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Initial Study and Mitigated Negative Declaration
Renewable H2 Project
APNs 0468-231-26-0000 and 0459-041-27-0000
Plan No. PLAN20-00025

Lead Agency:

City of Victorville
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Acronyms and Abbreviations

APCD	Kern County Air Pollution Control District
APE	Area of potential effect
ASF	Airport and Support Facility District
ASME	American Society of Mechanical Engineers
AVAQMD	Antelope Valley Air Quality Management District
BMPs	Best management practices
CalARP	California Accidental Release Prevention Program
CARB	California Air Resources Board
CAP	Climate action plan
CDFW	California Department of Fish and Wildlife
CDOC	California Department of Conservation
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CGS	California Geologic Survey
CH ₄	Methane
CNDDDB	California Natural Diversity Database
CO	Carbon monoxide
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CRHR	California Register of Historical Resources
CRPR	California Native Plant Society Rare Plant Ranks
dB	Decibels
dBA	A-weighted decibels
DEH	California Health Services Department
DOE	US Department of Energy
DOT	US Department of Transportation
EFVs	Electric fuel cell vehicles
EIR	Environmental Impact Report
FMCSA	Federal Motor Carrier Safety Administration
GHGs	Greenhouse Gases
HMTA	Hazardous Materials Transportation Act
HVAC	Heating, ventilation, and air conditioning
IFC	International Fire Code
IFGC	International Fuel Gas Code
Leq	Equivalent sound level
Ldn	Day-night sound level
Lmax	Maximum sound level of a noise source
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
MND	Mitigative negative declaration
msl	mean sea level
O ₃	Ozone
OSHA	Occupational Safety and Health Administration
N ₂ O	Nitrous oxide
ND	Negative Declaration
NEC	National Electrical Code
NFPA	National Fire Protection Association
NOx	Nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
PEM	Polymer electrolyte membrane
PHMSA	Pipeline and Hazardous Materials Safety Administration

Project	Renewable H2 Project
PM	Particulate matter
psi	pounds per square inch
SCAQMD	South Coast Air Quality Management District
SCLA	Southern California Logistics Airport
SMR	Steam Methane Reformer
SO ₂	Sulfur dioxide
SO _x	Sulfur oxide
SWPPP	Stormwater Pollution Prevention Plan
TCRs	Tribal Cultural Resources
UWMP	Urban Water Management Plan
US	United States
USDA	US Department of Agriculture
USGS	US Geological Survey
USFWS	United States Fish and Wildlife Service
VOCs	Volatile organic compounds
VVEDA	Victor Valley Economic Development Authority
VVWRA	Victor Valley Wastewater Elimination System
WQMP	Water quality management plan

1 Introduction

1.1 Purpose of the Initial Study

This Initial Study analyzes the environmental impacts associated with approximately 10.38 acres of previously developed land located north-northwest of the intersection of Perimeter Road and Phantom East (6N, 5W, Section 24) in the city of Victorville, San Bernardino County, California. This document has been prepared to satisfy the California Environmental Quality Act (CEQA) (Pub. Res. Code, Section 21000 et seq.) and CEQA Guidelines (14 California Code of Regulations (CCR) 15000 et seq.). CEQA requires that all state and local government agencies consider the potential environmental consequences of projects over which they have discretionary authority before acting on those projects. A CEQA Initial Study is generally used to determine which CEQA document is appropriate for a project (Negative Declaration [ND], Mitigated Negative Declaration [MND], or Environmental Impact Report [EIR]). The City of Victorville is the designated Lead Agency and will be responsible for the Project's environmental review.

2 Project Description

2.1 Project Overview

StratosFuel LLC proposes to construct the Renewable H2 Project (Project), which will consist of the construction of a 100 percent renewable hydrogen electrolysis and steam methane reformation facility and associated professional office campus. The proposed Project will be constructed on approximately 10.38 acres of previously developed land located north-northwest of the intersection of Perimeter Road and Phantom East in the city of Victorville, San Bernardino County, California. The purpose of the Project will be to produce gas and liquid hydrogen for distribution to local and regional hydrogen fueling stations for use in electric fuel cell vehicles.

2.2 Existing Site Conditions

The proposed Project is located in the City of Victorville in Township 6 North, Range 5 West, Section 24, and the applicable assessor parcel numbers are 0468-231-26-0000 and 0459-041-27-0000. The Project would be located north of Phantom East, south of the High Desert Power Project, west of Perimeter Road and east of the Southern California Logistics Airport (SCLA) (see Figure 1). StratosFuel is proposing to lease a total of 10.38 acres of which approximately 7 acres would be developed for the proposed Project site (see Figure 2). Within the Project site boundary, there are seven existing buildings which were formerly utilized as part of the munition storage facility for former George Air Force Base. These buildings were constructed around 1953. Additionally, there are a total of three "blast" berms that are located on the Project site and to the south of the site. These berms were created as a safety measure to protect the munitions storage facility and surrounding area from any blasts and associated fragments during previous site operations. The berms appear to be constructed with soil and capped with asphalt. Photographs of the Project site are provided in Appendix A.

2.3 Existing Land Uses

The Project would be located within an area approved for Industrial use in the 2004 SCLA Specific Plan. In the October 22, 2019 Notice of Preparation – Southern California Logistics Airport (SCLA) Specific Plan Amendment (PLAN-19-00004) Draft Subsequent Program Environmental Impact Report, the Project site is located within the Priority Development Area for SCLA.

The surrounding land uses include the following:

- **North of the Project site:** To the north is a portion of the munition storage facility and an area used as a storage yard. Approximately 550 feet north of the site is the High Desert Power Project, which is an 830 mega-watt (MW) power plant that produces electricity to serve the southern California area.

- **South of the Project Site:** To the south of the site is an approximate 150 wide area of undeveloped land followed by Phantom East roadway. Across Phantom East is approximately 300 feet of vacant undeveloped land. South of the vacant land are units formerly used by the Air Force Base for housing. The housing units have been abandoned.
- **East of the Project site:** Directly to the east is Perimeter Road. Across Perimeter Road is vacant land covered with desert scrub brush. A portion of the vacant land has been fenced off. Based on signage, the fenced area was formerly used as a landfill.
- **West of the Project Site:** To the west is Aviation Drive and a storage yard. To the west-northwest, is a strip of vacant, undeveloped land that is located between the site and Aviation Drive. The strip of land varies in width between 250 to 400 feet. Across Aviation Drive is International Aerospace Coatings which specializes in aircraft painting, interiors and graphics.

Photographs of the surrounding land areas are provided in Appendix A.

2.4 Project Operations

Operations on-site entail the production of hydrogen via electrolysis and steam methane reformation. Electrolysis is the process of using electricity to split water into hydrogen and oxygen. This reaction takes place within an electrolyzer unit. In a polymer electrolyte membrane (PEM) electrolyzer, the electrolyte is a solid specialty plastic material. Imported water reacts at the anode to form oxygen and positively charged hydrogen ions (protons). The electrons flow through an external circuit, and the hydrogen ions selectively move across the PEM to the cathode. At the cathode, hydrogen ions combine with electrons from the external circuit to form hydrogen gas. The hydrogen is stored, while the oxygen is released into the air. The project proposes five (5) on-site electrolyzers approximately 50-feet in length by 10 feet in width to be housed in a roofless structure comprised of perimeter concrete walls ranging in height between 8 to 14 feet in accordance with National Fire Protection Association (NFPA) 2 Hydrogen Technologies Code.

Most hydrogen produced today in the United States is made via steam methane reforming, a production process in which high-temperature steam (700°C–1,000°C) is used to produce hydrogen from biogas. In steam methane reforming, biogas reacts with steam under 3–25 bar pressure (1 bar = 14.5 psi) in the presence of a catalyst to produce hydrogen and a relatively small amount of carbon dioxide. Steam reforming is endothermic, that is, heat must be supplied to the process for the reaction to proceed. Subsequently, in what is called the "water-gas shift reaction," the biogas and steam are reacted using a catalyst to produce carbon dioxide and more hydrogen. In a final process step called "pressure-swing adsorption," carbon dioxide and other impurities are removed from the gas stream, leaving essentially pure hydrogen¹.

Liquid hydrogen would be stored on-site in a new 18,750 gallon or about 5,000 kilogram liquid hydrogen tank (roughly 11,023 pounds). The liquid hydrogen stored at the site would be available for distribution by truck. Liquid hydrogen would be vaporized and loaded into trucks at one of the filling bays. Liquid hydrogen is noncorrosive. Special materials of construction are not required. However, because of its extremely cold temperature, equipment must be designed and manufactured of material that is suitable for extremely low temperature operation. Vessels and piping must be selected and designed to withstand the pressure and temperatures involved and comply with applicable codes and regulations.

The NFPA 2 code provides fundamental safeguards for the generation, installation, storage, piping, use, and handling of hydrogen in compressed gas as well as cryogenic liquid form. Hydrogen is environmentally safe, odorless, and non-toxic. In general, hydrogen is neither more nor less hazardous than gasoline, propane, or methane. If hydrogen were to leak onsite, it would disperse into the air almost immediately because it is so light. As required by NFPA 2 and other regulations discussed in detail in Section 4 of this document, the proposed Project

¹ Hydrogen Production: Natural Gas Reforming. Office of Energy Efficiency & Renewable Energy.
<https://www.energy.gov/eere/fuelcells/hydrogen-production-natural-gas-reforming>.

shall be designed to prevent hydrogen from leaking and shall incorporate redundant systems to shut down automatically in the unlikely event an accident occurs. StratosFuel's on-site offices will monitor the facility both on-site and remotely by cameras and electronically 24 hours a day. Flame detection and hydrogen gas sensors shall be incorporated to ensure safe operating conditions. These elements, as well as programmed equipment alarms, will report back to a monitored systems control panel pursuant to International Fire Code (IFC) and NFPA 2 regulations.

Hydrogen will be stored on-site in its natural form as a gas as well as a cryogenic liquid. Gaseous hydrogen is stored predominately in steel cylinders at a pressure of 150-200 bar and at an ambient temperature of approximately 298 Kelvin (76.73 Fahrenheit). Hydrogen is liquefied by reducing its temperature to -253 Celsius (-423.4 Fahrenheit). Significant amounts of hydrogen can be stored within high-pressure storage tanks that can be situated above ground or underground, which is similar to the storage of natural gas. The construction material properties in above ground storage impose limitations on the quantity of gaseous hydrogen that can be stored and the hydrogen can be stored at an increased pressure in an underground pressure tank or underwater tank.

The most common conventional steel gaseous cylinders contain a volume of 40 liters and a pressure of 150 bar and in the last decade significant progress has been made in a move towards lightweight cylinders using chrome-molybdenum steel. The individual cylinders would be clustered together to be filled and released at the proposed transfill station through just one valve, and the cylinders are interconnected through high-pressure tubing. At full capacity, up to 25 truck trailers would be filled per day at the transfill station for distribution to local and regional hydrogen fueling stations to serve electric fuel cell vehicles.

The project site will include perimeter and on-site landscaping, as well as a minimum-8-foot perimeter fence to be constructed in accordance with applicable design standards. Additionally, on-site bioswales will be incorporated, as appropriate, into the project landscaping to ensure stormwater runoff from conversion of permeable surfaces to impermeable surfaces is managed in accordance with applicable regulations.

2.5 Regulatory Requirements, Permits and Approvals

The following approvals and regulatory permits are anticipated for the construction and operation of the Project:

- Site Plan and Conditional Use Permit from the City of Victorville;
- Encroachment Permit from City of Victorville for use of Phantom East and Perimeter Road for construction access;
- Lahontan Regional Water Quality Control Board (LRWQCB) National Pollutant Discharge Elimination System (NPDES) California General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities;
- LRWQCB NPDES General Permit for Storm Water Discharges Associated with Industrial Activities;
- MDAQMD Title V Permit;
- Federal Aviation Administration Form 7460-1 Notice of Proposed Construction or Alteration; and
- Occupational Safety and Health Administration (OSHA) Process Safety Management of Highly Hazardous Chemicals.

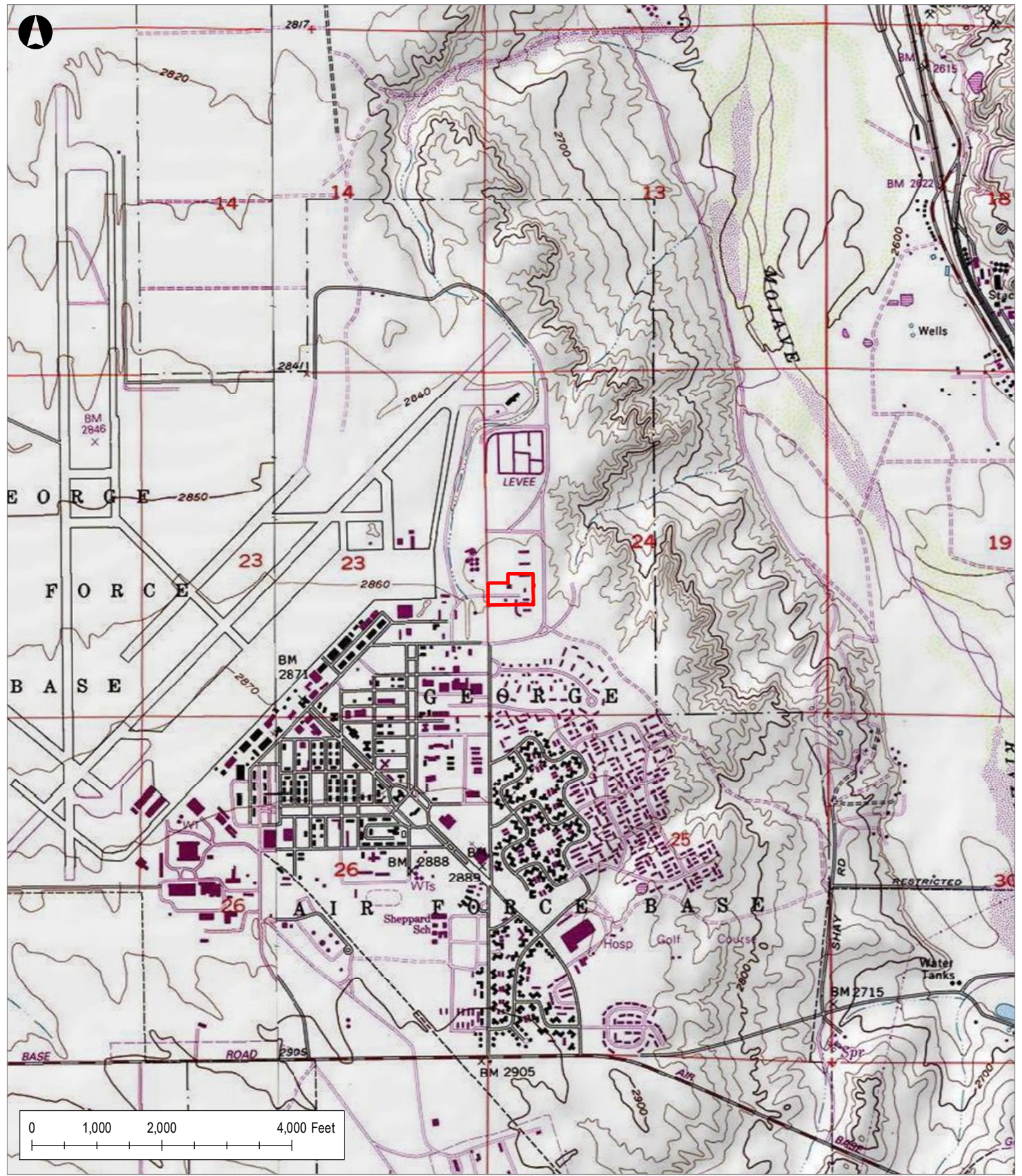
The listed permits above is not exhausted and maybe modified as the design of the project is finalized.

2.6 Consultation with California Native American Tribe(s)

The following California Native American Tribes traditionally and cultural affiliated with the project area have been notified of the proposed Project in accordance with Assembly Bill 52:

- Morongo Band of Mission Indians;
- Cabazon Band of Mission Indians;
- San Manuel Band of Mission Indians; and
- Twenty-Nine Palms Band of Mission Indians.

Notification of the Project was provided to the Tribes in a letter dated October 28, 2020. The Tribes have 30 days from the date of receipt of the notification to request consultation. No requests for consultation were received from the Tribes for this Project.



LEGEND

PROJECT BOUNDARY

PREPARED BY
EXP/energy Services Inc.

PROJECT OVERVIEW

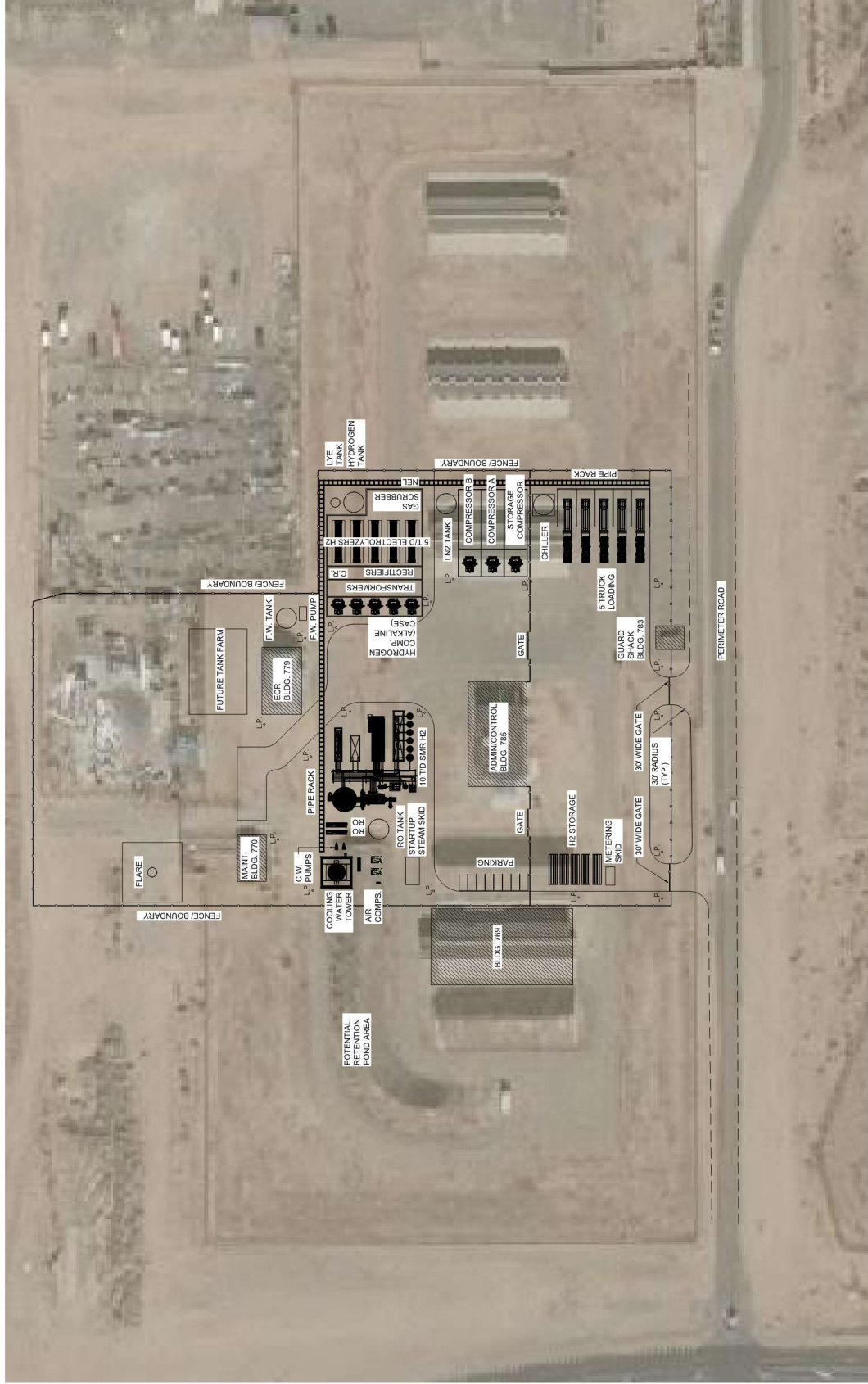
24-6N-5W

Figure 1



PLAN VIEW
SCALE: 1"=600'-0"
VICTORVILLE, CALIFORNIA

LEGEND
LP LIGHT POLE
FENCE
EXISTING BLDG. TO BE REUSED



NOTES				REFERENCE DRAWINGS				REVISIONS				DRAWING STATUS				PROJECT INFO				Renewable US Project																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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4 Environmental Factors Potentially Affected and Determination

4.1 Environmental Factors Potentially Affected

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

- | | | |
|--------------------------------------------------------------|------------------------------------------------------|-------------------------------------------------------------|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Agricultural and Forestry Resources | <input type="checkbox"/> Hazards/Hazardous Materials | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Air Quality | <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Land Use and Planning | <input type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Utilities and Service Systems |
| <input type="checkbox"/> Energy | <input type="checkbox"/> Noise | <input type="checkbox"/> Mandatory Findings of Significance |
| <input type="checkbox"/> Geology and Soils | <input type="checkbox"/> Population and Housing | |

Determination

On the basis of this initial evaluation:

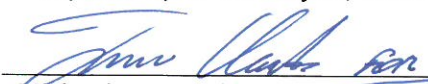
I find that the Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared. ☐

I find that although the Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared. ☒

I find that the Project MAY have a significant effect on the environment, and ENVIRONMENTAL IMPACT REPORT is required. ☐

I find that the Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed. ☐

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



Michael Szarzynski
Senior Planner


Date

5 Environmental Checklist and Discussion

I. Aesthetics. Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	
II. Agriculture and Forestry Resources. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in accessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the Project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

III. Air Quality. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?				X
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			X	
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?			X	
d) Expose sensitive receptors to substantial pollutant concentrations?				X
e) Create objectionable odors affecting a substantial number of people?			X	
IV. Biological Resources. Would the Project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?				X
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				X
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

V. Cultural Resources. Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?			X	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?				X
c) Disturb any human remains, including those interred outside of dedicated cemeteries?		X		
VI. Energy.				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				X
VII. Geology and Soils.				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: <ul style="list-style-type: none"> i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. ii) Strong seismic ground shaking? iii) Seismic-related ground failure, including liquefaction? iv) Landslides? 			X	
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			X	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		

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

X. Hydrology and Water Quality. Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?				X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: <ul style="list-style-type: none"> i) result in a substantial erosion or siltation on- or off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; iii) create or contribute runoff water which exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) impede or redirect flood flows? 			X	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?				X
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	
XI. Land Use and Planning. Would the Project:				
a) Physically divide an established community?				X
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				X
XII. Mineral Resources. Would the Project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

XIII. Noise. Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies??			X	
b) Generation of excessive groundborne vibration or groundborne noise levels?			X	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels??			X	
XIV. Population and Housing. Would the Project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			X	
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
XV. Public Services. Would the Project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: Fire protection? Police protection? Schools? Parks? Other public facilities?			X	
XVI. Recreation. Would the Project:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X	
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X

XVII. Transportation. Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			X	
b) Conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision(b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
d) Result in inadequate emergency access?				X
XVIII. Tribal Cultural Resources. Would the Project:				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: <ul style="list-style-type: none"> i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. 			X	

XIX. Utilities and Service Systems. Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects??			X	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X	
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				X
XX. Wildfire. Would the Project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				X
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				X
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				X

XXI. Mandatory Findings of Significance.	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?		X		
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		X		

5.1 Aesthetics

The proposed Project is located within the City of Victorville, north of the San Bernardino mountains, at the western edge of the Mojave Desert and within the Western Mojave Basins ecoregion (Griffith *et.al.*, 2016). Victorville is surrounded by incorporated and unincorporated lands including the City of Adelanto to the northwest, the Town of Apple Valley to the east and the City of Hesperia to the south.

