

Tennyson Solar Project

Environmental and Social Assessment Summary

Prepared for



**Akvo Energy USA Inc.
BNB Tennyson Solar LLC**

Prepared by



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1.0 Introduction and Overview

BNB Tennyson Solar LLC (BNB Tennyson), a subsidiary of Akuo Energy USA Inc. (Akuo Energy) is proposing to develop the 150-megawatt (MW) Tennyson Solar Project (Project) in Coke County (County), Texas. The Project includes construction of a solar facility and associated infrastructure on approximately 1,200 acres (Project Area). No National Environmental Policy Act (NEPA) documentation was required for the Project per U.S. requirements, but a Critical Impact Analysis (CIA) and some follow-up technical studies were prepared to support the local construction permitting process.

To support the requirements of Akuo Energy's Project Lenders, Tetra Tech was engaged to prepare an Equator Principles 4 (EP4) Compliance Review and Gap Analysis of the Project. The current version of the EP4 was released in July 2020 (Equator Principles 2020a).

The findings of the review noted that this Project is considered a low-risk Category B Project under EP4 with some further gaps to be addressed. The review noted that there are still some areas where further environmental and social baseline data would be useful to understand and characterize risks (particularly air quality and noise). In addition, to be in full compliance with Performance Standard (PS) PS 6 and PS 8, there are some further steps that are recommended to ensure Project compliance with best practice international biodiversity and cultural resource standards. To fill these gaps, Akuo Energy has developed this targeted Environmental and Social Assessment Summary (ESAS) in a level of detail commensurate with the impacts. This document includes an analysis of Air Quality; Noise; Ecology and Biodiversity; Cultural Resources; Geology, Soils and Hydrogeology; Socioeconomics and Human Rights and Greenhouse Gas Emissions, and intends to summarize and mitigate any Project level environmental and social risks in line with EP4. From an EP4 perspective, the ESAS focuses on identifying the socioeconomic baseline and identifying any social and human rights risks; further assessing biodiversity, ecology, and cultural resources risks from an international standpoint; quantifying Greenhouse Gas Emissions; and generally summarizing Project conditions in terms of geology, soils, and hydrogeology in order to characterize impacts from a resource efficiency, waste management, and pollution prevention perspective. Further detail on these topics is provided to recognize any outstanding environmental and social issues that require further risk assessment and mitigation. Topics that were considered already understood to have an appropriate level of detail based upon the studies completed to date, and therefore outside the scope of this ESAS include Land Acquisition, general Community Health and Safety impacts, Water Quality Impacts, and Impacts to Indigenous People.

Additionally, per the Gap Analysis, a 2025 Risk Analysis was prepared for the Project which addresses a number of the physical risks covered in a climate risk assessment (Swiss Re 2025). This includes the risks of floods, convective storms, and wildfires. Three detailed hail and wind risk assessments were also prepared for the Project in 2024. Thus, Climate Risk is not specifically included in the ESAS as it has already been covered separately.

A separate Environmental and Social Management Plan is also being prepared for the Project to highlight relevant mitigation and monitoring measures both for topics included in the ESAS and including management of environmental and social risks with contractors on site.

2.0 Project Description

2.1 Site History & Location

The Project is a proposed 150-MW greenfield solar project located in Coke County, Texas, which is about 185 miles southwest of Fort Worth (Figure 1, Figure 2). The Project Area has been strategically located for its favorable solar profile and limited grid congestion. The Project is located on a 1,200-acre site situated within a larger parcel of 2,724.5 acres of land owned by a single family. The family historically maintained a small ranch on the site. The unincorporated community of Tennyson is located less than a mile to the northwest of the Project Area (1 mile radius around the Project Area). The Project Area is shown in Figure 2. San Angelo is the nearest major metropolitan area, located approximately 23 miles southwest of the site, with a population of over 100,000. There are three small towns with established communities and housing options located near the Project Area, each with a population near 1,000: Robert Lee, approximately 20 miles northwest; Bronte, approximately 10 miles north; and Miles, approximately 17 miles southeast.

The property is bordered by U.S. Highway 277 to the west; by Rocky Lane, agricultural cropland, a ranch, creeks, shrubland and a substation to the north; by creeks and shrubland to the east; and by a dairy farm along with creeks and mesquite-juniper-lotebush shrubland to the south. The site and surrounding area are used for agriculture. The immediate surrounding area for the Project Area is largely rural, and the site is considered remote.

Livestock production is the primary land use in this region. The Project Area has historically been privately owned and used for livestock rangeland, primarily supporting cattle and stock horses. The land is recognized as a registered Texas "Century Farm," indicating continuous family operation for over a century under the Texas Family Land Heritage Program. The main family residence is located to the north of the Project, with a second family home situated west of Tennyson Lane, south of its intersection with Saynor Lane. The property includes various outbuildings, water-drawing windmills, cisterns, fencing, stock ponds, and other livestock-supporting structures.



Figure 1. General Project Location

Source: Akuo, Tennyson Solar Presentation, March 2025

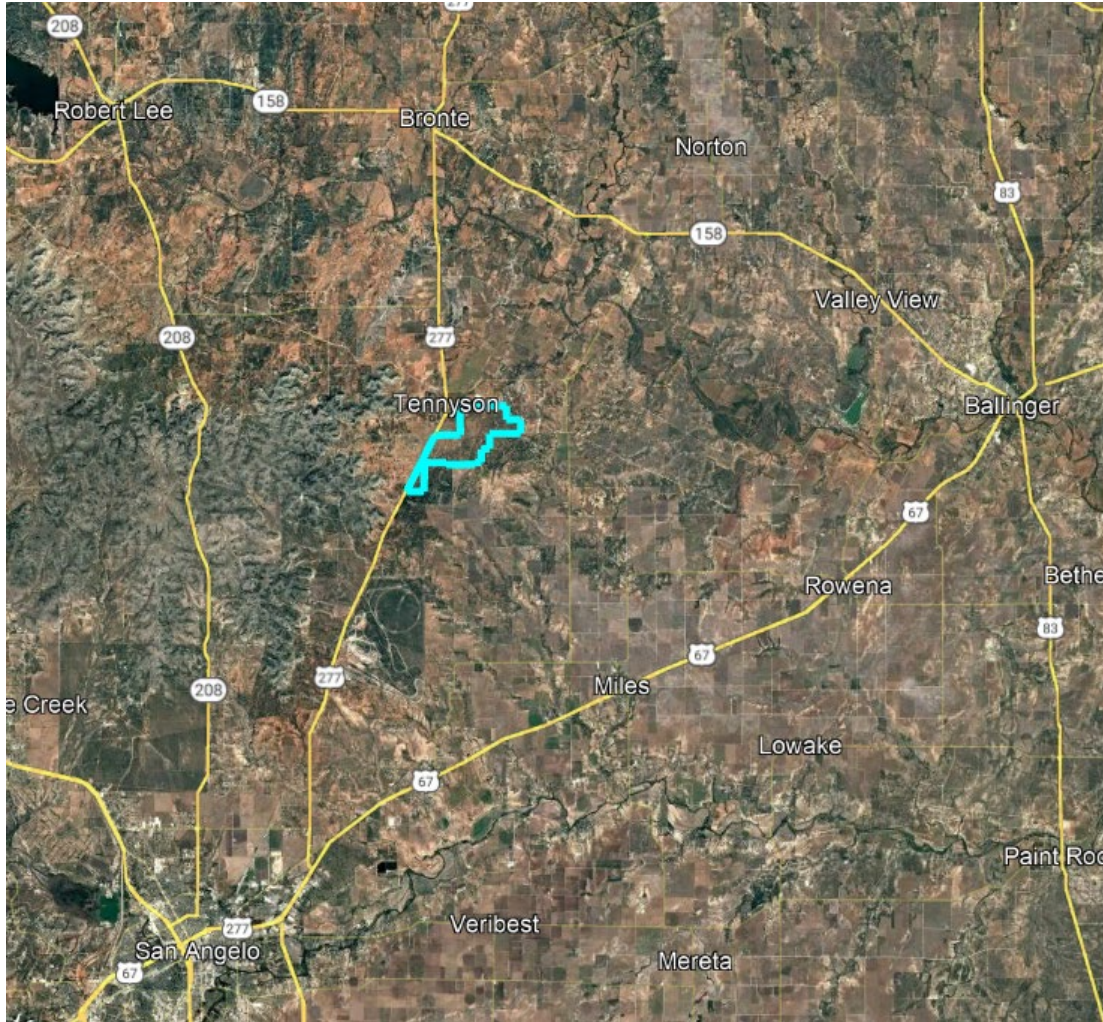


Figure 2. Project Area with Surrounding Highways and Cities

Source: Akuo, Tennyson Solar Presentation, March 2025



Figure 3. Example View of the Project Area

2.2 Project Setting

About 77 percent of the Project Area is covered by shrub and scrubland, with grasslands making up roughly 15 percent of the site. Developed open spaces account for approximately 6.4 percent of the site, while smaller portions consist of cultivated crops, deciduous forest, developed low-intensity areas, and evergreen forest.

The climate of Coke County is characterized by mild temperatures throughout the year with hot summers where average temperatures are in the low 90s. The area has an average rainfall of 28 inches largely in the summer. However, recent climate data indicate that the area has experienced a severe drought (Timmons Group 2022). The Project Area consists of steep canyons, escarpments, rounded badlands, and dissected river breaks. Elevation in the Project Area is irregular below the caprock canyons, ranging from 1,820 feet above mean sea level to 1,881 feet above mean sea level (USGS 2016). Drainage features in the Project Area include Gobbler Creek and Mule Creek, which eventually drain to the Colorado River.

2.3 Project Proponent

The Project is wholly owned by BNB Tennyson Solar LLC (BNB Tennyson), a subsidiary of Akuo Energy USA, Inc. Akuo Energy was formed in 2007 in France and branched out to global locations in 2009, launching its first U.S. project in 2016. As of 2024, the company has 489 employees globally, has over 90 power plants that are either in operation or under construction, and currently has developed four wind projects in the United States (Akuo Energy 2025b). Akuo Energy USA is headquartered in Chicago, Illinois, but has an operations and management team centralized in San Antonio, Texas.

BNB Tennyson has obtained a 50-year lease with the current landowners and secured an interconnection agreement in late 2022 with the Electricity and Reliability Council of Texas (ERCOT) and American Electric Power (AEP), the transmission provider. In January 2024, Akuo Energy purchased 16 acres from the landowner for the utility substation and its slack span and transferred the ownership to AEP of Texas, who operates the utility (Akuo Energy 2025c).

The Project's photovoltaic (PV) modules are contracted through a framework agreement with First Solar, a leading American solar technology manufacturer. BNB Tennyson is projected to generate approximately \$140 million in Investment Tax Credits and has an estimated hard capital expenditure of around \$240 million. The contractual structure for the Project is shown in Figure 4 (Akuo, Tennyson Project Presentation, March 2025). SOLV Energy LLC has been selected as the Engineering, Procurement, and Construction (EPC) contractor for the Project.

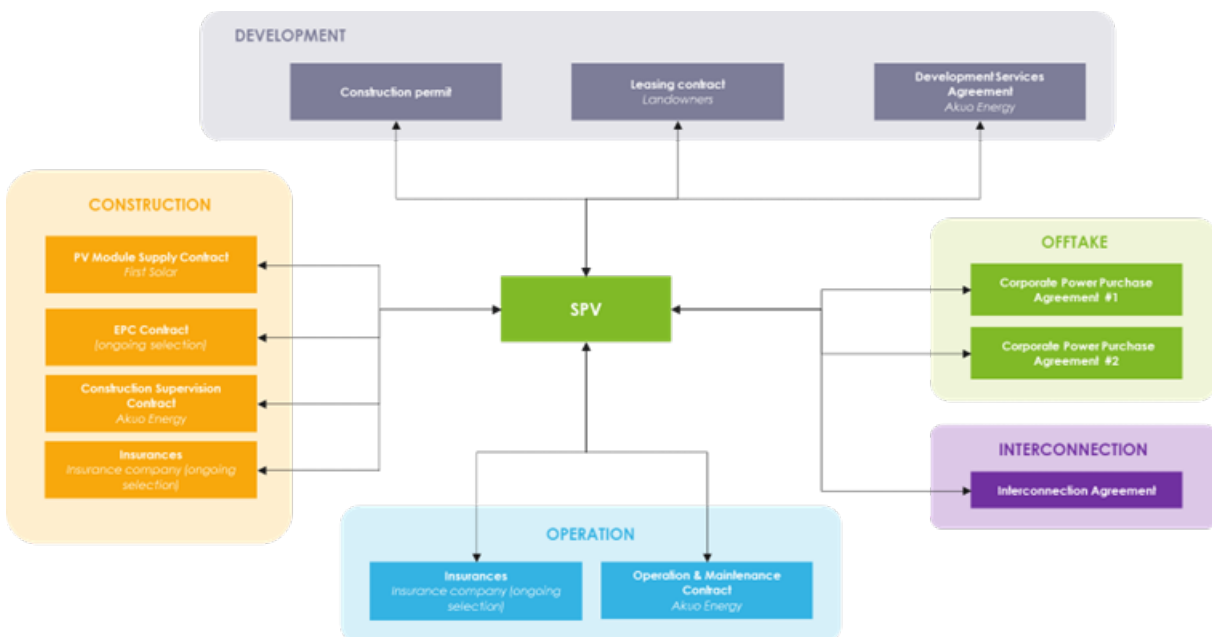


Figure 4. Project Contractual Structure

Source: Akuo, Tennyson Solar Presentation, March 2025

2.2 Project Features

The Project is designed to efficiently capture and transmit solar energy to the electrical grid. The Project's total permanent footprint is estimated to be 1,200 acres. The Project will include approximately 420,000 single-axis tracker-mounted PV modules organized into 3,800 arrays. In addition to the solar arrays and the BESS, the Project includes the following supporting components: a collector substation, an overhead 345-kilovolt (kV) slack span, one switchyard, 37 inverters, transformers, an operations and maintenance (O&M) building, associated access and service roads, and perimeter fencing. The Project's point of interconnection will be through the planned AEP substation and slack span. The Project Area Layout is illustrated in Figure 5.

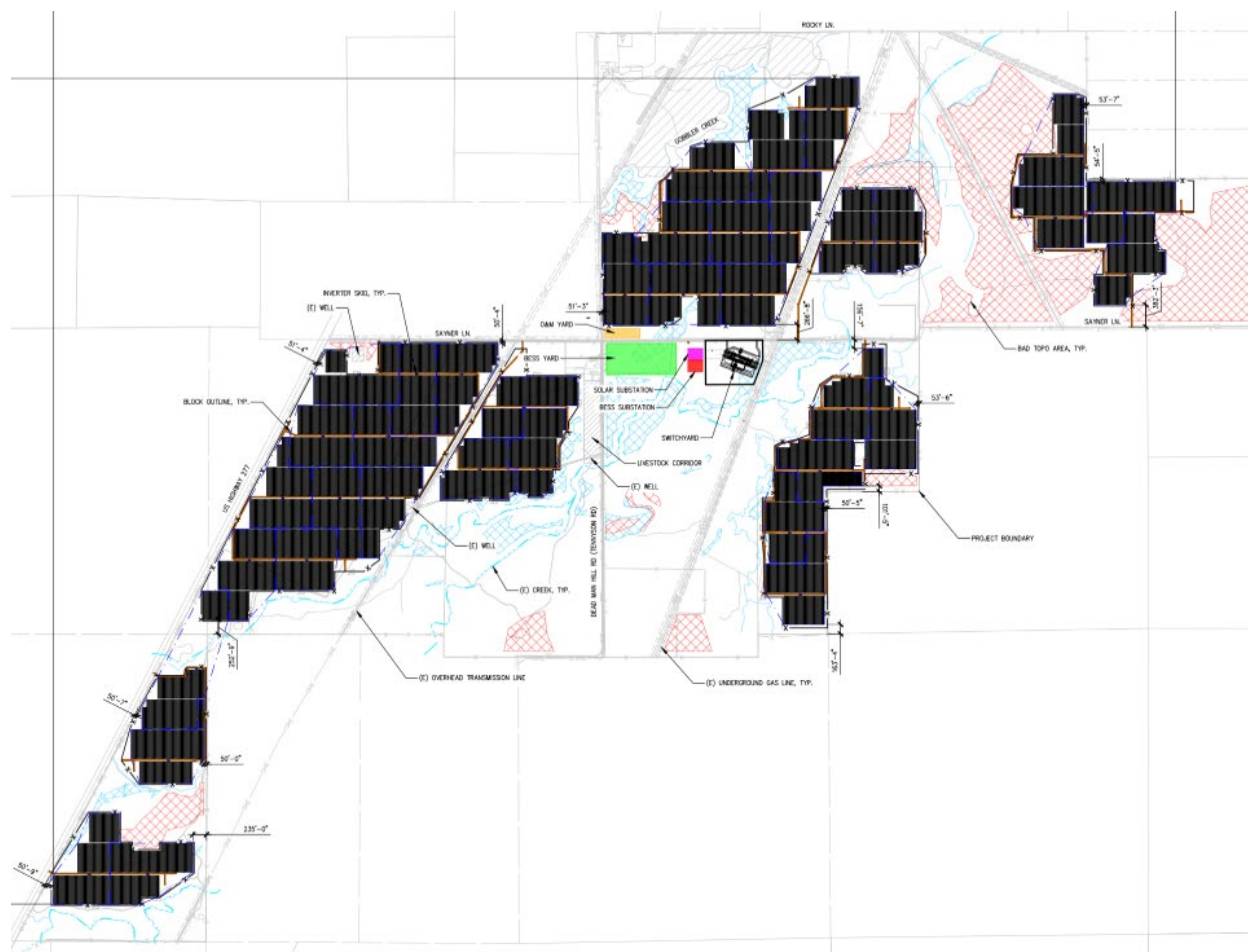


Figure 5. Project Area Layout

Source: Akuo, Tennyson Solar Presentation, March 2025

The Project infrastructure includes several components as part of the solar and battery energy storage system (BESS) facility. The solar arrays are located throughout the property, avoiding any wetlands/water channels and the archaeological site. The operations yard and the BESS yard will be located adjacent to each other in the central portion of the site and to the west of the solar and BESS substations. These areas are also directly adjacent to the switchyard. Additionally, an underground gas line runs through the east central portion of the Project Area. The overhead transmission line traverses north to south adjacent to the most western solar array.

2.4 Project Schedule

The Project has an active lease in place for 50 years that was secured in 2024 with the landowners. A framework agreement with First Solar was placed in June 2022 for the supply of around 500 MW between 2024 and 2026 in the U.S. Akuo Energy also secured the main power transformer in

October 2022, securing its delivery ahead of Project schedule requirements. Panels are anticipated to last 25-30 years.

The Project began interconnection work to a 345-kV transmission line in the spring of 2024. EPC selection was finalized in early 2025, and the Power Purchase Agreements were signed in March 2025. Offtake agreements were signed in 2025. Financial close was completed in September 2025, with commercial operation planned for the fourth quarter of 2026.

Construction

Project construction is anticipated to last up to 18 months from receipt of the Stormwater Pollution Prevention Plan (SWPPP), National Pollution Discharge Elimination System (NPDES), and Grading Permit in September 2025. Early construction work will include site clearing, site grading, drainage, site mobilization, and foundation installation, all of which are scheduled to be completed by the end of 2025. Later-stage construction activities will include installation of the solar modules and tracker system, installation of the inverters, and energizing the PV field, all of which is planned to be completed by early to mid-2026.

During the construction phase, the facility will be manned between the hours of 7:00 a.m. to 5:00 p.m., Monday through Friday. As identified in the Site-Specific Security Plan, during construction, a 7-foot chain link fence with barbed wire will be installed around the perimeter of the Project Area for security. The laydown area for equipment and materials will be staged in the vicinity of the BESS yard, the BESS and solar substations, and the maintenance facility.

Operations

Project commissioning is planned to begin in quarter 3 of 2026, and finish in the fourth quarter of 2026. The vegetation management plan (Exhibit A-1.2) identifies general requirements and protocols for managing the vegetation during operations to reduce fire hazard and maintain site conditions conducive to safe operations of the facility (Akua Energy 2025a). Periodic maintenance measures may include mowing/lawn care, tree trimming, and application of appropriate herbicides or other means to control undesirable vegetation. Best management practices will be used in vegetation management.

2.5 Project Alternatives

No alternative sites were considered for this Project. However, alternative site layouts were considered based upon avoidance of impacts to wetlands/waters, wildlife, and archaeological features on the site.

Solar PV was the original technology proposed. In addition, an alternative tracker type PV system was selected that features strong hail mitigation given the achievable tracker angle and response time during a hailstorm.

2.6 Associated Facilities

According to the World Bank Group (WBG)/International Finance Corporation's (IFC) Performance Standards, "associated facilities are defined as those facilities that would not be constructed if the

client's project did not exist and where the client's project would not be viable without the other facility." The WBG/IFC Performance Standards require that a social and environmental assessment be conducted covering the Project's Area of Influence, which encompasses the primary Project Area as well as associated facilities. In January 2024, Akuo Energy purchased 16 acres from the landowner for the utility substation and transferred the ownership to AEP of Texas, the utility (Akuo, Tennyson Project Presentation, March 2025). As a result, the AEP substation and its slack span are classified as associated facilities for the Project. A fiber-optic network for Project internet connectivity will also be constructed and is likewise considered an associated facility.

3.0 Methodology

3.1 Applicable Standards

In September 2025, Tetra Tech was engaged to evaluate Project compliance with the EP4 and other applicable standards as defined below and identify key environmental and social risks. The EPs are the finance industry's set of guidelines for managing social and environmental risks in project financing. The EPs were launched in 2003 by 10 global financial institutions and were updated to EP4 in October 2020. Equator Principle Financial Institutions, made up of private banks and export credit agencies, will only provide loans to projects that conform to a series of principles. Because the Project includes international funding, a review of Project compliance with EP4 is required (IFC 2020). In addition, the EPs rely upon the WBG/IFC Performance Standards on Environmental and Social Sustainability and the WBG Environmental, Health and Safety Guidelines. These Guidelines are also used to benchmark environmental and social compliance.

Based upon a review of existing documentation, the Project would be classified with a low-risk Category B designation. According to EP4 Statement of Principles, Principle 1: Review and Categorisation, Category B projects are defined as follows:

- **Category B** – potentially limited adverse risks/impacts that are few in number, generally site-specific, largely reversible and readily addressed through mitigation measures.

Although impacts noted in the early-phase technical studies were considered minor and would be consistent with a low-risk Category B designation, given the Project proximity to an archaeological site and the potential for biodiversity impacts and the subsequent need for mitigation, the Project would not qualify as a Category C designation for projects with minimal or no adverse impacts.

A CIA and Projected Species Assessment (PSA) were completed for the Project in 2019 (Blanton and Associates 2019a, 2019b). Many risk topics were adequately covered. For example, the Project is designed in accordance with local flood zoning requirements, and stormwater loads are dealt with via detailed design and considered in the SWPPP. However, there are still some areas where further environmental and social baseline data would be needed to understand and characterize risks (particularly socioeconomics, air quality, and noise). In addition, there are some further steps that need to be taken to evaluate Project compliance with international biodiversity and cultural resource standards and for the Project to be in full compliance with EP2 Environmental and Social Assessment requirements, which are addressed in this ESAS.

