FINAL
ENVIRONMENTAL ASSESSMENT
FOR THE
VIDAL SOLAR INTERCONNECTION PROJECT
DOE/EA-2170

Prepared for:

U.S. Department of Energy
Western Area Power Administration
Desert Southwest Region

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CHAPTER 1.0 – INTRODUCTION

1.1 PROJECT BACKGROUND

The Western Area Power Administration's (WAPA) Proposed Action consists of responding to a large generator interconnection request from CDH Vidal, LLC, the Proponent for the Vidal Energy Project, an approximately 160-megawatt (MW) nameplate capacity photovoltaic (PV) and battery energy storage system (BESS) facility proposed near the town of Vidal, in San Bernardino County, California (CA) on 1,090 acres of privately-owned lands. The Vidal Energy Project would include solar panels, access roads, and an underground electrical collection system, while the BESS would provide energy to the system at times when the solar generation system is offline. The solar project is proposed to be connected to WAPA's electrical transmission system via a new 161-kilovolt (kV) substation, looping into WAPA's existing Headgate Rock-Blythe (HDR-BLY) 161-kV transmission line (see Figure 1 in Appendix A), which crosses the southeastern corner of the proposed Vidal Energy Project. Although WAPA's new switchyard would be operated at 161-kV, it is anticipated to be built to 230-kV standards. WAPA's 52-mile HDR-BLY transmission line, which is part of WAPA's Parker-Davis Project transmission system and consists of wooden H-frame and three pole structures, runs generally northeast-to-southwest on privately owned lands, Colorado River Indian Tribes (CRIT) lands, and lands administered by the Bureau of Land Management (BLM) within an existing right-of-way (ROW).

On May 26, 2019, the Proponent submitted its large generator interconnection request to WAPA. WAPA made a determination to prepare an Environmental Assessment (EA) for the Proposed Action in accordance with the Department of Energy (DOE) National Environmental Policy Act (NEPA) implementing procedures (10 Code of Federal Regulations [CFR] 1021). Actions that require an EA include those that entail the "establishment and implementation of contracts, policies, marketing and allocation plans related to electric power that involve (1) the interconnection of, or acquisition of power from, new generation resources that are equal to or less than 50 average megawatts." The Proposed Action fits this action classification because given the project's expected capacity factor, it is anticipated to produce energy over the course of a year equivalent to a project with an average power generation capacity of 50 MW or less.

As background, Proponent believes the Vidal Energy Project would help meet customer demand for clean, cost effective, renewable energy. The State of California has an aggressive Renewables Portfolio Standard (RPS) Program consistent with the timeline established by Senate Bill 100 (De León, also known as the "California Renewables Portfolio Standard Program: emissions of greenhouse gases") as approved by the California legislature and signed by Governor Brown in September 2018, which increases total renewable energy capacity to 60 percent in by 2030 from 50 percent currently and establishes a goal of 100 percent renewable energy capacity by 2045. Additionally, California's goal is to reduce greenhouse gas (GHG) emissions consistent with the timeline established in 2006 under California Assembly Bill 32, the Global Warming Solutions Act of 2006, which requires the California Air Resources Board to reduce statewide emissions of GHGs to at least the 1990 emissions level by 2020. This timeline was updated in 2016 under Senate Bill 32, which requires that statewide GHG emissions are reduced to at least 40 percent below the statewide GHG emissions limit by 2030. The Vidal Energy Project would help the State support the RPS Program to reach GHG emissions goals. The project was approved by San Bernardino County in December 2023, which completed an Environmental Impact Report (EIR) pursuant to the California Environmental Quality Act (CEQA) evaluating environmental impacts from the construction, operation, and decommissioning of the project. The EIR included an evaluation of interconnection facilities and work to be completed as part of WAPA's Proposed Action.

Since WAPA's Proposed Action and Vidal Energy Project are not located on federal public lands, they are not subject to the California Desert Conservation Area Plan of 1980 (as amended) or Desert Renewable Energy Conservation Plan in accordance with Title 43 CFR 1610.5-3. San Bernardino County has determined the Vidal Energy Project to be in conformance with the County's General Plan.

Although the Vidal Energy Project has been permitted by San Bernardino County and is entirely located on private lands, this EA is analyzing the impacts of the solar project alongside the effects of WAPA's Proposed Action as part of a comprehensive analysis.

All Figures, Tables, Glossary, and List of Abbreviations and Acronyms for this EA are located in Appendix A. The San Bernardino County Final EIR for the Vidal Energy Project is available online at www.sbcounty.gov/uploads/LUS/Desert/Vidal%20Energy%20Project_Public%20FEIR.pdf.

1.2 PURPOSE AND NEED

WAPA is the lead Federal agency in the NEPA, the National Historic Preservation Act (NHPA) Section 106, and the Endangered Species Act Section 7 processes. WAPA is a federal power-marketing agency within the U.S. DOE) that owns, operates, and maintains transmission lines and associated facilities in accordance with the Federal Power Act Sections 210 to 213, and its Open Access Transmission Service Tariff (OATT). WAPA's OATT is filed with the Federal Energy Regulatory Commission (FERC). WAPA's purpose and need is to respond to the Proponent's large generator interconnection request in accordance with its Large Generator Interconnection Procedures pursuant to its OATT and the Federal Power Act. WAPA is required to verify that such requests do not degrade system reliability and safety, or adversely affect service to existing customers. WAPA conducts feasibility, system, and facility studies to determine the transmission system upgrades or additions necessary to meet these requirements and accommodate the proposed interconnection. Under WAPA's OATT, interconnections are offered to all eligible customers on a first-come, first-served basis, subject to an environmental review under NEPA.

This EA, which is the responsibility of WAPA, is a concise public document that serves to:

- Provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement (EIS) or a finding of no significant impact (FONSI);
- Aid WAPA's compliance with NEPA when no EIS is necessary; and
- Facilitate preparation of an EIS if one is necessary (40 CFR § 1508.9).

Based on the analysis contained in this EA, weighing how each alternative meets the purpose and need, WAPA will determine whether the proposed interconnection to the Vidal Solar Project requires an EIS, or if a FONSI can be prepared.

1.3 PUBLIC INVOLVEMENT

Scoping Period

Public scoping for WAPA's Proposed Action was initiated on January 12, 2022. WAPA held a 30-day scoping period that ended on February 17, 2022. Scoping letters were mailed to interested parties, including adjacent landowners, to inform them of WAPA's Proposed Action and the Vidal Energy Project, notify them of the scoping period and request input on the proposed EA.

Additionally, in compliance with Section 106 of the National Historic Preservation Act, Letters were sent on September 2, 2021 to the following five Native American tribes: Chemehuevi Indian Tribe, Colorado

River Indian Tribes, Fort Mojave Indian Tribe, Quechan Tribe of the Fort Yuma Reservation, and Twenty-Nine Palms Band of Mission Indians.

WAPA accepted scoping comments via telephone, email, and U.S. mail. WAPA received a total of 12 submittals, some of which included multiple comments on environmental resources or topics for analysis. Submittals were received from 11 individuals, and one tribe (Colorado River Indian Tribes). In total, 15 specific comments were identified from the 12 submittals. Comments concerned a range of environmental and impact analysis issues. Topics addressed in these comments ranged from requesting more information regarding the project and project location, land being for sale, property value. Individual and business comments also expressed general support for and opposition to the Proposed Project Other topics raised in the comments included access to cultural resources, socioeconomics, and the NEPA process.The Scoping Report is included in Appendix B.

The original project scope involved upgrading WAPA's communication equipment along the entire 52-mile HDR-BLY transmission line by replacing the overhead grounding wire with fiber optic cable. However, after further coordination, the Proponent determined that microwave communication would be used instead, eliminating the need for fiber optic upgrades between the Headgate Rock and Blythe Substations. As a result, the Project no longer included installing 52 miles of overhead fiber optic cable along the transmission line. Re-initiation of the public scoping process was deemed unnecessary since the Project footprint was reduced from the original scope. A new interconnection request submittal to WAPA was not required.

Public Input/Notice of Availability

Public comment on WAPA's Proposed Action was initiated on October 7, 2024. WAPA held a 30-day scoping period for the Proposed Action that ended on November 6, 2024. EA Postcards were mailed to interested parties and adjacent landowners to inform them of the project, notify them of the availability of the EA, and request input on the project. On October 7, 2024, the availability of the EA was also announced in local newspapers and published weekly for the entirety of the review period.

WAPA accepted EA comments via telephone, email, and U.S. mail as provided in the Postcard. The project received a total of 3 inquiries; however, no official comments were received. Each submittal was from nearby property owners inquiring about the Project's impact on their property values.

Section 7 Consultation

WAPA determined that the Proposed Action may affect, but would not likely adversely affect the Mojave Desert tortoise (*Gopherus agassizii*) and Yuma Ridgeway's rail (*Rallus longirostris yumanensis*). The Proposed Action would not affect any other species listed under the Endangered Species Act. WAPA consulted with the U.S. Fish and Wildlife Service pursuant to Section 7 of the Endangered Species Act. On October 18, 2024 the U.S. Fish and Wildlife Service concurred with WAPA's determinations for desert tortoise and Yuma Ridgeway's rail. See Appendix L for the concurrence letter.

Section 106 Consultation

WAPA consulted with the California State Historic Preservation Officer (SHPO) and consulting parties under Section 106 of the National Historic Preservation Act. On August 5, 2024, the SHPO concurred with WAPA's determination that none of the cultural resources identified within the Vidal Energy Project area are eligible for listing in the National Register of Historic Places (WAPA-2021-0916-001). See Appendix M for concurrence letter.

CHAPTER 2.0 – PROPOSED ACTION AND ALTERNATIVES

2.1 WAPA'S PROPOSED ACTION

WAPA's Proposed Action consists of responding to a large generator interconnection request and, if approved, entering into an interconnection agreement with the project Proponent. To interconnect the Vidal Energy Project to WAPA's transmission system, WAPA would have to construct, operate, maintain, and, ultimately, decommission, a new switchyard, up to five acres in area, and associated interconnection facilities to loop in the new switchyard to WAPA's existing HDR-BLY 161-kV transmission line (Figure 1 in Appendix A).

Underground fiber would be installed from the control building to the take-off structure. Optical Ground Wire (OPGW) would be installed from the take-off structure, along the new overhead approach spans, then coiled up at an existing structure. Additionally, an existing transmission structure may need to be replaced. All new facilities and work activities would take place within the 1,090-acre Vidal Energy Project area evaluated in San Bernardino County's EIR. The use of Project area in the EA refers to the 1,090 acres that includes WAPA's Proposed Action.

2.2 VIDAL ENERGY PROJECT FACILITIES

While Vidal Energy Project facilities are not part of WAPA's Proposed Action, they are described in this EA to aid the analysis. The Proponent proposes to build, operate, maintain, and decommission the Vidal Energy Project, shown on Figure 1 (Appendix A). The Vidal Energy Project includes the following components:

- Access roads
- Electrical infrastructure
- PV assembly and installation
- Substation construction
- Interconnection, and battery storage
- Stringing/pulling new circuit on existing infrastructure of generation interconnect (gen-tie) line
- Electrical and communication system installation
- PV commissioning

2.3 VIDAL ENERGY PROJECT LOCATION

The Vidal Energy Project site is located approximately 2.5 miles southeast of Vidal, an unincorporated area of San Bernardino County (County) that is located just east of U.S. Route 95, just north of the Riverside County border, and just west of the Colorado River Figure 1 in Appendix A). The Vidal Energy Project site encompasses 1,090 acres within 23 privately-owned parcels (and WAPA's Proposed Action would take place within the southeastern corner of the solar project footprint.

2.4 SCHEDULE

If a FONSI were to be issued by WAPA, the work described in the Proposed Action would be completed within 1-2 years following issuance of the FONSI.

Proponent anticipates a commercial operation date for the Vidal Energy Project in the second quarter of 2026. To meet this operation date, construction would begin no later than the fourth quarter of 2024 and is expected to take 10 to 14 months to complete, with an additional one to two months for testing. All construction would occur between the hours of 7:00 a.m. and 7:00 p.m. every day, except for Sunday and federal holidays.

2.5 PROJECT IMPLEMENTATION

This Section describes the construction, operations and maintenance (O&M), and decommissioning activities for WAPA's Proposed Action and Proponent's Vidal Energy Project. WAPA's Proposed Action would result in permanent disturbance of up to five acres for the new switchyard, all within the 1,090-acre Vidal Energy Project area assessed in San Bernardino County's Environmental Impact Report (County 2022a).

2.5.1 Proposed Action: WAPA Interconnection Construction, Operations and Maintenance, and Decommissioning

Construction

Construction Work Areas, Staging Areas, and Site Preparation

During construction, WAPA would permanently remove vegetation from up to five acres for the siting of the switchyard. All disturbance would occur within the footprint of the Vidal Energy Project.

WAPA would also need to perform enhancements at the Headgate Rock and Blythe substations, to the extent of upgrading the terminals where the transmission line terminates. In addition, to meet relay protection and control requirements, WAPA would install a new microwave path which would connect WAPA's new switchyard to the Vidal Energy Project substation. No new permanent ground disturbance would be associated with these activities. WAPA would replace insulators on HDR-BLY structure 25/2 to accommodate the interconnection, but replacement of insulators would not require any new ground-disturbing activities.

Construction Equipment and Workforce

WAPA estimates construction on the Proposed Action would require an eight-person workforce. WAPA would use the following construction equipment:

- 1 crane (8 hours/day for 5 days),
- 1 tractor/loader/backhoe (8 hours/day for 5 days),
- 1 pole delivery truck (8 hours or 1 day),
- 1 auger (8 hours/day for 5 days),
- 1 concrete truck (up to two trips),
- 1 grader (8 hours or 1 day),
- 1 water truck (8 hours/day for 15 days), and
- 1 bucket truck (8 hours or 1 day).

Staging Areas

Temporary staging areas will be contiguous with the staging areas for the proposed Vidal Energy Project.

Restoration

Following construction, temporary disturbance areas would be reclaimed in accordance with WAPA construction standards (WAPA 2021: Section 13.4, Landscape Preservation).

Operations and Maintenance

Routine Site Inspections and Maintenance

WAPA would incorporate the inspection of the new structures and associated improvements into its existing inspection program. WAPA conducts aerial inspections of its systems up to four times a year and

ground inspections up to once a year. WAPA uses the inspection reports to prioritize any needed repairs. WAPA dispatches six- to nine-person crews to make repairs, as needed, to maintain the reliability and safety of the bulk electric system.

WAPA operates and monitors its electrical power systems 24 hours a day, 7 days a week via a fiber-optic, microwave, and radio network connected to its operations centers. If a sustained fault is detected, switches will automatically de-energize the affected equipment. WAPA would inspect the equipment and manually return it to operation only when safe.

During O&M, ongoing but temporary impacts to vegetation would occur as a result of ground-disturbing maintenance activities and vegetation clearing beneath the gen-tie line, around the three-pole transmission structures associated with the interconnection, and within the switchyard.

Decommissioning

WAPA would re-evaluate the need for the project-related transmission system upgrades if Proponent's facility is decommissioned after the Vidal Energy Project's operational life of up to 35 years. Materials that could not be recycled would be disposed of at an approved landfill. WAPA would restore disturbed areas to preconstruction conditions, where feasible.

Decommissioning would result in the same impacts as construction, and WAPA would reclaim the area associated with its interconnection switchyard. WAPA would store equipment or materials for decommissioning within Proponent's facility staging areas.

2.5.2 Vidal Energy Project Construction, Operations and Maintenance, and Decommissioning

Construction

The construction of the Vidal Energy Project would last approximately 10 to 14 months, occurring between the hours of 7:00 a.m. and 7:00 p.m. every day except Sundays and Federal holidays in accordance with County noise standards. Construction would be comparable to other renewable energy projects and can be divided into the following components:

- Access Roads,
- Electrical infrastructure,
- PV assembly and installation,
- Substation construction,
- Construction, interconnection, and battery storage,
- Stringing/pulling new circuit on existing infrastructure of gen-tie line,
- Electrical and communication system upgrades, and
- PV commissioning.

The various elements of the Vidal Energy Project would be constructed concurrently on the property. Construction is anticipated to commence in the fourth quarter of 2024. Onsite workforce is expected to average 220 workers per day with a peak of up to 495 workers.

Construction activities would be expected to include site preparation, fencing, mowing, excavation, grading, trenching/underground work, pile driving, system installation, testing, and cleanup. Site preparation and construction would be in accordance with all federal, state, and County zoning codes and requirements. Noise-generating construction activities would be limited to the construction hours noted above. All stationary equipment and machines with the potential to generate a substantial increase in noise or vibration levels would be located away from noise receptors to the extent practicable. The

contractor would conduct construction activities in such a manner that the maximum noise levels at the affected buildings would not exceed established noise levels.

Operation and Maintenance

Upon completion of the construction and testing phases, the Vidal Energy Project would be operated during daylight hours. Up to 8 to 12 full-time and/or part-time staff would be required for operation, inspection, security, maintenance, and system monitoring purposes. Effective facility operations would be ensured by the following or similar activities:

- Liaison and remote monitoring,
- Administration and reporting,
- Semi-annual and annual services,
- Remote operations of inverters,
- Site security and management,
- Additional communication protocol,
- Repair and maintenance of solar facilities, substations, microwave tower, and other Vidal Energy Project facilities, and
- Periodic (up to twice per year) panel washing.

The PV arrays would produce electricity passively with minimal maintenance requirements. It is anticipated that panels would be washed up to two times a year, using the same water source used during the construction phase. The water source would likely be purchased from a local supplier using groundwater wells. This groundwater is suitable as a primary supply for panel washing but may not be suitable for potable use.

All new infrastructure would be fenced to help prevent access by the public. Gates would be installed at the roads entering the site. Limiting access to the site would be necessary both to ensure the safety of the public and to protect the equipment from potential theft and vandalism.

Project Decommissioning

The proposed Vidal Energy Project has an anticipated operational life of up to 35 years, after which Proponent may choose to update site technology and recommission, or to decommission the site and remove the systems and their components. All decommissioning and restoration activities would adhere to the requirements of the appropriate governing authorities and in accordance with all applicable federal, state, and County regulations.

2.6 NO ACTION ALTERNATIVE

The No Action Alternative provides a baseline against which the impacts of WAPA's Proposed Action can be compared. Under the No Action Alternative:

- WAPA would not approve the interconnection request, would not enter into an interconnection agreement, and would not implement Project-related transmission system upgrades, additions, or configurations; and
- Proponent would not develop the proposed Vidal Energy Project.

2.7 ALTERNATIVES CONSIDERED BUT NOT FURTHER EVALUATED

2.7.1 WAPA Proposed Action Alternatives

WAPA considered alternatives to the work described in the Proposed Action. WAPA considered installing new fiber optic line along the entire 52-mile HDR-BLY transmission line, which would have required numerous "pull sites" and additional ground disturbances both within and outside of the existing WAPA right-of-way. This would have resulted in potential additional impacts to sensitive vegetation and cultural resources. As such, WAPA's Proposed Action, which includes the installation of wireless communication infrastructure in lieu of new fiber optic lines, is anticipated to have fewer impacts to sensitive resources relative to the considered fiber optic alternative.

No other feasible alternatives have been identified; therefore, this Final EA only considers WAPA's Proposed Action and the No Action Alternative.

2.7.2 Vidal Energy Project Alternatives Considered

Prior to submitting the interconnection request, Proponent considered multiple factors in the evaluation of potential project locations, including proximity to the HDR-BLY 161-kV transmission line, contiguous parcel(s) of private lands suitable for solar resource development and with low resource value, proximity to existing transportation and utility infrastructure, and proximity to developed areas to minimize materials transportation and workforce commute. Based on these and other development factors, Proponent acquired the proposed 1,090-acre site for development in December 2018.