The proposed Project location is in the northern portion of the City of Victorville. The Project site is located on an existing developed parcel of land that will be re-developed. The topography of the general area is generally flat with low density of desert vegetation dominated by creosote bush and white bursage (Griffith *et.al.*, 2016).

Access to the site is via existing named and upgraded roads. The closest highway is US Highway 395 located approximately 4.3 miles south and west of the Project site. Access to Highway 15 is approximately 6.8 miles south and east of the Project site. In addition, access to Route 66 (National Trails Highway) is approximately 3.7 miles south and east of the Project site.

Following construction, the Project facility will present as an Industrial development including storage tanks, truck loading station, large compressor building and office/administration building. The facility is expected to operate 24 hours a day, 7 days per week; activity and lights are anticipated continually.

5.1.1 Analysis of Environmental Impacts

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?			X	

A vista is a view from a particular location or combination of locations; a scenic vista combines an aesthetically pleasing aspect, often natural, to the vista. While a scenic vista may be formally designated, they are often informal public views. An adverse effect to a scenic vista may result from a degradation of an existing vista or the loss of access to an existing viewpoint.

The Project site is not considered an existing scenic vista. Similarly, while the Project will not contribute positively to the scenic vista of the area, the Project is also not expected to detract from an existing scenic vista. The area immediately surrounding the proposed Project site contains existing industrial development including an airport, transmission corridor and gas-fueled electrical generating station. Impacts of the proposed Project on scenic vistas are expected to be less than significant.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X

The proposed Project site currently offers no valued scenic resources owing to the developed nature of the site and surrounding area. The site is not located adjacent to a state scenic highway. No impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Substantially degrade the existing visual character or quality of the site and its surroundings?			X	

The existing area at and surrounding the proposed Project site is developed with industrial and public use (e.g., religious buildings, school) infrastructure and uses. More specifically, the proposed Project site is an existing industrial development site that will be re-developed with more and taller infrastructure.

The addition of the proposed Project facility is generally the same as the existing visual character. As such, the impacts of the proposed Project on the visual character of the area is expected to be less than significant.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	

During construction, work activities may require the use of temporary lighting if activities are to be completed under low light levels. During operation, the facility is expected to be operational for 24 hours per day, 7 days per week, which will require at least low level lighting in the same timeframe. However, all lighting will be directed at work activities or point to the ground and be shielded to preserve dark skies.

With particular consideration based on the proximity to the SCLA the facility will follow any Federal Aviation Administration requirements for obstruction marking and lighting (FAA 2018). Following final design, the Project will determine filing requirements under Code of Federal Regulations Part 77 (Safe, Efficient Use, and Preservation of the Navigable Airspace), Subpart B (Notice Requirements), §77.9 (Construction or Alteration Requiring Notice).

Glare can result from the reflection of light from Project facilities including all metal and/or reflective surfaces. Where possible, materials with low glare (e.g., dull finish) properties will be used.

In addition, lighting design will conform to the Victorville Code of Ordinances (see Title 16, Chapter 3, Article 11, Section 40, Subsection e; Victorville, 2020) requirements for both lighting and glare including the requirement “to minimize impacts to the night sky” (Victorville, 2020). Both the new light and glare sources resulting from the Project are similar to existing lighting and glare in the general proposed Project area. As a result, the impacts of the proposed Project as a new light and/or glare source is expected to be less than significant.

5.1.2 Mitigation Measures

The following mitigation has been identified for the Project related to potential Aesthetics effects:

- All lighting will be directed at work activities to minimize impacts to the night sky.
- Lighting design will conform to the Victorville Code of Ordinances.
- Lighting requirements will meet those of the Federal Aviation Administration and Code of Federal Regulations.

5.2 Agricultural and Forestry Resources

Victorville lies more than 2,800 feet above mean sea level (msl) within a dry, high-desert climate. The area receives low rainfall (averaging 3.9 inches per year) and therefore low humidity throughout the year. With cool springs and falls, mild winters and hot summers, the temperature ranges from below freezing to more than 110°F (Victorville 2020).

Within Victorville, there are lands designated as Urban and Built-Up Land, Grazing Land, Prime Farmland, Water and Other Land (CDOC, 2020). However, being located within the Western Mojave Basins ecoregion, grazing is limited in the general area due to the lack of forage and water (Griffith *et.al.*, 2016). The proposed Project site is located on lands designated as Urban and Built-Up Land, meaning that it is occupied by built structures with a density of at least 1 building per 1.5 acres (CDOC, 2020).

The proposed Project site is designated/zoned by as Industrial within the SCLA Specific Plan (Victorville, 2019).

5.2.1 Analysis of Environmental Impacts

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?				X

There are no areas classified as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance within the project site (CDOC 2017). No impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X

The Project site is located within an area zoned for Industrial in the SCLA Specific Plan. The site does not conflict with existing zoning for agricultural use or a Williamson Act contract. No impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X

The Project site is located within an area zoned for Industrial. The Project site does not conflict with existing zoning for forest land or timberland. No impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X

The Project site is not located in an area zoned for forest land, and would not result in the loss of forest land or conversion of forest land to non-forest use. No impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

The Project site is not currently being used for agriculture. The proposed Project would not result in the conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. No impact would occur.

5.2.2 Mitigation Measures

No mitigation measures were identified for Agricultural and Forestry Resources.

5.3 Air Quality

In California, air quality is regulated by the California Air Resources Board (CARB). CARB divides the state into air basins that share similar meteorological and topographical features. The City of Victorville is located in San Bernardino County, which is located within the Mojave Desert Air Basin (MDAB). The MDAB is comprised of four air districts, the Kern County Air Pollution Control District (APCD), the Antelope Valley Air Quality Management District (AVAQMD), the Mojave Desert AQMD (MDAQMD), and the eastern portion of the South Coast AQMD (SCAQMD). The APCD consists of the eastern portion of Kern County; the AVAQMD consists of the northeastern portion of Los Angeles County; the MDAQMD includes San Bernardino County and the most eastern portion of Riverside County; and the portion of the SCAQMD includes the eastern part of Riverside County. The Project site is under the jurisdiction of the MDAQMD.

The MDAQMD has established quantitative thresholds for short-term (construction) emissions and long-term (operational) emissions for the following criteria pollutants:

- Volatile organic compounds (VOCs) are hydrocarbon compounds (any compound containing various combinations of hydrogen and carbon atoms) that exist in the ambient air. VOCs contribute to the formation of smog through atmospheric photochemical reactions and/or may be toxic. The daily threshold is 137 pounds per day of VOCs.
- Carbon Monoxide (CO) is a colorless, odorless toxic gas that interferes with the transfer of oxygen to the brain and is produced by the incomplete combustion of carbon-containing fuels emitted as vehicle exhaust. The threshold is 548 pounds per day of carbon monoxide (CO).
- Nitrogen Oxide (NOx) is a yellowish-brown gas, which at high levels can cause breathing difficulties. NOx is formed when nitric oxide (a pollutant from burning processes) combines with oxygen. The daily threshold is 137 pounds per day of nitrogen oxide (NOx).
- Sulfur Dioxide (SO₂) is a colorless, pungent gas formed primarily by the combustion of sulfur containing fossil fuels. Health effects include acute respiratory symptoms. The daily threshold is 137 pounds per day of sulfur oxides (SOx) of which SO₂ is the predominant component.
- PM₁₀ and PM_{2.5} refers to particulate matter less than ten microns and two and one-half microns in diameter, respectively. Particulates of this size cause a greater health risk than larger-sized particles since fine particles can more easily cause irritation. The daily threshold is 82 pounds per day of PM₁₀ and 65 pounds per day of PM_{2.5}.

5.3.1 Analysis of Environmental Impacts

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?				X

The MDAQMD is required, pursuant to the federal Clean Air Act, to reduce emissions of criteria pollutants for which the air basin is nonattainment for Clean Air Act standards. In order to reduce such emissions, the MDAQMD adopts and enforces rules and regulations concerning sources of air pollution, issues permits for stationary sources of air pollution, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the federal Clean Air Act and Clean Air Act Amendments. The MDAQMD also assists CARB in preparing the State Implementation Plan by preparing Attainment Plans that demonstrate how the ambient air quality standards will be achieved. The Attainment Plans describe the rules that will be developed and other means by which the MDAQMD will manage the emissions within its jurisdiction.

According to the MDAQMD, a project is non-conforming if it conflicts with, or delays implementation of any applicable attainment or maintenance plan. A project is conforming if it complies with all applicable District rules and regulations, complies with all proposed control measures that are not yet adopted from the applicable plan(s), and is consistent with the growth forecasts in the applicable plan(s) (or is directly included in the applicable plan). Conformity with growth forecasts can be established by demonstrating that the project is consistent with the land use plan that was used to generate the growth forecast. An example of a nonconforming project would be one that increases the gross number of dwelling units, increases the number of trips, and/or increases the overall vehicle miles traveled in an affected area (relative to the applicable land use plan).

The Proposed Project is located within the Industrial District identified in SCLA Specific Plan. This land use district allows for a broad range of industrial activities that will be consistent with the uses and regulations set forth in Chapter 18.44 of the Victorville Municipal Code titled "M-2 – Heavy Industrial District".

The purpose of the proposed Project is to generate hydrogen fuel that would be distributed to local and regional hydrogen fueling stations to serve electric fuel cell vehicles (EFVs). The increase in the availability of hydrogen for EFVs assists with meeting CARB's efforts to support and accelerate the number of plug-in hybrid and zero-emission vehicles in the state of California.

The proposed Project would be consistent with the emission-reduction goals of the MDAQMD Attainment Plans. Therefore, no impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			X	

Construction: MDAQMD has established daily emission thresholds for construction and operation of a project in MDAB. The emission thresholds were established based on the attainment status for each pollutant. Table 1 lists the MDAQMD thresholds for construction and operational emissions.

Table 1: MDAQMD Thresholds for Construction and Operational Emissions

	Pollutant Emission Threshold (lbs/day)					
	VOC	NO _x	CO	PM ₁₀	PM _{2.5}	SO _x
Construction	137	137	548	137	82	65
Operation	137	137	548	137	82	65

Source: Mojave Desert Air Quality Management District, California Environmental Quality Act and Federal Conformity Guidelines, August 2016 (<https://www.mdaqmd.ca.gov/home/showdocument?id=192>)

Projects in MDAB with construction-related emission or operational emissions that exceed any of their respective emission thresholds would be considered significant under MDAQMD guidelines. CALEEMod version 2016.3.2 was used to calculate the construction and operational emissions associated for the Project. A copy of the report is included in Appendix B. It should be noted that the emissions were determined for the construction of the Project at a site in Moreno Valley, California. However, the construction and operational equipment and schedule utilized for the Project will be the same for the Victorville location. Therefore, the estimated emissions are the same. Construction related emissions for the Project are provided in Table 2. No pollutant emissions rates would exceed their respective MDAQMD threshold.

Table 2: Short-term Project Construction Emissions

Construction Phase	Total Pollutant Emissions (lbs/day)							
	VOC	NO _x	CO	SO _x	Fugitive PM ₁₀	Exhaust PM ₁₀	Fugitive PM _{2.5}	Exhaust PM _{2.5}
Site Preparation	2	24	13	<1	<1	<1	<1	<1
Grading	2	24	11	<1	3	1	1	1
Building Construction	3	23	19	<1	<1	1	<1	1
Paving	1	13	13	<1	<1	<1	<1	<1
Architectural Coating	56	2	2	<1	<1	<1	<1	<1
Peak Daily	56	2	2	<1	4		2	
MDAQMD Thresholds	137	137	548	65	85		65	
Emissions Exceed Threshold?	No	No	No	No	No		No	

Sources: Mojave Desert Air Quality Management District, California Environmental Quality Act and Federal Conformity Guidelines, August 2016 (<https://www.mdaqmd.ca.gov/home/showdocument?id=192>) and LSA Air Quality & Climate Change Modeling for the Stratos Fuel Hydrogen Plant in Moreno Valley, California dated May 29, 2018.
Note: Column totals may not add up due to rounding of model results.

Project-generated dust would be controlled by adhering to MDAQMD fugitive dust requirements (Rule 403), which require “every reasonable precaution” to minimize fugitive dust emissions and prohibits greater than 100 micrograms per cubic meter difference between upwind and downwind particulate concentrations at the property line for a minimum of 5 hours. Dust suppression techniques include periodic watering of disturbed areas and the minimization of clearing and grading to the maximum extent feasible.

Operations: The Project would generate operational emissions over the life-time of the Project. When in operation, the Project would have up to 50 office staff and 5 to 25 daily hydrogen distribution truck trips. Emissions from the combustion of natural gas in the SMR, use of electricity during the hydrogen electrolysis project, and diesel exhaust from the haul trucks. Where possible, renewable energy sources would be used during operations. Natural gas and electricity providers are still being evaluated as of the date of this Initial Study. Estimated emissions during operations are provided in Table 3.

Table 3: Estimated Operational Project Emissions

Source	Estimated Pollutant Emissions (lbs/day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Stationary Sources	3	<1	<1	<1	<1	<1
Energy Sources	<1	<1	<1	<1	<1	<1
Mobile Sources	<1	2	4	<1	1	<1
Steam Methane Reformer	8	28	63	2	11	11
Truck-Loading Equipment	<1	3	2	<1	<1	<1
Project Emissions	11	34	71	2	13	12
MDAQMD Thresholds	137	137	548	65	85	65
Emissions Exceed Threshold?	No	No	No	No	No	No
Sources: Mojave Desert Air Quality Management District, California Environmental Quality Act and Federal Conformity Guidelines, August 2016 (https://www.mdaqmd.ca.gov/home/showdocument?id=192) and LSA Air Quality & Climate Change Modeling for the Stratos Fuel Hydrogen Plant in Moreno Valley, California dated May 29, 2018. Note: Column totals may not add up due to rounding of model results.						

The installation of equipment related to electrolysis, steam methane reformation, and cryogenic liquid hydrogen, or any other stationary equipment proposed as part of the Project would require a Title V permit from MDAQMD. Once a final Title V permit is issued, it does not need to be renewed until five years from the effective date. The Project must comply with all new periodic monitoring and recordkeeping requirements. The Project would be subject to reporting requirements such as deviation (non-compliance) reports, semi-annual monitoring reports and annual compliance certification reports. Title V requires additional periodic monitoring for the State Implementation Plan-approved, federally enforceable rules that do not contain sufficient monitoring requirements to assure compliance with the emission limitations or other requirements. The MDAQMD has developed guidelines for periodic monitoring, testing, and recordkeeping requirements that may be incorporated in Title V permits.

The Title V permitting process would be separate from the general occupancy permits and entitlements issued by the City of Victorville and would provide controls for emissions associated with any new stationary source equipment proposed for the Project.

As shown in Tables 2 and 3, the construction and operational project emissions would not exceed MDAQMD significance thresholds. Therefore, the Project is not anticipated to violate any air quality standard or contribute substantially to an existing or projected air quality violation. Impacts from construction and operation of the Project would be less than significant.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?			X	

For the Project area, the setting for air quality includes San Bernardino County and MDAB. The region is designated as a nonattainment area for the federal ozone (O₃) and PM₁₀ standards and is also a nonattainment area for the state standards for O₃, PM₁₀ and PM_{2.5} standards. Cumulative growth in population, vehicle use, and industrial activity could inhibit efforts to improve regional air quality and attain the ambient air quality standards. This cumulative analysis consists of the MDAB and associated growth and development anticipated for MDAB.

The MDAQMD's approach to assessing cumulative impacts is based on whether a project would result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations. In other words, the MDAQMD considers the impact of a project to be less than cumulatively considerable if it does not exceed significance thresholds under project-level conditions and does not conflict with the MDAQMD's air quality plans. As shown in Table 2 and 3, the Project would not exceed MDAQMD construction or operational emission thresholds. Additionally, the Project would not conflict with any MDAQMD air quality plans. Therefore, the proposed Project would result in less than significant cumulative air quality impacts.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Expose sensitive receptors to substantial pollutant concentrations?				X

MDAQMD identifies sensitive receptors as residences, schools, daycare centers, playgrounds and medical facilities. For sensitive receptors, an industrial project must use significance threshold criteria number 4 for sensitive receptors within 1,000 feet. No sensitive receptors were identified within 1,000 feet of the Project. No impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Create objectionable odors affecting a substantial number of people?			X	

Hydrogen is a colorless, odorless, and tasteless. Examples of projects that have the potential to generate considerable odors include oil refineries, coal plants, metallurgy facilities, and select food production facilities. Diesel truck trips would be a new odor source. However, there are no sensitive receptors within the vicinity of the site that would be affected by the additional trucks at the site. Impacts from the development of the Project would be the same or substantially similar to those identified for the area. Therefore, impacts of the Project from objectional odors are expected to be less than significant.

5.3.2 Mitigation Measures

Mitigation measures included in the Title V permit would be implemented for construction and operations of the Project. Additionally, during construction measures provided in Rule 403 would be implemented to mitigate fugitive dust from the Project. These measures include:

- AQ-1:** The Project shall not cause or allow the emissions of fugitive dust from any transport, handling, construction or storage activity so that the presence of such dust remains visible in the atmosphere beyond the property line of the emission source.
- AQ-2:** The Project take every reasonable precaution to minimize fugitive dust emissions from wrecking, excavation, grading, clearing of land and solid waste disposal operations
- AQ-3:** The Project shall not cause or allow particulate matter to exceed 100 micrograms per cubic meter when determined as the difference between upwind and downwind samples collected on high volume samplers at the property line for a minimum of five hours.
- AQ-4:** The Project shall take every reasonable precaution to prevent visible particulate matter from being deposited upon public roadways as a direct result of their operations. Reasonable precautions shall include, but are not limited to, the removal of particulate matter from equipment prior to movement on paved streets or the prompt removal of any material from paved streets onto which such material has been deposited.

5.4 Biological Resources

The proposed Project is located in the western-edge of the Mojave Desert in San Bernardino County. Based on available information from US Fish and Wildlife Service (USFWS), California Native Plant Society Rare Plant Ranks (CRPR), California Natural Diversity Database (CNDDDB), and California Department of Fish and Wildlife (CDFW), seven rare plant species and eleven wildlife species were identified as having the potential for occurrence in the Project area (within five miles). These species are listed in Table 4.

Table 4: Plants and Wildlife with Potential to Occur in the Project Area

Species Name (<i>Scientific name</i>)	Status	Habitat	Potential to Occur at Project Site
Plants			
White pygmy-poppy (<i>Canbya candida</i>)	Federal: None State: None CRPR: Limited distribution, fairly threatened	Gravelly, sandy, granitic; Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland	Marginal or limited habitat occurs within Project area. No known occurrences within five miles of the Project.
Mojave monkeyflower (<i>Mimulus mohaensis</i>)	Federal: None State: None CRPR: Rare or endangered in California and elsewhere, fairly endangered	Sandy or gravelly, often in washes; Joshua tree woodland, Mojavean desert scrub	Marginal or limited habitat occurs within Project area. Known occurrences exist within five miles of the Project.
Beaver Dam breadroot (<i>Pediomelum castoreum</i>)	Federal: None State: None CRPR: Rare or endangered in California and elsewhere, fairly endangered	Sandy, washes, and roadcuts; Joshua tree woodland, Mojavean desert scrub	Suitable habitat occurs within Project area. Known occurrences exist within five miles of the Project.
Booth's evening primrose (<i>Eremothera bothii</i> ssp. <i>Boothii</i>)	Federal: None State: None CRPR: Rare or endangered in California and elsewhere, not very endangered	Sandy, washes and roadcuts; Joshua tree woodland; Mojavean desert scrub	Suitable habitat occurs within Project area. Known occurrences exist within five miles of the Project.

Species Name (Scientific name)	Status	Habitat	Potential to Occur at Project Site
Mojave fish-hook cactus (<i>Scelerocactus polyancistrus</i>)	Federal: None State: None CRPR: Limited distribution, fairly threatened	Commonly found in carbonate soils; Great Basin scrub; Joshua tree woodland; Mojavean desert scrub	Marginal or limited habitat occurs within Project area. Known occurrences exist within five miles of the Project.
Wildlife			
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	Federal: Endangered State: Endangered	Breeds in vegetation alongside rivers, streams, or wetlands. Nests are typically placed in trees where the plant growth is most dense, where trees and shrubs have vegetation near ground level and where there is a low density canopy.	Critical habitat found along Mojave River, approximately one mile east of the Project site. Site is not located within designated critical habitat.
Least Bell's vireo (<i>Vireo bellii pusicius</i>)	Federal: Endangered State: Endangered	Nesting habitat typically consists of well-developed overstories and understories and low densities of aquatic and herbaceous cover. The understory frequently contains dense vegetation.	Limited habitat in Project area. No known occurrences with five miles of Project.
California condor (<i>Gymnogyps californianus</i>)	Federal: Endangered State: Endangered	Foraging habitat includes open grasslands and oak savanna foothills that support populations of large mammals such as deer and cattle. Nests are located in shallow caves and rock crevices on cliffs where there is minimal disturbance.	Limited habitat in Project area. No known occurrences with five miles of Project.
Desert tortoise (<i>Gopherus agassizii</i>)	Federal: Threatened State: Threatened	Desert valleys with vegetation communities such as alluvial fan, saltbush, creosote bush, dert scrub, and yuccas. Burrows in soil, under rocks, and along washes.	Suitable habitat occurs in within the Project area. Known occurrences exist within five miles of the Project.
Mohave ground squirrel (<i>Xerospermophilus mohavensis</i>)	Federal: None State: Threatened	Flat or moderately sloped desert habitats with deep sandy or gravelly friable soils. Found in habitats with abundant annual herbaceous vegetation, alluvial fans, desert sink shrublands, and creosote bush scrub.	Suitable habitat occurs within the Project area. Known occurrences exist within five miles of the Project.
Swainson's hawk (<i>Buteo swainsoni</i>)	Federal: None State: Threatened	Breeding habitat typically occurs in grasslands with sparse trees, riparian	Limited habitat in Project area. No known occurrences with five miles of Project.

