PREPARED FOR

OKLAHOMA
PRIMARY ALUMINUM

Scoping Report
Environmental and Social Impact Assessment

DATE
13 March 2026

REFERENCE
0793283

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ACRONYMS AND ABBREVIATIONS

Acronym	Description
°C	Degrees Celsius
CFR	Code of Federal Regulations
CT	Census Tract
EGA	Emirates Global Aluminum
EP	Equator Principals
EPCRA	Emergency Planning & Community Right-to-Know Act
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
°F	Degrees Fahrenheit
GHG	Greenhouse Gas
GTC	Potline gas treatment center
HUC	Hydrologic Unit Coe
IFC	International Finance Corporation
IPaC	Information for Planning and Consultation
IUCN	International Union for the Conservation of Nature
Kph	Kilometers per hour
MBTA	Migratory Bird Treaty Act
MMT	Million metric tonnes
Mph	Miles per hour
MSA	Metropolitan Statistical Area
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NSA	Noise sensitive areas
NWI	National Wetlands Inventory
OBIS	Oklahoma Biodiversity Information System
ODOT	Oklahoma Department of Transportation

Acronym	Description
OK DEQ	Oklahoma Department of Environmental Quality
OTSA	Oklahoma Tribal Statistical Area
OWRB	Oklahoma Water Resources Board
PS	Performance Standards
SEP	Stakeholder Engagement Plan
SHPO	State Historic Preservation Office
SSA	Socioeconomic study area
TAC	Crucible skimming and treatment
THPO	Tribal Historic Preservation Office
TPOI	Tulsa Port of Inola
TUL	Tulsa International Airport
UAE	United Arab Emirates
U.S.	United States of America
US(#)	U.S. Route
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VAP	Value-Added Product

EXECUTIVE SUMMARY

Emirates Global Aluminum (EGA) and Century Aluminum USA (Century) propose to construct and operate a new aluminum smelter at the Tulsa Port of Inola (TPOI) in Oklahoma, United States of America (Oklahoma Primary Aluminum or the Project). The Project aims to deliver economic benefits while safeguarding the environment and strengthening Oklahoma's position in the American manufacturing supply chain.

EGA and Century are conducting an Environmental and Social Impact Assessment (ESIA) which will be supported by an Environmental and Social Management Plan (ESMP). This Scoping Report represents the first step in the ESIA process.

ESIA PROCESS

The ESIA process includes a systematic series of steps evaluating the Project's potential environmental, social, and economic benefits and impacts (Figure ES-1). The ESIA enables stakeholders to participate in the identification and review of the Project's predicted impacts and mitigation measures before they are implemented so that EGA and Century can effectively manage the Project.