Following this compliance review, it was recommended that a stand-alone ESAS be prepared to address any outstanding gaps identified that are still needed to meet EP4 requirements.

3.2 Impact Assessment Criteria

Potential environmental and social risks were assessed by examining various factors. These included host country regulations, existing environmental and social management systems, social impact assessments, stakeholder engagement plans and grievance mechanisms, as well as the adequacy of the Project's management, mitigation, monitoring, and compensation measures.

Additionally, the impacts of associated facilities (defined above) were also evaluated. Key documents reviewed include the 2019 CIA, the 2019 Archaeological Reconnaissance for Site 41CK168 at the Tennyson Solar Project, the 2022 Tennyson Solar Jurisdictional Waters of the U.S. Delineation Package, and the 2025 Tennyson Solar Project Phase I Environmental Site Assessment Report (Blanton and Associates 2019a, Blanton and Associates 2019b, Timmons Group 2022, Tetra Tech 2025).

The WBG Environmental Health and Safety (EHS) Guidelines and Industry-specific EHS Guidelines for Wind Energy provide relevant guidelines for air quality emissions, water quality, noise, and waste management (WBG 2015). Overall environmental impacts in this ESAS are generally described according to the following criteria in Table 1 below.

3.3 Overview of the ESAS Process

The primary objectives of the ESAS are the following:

- To bridge the compliance gaps from the Project studies and permitting documents with the EP4 and supporting IFC Performance Standards and the WBG EHS Guidelines.
- To identify general environmental constraints and opportunities within the Project Area, taking into account the characteristics of the development and the local environment.
- To describe the avoidance, minimization, and mitigation measures identified to prevent, reduce, and where possible, offset any significant adverse effects on the environment.

3.4 ESAS Report

To evaluate environmental impacts and determine their effects and significance, relevant assessment criteria are identified. The various methodologies that have been used within each environmental topic area or discipline are included within the appropriate sections of this ESAS.

Each impact assessment topic section includes the following information:

- **Predicted Effects:** This is an evaluation of the proposed Project's impacts in quantitative and qualitative terms. In general, the effect of an impact is assessed by a combination of the sensitivity of the environment and the degree of alteration from the baseline state (both positive and negative), which can be predicted. Environmental sensitivity may be categorized by many factors, such as the threat to a rare or endangered species or changes to soil quality or land use. Impacts can have direct and indirect effects; can be cumulative, short-term, medium-term, or long-term; can be permanent or temporary; and can have positive or negative effects. Impacts can be analyzed in terms of the source of pollution and the pathways by which they travel to arrive at a receptor.
- **Significance of Effects:** Project impacts are determined to be 'significant' or 'not significant.' Significance is a combination of probability and severity and is evaluated in terms of likeliness to occur and the scale of the potential effect. The discussion will also identify impacts which cannot be assigned a significance along with the reasons for uncertainty.

- **Mitigation Measures:** This provides a description of the measures proposed to minimize potential significant adverse effects.

Details about evaluating human rights risks and the impacts of greenhouse gas emissions were based upon the September 2020 Guidance Note: On Implementation of Human Rights Assessments under the Equator Principles and Annex A of July 2020 EP4 (Equator Principles 2020a, 2020b).

3.4.1 Significance Criteria

As a guide, Table 1 presents the Environmental and Social Risk Matrix used to determine the effect's significance by combining factors of importance, sensitivity, and magnitude (as defined by factors like the geographic extent of effect, duration and frequency, irreversibility, and any regulatory standards which may apply) across a range of severities and probabilities.

Table 1. Environmental and Social Risk Significance Matrix

Severity	Probability				
	1. Very Unlikely to Occur	2. Unlikely to Occur	3. May Occur	4. Likely to Occur	5. Will Occur
5. Massive Effect	Medium	Medium	High	High	High
6. Major Effect	Low	Medium	Medium	High	High
3. Moderate Effect	Low	Low	Medium	Medium	High
2. Minor Effect	Negligible	Low	Low	Medium	Medium
1. Slight Effect	Negligible	Negligible	Low	Low	Low
0. No Effect	Negligible	Negligible	Negligible	Negligible	Negligible

3.4.2 Limitations

This ESAS was based upon available information in September 2025 with limited early-stage studies. Also, there are permitting processes for the Project that are presently underway, and it is not possible to comment on the outcome at this time. These permit processes are expected to proceed as planned, but there could be some political risk to receiving approval if permits are delayed. In addition, Tetra Tech did not interact with the EPC contractor so Tetra Tech cannot comment on the implementation of their HSE and labor management practices. Lastly, Tetra Tech received limited information on the description of the Project; thus, this document reflects the limited level of detail provided by Akuo Energy. A brief site visit was conducted by Tetra Tech in September 2025 to visit the site and surrounding area and take noise measurements.

3.4.3 Cumulative Impacts

Cumulative impacts are those that arise due to an impact from the Project interacting with another activity to create additional impact¹. These impacts include effects arising from the Project and other existing, planned, or reasonably defined developments at the time the scoping and impact assessment process is conducted. For this Project, additional major developments planned in the area are few; considerations included some upcoming housing developments in Coke County. Upcoming development listed on the Texas Office of the Governor was also consulted, but no major industrial developments were currently noted in the area. In line with EP4 requirements, the cumulative impacts of each topic are considered. The ESAS assumes that overall cumulative impacts are likely to be similar in scale to Project-related impacts, as few additional developments are planned in the area and are discussed in detail where relevant in the applicable section.

3.5 Environmental and Social Management Plan

A separate Environmental and Social Management Plan (ESMP) will also be prepared that summarizes all recommended mitigation and monitoring measures detailed in the ESAS, consistent with EP4. Based upon the measures included in the ESMP, an overarching Environmental and Social Management System detailing management roles and responsibilities for the measures and timelines for their implementation should be developed by Akuo Energy to guide the implementation.

¹ Guidance Note to Support Effective Consistent Application of the Equator Principles, July 2022.

4.0 Regulatory Requirements and Administrative Framework

Relevant legislation, regulations, policies, guidelines and standards from the United States (U.S.) and international treaties, standards, and guidance were considered in the development of the ESAS. Relevant permits for the Project in accordance with U.S. requirements are completed or awaiting issuance.

From a permitting standpoint, few state or local permitting requirements apply to this Project Area located on private land in Texas. The County has no zoning ordinance, hence there is no applicable discretionary permit. A letter agreement with Coke County (BNB Tennyson Solar LLC 2019) has been developed for road use. There is no trigger to comply with the federal NEPA. Impacts to wetlands and other waters of the U.S. were avoided via directional drilling so no U.S. Army Corps of Engineers (USACE) permits were required.

For this Project, only state and county environmental permits for the Project construction need to be obtained by the EPC before start of construction, as identified below. The following permits or approvals would be required, and their status is also noted:

- Texas Commission on Environmental Quality (TCEQ) Stormwater Construction Permit – signed September 24, 2025
- TCEQ Above Ground Storage Registration – September 2025
- Texas highway access and crossing permits – signed August 6, 2025
- U.S. Environmental Protection Agency (EPA) Spill Prevention, Control, and Countermeasure (SPCC) Plan – signed September 30, 2025 (Kimley Horn 2025)

Based upon a review of current records provided by Akuo Energy, some permits are in the process of application and have not yet been obtained. These approvals or permits must be obtained prior to construction to be in compliance with national and national standards.

4.1 Equator Principles

The EP4, established in 2003, provides a framework for Equator Principle financial institutions (EPFIs) to assess and manage environmental and social impacts and risks of projects that they fund. The EP4 apply to funding in support of new projects and financing of expansions or upgrades of existing projects (Equator Principles 2020a). Additionally, EPFIs encourage clients to apply the EP4 where appropriate throughout a project's lifecycle.

The EP4 refers to projects in terms of the size of their impact and the economy of the country in which they are located. They apply globally, across all industry sectors. The EP4 are reviewed periodically by EPFIs and updated to reflect collective project experience and advancements in good practice.

EPFIs may, at their sole discretion, undertake additional due diligence against additional standards relevant to specific project risks and apply additional requirements. In addition to undertaking due

diligence, it is through the defined terms used in loan agreements that EPFIs can incorporate the environmental and social standards with which a project must comply.

The EP4 are based on the principles of the IFC PS. The IFC PS help operationalize the EP4 and offer further detailed guidance on individual Environmental and Social topics for compliance.

4.2 IFC Performance Standards

The IFC's Sustainability Framework articulates the corporation's strategic commitment to sustainable development and is an integral part of IFC's approach to risk management. The IFC PS (IFC 2012a) are directed towards clients, providing guidance on how to identify risks and impacts, and are designed to help avoid, mitigate, and manage risks and impacts as a way of doing business in a sustainable way, including stakeholder engagement and disclosure obligations of the client in relation to project-level activities. In the case of its direct investments (including project and corporate finance provided through financial intermediaries), IFC requires clients seeking funding for their proposed project to apply the PSs to manage environmental and social risks and impacts so that development opportunities are enhanced. The Performance Standards may also be applied by other financial institutions. Many of the IFC PS have already been adequately addressed or scoped out during the EP4 Gap Analysis. However, further analysis of PS 6, PS 8, and to a limited degree PS 2 and PS 4 is included in this document to ensure adequate compliance with good international industry practice.

5.0 Environmental and Social Summary Assessment

In accordance with the EP4, an Environmental and Social Assessment process shall be completed to address the relevant environmental and social risks and scale of impacts of the proposed Project. The Assessment Documentation should propose measures to minimize, mitigate, and where residual impacts remain, to compensate/offset/remedy for risks and impacts to Workers, Affected Communities, and the environment, in a manner relevant and appropriate to the nature and scale of the proposed Project. For Category B Projects, a limited or focused environmental or social assessment may be appropriate, applying applicable risk management standards relevant to the risks or impacts identified during the categorisation process. The following Sections summarize the focused areas of potential effect identified in the gap analysis.

5.1 Air Quality

5.1.1 Introduction

This Project is a solar project and is not anticipated to generate significant air quality emissions during operations. Thus, this section focuses on construction emissions from a national and EP4 compliance perspective. A TCEQ Air Quality Permit is in process for the Project.

5.1.2 Air Quality Regulations

Guideline air pollutant values provide a concentration below which no adverse effects or indirect health significance is expected, although it does not guarantee the absolute exclusion of effects at concentrations below the given value. Air quality in the U.S. is measured against the National Ambient Air Quality Standards (NAAQS), which are established by the EPA for criteria pollutants. The NAAQS primary standards are intended to protect human health. The NAAQS have been developed for various averaging periods corresponding to durations of exposure. The WBG EHS Guidelines are the source of guidelines for good international industry practice. Both values are shown below for comparison in Table 2.

Table 2. Air Quality Guidelines

Pollutant	NAAQS ($\mu\text{g}/\text{m}^3$)	World Health Organization ¹
Carbon Monoxide (CO)	10,000 (8 hours) 40,000 (1 hour)	No standards for Carbon Monoxide
Total Suspended Particulates (TSP)	No 24 hour No annual standard	No standards for Total Suspended Particulates
Inhalable Particulates (PM ₁₀)	150 (24 hours) None	50 (24 hours) 20 (annual)
Inhalable Particulates (PM _{2.5})	35 (24 hours) 9 (annual)	25 (24 hours) 10 (annual)

Pollutant	NAAQS ($\mu\text{g}/\text{m}^3$)	World Health Organization ¹
Nitrogen Dioxide (NO_2)	188 (1 hour)	200 (1 hour)
	100 (annual)	40 (annual)
Ozone (O_3)	None	No 1-hour standard
	137 (8 hours)	100 (8 hours)
	No 10-minute standard	500 (10 minutes)
Sulphur Dioxide (SO_2)	196 1-hour standard	No 1-hour standard
	None (24 hours)	20 (24 hours)
	80 (annual)	No annual standard
1. Sources: 40 Code of Federal Regulations (CFR) 50; World Bank Group EHS Guidelines, "General EHS Guidelines – Air Emissions and Ambient Air Quality" section		

The potential effects of the Project on air quality in the vicinity of the proposed Project Area are summarized in the following sections.

5.1.3 Air Quality Baseline

Ambient air quality monitoring data was used to understand the existing ambient air quality in the area where the Project is proposed. Ambient monitors were selected in areas with greater point and non-point source emissions than the Project site to provide a conservative estimate of actual contaminant concentrations in the vicinity of the proposed project. Data are presented for 1-hour and annual nitrogen dioxide (NO_2), 1-hour and 8-hour carbon monoxide (CO), 24-hour particulate matter of less than 10 micrometers in diameter (PM_{10}) and particulate matter of less than 2.5 micrometers in diameter ($\text{PM}_{2.5}$), as well as annual $\text{PM}_{2.5}$, 1-hour and annual sulfur dioxide (SO_2), and 8-hour ozone (O_3). The monitoring data were obtained from the EPA AirData website and summarized in Table 3 for the three most recent years available.

Table 3. Ambient Air Quality Monitoring Data for 2022 to 2024

Pollutant	Averaging Period	Units	Monitor Site (AQS ID)	Monitored Concentrations ¹					NAAQS (µg/m ³)
				2022	2023	2024	Average (Units)	Average (µg/m ³)	
NO ₂	1-hour	ppb	Killeen Skylark Field (48-027-1047)	22	23	23	23	43	188 ²
	Annual	ppb		2.64	2.26	3.25	3.25	6	100 ³
CO	1-hour	ppm	Austin North Interstate 35 (48-453-1068)	2.1	2.5	2.1	2.5	2,855	40,000 ⁴
	8-hour	ppm		1.2	1.5	1.4	1.5	1,713	10,000 ⁴
PM ₁₀	24-hour	µg/m ³	Austin Audubon Society (48-453-0020)	38	48	38	48	48	150 ⁵
PM _{2.5}	24-hour	µg/m ³	Odessa Gonzales (48-135-1014)	20	16	19	18	18	35 ⁶
	Annual	µg/m ³		7.5	6.8	7.3	7.2	7.2	9.0 ⁷
SO ₂	1-hour	ppb	Austin North Hills Drive (48-453-0014)	2	2	3	2.3	6	196 ⁸
	Annual	ppb		0.17	0.12	0.15	0.15	0.39	26 ⁷
Ozone	8-hour	ppm	Granbury (48-221-0001)	0.081	0.079	0.076	0.079	154	137 ⁹

1. All concentrations are presented in the same statistical form as the corresponding NAAQS standard, as noted below.

2. Annual 98th percentile of 1-hour daily maximum concentrations, averaged over 3 years.

3. Annual Mean.

4. Not to be exceeded more than once per year.

5. Not to be exceeded more than once per year on average over 3 years.

6. 98th percentile, averaged over 3 years.

7. Annual mean, averaged over 3 years.

8. Annual 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years.

9. Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years.

5.1.4 Construction Impacts

The Project will include multiple construction activities that can cause temporary air quality impacts locally. Construction will last up to 18 months total and could generate dust and other emissions. The following air pollutants have been identified as the main potential contaminants of concern during construction:

- TSP;
- PM₁₀;
- PM_{2.5};
- NO₂;
- SO₂; and
- CO.

Construction-related air quality emission sources can be classified into three main categories:

1. **Construction Dust Emission Sources:** Construction dust emission is the main air quality concern associated with construction for the Project. The main activities associated with the construction dust emissions are as follows:
 - Site preparation;
 - Storage piles;
 - Material handling and transfer systems; and
 - Road surfaces.
2. **Construction Equipment and Vehicle Exhaust:** Construction equipment and vehicles contribute to the emission of fuel combustion related air contaminants, mainly NO₂, CO, SO₂, and PM_{2.5}.

Construction dust emission sources (TSP, PM₁₀, and PM_{2.5}) shall be monitored visually on site to implement specific mitigation actions, if necessary. Although construction emissions can be a nuisance and have potential health effects, construction emissions will be managed in line with Good International Industry Practice reducing construction emissions impact levels to negligible levels.

5.1.5 Mitigation Measures

- Dust generation and dispersion during construction shall be minimized through good construction practice and appropriate monitoring throughout the construction period. Standard dust minimization measures to be applied would include the following:

- Water (or other suitable environmentally benign dust-suppressant material) spray dampening of unsurfaced areas, soils and spoil may be undertaken to prevent dust blow during hot, dry weather conditions with relatively high wind speeds.
- Careful location, grading, and management of stockpiles of soil and similar materials will be undertaken.
- Re-vegetation of completed earthworks will be undertaken as soon as reasonably practicable.
- Implement vehicle speed limits at an appropriately low speed.
- Regular cleaning of surfaced roads and maintenance of un-surfaced roads on site will be undertaken to reduce off-site transport of soils and to avoid dust generation.
- Diesel-powered construction equipment and vehicles will be inspected and well-maintained.

5.2 Noise

5.2.1 Introduction

Although neither national nor Texas requirements have triggered the need for any noise modeling or analysis, a survey of baseline conditions and analysis of construction noise impacts is included here. Noise disturbance is frequently cited as a concern by local communities in the U.S. for new development and is often the focus of complaints. In some situations, significant increases in ambient noise can even lead to adverse health impacts. Therefore, it is important to consider and, if necessary, mitigate the potential noise impacts of the Project.

5.2.2 Noise Regulations

The Project is located in a remote area that is currently not subject to any local, state, or federal noise ordinances. Although there are no specific local noise ordinances that apply to the Project Area, there are sensitive uses within 0.25 miles of the site. The 1999 World Health Organization (WHO) Guidelines for Community Noise outline noise levels that are considered acceptable in the day- and night-time for noise sensitive receptors (WHO 1999). Noise limit criteria in relation to the identified nearby sensitive receptors are outlined in Table 4.

Table 4. Assessment Noise Limit Criteria WHO Guidelines

WBG EHS Guidelines (dBA) 1			
Receptor	Daytime 07:00-22:00 hours (hrs) Continuous A-weighted Equivalent Sound Level Over 1-Hour Decibels ($L_{Aeq\ 1hr}$)	Night-time 22:00-07:00 hrs ($L_{Aeq\ 1hr}$)	Maximum Increase Above Background
Residential; institutional; Educational	55	45	+ 3
Industrial; Commercial	70	70	Not Applicable
1. The guidance defines the day- and night-time levels as the L_{Aeq} over 1 hour in decibels (dB). It also specifies the maximum increase limit of 3 A-weighted decibels (dBA) in the background levels at the nearest receptor location off-site.			

For workers, the Occupational Safety and Health Administration (OSHA) permissible exposure limit for workers (OSHA 2008a) is used as a basis for the sound pressure level limits (85 dbA over 8 working hours).

5.2.3 Baseline Noise Conditions

Baseline noise measurements were conducted by Tetra Tech with the aim of collecting data representative of the existing weekday day- and night-time typical noise levels at the closest identified sensitive receptors to the proposed Project, as well as at a representative location along the proposed Project boundary. Short-term ambient sound measurements were conducted in the presence of a field engineer for an approximate duration of 30 minutes at publicly accessible locations near noise sensitive receptors (NSRs). Short-term measurements were made during both day- (7:00 a.m. to 10:00 p.m.) and night-time (10:00 p.m. to 7:00 a.m.) periods.

All sound level measurements were conducted using a Larson Davis Model 831C precision integrating sound-level meter that meets the requirements of American National Standards Institute (ANSI) Standards for Type 1 precision instrumentation. This sound analyzer has an operating range of 5 dB to 140 dB and an overall frequency range of 3.15 to 20,000 hertz (Hz). During the measurement program, microphones were fitted with a windscreen, set upon a tripod at a height of approximately 1.5 meters (5 feet) above the ground and located out of the influence of any vertical reflecting surfaces. The sound analyzer was calibrated at the beginning and end of the measurement period using a Larson Davis Model CAL200 acoustic calibrator following procedures that are traceable to the National Institute of Standards and Technology. During the survey, weather conditions were conducive to accurate data collection. Weather conditions were partly cloudy with no precipitation occurring during the measurement period. Temperatures were 73-84 degrees Fahrenheit (°F) during the day and 66-72 °F during the night.

Attended short-term ambient sound measurements were performed at public locations. The four short-term sound measurements were positioned at or nearby NSRs. The four monitoring locations are shown on Figure 6.

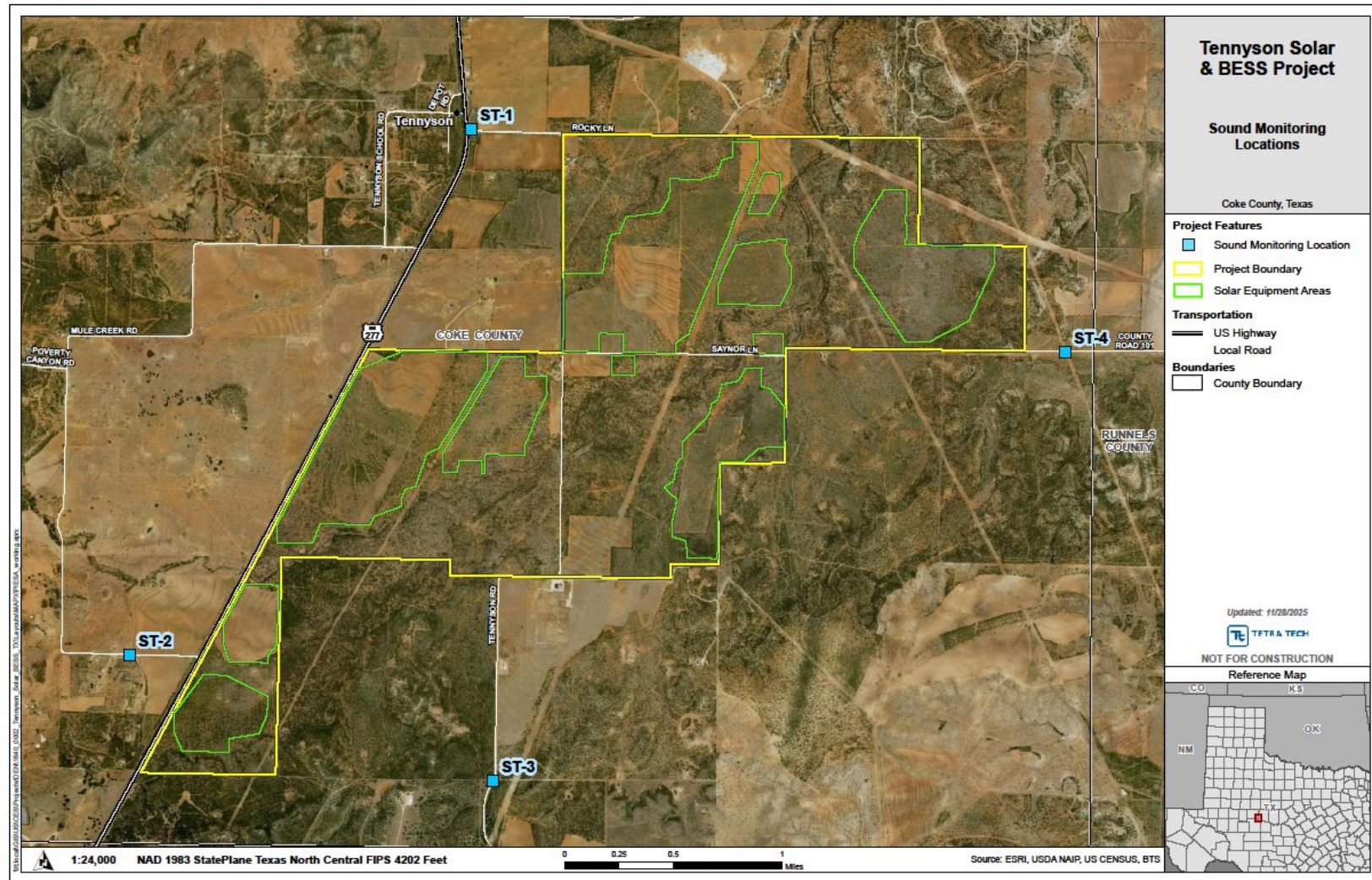


Figure 6. Noise Monitoring Locations

Table 5 provides a summary of the measured ambient day- and night-time Leq sound levels during the sound survey.