Species Name (<i>Scientific name</i>)	Status	Habitat	Potential to Occur at Project Site
		habitats, juniper-sage flats, and agricultural lands with large trees. Historic ranges included the Mojave Desert, but southern populations have declined dramatically.	
Burrowing owl (<i>Athene cunicularia</i>)	Federal: None State: Species of Special Concern	Open grasslands including prairies, plains, and savannah or vacant lots	Suitable habitat occurs in within the Project area. Known occurrences exist within five miles of the Project.
Loggerhead shrike (<i>Lanius ludovicianus</i>)	Federal: None State: Species of Special Concern	Deserts, grasslands, savanna, and chaparral with scattered shrubs and trees or other perches for hunting	Suitable habitat occurs in within the Project area. Known occurrences exist within five miles of the Project.
Golden eagle (<i>Aquila chrysaetos</i>)	Federal: None State: Fully Protected Species	Prairies, sagebrush, savannah or sparse woodlands, and barren hills or mountainous areas. Nests on rocky cliff edges or in large trees such as eucalyptus or oak.	Limited foraging habitat in Project area. No nesting habitat present.
Desert kit fox (<i>Vulpes macrotis arsipus</i>)	Federal: None State: Fur-bearing mammal	Annual grasslands or grassy open stages of vegetation dominated by scattered brush, shrubs, and scrub.	Suitable habitat occurs in within the Project area. Known occurrences exist within five miles of the Project.
American badger (<i>Taxidea taxus</i>)	Federal: None State: Species of Special Concern and Fur-bearing mammal	Most abundant in drier open stages of most scrub, forest and herbaceous habitats with friable soils.	Limited habitat in Project area. No known occurrences with five miles of the Project.

Habitat at the Project site is generally unsuitable for the species listed in Table 4. A review of USFWS's Environmental Conservation Online System website indicates there is no critical habitat designated under the Endangered Species Act on or near the proposed Project site. The nearest critical habitat (for southwestern willow flycatcher) is found along the Mojave River a mile east of the site.

Because the proposed Project site was previously developed and used and now in a disturbed condition, a biological survey was not conducted. A site visit was conducted by exp personnel on September 29, 2020. No evidence of protected or sensitive wildlife or plant species or habitat was observed.

5.4.1 Analysis of Environmental Impacts

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service?		X		

No sightings of any candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW and USFWS occurred during the September 29, 2020 site visit. Additionally, the proposed Project site is developed and two of the buildings are being actively used for storage. The remaining buildings are empty and not in use. The Project site is situated in a heavily industrialized area with low value habitat. Areas of suitable habitat would be located to the northeast and east near the Mojave River.

Due to the proximity of suitable habitat and documented sightings in the vicinity of the proposed Project of candidate, sensitive, or special status species listed in Table 4, mitigation measures would be implemented to ensure less than significant impact occurs during project construction. Mitigation measures would include pre-construction surveys prior to any ground disturbance or construction and monitoring during construction activities, as required.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?				X

The proposed Project site is not located within any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW and USFWS. No impacts would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X

The site is previously disturbed / developed and gently slopes toward the southwest. It lies entirely within a single map unit of Mohave variant loamy sand with 0-2 percent slopes. These soils are sandy, well drained soils and are not hydric soils (USDA 2020). Much of the site is unvegetated but portions have what is best described as a disturbed Mohave creosote bush scrub vegetation. A site visit revealed no hydrophytic vegetation and no hydrologic evidence of waters of the US that would be jurisdictional under Section 404 of the Clean Water Act. An ephemeral stream channel located across Perimeter Road from the Project site and approximately 260 feet to the east of site is the nearest hydrologic feature and drains north and east approximately 4,200 feet to the Mohave River. A manmade swale is located along the perimeter of the site which drains toward a former retention pond at the southwest corner

of the site. As no federally protected wetlands or waters of the US are located on or adjacent the site, there will be no direct on federally protected wetlands. No impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				X

The proposed Project site is developed, fenced, and located in an industrial zoned area. Development of the site would therefore not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. The nearest wildlife corridor is the Mojave River, which is located approximately one mile east of the site and separated from the site by Perimeter Road along the eastern site boundary, a former landfill, a large area of undeveloped land, and Shay Road. No impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X

Per City of Victorville Municipal Code 13.33 (Ordinance 1224), it is unlawful for any person to cut, damage, destroy, dig up, or harvest any Joshua tree (*Yucca brevifolia*) without the prior written consent of the director of parks and recreation. Additionally, the Western Joshua Tree has been listed as a Candidate Species by CDFW. During the Candidacy period, the species is fully protected and may not be disturbed, harmed or removed. The approximately 7-acre Project site is previously developed and disturbed and largely unvegetated. A reconnaissance of the site indicates there are no Joshua trees on the property, thus no Joshua trees would be cut, damaged, or destroyed during Project development. Project development would not conflict with this ordinance or any others regarding biological resources. No impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

The proposed Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. The proposed project site is within the SLCA Specific Plan area and has been zoned as Industrial. No impact would occur.

The nearest area with a habitat conservation plan is north of the site for the High Desert Power Plant which is located approximately 2 miles north of the Project site. The listed species covered by the plan is the desert tortoise.

5.4.2 Mitigation Measures

- BIO-1:** Since the areas surrounding the Project site provides suitable habitat for the desert tortoise and Mohave ground squirrel, pre-construction surveys will be performed prior to any ground disturbance or construction. Should any desert tortoises or Mohave ground squirrels be identified during the surveys, a management plan will be prepared in consultation with the CDFW that will outline protection and mitigation measures that will be implemented during construction activities. The management plan will be subject to the approval of the CDFW.
- BIO-2:** Thirty (30) days prior to any ground disturbance or construction, field surveys will be conducted for burrowing owls. Should any burrowing owls or active burrows be identified during the surveys, a Burrowing Owl Management Plan will be prepared in consultation with CDFW. The purpose of the Burrowing Owl Management Plan will be to outline protection and avoidance and minimization measures that will be implemented for the Project. The Burrowing Owl Management Plan will be subject to the approval of CDFW.

5.5 Cultural Resources

A California cultural history summary was prepared by EXP. (Appendix C) for the proposed Project to determine if cultural resources were present in or adjacent to the Area of Potential Effects (APE) and assess the sensitivity of the APE for undiscovered or buried cultural resources. The APE is the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties. The APE for the proposed Project includes all of the proposed Project components described in the Project Description.

In September 2020, a cultural resources records search was conducted through the South Central Coastal Information Center at California State University, Fullerton. The records search results indicated that one historical resource, George Air Force Base, was located within the project APE. An additional 17 resources have been documented within a one-mile radius of the APE. These resources include 15 prehistoric resources and two historic resources. Of the 15 prehistoric resources, seven are considered Isolated Finds consisting of only a few artifacts. The eight prehistoric sites consist of primarily lithic scatters (n=6), and also include one quarry site, and one bedrock milling feature. The other two historic sites consist of one residential property and one historic military property.

Twenty-three cultural resources investigations and subsequent reports were conducted within a one-mile radius of the Project area between 1980 and 2013. A wide range of surveys for various construction projects associated with development were undertaken. The projects included four inventories of the George Air Force Base, four waterline projects, three sewer pipeline projects, three transmission projects, two historical properties surveys, one electrical infrastructure project, one airport and railway project, one roads project, one Mojave River project, one general construction undertaking, one weed eradication project, and one solar project.

Because the proposed Project site was previously developed and used and now in a disturbed condition, a cultural resources field survey was not conducted. Seven structures were identified at the Project site during a site visit on September 29, 2020. The buildings are all associated with former operation of a munitions storage facility associated with George Air Force Base. Currently, two of the buildings are being actively used for storage. The remaining buildings are empty and not in use.

5.5.1 Analysis of Environmental Impacts

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?			X	

In September 2020, a cultural resources records search was conducted through the South Central Coastal Information Center at California State University, Fullerton. The records search results indicated that one historical resource, the George Air Force Base, was previously recorded within the Project APE. An additional 17 resources have been documented within a one-mile radius of the APE.

The project APE is located within site P-36-025787, the historic George Air Force Base, a large site and potential historical district. While a detailed history of the George Air Force Base exists (Air Force Historical Research Agency), according to McKenna the Base as a whole, has never been fully evaluated to the National Register of Historic Places (NRHP) or California Register of Historical Resources (CRHR). In 2012 McKenna evaluated four resources within their project area associated with George Air Force Base, which were treated as features or components of the larger resource, all of which were determined insignificant as individual resources to the NRHP. McKenna recommended monitoring for the Air Expressway Sewer Station project, and with the monitoring program in place, a MND was deemed appropriate with respect to cultural resources.

In 1991 Woodman conducted an architectural and historical evaluation of George Air Force Base. All World War II buildings were inspected, and the study made specific recommendations in determining significance for these specific buildings located on the Base. More than 200 buildings were constructed on the Base between 1941-1942, and fewer than 100 remain today. One hundred and forty structures were evaluated as a result of this study and only four were considered eligible for listing on the NRHP. The four eligible resources included a hangar facility for heavy bombers; a large structure designed to contain live ammunition from military aircraft for test firing before aerial maneuvers, one pursuit plane revetment, and one bomber revetment.

As a result of the field survey seven historical structures were identified and documented within the project APE. The buildings are all associated with the historic George Air Force Base. Three of these buildings are planned for use as part of operations for the Project. These buildings are shown on Figure 2.

Prior to construction activities, the existing building will be evaluated and documented in accordance with NRHP and CRHR eligibility criteria. Considering that these buildings were constructed after 1953, it is not likely result in impact to Historic Properties or Historical Resources. The 17 cultural resources in the APE were evaluated using NRHP and CRHR eligibility criteria and determined to be not eligible for listing in the NRHP or CRHR. Impacts of the Projects on substantial adverse change in the significance of a historic resource are expected to be less than significant.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?				X

As previously mentioned in response to question a) of this section, the records search conducted for the proposed Project indicated that one previously recorded historic resource is located within the Project APE. P-36-025787, former George Air Force Base, has not been evaluated as a whole because the site represents a large historical district. However, portions of the George Air Force Base have been evaluated, and they have been determined to be not significant to the NRHP or CRHA under any criteria.

The buildings associated with former George Air Force Base in the current Project are recommended as not significant to the overall eligibility of the Base for listing in the NRHP or CRHA under any criteria. As such, the proposed Project would result in no impact to known archaeological resources.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Disturb any human remains, including those interred outside of dedicated cemeteries?		X		

No formal cemeteries are located within the project site. It is not possible to ascertain with absolute certainty that remains are not present without either test excavation or use of ground-penetrating radar; however, the likelihood of the Project area containing human remains is deemed low. No impacts to human remains are anticipated; however, if any are encountered during ground-disturbing construction activities, mitigation measures would be implemented reduce potential impacts to a less than significant level.

5.5.2 Mitigation Measures

A qualified archaeologist shall monitor all ground disturbing activities within native sediments. If subsurface deposits believed to be cultural or human in origin are discovered during construction, then all work must halt within a 100-foot radius of the discovery. The archaeologist shall evaluate the significance of the find and shall have the authority to modify the no-work radius as appropriate, using professional judgment. Depending on the nature of the find, the following notifications may be required:

- CUL-1:** If the professional archaeologist determines that the find does not represent a cultural resource, then work may resume immediately, and no agency notifications are required.
- CUL-2:** If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, then the archaeologist shall immediately notify the City of Victorville. The City of Victorville shall make a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines. Work cannot resume within the no-work radius until the City, through consultation as appropriate, determines that the site either: 1) is not a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines; or 2) that the treatment measures have been completed to their satisfaction.
- CUL-3:** If the find includes human remains, or remains that are potentially human, then the archaeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the San Bernardino County Coroner (per Section 7050.5 of the Health and Safety Code). The provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California Public Resources Code, and Assembly Bill 2641 will be implemented. Work cannot resume within the no-work radius until the City, through consultation as appropriate, determines that the treatment measures have been completed to their satisfaction.

5.6 Energy

5.6.1 Analysis of Environmental Impacts

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	

The Proposed Project's objectives are to construct and operate a 100 percent renewable hydrogen production facility that will provide gas and liquid hydrogen for distribution to local and regional hydrogen fueling stations for use in electric fuel cell vehicles. This facility will assist California with meeting its goal of cutting greenhouse

gas emissions to 40 percent below 1990 levels by 2030 and the health-based air quality requirements established in the federal Clean Air Act. The operation of the proposed Project would create an alternative fuel over its planned lifetime and decrease the need for fossil fuels, which is considered a beneficial impact to statewide air quality.

Construction of the Proposed Project would require the use of fossil fuel powered equipment and vehicles. There are no established thresholds of significance, statewide or locally, for what constitutes a wasteful, inefficient, and unnecessary consumption of energy for a proposed land use project. Measures will be put in place that would limit the unnecessary fuel consumption, such as limit idling of heavy construction equipment, maintaining proper tire pressure, and adjusting belts to the proper tension.

The proposed Project would have a less than significant impact due to wasteful, inefficient, or unnecessary consumption of energy sources during construction and operation.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				X

As described above, the objective of the Project is to produce gas and liquid hydrogen that would replace usage of fossil fuels. The proposed Project would provide a renewable energy resource that will help California achieve its goal of reducing greenhouse gas emissions by 40 percent by 2030 thereby increasing overall air quality in the state. The Project would represent a beneficial impact to the state's goal of increasing renewable energy usage.

5.6.2 Mitigation Measures

- EN-1:** Limiting idling of heavy construction equipment maintaining proper tire pressure for equipment and trucks, and adjusting equipment belts to the proper tension to limit unnecessary fuel consumption.

5.7 Geology and Soils

The project site is located on the central portion of the Mojave Desert Geomorphic Province, which occupies a significant portion of southeastern California, and smaller portions of central California, southern Nevada, and western Arizona. The Mojave Desert Geomorphic Province is characterized by broad expanses of desert with localized mountains and dry lakebeds. The province is bounded by the Tehachapi, San Gabriel and San Bernardino Mountains to the west and southwest, Pinto Fault to the south, San Andreas Fault to the west, Garlock Fault to the north, and the Basin and Range Province to the east. Most of the faults within the central Mojave Desert trend to the northwest, parallel to the San Andreas Fault Zone, and truncate against the Garlock Fault, trending to the northeast. The closest known fault to the project site is the Helendale Fault located approximately 11.5 miles northeast of the project site (USGS, 1986).

According to the Web Soil Survey, one soil unit, or type, has been mapped within the Project site: 150-Mohave Variant Loamy Sand, 0 to 2 percent slopes (hksr).

5.7.1 Analysis of Environmental Impacts

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based			X	

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. ii) Strong seismic ground shaking? iii) Seismic-related ground failure, including liquefaction? iv) Landslides?				

- i. The project site is not located within an Alquist-Priolo earthquake fault zone (CDOC 2020). The closest known fault to the project site is the Helendale Fault located approximately 11.5 miles northeast of the project site. No earthquake fault zone boundaries or County designated fault zones were identified at the Project site (SBCo 2010). Therefore, ground rupture as a result of an earthquake fault traversing the project site would not be likely. A less than significant impact would occur.
- ii. The City of Victorville, as is most of Southern California, is located in a seismically active area. Earthquakes from active or potentially active faults in the region could affect the proposed Project site with strong ground shaking. The design and construction of the Proposed Project would adhere to all applicable provisions of the California Building Code and all grading and construction plans would be reviewed and approved by the City of Victorville. This would ensure that all proposed structures are adequately designed and constructed to reduce the risk of loss, injury, or death resulting from strong ground shaking. A less than significant impact would occur.
- iii. The California Geologic Survey (CGS) Seismic Hazards Program delineates areas prone to ground failure and other earthquake-related hazards including soil liquefaction (the failure of water-saturated soil), earthquake-induced landslides, surface fault rupture, and tsunami inundation. The program maps known seismic hazards, and designates zones of required investigation that identify areas where a site-specific hazard study and report with recommended countermeasures must be completed before a work permit is approved to construct buildings. The Alquist-Priolo Earthquake Fault Zoning Act (1972) and the Seismic Hazards Mapping Act (1990) direct the California State Geologist to delineate regulatory "Zones of Required Investigation" to reduce the threat to public health and safety and to minimize the loss of life and property posed by earthquake-triggered ground failures. Seismic hazard maps produced by CGS show fault, fault traces, liquefaction zones, and earth-quake induced landslides zones.

Potential hazards due to liquefaction include the loss of bearing strength beneath structures, possibly causing foundation failure and/or significant settlements. Areas to the south and east of the Project site are susceptible to liquefaction (SBCo 2010). However, the Project site is not located within an area as identified as susceptible to liquefaction. The primary factors for increased liquefaction susceptibility include areas subject to high seismicity, shallow groundwater, and young, poorly consolidated sandy alluvium. Liquefaction susceptibility is generally considered high if groundwater depth is less than ten feet beneath the ground surface, moderate if ground water depth is between ten and thirty feet, and low if groundwater is between thirty and fifty feet deep. Liquefaction is usually not considered a hazard if the groundwater table is greater than fifty feet in depth. Groundwater beneath the site is anticipated to be approximately 125 to 150 feet below ground surface. Considering that the Project is not located in liquification area and the depth to groundwater is greater than 50 feet, it is anticipated that the liquefaction potential beneath the Project site is low. Additionally, design and construction of the proposed Project would adhere to all applicable provisions of the California Building Code and all grading and construction plans would be reviewed and approved by the City of Victorville. This would ensure that all proposed structures are adequately designed and constructed to minimize impacts from seismic-related ground failure, including liquefaction. Impacts would be less than significant.

- iv. The Project site is located on relatively flat land at an elevation of approximately 2,860 feet above msl. There is no steep topography at the site or in the immediate vicinity of the Project site. Additionally, the Project site is not located in an area identified for landslide potential (SBCo 2010). Therefore, the landslide potential at the site is considered low. Project grading plans would adhere to the California Building Code and would be reviewed by the City of Victorville, and would ensure grading activities at the Project site would not create the potential for landslides. Impacts would be less than significant.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Result in substantial soil erosion or the loss of topsoil?			X	

The Project site was previously developed as part of the George Air Force Base, which has disturbed topsoil. Project construction would require some grading at the equipment locations. Where possible, existing buildings would be re-used and thereby reducing soil disturbance during construction of this Project. Other areas of the Project site would be paved over and landscaped, which would minimize soil erosion. Additionally, a general permit for stormwater discharges from construction activities regulated under the NPDES stormwater permitting program would be obtained prior to the start of construction. As part of the permit requirements, a Stormwater Pollution Prevention Plan (SWPPP) would be prepared and include Best Management Practices (BMPs) that will be designed to prevent soil erosion and the discharge of sediment into the local storm drains during the Project's construction phase. As a result, the impacts would be less than significant

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	

The Project site is not located within an area that is subject to liquefaction or landslides (See Question a). The soils underlying the Project site are described as very deep and well drained loamy sands that possess a low potential for shrinking and swelling. Since the soils have a low shrink-swell potential, the potential for lateral spreading resulting from an influx of groundwater is very low. The likelihood of lateral spreading will be further reduced since the grading and excavation activities at the site would not extend to depth groundwater, which is expected at depths of 125 to 150 feet. Additionally, the Project would not require direct extraction of groundwater. Therefore, the potential impacts are will be less than significant

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			X	

Expansive soils contain large amounts of clays that expand when wetted and cause damage to foundations if moisture collects beneath structures (e.g., settlement, structure heave, or slab-on-grade foundation shifting). Wetting can occur as a result of precipitation, a rise in the water table, irrigation water application, water line leakage, and other factors. Damage from expansive soils also occurs when the soils dry out and contract. The soils underlying the Project site are described as very deep and well drained loamy sands that possess a low potential for expanding and contracting. Impacts from the Project are expected to be less than significant.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater?				X

Wastewater discharges for the Project are expected to be to an existing sewer line. No septic tanks or alternative wastewater disposal system is anticipated to be used as part of the Project. No impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
f) Destroy or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		

The subsurface deposits in the Project area are composed of younger Quaternary alluvium underlain by older Quaternary alluvium. The younger alluvium is unlikely to contain significant vertebrate fossils. There is potential for fossil vertebrates present in the older alluvium. Based on file search conducted by the Natural History Museum of Los Angeles County, four potential fossil localities were identified in the Project area. The closest known fossil vertebrate locality is LACM 7786, which is located between Adelanto and George Air Force Base (west-southwest of the Project site). Excavations are anticipated to be very shallow (less than 10 feet) for the Project and are unlikely to encounter significant fossil vertebrates. Deeper excavations could extend into the older alluvium potentially encountering fossil vertebrates. Mitigation measures would be implemented should deep excavations be required for footings. Therefore, impacts would be less than significant with mitigation incorporated.

5.7.2 Mitigation Measures

GEO-1: A qualified paleontologist shall be retained to conduct a paleontological assessment of the Project area. The paleontologist will determine if the older Quaternary sediments are being disturbed during deep excavations of ten feet below the ground surface or greater. If so, the paleontologist shall establish a monitoring program to recover any significant fossils that may be encountered. Sediment samples shall be collected and processed to determine the small fossil potential in the project area. Any fossils recovered during mitigation shall be deposited in an accredited and permanent scientific institution in consultation with the City of Victorville.

5.8 Green House Gases

Gases that trap heat in the atmosphere are called greenhouse gases (GHGs). There are four main GHGs: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated gases. Carbon dioxide enters the atmosphere through burning fossil fuels (coal, natural gas, and oil), solid waste, trees and other biological materials, and also as a result of certain chemical reactions (e.g., manufacture of cement). Methane is emitted during the production and transport of coal, natural gas, and oil. Nitrous oxide is emitted during agricultural and industrial activities, combustion of fossil fuels and solid waste, as well as during treatment of wastewater. Fluorinated gases are synthetic, powerful greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases include Hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride.