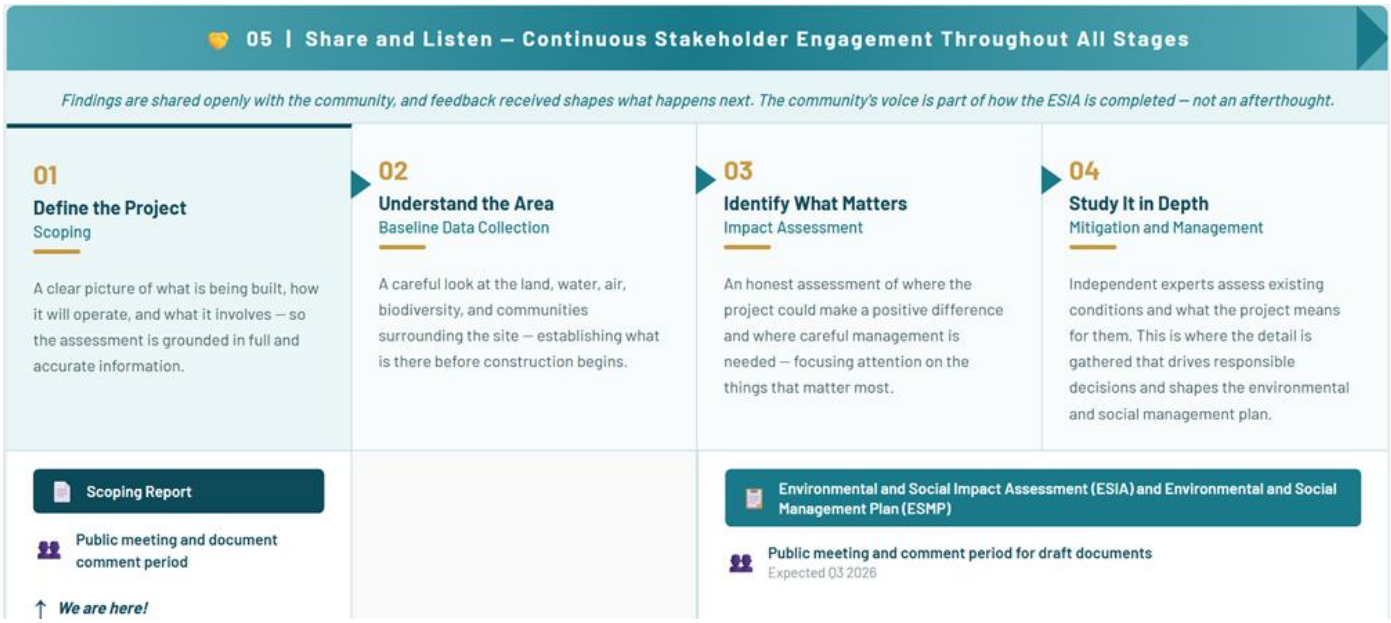

FIGURE ES-1 ESIA PROCESS

The ESIA for the Project is currently in the Scoping Phase. The purpose of this Scoping Report is to define the scope, boundaries, and methodology of the ESIA and share an initial understanding of the key environmental and social risks, benefits and impacts that will be addressed in the ESIA and ESMP in detail. The ESIA Scoping Summary, released concurrently with the Scoping Report, provides a high-level, accessible summary of the contents of the Scoping Report, including a streamlined Project description, potential impact summary, and proposed management measures.

Impact assessment will follow the Scoping Phase to assess the sensitivity of the existing environment, the magnitude of the potential impact, and viable options to remediate impacts. It

will consider potential direct and indirect environmental and social impacts and benefits and will be informed by baseline data.

Mitigation and management measures will be identified in an iterative process as impacts are assessed. Design modifications and inbuilt controls that can sufficiently manage and or mitigate potential negative impacts will be identified and documented in the ESIA and ESMP which will align with the Project's governance framework.

PROJECT OVERVIEW

The proposed Project will include smelting, casting, and anode production activities to produce an estimated 826,733 U.S. tons (750,000 metric tonnes) of primary aluminum per year, which will double the current United States production.