Table 5. Ambient Sound Survey Results Summary

Sound Monitoring Location	UTM Coordinates		Time Period	Sound Level Metric (dBA)
	Easting (meters)	Northing (meters)		Leq ²
ST-1	378273	3512415	Day	66
			Night*	58
ST-2	375764	3508515	Day	45
			Night*	61
ST-3	378459	3507595	Day	47
			Night*	62
ST-4	382685	3510792	Day	49
			Night*	68
Note: Measured nighttime sound data was filtered to remove frog and insect noise, but it was not possible to remove it entirely.				

Short-term sound measurements were collected at four offsite locations. Sound levels were measured at these locations during daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) hours. Existing sound sources in the Project primarily included roadway traffic and natural sounds (e.g., insects, frogs). The sound levels were higher due to frog and insect noise and, while the measured night-time sound data was filtered to remove their contribution, it was not possible to remove it entirely. For that reason, measured sound levels did not display the typical diurnal patterns with higher sound levels during daytime and lower sound levels at night. Therefore, the daytime ambient measured sound levels are considered the most representative of the existing noise levels within the Project Area (since there may be times of year frog and insects won't be present). When reviewing the daytime Leq sound levels, they ranged from 45 dBA at ST-2 to 66 dBA at ST-1.

5.2.4 Construction Impacts

Construction equipment for this Project is expected to include: Plate Compactors, , Generator Sets, Dumpers/ Tenders, Excavators, Rollers, Trenching machines, End Loaders/ Skid Steer Loaders, , Compaction machines, Cutting machines, Forklifts and carry decks, Bulldozers, Crawler Tractors, Drill Rigs, Backhoes, Graders, Cranes, and Scrapers. In addition to the above listed construction equipment, pile driving will be the method selected to install the foundations of the solar PV modules. Pile driving can generate high noise levels. Noise is generated from both the ram striking

² Leq is the [equivalent continuous sound level](#) in [decibels](#). Leq is also known as the [time-average sound level](#).

the pile as well as the operating steam, air, or diesel exhaust as it is exhausted from the cylinder (this is not present with hydraulic impact hammers). No noise modelling was undertaken for construction at this time.

Construction noise impacts are of a temporary nature and limited to the duration of the work. Potential construction noise impacts on humans include sleep disturbance; an increased incidence of social and behavioral problems; and, in extreme cases, hearing impairment. Construction noise levels will vary depending on the activity being undertaken; the construction plant being used; the distance between the receptors and the activities; and the screening from any intervening obstacles, including the effect of the ground absorption. Since the nearest residence is 0.25 miles away and noise from construction would be limited, construction noise impacts are anticipated to be negligible.

5.2.5 Operational Impacts

Noise modelling for operational impacts has not been undertaken at this time. As certain operational solar equipment/inverters can result in more substantial noise emissions than others, future operational noise monitoring should be considered if sensitive uses are located within 1,000 feet of the equipment. However, given that the nearest receptor is currently more than a quarter of a mile away, operational noise impacts are not anticipated to be significant.

5.2.6 Mitigation Measures

While the noise impacts due to noise emissions during the construction activities is expected to be less than the 70-dBA guideline limit and construction activities are of a temporary nature, it is nevertheless recommended that the contractors conducting the activities on site implement the following proposed ‘best practice’ measures to maintain the noise levels at fence line at the minimum level as practicable. These measures include, but are not limited to, the following:

- Construction site and access road speed limits will be established and enforced during the construction period.
- If anticipated construction activities exceed 85 dBA over 8 working hours, the OSHA-mandated worker hearing protection best practices shall be utilized, as applicable.
- Ensure machinery is properly maintained in accordance with equipment maintenance requirements captured in the contractor’s management system.
- Machinery and equipment shall always be used in accordance with the manufacturers’ instructions.
- All noise-producing construction equipment and vehicles using internal combustion engines will be equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specification. Mobile or fixed “package” equipment (e.g., arc-welders,

air compressors) will be equipped with shrouds and noise control features that are readily available for that type of equipment.

- No equipment should be left running unnecessarily.

Increased road traffic due to the transport of materials and waste during construction as well as vehicle movements to transport staff required to undertake the proposed construction work shall require management measures. The noise from vehicles shall be minimized by regular maintenance, selection of traffic routes, and timing of traffic movement.

5.3 Ecology and Biodiversity

To facilitate sustainable development globally, EP4 notes the importance of conservation including the goal of enhancing the evidence base for research and decisions relating to biodiversity. As described below, the proposed Project is being developed in accordance with federal and state laws and regulations. The following analysis summarizes the protections provided by federal and state laws and regulations to those achieved through application of EP4 and Good International Industry Practice. Key differences between the U.S. approach and the IFC PS 6 conventions include the following:

- Designation of modified and natural habitat;
- Evaluation for Critical Habitat;
- Application of the mitigation hierarchy to all habitats; and
- Management of ecosystem services.

An EP4 gap analysis was completed for the Project which resulted in a recommendation that a screening assessment for Critical Habitat and analysis of general compliance with PS 6 should be completed. As a result, this section focuses on the Critical Habitat Screening and the potential effects of the Project on biodiversity in the vicinity of the proposed Project Area. Data for this section is primarily provided from the CIA (Blanton & Associates 2019a) and the PSA (Blanton & Associates 2019b).

5.3.1 Baseline

The Project Area is located within the Caprock Canyons, Badlands and Breaks ecoregion, which is comprised of steep canyons, escarpments, rounded badlands, and dissected river breaks. The caprock canyons serve as the headwater basins for several major Texas rivers.

Potential waters of the United States (WOTUS) (i.e., water features protected under Section 404 of the Clean Water Act) in the Project Area include Mule Creek, Cedar Creek, and unnamed tributaries. A wetland delineation was completed at the site to determine the locations and extent of WOTUS within the Project Area and submitted to USACE for concurrence (Timmons Group 2022). No protected wetland areas or ecosystems were identified at the Project Area based upon this review. Based on surface topography, as interpreted from U.S. Geological Survey (USGS) topographic quadrangle map, shallow groundwater throughout the Project Area might be expected to flow north into Cedar Creek and Mule Creek.

Various studies have been conducted to characterize the ecological context of the Project Area. The desktop-based CIA noted the following:

- Land use in the Project Area is primarily shrub/scrub with approximately 77 percent of the Project Area, and 15 percent of the Project Area is classified as grassland. Developed open space represents approximately 6.4 percent of the Project Area. Other land cover types that are mapped in small portions of the Project Area are cultivated crops, deciduous forest, developed low intensity, and evergreen forest.
- The Project Area is located within the Middle Colorado-Elm watershed (Hydrologic Unit Code 12090101). Main aquatic features in the Project Area include Mule Creek, Cedar Creek, and unnamed tributaries. Mule Creek flows northward out of the Project Area and flows into the Colorado River approximately 4 miles northeast of the Project Area.
- During initial Project studies, the Project Area was assessed to contain potential habitat for Texas poppy-mallow (*Callirhoe scabriuscula*; considered an Endangered Species both federally and by the state of Texas), and potential habitat for state-listed Texas horned lizard (*Phrynosoma cornutum*; considered as a Threatened species by Texas standards). The black-capped vireo (*Vireo atricapilla*) was delisted from the federal and state endangered species lists in 2018 due to significant population increases (Blanton and Associates 2019a). No habitat for listed species was observed.
- Any occurrences of migrating birds in the Project Area were expected to be incidental and temporary.

The PSA conducted in 2019 further assessed potential habitat for federally protected species and noted the following:

- All vegetation communities and aquatic resources within the Project Area were surveyed for the presence of potential habitat for federally and state protected species with the potential to occur in or near the site. A review of the USFWS Information for Planning and Consultation (IPaC) system indicated no USFWS- designated critical habitat is present within or adjacent to the Project Area (USFWS 2025).
- Six federally protected species (Texas poppy-mallow, five birds) and three candidate species (all mussels) for federal listing were identified as having potential to occur in Coke County. The bird species include bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), piping plover (*Charadrius melodus*; Threatened), red knot (*Calidris canutus rufa*; Threatened), and interior least tern (*Sterna antillarum*; Endangered and delisted in 2021). The mussel species include Texas fatmucket (*Lampsilis bracteate*; Candidate, listed as Endangered in 2024), Texas fawnsfoot (*Truncilla macrodon*; Candidate, listed as Threatened in 2024), and Texas pimpleback (*Quadrula petrina*; Candidate, listed as Endangered in 2024).

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act. The bald eagle and one candidate mussel species (Texas fatmucket) are also listed as threatened

under Texas state legislation. Literature review, desktop analysis, and field observations suggest that there is not suitable habitat for bald or golden eagle nesting. Bald eagles may forage in the Project Area but are no more likely to forage in the Project Area than in other similar areas. Golden eagles could migrate through the Project Area, but the Project Area is not expected to be heavily utilized by golden eagles due to lack of suitable foraging habitat.

- Overall, the field survey determined that there was not suitable habitat for the piping plover, red knot, the bald eagle, the least tern or the golden eagle; or the three mussel species, and none of these species were observed.
- The assessment did not identify any constraints associated with federally and state protected species within the Project Area that cannot be avoided or that would be considered a critical issue.

5.3.2 Critical Habitat Screening

According to PS 6, “Critical Habitats” represent areas of highest biodiversity value and conservation priority (IFC 2012a, 2012b). Critical habitat reflects both global and national priorities and builds on the conservation principles of “vulnerability” (threat) and “irreplaceability” (rarity/restricted distribution). Both natural and modified habitat can be classified as Critical Habitat.

Critical Habitat is determined using five main criteria:

- Criterion 1: Habitat of significant importance to species listed as Critically Endangered or Endangered on the International Union for Conservation of Nature (IUCN) Red List.
- Criterion 2: Habitat of significant importance to endemic and/or restricted-range species.
- Criterion 3: Habitat supporting globally significant concentrations of migratory species and/or congregatory species.
- Criterion 4: Highly threatened and/or unique ecosystems.
- Criterion 5: Areas associated with key evolutionary processes.

Quantitative thresholds have been defined for the first four Critical Habitat criteria. The thresholds for Criterion 1, Criterion 2, and Criterion 3 are based on the thresholds published in the IUCN’s A Global Standard for the Identification of Key Biodiversity Areas and Red List Categories and Criteria (IUCN 2016). The thresholds for the first three criteria are based upon the proportion of the population that the habitat supports. Ideally, these quantitative measures are derived from known population size, though in reality this is often not feasible.

Regarding the determination of Critical Habitat based on other listings (i.e., non-IUCN Red List) relevant considerations are as follows:

- If the species is listed nationally/regionally as critically endangered or endangered, in countries that have adhered to IUCN guidance, the Critical Habitat determination will be made on a project-by-project basis in consultation with competent professionals.

- In instances where nationally or regionally listed species' categorizations do not correspond well to those of the IUCN (e.g., some countries more generally list species as "protected" or "restricted"), an assessment will be conducted to determine the rationale and purpose of the listing. In this case, the critical habitat determination will be based on such an assessment.

For this screening, those species potentially present in Coke County and listed as 'Endangered' or 'Threatened' at a federal or Texas state level (i.e., listed on the Rare, Threatened, and Endangered Species of Texas by County [TPWD 2025] and USFWS 2025) were considered according to IFC PS 6 Criterion 1. Although a detailed Critical Habitat assessment has not been completed for the Project as it was not required, screening of baseline data provides an early indication of the potential occurrence of Critical Habitat and compliance with IFC PS 6 and Good International Industry Practice. The results of this screening are summarized in Appendix A.

According to Criteria 1 and a review of the IUCN Red List, the Project does not overlap areas that support globally important concentrations of an IUCN Red-listed endangered (EN), or critically endangered (CR) species and is unlikely to overlap with areas of vulnerable species. In terms of Criteria 2, while there are approximately three potential endemic or restricted range species considered present in Coke County (Texas fatmucket; Brazos water snake [*Nerodia harteri*], and Concho water snake [*Nerodia paucimaculata*]), aquatic species with a global linear range of $\leq 400\text{km}$, their current known ranges do not include the Project Area with no observations nearby (iNaturalist 2025). Therefore, they do not qualify the area as Critical Habitat under IFC PS 6 Criterion 2. For Criterion 3, while the Project Area is within the global range of several migratory or congregatory species, most of these have relatively large global populations (BirdLife International 2025; IUCN 2025), and there are limited observations of each species within the Project vicinity, suggesting that the Project Area is not known to sustain, on a cyclical or otherwise regular basis, a significant proportion of the global populations. Therefore, none of these species qualify the area as Critical Habitat under IFC PS 6 Criterion 3. There are no features present that would trigger IFC PS 6 Criterion 4 or Criterion 5.

In the context of IFC PS 6 and the potential presence of Critical Habitat, initial screening of available data suggests that there are no species that trigger Critical Habitat, based on available extent of species occurrence data. While there is still a small possibility that suitable habitat could be present in the Project Area and the potential presence of species listed in Appendix A cannot be ruled out, it is considered unlikely that the IFC PS 6 Criteria thresholds will be triggered based on overlap of current known global ranges and the information provided in the CIA (Blanton and Associates 2019a) and PAS (Blanton and Associates 2019c).

5.3.3 Construction Impacts

Construction of the Project will consist of modifying habitats of varying biodiversity value. However, no critical habitat for any fauna protected under U.S. regulations or international requirements was determined to be present on the site. In addition, per the PSA, no critical habitat for any flora protected under U.S. regulations or international requirements was determined to be present on the site. Since the Project Area lacks suitable habitat for potential special-status animals

or protected plant species, and none were observed during focused surveys conducted as part of the PSA, impacts from construction on flora and fauna are determined to be negligible. The Texas horned lizard is a Threatened Species within the State of Texas and could be present on the site; therefore, best management practice measures must be implemented to ensure that impacts are reduced to negligible levels.

Although no impacts are anticipated, clearance of mainly shrub/scrub will be required. As a standard best management practice in Texas, it is recommended that during the bird breeding season (typically March–August), surveys for ground nesting birds be conducted prior to clearing to identify any nests/eggs/chicks.

5.3.4 Operational impacts

Potential impacts during operations may occur due to powerline electrocution and power line strike. Impacts to federally protected species are considered unlikely, with the possible exception of the bald eagle. Take (mortality) of a bald eagle without an incidental take permit is a strict liability violation under the Bald and Golden Eagle Protection Act. The most likely source of bald eagle take would be from powerline electrocution, and secondarily from power line strike. The probability of either of these threats is likely low based on the amount of overhead powerline constructed, and the lower likelihood of occurrence of the bald eagle in the Project Area. Nevertheless, impacts could occur if not properly managed. Direct and indirect impacts to bald eagles from O&M of the transmission line would be negligible with the implementation of the following noted mitigation measures.

5.3.5 Mitigation and Improvement Measures

The guidelines and best management practices outlined in the Avian Protection Plan (APP) Guidelines (Avian Powerline Internation Committee (APLIC), and USFWS 2005) and Suggested Practices for Avian Protection on Power Lines (APLIC 2006) should be followed to minimize potential impacts associated with the construction of transmission lines. Additional best management practices (BMPs) will also be considered in the construction and operations of the Project.

Mitigation Measures

- The use of best management practices, such as silt fencing, shall be used to protect water quality at any stream crossing to mitigate potential impacts in locations where mussels could occur.
- Direct impacts to watercourse channels are avoided due to the Project's avoidance strategy. Dry intermittent creeks will be crossed using underground directional drilling that is 5 feet below the channel and will avoid direct impacts to the channel edges via a 15-foot buffer.

- Impacts associated with electrocution of birds from powerlines can be mitigated in the planning stage by limiting overhead power line construction, and by prudent powerline design.
- The Akuo Energy Vegetation Management Plan (Akuo Energy 2025a) is designed to manage site vegetation to mitigate the risk of wildfire. Vegetation management is focused on controlling vegetation for site operations.
- Measures to control invasive and alien plant species will also be implemented to mitigate potential negative environmental effects.
- The following best management practices for Texas Horned Lizard must be applied:
 - Never touch or disturb a state or federally listed species.
 - Common best management practices for the protection of reptile species include the use of a sediment control fence that can serve as a wildlife exclusion fence, providing escape routes for reptiles trapped within open trenches, and contractor training to raise awareness of the presence of protected species.
- Remediation Steps (if the Texas Horned Lizard is observed)
 - Cease work in the immediate area.
 - Do not attempt to move the Texas Horned Lizard as it can stress the lizard.
 - Inform the Field Stormwater Technician or the Environmental Compliance Manager.
 - Flag the area where the Texas Horned Lizard has been observed if the lizard does not move.
 - Wait for the lizard to leave the immediate area to resume work.

Improvement Measures

The following improvement measures are recommended but not required:

- Avoid vegetation removal or ground disturbing activities during bird nesting/breeding season.

5.4 Cultural Resources

5.4.1 Introduction

The following section evaluates potential Project impacts to cultural resources (historic and archaeological resources) including consideration of impacts in line with IFC PS 8. An EP4 gap analysis was completed for the Project, which resulted in a determination that the site contains only archaeological resources and that no historic resources were present. As a result, this analysis is a

targeted review of impacts on archaeological resources and includes recommended mitigation measures to avoid or reduce any potential impacts.

5.4.2 Baseline

Archaeological sites in the region tend to be located along the edges of natural waterways and atop ridges and other higher landforms (Blanton & Associates 2019a). Much of the Project Area has been intensively impacted by modern ranching activities and the likelihood of intact cultural resources being present is low (Blanton & Associates 2019a). The CIA completed in 2019 by Blanton & Associates (Blanton & Associates, 2019 a) reviewed state digital site files for previously recorded cultural resources within one mile of the Project Area. Two archaeological sites were identified within the Project Area:

- Site 41CK168 was documented as a large prehistoric campsite during the 1920s. Prehistoric campsites of this type commonly qualify for listing in the National Register of Historic Places (NRHP).
- Site 41CK308, recorded prior to pipeline construction, consists of a prehistoric lithic scatter. Lithic scatters of this type occur frequently in the region and generally lack sufficient integrity for NRHP listing.

No UNESCO World Heritage sites were identified in the Project vicinity. The CIA concluded that the Project Area has low to moderate potential for intact archaeological sites and that no field survey was required to satisfy state or federal regulations. A targeted field survey was recommended solely to delineate Site 41CK168 boundaries and an Unanticipated Discovery Plan was advised for construction to ensure proper procedures if archaeological materials or human remains are encountered. Site 41CK308 (a lithic scatter type common throughout the region) was also noted in the CIA, but it was noted that sites of this type in the area are very common and are therefore not eligible for NRHP protection. The report notes that no historic structures are likely to be impacted by the Project. The CIA also notes that there are no known Sacred Sites or Traditional Cultural properties within the Project Area.

Following on from the CIA, B&A archaeologists conducted a Reconnaissance Survey for Site 41CK168 in December 2019 (Blanton and Associates 2019b). The report confirmed the correct location for the archeological site and that the site measures approximately 135 meters east-west by 100 meters north-south. The report also notes that the site contains multiple burned-rock middens (prehistoric cooking features), grinding tools, and hundreds of stone flakes. A subsurface deposit at least 10 centimeters deep remains intact beneath the surface scatter. B&A concluded that these characteristics satisfy NRHP criteria for information potential, and therefore Site 41CK168 would be considered eligible for listing under the NRHP and could qualify as Critical Cultural Heritage under PS 8.

5.4.3 Construction impacts

The Project layout has been designed to avoid any construction or excavation within 156 feet of the defined boundary of Site 41CK168; as a result, no direct impacts to the Site are expected.

Temporary indirect impacts to Site 41CK168, such as dust and vibrations from earthmoving and heavy equipment, may occur during construction; however, these effects are expected to be minimal.

Construction work has the potential to uncover previously unidentified Native American or Euro-American archaeological artifacts. The Project's Unanticipated Discovery Plan (acting as the Chance Find Procedure) will apply to any construction activity on the site to protect any yet undiscovered cultural resources.

5.4.4 Operational impacts

Project operation is not anticipated to cause impacts to Site 41CK168.

5.4.5 Mitigation measures

- Avoidance buffers of at least 156 feet for site 41CK168 will be maintained during construction and operation.
- If an artifact or material is discovered that is not of a clearly modern manufacturing date (i.e., most of the artifacts are made of plastic, or have UPC bar codes), work will be halted until a qualified historic archaeologist can be consulted. It will be stressed that consistent identification of archaeological artifacts and features, especially historic archaeological material, requires considerable training and experience, and if there is any doubt about the age of any material uncovered, a professional archaeologist will be consulted.
- In the event of an inadvertent discovery of possible cultural materials, including human remains:
 - All work will stop immediately in the vicinity of the find.
 - A 100-foot buffer will be placed around the discovery with work being able to proceed outside of this buffered area unless additional cultural materials are encountered.
 - The area will be secured and protected.
 - A qualified archaeologist will be consulted, who will reach out to the Texas Historical Commission (THC). The THC will advise on how to consult with Tribes.
 - THC Main Contact Information:
 - Main Phone: (512) 463-6100
 - Main Email: thc@thc.texas.gov

- THC Archeology Division:
 - (512) 463-6096
 - archeology@thc.texas.gov
- THC Region 1 Reviewer: Drew Sitters
 - (512) 463-6252
 - drew.sitters@thc.texas.gov
- THC Architecture Division:
 - West/Central Texas & Military Project Reviewer: Patrick Bassett
 - (512) 463-6183
 - patrick.bassett@thc.texas.gov
- If possible human remains are encountered:
 - The Texas Department of Health Services Discovery of Human Remains flow chart will be followed, including:
 - Stopping work and making a reasonable effort to protect the site of discovery;
 - Filing a Notice of Existence of a Cemetery with the County Clerk within 10 days; and
 - If remains must be moved, notifying lineal descendants and THC, obtaining an order from the district court to remove remains, and contacting the State Registrar for a Disinterment Permit.
 - The following entities will also be notified:
 - Coke County Sheriff's Office: (325) 453-2717
 - THC: Emily Dylla: (512) 463-5915; emily.dylla@thc.texas.gov
 - Appropriate Tribes: As designated by THC
 - No media or 911 calls will be made, and no photos will be taken.
- No work will resume until consultation with the THC has occurred and a professional archaeologist is able to assess the discovery. Some areas may be specified for close monitoring or as "no-work zones" within the larger Project Area.
- All field staff and contractors will receive a site-sensitivity briefing, maps showing buffer zones and contact information will be distributed, and annual refresher training will be provided for O&M personnel.