The primary sources² of GHG emissions in the United States are:

² <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>

- Transportation (28.2 percent of 2018 GHG emissions) – The transportation sector generates the largest share of GHG. GHG emissions from transportation primarily come from burning fossil fuel for our cars, trucks, ships, trains, and planes. Over 90 percent of the fuel used for transportation is petroleum based, which includes primarily gasoline and diesel.
- Electricity production (26.9 percent of 2018 GHG emissions) – Electricity production generates the second largest share of GHG emissions. Approximately 63 percent of our electricity comes from burning fossil fuels, mostly coal and natural gas.
- Industry (22.0 percent of 2018 GHG emissions) – GHG emissions from industry primarily come from burning fossil fuels for energy, as well as GHG emissions from certain chemical reactions necessary to produce goods from raw materials.
- Commercial and Residential (12.3 percent of 2018 GHG emissions) – GHG emissions from businesses and homes arise primarily from fossil fuels burned for heat, the use of certain products that contain GHGs, and the handling of waste.
- Agriculture (9.9 percent of 2018 GHG emissions) – GHG emissions from agriculture come from livestock such as cows, agricultural soils, and rice production.
- Land Use and Forestry (11.6 percent of 2018 GHG emissions) – Land areas can act as a sink (absorbing CO₂ from the atmosphere) or a source of GHG emissions. In the United States, since 1990, managed forests and other lands are a net sink, i.e. they have absorbed more CO₂ from the atmosphere than they emit.

5.8.1 Analysis of Environmental Impacts

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	

MDAQMD's (2016) *California Environmental Quality Act (CEQA) And Federal Conformity Guidelines* identifies both annual and daily construction significance thresholds for GHG emissions. The Project is compared to the MDAQMD annual threshold of 100,000 metric tons of carbon dioxide equivalent (CO₂e) annually as well as the MDAQMD daily threshold of 578,000 pounds of CO₂e daily.

Construction: Construction related activities that would result in short-term GHG emissions. The same parameters were used as in Section 4.3.1 to estimate the potential GHG emissions that would be generated during construction activities. It should be noted that the emissions were determined for the construction of the Project at a site in Moreno Valley, California. However, the construction equipment and schedule utilized for the Project will be the same for the Victorville location. Therefore, the estimated emissions are the same. The estimated short-term GHG emissions for construction activities are included in Table 5.

Table 5: Short-Term Construction Greenhouse Gas Emissions

Construction Phase	Peak Annual Emissions (MT/yr)			Total Emissions (MT CO ₂ e)
	CO ₂	CH ₄	N ₂ O	
Site Preparation	3	<1	0	4
Grading	6	<1	0	6
Building Construction	346	<1	0	346
Paving	9	<1	0	9
Architectural Coating	2	<1	0	2
Total Construction Emissions				369
MDAQMD Annual Threshold				100,000
Emissions Exceed Thresholds				No
Source: LSA, May 2018				
MT/yr – metric tons per year				

As shown in Table 5, the short-term construction related GHG emissions would not exceed MDAQMD thresholds. A less than significant impact would occur.

Operations: The GHG emission estimates presented in Table 6 show the GHG emissions associated with the level of development envisioned by the proposed Project operating at full capacity.

Table 6: Project Operational Greenhouse Gas Emissions

Source	Pollutant Emissions (MT/yr)			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
Area Sources	<1	<1	0	<1
Energy Sources	193	<1	<1	194
Mobile Sources	177	<1	0	177
Truck-Loading Equipment	35	<1	0	35
Waste Sources	30	2	0	73
Water Usage	9	<1	<1	37
Total Project Operational Emissions	455	2	0	529
MDAQMD Annual Threshold				100,000
Emissions Exceed Thresholds				No
Source: LSA, May 2018				
MT/yr – metric tons per year				

As shown in Table 6, the operation GHG emissions for the Project would not exceed MDAQMD thresholds. A less than significant impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				X

The City of Victorville adopted a community-wide climate action plan (CAP) in September 2015. A climate action plan is a comprehensive strategy for a community to reduce emissions of GHGs, which, according to scientific consensus, are primarily responsible for causing climate change. The 2015 CAP presents GHG inventories, identifies the effectiveness of California initiatives to reduce GHG emissions, and identifies local measures to reduce GHG emissions and achieve a City-identified GHG reduction target. The City participated in the San Bernardino County Regional GHG Reduction Plan, which presents the collective results of all local efforts Countywide to reduce GHG emissions consistent with statewide GHG targets expressed in assembly bill (AB) 32. The City of Victorville used the technical information within the County Regional GHG Reduction Plan to develop the City CAP. The CAP builds on

this regional work and refines it to provide City-specific information and to develop the local implementation plan for Victorville-centric GHG reduction measures. The CAP identifies how the GHG reduction measures will be implemented and monitored by the City to ensure that progress is being made toward the GHG reduction target.

Specifically, the CAP establishes a GHG emissions reduction target for the year 2020 that is 29 percent below projected year 2020 emission levels. The GHG Plan is consistent with AB 32 and sets the City on a path to achieve a more substantial long-term reduction in the post-2020 period. Achieving this level of emissions would ensure that the contribution to GHG emissions from activities covered by the CAP would not be cumulatively considerable.

While the Project would emit some GHG emissions during construction and operations, the levels are well below the MDAQMD significance thresholds and those thresholds identified in the CAP. The purpose of the proposed Project is to provide an alternative fuel resource that would reduce GHG emissions from vehicles, which is consistent with California GHG-reducing legislature. Additionally, the Project would confirm with the CAP. No impact would occur.

5.8.2 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

5.9 Hazards and Hazardous Materials

5.9.1 Analysis of Environmental Impacts

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	

The construction phase of the Project would use and/or store on-site potential hazardous materials such as fuel, paint products, lubricants, solvents, and cleaning products. may be used and/or stored on-site during construction of the Project. However, due to the limited quantities of these materials to be used during construction, they are not considered hazardous to the public at large. In accordance with the City's hazardous materials policy, the transport, use, and storage of hazardous materials during the construction and operation of the site will be conducted pursuant to all applicable local, state and federal laws.

During operation, hazardous materials, namely hydrogen, would be produced during operation but shall comply with all applicable federal, state, and local laws and regulations pertaining to the transport, use, disposal, handling, and storage of hazardous waste, including but not limited to the IFC for hydrogen applications, the International Building Code and California Building Code (Title 24) for general construction requirements, the International Fuel Gas Code (IFGC), the NFPA 2 Hydrogen Technologies Code, the NFPA 55 for compressed gases and cryogenic fluids, the NFPA 70 for electrical infrastructure, the American Society of Mechanical Engineers (ASME) B31.12 standard on hydrogen piping and pipelines, and Title 49 of the Code of Federal Regulations implemented by Title 13 of the CCR, which describes strict regulations for the safe transportation of hazardous materials.

The City has no direct authority to regulate the transport of hazardous materials on State highways or rail lines. Transportation of hazardous materials by truck and rail is regulated by the US Department of Transportation (DOT). DOT regulations establish criteria for safe handling procedures. Federal safety standards are also included in the California Administrative Code. The California Health Services Department (DEH) regulates the haulers of hazardous waste. The Pipeline and Hazardous Materials Safety Administration (PHMSA) and Federal Motor Carrier Safety Administration (FMCSA) are responsible for the oversight of federal hazardous materials transportation regulations, including, but not limited to maintaining the National Hazardous Materials Route Registry, which is a reporting of all designated and restricted road and highway routes for transportation of hazardous materials.

The proposed Project site would be located in an area designated as Industrial under the SCLA Specific Plan. The closest residence are located approximately 1.7 miles east of the site. Hydrogen would be transported from the proposed Project site via trucks designed for the transport of hydrogen gas using a regional highway (Interstate 15), and local streets (D Street, Air Expressway, Phantom East and Perimeter Road).

Hydrogen delivery trucks entering and exiting the project site would be provided specific travel directions to the hydrogen facility and for deliveries to hydrogen refueling stations (i.e., primarily utilizing arterial streets and unrestricted highways, per the National Hazardous Materials Route Registry). Hydrogen delivery trucks (both liquid and gaseous) would be required to be in conformance with Hazardous Materials Transportation Act (HMTA) regulations pertaining to training, packaging, and operation of trucks transporting hydrogen, a flammable substance. The Project at buildout would generate up to 25 gaseous hydrogen tube trailer trucks traveling to and from the site per day. As noted by the US Department of Energy (DOE), hydrogen (and another alternative fuel, propane) have long histories of being used as fuel and both fuels can be used safely if their physical, chemical, and thermal properties are understood and if appropriate codes, standards, and guidelines are followed (DOE 2009). The Project site is located in an industrial and commercial utilized area and can be accessed primarily by highway and main arterial roadways. Transportation of hydrogen at the proposed level of up to 25 trucks, in accordance with federal, state, and local regulations and guidelines, would not result in a significant hazard to the public or the environment.

Hydrogen is a colorless, odorless, tasteless, highly flammable gas with a wide flammability range and can cause fires and explosions if not handled properly (OBED 2015). Hazards associated with liquid hydrogen are fire, explosion, and exposure to asphyxiation and to extremely low temperatures for those handling liquid hydrogen. Hydrogen will be stored on-site in its natural form as a gas as well as a cryogenic liquid in containers designed per NFPA 2, ASME B31.12, and NFPA 55 requirements. Before being installed, all of the equipment skids will go through partial factory acceptance testing at a qualified facility. The factory acceptance testing will include a full input/output check of instrumentation and cabling, as well as pressure testing of the pressurized process equipment skids.

Gaseous hydrogen is stored predominately in steel cylinders at a pressure of 150-200 bar and at an ambient temperature of approximately 298 Kelvin (76.73 Fahrenheit). Hydrogen is liquefied by reducing its temperature to -253 Celsius (-423.4 Fahrenheit). The most common conventional steel gaseous cylinders contain a volume of 40 liters and a pressure of 150 bar. In the last decade, significant progress has been made in a move towards lightweight cylinders using chrome-molybdenum steel. The individual cylinders would be clustered together to be filled and released at the proposed transfill station through just one valve, and the cylinders would be interconnected through high-pressure tubing. Hydrogen would be stored on-site also in liquid form in a double-walled, steel cryogenic tank with a capacity of 18,750 gallons (11,023 pounds). The California Accidental Release Prevention Program (CalARP) program requires the project operator to prepare a Hazardous Materials Business Emergency Plan for emergency response to a release or threatened release of a hazardous material in accordance with the standards prescribed in the regulations adopted pursuant to California Health and Safety Code Section 25503 and Section 25507 because the business would handle a hazardous material or a mixture containing a hazardous material that has a quantity at any one time above the thresholds described in Section 25507(a) (1) through (6) (i.e., liquid hydrogen in excess of 10,000 pounds). A Project-specific, Hazardous Materials Business Emergency Plan will be developed in accordance with the DOE's Hydrogen Safety Panel's Safety Planning for Hydrogen and Fuel Cell Projects, dated March 2016.

All on-site facilities would be constructed and operated in accordance with the NFPA 2 Hydrogen Technologies Code. The NFPA 2 code provides fundamental safeguards for the generation, installation, storage, piping, use, and handling of hydrogen in compressed gas as well as cryogenic liquid form. If hydrogen were to leak on-site, it would disperse into the air almost immediately because it is so light. As required under NFPA 2 and the IFC, the Project shall be designed to prevent hydrogen from leaking and shall incorporate redundant systems to shut down automatically in the unlikely event an accident occurs. StratosFuel's on-site offices will monitor the facility both on-site and remotely by cameras and electronically 24 hours a day. Flame detection and hydrogen gas sensors shall be

incorporated to ensure safe operating conditions. These elements, as well as programmed equipment alarms, will report back to a monitored systems control panel pursuant to IFC and NFPA 2 regulations.

NFPA 2 requires a hazard analysis to be conducted on every hydrogen fueling system installation by a qualified engineer(s) with proven expertise in hydrogen fueling systems, installations, and hazard analysis techniques. As required by the California Energy Commission (CEC), the StratosFuel has contracted Intertek, a third party quality assurance and certification tests contractor, to monitor the engineering process. Intertek would provide safety testing to ensure the Project complies with all OSHA, NFPA 2, IFC, and National Electrical Code (NEC) regulations, the site-specific Hazardous Materials Business Emergency Plan for emergency response to a release or threatened release of a hazardous material, as well as pursuant to California Health and Safety Code Section 25503 and Section 25507, and the CalARP Program. The third-party testing is incorporated into the site manuals and will be shared with fire & safety personnel of the City's Fire Department.

StratosFuel also be required to provide adequate access for emergency response apparatus and coordinate with the City Fire Department to establish preplanning strategies and ensure appropriate training and equipment for first responders in the event of an emergency. Pursuant to IFC 5003.9.1, the StratosFuel will invite the City Fire Department to tour the hydrogen facilities and focus attention on safety features and emergency shutoffs. Qualified project applicant staff will provide training to emergency response personnel to ensure proper understanding of appropriate response to a hydrogen incident. Additionally, the project applicant will maintain thermal imaging cameras and flame detectors on-site and ensure the City fire department has such equipment available for their use.

Compliance with all applicable local, state, and federal laws, including but not limited to Title 49 of the Code of Federal Regulations implemented by Title 13 of the CCR, CalARP Program, California Health and Safety Code Section 25503 and 25507, DEH, PHMSA, FMCSA, DOT, HMTA, CEC, OSHA, NFPA 2, IFC, IFGC, and NEC would ensure impacts from the routine transport, use, or disposal of hazardous materials as a result of development of the Project would be less than significant.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	

As detailed in response to Question a (see above), compliance with all applicable local, state, and federal laws, including but not limited to Title 49 of the Code of Federal Regulations implemented by Title 13 of the CCR, CalARP Program, California Health and Safety Code Section 25503 and 25507, DEH, PHMSA, FMCSA, DOT, HMTA, CEC, OSHA, NFPA 2, IFC, IFGC, and NEC would ensure operation of the proposed Project would implement redundant safeguards such as quality control of engineering, construction, and installation of equipment, leak detection devices, automatic shut-off valves, and 24-hour/7 days per week on-site and remote monitoring of the facility to prevent release of hazardous materials (i.e., hydrogen) into the environment. Therefore, impacts from upset and accident conditions involving the release of hazardous materials into the environment would be less than significant.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X

The handling of hazardous materials or emission of hazardous substances would occur pursuant to the Project-specific Hazardous Materials Business Emergency Plan for emergency response to a release or threatened release of a hazardous material in accordance with the standards prescribed in the regulations adopted pursuant to California Health and Safety Code Section 25503 and Section 25507. Additionally, the project would be constructed and operated in accordance with Title 49 of the Code of Federal Regulations implemented by Title 13 of the CCR, CalARP Program, California Health and Safety Code Section 25503 and 25507, DEH, PHMSA, DOT, HMTA, CEC, OSHA, NFPA 2, IFC, IFGC, and NEC to ensure proposed Project would implement redundant safeguards such as quality control of engineering, construction, and installation of equipment, leak detection devices, automatic shut-off valves, and 24-hour/7 days per week on-site and remote monitoring of the facility to prevent release of hazardous materials (i.e., hydrogen) into the environment. Specifically, through compliance with the DOT, PHMSA, and FMCSA for the oversight of federal hazardous materials transportation regulations, including, but not limited to maintaining the National Hazardous Materials Route Registry, which is a reporting of all designated and restricted road and highway routes for transportation of hazardous materials. There are no existing or proposed schools located within one-quarter mile of the Project site or roadways planned for use of the Project. Therefore, no impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?		X		

Pursuant to Government Code 65962.5, environmental regulatory database lists were reviewed to identify and locate properties with known hazardous substance contamination within the proposed project area (California Government Code, Section 65960 et seq.). Four State agencies are required to provide lists of facilities that have contributed, harbor, or are responsible for environmental contamination within their jurisdiction. The four State agencies that are required to provide these lists to the Secretary for Environmental Protection include the DTSC, the State Department for Health Services, the State Water Resources Control Board (SWRCB), and the California Integrated Waste Management Board (CIWMB). The Secretary for Environmental Protection then takes each of the four respective agency lists and forms one list, referred to as the Hazardous Waste and Substances Site List – Site Cleanup and also known as the Cortese List, which is made available to every city and/or county in California.

The Proposed project site was included as part of former George Air Force Base. The former air force base is listed on the Cortese list, US Environmental Protection Agency (EPA) National Priorities List (NPL). Under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also referred to as Superfund sites on the NPL are required to undertake "long-term remedial response actions that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening. Contamination at the base resulted from the use of potentially hazardous materials such as jet fuel, gasoline, paints, and solvents. Such materials were spilled or leaked into the soil and groundwater. The US Air Force is responsible for assessment and cleanup operations for the former air force base, which are currently ongoing.

Based on available soil and groundwater assessment maps, no soil or groundwater contamination has been identified at the Project site. Due to the Project site proximity to areas of soil contamination associated with former George Air Force Base, monitoring will be conducted during construction grading activities. A monitoring plan will be developed in accordance with US Air Force protocols and implemented during construction. Any soils with potential contamination will be appropriately characterized and disposed of following US Air Force requirements. With the implementation of this mitigation measure, impacts would be less than significant.

As part of Project site development, one of the “blast” berms is planned for removal. Prior to removal, additional assessment will be conducted to evaluate the berm soils for potential contamination. A sampling and analysis plan will be developed in accordance with US Air Force protocols, and any identified soil contamination will be disposed of in accordance with US Air Force requirements. With the implementation of this mitigation measure, impacts would be less than significant.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X

The Project is located to the east of the SCLA, and is located within the SCLA Specific Plan. The Specific Plan describes a commercial air facility and related uses for an approximately 8,703-acre site with the majority of the site (5,350 acres) within the realigned George AFB. A Comprehensive Airport Land Use Plan has been developed in conjunction with the Specific Plan to minimize potential land use conflicts.

Power or Power Generating Plant” is a permitted use allowed through a CUP process in areas designated as Industrial in the SCLA Specific Plan. According to the Comprehensive Land Use Plan and Airport Master Plan, the Proposed Project would be a compatible land use with the SCLA. No impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X

The Project site is not located within the vicinity of a private airstrip. Therefore, the proposed Project would not result in a safety hazard for people residing or working on the project site. No impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X

The City of Victorville Emergency Plan identifies emergency responses and actions. The Plan identifies the available emergency shelters in the event of an evacuation, including schools, fire stations, police stations, hospitals, casualty collection points, emergency operations center, and emergency command center. The Plan directs that persons living or working in an area adversely affected by a disaster should report to the appropriate shelters, as directed by local public safety officials. It also explains that persons injured or ill be taken to a casualty collection point (such as Victor Valley College) to obtain triage medical services.

The Project site does not include any emergency or public facilities that would be used during emergency response and would not involve closures of emergency routes. As such, the proposed Project would not impair or interfere with an adopted emergency response plan. No impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X

The Project site is not located within an area identified as having wildland fire potential (SBCo 2010). Therefore, the Project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires. No impact would occur.

5.9.2 Mitigation Measures

- HAZ-1:** During Project grading activities, excavated soil would be monitored in accordance with an approved monitoring plan for potential contamination. Any impacted soil would be characterized and disposed of in accordance with US Air Force requirements.
- HAZ-2:** Assessment will be conducted to evaluate the “blast” berm soils for potential contamination. A sampling and analysis plan will be developed in accordance with US Air Force protocols, and any identified soil contamination will be disposed of in accordance with US Air Force requirements.

5.10 Hydrology and Water Quality

Regional Hydrology

The Project site is located within the Mojave River Watershed, encompassing approximately 4,700 square miles within San Bernardino County; the main waterbody of the watershed is the Mojave River. The Mojave River’s headwaters are located in the San Bernardino Mountains, south of the City of Hesperia, and the river flows in a mostly northeasterly direction to terminate in Soda and Silver Dry Lakes near Baker, California. The main impoundment along the river’s length is at Silverwood Lake, a reservoir created in 1971 as a part of the State Water Project that is currently managed for recreation and water supply. The Mojave Forks Dam is another impoundment along the river’s length located approximately 20 miles south of the City. The river flows 26 miles from the Cedar Springs Dam (Silverwood Lake) in a northerly direction before passing to the east of the Project site through a natural canyon. The Mojave River is approximately one mile east of the Project site. Major tributaries to the Mojave River near the Project site include largely unnamed desert washes. All of the drainages in the Project site flow in a north or easterly direction towards the Mojave River.

The Project site is located within the Burkhardt Lake-Mojave River (HUC 180902080706, USGS 1978) subwatershed. This subwatershed shares a connection with the Mojave River.

Site Hydrology

The Project site and surrounding areas are mostly disturbed from previous development associated with the former George Air Force Base. There is vacant desert land containing sparse desert scrub vegetation to the east across Perimeter Road. The Project site contains several previously disturbed/developed areas consisting of old munitions storage structures and parking areas. The Project Site is approximately 10 acres in size and is located entirely on the previously disturbed land adjacent to the SCLA. The Project site is fairly level with grades between 0 to 2 percent, except for the “blast” berm. To the east of Perimeter Road, the land slopes east away from the Project site and toward the Mojave River with varying grades of 15 percent or more (NRCS 1986). An ephemeral drainage channel exists to the west of the Plant Site running in a northeasterly direction toward the Mohave River. The proposed Project will not directly impact the ephemeral stream/drainage. There are also ephemeral drainages east of the site across Perimeter Road. The Proposed Project will not directly impact these drainages.

5.10.1 Analysis of Environmental Impacts

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	

Construction: During construction of the Proposed Project water quality impacts could occur without proper controls. Soils loosened during grading, as well as spills of fluids or fuels from vehicles and equipment, if mobilized or transported offsite in overland flow, have the potential to degrade water quality. Because the area of disturbance affected by construction of the Proposed Project exceeds one acre, the Proposed Project would be subject to the requirements of the statewide NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (General Permit). Construction activity subject to this permit includes clearing, grading, and disturbances to the ground such as stockpiling or excavation.

During construction, to comply with the General Permit the applicant would be required to implement a SWPPP, which would include BMPs to prevent construction pollutants and products from violating any water quality standards or any waste discharge requirements. Compliance with the provisions of the NPDES General Permit would reduce impacts associated with water quality standards and discharge requirements during construction to a less than significant level.