San Bernardino County's Environmental Impact Report for the Vidal Energy Project evaluated three alternatives to the solar project as proposed by the Proponent: 1) a No Project Alternative, 2) a Reduced Acreage Alternative, and 3) an Offsite Alternative. Under the County's No Project Alternative, the Proponent would not construct a PV and BESS facility. Under the Reduced Acreage Alternative, the Vidal Energy Project site would be reduced by 177 acres and the Project's renewable energy generation capacity would be reduced by approximately 25 percent due to the installation of fewer PV panels. Under the Offsite Alternative, the Vidal Energy Project would be redesigned and relocated to a different site which is designated as a Development Focus Area (DFA) for renewable energy in the Desert Renewable Energy Conservation Plan (DRECP).

The County determined that the No Project Alternative would be considered the environmentally superior alternative, as it would avoid or reduce all of the potential impacts associated with construction and operation of the Vidal Energy Project. However, in accordance with CEQA Guidelines, a secondary alternative was chosen since the No Project Alternative was environmentally superior. The Reduced Acreage Alternative was conservatively considered as the environmentally superior alternative because it would incrementally reduce certain impacts due to the reduced footprint. However, the County determined that the Vidal Energy Project as proposed would not result in any significant and unavoidable impacts as defined by CEQA, so environmental impacts would be less-than-significant for all resource areas under either the project as proposed or the Reduced Acreage Alternative. Further, the County determined that the Reduced Acreage Alternative would attain most of the Project objectives, although it would not do so to the same extent as the Project. The County determined that the Reduced Acreage Alternative would leave underutilized land that has been planned for a solar energy facility. The Reduced Acreage Alternative would also contribute less to assisting California reach its renewable energy generation goals under SB 100. The County concluded that the Reduced Acreage and Offsite Alternatives would not significantly reduce solar project impacts.

2.8 PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIONS

WAPA developed a list of past, present, and reasonably foreseeable future actions that, when combined with impacts from WAPA's Proposed Action, would have a potential for impacts resulting in cumulative effects (Table 1 of Appendix A). . Since planned projects are not always carried to completion, the window for future reasonably foreseeable projects was projected only for those projects anticipated to have on-site impacts within 10 years.

CHAPTER 3.0 – AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION

This chapter describes the affected environment and the environmental impacts of WAPA's Proposed Action alongside impacts from the Vidal Energy Project, and No Action Alternative on the resources identified for analysis. The resource issues addressed in this EA were developed using comments received from the public, tribes, and agencies during internal and external scoping. Resource issues considered but dismissed from further analysis are described in Section 3.3 and Table 4 in Appendix A.

3.2 IMPACT ANALYSIS METHODOLOGY

The affected environment for each resource consists of the physical area that bounds the environmental, economic, or cultural resources of interest that would likely be impacted by the alternatives. The affected environment is described for each resource analyzed based on primary and secondary data sources, and for some resources, field observations. The affected environment also serves as the baseline from which to evaluate likely changes, or impacts resulting from WAPA's Proposed Action alongside the Vidal Energy Project, and the No Action Alternative.

Environmental consequences, or impacts, were defined as modifications to the affected environment brought about by implementing WAPA's Proposed Action and the Vidal Energy Project, or the No Action Alternative. Impacts can be beneficial or adverse, result from the action directly or indirectly, can be temporary, long-term, permanent, or cumulative in nature, and described in intensity as negligible, minor, moderate, and major. The impact terminology used throughout this analysis are defined in Table 3 Appendix A. The impact analysis was conducted on either a quantitative or qualitative basis, depending on available data or the nature of the impact, and the severity of impact is established in the context of the affected environment. A direct and indirect analysis area is provided for each resource in the sections below.

To determine cumulative effects that would result from implementing WAPA's Proposed Action and Vidal Energy Project or the No Action Alternative, WAPA reviewed the known past, present, and reasonably foreseeable future proposed projects in the vicinity of the Vidal Energy Project area (Table 1 in Appendix A), which includes the area within which WAPA's Proposed Action would occur, and considered their temporary and long-term incremental effects on the local environment. The geographic analysis area considered for cumulative effects varies by resource issue.

The impacts of implementing WAPA's Proposed Action and the Vidal Energy Project are presented in totality, followed by separate presentation of impacts specific to each element. It is assumed for this analysis that the Proponent would construct the Vidal Energy Project, including the battery storage system; therefore, total impacts would be representative of the full construction and operation of the Vidal Energy Project, in addition to WAPA's Proposed Action. Further, it is assumed that the Vidal Energy Project would be constructed during the same time period as construction activities associated with WAPA's Proposed Action, in order to provide a worse case estimate of combined impacts.

3.3 RESOURCES CONSIDERED BUT NOT FURTHER EVALUATED

Resource issues dismissed from further evaluation—either because they are not present in the area to be disturbed or because only negligible impacts would occur—are described briefly in Table 4 of Appendix A. Resources for which only negligible impacts would occur were evaluated in San Bernardino County's EIR, which evaluated impacts from both the Vidal Energy Project and WAPA's Proposed Action, and the EIR's findings are briefly summarized in Table 4 of Appendix A.

3.4 AIR QUALITY

This section analyzes impacts of WAPA's Proposed Action alongside the Vidal Energy Project, and the No Action Alternative on the air quality issues identified during scoping, including air pollutant emissions from vehicles and equipment, and fugitive dust. Air pollutants tend to disperse into the atmosphere, becoming more spread out as they travel away from a source of pollution, and therefore cannot be confined within defined boundaries, such as the boundary of the Project area or county lines. Because of the nature of air pollutants, the air quality analysis area for direct and indirect effects extends 5 kilometers (3.1 miles) in all directions beyond the Project boundaries.

3.4.1 Affected Environment

The Project site is located within the San Bernardino County portion of the Mojave Desert Air Basin (MDAB). 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 above the valley floor. Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions 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), whose passes form the main channels for these air masses. The Mojave Desert is bordered in the southwest by the San Bernardino Mountains, separated from the San Gabriel Mountains by the Cajon Pass (4,200 feet). A lesser channel lies between the San Bernardino Mountains and the Little San Bernardino Mountains (the Morongo Valley).

Project Area

Pollutants of concern include ozone (O_3), nitrogen dioxide (NO_2), particulate matter (PM_{10} and $PM_{2.5}$), and lead (Pb). These pollutants are discussed below. In California, sulfates, vinyl chloride, hydrogen sulfide, and visibility-reducing particles are also regulated as criteria air pollutants. Results from local air quality monitoring stations are provided in Table 6 of Appendix A.

The Blythe Station is located approximately 33 miles south of the Project area at 495 W Murphy Street, Blythe, the Joshua Tree Station is located approximately 80 miles west of the Project area at Cottonwood Campground, the Niland Station is located approximately 84 miles southwest of the Project area at 7711 English Road, Niland, and the Palm Springs Station is located approximately 119 miles west of the Project area at 590 Racquet Club Avenue, Palm Springs. The monitoring data is presented in Table 6 of Appendix A and shows the most recent three years of monitoring data from the California Air Resources Board (CARB). Ozone was measured at the Blythe Station, NO_2 was measured at the Palm Springs Station, PM_{10} was measured at the Niland Station, and $PM_{2.5}$ was measured at the Joshua Tree Station.

Ozone

The State 1-hour and 8-hour concentration standards for ozone have not been exceeded over the past three years at the Blythe Station. The Federal 8-hour ozone standard has not been exceeded over the past three years at the Blythe Station.

Ozone is a secondary pollutant as it is not directly emitted. Ozone is the result of chemical reactions between other pollutants, most importantly hydrocarbons and NO_2, which occur only in the presence of bright sunlight. Pollutants emitted from upwind cities react during transport downwind to produce the oxidant concentrations experienced in the area. Many areas of Southern California contribute to the

ozone levels experienced at this monitoring station, with the more significant areas being those directly upwind.

Nitrogen Dioxide

Most nitrogen dioxide, like ozone, is not directly emitted into the atmosphere but is formed by an atmospheric chemical reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO_2 are collectively referred to as NOx and are major contributors to ozone formation. High concentrations of NO_2 can cause breathing difficulties and result in a brownish-red cast to the atmosphere with reduced visibility. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in children (2 and 3 years old) has also been observed at concentrations below 0.3 parts per million (ppm) by volume.

The Palm Springs Station did not record an exceedance of either the Federal or State 1-hour NO_2 standards for the last three years.

Particulate Matter

The State 24-hour concentration standard for PM_{10} has been exceeded between 7 and 66 days each year over the past three years at the Niland Station. Over the past three years the Federal 24-hour standard for PM_{10} has been exceeded between 1 and 10 days each year of the past three years at the Niland Station. The annual PM_{10} concentration at the Niland Station has exceeded the State standard for the past three years and has not exceeded the Federal standard for the past three years.

Over the past three years the 24-hour concentration standard for $PM_{2.5}$ has been exceeded between 0 and 2 days each year over the past three years at the Joshua Tree Station. No data was available for the annual $PM_{2.5}$ concentration standards at the Joshua Tree Station. There does not appear to be a noticeable trend for PM_{10} or $PM_{2.5}$ in either maximum particulate concentrations or days of exceedances in the area. Particulate levels in the area are due to natural sources, grading operations, and motor vehicles.

According to the EPA, some people are much more sensitive than others to breathing fine particles (PM_{10} and $PM_{2.5}$). People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death due to breathing these fine particles. People with bronchitis can expect aggravated symptoms from breathing in fine particles. Children may experience decline in lung function due to breathing in PM_{10} and $PM_{2.5}$. Other groups considered sensitive are smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive because many breathe through their mouths during exercise.

Methodology and Assumptions

To determine air quality related impacts, the Vidal Energy Project was modeled using CalEEMod Version 2020.4.0. The CalEEMod program uses the EMFAC2017 computer program to calculate the emission rates specific for the Mojave Desert portion of San Bernardino County for employee, vendor, and haul truck vehicle trips and the OFFROAD2011 computer program to calculate emission rates for heavy equipment operations. EMFAC2017 and OFFROAD2011 are computer programs generated by CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour.

The Project characteristics in CalEEMod were set to a Project location of the Mojave Desert portion of San Bernardino County, a Climate Zone of 10, utility company of Southern California Edison, and an opening year of 2023 was utilized in this analysis. In addition, the EMFAC off-model adjustment factors for gasoline light duty vehicle to account for the SAFE Vehicle rule was selected in the CalEEMod model run.

3.4.2 Environmental Consequences

No Action

Under the No Action Alternative, WAPA's Proposed Action would not be developed and there would be no Project-related emissions; therefore, there would be no impacts to air quality in the analysis area.

WAPA's Proposed Action

The WAPA's Proposed Action would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable Federal or State ambient air quality standard. The Proposed Action involves the construction, operation, and decommissioning of an electrical switchyard and enhancements to two substations.

During construction, WAPA would create temporary air pollutant emissions from equipment exhaust, vehicle exhaust from travel to and from the Project site, and fugitive dust from soil disturbance. The highest criteria pollutant emissions produced by construction of WAPA's interconnection facilities are CO, NOx, and PM_{10}. The greatest contributor to these pollutants is the exhaust emissions from on-road construction equipment and worker commuting. Based on estimates from similar projects and review of San Bernardino County's annual emissions, WAPA would not exceed MDAMD pollutant emission thresholds as provided on Table 4.2-4 in the EIR and any increase would be temporary. As such, the projected emission estimate for each pollutant from the construction of the transmission interconnect is negligible in comparison to the county's annual emissions. Emissions from the construction period would be temporary and transient in nature and would have negligible impacts on air quality. Construction of the WAPA transmission interconnect is therefore not expected to cause an exceedance of the NAAQS.

During operations, WAPA would create emissions from inspection activities such as exhaust from on-road inspection vehicles and fugitive dust from travel on paved and unpaved roads. Emissions from operations and maintenance would not exceed MDAMD pollutant emission thresholds as shown on Table 4.2-5 in the EIR. Impact on air quality from operation of the transmission interconnect is negligible. Therefore, operation of the transmission interconnect would not cause an exceedance of the NAAQS.

During decommissioning, WAPA would create the same or less emissions as during construction; therefore, impacts to air quality from decommissioning the transmission interconnect would be less than or equal to the construction impacts.

Vidal Energy Project

Construction Emissions

Construction of the Vidal Energy Project would result in the temporary addition of pollutants to the local air basin caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and volatile organic compounds (VOC) off-gassing) and off-site sources (i.e., on-road haul trucks, vendor trucks, and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and for dust, the prevailing weather conditions. Construction activities for the Vidal Energy Project are anticipated to start in the fourth quarter of 2024 and would last approximately 10 to 14 months. Annual construction-related criteria pollutant emissions from the Vidal Energy Project are shown below in Table 7 of Appendix A and the CalEEMod modeling results are provided in Appendix C.

Table 7 of Appendix A shows that none of the analyzed criteria pollutants emissions would exceed the MDAQMD annual thresholds during construction of the Vidal Energy Project. Therefore, impacts from air quality emissions from construction of the Vidal Energy Project would be short-term and minor.

Operation Emissions

The Vidal Energy Project involves development of a 160-MW photovoltaic solar energy facility and substation with an energy storage system. Operation of the Vidal Energy Project would generate VOC, NOx, CO, sulfur oxides (SOx), PM_{10}, and $PM_{2.5}$ emissions from mobile sources, including vehicle trips from maintenance vehicles. Pollutant emissions associated with long-term operations were quantified using CalEEMod modeling software. Because the Vidal Energy Project would have no major stationary emissions sources and a relatively low number of employees traveling to the facility site, operation of the Vidal Energy Project would result in substantially lower emissions than Project construction. The annual operations-related criteria pollutant emissions from the Vidal Energy Project are shown below in Table 8 of Appendix A and the CalEEMod results are provided in Appendix C.

Table 8 of Appendix A shows that none of the analyzed criteria pollutants emissions would exceed the MDAQMD annual emissions thresholds during operation of the Vidal Energy Project. Therefore, impacts from operations would be minor and no conservation measures are required.

Cumulative Impacts

The analysis area for cumulative effects was expanded to 15 miles around the Project area to account for a wider scope of regional air quality impacts that could cumulatively overlap with WAPA's Proposed Action. Cumulative effects to air quality from the actions and projects listed in Table 1 of Appendix A would occur as a result of emissions from Off-Highway Vehicle (OHV) and construction vehicle use. During construction or implementation, these projects would result in emissions from equipment exhaust, vehicle exhaust, and fugitive dust. Additionally, operations activities associated with transmission system maintenance would also result in emissions from the same sources (equipment, vehicles, and fugitive dust). These types of activities would be expected to have minimal emissions relative to existing county-level emissions inventory. Cumulatively, the long-term impact on air quality would be negligible.

3.5 BIOLOGICAL RESOURCES - VEGETATION

This section analyzes impacts of WAPA's Proposed Action alongside the Vidal Energy Project, and the No Action Alternative on the biological resource issues identified during scoping, including impacts to general vegetation and special status plants. Additional information is considered in the Biological Technical Study (Appendix D).

WAPA studied a 5-mile radius around the Project area for direct, indirect, and cumulative impacts to biological resources. This analysis area provides context for potential impacts and matches the occurrence records for special status species in the California Natural Diversity Database. Site visits documented habitat conditions within and in the vicinity of the Project area, and a description of conditions specific to the Project area is included in Appendix D. These conditions were used to determine the habitat present, and if habitats present could support listed threatened, endangered, and/or special status species.

3.5.1 Affected Environment

The affected environment for both the Vidal Energy Project and WAPA's Proposed Action, as it relates to biological resources, are contiguous; therefore, the affected environment section is discussed together.

Six vegetation communities, in addition to Bare Ground and Developed areas, are within the Vidal Energy Project and WAPA survey area: Blue Palo Verde – Ironwood Woodland, Creosote Bush Scrub, Rigid Spineflower – Hairy Desert Sunflower Desert Pavement Sparsely Vegetated Alliance, Disturbed Creosote Bush Scrub, Disturbed, and Tamarisk Thickets. The dominant vegetation community within the Project area is Creosote Bush Scrub, with two large washes dominated by Blue Palo Verde – Ironwood Woodland. Mapped vegetation communities within the Vidal Energy Project area are depicted in Table 9 of Appendix A.

Methodology and Assumptions

Literature Review

Prior to performing the reconnaissance-level survey and rare plant focused surveys, existing documentation relevant to the Project area was reviewed. The most recent records of the California Natural Diversity Database (CNDDB) managed by the CDFW (CDFW 2020), the USFWS database – Carlsbad office (USFWS 2020b), the National Wetlands Inventory (NWI; USFWS 2020a), the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2020), and the California Native Plant Society's Electronic Inventory (CNPSEI) of Rare and Endangered Vascular Plants of California (CNPS 2020) were reviewed for the following quadrangles containing and surrounding the Project area: Vidal Junction, Parker NW, Vidal, and Parker SW California United States Geological Survey (USGS) 7.5-minute quadrangles. These databases contain records of reported occurrences of federally and state listed endangered or threatened species, proposed endangered or threatened species, California Species of Special Concern (SSC), or otherwise sensitive species or habitats that may occur within or in the immediate vicinity of the Project. Maps of sensitive species occurrences within 5 miles of the Project area is included as Figure 4 of Appendix A.

Preliminary Jurisdictional Delineation

A desktop assessment was conducted of available data prior to the biological reconnaissance survey in the field. Once completed, a preliminary delineation was performed within the Project area. A general assessment of waters potentially regulated by the U.S. Army Corps of Engineers (USACE), California Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW) was conducted for the survey area.

Pursuant to Section 404 of the Clean Water Act, USACE regulates the discharge of dredged and/or fill material into waters of the United States. The State of California (State) regulates discharge of material into waters of the State pursuant to Section 401 of the Clean Water Act and the California Porter-Cologne Water Quality Control Act (California Water Code, Division 7, §13000 et seq.). Pursuant to Division 2, Chapter 6, Sections 1600-1602 of the California Fish and Wildlife Code, CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife.

Field verification of all USFWS National Wetland Inventory (NWI) drainages (USFWS 2022a) were conducted for the survey area. Active channels and drainages were mapped by identifying clear evidence of hydrology including sediment deposition, shelving, drift deposits, and destruction of vegetation. These characteristics were used to inventory the active channels and drainages during the surveys. A Supplement Delineation was conducted in December 2023 (Appendix E) that verified the original jurisdictional delineation.

Reconnaissance-level survey

A reconnaissance-level survey was conducted within the Project area to identify the potential for occurrence of sensitive species, vegetation communities, and habitats that could support sensitive wildlife species. The survey was conducted on foot throughout the Vidal Energy Project area between 0630 and 1620 hours on April 23, 2020.. All plant and wildlife species and vegetation communities observed were recorded.

Weather conditions during the survey included temperatures ranging from 80 to 101 degrees Fahrenheit, with no cloud cover and no precipitation. Wind speeds ranged between 0 and 10 miles per hour (mph) Photographs of the Project area were recorded to document existing conditions (Appendix D).

All plant species and vegetation communities observed within the Project area during the reconnaissance-level surveys were recorded. Vegetation communities within the Project area were then identified, qualitatively described, and mapped onto an aerial photograph. The vegetation communities are described following A Manual of California Vegetation, 2nd edition (Sawyer et al. 2009). Plant nomenclature follows that of The Jepson Manual, Second Edition (Baldwin et al. 2012).