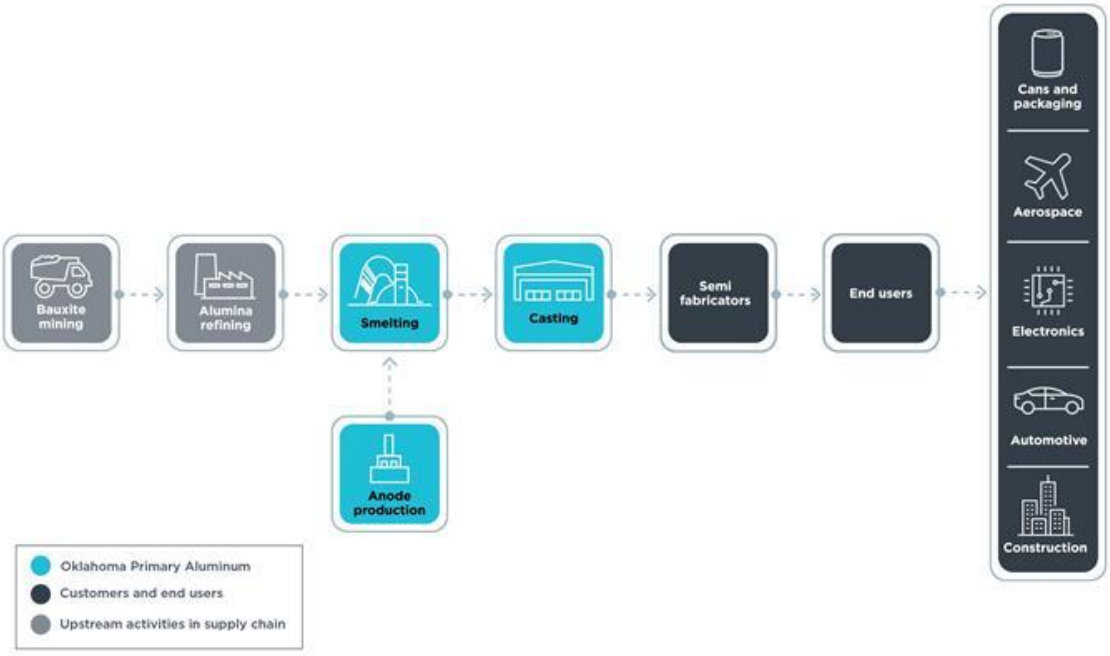

FIGURE ES-2 THE ALUMINUM PRODUCTION PROCESS

The Project would occupy a 437.5-acre (177.0-hectare) lot at the TPOI, 2.8 miles (4.5 kilometers) west of the town of Inola, and 24 miles (38.6 kilometers) east of Tulsa (Figure ES-3). The Project Site is an undeveloped portion in an industrial park that is owned and managed by the TPOI. EGA will purchase the Project Site land prior to development. The Project Site is adjacent to the Verdigris River which is connected to the Mississippi and an existing corridor for commercial shipping, and the site is connected to rail and road networks.

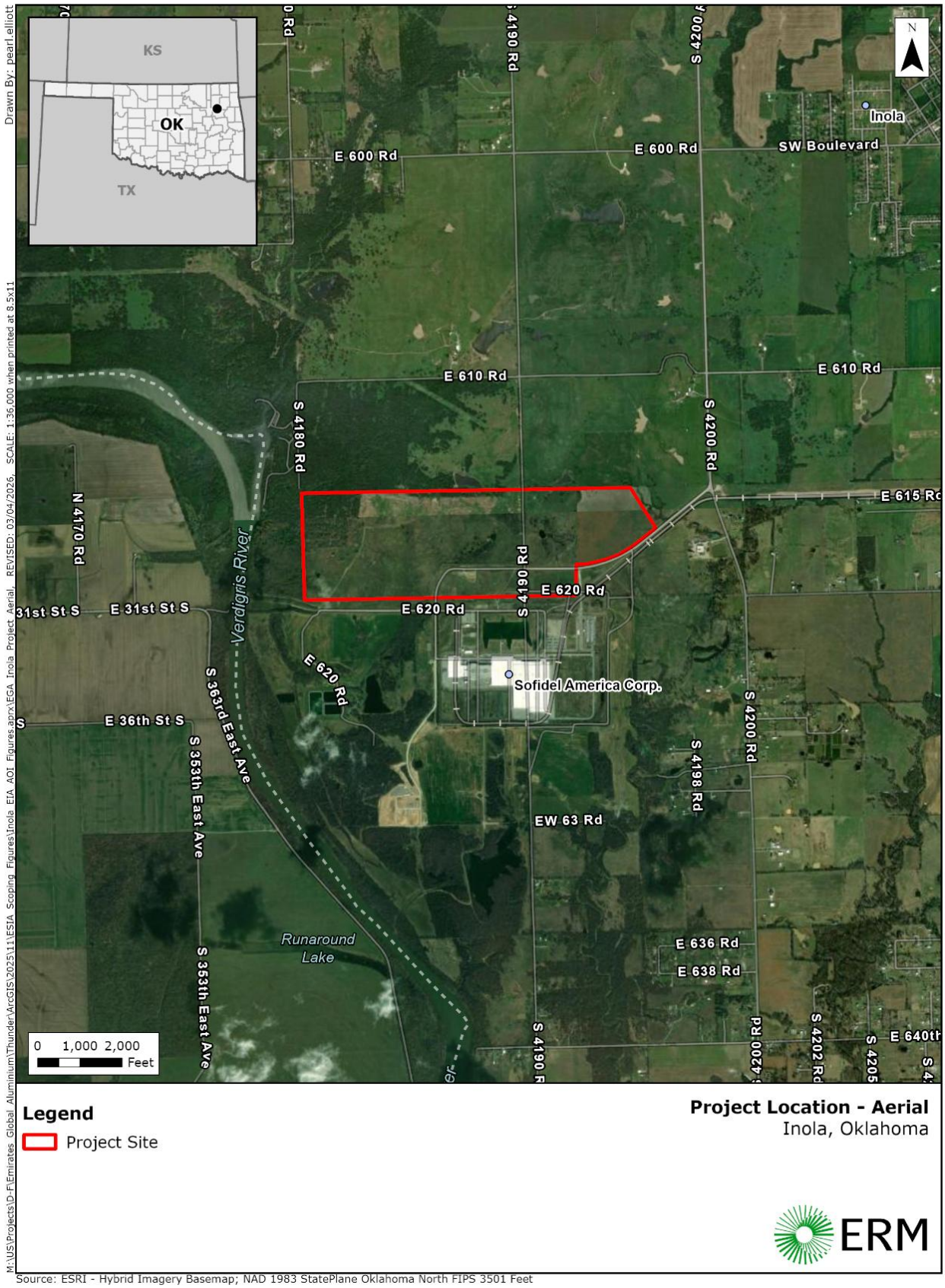

FIGURE ES-3 PROJECT LOCATION

The Project is currently evaluating technology options as part of the design stage, so several aspects of the design, technology selection, and operational parameters remain subject to change.