Operations: Post-development conditions on the Project site could affect the quality and quantity of stormwater discharges originating from the Project site. To meet the requirements of RWQCB Order No. 2013-0001-DWQ, a Water Quality Management Plan (WQMP) will be prepared for the Proposed Project. The WQMP is intended to comply with the requirements of the City of Victorville and the Municipal Separate Storm Sewer Systems Permit (Phase II Small MS4 General Permit) for the Mojave River Watershed. The WQMP details stormwater treatment and other stormwater quality and quantity control measures that would be implemented to manage stormwater during Project operations. The ground surfaces beneath the flare would remain with native on-site soil. Precipitation would run off the hard surfaces onto the ground surface, sheet flow across the site, and infiltrate into the ground similar to the pre-Project conditions or be directed into a retention pond. Concrete equipment foundations for compressors, tanks and other equipment would be located sporadically throughout the Project site. Excess runoff would primarily be shallow sheet-like flows across the surfaces of the site. After flowing across the site, the runoff would enter on-site retention basins/swales along site perimeters, and then would overtop these basins as wide, shallow flow. The basins would be designed and constructed to overtop in a manner so as to preserve the existing runoff characteristics and locations to the greatest extent practical. As part of final designs, erosion control would be needed where flows enter and exit the retention basins. In general, existing runoff locations and characteristics entering and leaving the site would be preserved to the greatest extent practical.

BMPs included in the WQMP would help maintain water quality and waste discharge requirements during Project operation. Compliance with the provisions of the WQMP and the MS4 Permit would reduce impacts associated with water quality standards and discharge requirements during operations to a less than significant level.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?				X

No new direct construction related impacts to groundwater supplies, or groundwater recharge activities would occur as part of the proposed Project's development. No new water wells would be constructed onsite. Water may

be required during construction for site preparation and dust control. Possible water sources for construction include reclaimed and potable water agencies in the Project vicinity and trucked to the Project site. Water would also be required during operations for restrooms and a break room with sink. Since there would be restrooms onsite, a permanent water supply would be needed.

The greatest short-term demand for water by the Proposed Project could occur during construction. However, construction would be temporary (12 to 16 months). Operational water demand would be minor and would be obtained from the local water purveyor. For these reasons water needs for the Proposed Project during construction and operation are anticipated to be minimal and are not anticipated to substantially decrease water supplies. Impacts to groundwater supplies would be less than significant. The Proposed Project would result in a minimal increase of impervious surfaces on the Project site due to the previous disturbance and re-use of some existing buildings.

As previously explained in the response to Question a (see above), stormwater originating from the Project site would sheet flow across the site, and infiltrate into the ground similar to the pre-Project conditions. Excess runoff would be directed to onsite retention basins where water would be allowed to infiltrate into the groundwater. For these reasons, the proposed Project is not anticipated to interfere with groundwater recharge. Impacts would be less than significant.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i) result in a substantial erosion or siltation on- or off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; iii) create or contribute runoff water which exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv) impede or redirect flood flows?			X	

1. Permanent disturbance to the Project site would result from construction of vehicle access areas, equipment pads, buildings and grading of areas with slopes greater than 5 percent (former blast berms). Temporary disturbance to the site would result from construction staging areas. The Project design confines the facilities and vehicle access areas to the proposed footprint (see Figure 2). Project grading requirements are anticipated to be minimal, because the site is relatively flat and fairly level. The preliminary grading design, retention pond, and swales/basins would be designed to maintain the pre-Project flow rates, volumes, locations, and characteristics leaving the site in order to avoid adverse impacts downstream. Grading would be minimized to the greatest extent practical; and existing drainage patterns on the site would be kept as close as possible to their existing conditions. The Project's construction will not alter the course of any stream or river and would not result in substantial erosion or siltation on- or off-site. As such, impacts from erosion or siltation from the altering of drainage patterns would be less than significant.
2. Proposed modifications to the drainage patterns of the Project site would be minimal as discussed in Question c) i. The proposed Project would result in a minimal increase of impervious surfaces on the Project site. The net gain of impervious areas due to the construction of the Proposed Project would be minimal.

Stormwater originating from the Project site would sheet flow across the site and infiltrate into the ground similar to the pre-developed conditions. Excess runoff due to the addition of impervious surfaces would be directed to onsite basins where water would be allowed to infiltrate. As such impacts from flooding on- or off-site resulting from alterations of drainage patterns would be less than significant.

3. The proposed Project would result in little to no in impervious surfaces on the site which could result in slight alterations to the quantities and velocity of stormwater discharges relative to existing conditions. Proposed alterations to the Project site have been designed to maintain the predevelopment flow rates, volumes, locations, and characteristics leaving the site in order to avoid adverse impacts downstream. All stormwater runoff originating on the Project site would be conveyed to onsite basins replicating existing drainage patterns. The proposed basins would allow water to infiltrate on the Project site or to be carried offsite via existing drainage structures (ditches, drains and sewers).

Implementation of BMPs as part of the SWPPP and WQMP would minimize polluted runoff during Project construction and operation. Impacts would be less than significant.

4. The Federal Emergency Management Agency Flood Insurance Rate Map (FIRM), Number 06071C5805H covers the Project site. The effective date of the map is August 28, 2008. The entire Project site falls within Zone D, which is defined as “for areas where there are possible but undetermined flood hazards, as no analysis of flood hazards has been conducted.” The Project site is located outside of the mapped floodway, 100-year floodplain and “Area of Minimal Flood Hazard”. Therefore, the Project would not impede or redirect flood flows. No impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?				X

As indicated in c) iv., the Project site is located outside of the mapped floodway, 100-year floodplain and “Area of Minimal Flood Hazard”. Additionally, no major surface water bodies are located within the City of Victorville; therefore, the Project site would not be subject to inundation from seiches. Furthermore, the Project site is located in the Mojave Desert and, due to distance to the Pacific Ocean and intervening mountains, the Project site is not subject to tsunamis. Therefore, the Project would not risk release of pollutants due to inundation. No impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

Victorville Water District has prepared an Urban Water Management Plan (UWMP) to evaluate long-term resource planning and establish management measures to ensure adequate water supplies are available to meet existing and future demands. The UWMP provides a framework to help water suppliers maintain efficient use of urban water supplies, continue to promote conservation programs and policies, ensure that sufficient water supplies are available for future beneficial use, and provide a mechanism for response during water drought conditions. This plan was prepared in compliance with the California Water Code, and the guidelines and format established by the California Department of Water Resources. This UWMP includes a 25 year planning period from 2015 to 2040. Conservation programs include

Water conservation programs in the UWMP include voluntary water conservation, restrictions on water use during supply shortage and emergencies, water metering, conservation pricing, public information programs regarding

water use efficiency, increased educations regarding water conservation in schools, additional processes to assess and manage distribution loss, and incentive programs for homeowners that reduce water use with high efficiency washing machines and toilets and replacement of grass with water smart landscaping. With the conservation programs in place, the 2020 water consumption was at levels less than 2015. These conservation programs will be continued. Waste use during construction and operation of the Project would not obstruct the implementation the UWMP. Impacts would be less than significant

5.10.2 Mitigation Measures

Mitigation measures that would be implemented include:

HYDRO-1: Implementation of a SWPPP with BMPs to prevent construction stormwater to prevent pollutants and products from violating water quality standards or any waste discharge requirements.

HYDRO-2: Development of a WQMP and BMP during operations to maintain water quality and waste discharge requirements.

5.11 Land Use and Planning

The site was developed as a munitions storage area to support the former George Air Force Base. Currently, the site is used for storage by SCLA and the County of San Bernardino. Surrounding land uses include:

- **North of the Project site:** To the north is a portion of the munition storage facility and an area used as a storage yard. Approximately 550 feet north of the site is the High Desert Power Project, which is an 830 mega-watt (MW) power plant that produces electricity to serve the southern California area.
- **South of the Project Site:** To the south of the site is an approximate 150 wide area of undeveloped land followed by Phantom East roadway. Across Phantom East is approximately 300 feet of vacant undeveloped land. South of the vacant land are units formerly used by the Air Force Base for housing. The housing units have been abandoned.
- **East of the Project site:** Directly to the east is Perimeter Road. Across Perimeter Road is vacant land covered with desert scrub brush. A portion of the vacant land has been fenced off. Based on signage, the fenced area was formerly used as a landfill.
- **West of the Project Site:** To the west is Aviation Drive and a storage yard. To the west-northwest, is a strip of vacant, undeveloped land that is located between the site and Aviation Drive. The strip of land varies in width between 250 to 400 feet. Across Aviation Drive is International Aerospace Coatings which specializes in aircraft painting, interiors and graphics.

5.11.1 Analysis of Environmental Impacts

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?				X

The Project site consists of approximately 10 acres of previously disturbed/developed land within the SCLA Specific Plan. The Project site and is zoned for Industrial use. The Project site does not provide access to established communities and would not isolate any established communities or residences from neighboring communities. Development and operation of the Project would not physically divide the arrangement of an established community. No impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				X

The parcels where the project would be developed are located within the SCLA, which was developed upon closing of the former George Air Force Base. The Victor Valley Economic Development Authority (VVEDA) prepared a Reuse Plan for the base, which was adopted in April 1990, and a subsequent Activation Plan adopted in August 1996. The City of Victorville Planning Department has prepared Specific Plan 1-92 (SCLA Specific Plan and amendments) to more adequately assess the planning and environmental review procedures for development within the Specific Plan area. The Specific Plan is consistent with the VVEDA Activation Plan. The City of Victorville must review development plans to ensure they are consistent with the SCLA Specific Plan and therefore also consistent with the Activation Plan. The Specific Plan supersedes the City of Victorville Zoning Ordinance unless the issue is not addressed by the Specific Plan. The Specific Plan is also consistent with the Land Use, Housing, Circulation, Safety, Environmental Resources, Noise, and SCLA Community Plan elements of the County of San Bernardino General Plan.

SCLA Specific Plan establishes Land Use Districts, and any use proposed within the plan area must first comply with the permitted and conditionally permitted uses allowed in the district and secondly with the development standards within the district. The Project site is located within the Industrial District, which is intended for development of a broad range of industrial activities, as long as they are compatible with the Airport and Support Facility (ASF) District. The City of Victorville is currently in the process of updating the SCLA Specific Plan (*Southern California Logistics Airport Specific Plan Amendment – PLAN19-0004*). The update is planned to be adopted and implemented in 2021. The zoning at the site will change from I Industrial to ASF Airport and Support Facilities. However, a Hydrogen Production Facility would be allowed within this District with a Conditional Use Permit. Therefore, the Project would remain conforming with the Land Use of the SCLA Specific Plan.

Per the Specified Plan, development within the district must be consistent with uses and regulations set forth in the Victorville Municipal Code for the M-2 Heavy Industrial District. Chapter 17.50 of the municipal code states that uses permitted outright include manufacturing, repairing, compounding, fabricating, processing, packing or storage of a use not listed in JCMC 17.45.010 (Light Industrial Zone M1). Lands to the north, east and south are also zoned as Industrial, lands to the west are designated ASF District.

The proposed Project development does not conflict with any applicable land use plans, policies, or regulations. No impact would occur.

5.11.2 Mitigation Measures

No mitigation measures were identified for land use and planning.

5.12 Mineral Resources

Naturally occurring mineral resources within the City of Victorville include sand, gravel, and stone deposits that are suitable as sources of concrete aggregate. These resources are located primarily along the Mojave River. The project site is located within mineral resource zone (MRZ) 3A, which are areas containing known mineral occurrences of undetermined mineral resource significance (Miller 1993).

5.12.1 Analysis of Environmental Impacts

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X

The Victorville General Plan indicates the Project site is within a large area encompassing much of the City of Victorville that has been designated with a Mineral Land Classification of MRZ-3A or area containing known mineral occurrences of undetermined mineral resource significance. This classification was based on a report by the CDOC, Division of Mines and Geology, entitled Mineral Land Classification of Concrete Aggregate Resources in the Barstow - Victorville Area, San Bernardino County, California (Miller 1993). The naturally occurring mineral resources within the Planning Area include sand, gravel or stone deposits that are suitable as sources of concrete aggregate. Review of the Environmental Impact Report for the San Bernardino County General Plan (PlaceWorks 2019) and California Department of Conservation interactive web mapping, there are no active mines on the Project site or within the SCLA Specific Plan area. The SCLA Specific Plan does not designate the Specific Plan area for mineral resource recovery, and no mineral resource recovery activities occur within Specific Plan boundaries. The closest sand and gravel mining operations occur along the Mojave River approximately two miles northeast of the Project site.

There are no active oil and gas fields in the area. Interactive mapping (WellFinder) of the California Department of Conservation indicates an oil and gas well (dry hole) was drilled on the SCLA plan area approximately two miles northwest of the Project site.

The mineral resource zone classifications assigned by the CDOC focus solely on geologic factors and the potential value and marketability of a mineral resource, without regard to existing land use and ownership or the compatibility of surrounding land uses. The SCLA Specific Plan identifies the Project site for Industrial land use, meaning a determination has been made that these non-mining land uses on-site are more valuable to the region than potential mineral extraction uses. Accordingly, the Project would not result in the loss of availability of a known mineral resource. No impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

There are no active mines on the Project site or within the SCLA Specific Plan area. The SCLA Specific Plan does not designate the Specific Plan area for mineral resource recovery and there presently are no mineral resource recovery activities within the boundaries of the Specific Plan. No locally-important mineral resource recovery sites have been delineated on the City of Victorville or San Bernardino County General Plans or the SCLA Specific Plan. The Specific Plan identifies the Project site for industrial land uses, meaning a determination has been made that these non-mining land uses on-site are more valuable to the region than potential mineral extraction uses. Accordingly, the Project would not result in the loss of availability of a locally important mineral resource. No impact would occur.

5.12.2 Mitigation Measures

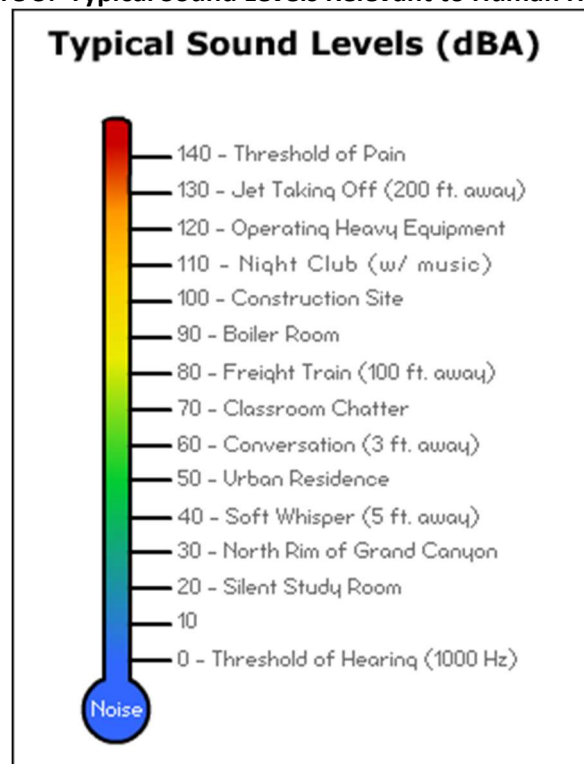
No mitigation measures were identified for mineral resources.

5.13 Noise

Noise is defined as loud or unpleasant or that causes disturbance. Noise is measured in units of sound pressure levels called decibels (dB) using A-weighted sound levels (dBA). The A-weighted sound levels closely match the perception of loudness by the human ear. Decibels are measured on a logarithmic scale which means that a small change in the number of decibels results in a huge change in the amount of noise and the potential damage to a person's hearing (OSHA, 2020).

Common sound level measurements relate the time-varying quality of environmental noise to its known effects on people are the equivalent sound level (Leq) and the day-night sound level (Ldn). The Leq is a sound level over a specific time period corresponding to the same sound energy as measured for an instantaneous sound level assuming it is a constant noise source. Sound levels are perceived differently, depending on the length of exposure and time of day. The Ldn takes into account the time of day and duration the noise is encountered. Specifically, in calculation of the Ldn, late night and early morning (10:00 p.m. to 7:00 a.m.) noise exposures are increased by 10 dBA to account for people's greater sensitivity to sound during nighttime hours. Due to the 10 A-weighted decibels (dBA) nighttime penalty added prior to calculation of the Ldn, for a facility to meet the 55 dBA Ldn limit, the facility must be designed such that the constant 24-hour noise level does not exceed an Leq of 48.6 dBA at any noise sensitive area (NSA). The A-weighted scale is used because human hearing is less sensitive to low and high frequencies than to midrange frequencies. Figure 3 demonstrates the typical dBA noise levels of common sounds measured in the environment and industry.

Figure 3: Typical Sound Levels Relevant to Human Hearing



Source: OSHA Technical Manual, Section III, Chapter 5 Noise

Victorville Municipal Code Section 13.01.030 and 13.01.040 limit noise at any location on a residential property at a maximum 65 dBA from 7 a.m. to 10 p.m. and 55 dBA from 10 p.m. to 7 a.m. Section 13.01.030 limits noise at any location on an industrial land use, such as the properties immediately surrounding the project site, at a maximum 75 dBA.

According to the Victorville General Plan Noise Element (2008), aircraft noise is the predominate source of noise in the Proposed Project vicinity. The project site is positioned beyond the identified noise contours created by aircraft operations and therefore can be expected to experience noise levels of less than 55 dBA.

5.13.1 Analysis of Environmental Impacts

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies??			X	

Construction: Construction noise associated with the proposed Project would be temporary and would vary depending on the nature of the activities being performed. Noise generated would primarily be associated with the operation of heavy equipment for on-site construction activities. Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g., building construction, paving). Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 to 4 minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts).

Table 5: Typical Construction Equipment Noise Levels

Construction Equipment	Lmax @ 50 feet dBA ¹
Pump	81
Generator	81
Air Compressor	78
Backhoe	78
Crane	81
Welding Machines	74
Dozer	82
Front end Loader	79
Grader	85 ²
Pickup Truck	75
Excavator	81
Flat bed Truck	74
Source: USDOT 2006	
¹ Noise emission level at 50 feet	
² specification limit for each piece of equipment expressed as an Lmax level in dBA "slow" at a reference distance of 50 foot from the loudest side of the equipment	

There are no sensitive receptors in the immediate vicinity to the project site. The nearest is a residence located approximately 1.7 miles east of the Project site. Therefore, construction of the Proposed Project would not negatively affect exterior noise levels at any sensitive receivers. As shown in Table 5 noise levels associated with individual construction equipment used for typical construction projects can reach levels of up to approximately 85 dBA Lmax at a distance of 50 feet. Considering an average noise attenuation rate of 6 dB per doubling of distance from the source (USEPA 1971), predicted maximum loudest equipment at the property line closest to the receptor would be approximately 39.9 dBA at the nearest residence, as construction activities would occur throughout the project site and would not be concentrated at one point. As previously described, Victorville Municipal Code Section 13.01.030 and 13.01.040 limit noise at any location on a residential property at a maximum 65 dBA from 7 a.m. to 10 p.m. and thus the noise levels would be below the standard set forth in the Municipal Code.

Noise associated with construction activities would not generate substantial temporary ambient noise levels in the vicinity of the project in excess of standards established in local noise ordinance. Impacts of Project construction activities on noise are expected to be less than significant.

Operations: The Project would operate continuously 24 hours per day, seven days a week. Noise generated by Project operations would be from heating, ventilation, and air conditioning equipment (HVAC), compressors associated with the transfill station, SMR operations, and truck loading and unloading. Anticipated noise levels from these sources are provided in Table 7.

Table 7: Anticipated Noise Levels During Operations

Source	dBA ¹
HVAC	75
Air Compressor	85
SMR	88
Truck loading and unloading	75
Source: USDOT 2006 ¹ Noise emission level at 50 feet ² specification limit for each piece of equipment expressed as an Lmax level in dBA "slow" at a reference distance of 50 foot from the loudest side of the equipment	

As indicated above, sound levels decrease at a rate of approximately 6 dB for each doubling of distance from a stationary source. As a result, operation of the SMR, which would produce a noise level of 88 dBA at 50 feet, would result in noise levels of approximately 42.9 dBA at the nearest sensitive receptor, which is located approximately 1.7 miles east of the Project site. This noise level is below both the daytime and nighttime standards for residential land uses. Therefore, noise associated with operational activities would not generate substantial permanent ambient noise levels in the vicinity of the project in excess of standards established in local noise ordinance. Impacts of Project operational activities on noise are expected to be less than significant.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Generation of excessive groundborne vibration or groundborne noise levels?			X	

Development of the Project may result in groundborne vibration or noise generated during construction activities. The primary sources of groundborne vibration during construction would be from large bulldozers and graders, which would be temporary and cease upon completion of construction. Other sources of groundborne vibration include delivery trucks. Generally, roadways in the project vicinity are well-maintained, and the proposed truck activities are not located within 100 feet of existing residences. Groundborne vibration from operation of the proposed Project is expected to be minimal. Therefore, excessive groundborne vibration or groundborne noise levels would be less than significant.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			X	

The proposed Project is located to the east of SCLA. The SCLA has developed noise contours for the airport. The Project site is located outside of the 65 dBA noise contour. Therefore, noise from SCLA is expected to be less than the noise levels generated by on-site equipment. Therefore, noise levels from SCLA would not expose people working at the Project site to excessive noise level. Impacts would be less than significant.

5.13.2 Mitigation Measures

No mitigation measures were identified for noise.

5.14 Population and Housing

5.14.1 Analysis of Environmental Impacts

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			X	

The Project would result in some growth in the area. Direct employment due to the Project is expected to be 50 people. This growth would not represent a significant impact to population or housing in the area and may help to mitigate the loss of jobs that resulted from the closing of the George Air Force Base. The Project would not require or include the extension of roads or other new infrastructure. Impacts from the Project on population and housing are expected to be less than significant.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X

The Project is located on two parcels, neither of which currently contain any housing. No housing would be lost due to development of the parcels. The Project would not result in need for replacement housing. No impact would occur.

5.14.2 Mitigation Measures

No mitigation measures were identified for population and housing.

5.15 Public Services

Fire: Fire protection and emergency medical services for the City of Victorville are provided by the City of Victorville Fire Department. Within the City, there are six fire stations with one of the fire stations located SCLA (Fire Station 319). In addition to the City fire stations, there are two County of San Bernardino Fire Stations located within the city limits. Both of these fire stations (Baldy Mesa and Mountain View) are currently listed as in active. The proposed Project would be served by the fire station located at SCLA.