Focused plant survey

A focused plant survey was conducted within the Project Area on May 4 through May 8, 2020 to identify and record occurrences of any of the seven rare plants identified in literature searches as having potential to occur on or within 5 miles of the Vidal Energy Project, in advance of construction. The survey was conducted in accordance with the Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened and Endangered Plants and Natural Communities (CDFW 2000), and within the blooming period for four of the seven sensitive plant species identified as having potential to occur on or within the Project vicinity including chaparral sand-verbena (*Abronia villosa*), Alverson's foxtail cactus (*Coryphantha vivipara alversonii*), glandular ditaxis (*Ditaxis claryana*), Abrams' spurge (*Euphorbia abramsiana*), winged cryptantha (*Cryptantha holoptera)*, Torrey's box-thorn(*Lycium torreyi*), and Hall's tetracoccu *(Tetracoccus hallii*)s. The survey was conducted outside the bloom period for three of the seven species, glandular ditaxis (typically blooms October through March), Abrams' spurge (typically blooms September through November), and winged cryptantha (typically blooms from March through April); for these species, surveyors focused on identifying vegetative characteristics and any floral remains. Although winged cryptantha blooms from March through April, this species, even if not in bloom, would have been conspicuous in early May. Furthermore, no Johnstonella or unidentified Cryptantha species were observed during the focused plant survey, and therefore this species is considered unlikely to occur Vidal Energy Project area. It should be noted that one occurrence of saguaro cactus (*Carnegiea gigantea*) was observed; however, it was concluded that the observance was not natural as it was located near a residence to the north of the Project site.

Weather conditions during the five-day survey included temperatures ranging from 62 to 107 degrees Fahrenheit, wind speeds ranging from 0 to 3 mph, 0 to 60 percent cloud cover, and no precipitation.

Vegetation Communities

Proposed Action and the Vidal Energy Project

Six vegetation communities in addition to Bare Ground and Developed areas were mapped within the Project area: Blue Palo Verde – Ironwood Woodland, Creosote Bush Scrub, Rigid Spineflower – Hairy Desert Sunflower Desert Pavement Sparsely Vegetated Alliance, Disturbed Creosote Bush Scrub, Disturbed, and Tamarisk Thickets. The dominant vegetation community within the Project area is Creosote Bush Scrub, with two large washes dominated by Blue Palo Verde – Ironwood Woodland. The following summarizes the principal characteristics of the vegetation communities observed within the Project area during the biological reconnaissance survey. Vegetation communities were mapped in the field and are included in Figure 2 in Appendix A.

Table 9 in Appendix A summarizes the vegetation communities within the Project area and the acreage of each community.

Blue Palo Verde – Ironwood Woodland

Blue Palo Verde - Ironwood Woodland as described by Sawyer et al. (2009), is dominated by blue palo verde (Parkinsonia florida), ironwood, or smoke tree (Psorothamnus spinosa) less than 60 feet in height. The tree canopy is continuous to open where shrubs are common, and seasonal annuals are present in

the herbaceous layer. Blue Palo Verde – Ironwood Woodland habitat occurs along desert arroyo margins, seasonal watercourses and washes, bottomlands, middle and upper bajadas and alluvial fans, and lower slopes that are occasionally flooded or saturated at elevations between 30 and 1,600 feet above mean sea level (amsl). Blue Palo Verde – Ironwood Woodland is consistent with Desert Dry Wash Woodland as described by Holland (1986).

Blue Palo Verde – Ironwood Woodland is present within the Project area along two large washes that generally flow from west to east in the northern and central portions of the Project area. In addition, this habitat is associated with a number of smaller drainages along the southern border of the Project area. Plant species found in the Project area are typical of this vegetation community include white bur-sage (Ambrosia dumosa), cheesebush (*Ambrosia salsola* var. *salsola*), sweetbush (*Bebbia juncea* var. *aspera*), silver cholla (*Cylindropuntia echinocarpa*), brittlebush (*Encelia farinosa*), desert lavender (*Condea emoryi*), creosote bush, Anderson's wolfberry (*Lycium andersonii*), and cat's claw (*Senegalia greggii*). There are 81.44 acres of Blue Palo Verde – Ironwood Woodland in the Project area.

Creosote Bush Scrub

Creosote Bush Scrub as described by Sawyer et al. (2009) consists of widely spaced shrubs less than 10 feet in height dominated by creosote bush or co-dominant with white bur-sage, cheesebush, and/or brittlebush, frequently with bare ground between shrubs. Growth occurs from winter to early spring if rainfall is sufficient. Ephemeral herbs typically flower from late February to March. Creosote Bush Scrub can be found on alluvial fans, bajadas, upland slopes, and minor intermittent washes with well-drained secondary soils and sometimes desert pavement at elevations between 245 and 4,256 feet amsl. Creosote Bush Scrub is consistent with the Sonoran Creosote Bush Scrub and Mojave Creosote Bush Scrub communities as described by Holland (1986).

Creosote Bush Scrub habitat is located in the northeastern portion of the Project area that was previously used for dry-land and irrigated farming and contains a high amount of non-native species; however, the level of disturbance and non-native species cover does not rise to the level of being considered a disturbed form of this habitat. Plant species found within the Project area that are typical of this vegetation community include: cheesebush, sweetbush, pencil cholla (*Cylindropuntia ramosissima*), silky dalea (*Dalea mollissima*), barrel cactus (*Echinocactus polycephalus*), brittlebush, and bush encelia (*Encelia frutescens*). Emergent trees or tall shrubs may be present at low cover. There are 913.57 acres of Creosote Bush Scrub within the Project area.

A disturbed form of this habitat is located in proximity to two now-abandoned residential areas. This vegetation type has been disturbed by human activities such as off-road vehicle use, the introduction of non-native species, past development, compaction, and/or littering; and it is considered of lower quality than the Creosote Bush Scrub habitat described above. Non-native, weedy species found in these areas include Saharan mustard, foxtail brome (*Bromus rubens*), and Mediterranean schismus (*Schismus barbatus*). A total of 30.75 acres of Disturbed Creosote Bush Scrub is located within the Project area.

Rigid Spineflower – Hairy Desert Sunflower Desert Pavement Sparsely Vegetated Alliance

The Rigid Spineflower – Hairy Desert Sunflower Desert Pavement Sparsely Vegetated Alliance as described by Sawyer et al. (2009) can be found in broad alluvial fans and lower slopes in the desert and are associated with areas of desert pavement. The ground surface is sandy and gravelly mixed alluvium, with various rocks and gravel along with interstitial fine sediments. The herb layer is sparse to intermittent, and the non-vascular (cryptogamic crust) layer is sparse to intermittent. The shrub layer is often sparse or non-existent. Rigid spineflower (*Chorizanthe rigida*) and/or hairy desert sunflower (*Geraea canescens*) is characteristically present in the herbaceous layer. Rigid Spineflower – Hairy Desert Sunflower Desert

Pavement Sparsely Vegetated Alliance is consistent with Sonoran Desert Scrub or Mojave Creosote Bush Scrub communities as described by Holland (1986).

Rigid Spineflower – Hairy Desert Sunflower Desert Pavement Sparsely Vegetated Alliance is present within the Project primarily along the western edge of the Project area and within 0.5 mile of Highway 95. Plant species found on the Project site typical of this vegetation community include rigid spineflower with lesser amounts of trailing windmills (*Allionia incarnata*), Saharan mustard, foxtail brome, primrose (*Camissonia* spp.), pincushion (*Chaenactis* spp.), spurge (*Euphorbia* spp.), brittle spineflower (*Chorizanthe brevicornu*), cryptantha (*Cryptantha* spp.), and common Mediterranean grass (*Schismus* spp.). Shrub cover is very sparse, if present at all, and when present includes bur-sage, desert holly (*Atriplex hymenelytra*), silver cholla, brittlebush sunflower, white rhatany (*Krameria grayi*), creosote, beavertail cactus (*Opuntia basilaris*), and/or honeysweet (*Tidestromia suffruticosa*). There are 20.26 acres of this vegetation type located within the Project area.

Tamarisk Thickets

Tamarisk Thickets as described by Sawyer et al. (2009) can be located in a variety of riparian and upland areas and is generally dominated by any number of tamarisk species. Tamarisk are known to be strongly phreatophytic (deep rooted) and they often supplant native vegetation following a major disturbance. Soil is usually sandy or gravelly in braided washes or intermittent streams, often in areas where high evaporation increases the stream's salinity. Tamarisk Thickets is consistent with the Tamarisk Scrub community described by Holland (1986).

Tamarisk Scrub is present as a windbreak along the northern and western edges of a former agricultural area in the central portion of the Project area. Plant species found within the Project area typical of this vegetation community include a nearly monotypic makeup dominated by Mediterranean tamarisk (*Tamarix ramosissima*) with scattered annual species including schismus, Sahara mustard, and cryptantha along the periphery of the habitat. There are 1.53 acres of Tamarisk Thickets within the Project area.

Disturbed

Areas classified as Disturbed habitat tend to be dominated by pioneering herbaceous species that readily colonize disturbed ground and that are typically found in temporary, often frequently disturbed habitats (Barbour et al. 1999) and that have a high percentage of non-native weedy species (i.e., greater than 25 percent of the species cover). The soils in Disturbed areas are typically characterized as heavily compacted or frequently disturbed. The vegetation in these areas is adapted to living in compacted soils where water does not readily penetrate the soil. Plant species found within the Project area typical of this vegetation community include non-native annual species such as Arabian schismus, Mediterranean schismus, sand peppergrass (*Lepidium lasiocarpum* subsp. *lasiocarpum*), and Sahara mustard. This habitat is associated with areas along the extreme western edge of the Project area along Highway 95 as well as within a previous agricultural area within the central portions of the Project area. There are 24.95 acres of Disturbed habitat within the Project area.

Bare Ground

Bare Ground areas are devoid of vegetation. These areas are generally associated with the existing dirt access roads located throughout the Project area. A total of 16.61 acres of Bare Ground are located within the Vegetation Survey Area.

Developed

Developed areas are areas that have been altered by humans and now display man-made structures such as houses, paved roads, buildings, parks, and other maintained areas.

Developed areas are present within the cProject area and are associated with existing residential structures located along the western edge and eastern-central portions of the Project area. There are 1.79 acres of Developed areas within the Project area.

Special Status Species

Several factors are taken into consideration when determining the significance of biological resources (wildlife, plants, habitats, etc.). The factors include the listing status of a species (federal, state) which identifies the weighted legal protection afforded a species, whether critical habitat for a species is present, the regional scarcity of a species, and other legal protections in place for species not formally listed but considered unique or rare, such as those species afforded protection under CEQA or considered species of concern by the CDFW. Plant species in California are also ranked by the California Native Plant Society according to a hierarchy of rarity or threat of extinction. This combined evaluation of factors determines the potential significance of impacts to a species/population. The complete list of abbreviations associated with species occurrence/ranking is described below.

In addition, Table 10 of Appendix A provides the criteria used to determine the likelihood of special status species to potentially occur within the Survey Area and proposed Project site.

The following information is a list of abbreviations used to help determine the significance of biological sensitive resources potentially occurring on the Project area.

California Rare Plant Rank (CRPR)

List 1A Plants presumed extinct in California.
List 1B Plants rare and endangered in California and throughout their range.
List 2 Plants rare, threatened, or endangered in California but more common elsewhere in their range.
List 3 Plants about which we need more information; a review list.
List 4 Plants of limited distribution; a watch list.

CRPR Extensions

0.1 Seriously endangered in California (greater than 80 percent of occurrences threatened/high degree and immediacy of threat).
0.2 Fairly endangered in California (20-80 percent occurrences threatened).
0.3 Not very endangered in California (less than 20 percent of occurrences threatened).

Sensitive Plants

Proposed Action and the Vidal Energy Project

Current database searches (CDFW 2020; CNPS 2020) resulted in a list of seven sensitive plant species documented to occur within 5 miles of the Project area (CNDDB and USFWS data; Figure 3 in Appendix **A**) and within the quadrangles (California Native Plant Society Electronic Inventory (CNPSEI) data) containing and surrounding the Project area. Factors used to determine the potential for occurrence included the quality of habitat, level of anthropogenic influence, elevation, and soils present. In addition, the location of prior CNDDB records of occurrence were used as additional data, but as the CNDDB is a positive-sighting database, these data were used only in support of the analysis from the previously identified factors. Of the seven special status plant species evaluated for their potential occurrence in the c Project area, no species had a High potential to occur, two species had a Moderate potential to occur, four species had a Low potential to occur, and one species was considered to be Absent from the site. None of the four

species evaluated as having potential to occur in the Project area, and that would have been blooming and conspicuous at the time of the focused plant survey, were observed during the survey and are therefore considered Absent in the Project area. One additional species, Utah vine milkweed (*Funastrum utahense*; CRPR 4.2), was not identified in the literature searches but was observed in the original Project area during the focused plant survey; however, it is located within the Survey Area 500-foot buffer. None of the sensitive plant species with potential to occur are federally or state listed species.

These sensitive plant species, their current status, and potential for occurrence are summarized below. A complete table of sensitive plant species potentially occurring in the Project area including bloom periods and habitat requirements is included as Appendix D. A list of all plant species observed during the reconnaissance-level and focused plant survey is provided in Appendix D.

The following four species are considered Absent from the coProject area, as they were not observed when the plants would have been in bloom and conspicuous within the Project area during surveys:

- Alverson's foxtail cactus – CRPR List 4.3,
- chaparral sand-verbena – CRPR List 1B.1,
- Hall's tetracoccus – CRPR List 4.3, and
- Torrey's box-thorn – CRPR List 4.2.

The following species was observed within the original Project area during the focused plant survey; however, after Project design revisions, it is now located within the Survey Area 500-foot buffer and is considered Absent in the Project area:

- Utah vine milkweed – CRPR 4.2

The following species has a Low potential to occur in the Project area, as the environmental conditions required by the species is of low quality. Furthermore, while this species blooms from March through April, this species, even if not in bloom, would have been conspicuous in early May and no Johnstonella species or unidentified Cryptantha species were identified; therefore, this species has a Low potential to occur:

- winged cryptantha – CRPR List 4.3

The following two plant species have a Moderate potential to occur in the Project area, as the environmental conditions needed for the species exist marginally:

- Abrams' spurge – CRPR List 2B.2 and
- glandular ditaxis – CRPR List 2B.2

All sensitive plant species having a Moderate or higher potential to occur in the Project area are described below.

Abrams' spurge is a prostrate annual herb in the Euphorbiaceae family that occurs in sandy flats of Mojavean Desert scrub and Sonoran Desert scrub. This species blooms from September to November. It can be found at elevations between -15 and 4,300 feet amsl. Moderate to high-quality Creosote Bush Scrub is present, and this species has been recorded within 3 miles of the Project area.

Glandular ditaxis is a perennial herb in the Euphorbiaceae family that occurs in sandy soils of Mojavean Desert scrub, Sonoran Desert scrub, and Creosote Bush Scrub. This species typically blooms from October to March. It can be found at elevations between 0 and 1,525 feet amsl. Moderate to high-quality Creosote Bush Scrub is present in the Project area, and this species has been recorded within 3 miles of the site.

General Plants

Proposed Action and the Vidal Energy Project

A total of 136 plant species were observed during the reconnaissance-level survey and the focused plant survey. Plant species observed during the survey efforts were representative of the existing site conditions. A solitary Utah vine milkweed (CRPR 4.2) was observed in the northwestern portion of the Project area during the focused plant survey. No other sensitive plant species or sensitive vegetation communities were observed during the survey efforts. A complete list of plants observed is provided in Appendix D.

Delineation Results

The Survey Area contains primarily alluvial fan systems consisting of braided channels, individual drainage channels, erosional channels, and man-made berms. Drainages found within the Survey Area are potentially subject to jurisdiction by the CDFW, and RWQCB. As discussed in the Supplemental Delineation (Appendix E), due to the arid environmental conditions of the Survey Area, where most rain events are flashy in nature, all drainages observed were ephemeral and are presumed to be exempt from potential federal jurisdiction. The active channels throughout the Survey Area consisted of alluvial sediment comprised of sand and gravel deposits. The active channels and drainages mapped exhibited clear evidence of hydrology including sediment deposition, shelving, drift deposits, and destruction of vegetation. These characteristics were used to inventory the active channels and drainages during the surveys.

The widths of the Ordinary High Water Mark (OHWM) and bank features were similar due to the erosion of banks in a vertical formation; therefore, the OHWM measurements were measured as the same width as the banks throughout the Survey Area.

3.5.2 Environmental Consequences

No Action

Selection of the No Action Alternative, as described in Section 2.6, would not result in implementation of WAPA's Proposed Action; potential effect to vegetation resources would not occur.

WAPA's Proposed Action

Under WAPA's Proposed Action, construction of a new switchyard would cause approximately 5 acres of permanent ground disturbance. The only vegetation community impacted would be Creosote Bush Scrub; no sensitive plant species or communities would be impacted by WAPA's Proposed Action.

Temporary impacts in areas adjacent to the new switchyard may include trimming or crushing of vegetation. Areas of temporary disturbance would be reclaimed by regrading so that surfaces drain naturally, blend with the natural terrain, and are left in a condition that would facilitate natural revegetation. However, desert ecosystems can take from 70 to over 200 years to recover from disturbance, so these reclaimed areas will not provide pre-construction habitat values within the timeframe of this analysis (Abella 2010).

Ground-disturbing activities can create conditions that would increase the potential for introduction and/or establishment of nonnative plants. As part of the Proposed Action, WAPA would comply with all Federal, State, and local weed control regulations, and implement construction standards (WAPA 2021: Section 13.6, Weed Control Standards) such as maintaining vehicles and equipment free of mud and vegetation debris when transporting between sites and using only certified weed-free mulches and native seed mixes for reclamation.

Activities associated with O&M would be infrequent and may cause limited ground disturbance or vegetation removal. Decommissioning would be confined to areas already disturbed during construction and would not lead to any additional ground disturbance. A detailed description of the WAPA facilities and all construction, O&M, and decommissioning activities is provided in Section 2.1.

Vidal Energy Project

Vegetation Communities

Six vegetation communities are present within the proposed Project area: Blue Palo Verde – Ironwood Woodland, Creosote Bush Scrub, Disturbed Creosote Bush Scrub, Rigid Spineflower – Hairy Desert Sunflower Desert Pavement Sparsely Vegetated Alliance, Tamarisk Thickets, and Disturbed. Bare ground and developed areas were also identified within the Project area. Temporary impacts to native vegetation communities are assumed to be due to crushing and not full removal of the plants. If full uprooting of plants is necessary (e.g., due to grading or recontouring) these impacts will be considered permanent and vegetation impacts will be updated accordingly. Temporary and permanent impacts to each vegetation community within the Project area are provided in Table 11 in Appendix A. A map showing vegetation communities in the Project boundary is provided as Figure 2 in Appendix A.

Blue Palo Verde – Ironwood Woodland is generally of moderate to high quality within the major washes of Drainage 4 and Drainage System 5; however, exotic plant species do occur throughout this community. Removal of exotic plant species within this community may be considered suitable on-site, but out-of-kind conservation. Based on current Project design, approximately 1.29 acres of temporary impacts and 1.68 acres of permanent impacts to this community are anticipated.

Creosote Bush Scrub is generally of moderate to high quality with low plant density overall. Large areas of bare ground separate individual creosote bush shrubs with only limited plant species being located within the bare ground matrix of the habitat. In other areas Creosote Bush Scrub habitat is denser and more diverse. Areas with disturbed creosote scrub have high amounts of non-native, weedy species including Saharan mustard, foxtail brome, and Mediterranean schismus and are considered low quality habitat. Based on current Project design, approximately 563.64 acres of temporary impacts and 325.62 acres of permanent impacts to Creosote Bush Scrub habitat and approximately 18.63 acres of temporary impacts and 8.92 acres of permanent impacts to Disturbed Creosote Bush Scrub habitat are anticipated.

Rigid Spineflower – Hairy Desert Sunflower Sparsely Vegetated Desert Pavement Alliance habitat areas are associated with locations that appear to experience ephemeral water infiltration and support a higher level of herbaceous species than surrounding areas. A fair amount of invasive and non-native species are present in this habitat and it is therefore considered moderate quality habitat. Invasive Sahara mustard populations can be addressed through targeted hand weeding efforts between when the plant bolts and when it goes to seed. Based on current Project design, approximately 11.96 acres of temporary impacts and 8.30 acres of permanent impacts to this community are anticipated.