The ESIA will include environmental and social impact assessment for construction and operation of the following planned Project components:

- Aluminum smelting operations
- Aluminum casting
- Anode production facility
- Railroad spur
- Electrical switchyard
- Temporary construction laydown area
- Raw Material Handling
- Conveyor from barge fleeting area to Project Site

Unplanned (accidental) events will also be addressed.

Several concurrent activities are known to be occurring near to the Project, including infrastructure enhancements being performed by the TPOI such as barge loading and unloading and surface water intake. These activities are not directly dependent to the Project and will occur irrespective of the Project; therefore, these will not be included in detailed analysis. The concurrent activities and other reasonably foreseeable activities known to be occurring within the Project's anticipated area of impact will be considered and addressed as cumulative projects.

IMPACT ASSESSMENT

Assessment of potential direct and indirect environmental and social impacts and benefits will be informed by assessment of the baseline data, technical subject matter expertise and professional judgement, consultation with EGA, Century, and engineers, stakeholder input, ESIAs for similar projects, and literature and research. The approach assesses the sensitivity of the existing environment and social setting, consideration of inbuilt project controls, the magnitude of the potential impact and benefit, and identification of viable options to further mitigate impacts. Assessment of unplanned events also considers the potential likelihood of occurrence.

Impacts and benefits that will be addressed include:

- Construction:
  - Site clearing, earthworks and building: removal of vegetation and wildlife habitat, cultural heritage, impact on to surface water and flow, sediments and erosion, and local community impact.
  - Transportation and mobile equipment: noise, air emissions including greenhouse gas (GHG) and dust, wildlife, traffic, and accidents.
  - Workforce: worker and community health and safety, and local community impact.
  - Socioeconomics: economic growth and community benefits.
- Operation:
  - Raw material unloading and transport: air quality, noise.

  - Operation of the smelter: air quality and GHG emissions, noise.
- Water and waste management: soil and water.
- Workforce and community: worker and community health and safety.
  - Socioeconomics: economic growth and community benefits.
- Transportation and mobile equipment (including barge and rail): noise, air quality and GHG emissions, wildlife, traffic, and accidents.
  - Workforce: socioeconomics, worker and community health and safety.
- Unplanned (emergency events): process incidents, equipment failure, leaks and spills, severe weather, and traffic accidents.
- Local community impacts to economy growth, social infrastructure, community health, visual aesthetics, and land use.

ENVIRONMENTAL AND SOCIAL BASELINE

Baseline environmental and social conditions are informed by a combination of available public and desktop data, stakeholder input, prior site field work undertaken by the TPOI, and studies performed to date for the Project. The environmental and social baseline are discussed in depth in Section 5.

The Project is located in the Osage Plains physiographic section of the larger Central Lowland region of the United States and on the left bank (east side) of the Verdigris River, which flows south past the Project Site. Groundwater within the Project Site mainly resides within a confined bedrock aquifer composed of shale and sandstone units. The main sources of air pollution in the Inola area are agriculture, industry, commercial, and motor vehicles. The proposed Project Site is undeveloped but zoned for industrial use, which typically have ambient noise levels of 70 to 80 A-weighted decibels. The Project Site is located within the Osage Cuestas (40b) Level IV Ecoregion. Natural habitats in the Osage Cuestas Ecoregion are predominantly tall grass prairie and post oak–blackjack oak forests. Inola and the immediate surrounding area are rural. The population surrounding the Project Site is largely white alone, not Hispanic or Latino, and with poverty rates in line with or below the Oklahoma state average. Inola is predominately a “bedroom” community and the surrounding area, including Tulsa, is likely to provide access to employees, goods, and services. The Project Site is located on Muscogee (Creek) Nation reservation land. Tangible and intangible cultural heritage surveys are pending. The landscape in this area consists of gently rolling hills along the east bank of the Verdigris River. Due to location, topography, and vegetation, few publicly accessible views of the Project Site exist. The Project is expected to generate road and vessel traffic during construction, for transport of Project modules, components, construction materials, consumable supplies, and workers to and from the Project Site. US Highway 412 and State Route 88 are the main roads that will provide access to the site.