Police: The Victorville Station has the distinction of being San Bernardino County Sheriff's Department's first contract city operation, serving as the Victorville Police Department since 1962. The Victorville Police Department is responsible for providing public safety services to a geographical area of a little more than 74 square miles and to a

population of approximately 121,515 residents (excluding the Federal Prison Complex at SCLA which the Police Department does not serve).

Schools: Public schools with grades kindergarten through 12 in the City of Victorville are managed by four school districts: Victor Valley Elementary School District, Adelanto Elementary School District, Oro Grande Elementary School District, and Victor Valley Union High School District. In addition, there are private and charter schools located within the city limits. The closest schools to the Project Site are Riverside Preparatory Middle and High Schools. These schools share the same campus and are located approximately 1.5 miles east-northeast of the Project site.

Parks: Per the City of Victorville General Plan 2030, it is the City's goal to provide sufficient local, community and regional park land to meet current and future outdoor recreation needs of the planning area. The City currently maintains 198.4 acres of park land, which includes public parks, public golf courses, public access lakes, bicycle paths and pedestrian trails, and ground-level linkages between recreation areas and urbanized places.

5.15.1 Analysis of Environmental Impacts

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

Fire: The City of Victorville Fire Department provides fire and life-saving services within the SCLA planning area from their headquarter station (Station 311) located at 16200 Desert Knoll Drive as well as Station 313 located at Amethyst Road, Station 314 located at 17008 Silica Road, and Station 319 located at 18500 Readiness Street. Station 319 is located on the SCLA less than 0.75 miles from the Project site, thus no additional facilities are required to maintain response times. The City of Victorville Fire Department will review the development plans for the Project to ensure the development adheres to the Department's requirements. With this mitigation measure, the Project would have less than significant effects on fire fighting services and no effect on fire department facilities.

Police: The San Bernardino County Sheriffs Department is under contract to the City of Victorville to provide police protection and public safety services within the city, including the SCLA and the subject parcels. This is done through the Victorville Police Department, which provides public safety services to a geographical area of over 74 square miles and to a population of approximately 121,515 residents (excluding the Federal Prison Complex at SCLA which the Police Department does not serve). The addition of the proposed Project to the community would result in no more than a non-significant, negligible, increase in the demand on these police services and would not result in the need for new or expanded police facilities. In addition, the San Bernardino Sheriffs Department will review the development plans for the Project to ensure the development adheres to the Department's requirements. With this mitigation measure, the Project would have less than significant effects on police services and no effect on police facilities.

Schools: As discussed in Section 4.14, the Project would not result in a significant increase in population, and thus would not result in need for additional schools or expansion of existing ones. All existing schools are located more than 0.5 miles for the Project site. No impact would occur.

Parks: Victorville parks nearest to the proposed Project are the Westwinds Sports Center, Westwinds Activities Center, and Norman Schmidt Memorial Park, all located on George Boulevard within the SCLA approximately 0.7 to 0.9 miles from the Project site. Project employees could be reasonably expected to utilize these facilities. Project employees and their families with residences elsewhere in the City of Victorville could utilize parks and other recreational facilities elsewhere. Because of the levels of expected employment, all such use would be at most a negligible increase in use and would not result in the need for additional facilities. No impact would occur.

Other public facilities: The proposed Project is not anticipated to induce population growth. Therefore, it would not create a demand for other public facilities, such as increased public transportation demands or libraries. No impact would occur.

5.15.2 Mitigation Measures

POP-1: The San Bernardino Sheriffs Department will review the development plans for the Project to ensure the development adheres to the Department's requirements.

POP-2: The City of Victorville Fire Department will review the development plans for the Project to ensure the development adheres to the Department's requirements.

5.16 Recreation

Outdoor recreation resources in the Victorville Planning Area include public parks, public golf courses, public access lakes, bicycle paths and pedestrian trails, and ground-level linkages between recreation areas and urbanized places. As indicated in Section 4.15, the City currently maintains 198.4 acres of park land throughout the Planning Area. Included in the park land areas are two public golf courses: the 18-hole, 150-acre Green Tree Golf Course, and a 9-hole 60-acre golf course, which is currently closed, within the SCLA. Additionally, there is a 172 acre potential expansion area within the SCLA. The City also maintains paseo systems within specific plan communities that link neighborhoods to local parks and to other neighborhoods.

5.16.1 Analysis of Environmental Impacts

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X	

The Project would involve development of the subject property for industrial land uses only, it does not include any type of residential use or other land use that might generate a localized population increase that would then increase the use of existing neighborhood and regional parks or other recreational facilities. Direct employment opportunities resulting from Project Development could possibly be filled by persons residing outside the City of Victorville or from other neighborhoods within Victorville; however, any such shifts in the population would be negligible and would not result substantial physical deterioration of existing neighborhood or regional parks. Parks in the vicinity of the Project site are discussed above in Section 4.15. These parks could potentially be used by Project employees, but any increase in use would be negligible and would not result in substantial physical deterioration of the facilities. All such effects on parks and other recreational facilities would be less than significant, thus no mitigation measures are proposed. The Project would have no impact on existing recreational resources.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X

The Project does not propose to construct any new on- or off-site recreation facilities or expand any such facilities. Therefore, environmental effects related to the construction or expansion of recreational facilities would not occur.

5.16.2 Mitigation Measures

No mitigation measures were identified for recreational resources.

5.17 Transportation

5.17.1 Analysis of Environmental Impacts

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			X	

Construction: The proposed Project would generate short-term construction related vehicle trips. Construction traffic would include construction workers travelling to and from the Project site and delivery of construction equipment and materials to the site. The Project site would be accessed using Phantom East and Perimeter Road.

Routes used by construction workers and trucks hauling construction equipment and materials would primarily include using a regional highway (Interstate 15), and local streets (D Street, Air Expressway, Phantom East and Perimeter Road). Material deliveries would be on-going throughout construction and would include all components required for operation of the hydrogen plant (i.e., SMR unit, electrolyzers, truck loading rack, and associated support components). Heavy construction equipment would generally arrive at the Project site at the beginning of construction and would be stored at the site for the duration of construction activities.

Traffic generated during construction would be temporary. As indicated in Section 4.10, the proposed Project would be consistent with the land use and zoning designation of the Project site. Vehicle traffic from construction would not conflict with the SCLA or City of Victorville's circulation system. Impacts would be less than significant.

Operations:

Once in operations, the Project is anticipated to have up to 50 employees working at the site and 5 to 25 daily hydrogen distribution truck trips. Access to the site would be from Perimeter Road and routes used to access the site would be similar to those used for construction activities. The Proposed Project would develop an allowed use on the site per the SCLA Specific Plan and City of Victorville's General Plan. Therefore, the Proposed Project is not anticipated to conflict with an applicable congestion management program. A less than significant impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision(b)?			X	

CEQA Section 15064.3 subdivision (b) establishes vehicle miles traveled (VMT) as the most appropriate measure of transportation impacts, shifting away from the level of service (LOS) analysis that evaluated a project's impacts on traffic conditions on nearby roadways and intersections. The primary components of 15064.3 include:

- 1) Land Use Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.
- 2) Transportation Projects. Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, such as in a regional transportation plan EIR, a lead agency may tier from that analysis as provided in Section 15152.
- 3) Qualitative Analysis. If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.
- 4) Methodology. A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled, and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project.

The City of Victorville adopted its own VMT Guidelines. According to those thresholds within the Guidelines, the Project is exempt from a VMT Analysis and meets the City's VMT Guidelines. The proposed Project would not conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision(b). Impacts would be less than significant.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X

The proposed Project would use existing local roads and highways for access. Direct access to the site would be from Phantom East and then Perimeter Road. Should road conditions deteriorate, such as potholes, then road improvements would be designed to meet City of Victorville requirements. No impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Result in inadequate emergency access?				X

Construction of the Proposed Project may require temporary street closure, or partial closure, of portions of Perimeter Road. Street closures have the potential to interfere with emergency access to areas near the project site. However, emergency access and traffic detours would be established during temporary or partial street closures. As such, impacts would be less than significant. The Project would be designed and constructed, and

structures, roadways, and facilities would be maintained to provide for adequate emergency access and evacuation. The Project will be subject to several local, state, and federal laws, including but not limited to Title 49 of the Code of Federal Regulations implemented by Title 13 of the CCR, CalARP Program, California Health and Safety Code Sections 25503 and 25507, PHMSA, US Department of Transportation (DOT), OSHA, NFPA, IFC, International Fuel Gas Code (IFGC), and NEC, which are designed to support emergency response and evacuation in the unlikely event of an incident.

Any street closures necessary to construct the proposed Project will be temporary and managed in compliance with California Fire Code and all City of Victorville municipal codes and regulations such that it would not interfere or impede any emergency access. Adequate access for emergency response apparatus would be provided and would be coordinated with the City of Victorville Fire Department to establish preplanning strategies and ensure appropriate training and equipment for first responders in the event of an emergency.

The Project would be reviewed by the City of Victorville Engineering, Fire, and Police Departments as part of City review and approval prior to issuance of building permits to ensure construction and operation of the Project would not result in inadequate emergency access. No impact would occur.

5.17.2 Mitigation Measures

No mitigation measures were identified for transportation.

5.18 Tribal Cultural Resources

The Project is located within the territory known to have been occupied by the Serrano Native American group prior to contact with Europeans, as well as the Vanyume group of Native Americans. The Chemehuevi, whose main territory was in the eastern Mojave Desert and around the Colorado River, were occasional enemies or allies of the Serrano, and were sometimes found in Lucerne Valley and the northern reaches of the San Bernardino Mountains in the early historic period. All three groups are discussed below.

The Serrano were mainly hunters and gatherers who occasionally fished. Game that was hunted included mountain sheep, deer, antelope, rabbits, small rodents, and various birds, particularly quail. Vegetable staples consisted of acorns, pinyon nuts, bulbs and tubers, shoots and roots, juniper berries, mesquite, barrel cacti, and Joshua tree (Bean and Smith 1978).

A variety of materials were used for hunting, gathering, and processing food, as well as for shelter, clothing, and luxury items. Shells, wood, bone, stone, plant materials, and animal skins and feathers were used for making baskets, pottery, blankets, mats, nets, bags and pouches, cordage, awls, bows, arrows, drills, stone pipes, musical instruments, and clothing (Bean and Smith 1978).

Settlement locations were determined by water availability, and most Serranos lived in villages near water sources. Houses and ramadas were round and constructed of poles covered with bark and tule mats (Kroeber 1925). Most Serrano villages also had a ceremonial house used as a religious center. Other structures within the village might include granaries and sweathouses (Bean and Smith 1978).

Serrano social and political units were clans, patrilineal exogamous territorial groups. Each clan was led by a chief who had both political and ceremonial roles. The chief lived in a principal village within the clan's territory. The clans were part of a moiety system such that each clan was either a wildcat or coyote clan and marriages could only occur between members of opposite moieties (Earle 2004). On the north side of the San Bernardino Mountains, clan villages were located along the desert-mountain interface on Deep Creek, on the upper Mojave River, in Summit Valley, and in Cajon Pass. The principal plant food available near these villages was juniper berries. These villages also had access to mountain resources, such as acorns and pinyon nuts.

Vanyume villages were located along the Mojave River from south of Victorville to Soda Lake. These river villages had populations of 40-80 people. Marriage ties between the Serrano foothill villages and Vanyume desert villages facilitated access to mountain resources, such as acorns and pinyon nuts, by the desert villages. The principal

desert resources were mesquite beans, screw beans, tule reed roots, and carrizo grass sugar (produced by aphids that lived on the Carrizo grass). Animal resources were rabbits, jackrabbits, desert bighorn sheep, pronghorn, and desert tortoise (Earle 2004:10). The Vanyume also collected salt from Soda Lake and from the Barstow-Daggett area to exchange for acorns and other resources from the mountains (Earle 2004:11).

Partly due to their mountainous and desert inland territory, contact between Serrano and European-Americans was minimal prior to the early 1800s. In 1819, an asistencia (mission outpost) was established near present-day Redlands and was used to help relocate many Serrano to Mission San Gabriel. However, small groups of Serrano remained in the area northeast of the San Geronio Pass and were able to preserve some of their native culture. Today, most Serrano live either on the Morongo or San Manuel reservations (Bean and Smith 1978).

The Chemehuevi are one of 16 identified Southern Paiute groups that at one time occupied a wide strip of territory extending across southern Utah and southern Nevada and following the Colorado River into California. The main territory occupied by the Chemehuevi group was west of the Colorado River, extending approximately from present-day Blythe to just north of Needles, and into California halfway to Twentynine Palms (Kelly and Fowler 1986; Earle 1997).

The Chemehuevi hunted large game, but small animals were the chief source of protein and included rabbits, wood rats, mice, gophers, squirrels, chipmunks, and birds. Plant foods included piñon nuts, roots agave, seed, and berries. Some horticulture was being practiced at the time of Spanish contact in the 1770s (Earle 1997). Settlement was mobile and scattered, with recurrent residence in specific locations. Individual households grouped together with others and traveled as units on hunting and gathering trips (Kelly and Fowler 1986). Structures varied according to the season. During the winter, the Chemehuevi lived in earth-covered dwellings or caves. In warmer months, many lived under trees, sometimes with extra brush added for denser shade (Kelly and Fowler 1986).

As early as the end of the eighteenth century, Southern Paiute-Chemehuevis were being enslaved or baptized in the Spanish settlements. In response, some Chemehuevi raided travelers along the Old Spanish Trail from the 1850s to the early 1870s. During that time, efforts were made to settle the Chemehuevi on the Colorado River Reservation, but many did not agree to move there until the twentieth century. The early 1900s saw the establishment of a number of small reservations in Utah for the Southern Paiute. In 1980, the Southern Paiute-Chemehuevi numbered approximately 124 (Kelly and Fowler 1986).

5.18.1.1 Assembly Bill 52

Effective July 1, 2015, AB 52 amended CEQA to require that: 1) a lead agency provide notice to those California Native American tribes that requested notice of projects proposed by the lead agency; and 2) for any tribe that responded to the notice within 30 days of receipt with a request for consultation, the lead agency must consult with the tribe. Topics that may be addressed during consultation include Tribal Cultural Resources (TCRs), the potential significance of project impacts, type of environmental document that should be prepared, and possible mitigation measures and project alternatives.

Pursuant to AB 52, Section 21073 of the Public Resources Code defines California Native American tribes as “a Native American tribe located in California that is on the contact list maintained by the California Native American Heritage Commission for the purposes of Chapter 905 of the Statutes of 2004.” This includes both federally and non-federally recognized tribes.

Section 21074(a) of the Public Resource Code defines TCRs for the purpose of CEQA as:

1. Sites, features, places, cultural landscapes (geographically defined in terms of the size and scope), sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
 - a) included or determined to be eligible for inclusion in the California Register of Historical Resources; and/or
 - b) included in a local register of historical resources as defined in subdivision (k) of Section 5020.1; and/or

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

Because criteria a and b also meet the definition of a historical resource under CEQA, a TCR may also require additional consideration as a historical resource. TCRs may or may not exhibit archaeological, cultural, or physical indicators.

Recognizing that California tribes are experts in their tribal cultural resources and heritage, AB 52 requires that CEQA lead agencies provide tribes that requested notification an opportunity to consult at the commencement of the CEQA process to identify TCRs. Furthermore, because a significant effect on a TCR is considered a significant impact on the environment under CEQA, consultation is used to develop appropriate avoidance, impact minimization, and mitigation measures.

5.18.1.2 Summary of AB 52 Consultation

On October 28, 2020, the City of Victorville sent notification letters via mail to the following California Native American tribes, which had previously submitted general consultation request letters pursuant to 21080.3.1(d) of the Public Resources Code:

- Twenty-Nine Palms Band of Mission Indians
- Morongo Band of Mission Indians
- San Manuel Band of Mission Indians
- Cabazon Band of Mission Indians

Each recipient was provided a brief description of the proposed Project and its location, the lead agency contact information, and a notification that the tribe has 30 days to request consultation. In addition, each recipient was provided a California cultural history that summarized the Mojave Desert region from prehistoric times up through the historical period for the Project area. The 30-day response period concluded on December 4, 2020. No requests to initiate consultation were received from the notified tribes.

5.18.2 Analysis of Environmental Impacts

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: <ul style="list-style-type: none"> i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 			X	

5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.				
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a) i.: As indicated in Section 4.5.1, the records search performed for the Project site identified one historical resource, the George Air Force Base, within the Project APE. An additional 17 resources have been documented within a one-mile radius of the APE. Former George Air Force Base was identified as a potential historical district. While a detailed history of the George Air Force Base exists (Air Force Historical Research Agency), according to McKenna the Base as a whole, has never been fully evaluated to the NRHP or CRHR.

Seven historical structures were identified and documented within the project APE. The buildings are all associated with former George Air Force Base. Three of these buildings are planned for use as part of operations for the Project. Prior to construction activities, the existing building will be evaluated and documented in accordance with NRHP and CRHR eligibility criteria. Considering that these buildings were constructed after 1953, it is not likely result in impact to Historic Properties or Historical Resources. The 17 cultural resources in the APE were evaluated using NRHP and CRHR eligibility criteria and determined to be not eligible for listing in the NRHP or CRHR. Impacts of the Projects on substantial adverse change in the significance of a historic resource are expected to be less than significant.

a) ii.: No resources were identified to be significant pursuant to the criteria set forth in subdivision (c) of the Public Resources Code Section 5024.1. No impact would occur.

5.18.3 Mitigation Measures

A qualified archaeologist shall monitor all ground disturbing activities within native sediments. If subsurface deposits believed to be cultural or human in origin are discovered during construction, then all work must halt within a 100-foot radius of the discovery. The archaeologist shall evaluate the significance of the find and shall have the authority to modify the no-work radius as appropriate, using professional judgment. Depending on the nature of the find, the following notifications may be required:

- CUL-1:** If the professional archaeologist determines that the find does not represent a cultural resource, then work may resume immediately, and no agency notifications are required.
- CUL-2:** If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, then the archaeologist shall immediately notify the City of Victorville. The City of Victorville shall make a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines. Work cannot resume within the no-work radius until the City, through consultation as appropriate, determines that the site either: 1) is not a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines; or 2) that the treatment measures have been completed to their satisfaction.
- CUL-3:** If the find includes human remains, or remains that are potentially human, then the archaeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the San Bernardino County Coroner (per Section 7050.5 of the Health and Safety Code). The provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California Public Resources Code, and Assembly Bill 2641 will be implemented. Work cannot resume within the no-work radius until the City, through consultation as appropriate, determines that the treatment measures have been completed to their satisfaction.

5.19 Utilities and Service Systems

5.19.1 Analysis of Environmental Impacts

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	

The project site is currently vacant, but was previously developed as a munition storage site for the former George Air Force Base. Based on information provided by City of Victorville, utility service lines are available at or near the Project site. The Project is estimating to use approximately 150,000 gallons per day of water in the hydrogen production process. The Project's implementation may require minor upgrades to existing utilities for water, wastewater, electricity and communications. However, the Proposed Project would not require the relocation of any utilities (i.e., relocate a substation, etc.). Also, the increase in demand for waste disposal, water, and wastewater treatment services can be adequately handled and no expansion of these services is required. As a result, the potential impacts will be less than significant

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X	

The City of Victorville Water District provides water service and wastewater service to the Project site. According to the City's 2015 Urban Water Management Plan, the City is projected to have an adequate supply of water to meet the increase in demand. In addition, the City is projected to have enough water to meet demand during a single dry year and multiple dry year scenario (Victorville, 2015). The proposed Project is anticipated to use 150,000 gallons of water per day, and will connect to the existing water line system. As a result, the impacts will be less than significant.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	

The SCLA Industrial Wastewater Treatment Plant was constructed to treat high-strength wastewater from industrial manufacturing processes side-by-side with normal strength sanitary wastewater. The treatment plant is located within the SCLA and treats industrial waste from a Dr. Pepper/Snapple bottling plant along with domestic waste from SCLA and northwestern Victorville (Victorville, 2021a). The Title 22 recycled water produced at the plant is used for irrigation at the SCLA and cooling water for a power generation plant. The facility is capable of processing 2.5 million gallons per day (Victorville, 2021b).

The proposed Project anticipates that 50 employees whose contribution to wastewater treatment would be minimal as compared to the overall daily capacity of the VVWRA treatment plant. The impacts from the Project are expected to be less than significant.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	

Solid waste collection is a “demand-responsive” service, and current service levels can be expanded and funded through user fees. Non-hazardous solid waste generated in the City of Victorville is currently deposited in the Victorville Landfill, which is operated by the County of San Bernardino. The Victorville Landfill property area is approximately 491 acres in total, with an approximately 80-acre parcel currently in use for landfill operations. Due to future development plans in the North Mojave specific plan area (outside of the Project area), the City is working towards an alternative location for the County landfill. However, it is not anticipated that the construction and operation of the Proposed Project would result in the Victorville Sanitary Landfill exceeding its design capacity. Impacts would be less than significant.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				X

The Proposed Project, like all other development in San Bernardino County and the City of Victorville, will be required to adhere to City and County ordinances with respect to waste reduction and recycling. As a result, no impacts related to Federal, State and local statutes and regulations governing solid waste are anticipated.

5.19.2 Mitigation Measures

No mitigation measures were identified for utilities and service systems.

5.20 Wildfire

5.20.1 Analysis of Environmental Impacts

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				X

City of Victorville has not specified evacuation routes within the SCLA Specific Plan. Evacuation routes are to be determined on a case-by-case basis in the event of a major disaster. The Project site is not located in or near a state responsibility area. Additionally, the Project site is not located within a designated fire hazard severity zone. During construction and operations, the Project would comply with all local regulations and requirements in the event of an emergency and/or evacuation. No impacts would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				X

A Fire Hazard Severity Zone is a mapped area that designates zones (based on factors such as fuel, slope, and fire weather) with varying degrees of fire hazard (i.e., moderate, high, and very high). Maps provided by CalFire identify areas with fire hazards and designated responsibility for those areas (i.e., local, state or federal). The Fire Hazard Severity Zones do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and therefore are of greater concern. The Project site is not located within a Fire Hazard Severity Zone. Therefore, the potential for Project occupants to be exposed to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire is not likely. No impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X

Since the Project is not located within a Fire Hazard Severity Zone, the installation or maintenance of associated infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment is unlikely. No impact would occur.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				X

Since the Project is not located within a Fire Hazard Severity Zone, the potential of exposure of people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes is unlikely. No impact would occur.

5.20.2 Mitigation Measures

No mitigation measures were identified for wildfires.