Tamarisk Thickets is a non-native community composed primarily of invasive tamarisk species and aside from being potential nesting habitat for some opportunistic bird species, this community does not contribute positively to the overall health and quality of the environment. Tamarisk competes for water in drainage features and changes the natural chemistry of the soil (salt-saturated) that inhibits the survival of native species. The presence of tamarisk decreases the habitat value of area. Enhancement by removal of this species within the Project area will provide higher biological value and increase the native species composition. Based on current Project design, approximately 1.10 acres of temporary impacts and 0.43 acres of permanent impacts to this community are anticipated.

Disturbed habitat is also present in the Project area. The soils in Disturbed areas are typically characterized as heavily compacted or frequently disturbed. The vegetation in these areas is adapted to living in compact soils where water does not readily penetrate the soil. Plant species found within the Project area typical of this vegetation community include non-native annual species such as Arabian schismus (*Schismus arabicus*), Mediterranean schismus, sand peppergrass, and Sahara mustard. Care should be taken when working in disturbed habitats or other weedy areas so as not to spread weeds off site to adjacent native habitats. The presence of Disturbed habitats decreases the habitat value of area. Enhancement by removal of exotic species within the Project area will provide higher biological value and increase the native species composition. Based on current Vidal Energy Project design, approximately 14.73 acres of temporary impacts and 10.20 acres of permanent impacts to this community are anticipated.

None of the vegetation communities present in the Project area are considered sensitive vegetation communities; however, several desert shrub and tree species are protected under the San Bernardino County Development Code Desert Native Plant Protection Section 88.01.060. Tree and shrub species present on site that may require a permit for removal include:

- Dalea spinosa (smoke tree), all species of the genus Prosopis (mesquites) with stems greater than 2 inches in diameter or greater than 6 feet in height.
- Creosote Rings, 10 feet or greater in diameter.
- Any part of any of the following species, whether living or dead: Olneya tesota (desert ironwood), all species of the genus Prosopis (mesquites), all species of the genus Cercidium (synonym: Parkinsonia, palo verde).

The majority of individuals of these species exist within the large wash systems of Drainage 5 within Blue Palo Verde – Ironwood Woodland habitat, and Creosote Bush Scrub within Drainage 6 which will be largely avoided by the current Vidal Energy Project design. It is recommended that species that may require a County permit for removal be assessed during pre-construction surveys to determine how many will require conservation prior to the start of construction.

Sensitive Plants

The results of the focused plant survey were negative for the seven rare plant species identified in the literature search as having potential to occur within the Project area; however, Utah vine milkweed, a species that was not identified in the literature search was observed in the Survey Area buffer but was not identified in the Project area during the 2020 effort. The focused plant survey was conducted outside of the blooming period for three of the seven species, glandular ditaxis (typically blooms October through March), Abrams' spurge (typically blooms September through November), and winged cryptantha (typically blooms from March through April). For these species, surveyors focused on identifying vegetative characteristics and any floral remains; however, it is unlikely that any vegetative or floral remains of Abrams' spurge would have been observed due to its late-season bloom period. Due to drought in the spring/summer of 2020, this species is not expected to emerge in fall of 2020. This species was not observed during visits to known populations (reference sites) in the area in October of 2020. Although winged cryptantha blooms from March through April, this species, even if not in bloom, would have been conspicuous in early May. Furthermore, no Johnstonella or unidentified Cryptantha species were observed during the focused plant survey, and therefore this species is considered to have Low potential to occur in the Project area. As winged cryptantha is a CRPR 4 species, and has Low potential to occur, no focused survey during its bloom period will be conducted for this species.

Cumulative Impacts

As discussed above in Section 3.5.1, the analysis area has been affected by past and current land use practices, some of which have resulted in the loss or degradation of vegetation and habitat and contributed to current conditions. When considering other reasonably foreseeable projects within the analysis area (see Table 1 of Appendix A), the majority are limited in new ground disturbance, are located within existing facilities, or are not expected to result in adverse impacts to biological resources that would contribute to an adverse cumulative impact. The majority of the projects are on federal lands and would be subject to compliance with federal laws including, but not limited to, the NEPA, Endangered Species Act (FESA), and BLM management guidance for special status species, which would reduce the potential for adverse cumulative impacts.

Reasonably foreseeable future actions Table 1 of Appendix A – No. 10 Routine Transmission Inspections; No. 11 Past/Present Dispersed Recreation OHV Travel on BLM Lands) would likely result in the loss and/or degradation of vegetation and habitat within the analysis area. Routine transmission line inspections and OHV activities could result in temporary disturbance to the same vegetation communities disturbed by WAPA's Proposed Action; however, both would likely use established roads and would not involve vegetation removal. As the cumulative area of disturbance for both projects are relatively small when considered in terms of the expanses of similar habitat available adjacent to the Project area, the projects would not result in long-term adverse cumulative impacts to vegetation communities or populations of special status species.

3.6 BIOLOGICAL RESOURCES – WILDLIFE

This section analyzes impacts of WAPA's Proposed Action alongside the Vidal Energy Project, and the No Action Alternative on the biological resource issues identified during scoping, including impacts to wildlife. Additional information is considered in the Biological Resources Report (Appendix D). WAPA completed Section 7 of the Endangered Species Act consultation with the USFWS for the Proposed Action. See Appendix L.

3.6.1 Affected Environment

The affected environment for both the Vidal Energy Project and the WAPA Proposed Action, as it relates to biological resources, are contiguous; therefore, the affected environment section is discussed together.

Methodology and Assumptions

Literature Review

Prior to performing the reconnaissance-level survey; jurisdictional waters delineation; and desert tortoise (*Gopherus agassizii*), burrowing owl (*Athene cunicularia*) surveys, existing documentation relevant to the Project area was reviewed. The most recent records of the California Natural Diversity Database (CNDDB) managed by the CDFW (CDFW 2020), the USFWS database – Carlsbad office (USFWS 2020b), the National Wetlands Inventory (NWI; USFWS 2020a), the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2020), and the California Native Plant Society's Electronic Inventory (CNPSEI) of Rare and Endangered Vascular Plants of California (CNPS 2020) were reviewed for the following quadrangles containing and surrounding the Project area: Vidal Junction, Parker NW, Vidal, and Parker SW California United States Geological Survey (USGS) 7.5-minute quadrangles. These databases contain records of reported occurrences of federally and state listed endangered or threatened species, proposed endangered or threatened species, California Species of Special Concern (SSC), or otherwise sensitive species or habitats that may occur within or in the immediate vicinity of the Project. A map of sensitive species occurrences within 5 miles is included as Figure 3 of Appendix A.

Reconnaissance-level survey

A reconnaissance-level survey was conducted within the Project area to identify the potential for occurrence of sensitive species, vegetation communities, and habitats that could support sensitive wildlife species. The survey was conducted on foot throughout the Project area between 0630 and 1620 hours on April 23, 2020 and between 0600 and 1700 hours May 2 through May 5, 2022. All plant and wildlife species and vegetation communities observed within the Project area were recorded.

Desert Tortoise and Burrowing Owl Surveys

Desert tortoise and burrowing owl surveys were conducted over a 5-day period from May 11 through 15, 2020, in accordance with the USFWS Mojave Desert Tortoise Pre-project Survey Protocol (USFWS 2018), the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012). The desert tortoise survey and one round of burrowing owl surveys were conducted concurrently within the approximately 1,090-acre Project area. The burrowing owl survey included a 500-foot survey buffer around the Project area (where feasible), in accordance with CDFW protocol. Buffer areas not accessible for surveys on foot included a private landowner (APN: 064709108) along the northern boundary of the Project, and Colorado River Indian Reservation Lands (APN: 064706107) located at the eastern boundary of the Project.

These surveys were required to determine if desert tortoises and burrowing owls are present within the Project area and, if present, estimate the amount of incidental take of these species. Based on the minimum survey effort recommended in each Recovery Unit, the Project falls within the Colorado Desert and required a full coverage survey: 10-meter-wide belt transects for full coverage. The surveys were conducted when desert tortoises are most active: April through May and/or September through October when temperatures are below 95 degrees Fahrenheit.

Details were recorded on habitat conditions, number of each species identified, and abundance (if present); estimated number of tortoises (greater than or equal to 180-millimeter midline carapace length) within the action area (USFWS protocol takes into account the fact that not all tortoises within the action area are observed by the surveyors). All sign of desert tortoise (including live tortoises, shell, bones, scutes, limbs, scat, burrows, pallets, tracks, eggshell fragments, courtship rings, drinking sites, and mineral licks) and burrowing owl (including live burrowing owls, burrows, whitewash, prey remains, pellets, scratch marks, and feathers) were recorded on data sheets and with GPS units.

Weather conditions during the five-day survey included temperatures ranging from 66 to 102 degrees Fahrenheit, wind speeds ranging from 0 to 10 mph, 0 to 20 percent cloud cover, and no precipitation.

Special Status Species

Several factors are taken into consideration when determining the significance of biological resources (wildlife, plants, habitats, etc.). The factors include the listing status of a species (federal, state) which identifies the weighted legal protection afforded a species, whether critical habitat for a species is present, the regional scarcity of a species, and other legal protections in place for species not formally listed but considered unique or rare, such as those species afforded protection under CEQA or considered species of concern by the CDFW. Plant species in California are also ranked by the California Native Plant Society according to a hierarchy of rarity or threat of extinction. This combined evaluation of factors determines the potential significance of impacts to a species/population. The complete list of abbreviations associated with species occurrence/ranking is described below.

Table 10 in Appendix A provides the criteria used to determine the likelihood of special status species to potentially occur within the Survey Area and Project area.

The following information is a list of abbreviations used to help determine the significance of biological sensitive resources potentially occurring on the proposed Project area.

Federal

FE	Federally listed; Endangered
FT	Federally listed; Threatened
FC	Federal Candidate for listing

State

ST	State listed; Threatened
SE	State listed; Endangered
RARE	State-listed; Rare (Listed "Rare" animals have been redesignated as Threatened, but Rare plants have retained the Rare designation.)
SSC	State Species of Special Concern
WL	CDFW Watch List

Sensitive Wildlife

Proposed Action and the Vidal Energy Project

A current database search (CDFW 2020; USFWS 2020) resulted in a list of 21 federally and/or state listed endangered or threatened, SSC, or otherwise sensitive wildlife species documented to occur within the quadrangles containing and surrounding the Project area. After a literature review, reconnaissance-level survey, and desert tortoise and burrowing owl focused surveys, it was determined that nine sensitive wildlife species are considered Absent, six species have a Low potential to occur, and seven species have a Moderate potential to occur in the Project area. One species, yellow warbler (Setophaga petechia, SSC), was not identified in the literature searches but was observed foraging outside the Project area boundary but inside the 500-foot buffer during the burrowing owl survey; therefore, this species is considered to have a Moderate potential to occur in the Project area for forage (no suitable nesting habitat). Three additional species, loggerhead shrike (*Lanius ludovicianus*; SSC), osprey (Pandion haliaetus; WL), and black-tailed gnatcatcher (*Polioptila melanura*; WL), were not identified in the literature searches but were observed or detected in the Project area during survey efforts; osprey was migrating through the area (no nesting habitat or foraging opportunities in the Project area), and loggerhead shrike and black-tailed gnatcatcher have nesting and foraging habitat on site and are therefore considered Present in the Project area.

These sensitive wildlife species, their current status, and potential for occurrence are summarized below. Factors used to determine potential for occurrence included the quality of habitat, the location of prior CNDDB records of occurrence in relation to the Project area, and connectivity of the Project area with sensitive species habitat. A complete table of sensitive wildlife species and their potential to occur in the Project area, including habitat requirements, is included in Appendix D. A list of all wildlife species observed or detected during all survey efforts is provided in Appendix D.

The following nine sensitive wildlife species are considered Absent from the Project area due to lack of suitable habitat present, because the species falls outside the elevation range, no suitable habitat is present, or no evidence of this species was observed during the survey efforts on the Project area.

- California black rail (*Laterallus jamaicensis coturniculus*) – ST,
- California leaf-nosed bat (*Macrotus californicus*) – SSC,
- cave myotis (*Myotis velifer*) – SSC,
- desert tortoise (*Gopherus agassizii*) – FT, ST,

- long-billed curlew (*Numenius americanus*) – WL,
- razorback sucker (*Xyrauchen texanus*) – FE, SE,
- Townsend's big-eared bat (*Corynorhinus townsendii*) – SSC,
- western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) – FT, SE, and
- Yuma Ridgway's rail (*Rallus obsoletus yumanensis*) – FE, ST.

The following six sensitive wildlife species have a Low potential for occurrence in the Project area due to low quality and disturbed suitable habitat.

- Arizona Bell's vireo (*Vireo bellii arizonae*) – SE,
- Bendire's thrasher (*Toxostoma bendirei*) – SSC,
- northern cardinal (*Cardinalis cardinalis*) – WL,
- prairie falcon (*Falco mexicanus*) – WL,
- southwestern willow flycatcher (*Empidonax traillii extimus*) – FE, SE, and
- yellow-breasted chat (*Icteria virens*) – SSC.

The following seven sensitive wildlife species have a Moderate potential for occurrence in the Project area due to marginal habitat and environmental and food source conditions.

- American badger (*Taxidea taxus*) – SSC,
- burrowing owl (*Athene cunicularia*) – SSC,
- Costa's hummingbird (*Calypte costae*),
- crissal thrasher (*Toxostoma crissale*) – SSC,
- Le Conte's thrasher (*Toxostoma lecontei*) – SSC,
- Gila woodpecker (*Melanerpes uropygialis*) – SE, and
- yellow warbler – SSC.

The following three sensitive wildlife species were detected during survey efforts and are therefore considered Present in the Project area.

- black-tailed gnatcatcher – WL,
- loggerhead shrike – SSC, and
- osprey (migrating through) – WL.

Species determined to have Moderate potential to occur or that are considered present in the Project area, are described below. The California SSC is a designation assigned by CDFW for those species, subspecies, or populations of animals that have exhibited declines and threats to their viability. The parenthesis designates what season is of concern for the species and when they are protected. Bird species that migrate to and breed in California have signifiers in parenthesis including "nesting". These birds are not typically found in California outside the breeding season.

American Badger. The American badger is a California Species of Special Concern. This carnivorous species ranges over most of the western United States and upper midwestern United States south into central Mexico. In California, the badger may occupy a variety of habitats, especially grasslands, savannas, sandy soils, and deserts. It prefers friable soils for burrowing and relatively open, uncultivated ground. Prey items include pocket gophers and ground squirrels (Jameson and Peeters 1988). The American badger may weigh up to 11.4 kilograms or 25 pounds and is easily recognized by its overall silver-gray coloration, white stripe on top of its head, white cheeks, and black feet with noticeably long front claws. It is a heavy-bodied

animal that is stout and flattened. The American badger is chiefly nocturnal, but it is often seen by day as well. It gives birth to one to four young from March to April (Jameson and Peeters 1988). Threats to this species include habitat loss due to agriculture, housing and other land conversions, and illegal hunting. Suitable habitat for this species is present throughout the Project area; therefore, the potential for occurrence is Moderate.

Burrowing Owl. The burrowing owl is a California Species of Special Concern. It is broadly distributed across the western United States, with populations in Florida and Central and South America. The burrowing owl breeds in open plains from western Canada and the western United States, Mexico through Central America and into South America to Argentina (Klute et al. 2003). This species inhabits dry, open, native or non-native grasslands, deserts, and other arid environments with low-growing and low-density vegetation (Ehrlich et al. 1988). It may occupy golf courses, cemeteries, road rights-of way, airstrips, abandoned buildings, irrigation ditches, and vacant lots with holes or cracks suitable for use as burrows (TLMA 2006). Burrowing owls typically use burrows made by mammals such as California ground squirrels (*Spermophilus beecheyi*), foxes, or badgers (Trulio 1997). When burrows are scarce, the burrowing owl may use man-made structures such as openings beneath cement or asphalt pavement, pipes, culverts, and nest boxes (TLMA 2006). Burrowing owls often are found within, under, or in close proximity to man-made structures. Prey sources for this species include small rodents; arthropods such as spiders, crickets, centipedes, and grasshoppers; smaller birds; amphibians; reptiles; and carrion. Threats to the burrowing owl include loss of nesting burrows, habitat loss, and mortality from motor vehicles.

Costa's hummingbird. Costa's hummingbird is a USFWS bird of conservation concern for nesting. It is most common in Southern California, but also breeds locally along the western edge of the San Joaquin Valley (McCaskie et al. 1979), the eastern edge of the Sierra Nevada north through Inyo County and is known to occur regularly in Monterey and Siskiyou counties in the spring and summer months (McCaskie et al. 1988). During winter, Costa's hummingbird is largely restricted to the southern coast, but also winters in southern deserts (Garrett and Dunn 1981). Costa's hummingbird is a small hummingbird; the male having iridescent purple crown and flared gorget (patch of color on the throat), and the female having either a small throat patch of metallic purple feathers (Baltosser 1987), or and entirely white throat and underparts (Baltosser 2020). This species primarily occupies desert washes, the edges of desert and valley foothill riparian, coastal and desert scrub, desert succulent shrub, lower-elevation chaparral, and palm oasis habitats (Garrett and Dunn 1981). Costa's hummingbird feeds on a variety of herbaceous and woody plants for flower nectar and will also eat small insects and spiders (Garrett and Dunn 1981). It will nest in wide variety of trees, cacti, shrubs, woody forbs, and sometimes vines (Bent 1940). Alteration of natural habitats is a major concern for this species, and its most serious threat may be the clearing of desert scrub for agriculture and flood control, and the conversion of natural habitats to forage for cattle grazing (Yetman and Burquez 1994). No historical records for this species have been documented within 5 miles of the Project area; however, this species was found on the USFWS Environmental Conservation Online System. Habitat for this species is found primarily within the larger drainage systems within the Project area that will be avoided. Therefore, the potential for this species is Moderate.

Crissal Thrasher. The crissal thrasher is a California Species of Concern. It is widely distributed from southeastern California and southwestern Utah to Central America, inhabiting desert washes and riparian thickets in the Colorado River and Rio Grande valleys and their tributaries in southwestern North America. To the south and southeast within its range it can be found on brushy plains, in foothill scrub, or in open piñon-oak-juniper woodlands where there is a shrubby understory. The crissal thrasher is mostly insectivorous but may eat seeds, fruits, and berries (e.g., juniper berries) outside the summer season. It is a relatively large, grayish-brown songbird with a long, graduated tail and a rusty colored crissal (the area surrounding the cloacal opening). It has a long, decurved bill. Loss of habitat to clearing for agriculture or

urban and suburban development threatens some populations. Other possible factors affecting this species include grazing of arid lands and off-road vehicle use (Cody 1999). Suitable nesting and foraging habitat for this species is present throughout the desert washes that cross through the Project area; therefore, the potential for occurrence is Moderate.

Le Conte's thrasher. Le Conte's thrasher is a California Species of Concern and a USFWS bird of conservation concern. It occurs in deserts of the southwest United States, southwestern Utah, southern Arizona, and northwestern Mexico (Weigand and Fitton 2008). The Le Conte's thrasher is a medium-sized songbird with a long dark tail, black decurved bill, and a plain grayish or sandy-colored body. It is distinguished from other thrashers by its unspotted breast, deep buff crissum, dark eye, and dark tail that contrasts sharply with its body. Habitat includes open desert wash, desert scrub, alkali desert scrub, desert succulent shrub habitats, and Joshua tree habitat with scattered shrubs. Le Conte's thrashers forage as generalists on bare ground and in vegetation litter under shrubs by scratching the soil and overturning objects (Weigand and Fitton 2008). In some parts of its range, this thrasher has lost extensive habitat to development and where irrigated lawns, groves, and fields have been created over valuable xeric habitat. Development, wild burros, off-road vehicle recreation, and invasive plant species threaten this species (Weigand and Fitton 2008). Although there are no reported occurrences within 5 miles of the Project area, suitable habitat is found within and adjacent to the Project area. In addition, a thrasher species was briefly observed outside of the eastern Project area boundary in flight. Therefore, the potential for this species is Moderate.