- Since the cultural resources identified could meet the requirements of Critical Cultural Heritage per PS 8³, the following steps shall be undertaken:
 - Most cultural heritage is best protected by preservation in its place, unless the following conditions are met:
 - There are no technically or financially feasible alternatives to removal;
 - The overall benefits of the Project conclusively outweigh the anticipated cultural heritage loss from removal; and
 - Any removal of cultural heritage is conducted using the best available technique.
- If in fact it is determined that an identified cultural resource is replicable, which could be determined by data recovery, then the following conditions would also apply:
 - Minimize adverse impacts and implement restoration measures, in situ, that ensure maintenance of the value and functionality of the cultural heritage, including maintaining or restoring any ecosystem processes needed to support it.
 - Where restoration in situ is not possible, restore the functionality of the cultural heritage, in a different location, including the ecosystem processes needed to support it.
 - The permanent removal of historical and archaeological artifacts and structures is carried out in accordance with the Convention Concerning the Protection of the World Cultural and Natural Heritage and that the client will identify and protect cultural heritage by ensuring that internationally recognized practices for the protection, field-based study, and documentation of cultural heritage are implemented. Where the risk and identification process determines that there is a chance of impacts to cultural heritage, the client will retain competent professionals to assist in the identification and protection of cultural heritage.
 - Only where minimization of adverse impacts and restoration to ensure maintenance of the value and functionality of the cultural heritage are demonstrably not feasible, and where the Affected Communities are using the tangible cultural heritage for long-standing cultural purposes, compensate for loss of that tangible cultural heritage.

³ Critical cultural heritage consists of one or both of the following types of cultural heritage: (i) the internationally recognized heritage of communities who use or have used within living memory the cultural heritage for long-standing cultural purposes; or (ii) legally protected cultural heritage areas, including those proposed by host governments for such designation.

5.5 Geology, Soils, and Hydrogeology

5.5.1 Introduction

The geology, soils, and hydrogeology conditions in the vicinity of the proposed Project Area and potential impacts associated with the Project are summarized in the following sections. The data are taken predominantly from the Phase 1 Environmental Site Assessment Report by Tetra Tech (Tetra Tech 2025) and publicly available information.

5.5.2 Baseline

5.5.2.1 Geology

The Project Area lies within the West Texas Rolling Plains of the North Central Plains Province, an extension of the interior lowlands that parallel the Great Plains to the West (Texas Almanac 2022). Geology of the property is mapped as Holocene age alluvial deposits, Middle Pleistocene and Early Pleistocene age alluvial deposits, and Holocene to Middle Pleistocene age disintegration residual deposits (USGS 2025). The Holocene age alluvial deposits consist of sand, silt, clay, and gravel, with thickness averaging about 5 to 25 meters in the valleys of large rivers, about 2 to 6 meters elsewhere, and locally as much as 25 meters. The Middle Pleistocene and Early Pleistocene age alluvial deposits consist of gravel and sand of the Seymour Formation with a thickness of 0.5 to 15 meters. The Holocene to Middle Pleistocene age disintegration residual deposits consist of red silty clay disintegration residuum with a thickness of 0.5 to 1 meter.

5.5.2.2 Soils

The primary surface soils on the Project Area are classified as Sagerton clay loam (~77.9 percent), Miles fine sandy loam (~9.5 percent), and Bronte fine sandy loam (~5.9 percent) (NRCS 2025). All these soil types are classified as very deep, well drained, and moderately permeable (USDA NRCS 2013).

5.5.2.3 Seismicity

The seismic risk for the Project Area is low, with a peak ground acceleration hazard of 4 to 8 percent gravity. There are no major faults identified in the surrounding area. Figure 7 shows the seismic activity in Texas from 2017-2024, and indicates that no major seismic events have taken place near the site within this time frame.

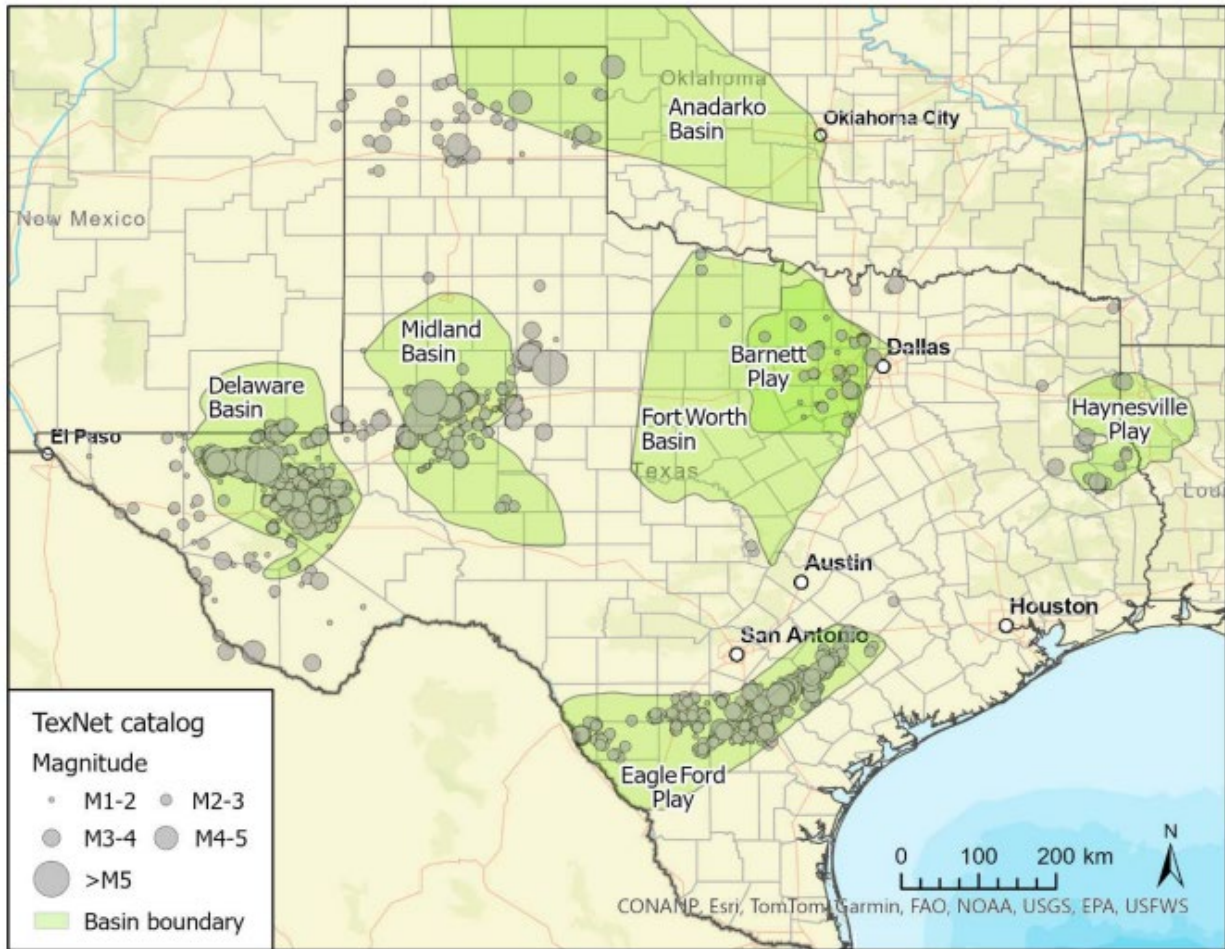


Figure 7. Texas Seismic Activity Map 2017-2024

5.5.2.4 Hydrogeology

Based on surface topography, shallow groundwater throughout the Project Area might be expected to flow north into Cedar Creek and Mule Creek. The actual groundwater flow direction may be locally influenced by factors such as surface topography, underground structures, oil and gas extraction, wetlands, seasonal fluctuations, soil and bedrock geology, water wells, and other factors. The Texas Water Development Board (TWDB) Groundwater Data Viewer indicates two new domestic wells are in the central portion of the Project Area (TWDB 2025). One well has a total depth report at 240 feet below ground surface (bgs) with a static water level of 60 feet bgs. The second well is reported at 200 feet bgs with a static water level of 160 feet bgs. Wells are reported to be completed in the Colorado River Basin (TWDB 2025).

5.5.3 Construction Impacts

The potable water and sanitary sewer needs for both construction and operation are anticipated to be small and will be met by the on-site wells and for wastewater via sources from existing municipality facilities, so no water supply impacts are anticipated.

During soil disturbance, clearing, grading and construction-related activities, there is potential for erosion and sediment run-off particularly during rain events. The SWPPP and SPCC (Kimley Horn 2025; SOLV Energy 2025) identify the potential issues and associated best management practices to avoid potential run-off and spill issues from construction-related activities

There is the potential for contamination of soils from any spills of hazardous materials during construction activities (including fuel and oil). Releases could occur from oil-filled operational equipment due to the mechanical or structural failure of some component of the system or operator error, leaks or failure of containment from the bulk storage tanks, and during loading/unloading activities where there is a transfer of fuel or and/or oil. Risks to human health include exposure of construction workers to any soil contamination. Although there are risks, they are considered to be low as very few hazardous materials will be present on site. In addition, there are very few receptors in the immediate Project vicinity (one located 0.25 miles away). Most of the risks can be managed by the SPCC Plan, and an Emergency Response and Hazardous Waste Management Plans.

5.5.4 Operational Impacts

Impacts on soils and geology will be limited during the operational phase in the absence of any major spills or contamination events. There is also the potential for health risks to site users if spills or leaks occur (in particular, spills of hazardous materials such as fuel and oil). However, since this is a solar project, likelihood of this occurring is low and would generally be limited to construction and transport. In addition, there is the potential for runoff of spills or contaminants from the site to affect nearby sensitive receptors. However, there are very few receptors in the immediate Project vicinity (one located 0.25 miles away) and most run-off would not travel far enough to reach these receptors. The EPC contractor SOLV has developed a Site-Specific Safety Plan that includes Hazardous Waste Management and an Emergency Response Plans to address best management practices in the event of a spill during operations. Akuo will review and monitor implementation of these plans. Additionally, most activities with potential for spill would be conducted within the O&M facility within a contained area. Therefore, operational impacts on soils, hydrology and geology are anticipated to be negligible.

5.5.5 Mitigation Measures

No significant adverse impacts to geology, soils, or hydrogeology are anticipated for this Project. The following mitigation measures should be taken to reduce the potential for adverse impacts due to spills or contamination:

- During the construction period, the EPC contractor shall be responsible for setting out construction mitigation practices and appropriate monitoring measures. These will include

measures to prevent, contain, and clean up accidental spills and leaks that could cause contamination to soils, provisions for waste disposal, and brief method statements for identification of any potential contamination uncovered during construction work as outlined in the SWPPP (SOLV Energy 2025) and SPCC (Kimley Horn 2025);

- Implement best management practices identified in the SWPPP (SOLV Energy 2025) including sediment and erosion control measures during soil disturbance, clearing, grading and construction-related activities. The use of silt fence, culverts, riprap, erosion control blankets, rock bats, and earth dikes will be used to ensure proper drainage and maintenance. General best management practices include the following:
 - Constructing erosion and sediment controls prior to earth-moving activities.
 - Measures to be implemented during construction include the following:
 - Earth dikes/silt fence/rock outlets will be installed at the perimeter of the site to prevent soil runoff onto surrounding properties, as needed.
 - Rock bags will be installed within the site to allow settlement of sediment water before it runs downstream. Stormwater sediment controls will be implemented at the inlets and outlets for the proposed stormwater conveyance system.
 - Construction entrances will have appropriate sediment control measures implemented for construction vehicle traffic, including a stabilized construction entrance and concrete washout.
 - Stockpiles materials resulting from the clearing and grubbing or excavation operations shall be stockpiled up slope from adequate sedimentation controls. Re-seeding to be done as soon as earth moving activities are completed. This includes any temporary soil stockpiles. Materials removed to an offsite location shall be protected with appropriate controls and properly permitted.
 - Mechanical station, per the general contractor, shall designate areas for equipment cleaning, maintenance, and repair areas shall be protected by a temporary perimeter berm or similar best management practice. The SPCC shall be updated as necessary to reflect any large quantities or oils or fuel used in this area and will be appropriately labeled per Texas requirements.
 - Use of detergents for large scale washing is prohibited (i.e., vehicles, buildings, pavement surfaces, etc.).
 - Hazardous waste storage of chemicals, paints, solvents, fertilizers, and other toxic materials must be stored in weatherproof containers. Except during application, the contents must be kept in trucks or within storage facilities. Runoff containing such material must be collected and removed from the

site, treated, and disposed of at an approved solid waste or chemical disposal facility.

- Limiting exposure of disturbed areas.
- Utilizing temporary controls prior to earth-moving activities.
- Re-vegetating and/or stabilizing disturbed areas as soon as possible.
- Removing sediment from stormwater prior to drainage from site.
- Maintaining a 50-foot undisturbed natural buffer around all on-site jurisdiction streams and wetlands.
- More specific best management practices include the following:
 - Prior to any construction on the site, a stabilized construction entrance and laydown yard shall be installed.
 - Prior to any grading of the site, sediment control measures shall be installed. These controls may include but are not limited to silt fences, earth berms, rock bags, sedimentation ponds and vegetated swales. The installation is required to prevent sediment from leaving disturbed areas.
 - After the install of the perimeter controls, any necessary clearing and grubbing will occur, followed by rough grading.
 - Roads will be installed across the site for access and to limit to the extent feasible off-road impacts and erosion.
 - Existing erosion control measures must be maintained during final grading.
 - During building construction, construction materials will be unloaded in the stabilized laydown yard with gravel surfaces where possible, thereby preventing disturbing control measures already in place and reducing sediment tracking into paved areas. Areas where construction activity temporarily ceases for more than 14 days will be stabilized with a temporary seed and mulch within 14 days of the last disturbance. Once construction activity ceases permanently in an area, that area will be stabilized with permanent seed and mulch. After the entire site is stabilized, the accumulated sediment will be removed, and the erosion control measures will be removed.
- Erosion and sediment materials and construction waste materials will be collected and managed according to provisions under waste disposal in the SWPPP.
 - Erosion and sediment materials that build up in silt fencing and silt dikes will be spread on site and allowed to dry. Paved streets will be swept as needed to remove mud, rock, and dirt as needed.
 - All construction waste materials will be collected and stored in line with county and state solid waste management regulations and emptied as needed.

- Soil stabilization to prevent soil from leaving the site will be managed through temporary and permanent seeding. Temporary seeding should be done immediately when an area is expected to be dormant for more than 14 days. Permanent seeding must be implemented prior to 14 days after completion of major construction activity.
- Sanitary waste will be managed by temporary facilities and serviced by a commercial operator.
- All SPCC and SWPPP best management measures will require periodic inspection and maintenance.
- Maintenance of erosion and sediment controls include the following:
- All control measures shall be inspected within 14 days of construction or within 24 hours following a rainfall event of 0.50 inches or greater.
 - If measures are in need of repair, appropriate remedies shall be initiated immediately.
 - Silt fences shall be inspected for sediment build up, break through, and to see if they are functional.
 - Sediment shall be removed from the devices when the sediment has reached half the height of each.
 - Stabilized construction entrances/exits shall be checked for sediment clogging the rock at the entrance/exit.
 - Streets shall be checked for sediment tracking due to vehicles.
 - Inspections shall evaluate disturbed areas and areas used for storing materials that are exposed to rainfall for evidence of, or potential for, pollutants entering the drainage system or discharging from the site. If necessary, the materials must be covered or original covers must be repaired or supplemented. If necessary, protective berms must be constructed to contain runoff from material storage areas.
 - Grassed areas shall be inspected to confirm that a healthy stand of grass is maintained.
 - The site has achieved final stabilization once all areas are covered with access gravel road or have stand of grass with at least 70 percent density of the existing vegetation. Areas must be watered, fertilized, and reseeded as needed to achieve this requirement.
 - All discharge points must be inspected to determine whether erosion control measures are effective in preventing significant impacts to receiving waters.
- The Primary Emergency Coordinator is the facility designee and is responsible for oil discharge prevention, control, and response preparedness activities at this facility.

- The SPCC requires implementation of the following actions:
 - Conduct site inspection to verify substation transformer secondary containment is constructed to plan and properly sized, and construction aboveground storage tanks are placed onsite as described herein.
 - Conduct spill prevention training at least once each year (40 Code of Federal Regulations (CFR) 112.7[f]).
 - Implement and conduct monthly and annual site inspections of all facilities and equipment (40 CFR 112.7[e]).
 - Prepare a site spill cleanup kit for use at the facility that includes absorbent material, booms, and other portable barriers. Locate an additional cache of spill materials at a central location. Check the spill kit inventory monthly to ensure that any used materials are replenished (40 CFR 112.7[c]).
 - Post clearly visible site identification, location, and emergency contact phone numbers in a location to enable a person reporting a discharge to communicate to emergency responders.
 - Any release of oil from temporary storage will be mitigated and cleaned up immediately. Precipitation accumulated in containment areas will be drained to prevent accidental discharge of oil to the environment.
 - Provide each storage tank with a clearly visible label showing size and contents to aid emergency responders.
- Discharge prevention and containment procedures are as follows as identified in the SPCC:
 - Oil-Filled Operational Equipment
 - Prior to draining, inspect the containment area and take appropriate action including removing accumulated oil on the rainwater and returning it to storage or disposing of it in accordance with legally approved methods.
 - Inspect drainage systems at regularly scheduled intervals for oil accumulation.
 - Maintain records of drainage events.
 - Bulk Oil Storage:
 - Use oil storage containers of appropriate construction for the material stored and the conditions of storage.
 - Periodically and upon a regular schedule, visually inspect each container of oil for deterioration and maintenance needs, including the foundation and support of each container that is on or above the surface of the ground.
 - The security of the areas/equipment is checked (i.e., valves and equipment

- locked and secured).
 - Engineer/update tanks in accordance with good engineering practices to prevent discharge.
- If a discharge occurs, the following response and cleanup procedures will be taken per the SPCC:
 - Eliminate potential spark sources.
 - Determine the source of the leak.
 - Take corrective action to stop the leak if possible (i.e., upright container, plughole, etc.).
 - Contain the discharge with sorbents, berms, fences, trenches, sandbags, or other material.
 - Contact the Primary Emergency Coordinator or their alternate.
 - Contact regulatory authorities and the response organization.
 - Collect and dispose of recovered products according to regulation.
- All construction work shall be completed in accordance with the recommendations of U.S. law, EP4, and Good International Industry Practice guidelines as applicable.
- All employees that regularly handle hazardous materials shall receive training in the proper implementation of measures for discharge prevention and control.
- A Site-Specific Safety Plan has been developed by the EPC that includes hazardous waste management measures. Akuo will complete regular oversight and inspection of the hazardous waste management practices on site along with review of overall site-specific safety measures.
- An Emergency Response Plan has been developed by the EPC. Akuo shall verify implementation of the Plan and monitor that evacuation procedures are properly posted on site.

5.6 Socioeconomics and Human Rights

5.6.1 Introduction

The Project Area is located on a 1,200-acre site situated within a larger parcel of 2,724.5 acres of land owned by a single family in Coke County, Texas. The family historically maintained a small ranch on the site. The property is bordered by U.S. Highway 277 to the west; by agricultural cropland, a ranch, creeks, shrubland, and a substation to the north; by creeks and shrubland to the east; and by a dairy farm along with creeks and shrubland to the south. The site and surrounding area are used for agriculture. The unincorporated community of Tennyson is located less than a mile to the northwest of the Project Area. San Angelo is the nearest major metropolitan area, located approximately 23 miles southwest of the site, with a population of over 100,000 U.S. Census Bureau. 2023). The immediate surrounding area for the Project Area is largely rural, and the site is considered remote.

Based upon the gap analysis completed for the Project, it was recommended that analysis of socioeconomics impacts and a high-level human rights scan be completed for the Project in line with the EP4. Socio-economic conditions and impacts are discussed first followed by a summary of potential human rights risks and impacts.

5.6.2 Socioeconomic Baseline

For the purposes of understanding the existing demographic characteristics of the population that lives and works within proximity of the Project, the immediate area of socioeconomic influence for the Project is defined as up to 2 miles surrounding the Project Area (Project Area of Influence). However, the population in this area is extremely small, as the area is rural and there is no major population center. For comparison purposes, the population of the nearby community of Bronte, located 10 miles to the north of the site, has also been included.

The Project Area of Influence is a rural area with an extremely low population of 40 individuals (U.S. Census Bureau 2020) shown in Figure 8. Approximately 50 percent of the population is male, and 50 percent is female. Most of the population (65 percent) are adults aged 65 years and older, followed by those aged 45 to 64 years (35 percent). There are no individuals aged 44 years or younger living in this area. The population has a high rate of basic education, with 100 percent of the population possessing a high school degree or higher. All adults in the Project Area of Influence are employed; therefore, there is no unemployment, likely indicating that most residents are engaged in some level of farm labor. All adults within the Project Area of Influence live independently, with no individuals reporting having independent living difficulties. Additional demographic data can be found in Section 5.6.2.1.



Figure 8. Example of Project Area of Influence

The nearest established town to the Project Area of Influence is Bronte, which has a population of 1,098 individuals (U.S. Census Bureau 2020). Approximately 55 percent of the population in Bronte is male, and 45 percent is female. Adults aged 20 to 44 years make up the greatest percentage of the population (25.3 percent), followed by adults aged 45 to 64 years (21.9 percent), and children aged 5 to 14 years (21.3 percent). The population has a high rate of basic education, with 88.9 percent of the population possessing a high school degree or higher. Unemployment rates in Coke County are low, at approximately 3.9 percent and below, and these county numbers are likely to be similar for Bronte. Most of the adults within the town of Bronte live independently, with some adults aged 18 to 34 years (1.40 percent) and 75 years and older (11.21 percent) having independent living difficulties. Additional demographic data can be found in Section 5.2.6.1.

5.6.2.1 Population Demographics

This section provides population demographics for the Project Area of Influence in comparison to the nearest town (Bronte), Coke County overall, and the State of Texas. Population data (including total population, race/ethnicity, income levels, educational attainment, and unemployment) are presented in Table 6.