5.21 Mandatory Findings of Significance

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		

Impacts to biological resources and cultural resources are discussed in the respective sections of this Initial Study. Impacts would be less than significant with the incorporation of the following mitigation measures:

Biological

- BIO-1:** Since the areas surrounding the Project site provides suitable habitat for the desert tortoise and Mohave ground squirrel, pre-construction surveys will be performed prior to any ground disturbance or construction. Should any desert tortoises or Mohave ground squirrels be identified during the surveys, a management plan will be prepared in consultation with the CDFW that will outline protection and mitigation measures that will be implemented during construction activities. The management plan will be subject to the approval of the CDFW.
- BIO-2:** Thirty (30) days prior to any ground disturbance or construction, field surveys will be conducted for burrowing owls. Should any burrowing owls or active burrows be identified during the surveys, a Burrowing Owl Management Plan will be prepared in consultation with CDFW. The purpose of the Burrowing Owl Management Plan will be to outline protection and avoidance and minimization measures that will be implemented for the Project. The Burrowing Owl Management Plan will be subject to the approval of CDFW.

Cultural Resources

- CUL-1:** If the professional archaeologist determines that the find does not represent a cultural resource, then work may resume immediately, and no agency notifications are required.
- CUL-2:** If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, then the archaeologist shall immediately notify the City of Victorville. The City of Victorville shall make a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines. Work cannot resume within the no-work radius until the City, through consultation as appropriate, determines that the site either: 1) is not a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines; or 2) that the treatment measures have been completed to their satisfaction.
- CUL-3:** If the find includes human remains, or remains that are potentially human, then the archaeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the San Bernardino County Coroner (per Section 7050.5 of the Health and Safety Code). The provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California Public Resources Code, and Assembly Bill 2641 will be implemented. Work cannot resume within the no-work radius until the City, through consultation as appropriate, determines that the treatment measures have been completed to their satisfaction.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?		X		

Impacts from the Proposed Project would not be cumulatively considerable with the implementation of the Mitigation Measures listed in this Initial Study.

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		X		

Direct and indirect impacts to human beings would be less than significant with the implementation of Mitigation Measures listed in this Initial Study.

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Appendix A – Photographs



Munitions storage building



Vacant building onsite. Planned for use by Project



Existing Building at Project site. Planned for use by the Project



View of the Project site. Building in background will be removed.



Adjacent property to the north. High Desert Power Project plant is in the background.



Adjacent property to the south.



Adjacent property to the west. SCLA is seen in the background.



Adjacent property to the east across Perimeter Road

Appendix B – Air Report

MEMORANDUM

DATE: May 29, 2018

To: Dionisios Glentis, Environmental Planner

FROM: Ron Brugger, Senior Air Quality Specialist

SUBJECT: Air Quality & Climate Change Modeling for the Stratos Fuel Hydrogen Plant in Moreno Valley, California

INTRODUCTION

LSA conducted an air quality analysis of the six-building industrial project on 8.82 acres within the Moreno Valley Industrial Area [Specific] Plan (SP #208) Master Area Plot Plan PA07-0035 in the City of Moreno Valley in 2008. The environmental initial study was approved by the City in 2009. The industrial project was never built and a hydrogen electrolysis and steam methane reformation plant and associated office facility is now proposed for the site. A new air quality and greenhouse gas (GHG) analysis has been prepared to evaluate the project emissions that would occur with this new land use compared to the approved project emissions. Guidelines identified by the South Coast Air Quality Management District (SCAQMD) in its *CEQA Air Quality Handbook* and associated updates were followed in this Air Quality and Greenhouse Gas Analysis.

PROJECT DESCRIPTION

The facility would be located at the northerly tip of Moreno Valley's Business park/ Industrial Area. Adjacent to the facility to the north is undeveloped suburban residential R5 (pending economic development). Suburban residential properties are located east of the facility. South of the proposed facility is a 409,598 square foot warehouse commercial/industrial building. Within a 1-mile radius from the facility are two (2) schools; Rainbow elementary School and March Middle School.

AIR QUALITY ANALYSIS

SCAQMD has established daily emissions thresholds for construction and operation of a proposed project in the Basin. The emissions thresholds were established based on the attainment status of the Basin with regard to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety (SCAQMD 2017), these emissions thresholds are regarded as conservative and would overstate an individual project's contribution to health risks.

Regional Thresholds for Construction and Operational Emissions

Table A lists the SCAQMD CEQA significance thresholds for construction and operational emissions. These thresholds are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table A: Regional Thresholds for Construction and Operational Emissions

	Pollutant Emissions Threshold (lbs/day)					
	VOC	NO _x	CO	PM ₁₀	PM _{2.5}	SO _x
Construction	75	100	550	150	55	150
Operations	55	55	550	150	55	150

Source: South Coast Air Quality Management District. Website: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf> (accessed May 2018).

CO = carbon monoxide

lbs/day = pounds per day

NO_x = nitrogen oxides

PM₁₀ = particulate matter less than 10 microns in size

PM_{2.5} = particulate matter less than 2.5 microns in size

SO_x = sulfur oxides

VOC = volatile organic compounds

Projects in the Basin with construction-related emissions or operational-related emissions that exceed any of their respective emission thresholds would be considered significant under SCAQMD guidelines. The most recent version of CalEEMod (Version 2016.3.2) was used to calculate the construction and operational emissions associated with the project.

Construction

The construction schedule and equipment was based on CalEEMod defaults for the land use and site size, with modifications based on the project plans. Table B lists the construction emissions. No pollutant emissions rate would exceed their respective SCAQMD threshold.

SCAQMD published its *Final Localized Significance Threshold Methodology* in June 2003 and updated it in July 2008, recommending that all air quality analyses include an assessment of impacts on the air quality of nearby sensitive receptors. Table C shows the updated on-site localized emissions during construction. None of the construction emission rates would exceed the LSTs for the existing sensitive receptors within 25 meters to the east of the project site.

Table B: Short-Term Regional Construction Emissions

Construction Phase	Total Regional Pollutant Emissions (lbs/day)							
	VOC	NO _x	CO	SO _x	Fugitive PM ₁₀	Exhaust PM ₁₀	Fugitive PM _{2.5}	Exhaust PM _{2.5}
Site Preparation	2	24	13	<1	<1	<1	<1	<1
Grading	2	24	11	<1	3	1	1	1
Building Construction	3	23	19	<1	<1	1	<1	1
Paving	1	13	13	<1	<1	<1	<1	<1
Architectural Coating	56	2	2	<1	<1	<1	<1	<1
Peak Daily	56	24	19	<1	4		2	
SCAQMD Thresholds	75	100	550	150	150		55	
Emissions Exceed Threshold?	No	No	No	No	No		No	

Source: Compiled by LSA (May 2018).

Note: Column totals may not add up due to rounding up of model results. PM10 and PM2.5 fugitive emissions are from the Mitigated results - the only "mitigation" applied in this modeling are required dust control measures per SCAQMD Rule 403.

CO = carbon monoxide

lbs/day = pounds per day

NO_x = nitrogen oxides

PM_{2.5} = particulate matter less than 2.5 microns in size

PM₁₀ = particulate matter less than 10 microns in size

SCAQMD = South Coast Air Quality Management District

SO_x = sulfur oxides

VOC = volatile organic compounds

Table C: Construction Localized Impacts Analysis

Emissions Sources	Pollutant Emissions (lbs/day)			
	NO _x	CO	PM ₁₀	PM _{2.5}
On-Site Emissions	24	16	4	2
LST Thresholds	237	1,346	11	7
Significant Emissions?	No	No	No	No

Source: Compiled by LSA (May 2018).

Note: Source Receptor Area – Perris Valley, 4 acres, receptors at 25 meters. 4 acre thresholds derived by interpolating the 2- and 5-acre thresholds.

CO = carbon monoxide

NO_x = nitrogen oxides

lbs/day = pounds per day

PM_{2.5} = particulate matter less than 2.5 microns in size

LST = local significance threshold

PM₁₀ = particulate matter less than 10 microns in size

Construction activities would also result in emissions of greenhouse gases (GHG). Using the same assumptions and air quality model as above, Table D lists the total GHG emissions during construction. Rather than examine the significance of these construction GHG emissions, SCAQMD has directed that the construction emissions be amortized over the lifetime of the project and then combined with the operational GHG emissions to determine significance. In the absence of project-specific information, SCAQMD suggests assuming a project lifetime of 30 years.

Table D: Short-Term Regional Construction Greenhouse Gas Emissions

Construction Phase	Peak Annual Emissions (MT/yr)			Total Emissions per Phase (MT CO ₂ e)
	CO ₂	CH ₄	N ₂ O	
2018				
Site Preparation	3	<1	0	4
Grading	6	<1	0	6
Building Construction	158	<1	0	159
2019				
Building Construction	188	<1	0	189
Paving	9	<1	0	9
Architectural Coating	2	<1	0	2
Total Construction Emissions				367
Total Construction Emissions Amortized over Project Lifetime (30 years)				12

Source: Compiled by LSA (May 2018).

CH₄ = methane

CO₂ = carbon dioxide

CO₂e = carbon dioxide equivalent

MT CO₂e = metric tons of carbon dioxide equivalent

MT/yr = metric tons per year

N₂O = nitrous oxide

Operations

In addition to short-term construction emissions, operation of the proposed modified project would also generate air emissions over the long-term. Table E lists the operational emissions from the proposed modified project compared to the previously approved project emissions. The previously approved analysis estimated that there would be 2,031 daily vehicle trips. The proposed modified project would have normal office staff and 5 to 25 daily hydrogen distribution truck trips up to 100 miles, with an average trip length of 40 miles, based on anticipated haul destinations. While the hydrogen electrolysis process uses a large amount of electricity, the facility's electricity will come from Stratos' in-state 140MW wind/solar 30-year power purchase agreement (PPA). The steam methane reformation (SMR) portion of the project would combust approximately 59.06 mmbtu/hr of natural gas to produce hydrogen, releasing criteria pollutants listed in Table E.

As shown in Table E, the proposed modified project would have substantially lower operational emissions from all source categories than the previously approved project. This is due to the much lower vehicle use (both cars and trucks) and that all electricity would be from wind and solar facilities.

Table E: Regional Operational Emissions

Source	Pollutant Emissions, lbs/day					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Previously Approved Land Use (From April 2008 Air Quality Report)						
Stationary Sources	15	3.7	7.6	<1	0	0
Mobile Sources	26	51	240	<1	46	33
Total Approved Emissions	41	54	248	<1	46	33
Proposed Hydrogen Plant Scenario						
Stationary (Area) Sources	3	<1	<1	0	<1	<1
Energy Sources	<1	<1	<1	<1	<1	<1
Mobile Sources	<1	2	4	<1	1	<1
Steam Methane Reformer	8	28	63	2	11	11
Truck-Loading Equipment	<1	3	2	<1	<1	<1
Total Project Emissions	11	34	71	2	13	12
Net Emissions Change	-30	-20	-177	2	-33	-21
SCAQMD Thresholds	55	55	550	150	150	55
Emissions Exceed Threshold?	No	No	No	No	No	No

Source: Compiled by LSA (May 2018).

Note: Column totals may not add up due to rounding up of model results.

CO = carbon monoxide

lbs/day = pounds per day

NO_x = nitrogen oxides

PM_{2.5} = particulate matter less than 2.5 microns in size

PM₁₀ = particulate matter less than 10 microns in size

SCAQMD = South Coast Air Quality Management District

SO_x = sulfur oxides

VOC = volatile organic compounds

The only known project-related emissions of toxic air contaminants would be the diesel exhaust from the haul trucks and the combustion of natural gas in the SMR. The PM₁₀ emissions shown in Table E for mobile sources would include all truck exhaust emissions, which when combined with the SMR emissions would total approximately 12 pounds per day of PM₁₀, well below the SCAQMD threshold of 150 pounds per day, which is designed to protect the health and welfare of the populace with a reasonable margin of safety. Thus, there would be a very low health risk to any of the nearby residents.

While the previously approved land use analysis did not include a GHG emissions analysis, running the CalEEMod model with the same parameters used for the 2008 report for the approved land uses produced the GHG emissions shown in Table F. The GHG emission estimates presented in Table F show the GHG emissions associated with the level of development envisioned by the proposed modified project at full capacity with the amortized short-term construction incorporated. Attachment A includes the CalEEMod worksheets for both the approved and modified project-related GHG emissions.

Table F: Project Operational Greenhouse Gas Emissions

Source	Pollutant Emissions (MT/yr)					
	Bio-CO ₂	NBio-CO ₂	Total CO ₂	CH ₄	N ₂ O	CO ₂ e
GHG Emissions Based on Previously Approved Land Use (From April 2008 Air Quality Report)						
Area Sources	0	<1	<1	<1	0	<1
Energy Sources	0	372	372	<1	<1	373
Mobile Sources	0	3,888	3,888	<1	0	3,893
Truck-Loading Equipment	0	140	140	<1	0	141
Waste Sources	78	0	78	5	0	194
Water Usage	30	393	423	3	<1	523
Total Approved Emissions	108	4,793	4,901	8	0	5,125
Proposed Hydrogen Plant Scenario						
Construction Emissions Amortized Over 30 Years	0	12	12	<1	0	12
Operational Emissions						
Area Sources	0	<1	<1	<1	0	<1
Energy Sources	0	193	193	<1	<1	194
Mobile Sources	0	177	177	<1	0	177
Truck-Loading Equipment	0	35	35	<1	0	35
Waste Sources	30	0	30	2	0	73
Water Usage	9	0	9	<1	<1	37
Total Project Emissions	38	417	455	2	0	529
Net GHG Emissions Change	-70	-4,376	-4,446	-6	0	-4,596

Source: Compiled by LSA (April 2018).

Note: Numbers in table may not appear to add up correctly due to rounding of all numbers to two significant digits.

Bio-CO₂ = biologically generated CO₂

MT/yr = metric tons per year

CH₄ = methane

N₂O = nitrous oxide

CO₂ = carbon dioxide

NBio-CO₂ = Non-biologically generated CO₂

CO₂e = carbon dioxide equivalent

Table F shows that the proposed modified project would generate far lower GHG emissions than the approved project would have. The 2009 environmental initial study did not include GHG emissions; therefore it did not assess the level of significance. The SCAQMD has an applicable GHG emissions threshold of 10,000 metric tons per year (MT/yr) for industrial uses. Table F shows that the proposed modified project would generate 529 MT/yr of GHG, less than this SCAQMD threshold. Additionally, this level of GHG emissions for the modified project is below the level of emissions for the previously approved land use that was included in the Moreno Valley GHG Reduction Strategy and Western Riverside Council of Governments (WRCOG) Sub-Regional Climate Action Plan (CAP). Therefore, the proposed modified project does not conflict with these plans. As the modified project's GHG emissions would be less than significant and not conflict with any plan, the impacts from GHGs would be considered to be less than significant.

Appendix C – Cultural History Summary



October 27, 2020

Mr. Scott Webb
City of Victorville
14343 Civic Drive
Victorville, California 92393

**Re: StratosFuel Renewable H2 Project
California Cultural History Summary**

Dear Mr. Webb:

As discussed during our conference call on October 19, 2019, EXP submitted a request for cultural resource records from the South Central Coastal Information Center (SCCIC) for the above referenced project on September 28, 2020. Based on information from the SCCIC, the turnaround time for the records request will be 8 weeks. So that the City of Victorville can move forward with sending the Tribal notification letters, EXP has developed the attached California cultural history summary for the project area for incorporation into the notification letters. This summary broadly covers the Mojave Desert region from prehistoric times up through the historical period. Should you have any questions regarding the summary, my contact information has been provided below.

Sincerely,

A handwritten signature in blue ink, appearing to read "Angie Wagner".

Angie Wagner
Environmental Project Manager

EXP Energy Services Inc.

cc: Mike Szarzynski, City of Victorville
Jonathan Palacios-Avila, StratosFuel
John Avila, StratosFuel
Denny Dyroff, EXP



Attachment A – California Cultural History Summary



California Cultural History for the StratosFuel Renewable H2 Project Area

Introduction

StratosFuel, Inc proposes to construct the Renewable H2 Project (the Project), which will consist of the construction of a 100 percent renewable hydrogen electrolysis and steam methane reformation facility and associated professional office campus. The proposed Project will be constructed on approximately 10.00 acres of previously developed land located north-northwest of the intersection of Perimeter Road and Phantom East (6N, 5W, Section 24) in the city of Victorville, San Bernardino County, California. There are three existing storage facilities within the project boundary that were formerly utilized as weapons storage facilities. These buildings were constructed around 1953. The purpose of the Project will be to produce gas and liquid hydrogen for distribution to local and regional hydrogen fueling stations for use in electric fuel cell vehicles.

EXP has requested a cultural resources records search from the South Central Coastal Information Center (SCCIC) for the Project. The results of the records search is currently pending, however, due to the Covid-19 pandemic; the SCCIC timetable for delivering records searches has been delayed, and will take approximately 8 weeks.

The ground surface in the Project area has been previously disturbed by the construction of a weapons storage facility for the former George Air Force Base. The design for the current project is still in the preliminary stages; depths of footings or areas that will be capped with fill or soil have yet to be determined.

A California cultural history is provided below that broadly covers the Mojave Desert region from prehistoric times up through the historical period, and was adapted from the nearby High Desert Solar Project report (Cunningham and Blumel 2018).

CULTURAL CONTEXT

Regional Prehistory

Two significant volumes on the prehistory of California, *The Archaeology of California* by Joseph and Kerry Chartkoff, and *California Archaeology* by Michael Moratto, were published in 1984. At that time, Warren (1984, in Moratto 1984) provided a modified version of his earlier (1980) Mojave Desert chronology. The 1984 version included six cultural periods marked primarily by projectile point types (Table 1).

Table 1. Cultural Sequences for the Mojave Desert Region, California		
Cultural Complex	Approximate Time Period in Years Before Present (BP) and Calendar Years AD	Characteristic Artifacts
Fluted Point, or Pleistocene Period	12,000 – 10,000 BP	Fluted points (Clovis)
Lake Mojave Period	10,000 – 7,000 BP	Stemmed points (Lake Mojave, Silver Lake)
Pinto Period	7,000 – 4,000 BP	Pinto and leaf-shaped points
Gypsum Period	4,000 BP – AD 500	Gypsum and Elko series points
Saratoga Spring Period	AD 500 – 1200	Rose Spring, Eastgate, Saratoga Spring points
Late Prehistoric, or Shoshonean Period	AD 1200 – Contact with European explorers ca. 1770	Desert Series points, ceramics

Adapted from Warren 1980, 1984

New research has led to refinements of the pre-contact chronology of the Mojave Desert region since the early 1980s, including new applications of radiocarbon dating on marine shell and organic materials in sediments, improved understanding of obsidian hydration rates, and more detailed flaked-stone technology profiles. This ongoing research has contributed new information that has enhanced understanding of the pre-contact chronology of the Mojave Desert region, a chronology that will most likely continue to be refined in the future. Sutton et al. (2007) discuss these refinements in depth, and presents a slightly modified chronological sequence, which is, nonetheless, very similar to that of Warren (1984). Sutton et al. (2007) place their chronology in the context of climatic periods (Pleistocene, early Holocene, middle Holocene, and late Holocene) separated further by cultural complexes based upon technological advances. In addition to the cultural complexes, Sutton et al. (2007) include a hypothetical Pre-Clovis complex, pre-dating 12,000 years before present (BP), for which there is little or no solid archaeological evidence in the Mojave Desert. They also propose a Deadman Lake complex roughly contemporaneous with the Pinto Period, based on artifact assemblages they contend are unique to the Twentynine Palms area. A brief discussion of the different cultural complexes is presented below in Table 2.

Table 2. Temporal Periods and Cultural Sequences for the Mojave Desert Region, California			
Temporal Period	Cultural Complex	Approximate Dating	Characteristic Artifacts
Pleistocene	Pre-Clovis (hypothetical)	Pre-12,000 BP	Unclear
	Fluted Point, or Pleistocene Period	12,000 – 10,000 BP	Fluted points (Clovis)
Early Holocene	Lake Mojave Period	10,000 – 8,000 BP	Stemmed points (Lake Mojave, Silver Lake)
	Pinto Period	9,000 – 5,000 BP	Pinto and leaf-shaped points
Middle Holocene	Deadman Lake (Provisional)		Contracting-stem and leaf-shaped points
Late Holocene	Possible population hiatus	5,000 – 4,000 BP	Few sites or artifacts
	Gypsum Period	4,000 BP – AD 200	Gypsum and Elko series points
	Saratoga Spring, or Rose Spring Period	AD 200 – 1100	Rose Spring, Eastgate, Saratoga Spring points
	Late Prehistoric, or Shoshonean Period	AD 1100 – Contact	Desert Series points, ceramics

Adapted from Sutton et al. 2007

Fluted Point or Late Pleistocene Period – 12,000 to 10,000 BP

In the face of growing evidence of earlier occupation of other regions of North America, the presence of humans in the Mojave Desert prior to 12,000 BP cannot be discounted. The oldest well-identified cultural complex in the Mojave Desert is Clovis (ca. 12,000-10,000 BP), characterized by the long, fluted Clovis projectile point and Clovis-like points known as Great Basin Concave Base points. Reliable radiocarbon dates for organic material associated with fluted points in the Mojave Desert are lacking, but obsidian hydration has established that they have older relative ages than stemmed points from the same region. Only one possible Clovis occupation site has been found, at China Lake, while other fluted points have been recorded as isolated finds. Very little can be inferred about the people who created these fluted points, except that they most likely lived in highly mobile small groups and camped near reliable sources of water. Fluted point finds are concentrated in the China Lake and Lake Thompson (predecessor of Rosamond, Rogers, and Buckhorn lakes) areas, which are known to have had significant stream runoff and to have been good water sources during the Pleistocene/Holocene Transition, continuing during the early Holocene (Sutton et al. 2007).

Pinto Period (Early to Middle Holocene) – 9,000 to 5,000 BP

Previous investigators (e.g., Moratto 1984) defined the Pinto Period as a response to Mid-Holocene climatic warming and desiccation in the Great Basin, including the Mojave Desert. In this scenario, the Pinto Period began after the Lake Mojave Period at about 7,000 BP, corresponding roughly with the Holocene Maximum warming trend. At first, groups of hunter-gatherers adapted to the drying, warming conditions, possibly by abandoning the desert floor and occupying the higher, wetter margins for a thousand years or more. As the climate cooled again, the desert was repopulated as springs, streams, and shallow lakes reappeared (Moratto 1984). Information gathered during the past two decades suggests that the Pinto Period began during the early Holocene and overlapped the Lake Mojave Period. Recently obtained radiocarbon dates from Pinto Basin, Little Lake, Fort Irwin, and Twentynine Palms indicate ages of at least 9,000 years for some Pinto sites (Sutton et al. 2007). Although there is still some debate about the inception of the Pinto complex, it is clear that it is probably older than had been previously thought.