Gila Woodpecker. The Gila woodpecker is a state listed Endangered species. It is a permanent resident of the lower Colorado River and Imperial Valley of southeastern California, throughout central Arizona and southwestern New Mexico, and south into northeastern Mexico. Physical characteristics include a tan to brown head and underparts, yellow-tinged belly, and black and white bar patterns on the back. The Gila woodpecker inhabits dry subtropical forests, riparian woodlands, and deserts with large cacti or tree species suitable for nesting. Habitats include saguaro desert, desert washes, riparian woodlands, and residential areas, including orchards and vineyards (Bancroft 1929; Price et al. 1995). Near Brawley, California, it is found primarily in date palm groves and ranch yards (Garrett and Dunn 1981). It is omnivorous; and its diet may include insect larvae, insects, cactus fruits, and berries. The disappearance of this species from much of Imperial Valley during the latter half of the twentieth century may have been connected to the clearing of riparian woodlands and to nest-site competition with European starlings (Sturnus vulgaris; Edwards and Schnell 2000; Bancroft 1929; Price et al. 1995). Suitable habitat for this species is present throughout the desert washes within the Vidal Energy Project area; therefore, the potential for occurrence is Moderate.

Yellow Warbler. The yellow warbler (nesting) is a California Species of Special Concern. Its breeding range includes most of North America from northern Alaska and northern Canada to the southern United States and Mexico. Wintering birds occur from Mexico to Peru. The plumage includes a yellow breast with varying chestnut streaking in males; crown, back, and wings are yellowish olive green; and the warbler has a faint and indistinct white eye ring. Breeding habitats include wet areas, such as riparian woodlands, orchards, gardens, swamp edges, and willow thickets. Most breeding habitats generally contain medium to high-density tree and shrub species with ample early successional understories. In migration, it may occur in other habitats, including early seral riparian habitats. It is almost entirely insectivorous but also eats a few berries. Populations are in decline in California due to habitat loss, grazing of riparian understories, and brood parasitism by the brown-headed cowbird (*Molothrus ater*; Lowther et al. 1999). This species was observed foraging outside the Project boundary but inside the 500-foot buffer near the eastern edge of the Project area during the burrowing owl survey, likely migrating through the area

(nesting and forage habitat exists along the Colorado River). As such, this species has Moderate potential to occur in the Project area for forage.

Black-tailed Gnatcatcher. The black-tailed gnatcatcher is a CDFW Watch List species. It is a permanent resident of low deserts in the southwest United States and northern Mexico (Grinnell and Miller 1944; Bent 1949). Habitats include mixed desert scrub, creosote scrub, mesquite scrub, dry washes, and desert ravines. This small songbird is characterized by its gray coloration along the back, white coloration below, and a black tail with white edges. During the breeding season, males develop black caps. It is an active, insectivorous species that gleans insects and their larvae from twigs and branches. It has also been known to consume spiders and a few seeds. The primary threat to the existence of this species lies in the conversion of its native desert habitats as a result of urban sprawl (Farquhar and Ritchie 2020). This species was detected during the reconnaissance-level survey within the 500-foot survey buffer on the eastern and western ends of the northern portion of the site and at the center of the site near Citrus Ranch Road and is considered Present in the Project area.

Loggerhead Shrike. The loggerhead shrike (nesting) is a California Species of Special Concern. Its range includes most of the United States from southern Canada to southern Mexico. The U.S. population is largely resident to the south and migratory to the north, but migrants and residents frequently overlap throughout its range. It is recognized by its black facial mask and overall gray, black, and white color pattern. It has a relatively big head and a hook-tipped bill not unlike that of a small raptor. Habitats may include oak savannas, open chaparral, desert washes, juniper woodlands, Joshua tree woodlands, and other semi-open areas. It can occupy a variety of semi-open habitats with scattered trees, large shrubs, utility poles, and other structures that serve as lookout posts while it searches for potential prey. Loggerhead shrikes prefer dense, thorny shrubs and trees, brush piles, and tumbleweeds for nesting (Seattle Audubon Society 2022). Both adults gather nesting materials, including twigs, grass, hair, feathers, and green vegetation; but only females build the cup-shaped nests. Females lay between five and six eggs, which are incubated for 15 to 17 days; and nestlings will leave the nest after 17 to 20 days but will not fly for another week (Seattle Audubon Society 2022). The loggerhead shrike is a carnivorous species that preys primarily upon insects but also takes lizards, mice, birds, carrion, and other opportunistic prey. This bird has a habit of caching its food for later consumption by impaling its prey on thorns, sharp twigs, or barbed wire; hence the term “butcher bird.” Habitat loss and pesticides are the two dominant factors in the decline of this species (Ehrlich et al. 1988; Scott and Morrison 1990). This species was detected during the reconnaissance-level survey along the southern edge of the northern portion of the site, at the center of the site near Citrus Ranch Road, and in the eastern buffer along the southern portion of the site and is considered Present in the Project area.

Osprey. The osprey (nesting) is a California Watch List species. The species is found on every continent except for Antarctica. Although this species may breed in many areas of its summer range, it breeds primarily from the northern United States up through Canada and into Alaska. Most of the North American population winters south of the United States in Central and South America, as well as along the Pacific and Caribbean coasts of Mexico. Wintering grounds also include coastal California and southeastern California. The osprey is a large raptor with a white belly and chest and black back and wings. Its forehead and crown are white with a thick black eye stripe that extends down onto the back. This raptor species forages primarily on fish and is strongly associated with open water throughout its range. It builds a large nest of twigs, sticks, moss, and other materials high on a tree or artificial structure and may use it for several seasons. Osprey populations have increased greatly since the ban of agricultural DDT, although shooting, electrocution at power lines, and habitat degradation still pose threats to populations (The Cornell Lab of Ornithology 2012). This species was observed during the reconnaissance-level survey near the northwest corner of the Project Area west of Citrus Ranch Road and is considered Present in the

Project area; however, the species is presumed to have been migrating through the area (nesting and forage habitat exists along the Colorado River) as the Project area does not support fish, which are a necessary food source for the species.

Desert Tortoise, Burrowing Owl, and Desert Kit Fox

No live desert tortoises, active desert tortoise burrows, or other desert tortoise sign (i.e., shell, bones, scutes, limbs, scat, pallets, tracks, eggshell fragments, courtship rings, drinking sites, and mineral licks) were identified in the Survey Area during desert tortoise surveys. One potential desert tortoise burrow was observed in the survey buffer near the southwest corner of the Project; however, the burrow was filled with spider webs and appeared to have been in disuse for some time. No live burrowing owls were observed within the Survey Area during the burrowing owl surveys; however, three potential burrowing owl burrows with sign including cough pellets and/or whitewash were observed within the Project area, and one potential burrowing owl burrow and one potential burrowing owl cough pellet were identified within the 500-foot survey buffer near the northeastern portion of the Project area. This burrow appeared old, and the single sun-bleached pellet found at the burrow entrance did not contain insect fragments typical of burrowing owl pellets, but the size and shape suggested that it may be from a burrowing owl.

Five active desert kit fox (non-sensitive) burrow/burrow complexes were identified within the Project area during the desert tortoise and burrowing owl surveys. These burrows had fresh sign including scat, tracks, and/or prey remains (e.g., rodent tails) on the burrow apron or in the vicinity, indicating recent use.

General Wildlife

Proposed Action and the Vidal Energy Project

A total of 47 wildlife species were observed or detected during the reconnaissance-level survey and desert tortoise and burrowing owl surveys. Wildlife species observed or detected during the survey efforts were characteristic of the existing site conditions. Below is a summary of the general wildlife observed on site. A complete list of wildlife observed is provided in Appendix D.

Mammals observed or detected on site included black-tailed jackrabbits (*Lepus californicus*), desert kit fox, desert woodrats (*Neotoma lepida*), white-tailed antelope ground squirrels (*Ammospermophilus leucurus*), mule deer (*Odocoieus hemionus*), and wild burro (*Equus asinus*). Desert kit fox and desert woodrats were not visually observed; however, five active kit fox burrow complexes and several desert woodrat dens were observed in the Project area.

Birds commonly observed or detected on site included red-tailed hawks, mourning doves, lesser nighthawks, common ravens (Corvus corax), verdins, northern mockingbirds (*Mimus polyglottos*), phainopeplas (*Phainopepla nitens*), black-throated sparrows (*Amphispiza bilineata*), house finches (*Haemorhous mexicanus*), and several flycatcher species. One barn owl (*Tyto alba*) and one great horned owl (Bubo virginianus) were also observed during survey efforts.

Reptiles commonly observed on site included desert iguanas (*Dipsosaurus dorsalis*), common zebra-tailed lizards (*Callisaurus draconoides*), Great Basin whiptails (*Aspidoscelis tigris tigris*), and rattlesnakes including Colorado desert sidewinders (*Crotalus cerastes laterorepens*) and Mohave rattlesnakes (*Crotalus scutulatus*).

Other Unique Features / Resources

Critical Habitat

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. Designated Critical Habitat delineates all suitable habitat, occupied or not, that is essential to the survival and recovery of the species. According to the USFWS Critical Habitat WebGIS map, the Project area does not fall within any designated Critical Habitat (USFWS 2020). Critical Habitat for razorback sucker and western yellow-billed cuckoo is present within 0.5 mile of the Project area to the east, and Critical Habitat for desert tortoise is present within 3 miles of the Project area to the northeast.

Wildlife Movement Corridors

Wildlife corridors are defined as areas that connect suitable habitat in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features, such as canyons, drainages, ridgelines, or areas with dense vegetation cover can provide corridors for wildlife travel. Wildlife corridors are important to mobile species because they provide access to individuals to find shelter, mates, food, and water; allow the dispersal of individuals away from high population density areas; and allow immigration and emigration of individuals to other populations, providing for gene flow between populations. Two large washes present on site (Drainages 4 and 5) are wildlife corridors providing a migration pathway for small to large mammal species (e.g., black-tailed jackrabbits, desert kit fox, mule deer, and wild burro) from the surrounding areas including the Turtle Mountains and Whipple Mountains to water sources such as the Colorado River. As an example, potential mule deer scat was

found in two locations in the northern wash (Drainage 5) within the Project area, suggesting that larger mammals utilize the washes for movement corridors. In a conversation that occurred during the survey efforts, the son of the previous landowner indicated that large mammals use the northern wash to access the Colorado River. However, Proposed Action and Vidal Energy Project facilities and access roads have been designed to avoid these large washes. They will not be impacted and will be left in place to allow surface flow and migration of wildlife through the site.

3.6.2 Environmental Consequences

Based on the results of the surveys completed for the Project, potential project related risks associated with construction, O&M, and decommissioning of the WAPA Proposed Action and Vidal Energy Project would include collision with overhead electric lines and other features, electrocution, loss of foraging habitat, nest site disturbance, and disturbance due to ongoing human presence at the facility

No Action

Selection of the No Action Alternative, as described in Section 2.6, would not result in implementation of WAPA's Proposed Action; potential effects to wildlife resources would not occur.

WAPA's Proposed Action

Terrestrial Species

Ground-disturbing activities associated with construction are potential sources of direct mortality and injury to terrestrial wildlife. Impacts from equipment and vehicles can occur for slower moving species and species that have subsurface burrows. Mammals (including desert kit fox) and reptiles are susceptible to visual and noise disturbances caused by the presence of humans and construction equipment and the generation of dust. Loss of burrows due to construction, ground vibration, or avoidance behavior would cause wildlife to search for and/or dig new burrows. Construction, O&M, and decommissioning of the WAPA Proposed Action could directly impact wildlife by causing wildlife to alter foraging and breeding behavior. For example, increased noise as a result of construction could result in wildlife temporarily avoiding the general area surrounding the proposed Project. If trash is left out, species such as desert kit fox and common raven could be attracted to the area. Ravens and other predators may be attracted to elevated structures associated with the proposed Project such as perimeter fencing, gen-tie line poles, and the switchyard structures.

Terrestrial wildlife occurring in and around the Project area would also be indirectly impacted. The removal and/or modification of natural vegetation communities would reduce forage, shelter, and nesting opportunities to wildlife including multiple special status wildlife species. The long-term loss and/or degradation of up to five acres of wildlife habitat could cause wildlife to rely more on habitat in surrounding areas. The vegetation within the WAPA Proposed Action is common to the region and the area does not contain any sensitive, unique, or notable areas of ecological importance to terrestrial species.

Ground-disturbing activities during construction, O&M, and decommissioning could increase the spread of noxious/invasive weeds, which could potentially out-compete existing annual vegetation and therefore, could indirectly and adversely affect the quality of terrestrial wildlife habitat and forage. Compliance with weed control regulations and implementation of construction standards would reduce the potential spread of noxious/invasive weeds.

During construction and decommissioning, hazardous waste (solid and liquid) could be generated at the site. Exposure to hazardous waste could be a direct source of wildlife mortality and/or injury through the

poisoning of individuals. Spills of hazardous material could also indirectly adversely impact wildlife if the spill of the hazardous material results in the loss of natural vegetation community. The containment and disposal of hazardous waste as outlined in a Spill Prevention and Emergency Response Plan developed by the construction contractor for the Project would reduce the likelihood that substantial spills would adversely affect terrestrial wildlife (including special status species) or habitat.

In summary, there would be negligible localized, short- and long-term, direct and indirect, adverse impacts to general and special status terrestrial species due to the construction, O&M, and decommissioning of the WAPA Proposed Action. There would be a temporary loss of approximately 50 acres and permanent loss of up to five acres of wildlife habitat associated with the implementation of the WAPA Proposed Action. The loss of wildlife habitat would result in the potential localized loss of shelter, nesting habitat, and forage for general and special status terrestrial wildlife species.

Avian and Bat Species

Direct effects to general and special status avian and bat species could result from collisions with or electrocution by overhead transmission lines. Vulnerability to collision with overhead transmission lines depends on many factors including flight behavior and maneuverability, topography, weather, and power line design and placement. Bird collision with power lines has been documented for decades and risk of collision is considered highest in areas where birds congregate, such as power lines that bisect daily flight paths to meadows, wetlands, and river valleys (APLIC 2012). Given that no new transmission lines or additional pole structures would be installed, and only minimal interconnection infrastructure would be constructed in order to interconnect the proposed Project, it is unlikely to increase in-air collisions. The existing lines have been in place for many years and foraging flight patterns have most likely adapted to the vast size of the utility infrastructure. To further reduce the risk of avian collisions, line marking devices would be installed, as needed, on the transmission lines to make the wires more visible to flying birds (APLIC 2012).

Power lines are present in many avian habitats and may result in the electrocution of raptors and other bird species (APLIC 2006; Lehman et al. 2010, and references therein). The potential for electrocutions depends on the arrangement and spacing of energized and grounded components of poles and towers that are sometimes used for perching, nesting, and other activities (APLIC 2006). However, nearly all electrocutions occur on smaller, more tightly spaced residential and commercial electrical distribution lines that are less than 69-kV (APLIC 2006). To protect avian species from electrocution, APLIC (2006) established guidelines for electric line design. Incorporating appropriate measures into the transmission line interconnection would minimize electrocution risk (refer to Appendix I).

There is the potential for bird and bat species to use the Project area for foraging and for nesting for some bird species. Ground-disturbing activities associated with construction and decommissioning are potential sources of direct mortality and injury to ground-nesting birds, particularly the western burrowing owl. Vehicles and equipment can also impact any subsurface burrows. Loss of burrows due to construction, ground vibration, or avoidance behavior would cause owls and other ground-nesting birds to search for new burrows. Other birds would be susceptible to noise disturbance, potentially resulting in alteration of foraging and/or nesting behaviors.

There is also potential for disturbance of bird nests during the construction and decommissioning phase of WAPA's Proposed Action due to noise, vegetation removal, and ground leveling. However, the WAPA Proposed Action would occupy a very small area and the vegetation within the site is common in the region. The Project area is not located in a sensitive, unique, or notable area of ecological importance to avian and bat species. Impacts to vegetation and presence of humans and machinery would deter most

avian and bat species from the interconnection area. However, most bird and bat species would return to the area after construction if suitable habitat and foraging opportunities exist.

Additional artificial light sources associated with the operation of the switchyard could attract insects and result in concentrated foraging by avian and bat species that feed on insects nocturnally. Artificial lighting also has the potential to adversely affect migration patterns of general and special status avian and bat species that move through the area.

In summary, there would be negligible, localized, short- and long-term, direct and indirect, adverse impacts to general and special status avian and bat species due to the WAPA Proposed Action. The loss of foraging and nesting habitat from the WAPA Proposed Action would result in general and special status avian species having to rely more on habitat outside of the Project's footprint until the area has been restored. Mortality of general and special status avian and bat species may result from collision with or electrocution by overhead transmission lines.

Implementation of the avoidance and minimization measures provided in Appendix I shall reduce the impacts to minor.

Vidal Energy Project

Terrestrial Species

This Vidal Energy Project would result in a total of approximately 1,090 acres of disturbance, of which approximately 360 acres would be permanently disturbed. To prepare the site for construction, the land would be cleared and graded. Site grading would only occur as needed to accommodate the laydown of materials at the staging area, solar panel and underground collection line installation, and construction of the access roads and the substation. A detailed description of the Vidal Energy Project facilities and all construction, O&M, and decommissioning activities is provided in sections 2.1 and 2.2.

Ground-disturbing activities associated with construction are potential sources of direct mortality and injury to terrestrial wildlife. Impacts from equipment and vehicles can occur for slow-moving species and species that have subsurface burrows. Mammals (including desert kit fox) and reptiles are susceptible to visual and noise disturbances caused by the presence of humans and construction equipment and the generation of dust. Such disturbances could cause terrestrial wildlife to alter foraging and breeding behavior and avoid suitable habitat.

Terrestrial wildlife occurring in and around the Project area would also be indirectly impacted. The solar site would be disturbed during construction and decommissioning of the solar facility. The removal and/or modification of natural vegetation communities would reduce forage, shelter, and nesting opportunities to wildlife including multiple special status wildlife species. To reduce impacts, the Vidal Energy Project would minimize land disturbance in natural drainage systems (including access road crossings).

The long-term loss and/or degradation of approximately 360 acres of wildlife habitat could cause terrestrial wildlife to rely more on habitat in surrounding areas. Construction, O&M, and decommissioning of the solar facility could directly and adversely impact wildlife by causing wildlife to alter foraging and breeding behavior.

Additionally, removal of resources would add pressure on the food resources in adjacent areas. Ground disturbing activities during construction, O&M, and decommissioning could increase the spread of

noxious/invasive weeds, which could potentially out-compete existing annual vegetation. Compliance with weed control regulations and implementation of construction standards would reduce impacts from nonnative plants.

During construction, hazardous waste (solid and liquid) could be generated at the site. Exposure to hazardous waste could be a direct source of wildlife mortality and/or injury through the poisoning of individuals. Spills of hazardous material could also indirectly adversely impact wildlife if the spill of the hazardous material results in the loss of natural vegetation community. The containment and disposal of hazardous waste as outlined in a Spill Prevention and Emergency Response Plan developed by the construction contractor for the Project would reduce the likelihood that substantial spills would adversely affect wildlife.

In summary, there would be minor, localized, short- and long-term, direct and indirect, adverse impacts to general and special status terrestrial species due to the construction, O&M, and decommissioning of the Vidal Project facilities. There would be a temporary loss of approximately 1,090 acres and permanent loss of approximately 360 acres of habitat as a result of the Vidal Energy Project. The loss of wildlife habitat would result in a loss of shelter, nesting habitat, and forage, and would result in general and special status terrestrial species having to rely on habitat outside of the Vidal Energy Project footprint until restoration has been completed.