Table 6. Population Demographics for the Project Area of Influence and Comparison to Other Areas

Group	Project Area of Influence	Town of Bronte	Coke County	Texas
Total Population	40	1,098	3,285	29,145,505
<i>Sex (%)</i>				
Male	50	55	51.0	49.9
Female	50	45	49.0	50.1
<i>Age Distribution (%)</i>				
Younger than 5 years	0	4.3	4.4	6.5
5 to 14 years	0	21.3	12.9	14.3
15 to 19 years	0	6.6	5.9	7.2
20 to 44 years	0	25.3	23.7	35.3
45 to 64 years	35.0	21.9	25.5	23.5
65 years and older	65.0	20.5	27.6	13.2
<i>Race/Ethnicity (%)</i>				
One Race	86.28	71.92	76.35	57.70
White	86.28	71.38	75.28	39.75
African American	0	0	0.21	11.82
American Indian/Alaskan	0	0.11	0.46	0.29
Asian	0	0.11	0.03	5.36
Hawaiian/Pacific Islander	0	0.11	0.18	0.10
Some Other Race	0	0.21	0.18	0.39
Two or More Races	3.92	1.82	3.53	3.04
Hispanic or Latino (%)	9.80	26.26	20.12	39.26
Total Minority (%) ¹	13.72	28.62	24.72	60.25
<i>Income</i>				
Median Household Income (\$)	100,375	52,083	46,431	79,721
Persons Below Poverty Line (%)	0	11.1	14.1	13.4
<i>Education Attainment (%)</i>				
High School Graduate or Higher ²	100	88.9	87.8	86.7
Less than High School Education	0	11.1	12.2	13.3
<i>Unemployment (% by Age)</i>				
20 to 24 years	N/A	3.0 ³	3.0	8.3

Group	Project Area of Influence	Town of Bronte	Coke County	Texas
25 to 29 years	N/A	3.0	3.0	5.2
30 to 34 years	N/A	3.0	3.0	4.6
35 to 44 years	N/A	3.0	3.0	3.9
45 to 54 years	N/A	3.0	3.0	3.2
55 to 59 years	0	3.0	3.0	3.4
60 to 64 years	0	3.0	3.0	3.5
<i>With an Independent Living Difficulty (% by Age)</i>				
18 to 34 years	N/A	1.40	1.96	3.17
35 to 64 years	0	0	2.54	3.74
65 to 74 years	0	0	0	7.89
75 years and over	0	11.21	9.74	23.17
Sources: U.S. Census Bureau, Census 2020 (U.S. Census Bureau, American Community Survey, 5-Year estimates (2019–2023) and (U.S. Census Bureau, Decennial Census 2020). 1 - Minority includes Hispanic, African American or Black, Asian and Pacific Islander, American Indian, Other, and Two or More Races. Total Minority (%) is calculated by subtracting the percentage of “Not Hispanic or Latino-White Alone” from 100%. 2 - High school graduate or higher includes high school graduates and equivalency, some college, no degree, associate degree, bachelor’s degree, and graduate or professional degree. 3 - The unemployment rate for Coke County was used for all age groups given the high margin of error in the U.S. Census data for unemployment rates by age in the Town of Bronte and Coke County.				

5.6.2.2 Employment

Employment in Coke County is generally high, with most adults participating in the labor force. Unemployment rates are low in Coke County, which has an overall unemployment rate of 3.9 percent. The age group with the highest employment rate is adults aged 35 to 59 years (87 percent), followed by adults aged 20 to 34 years (75 percent) and adults aged 60 to 64 years (54 percent).

The main employment industries in Coke County are the Educational Services, Health Care, and Social Assistance industry (26 percent), followed by Construction (14 percent) and then Finance, Insurance, and Real Estate industries (11 percent). Most employment within Coke County is found within the towns of Bronte and Robert Lee. Outside of these towns, Coke County is very rural. The highest land use in the County is agriculture and livestock production.

5.6.2.3 Local Public Service and Infrastructure

Two K-12 public schools are in Coke County: Bronte High School and Robert Lee High School. The Coke County Sheriff’s Office, located in Robert Lee, is the only police precinct in the County. There are three Fire Stations within the County, all of which are volunteer based. One is in Bronte and two are in Robert Lee. No formal medical facilities are located within Coke County, other than a nursing home in Robert Lee and a rehabilitation facility in Bronte. The closest hospital outside of Coke

County is the Shannon West Texas Memorial Hospital located in the City of San Angelo. The closest regional airport to Coke County is the San Angelo Regional Airport, and the closest international airport is the Dallas-Fort Worth International Airport located in Dallas.

The housing vacancy rate in Coke County is 30.65 percent. The homeowner vacancy rate is estimated to be 3.7 percent, and the rental vacancy rate is estimated to be 7.5 percent. Over half of the housing in the county is present within the towns of Robert Lee and Bronte (54.2 percent). The main highways in Coke County are State Highway 158, which travels east/west between the towns of Bronte and Robert Lee, State Highway 208, which travels north/south through Robert Lee, and Interstate Highway 277, which travels north/south through Bronte.

5.6.2.4 Disadvantaged and Vulnerable Groups

Of the total population in Coke County, 28.62 percent identify as a minority race or ethnicity, with the most common minority group being Hispanic/Latino (26.26 percent). The minority population within Coke County is significantly lower than in the state of Texas, in which 60.25 percent of the population identify as a minority group. In Coke County, American Indians/Alaskans comprise 0.46 percent of the population and Hawaiian/Pacific Islanders make up 0.18 percent of the minority population.

Elderly people (aged 65 and older) make up the largest age group in Coke County and comprise 27.6 percent of the population. In comparison, the percentage of adults in the total population aged 65 and older in the state of Texas is much lower at 13.2 percent. The greater number of elderly in Coke County is also reflected in the demographics of the Project Area of Influence, in which 65.0 percent of adults living there are aged 65 or older.

In Coke County, 18.4 percent of the total population reported having a disability (i.e., vision, hearing, cognitive, ambulatory, self-care, or independent living difficulties). Of the total population in the State of Texas, 12.8 percent reported having a disability. In both Coke County and the state of Texas, the populations with the greatest percentage of disabilities were aged 65 years or older.

According to the U.S. Department of Health and Human Services, the 2025 poverty guideline for a four-person household is \$32,150. As listed in Table 6, the median household income in Coke County is \$46,431 and 14.1 percent of households fall below the poverty line. The median household income is lower in Coke County than in the state of Texas, in which the median household income is \$79,721. The poverty rate in the State of Texas is 13.4 percent, which is 0.7 percent lower than the poverty rate in Coke County.

According to the U.S. Census, immigrants (foreign-born residents or undocumented workers) made up 22.6 percent of the workforce in Texas in 2023. This is 5 percent higher than the national average and represents the widest gap in the construction industry.⁴ This group could be considered vulnerable.

⁴ American Community Survey, S0501 (US Census Bureau 2023).

5.6.2.5 Construction Workforce

As noted in Section 2, Project construction is expected to take up to 12 months, reaching a peak workforce of approximately 400 workers. While the EPC contractor will prioritize hiring locally, the remote location limits the availability of local labor. As a result, additional skilled workers will be brought in from surrounding areas and accommodated in nearby existing hotels, mobile homes, or campgrounds in the surrounding towns. Three small towns with established communities and housing options are located near the Project Area, each with a population near 1,000: Robert Lee, approximately 20 miles northwest; Bronte, approximately 10 miles north; and Miles, approximately 17 miles southeast. San Angelo, the largest town with a population of roughly 100,000, is located approximately 23 miles southwest.

5.6.2.6 Nearby Residents

Akuo Energy has secured a 50-year lease for the Project Area from a single private property owner that has owned the land since 1999 and used the land for cattle ranching. In January 2024, Akuo Energy purchased 16 acres from the landowner for the utility substation and its slack span and transferred the ownership to AEP of Texas, who operates the utility. The landowners reside within 0.25 miles of the Project boundary.

5.6.2.7 Human Rights Baseline in the U.S.T

The U.S. has signed and ratified the following International Treaties on Human Rights:

- International Covenant on Civil and Political Rights (ICCPR) – The U.S. signed the ICCPR in 1977 and ratified it in 1992. The ICCPR protects and preserves basic human rights, including the right to life and to human dignity, equality before the law, freedom of speech, assembly and association, religious freedom and privacy, freedom from torture, ill-treatment and arbitrary detention, gender equality, fair trial, and minority rights.
- International Convention on the Elimination of All Forms of Racial Discrimination (CERD) – The U.S. signed the CERD in 1966 and ratified it in 1994. The CERD protects against discrimination based on race, intentionally or by neutral policies.
- Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (CAT) – The U.S. signed the CAT in 1988 and ratified it in 1994. The CAT protects people from torture. The U.S. deferred to the 8th Amendment of the U.S. Constitution for legal guidance on the definition of torture.
- Convention on the Prevention and Punishment of the Crime of Genocide (Convention) – The U.S. signed the Convention in 1948 and ratified the Convention in 1988. It establishes “genocide” as an international crime, which the U.S. and other nations “undertake to prevent and punish.”

In addition to these International Conventions, the following U.S. legislation would also be applicable to the Project:

- The U.S. Civil Rights Act of 1964 (and as amended in 1991) bans employment discrimination on the basis of race, color, religion, sex, or national origin. This Act prohibits discrimination in hiring, promoting, and firing.
- Age Discrimination Employment Act of 1967. This Act prohibits discrimination in hiring, promoting, and firing based on age.
- Discrimination based on disability is prohibited by Titles I and V of the Americans with Disabilities Act. It includes the following accommodations to be made by the employer, including transport for the employee to get from one destination to another, restroom facilities, safe access for things out of reach, and restructuring the work environment so the employee can work and get access to modified equipment.

In addition to the requirements above, the U.S. has made significant progress on adopting laws to eliminate race discrimination. Title VII of the Civil Rights Act protects employees and job applicants from these issues.

The Texas Commission on Human Rights Act addresses discrimination based on national origin, sex, color, race, disability, and age (Government of Texas 1983). OSHA (OSHA 2008b) also has measures for the protection of temporary workers, particularly health and safety protection measures for workers.

In addition, the Texas Human Trafficking Prevention Coordinating Council Task Force coordinates state agencies, local law enforcement, and non-governmental organizations to fight human trafficking. Texas legislators expressed a need for more coordination and collaboration among state agencies to orchestrate an effective and efficient use of appropriated funds for human trafficking programs and efforts across Texas. In response to the calls for coordination of human trafficking prevention programs and services administered in Texas, the Texas Legislature passed Senate Bill 72 during the 86th Legislative Session (2019) directing the Office of the Attorney General to establish the Texas Human Trafficking Prevention Coordinating Council to work towards effectively and efficiently eradicating human trafficking through the coordination and collaboration of programs, services, and state resources.

According to a Human Rights 2024 report, critical human rights issues in the U.S. in 2024 included abusive border policies and denials of the rights of migrants and asylum seekers, expansion of sometimes deadly constraints on reproductive rights, new threats to LGBT rights, and restrictions on voting rights, abuses often targeting or falling heaviest on communities of color. This report suggests that even with the many protections in place in the U.S., there can still be ongoing human rights risks to be managed (Human Rights Watch 2024).

5.6.3 Impacts

5.6.3.1 Employment and Economic Development

Construction

Akuo Energy anticipates that up to 400 workers will be employed in total at the peak of construction, which would result in a moderate beneficial impact due to job creation. In addition, the Project is expected to result in economic development. Typically, 3.2 to 3.5 jobs in service and supply sectors are created for each direct job generated by the power industry (NPC 2011). This would mean the potential creation of up to 1,400 indirect jobs during construction. At the local and regional levels, this is likely to stimulate work for food suppliers and in turn agricultural producers, as well as induce growth in other industries (such as retail, hospitality, transportation, etc.). This would be considered a major beneficial impact of the Project.

Although the EPC Contractor will try to hire locally as much as possible, given that the site is remote, the Project will likely require workers from the wider region, including San Angelo, Sweetwater, or even Abilene. No worker accommodation is to be constructed, so workers are anticipated to be housed in nearby hotels, mobile homes, or campgrounds. All labor and safety practices will comply with U.S. and Texas laws and with international human-rights principles, to help ensure fair treatment of migrant workers, women, and subcontractors throughout the supply chain. Personnel and health and safety measures will be implemented in line with U.S. standards. Despite the potential for a small amount of construction worker influx from the surrounding region, compliance with these standards and the use of existing accommodations are expected to help reduce pressure on the local community.

Operations

The permanent O&M workforce is estimated at 3 full-time employees, with up to 10 individuals during seasonal cleaning or repair campaigns. Although small in number, this would still be considered a minor beneficial impact. All operational staff will be employed in accordance with Akuo Energy's Occupational Health and Safety (OHS) and health and safety policies, provided regular safety training, personal protective equipment, and in line with U.S. labor laws. Consequently, community worker impacts on the surrounding community are expected to be negligible.

5.6.3.2 Community Impacts

No relocation will occur as a result of the Project. Akuo Energy has also implemented vegetation screening between the landowner's residence and Project infrastructure to reduce visual impacts from the landowner's home. Dust, noise, and increased traffic during earthworks and panel installation may affect the landowners and nearby residents. Construction vehicle movements on local roads could elevate the risk of traffic accidents. Temporary road closures or realignments could disrupt access to properties and emergency services. However, these impacts would be temporary and managed through standard mitigation measures (e.g., dust control, traffic

management, and scheduling of loud activities) covered in the Air Quality and Noise section of this document and are not expected to cause significant or lasting adverse effects on residents or landowners.

Workers from outside the area are anticipated to come from other parts of Texas. EPC contractors are likely to utilize available local hotels, recreational vehicle parks and campgrounds, and mobile homes to house workers from outside the area. The construction period will last approximately one and a half years, commencing in fall of 2025 and commissioning in the fourth quarter of 2026. Some construction work may be wrapping up after the Project is commissioned. The majority of employment during construction is likely to be relatively short-term, and the extent of employment opportunities for local communities will depend upon skill levels and proximity. Commissioning is anticipated to take place in approximately the fourth quarter of 2026.

Although 400 workers are anticipated at construction peak, fewer workers are anticipated on site throughout construction. Although the communities of Tennyson and even Bronte contain small populations, the surrounding communities of San Angelo and other parts of Coke County are likely to be the source of local construction workers. As noted, the housing vacancy rate in Coke County is 30.65 percent, leaving plenty of housing stock for temporary in-migration. There is likely to be some influx of workers in the community during construction which may put pressure on the local social services (such as housing, schools, and health care) and can lead to additional pressures on waste management, sanitation, water, power, and transportation. The integration of a large most likely male workforce into this largely rural area could cause community conflicts and must be carefully managed.

Under existing conditions, there are limited police and fire services in Coke County. The police station in Robert Lee is approximately 20 miles from the Project Area, and the closest fire station is about 10 miles away in Bronte. Possible emergencies at the Project Area requiring police or fire units could limit access to emergency services to other areas and local communities in the County. Additionally, as there are limited options for medical care within Coke County, all possible medical issues and emergencies will be directed towards facilities in San Angelo where there are care clinics and hospitals. As such, there is a possibility that Project-related illnesses and injuries will put pressure on the capacity of the medical facilities in San Angelo. Given that resources such as medical facilities, fire stations and police stations are limited in the area, this may result in a low to medium impact on public services.

5.6.3.3 Impacts on Vulnerable Groups

As described in the socioeconomic baseline, the total population within the immediate Project Area is small, 40 people. Most of the population (65 percent) are adults aged 65 years and older, which could be considered vulnerable from a health perspective. Minority groups compose approximately 13.72 percent of the population in the immediate Project Area, 24.72 percent in Coke County, and 60.25 percent in the State of Texas. However, in the immediate Project Area and nearby town, lower percentage of minorities are present.

This pressure can also exacerbate service restrictions for other community members, which may, ultimately, have particular effects on vulnerable groups. If not planned for and effectively managed, labor influx can lead to human-welfare risks and can negatively affect public infrastructure, housing, and the social dynamics in the Project Area and region.

Elderly individuals aged 65 years and older make up the largest percentage of the total population in both the immediate Project Area (65.0 percent) and Coke County (27.6 percent). In the state of Texas, the age group 65 years and older makes up 13.2 percent of the population. The elderly may be more susceptible to certain Project impacts, such as possible health concerns from airborne dust or strained community and emergency services, than younger age groups.

Migrant workers could also be vulnerable, as could women from a worker perspective, as the construction sector is historically a male-dominated sector. Given that migrants made up 22.6 percent of the workforce in Texas in 2023, this group could be considered vulnerable to risks from discrimination, substandard working conditions, excessive work hours, and any sub-standard labor management practices. According to the U.S. Bureau of Labor Statistics (USBLS), in 2024, women made up only 4.3 percent of the construction industry (USBLS 2024). Given that the construction industry is predominantly made up of male candidates and Akuo Energy is an equal opportunity employer, women may benefit from the employment opportunities created from the Project and increase their participation in the construction industry. However, it should also be noted that women are considered vulnerable to risks related to workplace discrimination and harassment.

No potential impacts to Tribal communities are anticipated by the proposed Project. The Project does not involve the relocation of Indigenous Peoples or the use of cultural heritage for commercial purposes, nor are there any known Native American Sacred Sites or Traditional Cultural Properties with the Project Area.

Overall, this Project has the potential to result in minor impacts on marginalized or vulnerable groups given the current pressure on resources and the presence of an elderly population as well as migrant workers. Mitigation measures are identified below to reduce impacts to negligible significant levels.

5.6.3.4 Human Rights Impacts

In line with EP4, it is recommended that Projects go through an initial high-level scan for Human Rights issues through desktop research to determine initial risk levels and mitigation measures. The scan considers the full range of potential Human Rights impacts to be considered for the Project and evaluates them through the lens of which issues are most severe (based on scale, scope, and remediability), and which have the greatest likelihood of occurring. Per EP 4, the following issues shall be considered when evaluating level of risk:

- Scale: How serious are the impacts for the rightsholder?
- Scope: How many people could be affected by the impact?

- Remediability: Will a remedy restore the rightsholder to the same or equivalent position before the impact?
- Likelihood: What is the likelihood of the impact occurring? At the screening phase, this likelihood can be understood as a combination of different elements, including: 1) inherent risks related to the business model in general or a particular high-risk operating context that are difficult to mitigate, even for experienced companies; and 2) evidence that the specific client has faced similar risks that it has failed to properly mitigate, leading to impacts.

Akuo Energy has an Ethical Charter that commits the company, its employees and suppliers to the acting based on the principles of the Universal Declaration of Human Rights and the core conventions of the International Labour Organisation. The Ethical Charter states that child labour and forced labour will not be used or supported. Akuo Energy has also developed a Supply Chain Workers and Contractors Code of Conduct that includes provisions prohibiting forced labor, a commitment to non-discrimination and anti-corruption. According to the Project Sponsor, supply chain products are anticipated to be sourced primarily from the U.S., Mexico, South Korea, Thailand and Malaysia.

EP4 notes that the assessment methodology should address the list of universal rights identified by the UNGPs; namely, at a minimum, those contained in the International Bill of Human Rights and the eight International Labor Organization (ILO) Core Labor Standards, and how they might be impacted by the client in the Project Area of Influence, so these standards were used as a starting list of potential risks. Human rights issues considered of concern for the Project include:

- Non-discrimination and just and favorable working conditions;
- Safe, healthy and secure working conditions and community health and safety impacts;
- Human trafficking, forced labor, and discrimination related to migrant workers, minorities and supply chain workers; and
- Upholding minority rights and rights of women.

The following table considers the risks highlighted along with other important human rights considerations for the Project. Risks are ranked from negligible, low up to moderate and high levels. In Table 7, each risk is detailed in accordance with the parameters identified above.

Table 7. Human Rights Risk Summary

Human Rights Concern/Potential Impact	Scale	Scope	Remediability	Likelihood	Remedy/ Proposed Mitigation
Freedom from Discrimination – Potential for worker discrimination in employment, unfair treatment in hiring or advancement.	Moderate scale economic consequences if this precludes employment. This could be compounded for vulnerable groups.	Likely to be minor as construction numbers as U.S. laws help protect against discrimination, but the actual potential scope is unknown.	It is remediable. Better outcomes are likely if there are corporate support programs that continue throughout the Project and if particular attention is paid to vulnerable groups with a commitment to non-discrimination and fair treatment.	Low to moderate likelihood, as migrant workers are commonplace in Texas.	Proactive implementation of Akuo Energy's non-discrimination policy as applied to the EPC contractor.
Right to Just, Favorable, Healthy, and Secure Working Conditions – risks include excessive working hours, unpaid overtime, denial of rest days and breaks, refusal to pay severance, potential for community conflicts.	Lower scale risks for short term impacts. Longer term endurance of these conditions can lead to secondary problems such as mental health issues, social isolation, and increased risk of suicide.	This scope would apply to all construction workers and particularly to vulnerable parties. Scope would be up to 400 workers at peak, which is considered minor and is likely to be less.	Remediability would depend on the severity of harm to the victim; some health and safety harm (such as physical or mental harm, death) may not be able to be remedied, while other harms (such as withheld wages, etc.) may be more easily remedied. Overall remediability would be considered medium.	Low to moderate likelihood unless measures are put in place to limit work hours and ensure protective health and safety conditions.	Require that construction contractors implement health and safety measures and training, and abide by Akuo Energy's policies and labor laws, ensuring employees for time worked. Provide hands-on training and supervision for both temporary and permanent workers on a safe and healthy working environment. Akuo Energy shall provide regular monitoring of contractors' labor management, including working hours, wages and terms of employment.

Human Rights Concern/Potential Impact	Scale	Scope	Remediability	Likelihood	Remedy/ Proposed Mitigation
Freedom from Slavery – potential for human trafficking, forced labor, and discrimination related to migrant workers.	Victims of forced labor, child labor and human trafficking face severe risks including physical harm due to unsafe working conditions, mental health issues, abuse of various kinds, and exploitation of vulnerabilities.	Likely to be minor given that child labor is prohibited in the U.S. and the government enforces these laws. However, the construction often engages migrant laborers (which involves risks of human trafficking and forced labor).	Remediability depends on the severity of harm to the victim; some harm (such as physical or mental trauma) may not be able to be remedied, while other harms (such as excessive work hours, poor conditions for migrant laborers, etc.) may be more easily remedied.	For child labor, low likelihood, as there is government enforcement and child labor is highly unlikely in the construction industry given the physical nature of the work. For human trafficking and forced labor, medium to low likelihood based on historic trends.	Ensure Akuo Energy's construction contractors proactively screen migrant workers when employed on the Project and develop a workers management plan that includes acknowledging worker rights and protections. It is recommended that all Supply Chain providers (outside of the panels themselves where a specific policy has been developed by Akuo Energy) policies be reviewed by the EPC contractor for human rights considerations prior to contracting and Akuo Energy be alerted to any issues. It is also recommended that monitoring be undertaken for forced labor and other human rights-related policies as applicable by the EPC contractor and reviewed/spot tested periodically by Akuo Energy.