Pinto artifact assemblages have less diversity of lithic materials than their Lake Mojave predecessors, suggesting a reduced range. At the same time, the presence of Olivella shell beads suggests that there was trade with coastal groups. Ground stone milling tools are much more prevalent than in Lake Mojave assemblages, indicating that extensive plant food processing began at the end of the early Holocene, before the beginning of the dry, warm conditions that affected the desert floor during the middle Holocene (Sutton et al. 2007).

Gypsum Period (Late Holocene) – 4,000 BP to AD 200

Near the end of the middle Holocene, harsh climatic conditions associated with the Holocene Maximum warming trend (also known as the Altithermal) may have resulted in very low population densities, and even temporary abandonment, of large expanses of the Mojave Desert. Very few sites have been dated to a timespan between about 5,000 and 4,000 BP that separates the Pinto and Gypsum complexes. The appearance of corner-notched (Elko), concave-base (Humboldt), and contracting-stemmed (Gypsum) projectile points in late Holocene sites of the western and northern Mojave signals the beginning of the Gypsum Period, as temperatures began to ameliorate during the First Neoglacial episode at the beginning of the late Holocene (Moratto 1984; Sutton et al. 2007).

In addition to the characteristic projectile point types, Gypsum assemblages include leaf-shaped points, stone knives, flake scrapers, t-shaped drills, choppers, hammer stones, shaft smoothers, ornamental items, split-twig animal figures, and paint. Some of these items, along with the presence of rock art, suggest ritual activities. Manos, metates, mortars, and pestles are also found (Moratto 1984; Sutton et al. 2007). Gypsum sites are generally smaller and more numerous than earlier components, and are spread over a wider variety of environments. Socio-economic contact with the California coast is indicated by the presence of shell beads. Gypsum Period sites show evidence of exploitation of split-hoofed animals, rabbits, hares, and rodents, as well as hard seeds and mesquite.

Better technology and somewhat more complex social organization (compared to the previous Pinto population) probably helped peoples of the Gypsum complex adapt to the warming and drying conditions that began again after about 2,000 years ago. A more successful adaptation to the warm dry conditions is indicated because another population hiatus did not occur in the Mojave Desert during this period (Moratto 1984; Sutton et al. 2007). By around 3,000 BP, the Northern Uto-Aztecan peoples who had probably come from northern Mexico around the end of the Pinto Period had separated into Tubatulabalic, Hopic, Numic, and Takic language groups (Sutton et al. 2007).

Saratoga Spring or Rose Spring Period (Late Holocene) – AD 200 to 1100

Although the climate was warmer at the beginning of the Saratoga Spring Period than it had been during the First Neoglacial episode, conditions were sufficiently mesic to support springs and streams in the Mojave Desert, and possibly even shallow perennial lake stands at some of the desert playas (Sutton et al. 2007). Archaeological data suggest a significant increase in population, especially in the western Mojave. Projectile points indicate that the bow and arrow were introduced to the Mojave Desert during the Saratoga Spring Period. While they probably do not indicate a major cultural change in the region (Moratto 1984), they were a technological advance that may have improved hunting efficiency and increased the carrying capacity of the land, resulting in a rise in population (Sutton et al. 2007).

Saratoga Spring sites in the southern Mojave Desert reflect the influence of Hakataya culture from the lower Colorado River by the inclusion of buffware and brown ware pottery sherds and Desert Side-Notched and Cottonwood points. Hakataya intrusion or influence probably extended as far north and west as the east side of Antelope Valley (Moratto 1984). Anasazi pottery and turquoise mining sites indicate the presence and influence of Pueblo peoples in the eastern Mojave during the Saratoga Spring Period (Moratto 1984). In the western Mojave, particularly Antelope Valley, the effects of Hakataya and Anasazi contact or intrusion appear to have been minimal. Large village sites with cemeteries and well-developed middens, indicating long-term occupations, have been documented there. Among the artifacts found in Saratoga Spring sites of the Antelope Valley are steatite items and large numbers of shell beads, probably indicating trade with coastal groups (Moratto 1984; Sutton et al. 2007).

The rise in temperature and return to xeric conditions and occasional severe droughts associated with the Medieval Climatic Anomaly affected roughly the second half of the Saratoga Spring Period, beginning around AD 700. Deteriorating climatic conditions in the Mojave Desert led to a population decline, and may have been partially responsible for bringing the Saratoga Spring complex to an end around AD 1100 (Sutton et al. 2007).

Late Prehistoric Period (Late Holocene) – AD 1100 to Contact (ca. 1770)

The several tribes occupying the Mojave Desert at the time of contact with Europeans are believed to have had their genesis in the separate cultural complexes that developed during the Late Prehistoric Period (Moratto 1984; Sutton et al. 2007). Toward the end of the Medieval Climatic Anomaly, the population of the Mojave continued a decline that had begun during the Saratoga Spring Period. Hakataya and Anasazi cultural influences remained in the southern and eastern parts of the region, respectively. By around AD 1000, the Numic speakers of the western Mojave Desert had differentiated into distinct language groups, one of which was the Southern Paiute, which spread eastward and occupied an area north of the Mojave River. The Chemehuevi branch of the Southern Paiute later moved south along the west side of the Colorado River as far as the Chuckwalla Valley. The Shoshone moved into territory even farther north. South of the Mojave River, and in much of southern California, Takic-speaking groups were predominant (Sutton et al. 2007).

Late Prehistoric sites are abundant in the Mojave Desert, and include lithic scatters, temporary campsites, and large villages with middens and cemeteries. Artifacts include Desert series projectile points, ground stone milling tools, shell beads, incised stones and pendants, and brown ware and buffware ceramics. Obsidian was not used as frequently as during earlier periods. Faunal remains at archaeological sites indicate that deer, rabbits, hares, rodents, and reptiles were eaten, along with a wide variety of vegetal foods, indicated by ground stone grinding implements (Sutton et al. 2007). Trade, especially along the Mojave River and in the Antelope Valley, appears to have enabled the transport of resources over long distances, possibly mitigating against shortages and making a more sedentary, village-oriented existence possible during the Late Prehistoric Period (Moratto 1984).

Ethnohistory

The Project APE is located within the territory known to have been occupied by the Serrano Native American group prior to contact with Europeans, as well as the Vanyume group of Native Americans. The Chemehuevi, whose main territory was in the eastern Mojave Desert and around the Colorado River, were occasional enemies or allies of the Serrano, and were sometimes found in Lucerne Valley and the northern reaches of the San Bernardino Mountains in the early historic period. All three groups are discussed below.

The Serrano were mainly hunters and gatherers who occasionally fished. Game that was hunted included mountain sheep, deer, antelope, rabbits, small rodents, and various birds, particularly quail. Vegetable staples consisted of acorns, pinyon nuts, bulbs and tubers, shoots and roots, juniper berries, mesquite, barrel cacti, and Joshua tree (Bean and Smith 1978).

A variety of materials were used for hunting, gathering, and processing food, as well as for shelter, clothing, and luxury items. Shells, wood, bone, stone, plant materials, and animal skins and feathers were used for making baskets, pottery, blankets, mats, nets, bags and pouches, cordage, awls, bows, arrows, drills, stone pipes, musical instruments, and clothing (Bean and Smith 1978).

Settlement locations were determined by water availability, and most Serranos lived in villages near water sources. Houses and ramadas were round and constructed of poles covered with bark and tule mats (Kroeber 1925). Most Serrano villages also had a ceremonial house used as a religious center. Other structures within the village might include granaries and sweatshouses (Bean and Smith 1978).

Serrano social and political units were clans, patrilineal exogamous territorial groups. Each clan was led by a chief who had both political and ceremonial roles. The chief lived in a principal village within the clan's territory. The clans were part of a moiety system such that each clan was either a wildcat or coyote clan and marriages could only occur between members of opposite moieties (Earle 2004). On the north side of the San Bernardino Mountains, clan villages were located along the desert-mountain interface on Deep Creek, on the upper Mojave River, in Summit Valley, and in Cajon Pass. The principal plant food available near these villages was juniper berries. These villages also had access to mountain resources, such as acorns and pinyon nuts.

Vanyume villages were located along the Mojave River from south of Victorville to Soda Lake. These river villages had populations of 40-80 people. Marriage ties between the Serrano foothill villages and Vanyume desert villages facilitated access to mountain resources, such as acorns and pinyon nuts, by the desert villages. The principal desert resources were mesquite beans, screw beans, tule reed roots, and carrizo grass sugar (produced by aphids that lived on the Carrizo grass). Animal resources were rabbits, jackrabbits, desert bighorn sheep, pronghorn, and desert tortoise (Earle 2004:10). The Vanyume also collected salt from Soda Lake and from the Barstow-Daggett area to exchange for acorns and other resources from the mountains (Earle 2004:11).

Partly due to their mountainous and desert inland territory, contact between Serrano and European-Americans was minimal prior to the early 1800s. In 1819, an asistencia (mission outpost) was established near present-day Redlands and was used to help relocate many Serrano to Mission San Gabriel. However, small groups of Serrano remained in the area northeast of the San Geronimo Pass and were able to preserve some of their native culture. Today, most Serrano live either on the Morongo or San Manuel reservations (Bean and Smith 1978).

The Chemehuevi are one of 16 identified Southern Paiute groups that at one time occupied a wide strip of territory extending across southern Utah and southern Nevada and following the Colorado River into California. The main territory occupied by the Chemehuevi group was west of the Colorado River, extending approximately from present-day Blythe to just north of Needles, and into California halfway to Twentynine Palms (Kelly and Fowler 1986; Earle 1997).

The Chemehuevi hunted large game, but small animals were the chief source of protein and included rabbits, wood rats, mice, gophers, squirrels, chipmunks, and birds. Plant foods included piñon nuts, roots agave, seed, and berries. Some horticulture was being practiced at the time of Spanish contact in the 1770s (Earle 1997). Settlement was mobile and scattered, with recurrent residence in specific locations. Individual households grouped together with others and traveled as units on hunting and

gathering trips (Kelly and Fowler 1986). Structures varied according to the season. During the winter, the Chemehuevi lived in earth-covered dwellings or caves. In warmer months, many lived under trees, sometimes with extra brush added for denser shade (Kelly and Fowler 1986).

As early as the end of the eighteenth century, Southern Paiute-Chemehuevis were being enslaved or baptized in the Spanish settlements. In response, some Chemehuevi raided travelers along the Old Spanish Trail from the 1850s to the early 1870s. During that time, efforts were made to settle the Chemehuevi on the Colorado River Reservation, but many did not agree to move there until the twentieth century. The early 1900s saw the establishment of a number of small reservations in Utah for the Southern Paiute. In 1980, the Southern Paiute-Chemehuevi numbered approximately 124 (Kelly and Fowler 1986).

History

The first significant European settlement of California began during the Spanish Period (1769-1821) when 21 missions and four presidios were established between San Diego and Sonoma. Although located primarily along the coast, the missions dominated economic and political life over the majority of the California region. The purpose of the missions was primarily Indian control and forced assimilation into Spanish society and Catholicism, along with economic support to the presidios (Castillo 1978).

The Mexican Period (1821-1848) began with the success of the Mexican Revolution in 1821, but changes to the mission system were slow to follow. When secularization of the missions occurred in the 1830s, the vast land holdings of the missions in California were divided into large land grants called ranchos. The Mexican government granted ranchos throughout California to Spanish and Hispanic soldiers and settlers (Castillo 1978; Cleland 1941).

In 1848, the Treaty of Guadalupe Hidalgo ended the Mexican-American War and marked the beginning of the American Period (1848 to present). The discovery of gold that same year sparked the 1849 California Gold Rush, bringing thousands of miners and settlers to California from various parts of the United States, most of whom settled in the north. For those settlers who chose to come to southern California, much of their economic prosperity was fueled by cattle ranching rather than by gold. This prosperity, however, came to a halt in the 1860s as a result of severe floods and droughts, which put many ranchos into bankruptcy (Castillo 1978; Cleland 1941).

The first known European visitors to the Mojave Desert via the Cajon Pass were Lieutenant Pedro Fages and a small party of soldiers, who traversed the pass and skirted along the north side of the San Gabriel Mountains toward the west in 1769. In 1776, while exploring a route across the Mojave Desert from the Colorado River to Mission San Gabriel, Father Francisco Garces, accompanying the expedition of Juan Bautista de Anza, passed through the Victor Valley area, establishing a section of what would become the "Old Spanish Trail". The expedition party is believed to have camped

approximately 1.5 miles southeast of present-day Hesperia. In 1826, Jedediah Smith and a group of trappers followed this route from present-day Needles to Mission San Gabriel, becoming the first White man to cross through the Victor Valley area. General John Fremont and Kit Carson also followed this route during an 1842 U.S. Army expedition to explore the Mojave Desert and to determine the Mexican military presence in the area. In the following years, hundreds of settlers used the trail to come to Spanish California. After the Mexican-American War officially ended in 1848, a group of Mormon war veterans who had been guarding the Cajon Pass against horse thieves were allowed to return home and are credited with being the first to take a wagon up the pass and through Victor Valley on their way home to Utah (California Historic Route 66 Association 1996; City of Hesperia 2002).

During the Spanish and Mexican periods, there was little activity in the area that would later come to be known as Victor Valley, because of its distance from the coast and the mission system. The Mojave River Narrows area was a favorite summer location for the large mission herds and subsequently the equally large herds of Rancho San Bernardino under Antonio Maria Lugo. In 1819, seven neophytes, sent by the padres of Mission San Gabriel to establish an asistencia at the Mojave River Narrows, were killed by hostile Indians. The perpetrators were most likely Mojave Indians who were known to terrorize not only Spanish supply lines, but also the local tribes of the desert. Evidence of Spanish mining activities has been found in the Lucerne Valley to the east, and similar small-scale operations may have taken place in the small hills and ranges surrounding Victor Valley. That the Spanish were limited to such minor operations may be attributable to the ferocity of the Mojaves and other Indians of the desert. Although the "Old Spanish Trail" traversed through the area, Victor Valley was never successfully settled by the Spanish or their Mexican descendants (California Historic Route 66 Association 1996).

With the conclusion of the Mexican–American War in 1848 making California part of the United States and the Gold Rush that followed less than a year later, White settlers began pouring into the new territory. Within 10 years there were a few White settlers on the Mojave River. A census shows there were 10 people living in two residences on the Mojave River by 1860. Listed in Dwelling No. 703 were Aaron Lane, William R. Levick, and the Nicholson family, consisting of George and Frances, and their three children aged nine to 13. Joseph and Mary Highmoor lived in Dwelling No. 704, with a seven-year-old female named Anna (Thompson et al. 1995).

Aaron Lane can be placed on the Mojave as early as 1858 and had probably taken advantage of an announcement from the Commissioner of the General Land Office (GLO) in the spring of 1858 that public land was for sale in the high desert. Mr. Lane laid claim to land near the Lower Narrows of the Mojave River approximately two miles north of present-day Victorville. This location was not picked by accident, since this was the site where the "Old Spanish Trail" crossed the Mojave River and turned southwest to the Cajon Pass. This spot soon became known as Lane's Crossing, at first a humble station where the early desert travelers could obtain the bare necessities of life. Here Aaron Lane

grew hay, barley, and other crops on a small scale to feed his own stock and those of the travelers who stopped at his station. By 1863, he owned a small quantity of stock for breeding or to provide milk and meat for his guests, as well as a small honeybee enterprise (Thompson 1995).

Several other way stations began to appear on the road along the Mojave River in the early 1860's, including Point of Rocks, Cottonwoods, Grapevine, and Fish Ponds. All of these stations were located downstream from Lane's Crossing, however, making Lane's either the last stop before heading over the Cajon Pass or the first stop through the desert. Because of its location, Lanes Crossing was the hub of activity for several years in the Mojave River area. That influence in the area soon ended, as a new road was established in 1867 by Lafayette Mecham, the owner of the way station at Fish Ponds. This new road bypassed the old river route, which traveled in a large arc to the north and then east. This new road would run directly southwest from Fish Ponds to Little Meadow. Little Meadow was upriver from Lane's Crossing near the Mojave River's Upper Narrows, and it was here that the new road crossed the river. When Sheldon Stoddard dug a well along the route, eliminating one of the road's major drawbacks, it became a very advantageous shortcut and was named Stoddard's Well Road. Another road was cut joining Lane's Crossing with Stoddard's Well Road, but because of the shorter distance and firmness of Stoddard's Well Road, the stage line began using the new route (California Historic Route 66 Association 1996; Thompson 1995).

The financial opportunity of this new and untapped route was not lost on other enterprising men of the time. Almost immediately, land around the new crossing was being claimed and filed on and in 1870, two settlers, A. F. McKenney and Jesse W. Taylor, combined their adjoining properties and established a new way station known as McKenney Station. Here McKenney provided fresh horses for the stagecoaches, blacksmithing services and meals to the stage line drivers. The station changed owners over the next few years, until it came into the hands of Heber Huntington in 1873, who added a trading post and supplied provisions to the stage line. The site was renamed Huntington Station and retained this name until 1885. Others looking to benefit from the new route included the Brown family, which consisted of four brothers. In 1869, they began filing on a few hundred acres of land upriver from the new crossing. The Brown family increased their holdings over the course of time to include property extending to the vicinity of the upper narrows on the north, and Bear Valley Road on the south. The spread was known as the Brown Ranch during the family's ownership, although it seems that none of the Brown brothers ever homesteaded on their property. The Brown Ranch was eventually sold in 1898 due to a severe recession that caused several bank failures in the 1890s. The Brown Ranch was auctioned off, and in 1901 several of the new mortgage holders incorporated their holdings into the Rancho Verde Company (Thompson 1995).

Although the new road and crossing spurred some interest in Victor Valley, the area was still considered remote and unsettled. In 1883, the construction of a railroad, the landmark event in the history of the Western Mojave, occurred. Built by the California Southern Railroad (later Atchison, Topeka, & Santa Fe [AT&SF] Railroad) under the supervision of L. N. Victor, the first tracks wound up

the Cajon Pass from San Bernardino into the Victor Valley. The line reached the AT&SF Railroad transcontinental mainline to the east at Daggett (near present day Barstow) in 1885. Huntington Station became a railroad substation and changed its name to Victor, in honor of the construction superintendent. Within a single year, the Plan of the Town of Victor was prepared, which created the grid pattern of the original town. The name of the town was changed to Victorville in 1901 by the U.S. Post Office to avoid confusion with Victor, Colorado.

The abundance of good water and the availability of rich bottom lands led to agricultural development along the Mojave River shortly after the establishment of the railroad depot. When fruit trees were shown to thrive in the rich soil, many of the ranches planted apple and pear orchards in addition to their normal activities (California Historic Route 66 Association 1996; Thompson 1995).

The coming of rail transportation introduced many new settlers to the banks of the Mojave River. Having federal grants of huge land holdings, the railroads began to engage in the real estate business on a scale never seen before. The AT&SF Railroad, with large holdings in the Victor Valley, promoted the township of Hesperia and throughout the 1880s land speculators throughout the valley feverishly bought and sold lots, tracts, townships and dreams. It is estimated that the population of Victor Valley multiplied up to five times before the boom ended. A decade later large development companies and individual real estate agents had inherited the role of town organizers, although they were never quite as successful as the railroad companies had been (California Historic Route 66 Association 1996).

In 1912, developer Arthur E. Hull arrived in the valley and immediately perceived the agricultural potential of the area. He quickly established the Apple Mesa Development Company, as well as other development companies throughout Victor Valley. With the help of Los Angeles newspaperman Max Ihmsen, the pair promoted and advertised the sale of land in the region across the nation and the AT&SF Railroad gave away more than 300,000 apple trees to land buyers during 1913 and 1914 alone. It is estimated that growers were now earning between \$350-\$500 per acre of apples a year. In 1916 the state and federal government authorized the Victor Valley Water Project; soon afterward, Hull and his associates put up \$2.5 million for the Arrowhead Reservoir and Power Company. Victor Valley had reached unprecedented levels of production and looked as if it would soon rival the other agricultural centers of Southern California. However, the onset of World War I in 1917 quickly reversed the industrious work of Arthur Hull and his contemporaries. Many young men who had made up the majority of the new homesteaders and skilled laborers enlisted in the Army and left Victor Valley for good. The region quietly slumped back into its previous state of desert guest ranches and small mining operations (California Historic Route 66 Association 1996).

In 1915, E.H. Richardson, the inventor of the Hotpoint Electric Iron, sold his patent and bought land for \$75,000 in the area of what is now the city of Adelanto. Richardson had planned to develop one of the first master-planned communities in Southern California. He subdivided the land into one-acre

plots to be sold to veterans with respiratory ailments suffered during World War I. Along with this plan he hoped to build a respiratory hospital. Although Richardson's dreams were never fully realized, his planning laid the foundation for the establishment of the City of Adelanto. Much like its neighboring cities, Adelanto grew acres of deciduous fruit trees. These orchards, famous for their fresh fruits and cider, thrived until the Great Depression. Later, they were replaced by poultry farms. In early 1941, as the war time emergency developed, the Victorville Army Air Field was established (City of Adelanto 2006). Constructed between 1941 and 1943 as the Air Corps Advanced Flying school, on April 23, 1943, it was renamed Victorville Army Airfield (California Military Museum 2018). By 1950, after the formation of the U.S. Air Force as a separate branch of the military, the base was renamed as George Air Force Base in honor of the late Brigadier General Harold H. George (California Military Museum 2018, City of Adelanto 2006). The Tactical Air Command took over the base in November 1951, and George Air Force Base became the first supersonic base with the arrival of F-100s in mid-1954. The base was decommissioned in December 1992 (California Military Museum 2018). In 1994, the base was repurposed as the Southern California Logistics Airport and as an industrial park (City of Victorville 2018). It was not long before modern tract homes began to replace the old homesteader shacks. Schools, hospitals, churches, hotels, and shopping centers soon followed. The interstate freeways built in the 1950s and 1960s contributed to the area's growth and allowed workers to commute to jobs in the San Bernardino Valley or in Riverside. The desert communities of Hesperia, Victorville, and Adelanto have experienced unprecedented growth in recent years because of the opportunities offered by cheaper housing. This has led to an increase of commuter traffic from Victor Valley to the Los Angeles basin in the south.

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