Avian and Bat Species

Solar energy facilities deployed at utility scales may pose a collision risk to birds, as birds may collide with transmission lines, solar towers, and migrating birds may perceive the reflective surfaces of solar panels as bodies of water and collide with the structures as they attempt to land on these panels. This is especially common in solar energy facilities that utilize heliostats, which are mirrors that concentrate solar energy into a centrally located tower. Most avian collisions at solar energy facilities occur with these heliostats. The solar facility proposed in the Vidal Energy Project will not utilize heliostats and will instead employ PV arrays which reduces the risk of collisions due to limiting the number of reflective surfaces that may be attractive to birds. Furthermore, unlike solar energy facilities that utilize heliostats or wind energy farms that have mobile wind turbines, PV arrays and associated transmission towers are static and highly visible which further reduces the risk for avian collisions.

Avian collisions have also been attributed to habitat loss, which has been specifically observed at solar energy facilities where burrowing owl habitat was impacted. Although no burrowing owls were observed during the surveys, suitable burrowing owl habitat was observed within the V Project area. However, the Vidal Energy Project is not anticipated to result in substantial loss of burrowing owl habitat and the high visibility of the solar panels reduces the potential for burrowing owl collisions. In addition, the solar energy facility will be further surrounded by fencing. Burrowing owls spend most of their time on the ground, on perches, or flying low to the ground and are more likely to utilize the fencing as a perch rather than collide with infrastructure.

To address avian concerns pertaining to collisions, the Project would comply with the Avian Powerline Interaction Committee (APLIC) 2012 Guidelines for overhead utilities, as appropriate, to minimize avian collisions with transmission facilities. Further, a Worker Response Reporting System (WRRS) be implemented. A WRRS will provide a means for recording and collecting information on incidental bird and bat species found dead or injured within the Project area by site personnel. The WRRS would be used by site personnel who discover bird and bat carcasses during construction and routine maintenance

activities. Site personnel would be provided a set of standardized instructions to follow in response to wildlife incidents in the Project.

In accordance with the WRRS, during construction, site personnel shall notify the Project Biologist to collect the following data on the incidentally detected avian wildlife: species, date, time, location (e.g., nearest Project structure), and how the animal died, if known. Results shall be reported to the CDFW on an annual basis unless listed species are involved. During operations, site personnel shall collect the same information provided above and shall notify CDFW on an annual basis unless listed species are involved. If a listed species is found dead or injured, CDFW shall be notified immediately. In the event of an injury, CDFW shall be contacted for instruction on how to handle the situation. Workers will be trained on the WRRS during the Worker Environmental Awareness Program. The WRRS shall be used for the life of the Vidal Energy Project. A Project Biologist shall be on retainer throughout the construction period, and one should be available during the life of the Project to assist in avian identifications, data collection, identify cause of death or injury, and implement the WRRS.

In summary, there would be negligible, localized, short- and long-term, direct and indirect, adverse impacts to general and special status avian and bat species due to the Vidal Energy Project. The loss of foraging and nesting habitat would result in general and special status avian species having to rely more on habitat outside of the Vidal Energy Project's footprint until the area has been restored.

Implementation of the avoidance and minimization measures provided in Appendix I shall reduce the impacts to minor.

Cumulative Impacts

The types of projects or actions within the 3-mile cumulative effects study area that could contribute to impacts to general and special status wildlife species include OHV use and routine transmission inspections and maintenance, in addition to the previously identified reasonably foreseeable future actions. Livestock grazing, as well as wildlife movement, may spread invasive plants and alter the cover and composition of plant communities used by wildlife. In combination, past, present, and reasonably foreseeable future actions would result in long term, direct and indirect, minor impacts to special status species the majority of the CESA would have measures implemented by the BLM to minimize potential effects to these special status species and their respective habitats.

In the long-term, both the WAPA Proposed Action and Vidal Energy Project would have adverse, localized, direct and indirect, minor effects to general and special status wildlife species and their habitats. These long-term effects would be reduced gradually over time as natural recovery of plant composition and cover occurs during the O&M phase and again following decommissioning of the Vidal Energy Project. Cumulatively, the effects of the WAPA Proposed Action and the Vidal Energy Project, when combined with past, present, and reasonably foreseeable future actions, would result in minor to moderate cumulative impacts to general and special status wildlife species within the 3-mile CESA due to the potential for further habitat loss, degradation, and fragmentation. The WAPA Proposed Action and the Vidal Energy Project would have a minor contribution to the cumulative effect on general and special status wildlife.

3.7 CULTURAL RESOURCES

This section analyzes impacts of WAPA's Proposed Action alongside the Vidal Energy Project, and the No Action Alternative on the cultural resource issues identified during scoping. Of primary concern to this analysis are the potential impacts to historic properties, i.e., resources which are listed in or eligible for listing in the National Register of Historic Places (NRHP) as defined by the implementing regulations (36 CFR 800) of the NHPA. Projects occurring on federal lands are subject to compliance with federal laws

including the NHPA. Federal agencies are required to consult about any adverse effects and ways to avoid, minimize, or mitigate adverse effects. WAPA has completed Section 106 of the National Historic Preservation Act consultation with SHPO for the Proposed Action. See Appendix M.

The cultural resources analysis area for direct impacts is the Project area; the analysis area for indirect and cumulative impacts is a 3-mile radius around the Project area. These analysis areas were selected to represent the area in which archaeological sites may be impacted as a result of implementing WAPA's Proposed Action and the Vidal Energy Project.

3.7.1 Affected Environment

Existing Conditions

The Project site is located in southeastern San Bernardino County, along the western margin of the Colorado River Indian Tribes Reservation, immediately adjacent to the Colorado River, approximately 41 miles north of Blythe and 58 miles south of Needles, California. This area is located within the northernmost section of the Sonoran Desert physiography, near its intersection with the Mojave Desert. At this location, the Mojave Desert encompasses a thin wedge of Sonoran Desert extending along the Colorado River, stretching only a few miles west of the river. The Sonoran Desert is composed of several subregion deserts for which this aspect is defined as part of the Colorado Desert.

Cultural Setting

As one of the first researchers in the Southern California deserts, Malcolm Rogers and his cultural chronologies have influenced and confounded subsequent researchers for decades. Rogers (1966) was among the first to synthesize and propose a regional overview; but because he frequently added new data to his thesis, several revisions—often contrary to a previous iteration—were produced (Warren 1984; Weide 1976; Schaefer 1994; Hall 2000). Rogers proposed a sequence beginning with the San Dieguito Complex, which he subdivided into San Dieguito I, II, and III. This cultural complex spanned from 11000 to 9000 before present (B.P.). After a 2000-year hiatus, the Amargosa Complex (Amargosa I–III) followed, dating from 7000 to 1950 B.P. Rogers then proposed the introduction of Basketmaker III and Pueblo II Periods, dating from 1950 to 1450 B.P. This was then followed by Prehistoric Yuman and Shoshonean Groups from approximately 1450 to 450 B.P., and then by the Paiute and Mojave groups after 450 B.P.

Mojave Desert

The Mojave Desert cultural sequence had been divided into five major periods by Warren (1984:413-424) and Warren and Crabtree (1986). This sequence includes Lake Mojave, Pinto, Gypsum, Saratoga Springs, and Shoshonean/Protohistoric periods. Warren (1984:413) describes the Lake Mojave period, from 10000 to 7000 B.P., as being "a generalized hunting and gathering subsistence system." The Pinto Period which follows, dating approximately from 7000 to 4000 B.P., is defined by its characteristic Pinto-style projectile point as well as by scrapers and knives. Warren also suggested that this period lacked ground stone implements. Schroth [1994:79], however, states "Ground stone, principally cobble manos and block metates, are present at 16" of 22 Pinto-period sites in the Pinto Basin. Campbell and Campbell (1935:28-29) also noted ground stone at Pinto Basin sites, though they could not necessarily place these within the Pinto-period. Nevertheless, Campbell and Campbell noted that given the numerous associations of ground stone within these sites they could not disclaim their contemporaneity with the other Pinto-period artifacts. These factors suggest that Pinto-period occupation comprised small bands of people, as evidenced by the non-intensive seasonal encampments that date to this period. By 4000 B.P. Humboldt Concave Base, Gypsum Cave, Elko Eared, and Elko Corner-notched projectile points are evident in the archaeological record. Additionally, ground stone tools suggest a shift toward a changing economy based on processing hard seed goods.

Indications of long-range trade or travel are also suggested, based on coastal California shell ornaments (Warren 1984:419). By 1450 B.P. use of ground stone and bow and arrow technologies suggests further shifts in desert adaptations. With the introduction of the Rose Spring and Eastgate projectile points through much of the desert region and brownware and buffware ceramics as well as Cottonwood and Desert Side-notched projectile points in the southern desert region, Warren proposed the Saratoga Springs Period. Dating from 1450 to 750 B.P. this period is characterized by "more complex settlement-subsistence system with large permanent villages" (Warren 1984:424) and increased long-distance networks. Warren further suggests that the artifact types associated with the Saratoga Springs Period see continued use through the Shoshonean/Protohistoric time period, from 750 B.P. up to the historic period.

Following on from Warren, Sutton (1996:225-240) presents a slightly altered chronology for the Mojave Desert region. Though claims for a very early "Pre-Projectile Point" occupation of the desert region have been made (Simpson 1958; Davis et al. 1980), Sutton suggests that evidence for these claims is wanting. The first clearly definable period of occupation occurs during the Paleoindian Period. Dating from 12,000 to 10,000 B.P, the Paleoindian Period is characterized by Clovis, or Clovis-style, fluted points, which have been associated with the Big Game Hunting Tradition. Sutton notes, however, that while taking megafauna may have been the primary subsistence strategy, smaller game as well as vegetal foods would have also been procured. Sutton's Pre-Projectile Period cultural sequence is followed by Warren's outline for the Lake Mojave, Pinto, and Gypsum Periods. Sutton nuances Warren's Saratoga Springs Period with his own Rose Springs Period. Dating from 1450 to 950 B.P., the Rose Spring Period follows the Gypsum Period and is characterized by Rose Springs and Eastgate projectile points. These point types—indicating use of bow and arrow technologies along with the use of ground stone tools, imported marine shell artifacts and obsidian, and evidence of more developed middens within sites—suggest more intensive and extensive use of desert resources. Sutton's Late Prehistoric Period, from 950 B.P. to contact, is an extension of the previous Rose Springs Period with a continuation of similar subsistence strategies, but with a replacement of projectile point forms with Cottonwood Triangular and Desert Side-notched points and the introduction of ceramic technology.

Like others, Hall (2000:14-16) suggests a five-stage chronology. Hall begins with the Lake Mojave Period beginning around 10,000 B.P. and extending to 7500 B.P. Hall suggests that during this period the Mojave Desert region was occupied by small bands of hunters and gatherers. Great Basin stemmed points and flaked stone crescents mark this period (Hall 2000:14). Continuing on into the Pinto Period (approximately 7500 B.P. to 4500 B.P.), these mobile bands evidenced an intensified occupation with the advent of ground stone tools, a reliance on large and small game, and an assortment of vegetal resources. Long-range travel or trade is also noted for this period, as illustrated by the presence of Olivella sp. spire-lopped beads in archaeological sites.

Following a brief hiatus, a culture adopting a different strategy emerges. Hall (2000:16) describes the Newberry Period, dating from 4000 to 1450 B.P., as one which has "geographically expansive land-use pattern[s]…involving small residential groups moving between select localities." As with the Pinto Period, there is evidence of long-distance trade or travel, along with a diffusion of trait characteristics from other groups. Defining artifact types from this period include Elko and Gypsum contracting stem points and split oval beads. Hall then adopts Warren's Saratoga Springs Period (1450 to 750 B.P) and adds a Tecopa Period (750 B.P to contact) as defining the last 1500 years of cultural development. Like Warren's Saratoga Springs Period, Hall (2000:17) notes an apparent restriction in geographic use area as a consequence of an increasing population. Anasazi grayware ceramics and Rose Springs and Eastgate projectile points are characteristic artifact types for the period. The Tecopa Period sees a continuation of similar patterns noted during the Saratoga Springs Period; and, like Sutton's Late Period, Cottonwood Triangular and Desert Side-notched projectile points replace earlier iterations. Furthermore, buff and brownwares are introduced

into the archaeological record, as well as beads of steatite, glass, and Olivella sp., including Thin Lipped, Tiny Saucer, Cupped, and Cylinder styles.

Colorado Desert

Schaefer (1994), using numerous northern Colorado Desert area studies, presents a four-period cultural sequence. Incorporating Rogers' earlier definition of the Malpais Pre-Projectile Period (Rogers 1939:6-7), Schaefer identifies a Paleoindian Period, dating prior to 10,000 B.P. and lasting to 8000 B.P. It is characterized by settlements atop mesas and terraces occupied by small, mobile bands of hunters and gatherers who subsisted on small and large game and a variety of vegetal materials. Key indicators of this period include cleared circular areas in the desert gravels, sometimes called "house sites" or "sleeping circles" (Rogers 1939:6-7; 1966:45-47); gravel pictographs of both the rock alignment and intaglio type (Rogers 1939:9-16); and very simple stone tools.

Schaefer next describes an Early Archaic Period dating from 8000 B.P. to 4000 B.P. and a Late Archaic Period dating from 4000 to 1450 B.P. Both periods appear to have been thinly populated with a population decline beginning in the Early Archaic. Both periods indicated highly flexible group sizes that practiced a seasonally adjusted settlement pattern based on available food resources. Ground stone tool production and use greatly expands during this period. In a work presented by Altschul (1994:27-23), Schaefer elaborates on these periods, shifting the time frame out to 10,000 B.P. and 1350 B.P. and inserting a Middle Archaic Period. While both Early and Late Archaic periods are indicated by low population densities, Schaefer suggests that the Middle Archaic witnessed a population increase. Based on interpretations of increased projectile point variability, some have suggested that social group membership, resource competition, and development of defenses along territorial borders were taking place during this period. Following a return to warmer and drier conditions, the Late Archaic Period appears to indicate a return to small, mobile groups focusing on ground stone technology and seasonally available resources. Characteristic artifact types include large spear and dart points, basketry, nets, traps, split-twig figurines (which were also noted in Warren's Gypsum Period), and other perishable items (Altschul 1994:29).

Schaefer's last cultural phase, the Late Prehistoric, has been termed the Patayan and has been subdivided into Patayan I, II, and III. Particular characteristic features of this period are the use of ceramic technology, cremation funerary patterns, and an extensive trail system. Schaefer dates Patayan I from 1150 to 900 B.P., noting that people organized in small mobile groups along the Lower Colorado River and utilized a Hohokam-style tool kit. The Patayan II Period is dated from 900 to 450 B.P. and is notable for the infilling of Lake Cahuilla. The lake encouraged population shifts toward the floodplain and along the western and eastern regions of the desert. Ceramic production also shifted from the Lower Colorado River toward a more local manufacture. Subsequent desiccation of Lake Cahuilla (Altschul 1994:30) marks the Patayan III Period (approximately 450 B.P. to historic times). Populations return to the Lower Colorado River as small, mobile bands subsisting on seasonal hunting and gathering as well as on small-scale agriculture. During this period contact with European explorers is made, giving rise to the Protohistoric Period.

3.7.2 Environmental Consequences

Methodology and Assumptions

An archaeological literature review and cultural resources inventory survey were conducted for the Project. A Cultural Resources Report was prepared for the Project in January 2022 (Appendix F). In support of this report, a records search request to the South Central Coastal Information Center (SCCIC) was submitted on July 9, 2020, and cultural resources surveys were completed in July and October 2020. A summary of these efforts has been included below.

Literature Review

A records search request was submitted to the SCCIC at California State University, Fullerton, on July 9, 2020. The records search results were received on August 27, 2020. The records search indicates that three studies have taken place within the proposed Project site, and three studies are located within a 1.0-mile radius of the Project site.

Assembly Bill 52

Assembly Bill 52 (AB 52) is part of CEQA, requiring public agencies to consult with California Native American tribes during the environmental review process to address potential impacts on tribal cultural resources. For further information regarding the Project's tribal consultation process, refer to Section 4.4 Tribal Consultation.

Field Survey

A survey of the Project site was conducted over the course of three weeks in two separate rotations. The first rotation occurred from July 27 to July 31, 2020 with qualified archaeologists. The second rotation occurred between October 5 and October 14, 2020. The Project area was surveyed at 15-meter intervals, and crews were equipped with sub-meter accurate Global Positioning Systems (GPS) units for recording spatial data and to document the survey area and all findings through ArcGIS Collector and Survey 123. A prior visit for the targeted plant and desert tortoise surveys earlier in the year, identified approximately 15 historic-period and prehistoric-period resources. All these possible resources were revisited by the cultural resources survey teams.

The archaeologists examined exposed ground surface for artifacts (e.g., flaked stone tools, tool-making debris, milling tools, ceramics), ecofacts (e.g., marine shell and bone), soil discoloration that might indicate the presence of a cultural midden, and features indicative of the former presence of structures or buildings (e.g., standing exterior walls, postholes, foundations) or historic debris (e.g., metal, glass, ceramics). Ground disturbances such as burrows were visually inspected for archaeological resources. In addition, previously identified possible historic properties were visited and photographed for inclusion in this report. These properties were assessed in the field and through post-field analysis of historic aerial photographs.

Tribal Resources Identified

Chambers Group submitted a request for a search of the Sacred Lands Files (SLF) housed at the California Native American Heritage Commission (NAHC) on July 9, 2020. The results of the search were returned on July 10, 2020, and were positive, indicating that sacred areas are known within or around the Project site that may be impacted by Project development. The NAHC response included a recommendation to reach out to the Chemehuevi Indian Tribe for more information. The NAHC provided contact information for the Chemehuevi and seven other tribes that may have information on cultural resources on the Project site.

WAPA also submitted a request to the NAHC on August 9, 2021, and received a response on September 2, 2021 with the same information that Chambers Group received in July 2020. WAPA contacted seven Indian tribal governments (see Section 4.4 for list) by letter during the EA scoping period regarding the Proposed Action and on January 21, 2022, invited tribal participation in the NHPA process and to determine if tribes had concerns or issues regarding tribal resources. WAPA initiated consultation with these Indian tribes on the basis of proximity of ancestral lands to the project area or previous stated interest.

No Action

Under the No Action Alternative, the Project would not be developed and would not require ground disturbance; therefore, there would be no impacts to cultural resources in the analysis areas.

Proposed Action

Construction activities that disturb or excavate soils may impact unidentified cultural resources by destroying intact archaeological features of deposits. Construction activities that modify the slope of the natural terrain or compact soils have potential to increase erosion, which might affect the integrity of cultural resources. Because construction activities would comply with regulations regarding the control of stormwater discharges, there is only minor potential for increased soil erosion to damage cultural resources. Such secondary impacts would likely be confined to the immediate vicinity of construction zones.

Ground disturbance activities associated with construction of the WAPA Proposed Action would be limited to disturbance associated with construction, operation, and decommissioning of the switchyard. As discussed above, no ground disturbance from WAPA's Proposed Action would occur within the site boundary or within 65 feet of the site boundary of known NRHP-eligible, recommended-eligible, or indeterminate sites. Through advanced design, the disturbance footprint for the WAPA Proposed Action will be refined based on the results of the field survey such that these resources are avoided.

Ground disturbing activities associated with O&M and decommissioning of the WAPA Proposed Action would be confined to areas in the disturbance footprint created during construction of the proposed Project facility. No additional impacts on cultural resources are expected from O&M or decommissioning activities. Therefore, no impacts on NRHP-eligible, or indeterminate cultural resources are expected from construction, O&M, or decommissioning activities associated with the WAPA Proposed Action.

The Vidal Energy Project

During the literature search Chambers Group found that none of the reported studies within the Vidal Energy Project site, or within a 1.0-mile radius of the Project site, resulted in the identification of cultural resources within the Project footprint. One unreported study resulted in the identification of a road segment (P-36-024757) along the eastern margin of US 95, which is directly connected to a longer dirt road that crosses through the east-west axis of the northern third of the Vidal Energy Project site. No indication as to the status of this road segment on the CRHR is given. Two other resources were identified outside the Vidal Energy Project site. These include a prehistoric lithic reduction station, which was destroyed during a geological testing program, and three prehistoric sleeping circles, the current status of which are unknown.