Human Rights Concern/Potential Impact	Scale	Scope	Remediability	Likelihood	Remedy/ Proposed Mitigation
Minority Rights -- Ensure that the rights of minorities (including migrants from other countries) are upheld.	As there may be 20% or more of the workforce that are migrants, labor exploitation is considered a medium risk including potential withholding and deductions of wages, harassment and verbal abuse.	Up to 20 percent of workers could be affected by this risk, which would be considered moderate.	This issue can be adequately remedied by ensuring proper compensation for these parties and that there are future employment opportunities for migrant workers with properly protected working conditions.	Given that migrant workers made up 22.6% of the workforce in Texas in 2023 and given that this is concentrated in the construction industry, likelihood is considered medium.	Akuo Energy to provide oversight/monitoring of their construction contractors, proactively screen migrant workers when employed on the Project, and develop a workers' management plan that includes acknowledging worker rights and protections. Akuo Energy to proactively monitor implementation of Akuo Energy's non-discrimination policy as applied to gender equality and minority groups.

According to the EP4 Guidance Note: On Implementation of Human Rights Assessments under the EP4, following this risk summary, projects should then be ranked into low and high-risk categories that would result in the following next steps:

- **Lower-risk:** High-level summary of risks: Where the result of such initial scanning deems the risks to be lower, this initial scan may suffice for an assessment and should be provided to the EPFI for review to make that determination. It may be sufficient for clients to provide information showcasing both the approach and the results of the initial scan which determined that potential adverse Human Rights impacts to stakeholders is low or such impacts would be adequately mitigated by Project plans. For areas of key potential Human Rights risk, clients should pay particular attention to any potential gaps between domestic legal and regulatory regimes and international Human Rights standards and should identify any exacerbating or mitigating factors, to be included in the high-level summary of risks for review by the EPFI.
- **Higher-risk:** Further assessment and more in-depth documentation: Where risk levels appear to be higher after this initial scan, clients should conduct/commission additional (on-the-ground) research driven by Stakeholder Engagement to get a fuller understanding of potential Human Rights risks and how they can be mitigated. Clients should document this analysis thoroughly in the Assessment Documentation provided to EPFIs, such as embedding as part of a comprehensive environmental and social impact assessment (ESIA) or, for the highest risk projects, in a specialized stand-alone study.

Most of the risks highlighted above are considered low risk. Additional monitoring may be warranted in regard to the labor and working conditions issues for Project workers and subcontractors moving forward. Follow-up on worker contracts and worker management plans will be essential to reducing these risks. Follow-up on migrant worker rights and protection from discrimination for minorities and women should also be addressed via worker management plans and labor monitoring reports. Additionally, regular monitoring audits for supply chain companies should be conducted.

5.6.4 Mitigation and Improvement Measures

Mitigation Measures

No specific adverse impacts to socioeconomics or health are anticipated. However, the following actions should be taken to reduce the potential for future impacts:

- A Project-Level Stakeholder Engagement plan, including a Grievance Mechanism has been developed that is easily accessible to the public and translated into all relevant languages for the Project and will be implemented prior to construction to ensure that all worker and community concerns are properly addressed.
- Akuo to periodically update the Stakeholder Engagement Plan, including the grievance mechanism log and make sure that new Project responsible parties are aware of the past interactions with the community.

- Outreach for the Project shall consider ways to encourage the community as a whole to participate in a public outreach program, including any vulnerable or marginalized groups. Akuo Energy is an Equal Opportunity employer. As reasonable or feasible, Akuo Energy should consider developing additional employment opportunities that offer training programs for women and people with disabilities to provide access to employment and the basic skills necessary for employment. Many relevant corporate policies are already available, and the Project plans to develop some other policies including:
 - Biodiversity Policy
 - Community Engagement and Involvement Policy
 - Energy Use Policy
 - Waste Management Policy
 - Water Management Policy
 - Sustainability Policy
 - Ethical Charter
 - Diversity and inclusion policy
 - HR Policy
 - HSE Golden Rules
 - ESG Annex for Contractors
- SOLV, the EPC contractor, also has a Code of conduct that includes Equal opportunities sections.
- Akuo Energy to uphold transparent, good-faith communications between Akuo Energy and any local labor unions and with workers who are part of a labor union or collective bargaining group. Apply these principles to migrant workers as well as local workers.
- Solv to implement their Code of Conduct which is aligned with our internal policies.
- Akuo Energy to provide hands-on training and supervision for both temporary and permanent workers to ensure a safe and healthy working environment.
- Akuo to regularly review SOLV labor reports to ensure compliance with US and international standards.
- Akuo Energy to require that construction contractors implement health and safety measures and training, and abide by Akuo Energy's policies, Ethical Charter, and Workers and Supply Chain Code of Conduct and U.S. labor laws, ensuring employees get paid for time worked.
- Akuo has 2 emergency response vehicles and a clinic on site. Regular emergency drills will be conducted.

5.7 Greenhouse Gas Emissions (GHG)

5.7.1 Introduction

Per the Equator Principles, GHG emissions should be calculated in accordance with the GHG Protocol⁵ procedures to allow for aggregation and comparability across projects, organizations, and jurisdictions. Clients may use national reporting methodologies if they are consistent with the GHG Protocol. According to the Greenhouse Gas Protocol (GHG Protocol), GHG emissions can be split into three categories known as ‘Scopes’.

Scopes 1, 2 and 3 are defined by the GHG Protocol and can be summarized as follows:

- Scope 1: Direct emissions from sources that are owned or operated by a reporting organization (examples – combustion of diesel in company-owned vehicles or used in on-site generators).
- Scope 2: Indirect emissions associated with the import of energy from another source (examples – import of electricity or heat).
- Scope 3: Other indirect emissions (other than Scope 2 energy imports) which are a direct result of the operations of the organization but from sources not owned or operated by them (examples include supply chain, business travel [by air or rail], and product usage).

The GHG Protocol, and many other reporting schemes, dictates that reporting Scope 1 and Scope 2 sources is mandatory, while reporting Scope 3 sources is optional.

The installation and subsequent operation of the proposed PV solar facility in Coke County, Texas, would involve several activities that have potential to contribute to global climate change impacts. GHG emissions would largely occur during construction activities due to earth-moving activities, construction equipment, trucks bringing materials to and from the site, construction crew commuting vehicles, and operation of stationary emergency generators to maintain equipment warranties and during power outages when they occur. GHG emissions during the operation of the proposed PV solar facility will be limited to the operation of motor vehicles used in the maintenance of the facility. For the purposes of this report, all GHG emissions are conservatively classified as Scope 1 emissions even though some could be classified as Scope 3 emissions. This conservative approach provides greater assurance that reporting thresholds will not be exceeded even if project assumptions change from those considered herein.

A high-level assessment of Scope 1 GHG emissions associated with operations and construction was undertaken using the EPA’s Motor Vehicle Emissions Simulator (MOVES5) emissions modeling system. The potential sources of emissions consist of direct contribution of onsite construction equipment including both mobile and stationary sources. Because the project is a PV solar facility, with negligible indirect emissions, Scope 2 emissions were not estimated. For the purposes of this

⁵ <https://ghgprotocol.org>

assessment, Scope 3 emissions associated with the facility equipment supply chain and other potential indirect sources have not been estimated.

5.7.2 Construction Activities

Construction activities are anticipated to occur during a period of approximately 18 months, however the analysis conservatively includes analysis over a 24-month period. For this analysis, 10 miles has been assumed as the workers' one-way vehicle miles traveled (VMT), with 250 one-way trips per day (125 vehicle round trips). The Project would also include hauling, vendor, and onsite trucks that will be used for transporting materials on and/or off-site during construction. The analysis assumes a one-way VMT of 50 miles per trip for vendors and haul trucks, with 16 one-way trips per day. Onsite trucks used for water spraying assume 6 one-way trips per day, and other light trucks assume 14 one-way trips per day, both assumed to have a one-way VMT of 2 miles per trip. Water would be required for common construction-related purposes, including (but not necessarily limited to) dust suppression, soil compaction, and grading. Temporary onsite water tanks and water trucks will provide water for construction needs. Construction scenario assumptions, including phasing, equipment, and vehicle trips, were estimated based on engineering judgement.

Tables 8 and 9 present the assumptions for the equipment and vehicle trips to be used during construction of the Project. Project construction is estimated to occur over 24 months with major activities in the first 18 months and approximately 233 days of the year (5 days per week, minus holidays and inclement weather days).

Table 8. Estimated Construction Offroad Equipment

Equipment Type	Average Number per Day ¹	Usage Hours	Horsepower Rating ²
Plate Compactors	1.0	8	8
Concrete Mixers/ Cement and Mortar Mixers	6.7	8	10
Generator Sets	3.3	8	14
Dumpers/ Tenders	4.1	8	16
Concrete/ Industrial Saws	2.0	8	33
Excavators	1.3	8	36
Rollers	0.7	8	36
Trenching Machines	6.7	8	40
End Loaders/ Skid Steer Loaders	1.7	8	71
Pavers	0.7	8	81
Paving Equipment	0.7	8	89
Compaction Machines/ Other Construction Equipment	5.0	8	82
Cutting Machines/ Other Construction Equipment	5.0	8	82
Forklifts and Carry Decks	3.6	8	82
Pile Drivers/ Other Construction Equipment	5.3	8	82

Equipment Type	Average Number per Day ¹	Usage Hours	Horsepower Rating ²
Bulldozers/ Crawler Tractors	0.3	8	87
Bore/ Drill Rigs	6.7	8	83
Backhoes	5.3	8	84
Graders	0.3	8	148
Cranes	0.7	8	367
Scrapers	0.3	8	423
1 Equipment counts are estimated based on project size and engineering judgment. The average number of equipment per day is based on total equipment usage averaged over the duration of the construction period.			
2 Obtained using the CalEEMod Version 2022.2 - Appendix G, Default Data Tables (CAPCOA 2022).			

Table 9. Estimated Construction Vehicle Trips

Trip Type	One-Way Trips per Day ¹	Miles per Trip
Worker	250	10
Vendor	16	50
Hauling (Delivery Trucks & Water Supply Trucks)	16	50
Onsite Truck (Flatbed Trucks, Light Trucks)	14	2
Onsite Truck (Water Spray Truck)	6	2

Emission factors for Coke County were obtained from the EPA MOVES5 model results for years 2025 and 2026 (Appendix B). Default scale was used to obtain emission factors. With this option, MOVES uses a default national database of inputs, based on a mix of national data, allocation factors, and some pre-loaded local data, to estimate emissions at the state and county level (EPA 2024)⁶. Therefore, vehicle model year distribution, the vehicle classifications (i.e., heavy duty truck vs passenger cars, etc.), and the vehicle fuels were all based on MOVES national average data.

GHGs include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), fluorinated carbons (hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (EPA 2025)⁷. The Project is not anticipated to include any sources of hydrofluorocarbons, or perfluorocarbons emissions, so GHG impacts for these classes of compounds were not evaluated. Since completion of this analysis, further details of equipment and emissions have been provided by the EPC contractor which indicate that the current carbon emissions estimates are higher than actual anticipated emissions. However, the current default estimates are still included here to illustrate that conservatively, emission would be within the relevant limits.

⁶ <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockkey=P101CTM3.pdf>

⁷ <https://www.epa.gov/ghgemissions/overview-greenhouse-gases>

Table 10 presents the calculated annual GHG emissions, including CO₂, CH₄ and N₂O, for construction.

Table 10. Estimated Annual Construction GHG Emissions

Construction Emissions	CO ₂	CH ₄	N ₂ O	CO ₂	CH ₄	N ₂ O
	Emissions (tons/year)			Emissions (metric tons/year)		
Construction GHG Emissions	10,130.48	0.20	0.93	9,190.21	0.18	0.84
Global Warming Potential	1	28	265	1	28	265
Equivalent CO ₂ e Emissions ¹	10,130.48	5.48	246.68	9,190.21	4.97	223.78
Total Construction GHG Emissions (CO₂e)	10,382.63			9,418.96		

¹ Equivalent CO₂e Emissions = Construction GHG Emissions × Global Warming Potential

For this analysis, the GHG emissions weighted by Global Warming Potential (GWP) were calculated using the GWPs codified by the EPA in 40 CFR Part 98. The GWP-weighted emissions are expressed in terms of CO₂ equivalent (CO₂e). The CH₄ GWP is 28 times that of CO₂, and the N₂O GWP is 265 times that of CO₂. Mathematically, the CO₂e can be represented by the following equation:

$$\text{CO}_2\text{e Emissions} = \text{CO}_2 \text{ Emissions} + (28 \times \text{CH}_4 \text{ Emissions}) + (265 \times \text{N}_2\text{O Emissions})$$

Estimated emissions are compared to the Equator Principles requirement threshold of GHG emissions (combined Scope 1 and Scope 2 emissions) for projects emitting over 100,000 tonnes of CO₂e annually, which would trigger the need to annually report GHG emissions publicly. In addition, per the Equator Principles, “clients will be encouraged to report publicly on Projects emitting over 25,000 tonnes.” GHG emissions associated with construction are calculated to be 9,419 tonnes annually within the construction period, which are less than the required reporting thresholds.

5.7.3 Operations

Operation of the Project would generate GHG emissions through motor vehicle trips to and from the Project Area including the occasional use of heavy-duty trucks. Operationally, this Project was designed to help reduce emissions associated with fossil-fueled energy generation in the region and would be considered beneficial in terms of GHG emissions. Table 11 presents the assumptions for the vehicle trips to be used during operation of the Project. Project operation is assumed to be 233 days of the year. The estimated operations GHG emissions from the Project are shown in Table 12.

Table 11. Estimated Operations Vehicle Trips

Trip Type	One-Way Trips per Day ¹	Miles per Trip
Worker	10	10

Table 12. Estimated Annual Operations GHG Emissions

Operational Emissions	CO ₂	CH ₄	N ₂ O	CO ₂	CH ₄	N ₂ O
	Emissions (tons/year)			Emissions (metric tons/year)		
Operations GHG Emissions	11.62	0.0007	0.0005	10.54	0.0006	0.0005
Global Warming Potential	1	28	265	1	28	265
Equivalent CO ₂ e Emissions ¹	11.62	0.02	0.14	10.54	0.02	0.12
Total Operational GHG Emissions (CO₂e)	11.78			10.69		
1. Equivalent CO ₂ e Emissions = Operations GHG Emissions × Global Warming Potential						

Estimated emissions are compared to the Equator Principles requirement threshold of GHG emissions (combined Scope 1 and Scope 2 emissions) for projects emitting over 100,000 tonnes of CO₂e annually, which would trigger the need to annually report GHG emissions publicly. In addition, per the Equator Principles, “clients will be encouraged to report publicly on Projects emitting over 25,000 tonnes.” GHG emissions associated with operations are calculated to be 11 tonnes annually, which are less than the required reporting thresholds.

5.7.4 Conclusion

Project operations and construction GHG estimates are well below the 100,000 tonnes of CO₂e threshold. As with most solar projects, this Project was designed to help reduce GHG emissions associated with fossil-fueled energy generation in the region and would be considered beneficial in terms of GHG emissions. Per Akuo Energy’s 2024 Carbon Footprint Report, Akuo Energy’s overall 2023 carbon footprint consisted of 44,985 tons CO₂e including company operations and all of their power plants. Overall, the report estimates that Akuo Energy projects have resulted in 1,025,516 tons of CO₂e savings (Nepsen 2024).

No formal Climate Change Risk Assessment has been completed for the Project at this time. However, a 2025 Risk Analysis was prepared for the Project, which addresses several of the physical risks covered in a climate risk assessment (Swiss Re 2025). This study includes the risks of floods, convective storms and wildfires. The report notes that the facility design would likely protect the PV system from 100-year flood events, but 250- and 500-year events could result in a small portion of the PV array being susceptible to damage. The report also notes that wildfire risks are considered low. Some design modifications have been incorporated to address high winds including modification of the PV poles and tracker and adjustment of the angles of the panels. These modifications will lower risk during storms. Three detailed hail and wind risk assessments were

also prepared for the Project in 2024. These studies show possible hail and wind impact potential over a period of time, and no further analysis of Climate Risks would be required at this time.

In addition, the Texas Priority Action Plan was developed by the TCEQ as part of the EPA's Climate Pollution Reduction Grants (CPRG) Phase I Planning Grant. The Plan notes that Texas is highly committed to improving air quality and places a priority on reducing pollutants that have a direct health impact to Texans. The Plan includes measures to help the electric power sector transition to solar. This Project is an example of compliance and implementation with these initiatives.

6.0 References

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Appendix A. Screening for Species Presence

CRITICAL HABITAT SCREENING FOR THE TENNYSON SOLAR PROJECT

NOVEMBER 2025

1.0 Critical Habitat Screening

According to IFC PS 6, 'Critical Habitats' represent areas of highest biodiversity value and conservation priority (IFC 2012a; IFC 2012b). Critical Habitat reflects both global and national priorities and builds on the conservation principles of 'vulnerability' (threat) and 'irreplaceability' (rarity/restricted distribution). Both natural and modified habitat can be classified as Critical Habitat.

Critical Habitat is determined using five main criteria:

- Criterion 1: Habitat of significant importance to species listed as Critical Habitat or Endangered on the IUCN Red List.
- Criterion 2: Habitat of significant importance to endemic and/or restricted-range species.
- Criterion 3: Habitat supporting globally significant concentrations of migratory species and/or congregatory species.
- Criterion 4: Highly threatened and/or unique ecosystems.
- Criterion 5: Areas associated with key evolutionary processes.

Quantitative thresholds have been defined for the first four Critical Habitat criteria (i.e., Critical Habitat/Endangered species; endemic/restricted-range species; migratory/congregatory species; threatened and unique ecosystems). The thresholds for Criterion 1, Criterion 2, and Criterion 3 are based on the thresholds published in IFC's Guidance Note 6 (IFC 2012b). The thresholds for the first three criteria are based upon the proportion of the population that the habitat supports. Ideally, these quantitative measures are derived from known population size, though in reality this is often not feasible.

Regarding the determination of Critical Habitat based on other listings (i.e., non-IUCN Red List) relevant considerations are as follows:

- If the species is listed nationally / regionally as critically endangered or endangered, in countries that have adhered to IUCN guidance, the Critical Habitat determination will be made on a project-by-project basis in consultation with competent professionals.

- In instances where nationally or regionally listed species' categorizations do not correspond well to those of the IUCN (e.g., some countries more generally list species as "protected" or "restricted"), an assessment will be conducted to determine the rationale and purpose of the listing. In this case, the critical habitat determination will be based on such an assessment.

In this report, those species potentially present in Coke County and listed as 'Endangered' or 'Threatened' at a Texas state level (i.e. listed on the Rare, Threatened, and Endangered Species of Texas by County (TPWD, 2025)) were considered according to IFC PS6 Criterion 1c (Table 1).

Although a detailed Critical Habitat assessment has not been completed for the Project as it was not required, screening of baseline data provides an early indication of the potential occurrence of Critical Habitat and compliance with IFC PS6 and Good International Industry Practice. The results of this screening are summarized below (Table 1).

In the context of IFC PS 6 and the potential presence of Critical Habitat, initial screening of available data suggests that there are no species that trigger Critical Habitat, based on available extent of occurrence data. While suitable habitat may be present in the Project Area and presence of species listed in Table 1 cannot be ruled out, it is unlikely that the IFC PS 6 Criteria thresholds will be triggered based on overlap of current known global ranges (for further details see the Critical Habitat Determination spreadsheet) and the information provided in the CIA (Blanton and Associates, 2019a) and PAS (Blanton and Associates, 2019b).

Table 1: Summary of Critical Habitat determination against IFC PS6 Criteria

IFC PS6 Criteria	Threshold	Potential Critical Habitat Trigger Species	Qualifying or Not Qualifying as Critical Habitat
Criterion 1 (C1): Critically Endangered (CR) and/or Endangered (EN) species	a. Areas that support globally important concentrations of an IUCN Red-listed EN or CR species ($\geq 0.5\%$ of the global population AND ≥ 5 reproductive units of a CR or EN species).	Whooping Crane (<i>Grus americana</i>) – EN Black rail (<i>Laterallus jamaicensis</i>) - EN	The ranges of these two species do not overlap with the Project Area (BirdLife International, 2025) and so they do not qualify the area as Critical Habitat under IFC PS6 Criterion 1a.
	b. Areas that support globally important concentrations of an IUCN Red-listed Vulnerable (VU) species, the loss of which would result in the change of the IUCN Red List status to EN or CR and meet the thresholds in (a).	Sprague's Pipit (<i>Anthus spragueii</i>) Chestnut-collared Longspur (<i>Calcarius ornatus</i>) Tricoloured bat (<i>Perimyotis subflavus</i>)	It is unlikely that the Project Area supports globally important concentrations of these three species (BirdLife International, 2025; IUCN, 2025), and so they do not qualify the area as Critical Habitat under IFC PS6 Criterion 1b.

IFC PS6 Criteria	Threshold	Potential Critical Habitat Trigger Species	Qualifying or Not Qualifying as Critical Habitat
	c. As appropriate, areas containing important concentrations of a nationally or regionally listed EN or CR species.	Black Rail (<i>Laterallus jamaicensis</i>) – Threatened in Texas White-faced Ibis (<i>Plegadis chihi</i>) – Threatened in Texas Interior Least Tern (<i>Sterna antillarum athalassos</i>) – Endangered in Texas Red River pupfish (<i>Cyprinodon rubrofluviatilis</i>) – Threatened in Texas Texas fatmucket (<i>Lampsilis bracteata</i>) – Threatened in Texas Texas pimpleback (<i>Quadrula petrina</i>) – Endangered in Texas Texas horned lizard (<i>Phrynosoma cornutum</i>) – Threatened in Texas Brazos water snake (<i>Nerodia harteri</i>) – Threatened in Texas Texas poppy-mallow (<i>Callirhoe scabriscula</i>) – Endangered in Texas	According to TPWD’s Rare, Threatened, and Endangered Species of Texas list for Coke County (TPWD, 2025) these ten species are present. However, the main ranges of these species do not overlap with the Project Area (BirdLife International, 2025; iNaturalist, 2025; USFWS, 2019) and therefore it is unlikely that they qualify the area as Critical Habitat under IFC PS6 Criterion 1c.
Criterion 2 (C2): Endemic or restricted-range species	a. Areas that regularly hold ≥10% of the global population size AND ≥10 reproductive units of a species.	Texas fatmucket (<i>Lampsilis bracteata</i>) Brazos water snake (<i>Nerodia harteri</i>) Concho water snake (<i>Nerodia paucimaculata</i>)	While these species are considered present in Coke County and restricted-range (aquatic species with a global linear range of ≤ 400km), their current known ranges do not include the Project they are not likely to be present in the Project Area, with no observations nearby (iNaturalist, 2025). Therefore, they do not qualify the area as Critical Habitat under IFC PS6 Criterion 2.
Criterion 3 (C3): Migratory or congregatory species	a. Areas known to sustain, on a cyclical or otherwise regular basis, ≥ 1 percent of the global population of a migratory or congregatory species at any point of the species’ lifecycle.	Sprague’s Pipit (<i>Anthus spragueii</i>) Golden Eagle (<i>Aquila chrysaetos</i>) Lark Bunting (<i>Calamospiza melanocorys</i>)	While the Project Area is within the global range of these species and most have relatively large global population (BirdLife International, 2025; IUCN, 2025), there are limited observations of each species within the Project

IFC PS6 Criteria	Threshold	Potential Critical Habitat Trigger Species	Qualifying or Not Qualifying as Critical Habitat
	b. Areas that predictably support ≥10 percent of the global population of a species during periods of environmental stress.	Chestnut-collared Longspur (<i>Calcarius ornatus</i>) Sanderling (<i>Calidris alba</i>) Red Knot (<i>Calidris canutus rufa</i>) Wilson's Warbler (<i>Cardellina pusilla</i>) Pyrhuloxia (<i>Cardinalis sinuatus</i>) Piping Plover (<i>Charadrius melodus</i>) Snowy Plover (<i>Charadrius nivosus</i>) Common Nighthawk (<i>Chordeiles minor</i>) Yellow-billed Cuckoo (<i>Coccyzus americanus</i>) Brewer's Blackbird (<i>Euphagus cyanocephalus</i>) Peregrine Falcon (<i>Falco peregrinus</i>) Whooping Crane (<i>Grus americana</i>) Bald Eagle (<i>Haliaeetus leucocephalus</i>) Loggerhead Shrike (<i>Lanius ludovicianus</i>) Franklin's gull (<i>Larus pipixcan</i>) Black Rail (<i>Laterallus jamaicensis</i>) White-faced Ibis (<i>Plegadis chihi</i>) Bank Swallow (<i>Riparia riparia</i>) Least Tern (<i>Sterna antillarum</i>) Black-capped Vireo (<i>Vireo atricapilla</i>) Pronghorn (<i>Antilocapra americana</i>) Hoary bat (<i>Lasiurus cinereus</i>) Tricolored bat (<i>Perimyotis subflavus</i>) Migratory monarch butterfly (<i>Danaus plexippus plexippus</i>)	Area, suggesting that it is not known to sustain, on a cyclical or otherwise regular basis, a significant proportion of the global populations. Therefore, none of these species qualify the area as Critical Habitat under IFC PS6 Criteria 3.