As a result of the cultural resources survey of the project footprint, a total of 63 resources were identified. These include 22 historic-period resources, 31 prehistoric resources, and 11 prehistoric isolates.

According to the Cultural Resources Report, the Vidal Energy Project footprint exhibits three primary eras of use. The earliest is the prehistoric period. The many archaeological sites and isolated artifacts recorded across the Vidal Energy Project site illustrate a pattern of repeated, extensive use of the area by prehistoric Native American populations. The middle period of use within the Vidal Energy Project site is represented by sites that date to the early twentieth century. Calzona Mine Road runs through the Project site and is indicated on a 1911 USGS map. Although the mine itself is not within the Vidal Energy Project site, an artifact scatter was identified adjacent to the road which has historic-period tools indicative of mining activities. The last period of use is representative of World War II and post-war developments. The Vidal

Energy Project site may have been subjected to use by General George Patton's Desert Training Center – California/Arizona Maneuver Area (DTC). The Project site does not have evidence of any camp areas or other major maneuver areas documented in the region; however, the southern portion of the Project site has many tracks that appear to have been made from tracked vehicles.

In addition, the remains of at least two homesteads from the historic era are still present on the Vidal Energy Project site. The oldest one is visible on 1947 historic aerials and may have pre-dated DTC use of the area. The second homestead dates to approximately 1953 and appears to have been abandoned by the 1980s, based on aerial photograph evidence.

Out of the 52 cultural sites recorded, 11 are proposed as not eligible for inclusion on the National Register and therefore would require no further work. Eight sites were identified as potentially eligible for inclusion on the National Register; however, field efforts sufficiently documented these resources, and no further work is recommended. Six prehistoric archaeological sites were recommended for evaluation under the California Archaeological Resource Identification and Data Acquisition Program (CARIDAP), or similar such program for sparse lithic scatters, thus streamlining and reducing the evaluation effort.

For the remaining 27 sites, Project engineers would review the site locations and determine if avoidance of these sites is possible in accordance with Cultural Resources conservation measures included in Appendix I. Any site that can be avoided will not require evaluation. For sites that cannot be avoided, an Archaeological Testing and Evaluation plan should be prepared for agency review and approval.

Cumulative Impacts

Most of the past, present, and future projects listed in Table 1 of Appendix A are limited in ground disturbance, within existing facilities, not located in close proximity to the Project area, or not expected to result in adverse impacts to cultural resources that would contribute to an adverse cumulative impact.

3.8 SOCIOECONOMICS

This section analyzes impacts of WAPA's Proposed Action alongside the Vidal Energy Project, and the No Action Alternative on the socioeconomic issues identified during scoping including impacts to the local community from employment, tax benefits to the area, and impacts to property values. The socioeconomic analysis area for direct, indirect, and cumulative impacts is San Bernadino County, including the Big River Census Designated Places (CDPs) located approximately 8.5 miles east of Vidal. Vidal has a population of 14 with the median age of 64 (Zip Codes 2024). In 2022, Big River has an estimated population of 6,500 with a median age of 32.3 (U.S. Census Bureau 2022). This analysis area was selected to represent the areas in which employment and taxes may be impacted from construction, operations, and decommissioning. The analysis area is the residential area in and around the unincorporated community of Vidal where localized impacts to property values would be expected to occur.

3.8.1 Affected Environment

The Vidal Energy Project site and WAPA's Proposed Action are located within the Desert Region's East Desert Fundamental Community planning area of the County. The County's Zoning Map identifies the zoning of the Vidal Energy Project and WAPA's Proposed Action site as Resource Conservation (RC; County Zoning Map). The RC land use zoning district provides sites for open space and recreational activities, single-family homes on very large parcels, and similar and compatible uses. Commercial renewable energy facilities are an allowable land use within the RC land use zoning district (County Development Code 2007).

Existing development in the area includes rural access roads and scattered rural residences. Current land use within the Vidal Energy Project site includes one rural residence and several WAPA towers.

Employment

Labor force and employment rates for the population 16 years and over in the analysis area are presented in Table 12. Employment rates have been increasing in the County and remaining stable in the Big River CDP.

Tax Revenues

State property tax in California is assessed by county treasurers, and San Bernardino County is the property tax assessor for the analysis area. Federal lands are not subject to state property taxes. The amount of property tax assessed on privately held lands is calculated based on property value, including the value of the land and improvements on the property. Property is also classified according to its value (i.e., residential, commercial, agricultural, etc.). In general, revenue from property tax collections helps fund state and local government budgets. Counties use their allocation of property taxes to fund county services, including operating budgets, school and fire districts, court systems, sheriff's departments, transportation projects, and emergency services.

The San Bernardino County Tax Collector Division is responsible for billing and collecting secured, unsecured, and supplemental property taxes, transient occupancy tax (TOT), racehorse tax, as well as various special assessments for all taxing entities within San Bernardino County. San Bernardino County property tax revenue and other fees collected in 2022 was $3.5 billion. (County 2022b)

Property Values

Property values and marketability of properties in the Big River area are dependent in part on the rural community setting of the area, which includes access to and views of open space. Existing development in the area includes rural access roads and scattered rural residences. Current land use within the Vidal Energy Project site includes one rural residence and several WAPA towers.

According to the U.S. Census Bureau's American Community Survey, median home values for owner-occupied housing units and owner-occupied mobile homes in the Big River CDP have been increasing since 2010. The median home value of owner-occupied housing units in the Big River CDP was estimated to be $128,200 in 2022, a 63% increase from the median home value of $78,500 in 2017 (U.S. Census Bureau 2022).

3.8.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, WAPA would not approve the interconnection request, would not enter into an interconnection agreement, and would not implement project-related transmission system upgrades, additions, or configurations. The Proponent would not develop the proposed Vidal Energy Project, and there would be no changes in employment, tax revenue, or property values; therefore, there would be no impact to the analysis area for socioeconomic issues identified during scoping.

Proposed Action and the Vidal Energy Project

Employment

Construction workers are expected to include existing WAPA employees, Vidal Energy Project construction crews, and/or another selected contractor. Operations and maintenance would be carried out by existing WAPA maintenance employees. Employment during decommissioning would be similar to construction and it is anticipated that WAPA and or its selected contractor would perform the decommissioning. The WAPA Proposed Action and the Vidal Energy Project construction and decommissioning activities would have a short-term beneficial impact to socioeconomics from onsite crews using local services and employment. During operations, it is assumed that there would be no positive impact on socioeconomics because it is assumed that local community members would not be part of operations personnel.

Tax Revenues

WAPA's Proposed Action would not impact the property tax revenue or sales and use taxes from the construction, operations, or decommissioning of the transmission line interconnection. The Vidal Energy Project construction and operations would have a minor beneficial impact on property tax revenues and sales and use taxes. Taxes associated with construction-related expenditures and sales and use taxes for goods and services would result in a minor, short-term benefit to the local economy during construction. A minimal number of operations-related expenditures would occur over the 35-year operational lifespan of the facility. Decommissioning would have similar short-term benefits to sales and use taxes and property taxes as construction and would eventually be readjusted to reflect the vacant land.

Property Values

Impacts to property values from the development of utility-scale solar facilities are dependent on multiple factors, including proximity to the facility, perceptions related to the presence of renewable energy, impacts to the rural setting, and changes in environmental quality. Individual perceptions towards the presence of renewable energy may influence a prospective buyer's assessment of property value (DOE and WAPA 2019).

As discussed in Section 3.9 Visual Resources below, the Vidal Energy Project and WAPA's Proposed Action area are adjacent to regional transmission lines supported by H-frame wood pole structures. Thus, WAPA's Proposed Action and the Vidal Energy Project are consistent with existing views in the surrounding area. Additionally, the introduction of facility components would not substantially obstruct or interrupt views of surrounding mountainous terrain. All occupied residences, as well as U.S. Route 95, are located west of the proposed Vidal Energy Project between the mountain foothills and the Project. As provided in Section 3.3 Resources Considered but Not Further Analyzed, the noise and traffic generated by the facility would be negligible. WAPA's Proposed Action facilities would not impact property values. The Vidal Energy Project facility may have a short-term, adverse impact on property values nearest to the facility during the higher-impact phases of facility construction and decommissioning; however, a long-term decline in property values is not expected to occur from the presence and operation of WAPA's Proposed Action alongside of the Vidal Energy Project because it would not create adverse change to the rural setting, environmental quality or adjacent to residential property.

Environmental Justice

Low-income and minority populations are present within the vicinity of the Project area, details are provided in the EPA EJScreen Community Report located in Appendix K (USEPA 2022). No adverse impacts would disproportionately burden minority or low- income populations. The Proposed Action and the Vidal Energy Project would have a minor impact on the identified tribal resources of vegetation, wildlife, and visual setting; however, these impacts would be minor, and similar vegetation communities and habitat types occur in abundance throughout the analysis area.

Cumulative Impacts

Construction and operations associated with the cumulative actions listed in Table 1 of Appendix A may have similar short- and long-term socioeconomic impacts on employment, tax revenues, and property values to those of WAPA's Proposed Action and the Vidal Energy Project. WAPA's Proposed Action and the Vidal Energy Project construction-related effects would include short-term, beneficial increases in area employment and tax revenues, and short-term, adverse impacts on property values. Because the long-term socioeconomic impacts of WAPA's Proposed Action and the Vidal Energy Project are negligible, a perceptible cumulative change in socioeconomic conditions in the analysis area is unlikely.

3.9 VISUAL RESOURCES

The term "visual resources" broadly refers to the composite of basic terrain, geologic, and hydrologic features, vegetative patterns, and built features that influence the visual appeal of an existing landscape, and the extent to which the WAPA Proposed Action, Vidal Energy Project, and No Action Alternative would modify or change the landscape. Visual impacts can be difficult to assess and define due to its inherent subjectivity. This section describes the existing context of the visual environment and assesses the potential impacts from the WAPA Proposed Action alongside the Vidal Energy Project and the No Action Alternative within the visual resource impact analysis area, including impacts to residential areas near the Project area and impacts to views from US 95 and SR 62. The analysis area for direct and indirect impacts is a five-mile radius around the Project area, which is roughly the distance from which a casual observer could distinguish the elements of the PV solar array, ancillary facilities, and interconnection.

3.9.1 Affected Environment

Project Area

Regional Setting

The County of San Bernardino Countywide Plan provides policies that serve to meet the County's comprehensive long-term goals for the future. The Natural Resources Element of the Countywide Plan provides goals and guidance for the protection of natural resources including the visual resources associated with natural and open space areas (County 2020). The County includes three distinct geographic regions, the Mountain Region, the Valley Region, and the Desert Region. The Project area is located in the Desert Region of the County, which is situated been the San Bernardino and San Gabriel Mountain Ranges, with features including mountains, alluvial fans, playas, basins, plateaus, and dunes (County 2019).

Surrounding Area

The surrounding area is generally flat and defined by an arid landscape, consisting of mainly undeveloped and vacant land. Existing development in the area includes rural access roads and scattered rural residences. No established residential communities are directly adjacent to the Project area beyond

abandoned, dilapidated residences. Other than sparse vegetation, the only natural visual resources present include distant views of the mountain foothills.

WAPA's Proposed Action and Vidal Energy Project

The Project area is located within the Vidal Wash and Upper Parker Valley-Colorado River watersheds. Vegetation characteristic of Vidal Wash and the major wash to the north includes Blue Palo Verde-Ironwood Woodland, with banks dominated by blue palo verde, ironwood, and creosote. Other minor drainages present in the Project site are primarily located within Creosote Bush Scrub habitat with bank vegetation typical of this community. Existing development in the area includes rural access roads and scattered rural residences. Current land use within the Project area includes one rural residence and several WAPA towers.

Disturbed areas of the c Project area show evidence of previous agricultural use. These areas are mainly concentrated along the western edge of the Project area along Highway 95 and in central portions of the site immediately west and east of Citrus Ranch Road. Several small, developed areas are also present throughout the Project Area that include man-made structures, basins (grow crop circles for wind avoidance), abandoned structures and barbed-wire fences, cattle watering holes (concrete), or paved areas. Evidence of continual site disturbance, such as OHV activity and illegal dumping is also present throughout the Project area. Extensive OHV tracks traversing the site can be seen on aerial imagery and were observed on the ground during the survey efforts.

Scenic Vistas

Scenic vistas are typically expansive views from elevated areas. They may or may not be part of a designated scenic overlook or other area providing a static vista view of a landscape. The Project site is located in a rural portion of San Bernardino County and is not located within an area containing a scenic vista designated by the County's General Plan. While there are scenic vistas in the desert regions, including views across desert landscapes, toward mountains, ridgelines, and rock formations, no designated scenic views, scenic vistas, or scenic resources are known to occur in the vicinity of the Project area (County 2020a)

Scenic Highways

The Project area is located directly east of U.S. Route 95, the nearest paved road; and is approximately 6.2 miles south of Highway 62, a County Scenic Route, and Eligible State Scenic Highway.

Visual Quality

Vividness

The flat terrain, as well as the texture and color of the desert vegetation are generally consistent. The flat alluvial plan includes exposed soils that are tan in color, with similarly earth-toned low desert shrubs and grasses. The Project area landscape is primarily undeveloped with development in the area including rural access roads and scattered rural residences. The Project area includes several WAPA towers, which are relatively orderly and are aligned along other linear landscape features such as roads. The Project area is also adjacent to regional transmission lines supported by H-frame wood pole structures. The scale of the WAPA electrical towers in the area make these features the most visible features throughout the landscape, and reduce the overall vividness of the Project area. Vividness of the landscape is considered low.

Intactness

The Project area is generally a rural desert landscape and includes primarily undeveloped land, U.S. Highway 95, WAPA transmission towers, dirt roadways, and various rural residential properties. The intactness of the existing landscape is moderately low due to the existing infrastructure within the viewshed.

Unity

The WAPA transmission towers traverse the western edge of the flat desert landscape in the Project area. While moderately contrasting in form, line, and color with the surrounding vegetation and terrain, the towers tend to recede into the background landscape somewhat with increased distance from receptors. For example, for motorists traveling on U.S. Route 95 the WAPA towers would be visible, but the scale of the features is reduced due to the presence of mountainous terrain in the background viewing distance. The visual prominence of the towers increases with proximity; the line and color of the towers increasingly contrast with background terrain. Visual unity of the landscape is moderately low.

Viewer Response

The potential for viewers in the Project area is moderate, as the nearest paved road to the Project site is U.S. Route 95 directly to the west; and the Project area would have moderately high visibility from this highway. No existing residents are within the viewshed of the Project area and the Project area is not within the viewshed of any designated scenic vistas.

Viewer Groups

Viewer groups that would be afforded views of WAPA's Proposed Action and the Vidal Energy Project are primarily motorists and residents. Local residents, although not within the immediate viewshed of the Project area, would experience views of the solar and energy storage site from the local public roads when driving to their homes. Local roads surrounding the Project area include U.S. Route 95, as well as dirt roads including Old Parker Road and Citrus Ranch Road. The two dirt roads have a low levels of use and provide direct access to rural residences. U.S. Route 95 has a higher level of use with an average annual daily traffic of 900 vehicles per day (Caltrans 2019) and provides regional access to a greater volume of motorists.

Motorists traveling on U.S. Route 95 would have a direct view of the solar and energy storage facilities. Motorists traveling on the highway include people living in the Vidal Junction area, including at the Colorado River Indian Reservation, and tourists who travel to the area to see the desert. Average annual daily traffic on U.S. Route 95 is approximately 900 vehicles per day (Caltrans 2019).

Nighttime Lighting

The Project area and surrounding area are generally devoid of significant nighttime lighting sources. Existing light sources in the area consist primarily of lighting associated with the scattered rural residences. No streetlights exist along the perimeter roadways, including Old Parker Road and Citrus Ranch Road; and streetlights are not installed along U.S. Route 95.

Methodology and Assumptions

Viewshed Analysis

The viewshed is generally the area that is visible from an observer's viewpoint and includes the screening effects of intervening vegetation and/or physical structures. A topographic viewshed analysis was conducted for the Project to illustrate the geographic extent of potential views of the Project area and to comply with San Bernardino County Code Section 82.19.040. The topographic viewshed analysis for the

Project is shown below in Figures 3-7 through 3-10. The viewshed analysis indicates that the Project site is only distantly visible from the nearest roadways. Generally, the Project area would be most visible from viewpoints within 1 mile; site visibility diminishes as distance increases and view angle decreases.

Key Observation Points (KOPs)

Three KOPs were selected as representative vantage points in the landscape that offer motorists, including local residents traveling on area roadways, views of the proposed solar and energy storage site. The locations of identified KOPs are shown in Figure 5 of Appendix A. Factors considered in the selection of KOPs included proximity to the solar and energy storage site, view angle, viewer concentration, view duration and frequency, and the amount of the Project site that would be visible. One KOP was selected from Old Parker Road and Desert Ranch Road, in the vicinity of a nearby rural residence, with the other two KOPs selected from U.S. Route 95 immediately to the west of the Project area. More distant viewing locations were not selected as KOPs as the visual details of WAPA's Proposed Action and the Vidal Energy Project components would not be highly visible or prominent.

Additional character photos were taken of the existing conditions of the Project area. These character photos were taken from elected locations to support the discussion on existing visual setting and the analysis of potential visual impacts associated with WAPA's Proposed Action and the Vidal Energy Project.

Visual Simulations

The visual simulations were developed using the following methodology: KOPs are identified, and several photos are collected at each KOP looking towards the proposed Project site. Photos are collected with a professional grade digital single-lens reflex (DSLR) camera. Each photo has direction, latitude, longitude, and elevation recorded to the metadata. A virtual camera is created with Autodesk 3DS Max and the settings of the virtual camera are modified to match that of the physical DSLR camera used to collect the photos.

The virtual camera in Autodesk 3DS Max is aligned to the photograph using existing terrain data (LiDAR, Topographic) and other key features within the field of view. Once the virtual camera is aligned and settings adjusted to match the DSLR camera settings, materials, sun system and shadows are implemented. The Vidal Energy Project design and 3D model is imported, or modeled in Autodesk 3DS Max, based on provided engineering design files.

The virtual camera is then rendered, using a physics-based render engine (V-Ray) that calculates complex light bounces, reflection, and refraction of materials. The rendered image is embedded into the matching photo, then atmospherics, blur and film grain are applied to the rendered elements to match the photo. The finished simulation will depict accurate scale, size, and placement of the 3D elements, based on the best available data during the visual simulation development.

Figure 6 of Appendix A shows KOP 1 with views facing southeast from Desert Ranch Road and Old Parker Road, with the Existing Conditions showing low-lying vegetation, the dirt road, and WAPA power poles in the distance. KOP1 provides a view of the Vidal Energy Project from users accessing Desert Ranch Road and Old Parker Road. A residence is located approximately 1,600 feet from the KOP and 1,500 feet from the nearest Project boundary line. The Proposed Conditions show that the Vidal Energy Project structures would be very distantly visible, with most of the structures not being perceptible at this distance. Figure 7 of Appendix A shows KOP 2 with views facing southeast from U.S. Route 95, with the Existing Conditions showing an existing structure, with distant views of a mountain ridge in the background. The Proposed Conditions shows that the solar panels will be visible from U.S. Route 95 and the battery storage facility will be less visible due to the distance from the KOP. Lastly, Figure 8 of Appendix A shows KOP 3 facing northeast from U.S. Route 95 at the border of San Bernardino and Riverside Counties, with pole structures,

signage, and power lines visible in the foreground and a mountain ridge in the background. The Proposed Conditions shows that the solar panels will be visible from U.S. Route 95 but will be at the same height as the low-lying vegetation.

Visual Change Analysis

The existing view photographs were compared to the simulated views to define the degree of visual change and visual impacts to the Vidal Project. The anticipated degree of viewer sensitivity (i.e., low, moderate, or strong) is disclosed for each KOP. Factors considered in determining degree of contrast include distance, view angle, view exposure, relative size or scale, and spatial relationships.

Glint and Glare Review

Potential glint and glare conditions were evaluated through a review of the *Utility-Scale Solar Energy Facility Visual Impact Characterization and Mitigation Study Project Report* published by the Argonne National Laboratory, which evaluates visual impacts for different types of solar projects (Sullivan and Abplanalp 2013). The glint and glare analysis discussed in Impact 4.1.5 (d) below includes a review of a similar single-axis PV solar project in southern Nevada.

3.9.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, WAPA would not approve a large generator interconnection request or construct any Proposed Action transmission system upgrades, and Proponent would not construct the Vidal Energy Project. Therefore, no new disturbance to the characteristic landscape would occur, and no new elements or patterns would be introduced to the Project area. Therefore, there would be no impact on the casual viewer. The No Action Alternative would not result in any impacts.

WAPA's Proposed Action

Under WAPA's Proposed Action, construction, O&M, and decommissioning activities would take place in, and directly adjacent to, the Vidal Energy Project. Construction of a new switchyard would cause approximately 5 acres of permanent impact. The existing visual character and scenic quality would be affected during construction by the generation of fugitive dust, movement of equipment and vehicles in and out of the WAPA Proposed Action area, and the presence of construction cranes, transmission line stringing, material stockpiles, and staging areas. The construction activities would introduce forms, lines, colors, and textures that would temporarily attract attention and create a noticeable contrast with the existing setting of the Project area.

WAPA would install, maintain, and decommission an interconnection on the existing HDR-BLY 161-kV transmission line, which would not require any additional pole structures. Activities associated with O&M would be infrequent and would not draw attention from the casual observer. Decommissioning would be confined to areas already disturbed during construction and would not have any additional impacts. These activities would be noticeable from the casual observer due to color and form contrast with the existing cultural modifications.

There would be approximately 5 acres of impacted landscape under the WAPA Proposed Action that would slightly reduce the quality of visual resources or the visual character of the existing environment associated with modification to the existing landscape by the new switchyard. The magnitude of change in landscape character associated with the WAPA Proposed Action would be minimal due to the proximity of the Vidal Energy Project to existing regional transmission lines supported by H-frame wood pole structures and proximity to the Vidal Energy Project facilities. The WAPA Proposed Action would be visible

and may attract attention from Highway 95. Therefore, there would be short- and long-term, minor impacts on views within five miles of the WAPA Proposed Action. There would be a minor change in the characteristic landscape and a minor change in the scenic quality of the Project area from the construction, O&M, and decommissioning of the WAPA Proposed Action. Project lighting at the substation would normally be off unless activated by onsite personnel.

The Vidal Energy Project

Under the Vidal Energy Project, the existing visual character and scenic quality would be affected during construction by the generation of fugitive dust, movement of equipment and vehicles in and out of the Vidal Energy Project area and stockpiling of materials. The construction activities would introduce forms, lines, colors, and textures that would temporarily attract attention and create strong contrast with the existing setting. Vegetation clearing and grading would expose lighter color soils and create a more uniform landform in the cleared and graded areas for the PV solar panel array, the substation, staging areas, underground electrical collection system trenches, and new access roads. The construction-related impacts would range from a minor to moderate degree of change in the characteristic landscape visible by the casual observer depending on the viewing distance, type of construction activity taking place, and time of day. The magnitude of change to the landscape character and scenic quality of the Project area would introduce elements not currently present in the area. The scale of the PV solar panel array in the landscape within the Project area would attract attention, create a detectable change in the landscape character, and result in a strong level of visual contrast in terms of form, line, texture, and color within the Project area. The access roads would be similar to existing features already present within the area and would most likely not attract attention.

The Vidal Energy Project site has views of mountain foothills to the southeast; however, the solar equipment proposed to be constructed on the Vidal Energy Project site is all low-profile, including PV modules mounted on fixed-tilt foundations or tracker units and associated electrical equipment that would display a height of approximately 12 feet. The Vidal Energy Project would also include overhead collection lines, access roads, and a 6-foot chain-link perimeter fence. Although the Vidal Energy Project would alter the existing character of the site, the introduction of Vidal Energy Project components would not substantially obstruct or interrupt views of surrounding mountainous terrain. All occupied residences, as well as U.S. Route 95, are located west of the Vidal Energy Project between the foothills and the Vidal Energy Project. Additionally, the Vidal Energy Project site is adjacent to regional transmission lines supported by H-frame wood pole structures. Thus, the Vidal Energy Project is consistent with existing views in the surrounding area. The County is divided into Mountain Regions, Valley Regions, and Desert Regions according to the Countywide Policy Plan. The Vidal Energy Project site is within the Desert Regions of the County. While there are scenic vistas in the desert regions, including views across desert landscapes, toward mountains, ridgelines, and rock formations, no designated scenic views, scenic vistas, or scenic resources are known to occur in the vicinity of the Vidal Energy Project (County 2020a). Additionally, construction of the Vidal Energy Project would not entail the removal of trees, rock outcroppings, and/or historic buildings, as these features do not occur on the Vidal Energy Project site.

Existing views and the analysis of visual change are described below for representative local roads surrounding the site. The location and view direction of each of the KOP photos are shown on Figure 5 of Appendix A. Existing simulated KOP figures are provided in Figures 6 through 8 in Appendix A. The proposed solar and energy storage facility would introduce solar PV panels, buildings, and other ancillary components to a primarily undeveloped high desert landscape. The proposed panels would be approximately a maximum of 18 feet above grade at the tallest point and approximately 2 feet above the grade at the lowest point.

Foreground Views of the Vidal Energy Project

KOP 2 and KOP 3 represent views of the solar and energy storage facility from U.S. Route 95, just west of the Project site (less than 0.25 mile), with KOP 2 north of Lye Road and KOP 3 south of Lye Road. This portion of U.S. Route 95 has a volume of approximately 900 average daily trips. The Vidal Energy Project site is in the immediate foreground, and the visual simulation represents the change in visual quality at a close viewing distance. As shown, the solar arrays would be visible in the foreground with views partially obstructed by existing desert shrubs and trees. The solar equipment proposed to be constructed on the Vidal Energy Project site is all low-profile, including PV modules mounted on fixed-tilt foundations or tracker units and associated electrical equipment that would display a height of approximately 12 feet. The Vidal Energy Project would also include overhead collection lines, access roads, and a 6-foot chain-link perimeter fence. The battery storage facilities and substation are not visible from any of the KOP vantage points. The mountain ridgelines would continue to be visible in the background, similar to existing conditions. The level of visual change would be moderate, as the solar panels would be the predominant features. The solar panels would have a uniform color, texture, and form, which would moderately contrast with the color and form of the desert vegetation and landscape. The existing scenic quality of the area is moderately low due to the existing visual encroachments including existing dirt roads and utility lines. The moderate level of visual change on the landscape in an area with moderately low visual quality would result in minor impacts on visual quality.

Middleground Views of the Project

The middleground view of the Vidal Energy Project from Old Parker Road is represented by KOP 1. The Vidal Energy Project facilities would be indistinct and not visually prominent in the middleground view. Vidal Energy Project components would appear low to the ground and less discernable in the middleground views. The Vidal Energy Project facilities would become visually imperceptible at the distance and viewing angle of KOP 1. Intervening topography and vegetation would provide some screening of the solar facilities. The Vidal Energy Project would appear as a series of flat, greyish horizontal forms from KOP 1, and the mountains and desert vegetation would remain visually prominent. The use of non-galvanized steel and other non-reflective materials would reduce the potential for reflectivity and would result in a low level of change from the existing environment. The Vidal Energy Project elements would only be slightly noticeable in the middleground of KOP 1 due to the contrast in color with the surrounding desert landscape; however, the Vidal Energy Project would result in a low level of visual change from views on Old Parker Road.

Nighttime Lighting

Construction

Construction of the Vidal Energy Project is anticipated to occur during daytime hours as permitted by the County of San Bernardino. However, if necessary and approved by the County, nighttime construction activities could occur, which may involve the use of temporary construction lighting equipment. Construction lighting is meant to be bright, and any such lighting may be visible for a great distance from nearby residences and roadways where there is an absence of intervening vegetation and topography. The use of any bright construction lighting would be temporary during the construction phase and would only occur if nighttime work was approved by the County. Any construction lighting would be directed away from adjacent residences and toward active construction areas.

Operation and Maintenance

The Vidal Energy Project would have lighting installed at the primary access gates to the site, within the battery storage containers, and around the onsite substation. Project lighting would be shielded and

directed downward to minimize light trespass onto surrounding properties; and lighting within the battery storage containers would be motion-activated.

In addition, nighttime lighting associated with the proposed solar and energy storage Project would be subject to County approval and compliance with County requirements. As summarized in the Regulatory Setting, County Ordinance No. 3900 regulates glare, outdoor lighting, and night sky protection; and County Development Code Section 83.07.040, Glare and Outdoor Lighting, regulates outdoor lighting practices geared toward minimizing light pollution, glare, and light trespass; conserving energy and resources while maintaining nighttime safety, visibility, utility, and productivity; and curtailing the degradation of the nighttime visual environment. Proposed lighting would be shielded and directed downward, and motion-activated lighting would normally be turned off unless needed for nighttime emergency work, consistent with County requirements.

Glint and Glare

Solar PV Panels

The Vidal Energy Project would use darkly colored matte PV solar panels featuring an anti-reflective coating. Photovoltaic solar panels are designed to be highly absorptive of light that strikes the panel surfaces, generating electricity rather than reflecting light. The solar panels are also designed to track the sun to maximize panel exposure to the sun, which would direct the majority of any reflected light back toward the sun in a skyward direction. PV panels have a lower index of refraction/reflectivity than common sources of glare in residential environments. The glare and reflectance levels of panels are further reduced with the application of anti-reflective coatings. PV suppliers typically use stippled glass for panels as the “texturing” of the glass to allow more light energy to be channeled/transmitted through the glass while weakening the reflected light. With the application of anti-reflective coatings and use of modern glass technology, Project PV panels would display overall low reflectivity.

The PV solar panels would be angled perpendicular to the east-west direction of the sun and are designed to track the position of the sun throughout the day to maximize panel exposure if a tracking system is used. Alternatively, the panels could be installed on a fixed-tilt system and would face to the south. The greatest potential for light reflection to reach viewer locations would occur with a tracking system when the panels would be angled toward the horizon at sunrise and sunset. During these periods, the solar panels would be tilted approximately 10 degrees below a horizontal plane in the direction of the sun. Unabsorbed light would reflect at approximately 20 degrees above the opposite horizon.

The solar power and energy storage facility would be located in a broad flat valley. Potential viewers of the facility primarily include motorists on U.S. Route 95 and residents, who would be less than 20 degrees above the facility. Motorists and residents would not be exposed to the glare at sunrise or sunset due to the low viewing angle. Motorists and residents may perceive indirect glare as an increase in color contrast in the early morning hours when the darkly colored PV panels could appear as lightly colored or while. However, this indirect glare would be brief and would not cause a nuisance to motorists or residents.

The Vidal Energy Project would also be designed to ensure consistency with San Bernardino County Code Section 84.29.040, which requires solar energy facilities to be designed to preclude daytime glare on any abutting residential land use zoning district, residential parcel, or public right-of-way. The solar PV panels would not create a substantial source of glare due to the use of anti-reflective coating on the panels and the elevation of potential receptors relative to the facility.

Metallic Electrical Equipment, Power Poles, and Buildings

Vidal Energy Project facilities, including the gen-tie line, battery storage facilities, and on-site substation, would be constructed with metallic components, which could introduce new sources of glare compared to the undeveloped area. Any glare associated with the proposed facilities would be minor and highly scattered because the metallic components would be separated geographically and would not concentrate potential glare in any area. In addition, for the metallic components, the Vidal Energy Project would include use of non-galvanized steel or other similar materials to reduce glint and glare. The new overhead conductor and steel support structures installed for the on-site substation and gen-tie line would reflect approximately the same level of light as the existing transmission line facilities in the Project area. The facilities would not involve concentrated light reflection that would become a nuisance or adversely affect daytime views.

Summary

There would be approximately 5 acres of impacted landscape under the Vidal Energy Project that would reduce the overall scenic quality associated with cultural modification by the proposed solar facility and ancillary components. The magnitude of change in landscape character associated with the Vidal Energy Project would be minor to moderate due to the scale of the PV solar panel array in comparison to the surrounding landscape, low vegetation, and nearby and adjacent built structures. Although the Project would alter the existing character of the site, the introduction of Project components would not substantially obstruct or interrupt views of surrounding mountainous terrain. All occupied residences, as well as U.S. Highway 95, are located west of the Project between the mountain foothills and the Vidal Energy Project. Additionally, the Project site is adjacent to regional transmission lines supported by H-frame wood pole structures. Therefore, the Vidal Energy Project is consistent with existing views in the surrounding area.

The Vidal Energy Project site is generally flat and contains no significant geologic features or vegetation unique to the area that could be considered scenic. Elements of the projects would be visible for motorists traveling along U.S. Route 95, including solar racks, perimeter fencing, access roads, and overhead collection lines, but this route is not a County- or State-designated scenic highway. The closest eligible State scenic highway is Interstate 40 from Barstow to Needles, approximately 50 miles north of the Project site (Caltrans 2019); therefore, the Vidal Energy Project and Proposed Action would not be visible within this viewshed. Additionally, construction would not entail the removal of trees, rock outcroppings, and/or historic buildings, as these features do not occur on the site.

Compliance with Renewable Energy & Conservation Element Policies RE-4.1 and RE-4.4 and implementation of the design elements, BMPs, and conservation measures described in Appendix I would minimize impacts to visual resources during construction, O&M, and decommissioning of the Vidal Energy Project. Therefore, no additional measures to avoid and/or minimize impacts are required.

Cumulative Impacts

No Action Alternative

Under the No Action Alternative, WAPA would not approve a large generator interconnection request or construct any Project-related transmission system upgrades, and Proponent would not construct the proposed Project. Therefore, no new disturbance to the characteristic landscape would occur, and no new elements or patterns would be introduced to the Project area. Therefore, there would be no impact on the casual viewer.

There would be no contribution to cumulative impacts to visual resource because the No Action Alternative would not result in any impacts. As such, the No Action Alternative is not analyzed for cumulative impacts to visual resources.

WAPA's Proposed Action and the Vidal Energy Project

The analysis below focuses on cumulative impacts to the local and regional viewshed results from development within approximately 40 miles of the Project area, as many of the related projects are located over 100 miles away, and therefore would not contribute to a cumulatively considerable visual or aesthetic impact due to intervening topography or geographic separation. The following cumulative projects are proposed in the regional vicinity of WAPA's Proposed Action and the Vidal Energy Project:

- Parker Blythe No. 2 161-kV Transmission Line Rebuild
- Bouse-Kofa 161-kV Rebuild
- Parker-Davis Transmission System Routine Operation and Maintenance Project and Proposed Integrated Vegetation Management Program

WAPA's Proposed Action transmission line rebuild or maintenance projects would not contribute to cumulative aesthetic impacts with the Vidal Energy Project because the visual elements of those separate projects are existing features in the environment and would also appear visually distinct and unrelated to the Vidal Energy Project.

Scenic Vistas

The Vidal Energy Project is not located within a designated scenic vista. The closest cumulative project to the Vidal Energy Project is the Parker Blythe No. 2 161-kV Transmission Line Rebuild, located 8 miles southwest of the Vidal Energy Project. The impact on views of the open landscape and mountains surrounding the proposed Project would not be cumulative because no cumulative projects would impact views of the surrounding mountains and terrain. No cumulative impact on scenic vistas would occur.

Scenic Highways

No State-designated scenic highways are located in proximity to WAPA's Proposed Action or the Vidal Energy Project; therefore, no cumulative impact would occur on a State-designated scenic highway.

Visual Quality

The local cumulative impact on visual quality would be minor because all three of the cumulative projects in the general vicinity are existing projects and impacts during construction would be temporary. The Proposed Action rebuild of the transmission lines and the maintenance of the transmission system would not introduce new features that would cause cumulative impacts, considering the addition of the Vidal Energy Project. Travelers on the highways would already be used to seeing the transmission lines that are undergoing upgrades and maintenance, so the cumulative projects would not add new visual features once construction is completed. In addition, the local and regional cumulative impact on visual quality would be minor because views of the cumulative projects from the Project area would generally be screened by intervening topography and vegetation.

Light and Glare

San Bernardino County is known for its dark skies. All of the cumulative projects would be subject to the County's outdoor lighting ordinance, which would limit the amount of lighting that would be introduced to the area and restrict the type of lighting that could be used. The cumulative impact on the night sky would be minor due to the conformance with the County's lighting ordinance. The cumulative projects

would not introduce new sources of glare that would be directed into any area. No cumulative glare impact would occur.

Summary

Cumulatively, effects of the WAPA Proposed Action and the Vidal Energy Project, when combined with past, present, and reasonably foreseeable future actions, would result in long-term, direct and indirect, minor cumulative impacts to the visual resources within the analysis area. The WAPA Proposed Action and the Vidal Energy Project would have a minor contribution to the cumulative effects to visual resources because of the scale and proximity to existing built structures. Visual resource impacts created by the solar facility would be largely reversible with decommissioning of the Vidal Energy Project at the end of its useful life and restoration of the landscape.

CHAPTER 4.0 – COORDINATION AND CONSULTATION

4.1 FEDERAL AGENCIES

- U.S. Army Corps of Engineers
- U.S. Bureau of Land Management
- U.S. Department of Defense
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service

4.2 STATE AGENCIES

- Arizona State Historic Preservation Office
- California State Historic Preservation Office
- California Department of Fish and Wildlife
- Colorado River Regional Water Quality Control Board

4.3 COUNTY GOVERNMENT

- San Bernardino County

4.4 TRIBAL

- Chemehuevi Indian Tribe
- Colorado River Indian Tribes
- Fort Mojave Indian Tribe
- Quechan Tribe of the Fort Yuma Reservation
- Twenty-Nine Palms Band of Mission Indians

CHAPTER 5.0 – APPLICABLE LAWS, REGULATIONS, AND OTHER REQUIREMENTS

Federal, State, and local agencies have jurisdiction over certain aspects of the proposed interconnection and solar facility. Major Federal, State, and local agencies and their respective permit/authorizing responsibilities are summarized in Table 1.

Table 1. Permit/Authorizing Responsibilities

Permit/Authorization	Agency with Jurisdiction or Responsibility for Compliance
Interconnection/Transmission Service Agreement	WAPA
NEPA	WAPA
Clean Air Act	WAPA
Easement Grants and Road Crossing Permits	San Bernardino County
Zoning Ordinances / Conditional Use Permit	San Bernardino County
NHPA	WAPA; SHPO
Native American Graves Protection and Repatriation Act	WAPA
American Indian Religious Freedom Act	WAPA
Construction Stormwater Permit	Colorado River Regional Water Quality Control Board
Pesticide General Permit	Colorado River Regional Water Quality Control Board
Clean Water Act Compliance	U.S. Army Corps of Engineers; Colorado River Regional Water Quality Control Board
California Fish and Game Code Compliance	California Department of Fish and Wildlife
Safety Plan	San Bernardino County Fire Department and San Bernardino County Planning Department
Migratory Bird Treaty Act	USFWS; WAPA
Bald and Golden Eagle Protection Act	USFWS; WAPA
Endangered Species Act	USFWS; WAPA
Executive Order 13690 (Federal Flood Risk Management)	WAPA
Executive Order 119088 (Floodplain Management)	WAPA

CHAPTER 6.0 – ENVIRONMENTAL ASSESSMENT PREPARERS AND CONTRIBUTIONS

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CHAPTER 7.0 – LITERATURE CITED

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