There are no features present that trigger IFC PS6 Criterion 4 or Criterion 5.

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Taxon					Preliminary analysis			
Class	Scientific name	Common name	IUCN RL Link	BirdLife International DataZone	C1a, b IUCN Red List	C1c US Endangered Species - State	C2 Restricted-range	C3 Migratory
Aves	<i>Haliaeetus leucocephalus</i>	Bald Eagle	Haliaeetus leucocephalus (Bald Eagle)	Bald Eagle Haliaeetus Leucocephalus Species Factsheet BirdLife DataZone	LC			Full Migrant
Aves	<i>Aquila chrysaetos</i>	Golden Eagle	Aquila chrysaetos (Golden Eagle)	Golden Eagle Aquila Chrysaetos Species Factsheet BirdLife DataZone	LC			Full Migrant
Aves	<i>Charadrius melodus</i>	Piping Plover	Charadrius melodus (Piping Plover)	Piping Plover Charadrius Melodus Species Factsheet BirdLife DataZone	NT			Full Migrant
Aves	<i>Calidris canutus</i>	Red Knot	Calidris canutus (Red Knot)	Red Knot Calidris Canutus Species Factsheet BirdLife DataZone	NT			Full Migrant
Aves	<i>Sterna antillarum</i>	Least Tern	Sternula antillarum (Least Tern)	Least Tern Sternula Antillarum Species Factsheet BirdLife DataZone	LC			Full Migrant
	<i>Sternula antillarum athalassos</i>	interior least tern			NE	Endangered		
Aves	<i>Vireo atricapilla</i>	Black-capped Vireo	Vireo atricapilla (Black-capped Vireo)	Black-capped Vireo Vireo Atricapilla Species Factsheet BirdLife DataZone	NT			Full Migrant
Aves	<i>Falco peregrinus</i>	Peregrine Falcon	Falco peregrinus (Peregrine Falcon)	Peregrine Falcon Falco Peregrinus Species Factsheet BirdLife DataZone	LC			Full Migrant
Aves	<i>Grus americana</i>	Whooping Crane	Grus americana (Whooping Crane)	Whooping Crane Grus Americana Species Factsheet BirdLife DataZone	EN			Full Migrant
Aves	<i>Plegadis chihi</i>	White-faced Ibis	Plegadis chihi (White-faced Ibis)	White-faced Ibis Plegadis Chihi Species Factsheet BirdLife DataZone	LC	Threatened		Full Migrant
Aves	<i>Colinus virginianus</i>	Northern Bobwhite	Colinus virginianus (Northern Bobwhite)	Northern Bobwhite Colinus Virginianus Species Factsheet BirdLife DataZone	NT			
Aves	<i>Callipepla squamata</i>	Scaled Quail	Callipepla squamata (Scaled Quail)	Scaled Quail Callipepla Squamata Species Factsheet BirdLife DataZone	LC			
Aves	<i>Coturnicops noveboracensis</i>	Yellow Rail	Coturnicops noveboracensis (Yellow Rail)	Yellow Rail Coturnicops Noveboracensis Species Factsheet BirdLife DataZone	LC			Full Migrant
Aves	<i>Laterallus jamaicensis</i>	Black Rail	Laterallus jamaicensis (Black Rail)	Black Rail Laterallus Jamaicensis Species Factsheet BirdLife DataZone	EN	Threatened		Full Migrant
Aves	<i>Charadrius nivosus</i>	Snowy Plover	Charadrius nivosus (Snowy Plover)	Snowy Plover Charadrius Nivosus Species Factsheet BirdLife DataZone	NT			Full Migrant
Aves	<i>Charadrius montanus</i>	mountain plover	Charadrius montanus (Mountain Plover)	Mountain Plover Charadrius Montanus Species Factsheet BirdLife DataZone	NT			Full Migrant
Aves	<i>Tringa semipalmata</i>	Willet	Tringa semipalmata (Willet)	Willet Tringa Semipalmata Species Factsheet BirdLife DataZone	LC			Full Migrant
Aves	<i>Calidris alba</i>	Sanderling	Calidris alba (Sanderling)	Sanderling Calidris Alba Species Factsheet BirdLife DataZone	LC			Full Migrant
Aves	<i>Larus pipixcan</i>	Franklin's gull	Larus pipixcan (Franklin's Gull)	Franklin's Gull Larus Pipixcan Species Factsheet BirdLife DataZone	LC			Full Migrant
Aves	<i>Coccyzus americanus</i>	yellow-billed cuckoo	Coccyzus americanus (Yellow-billed Cuckoo)	Yellow-billed Cuckoo Coccyzus Americanus Species Factsheet BirdLife DataZone	LC			Full Migrant
Aves	<i>Athene cunicularia hypugaea</i>	western burrowing owl	Athene cunicularia (Burrowing Owl)	Burrowing Owl Athene Cunicularia Species Factsheet BirdLife DataZone	LC			Full Migrant
Aves	<i>Chordeiles minor</i>	Common Nighthawk	Chordeiles minor (Common Nighthawk)	Common Nighthawk Chordeiles Minor Species Factsheet BirdLife DataZone	LC			Full Migrant
Aves	<i>Riparia riparia</i>	Bank Swallow	Riparia riparia (Collared Sand Martin)	Collared Sand Martin Riparia Riparia Species Factsheet BirdLife DataZone	LC			Full Migrant
Aves	<i>Campylorhynchus brunneicapillus</i>	Cactus Wren	Campylorhynchus brunneicapillus (Cactus Wren)	Cactus Wren Campylorhynchus Brunneicapillus Species Factsheet BirdLife DataZone	LC			
Aves	<i>Anthus spragueii</i>	Sprague's pipit	Anthus spragueii (Sprague's Pipit)	Sprague's Pipit Anthus Spragueii Species Factsheet BirdLife DataZone	VU			Full Migrant
Aves	<i>Lanius ludovicianus</i>	Loggerhead Shrike	Lanius ludovicianus (Loggerhead Shrike)	Loggerhead Shrike Lanius Ludovicianus Species Factsheet BirdLife DataZone	NT			Full Migrant
Aves	<i>Cardellina pusilla</i>	Wilson's Warbler	Cardellina pusilla (Wilson's Warbler)	Wilson's Warbler Cardellina Pusilla Species Factsheet BirdLife DataZone	LC			Full Migrant
Aves	<i>Cardinalis sinuatus</i>	Pyrrhuloxia	Cardinalis sinuatus (Pyrrhuloxia)	Pyrrhuloxia Cardinalis Sinuatus Species Factsheet BirdLife DataZone	LC			Full Migrant
Aves	<i>Calamospiza melanocorys</i>	lark bunting	Calamospiza melanocorys (Lark Bunting)	Lark Bunting Calamospiza Melanocorys Species Factsheet BirdLife DataZone	LC			Full Migrant
Aves	<i>Calcarius ornatus</i>	chestnut-collared longspur	Calcarius ornatus (Chestnut-collared Longspur)	Chestnut-collared Longspur Calcarius Ornatus Species Factsheet BirdLife DataZone	VU			Full Migrant
Aves	<i>Euphagus cyanocephalus</i>	Brewer's Blackbird	Euphagus cyanocephalus (Brewer's Blackbird)	Brewer's Blackbird Euphagus Cyanocephalus Species Factsheet BirdLife DataZone	LC			Full Migrant
Actinopterygii	<i>Cyprinodon rubrofluvialis</i>	Red River pupfish	Cyprinodon rubrofluvialis (Red River Pupfish)		LC	Threatened		
Actinopterygii	<i>Micropterus treculi</i>	Guadalupe bass	Micropterus treculi (Guadalupe Bass)		NT		Endemic	
Mammalia	<i>Myotis velifer</i>	cave myotis bat	Myotis velifer (Cave Myotis)		LC			
Mammalia	<i>Parastrellus hesperus</i>	Western pipistrelle	Parastrellus hesperus (Western Pipistrelle)		LC			
Mammalia	<i>Perimyotis subflavus</i>	tricolored bat	Perimyotis subflavus (Eastern Pipistrelle)		VU			Full Migrant
Mammalia	<i>Lasiurus cinereus</i>	hoary bat	Lasiurus cinereus (Hoary Bat)		LC			Full Migrant
Mammalia	<i>Cynomys ludovicianus</i>	black-tailed prairie dog	Cynomys ludovicianus		LC			
Mammalia	<i>Vulpes macrotis</i>	kit fox	Vulpes macrotis (Kit Fox)		LC			
Mammalia	<i>Puma concolor</i>	mountain lion	Puma concolor (Puma)		LC			
Mammalia	<i>Antilocapra americana</i>	pronghorn	Antilocapra americana (Pronghorn)		LC			Full Migrant
Insecta	<i>Danaus plexippus plexippus</i>	migratory monarch butterfly	Danaus plexippus (Monarch)		LC			Yes
Bivalvia	<i>Cyrtornais tampicoensis</i>	Tampico Pearly Mussel			NE			
Bivalvia	<i>Lampsilis bracteata</i>	Texas Fatmucket	Lampsilis bracteata		NT	Threatened	Yes	
Bivalvia	<i>Truncilla macrodon</i>	Texas Fawnsfoot			NE		Endemic to Texas	
Bivalvia	<i>Quadrula petrina</i>	Texas Pimpleback			NE	Endangered	Endemic to the Colorado River Basin in Texas	
Bivalvia	<i>Quadrula houstonensis</i>	Smooth Pimpleback	Cyclonaias houstonensis		NT			
Bivalvia	<i>Quadrula quadrula</i>	Mapleleaf	Quadrula quadrula		LC			
Plantae	<i>Callirhoe scabriscula</i>	Texas Poppy-mallow			NE	Endangered	Endemic to west-central Texas along the upper Colorado River	
Plantae	<i>Echinocereus viridiflorus</i> var. <i>correllii</i>	Correll's green pitaya	Echinocereus viridiflorus (Green-flower Hedgehog Cactus)		LC			
Plantae	<i>Echinocereus milleri</i>	Miller's hedgehog cactus			NE		Endemic to Texas	
Plantae	<i>Eriogonum nealeyi</i>	Irion County wild-buckwheat			NE		Endemic to Texas	
Plantae	<i>Penstemon guadalupeensis</i>	Guadalupe beardtongue			NE		Endemic to Texas	
Reptilia	<i>Phrynosoma cornutum</i>	Texas Horned Lizard	Phrynosoma cornutum (Texas Horned Lizard)		LC	Threatened		
Reptilia	<i>Graptemys versa</i>	Texas map turtle	Graptemys versa (Texas Map Turtle)		LC		Endemic to Texas	
Reptilia	<i>Terrapene ornata</i>	western box turtle	Terrapene ornata (Ornate Box Turtle)		NT			
Reptilia	<i>Apalone mutica</i>	smooth softshell	Apalone mutica (Smooth Softshell Turtle)		LC			
Reptilia	<i>Holbrookia lacerata</i>	plateau spot-tailed earless lizard	Holbrookia lacerata		NT		Endemic to Texas/New Mexico	
Reptilia	<i>Nerodia harteri</i>	Brazos water snake	Nerodia harteri		NT	Threatened	Yes	
Reptilia	<i>Nerodia paucimaculata</i>	Concho water snake	Nerodia paucimaculata		NT		Yes	
Reptilia	<i>Sistrurus tergeminus</i>	western massasauga			NE			
Amphibia	<i>Anaxyrus woodhousii</i>	Woodhouse's toad	Anaxyrus woodhousii (Woodhouse's Toad)		LC			

Global population status				Threshold analysis						Results		
Estimated Global population (IUCN/BirdLife)	Estimated Global population Upper limit	Estimated EOO	Population status	C1a	C1b	C1c	C2a	C3a	C3b	Probability	Notes;	References
200,000		28,400,000	increasing	NA	NA	NA	NA	U	U	Unlikely to qualify	Project area is in a non-breeding areas; no observations in the Project Area according to iNaturalist records	Bald Eagle (<i>Haliaeetus leucocephalus</i>) - iNaturalist
130,000	160,000	140,000,000	stable	NA	NA	NA	NA	U	U	Unlikely to qualify	Project area is in a non-breeding areas; no observations in the Project Area according to iNaturalist records	Golden Eagle (<i>Aquila chrysaetos</i>)
7,663	8,400	6,090,000	increasing	NA	NA	NA	NA	U	U	Unlikely to qualify	Project area is away from known resident and breeding areas; no observations in the Project Area according to iNaturalist records	Piping Plover (<i>Charadrius melodus</i>)
	3,000,000	17,800,000	decreasing	NA	NA	NA	NA	U	U	Unlikely to qualify	Project area is away from known resident and breeding areas; not present in the Project Area according to iNaturalist records	Rufa Red Knot (<i>Calidris canutus ssp. rufa</i>)
		18,200,000	decreasing	NA	NA	NA	NA	U	U	Unlikely to qualify	Project area is away from known resident and breeding areas; no observations in the Project Area according to iNaturalist records	Least Tern (<i>Sterna antillarum</i>)
				NA	NA	U	NA	NA	NA	Not qualifying	No IUCN/BirdLife data (subspecies); not present in the Project Area according to iNaturalist records	Interior Least Tern (<i>Sterna antillarum ssp. athalassos</i>)
	19,999	601,000	decreasing	NA	NA	NA	NA	U	U	Unlikely to qualify	Project Area is within known breeding range; no observations in the Project Area according to iNaturalist records; although occurrence is possible as noted in the CIA, the project area is likely to be below thresholds	Black-capped Vireo (<i>Vireo atricapilla</i>)
478,000	499,999	413,000,000	increasing	NA	NA	NA	NA	U	U	Unlikely to qualify	no observations in the Project Area according to iNaturalist records	Peregrine Falcon (<i>Falco peregrinus</i>)
329	483	306,000	increasing	U	NA	NA	NA	U	U	Not qualifying	Passage range is away from the Project area so no overlap; no observations in the Project Area according to iNaturalist records	Whooping Crane (<i>Grus americana</i>)
	1,200,000	32,900,000	increasing	NA	NA	U	NA	U	U	Unlikely to qualify	Project area is away from known resident and breeding areas; no observations in the Project Area according to iNaturalist records	White-faced Ibis (<i>Plegadis chihi</i>)
	5,800,000	10,100,000	decreasing	NA	NA	NA	NA	NA	NA	Not qualifying		
	5,100,000	1,800,000	decreasing	NA	NA	NA	NA	NA	NA	Not qualifying		
	17,000	6,000,000	decreasing	NA	NA	NA	NA	NA	NA	Not qualifying	Known range is away from the Project area so no overlap; not present in the Project Area according to iNaturalist records	Yellow Rail (<i>Coturnicops noveboracensis</i>)
	49,999	40,400,000	decreasing	U	NA	U	NA	U	U	Not qualifying	Known range is away from the Project area so no overlap; not present in the Project Area according to iNaturalist records	Black Rail (<i>Laterallus jamaicensis</i>)
	31,000	40,300,000	decreasing	NA	NA	NA	NA	U	U	Unlikely to qualify	Project area within known breeding range; no observations in the Project Area according to iNaturalist records	Snowy Plover (<i>Anarhynchus nivosus</i>)
	20,000	1,580,000	decreasing	NA	NA	NA	NA	NA	NA	Not qualifying	Known range is away from the Project area so no overlap; not present in the Project Area according to iNaturalist records	Mountain Plover (<i>Anarhynchus montanus</i>)
	250,000	16,300,000	decreasing	NA	NA	NA	NA	NA	NA	Not qualifying	Known range is away from the Project area so no overlap; not present in the Project Area according to iNaturalist records	Willet (<i>Tringa semipalmata</i>)
	1,200,000	13,600,000	decreasing	NA	NA	NA	NA	U	U	Unlikely to qualify	Project area is away from known resident and breeding areas; no observations in the Project Area according to iNaturalist records	Sanderling (<i>Calidris alba</i>)
	1,490,000	2,910,000	increasing	NA	NA	NA	NA	U	U	Unlikely to qualify	Project area is away from known resident and breeding areas; no observations in the Project Area according to iNaturalist records	Franklin's Gull (<i>Leucophaeus pipixcan</i>)
	9,600,000	35,000,000	decreasing	NA	NA	NA	NA	U	U	Unlikely to qualify	Project area within known breeding range; no observations in the Project Area according to iNaturalist records	Yellow-billed Cuckoo (<i>Coccyzus americanus</i>)
			decreasing	NA	NA	NA	NA	NA	NA	Not qualifying	No IUCN/BirdLife data (subspecies); not present in the Project Area according to iNaturalist records; main species Project area is within the known resident range	Western Burrowing Owl (<i>Athene cucularia ssp. hypugaea</i>)
	23,000,000	23,300,000	decreasing	NA	NA	NA	NA	U	U	Unlikely to qualify	Project area within known breeding range; no observations in the Project Area according to iNaturalist records	Common Nighthawk (<i>Chordeiles minor</i>)
	500,000,000	101,000,000	decreasing	NA	NA	NA	NA	U	U	Unlikely to qualify	Project area within known resident range; no observations in the Project Area according to iNaturalist records	Bank Swallow (<i>Riparia riparia</i>)
	8,500,000	2,840,000	decreasing	NA	NA	NA	NA	NA	NA	Not qualifying		
	1,400,000	1,280,000	decreasing	NA	U	NA	NA	U	U	Unlikely to qualify	Project area within known non-breeding range; no observations in the Project Area according to iNaturalist records	Sprague's Pipit (<i>Anthus spragueii</i>)
	7,000,000	13,500,000	decreasing	NA	NA	NA	NA	U	U	Unlikely to qualify	Project area within known resident range; no observations in the Project Area according to iNaturalist records	Loggerhead Shrike (<i>Lanius ludovicianus</i>)
	81,000,000	19,600,000	decreasing	NA	NA	NA	NA	U	U	Unlikely to qualify	Project area within known resident range; no observations in the Project Area according to iNaturalist records	Wilson's Warbler (<i>Cardellina pusilla</i>)
		2,060,000	decreasing	NA	NA	NA	NA	U	U	Unlikely to qualify	Project area within known resident range; no observations in the Project Area according to iNaturalist records	Pyrrhuloxia (<i>Cardinalis sinuatus</i>)
	12,000,000	2,010,000	decreasing	NA	NA	NA	NA	U	U	Unlikely to qualify	Project area within known non-breeding range; no observations in the Project Area according to iNaturalist records	Lark Bunting (<i>Calamospiza melanocorys</i>)
	3,100,000	1,150,000	decreasing	NA	U	NA	NA	U	U	Unlikely to qualify	Project area within known non-breeding range; no observations in the Project Area according to iNaturalist records	Chestnut-collared Longspur (<i>Calcarius ornatus</i>)
		7,590,000	decreasing	NA	NA	NA	NA	U	U	Unlikely to qualify	Project area within known non-breeding range; no observations in the Project Area according to iNaturalist records	Brewer's Blackbird (<i>Euphagus cyanocephalus</i>)
			stable	NA	NA	U	NA	NA	NA	Not qualifying		
			unknown	NA	NA	NA	NA	NA	NA	Not qualifying	Present in 47 counties; eyeballing range = more than 500km; no observations in the Project area	Guadalupe Bass (<i>Micropterus treculii</i>)
			stable	NA	NA	NA	NA	NA	NA	Not qualifying		
			stable	NA	NA	NA	NA	NA	NA	Not qualifying		
			decreasing	NA	U	NA	NA	U	U	Unlikely to qualify	Present in 254 counties but not within Project area according to IUCN distribution; not present in the Project Area according to iNaturalist records	Tricolored Bat (<i>Perimyotis subflavus</i>)
			decreasing	NA	NA	NA	NA	U	U	Unlikely to qualify	Present in 230 counties; no observations in the Project Area according to iNaturalist records	Northern Hoary Bat (<i>Lasiurus cinereus</i>)
			decreasing	NA	NA	NA	NA	NA	NA	Not qualifying		
			decreasing	NA	NA	NA	NA	NA	NA	Not qualifying		
750,000			stable	NA	NA	NA	NA	U	U	Not qualifying	Present in 91 counties but not within Project area according to IUCN distribution; not present in the Project Area/Coke County according to iNaturalist records	Pronghorn (<i>Antilocapra americana</i>)
			decreasing	NA	NA	NA	NA	U	U	Unlikely to qualify	Not present in the Project Area/Coke County according to iNaturalist records	Migratory Monarch (<i>Danaus plexippus ssp. plexippus</i>)
				NA	NA	NA	NA	NA	NA	Not qualifying		Tampico Pearly Mussel (<i>Cyrtolaias tampicoensis</i>)
		475	unknown	NA	NA	U	U	NA	NA	Not qualifying	Restricted to upper reaches of major tributaries within the Colorado River Basin. The total current distribution of Texas fatmucket, summed across the five populations from the Colorado River Basin, is a combined stream length of approximately 295 miles across 11 counties; not present in the Project Area/Coke County according to iNaturalist records	Texas Fatmucket (<i>Lampsilis bracteata</i>) U.S. Fish & Wildlife Service
				NA	NA	NA	NA	NA	NA	Not qualifying	Known to occur in the Colorado, Brazos and Trinity river basins across 28 counties in Texas; not present in the Project Area/Coke County according to iNaturalist records	Texas Fawnsfoot (<i>Truncilla macrodon</i>) U.S. Fish & Wildlife Service
				NA	NA	U	NA	NA	NA	Not qualifying	Documented in five populations across 11 counties; not present in the Project Area/Coke County according to iNaturalist records	Texas Pimpleback (<i>Quadrula petrina</i>) U.S. Fish & Wildlife Service
			unknown	NA	NA	NA	NA	NA	NA	Not qualifying		Texas Pimpleback (<i>Pustulosa petrina</i>)
			stable	NA	NA	NA	NA	NA	NA	Not qualifying		Smooth Pimpleback (<i>Quadrula houstonensis</i>) U.S. Fish & Wildlife Service
				NA	NA	U	NA	NA	NA	Not qualifying	Documented populations along the Colorado River in Runnels, Coke, and Mitchell counties, as well as an anecdotal report of a population in northern Mitchell and southern Scurry County; not present in the Project Area according to iNaturalist records or UWFWS map	texas-poppy-mallow-dkey.pdf
				NA	NA	NA	NA	NA	NA	Not qualifying		Texas Poppy-mallow 5-Year Review U.S. Fish & Wildlife Service
				NA	NA	NA	NA	NA	NA	Not qualifying	Not present in the Project Area according to iNaturalist records	Miller's green pitaya (<i>Echinocereus milleri</i>) - iNaturalist
				NA	NA	NA	NA	NA	NA	Not qualifying	Not present in the Project Area/Coke County according to iNaturalist records	Irion County Buckwheat (<i>Eriogonum nealleyi</i>)
				NA	NA	NA	NA	NA	NA	Not qualifying	Not present in the Project Area/Coke County according to iNaturalist records	Guadalupe Penstemon (<i>Penstemon quadalupensis</i>)
			stable	NA	NA	U	NA	NA	NA	Unlikely to qualify	While there are observations around Tennyson, there are none within the Project Area according to iNaturalist records; and the species has a large range	Texas Horned Lizard (<i>Phrynosoma cornutum</i>)
			stable	NA	NA	NA	NA	NA	NA	Not qualifying	Restricted to Texas but common; present in 36 counties; no mapping of IUCN distribution; not present in the Project Area according to iNaturalist records	Texas Map Turtle (<i>Graptemys versa</i>)
			decreasing	NA	NA	NA	NA	NA	NA	Not qualifying		
			decreasing	NA	NA	NA	NA	NA	NA	Not qualifying		
			decreasing	NA	NA	NA	NA	NA	NA	Not qualifying	Restricted to central and southern Texas and northern New Mexico; present in 40 counties; USFWS recognize its current range as roughly equivalent to historic range; eyeballing range = larger than 50,000km2	2024-02287.pdf
												Plateau Earless Lizard (<i>Holbrookia lacerata</i>)
		373	stable	NA	NA	U	U	NA	NA	Not qualifying	Range is limited to the Brazos River drainage in north-central Texas; present in 21 counties but not within Project area according to IUCN distribution; not present in the Project Area/Coke County according to iNaturalist records	Brazos River Watersnake (<i>Nerodia harteri</i>)
		421		NA	NA	NA	U	NA	NA	Unlikely to qualify	Present in 19 counties; Project area unlikely to represent 10% of global popln; no observations in the Project Area according to iNaturalist records	Concho Watersnake (<i>Nerodia paucimaculata</i>)
				NA	NA	NA	NA	NA	NA	Not qualifying		Sistrurus catenatus
			stable	NA	NA	NA	NA	NA	NA	Not qualifying		

Notes

- Column S is the size of the relevant EAAA - determined per project

- For C3, if ICUN does not state the species is a migratory species, it is considered not to be; however, still check the CMS appendices.

- Where IUCN gives a population estimate range, upper limit used for calculations.

- Where specific sizes of EOOs are not provided, whether or not a species is range-restricted has been qualitatively determined on the basis of species range maps available from IUCN red list.

- C4 / C5 are not applicable to species

The term endemic is defined as restricted-range. Restricted range refers to a limited extent of occurrence (EOO).

- For terrestrial vertebrates and plants, restricted-range species are defined as those species that have an EOO less than 50,000 square kilometers (km²).
- For marine systems, restricted-range species are provisionally being considered those with an EOO of less than 100,000 km².
- For coastal, riverine, and other aquatic species in habitats that do not exceed 200 km width at any point (for example, rivers), restricted range is defined as having a global range of less than or equal to 500 km linear geographic span (i.e., the distance between occupied locations furthest apart).

Definitions

ND; no data

NA; not applicable

EAAA; Ecologically Appropriate Area of Analysis

EOO; extent of occurrence

AOO; area of occupancy

P; potentially qualifying

Q; qualifying

SE; stakeholder engagement

NE; Not Evaluated
DD; Data Deficient
LC; Least Concern
NT; Near Threatened
VU; Vulnerable
EN; Endangered
CR; Critically Endangered
EW; Extinct in the Wild
EX; Extinct

Criteria	Thresholds Values	IFC GN6 references
Criterion 1 (C1): Critically Endangered (CR) and/or Endangered (EN) species	a. Areas that support globally important concentrations of an IUCN Red-listed EN or CR species (≥ 0.5% of the global population AND ≥ 5 reproductive units of a CR or EN species).	GN70-GN73
	b. Areas that support globally important concentrations of an IUCN Red-listed Vulnerable (VU) species, the loss of which would result in the change of the IUCN Red List status to EN or CR and meet the thresholds in (a).	
	c. As appropriate, areas containing important concentrations of a nationally or regionally listed EN or CR species.	
Criterion 2 (C2): Endemic or restricted-range species	a. Areas that regularly hold ≥10% of the global population size AND ≥10 reproductive units of a species.	GN74-GN75
Criterion 3 (C3): Migratory or congregatory species	a. Areas known to sustain, on a cyclical or otherwise regular basis, ≥ 1 percent of the global population of a migratory or congregatory species at any point of the species' lifecycle.	GN76-GN78
	b. Areas that predictably support ≥10 percent of the global population of a species during periods of environmental stress.	
Criterion 4 (C4): Highly threatened and/or unique ecosystems	a. Areas representing ≥5% of the global extent of an ecosystem type meeting the criteria for IUCN status of CR or EN.	GN79-GN80
	b. Other areas not yet assessed by IUCN but determined to be of high priority for conservation by regional or national systematic conservation planning.	
Criterion 5 (C5): Key evolutionary processes	No thresholds	GN81-GN83

Threshold analysis (C1-C3)	Probability
P	Potentially qualifying
Q	Qualifying
U	Unlikely to qualify
NA	Not qualifying

Appendix B. MOVES On-road Emission Factors

MOVES On-road Emission Factors (g/mi)
Coke County, TX - 2025-2026

MOVES Category	Purpose	Year	Fuel	Emission Factors (g/ mi)			
				CH ₄	CO ₂	N ₂ O	CO ₂ e
Light Commercial Truck	Onsite Trucks (Flat bed & Light Trucks)	2025	Diesel	0.039522	523.18	0.049306	537.33
		2026	Diesel	0.039823	505.89	0.050132	520.27
		Average		0.039672	514.53	0.049719	528.80
Passenger Truck	Worker Trucks	2025	Diesel	0.034861	527.98	0.033954	537.95
		2026	Diesel	0.035219	511.49	0.033738	521.40
		Average		0.035040	519.74	0.033846	529.68
Passenger Truck	Worker Trucks	2025	Gasoline	0.020721	400.91	0.006498	403.20
		2026	Gasoline	0.018689	393.59	0.006246	395.76
		Average		0.019705	397.25	0.006372	399.48
Single Unit Long-haul Truck	Vendor & Haul Trucks	2025	Diesel	0.011433	739.53	0.097220	765.61
		2026	Diesel	0.011217	720.26	0.096679	746.19
		Average		0.011325	729.89	0.096949	755.90
Single Unit Short-haul Truck	Vendor & Haul Trucks	2025	Diesel	0.082790	796.76	0.102293	826.18
		2026	Diesel	0.083826	776.40	0.102349	805.87
		Average		0.083308	786.58	0.102321	816.03

MOVES Non-road Emission Factors (g/hp-hr)
Coke County, TX - 2025 & 2026

Equipment Type	Hp Rating ¹	Hp-bin	Non-road Emission factors (g/ hp-hr) - 2025 ²				Non-road Emission factors (g/ hp-hr) - 2026 ²			
			CO ₂	CH ₄	N ₂ O ^{3, 4}	CO ₂ e ⁵	CO ₂	CH ₄	N ₂ O ^{3, 4}	CO ₂ e ⁵
Plate Compactors	8	6 < hp <= 11	588.01	0.072513	0.054136	604.38	588.00	0.072843	0.054135	604.38
Concrete mixers/ Cement and Mortar Mixers	10	6 < hp <= 11	587.98	0.063817	0.054134	604.11	587.99	0.064727	0.054135	604.15
Generator Sets	14	11 < hp <= 16	589.18	0.031901	0.054243	604.44	589.21	0.031851	0.054247	604.48
Dumpers/ Tenders	16	16 < hp <= 25	693.76	0.046497	0.063872	711.99	693.88	0.045643	0.063883	712.09
Concrete/Industrial Saws	33	25 < hp <= 40	595.87	0.012675	0.054860	610.77	595.88	0.012522	0.054860	610.77
Excavators	36	25 < hp <= 40	595.88	0.012387	0.054861	610.76	595.88	0.012388	0.054861	610.77
Rollers	36	25 < hp <= 40	595.88	0.012389	0.054861	610.77	595.88	0.012380	0.054861	610.77
Trenching machines	40	25 < hp <= 40	595.87	0.012651	0.054860	610.76	595.88	0.012505	0.054860	610.77
End Loaders/ Skid Steer Loaders	71	50 < hp <= 75	694.30	0.027881	0.063922	712.02	694.48	0.027039	0.063938	712.18
Pavers	81	75 < hp <= 100	596.09	0.001880	0.054880	610.69	596.11	0.001311	0.054882	610.69
Paving Equipment	89	75 < hp <= 100	596.03	0.003850	0.054874	610.67	596.05	0.003175	0.054876	610.68
Compaction machines/ Other Construction Equipment	82	75 < hp <= 100	596.01	0.004169	0.054873	610.67	596.04	0.003524	0.054875	610.68
Cutting machines/ Other Construction Equipment	82	75 < hp <= 100	596.01	0.004169	0.054873	610.67	596.04	0.003524	0.054875	610.68
Forklifts and carry decks	82	75 < hp <= 100	596.14	0.000547	0.054884	610.70	596.14	0.000539	0.054884	610.70
Pile drivers/ Other Construction Equipment	82	75 < hp <= 100	596.01	0.004169	0.054873	610.67	596.04	0.003524	0.054875	610.68
Bulldozers/ Crawler Tractors	87	75 < hp <= 100	596.12	0.001259	0.054882	610.69	596.12	0.001033	0.054883	610.70
Bore/Drill Rigs	83	75 < hp <= 100	589.77	0.010401	0.054298	604.45	589.81	0.010081	0.054302	604.48
Backhoes	84	75 < hp <= 100	694.95	0.021316	0.063982	712.51	695.16	0.016855	0.064001	712.59
Graders	148	100 < hp <= 175	536.79	0.001101	0.049421	549.92	536.80	0.000934	0.049421	549.92
Cranes	367	300 < hp <= 600	530.90	0.003719	0.048878	543.96	530.92	0.003257	0.048880	543.97
Scrapers	423	300 < hp <= 600	536.74	0.002577	0.049416	549.91	536.75	0.002145	0.049417	549.91

¹ Horsepower ratings obtained using the CalEEMod Version 2022.2 - Appendix G, Default Data Tables

(https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fcaleemod.com%2Fdocuments%2Fuser-guide%2F08_Appendix%2520G_v2022.1.1.3.xlsx&wdOrigin=BROWSELINK)

² Emission factors obtained using EPA MOVES5.

³ N₂O factor is based on emission rate for construction/mining equipment (0.94 g N₂O/gallon of diesel fuel) in Table 5 of EPA's, "2025 GHG Emission Factors Hub", January 2025.

<https://www.epa.gov/climateleadership/ghg-emission-factors-hub>

⁴ Fuel consumption rate for N₂O factor is scaled from MOVES5 CO₂ output, using a conversion factor of 10.21 kg CO₂/gallon of diesel fuel, from Table 2 of EPA's, "2025 GHG Emission Factors Hub", January 2025. <https://www.epa.gov/climateleadership/ghg-emission-factors-hub>

⁵ CO₂e factor is based on the current global warming potential (GWP) values in Table A-1 to 40 CFR Part 98.

Construction Vehicles Emissions Calculations

Trip Type	One-Way Trips per Day ¹	Miles per Trip	Work days per Year ²	Fuel Type	On-road Emissions, lbs/day ³				On-road Emissions, tons/year				On-road Emissions, tons ⁵			
					CH ₄	CO ₂	N ₂ O	CO ₂ e	CH ₄	CO ₂	N ₂ O	CO ₂ e	CH ₄	CO ₂	N ₂ O	CO ₂ e
Worker	250	10	233	Gasoline ⁴	0.05	1094.72	0.02	1100.88	0.006	127.535	0.002	128.253	0.013	255.071	0.004	256.506
				Diesel ⁴	0.10	1432.28	0.09	1459.67	0.011	166.860	0.011	170.051	0.022	333.721	0.022	340.103
Vendor	16	50	233	Diesel	0.15	1387.29	0.18	1439.22	0.017	161.619	0.021	167.669	0.034	323.239	0.042	335.339
Hauling (Delivery Trucks & Water Supply Trucks)	16	50	233	Diesel	0.02	1287.31	0.17	1333.18	0.002	149.971	0.020	155.315	0.005	299.943	0.040	310.630
Onsite truck (Flatbed Trucks, Light Trucks)	14	2	233	Diesel	0.00	31.46	0.00	32.33	0.000	3.665	0.000	3.767	0.001	7.330	0.001	7.533
Onsite truck (Water Spray Truck)	6	2	233	Diesel	0.00	20.81	0.00	21.59	0.000	2.424	0.000	2.515	0.001	4.849	0.001	5.030
Total:					0.32	5253.87	0.47	5386.87	0.038	612.076	0.055	627.571	0.075	1224.151	0.109	1255.141

¹ Number of daily trips for worker, vendor, and hauling trucks are estimated based on engineering judgment.
Number of daily trips for onsite trucks estimated based on engineering judgment.
Miles per trip for onsite trucks were estimated.

² Project construction estimated to occur over 24 months, 5 days/week, 233 days of the year.

³ Emissions (lbs/day) = Emission Factor (g/mi) x Number of One-Way Trips per day (trips/day) x Miles per Trip (mi) / 453.59237. Emission factors obtained using EPA MOVES5.

⁴ Analysis assumes 50%-50% Gasoline & Diesel Mix for worker vehicles.

⁵ Assumes project construction is 2 years.

Construction Offroad Equipment Emissions Calculations

Equipment Type	Number per Day ¹	Hours Per Day	Hp Rating ²	Work days per Year ³	Fuel Type	Non-road Emissions, lbs/day - 2025 ⁴				Non-road Emissions, lbs/day -2026 ⁴				Non-road Emissions,tons/year				Non-road Emissions,tons ⁸			
						CH ₄	CO ₂	N ₂ O ^{5, 6}	CO ₂ e ⁷	CH ₄	CO ₂	N ₂ O ^{5, 6}	CO ₂ e ⁷	CH ₄	CO ₂	N ₂ O ^{5, 6}	CO ₂ e ⁷	CH ₄	CO ₂	N ₂ O ^{5, 6}	CO ₂ e ⁷
Plate Compactors	1.0	8	8	233	Diesel	0.010	81.42	0.007	83.69	0.010	81.42	0.007	83.69	0.002	18.97	0.002	19.50	0.005	37.94	0.003	39.00
Concrete mixers/ Cement and Mortar Mixers	6.7	8	10	233	Diesel	0.075	691.35	0.064	710.32	0.076	691.36	0.064	710.36	0.018	161.09	0.015	165.51	0.035	322.17	0.030	331.02
Generator Sets	3.3	8	14	233	Diesel	0.026	479.52	0.044	491.94	0.026	479.54	0.044	491.97	0.006	111.73	0.010	114.63	0.012	223.46	0.021	229.25
Dumpers/ Tenders	4.1	8	16	233	Diesel	0.054	806.62	0.074	827.81	0.053	806.76	0.074	827.93	0.012	187.96	0.017	192.89	0.025	375.92	0.035	385.79
Concrete/ Industrial Saws	2.0	8	33	233	Diesel	0.015	693.62	0.064	710.96	0.015	693.63	0.064	710.96	0.003	161.61	0.015	165.65	0.007	323.23	0.030	331.31
Excavators	1.3	8	36	233	Diesel	0.010	504.46	0.046	517.06	0.010	504.46	0.046	517.06	0.002	117.54	0.011	120.47	0.005	235.08	0.022	240.95
Rollers	0.7	8	36	233	Diesel	0.006	270.63	0.025	277.39	0.006	270.63	0.025	277.39	0.001	63.06	0.006	64.63	0.003	126.11	0.012	129.26
Trenching machines	6.7	8	40	233	Diesel	0.059	2,802.51	0.258	2,872.55	0.059	2,802.53	0.258	2,872.55	0.014	652.99	0.060	669.30	0.028	1,305.97	0.120	1,338.61
End Loaders/ Skid Steer Loaders	1.7	8	71	233	Diesel	0.059	1,477.65	0.136	1,515.36	0.058	1,478.01	0.136	1,515.69	0.014	344.33	0.032	353.12	0.027	688.67	0.063	706.23
Pavers	0.7	8	81	233	Diesel	0.002	567.72	0.052	581.62	0.001	567.74	0.052	581.62	0.000	132.28	0.012	135.52	0.001	264.56	0.024	271.04
Paving Equipment	0.7	8	89	233	Diesel	0.004	623.72	0.057	639.05	0.003	623.74	0.057	639.05	0.001	145.33	0.013	148.90	0.002	290.66	0.027	297.80
Compaction machines/ Other Construction Equipment	5.0	8	82	233	Diesel	0.030	4,309.87	0.397	4,415.86	0.025	4,310.04	0.397	4,415.91	0.006	1,004.22	0.092	1,028.90	0.013	2,008.44	0.185	2,057.80
Cutting machines/ Other Construction Equipment	5.0	8	82	233	Diesel	0.030	4,309.87	0.397	4,415.86	0.025	4,310.04	0.397	4,415.91	0.006	1,004.22	0.092	1,028.90	0.013	2,008.44	0.185	2,057.80
Forklifts and carry decks	3.6	8	82	233	Diesel	0.003	3,145.19	0.290	3,222.01	0.003	3,145.19	0.290	3,222.01	0.001	732.83	0.067	750.73	0.001	1,465.66	0.135	1,501.46
Pile drivers/ Other Construction Equipment	5.3	8	82	233	Diesel	0.032	4,597.19	0.423	4,710.26	0.027	4,597.38	0.423	4,710.30	0.007	1,071.17	0.099	1,097.50	0.014	2,142.34	0.197	2,194.99
Bulldozers/ Crawler Tractors	0.3	8	87	233	Diesel	0.001	287.89	0.027	294.93	0.000	287.89	0.027	294.93	0.000	67.08	0.006	68.72	0.000	134.16	0.012	137.44
Bore/ Drill Rigs	6.7	8	83	233	Diesel	0.102	5,755.63	0.530	5,898.90	0.098	5,756.02	0.530	5,899.21	0.023	1,341.11	0.123	1,374.48	0.047	2,682.21	0.247	2,748.96
Backhoes	5.3	8	84	233	Diesel	0.167	5,452.80	0.502	5,590.51	0.132	5,454.38	0.502	5,591.16	0.035	1,270.69	0.117	1,302.66	0.070	2,541.37	0.234	2,605.33
Graders	0.3	8	148	233	Diesel	0.001	441.00	0.041	451.78	0.001	441.00	0.041	451.78	0.000	102.75	0.009	105.27	0.000	205.51	0.019	210.53
Cranes	0.7	8	367	233	Diesel	0.016	2,290.94	0.211	2,347.29	0.014	2,291.03	0.211	2,347.32	0.004	533.80	0.049	546.92	0.007	1,067.60	0.098	1,093.84
Scrapers	0.3	8	423	233	Diesel	0.006	1,260.31	0.116	1,291.22	0.005	1,260.33	0.116	1,291.22	0.001	293.65	0.027	300.85	0.003	587.31	0.054	601.71
TOTAL:						0.708	40,849.89	3.761	41,866.37	0.649	40,853.12	3.761	41,868.01	0.158	9,518.40	0.876	9,755.05	0.316	19,036.80	1.753	19,510.11

¹ Equipment counts are estimated based on project size and engineering judgment.

² Obtained using the CalEEMod Version 2022.2 - Appendix G, Default Data Tables (https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fcaleemod.com%2Fdocuments%2Fuser-guide%2F08_Appendix%2520G_v2022.1.1.3.xlsx&wdOrigin=BROWSELINK)

³ Project construction estimated to occur over 24 months, 5 days/week, 233 days of the year.

⁴ Emissions (lbs/day) = Emission Factor (g/hp-hr) x Number of Equipment x Horsepower Rating(hp) x Load x Activity (hr/day)/ 453.59237. Emission factors obtained using EPA MOVES5.

⁵ N₂O factor is based on emission rate for construction/mining equipment (0.94 g N₂O/gallon of diesel fuel) in Table 5 of EPA's, "2025 GHG Emission Factors Hub", January 2025. <https://www.epa.gov/climateleadership/ghg-emission-factors-hub>

⁶ Fuel consumption rate for N₂O factor is scaled from MOVES5 CO2 output, using a conversion factor of 10.21 kg CO2/gallon of diesel fuel, from Table 2 of EPA's, "2025 GHG Emission Factors Hub", January 2025. <https://www.epa.gov/climateleadership/ghg-emission-factors-hub>

⁷ CO₂e factor is based on the global warming potential (GWP) values for CO₂, CH₄, and N₂O in Table A-1 to 40 CFR Part 98 (in effect on January 1, 2025).

Operations Equipment Emissions Calculations

On-Road Vehicles

Trip Type	One-Way Trips per Day ¹	Miles per Trip ²	Fuel Type	Work Days per Year	On-road Emissions, lbs/day ⁴				On-road Emissions, tons/year ⁵			
					CH ₄	CO ₂	N ₂ O	CO ₂ e	CH ₄	CO ₂	N ₂ O	CO ₂ e
Worker	10	10	Gasoline ³	233	0.002	43.39	0.001	43.62	0.0002	5.054	0.0001	5.082
			Diesel ³	233	0.004	56.38	0.004	57.48	0.0005	6.569	0.0004	6.696
TOTAL:					0.006	99.77	0.004	101.10	0.0007	11.62	0.0005	11.78

¹ Estimated based on industry standard.² Estimated based on engineering judgment.³ Analysis assumes 50-50 Gasoline & Diesel Mix for worker vehicles.⁴ Emissions (lbs/day) = Emission Factor (g/mi) x Number of One-Way Trips per day (trips/day) x Miles per Trip (mi) / 453.59237. Emission factors obtained using EPA MOVES5 for 2026.⁵ Annual Emissions (tpy) = Emissions (lbs/day) x 365/2000.