ADDITIONAL SUPPORTING STUDIES AND ENGAGEMENT

EGA and Century are committed to completing a comprehensive review of the environmental and social risks through this voluntary ESIA process. The following studies and events are being considered or are planned to further inform the Project's baseline and impact assessment:

- Development of the Project Description and inbuilt controls (such as air emission scrubbers)
- Ambient noise monitoring
- Additional cultural resources survey
- Additional geology and soil survey
- Additional wetland/waterbody and biodiversity survey
- Flood study
- Visual impact assessment
- Socioeconomic impact and benefits study
- Air quality modeling
- ESIA Scoping Public Meeting (Open House)
- Draft ESIA Document Public Meeting
- Ongoing engagement with Tribes and stakeholders

STAKEHOLDER ENGAGEMENT

Engagement opportunities specific to ESIA will include the ESIA Scoping Public Meeting (Open House) and the subsequent Draft ESIA Document Public Meeting, which are focused on receiving public input regarding the ESIA process and topics pertinent to ESIA. Additional engagement opportunities will be ongoing during Project development and will include public meetings and events, written communications, and digital outreach such as through the Project website: https://oklahomaprimaryaluminum.com/ .

PROJECT SCHEDULE

A general ESIA process and timeframe for the Project is shown on Figure ES-1. Key milestones include:

- Publication of the Scoping Report in March 2026 followed by a public Open House
- Publication of the draft ESIA and ESMP in Q3 2026 followed by a public meeting
- Publication of the Final ESIA in Q3 2026
- Construction is planned to begin by end of 2026
- Operations are planned to begin by 2030.

1. INTRODUCTION

1.1 PROJECT PURPOSE AND NEED

Emirates Global Aluminum (EGA), together with strategic partner Century Aluminum USA (Century), are progressing plans to develop a new primary aluminum production plant in Inola, Oklahoma that anticipates to produce 826,733 U.S. tons (750,000 metric tonnes) of primary aluminum per year, which will double the current United States (U.S.) production. The Project will be the first primary aluminum production plant in the United States since 1980 and will provide aluminum needs for U.S. industries including aviation, automotive, construction, and household goods manufacture. Approximately 85 percent of U.S. aluminum needs are currently met by imported materials. The Project will be strategically located along the McClellan-Kerr Arkansas River Navigation System and existing Union Pacific rail infrastructure to deliver products to its U.S. customer base, reducing reliance on imported aluminum and supporting national security. Construction and operation of the Project would bring long-term economic benefits for Oklahoma and the United Stated through the creation of thousands of jobs, state and local taxes, and anticipated indirect benefits through the supply chain and offtake users.

1.2 ESIA SCOPING REPORT PURPOSE AND NEED

The Project is voluntarily conducting an Environmental and Social Impact Assessment (ESIA) aligned with Equator Principals (EP) 4 Principal 2: Environmental and Social Assessment (2020). In calibration with EP Principle 3, the Project is also voluntarily aligning with the International Finance Corporation (IFC) Performance Standards (PS) on Environmental and Social Sustainability (2012) and applicable World Bank Group Environmental Health and Safety Guidelines (2007) to ensure best-in-class risk assessment and controls. This requires an assessment of relevant environmental and social risks and scale of impacts of a proposed project, including measures to minimize, mitigate, and offset for risk and impacts. The ESIA will inform the development of an Environmental and Social Management Plan (ESMP) which will be the Project's governance framework to manage environmental and social risks.

The Project will comply with all United States and Oklahoma regulations and permits as they pertain to the Project. In addition, the Project is committed to completing a comprehensive review of environmental and social risks through this voluntary ESIA process, aligned with international best practice standards.

The ESIA for the Project is currently at the Scoping Phase. The purpose of this Scoping Report is to define the scope, boundaries, and methodology of the ESIA, as well as to share an initial understanding of the key environmental and social benefits and impacts that will be addressed in the ESIA and ESMP. The Scoping Report is shared publicly for transparency and to solicit stakeholder input.

Impact assessment will follow the Scoping Phase to assess the sensitivity of the existing environment, the magnitude of the potential impact, and best available options to mitigate impacts. It will consider potential direct and indirect environmental and social impacts and benefits, and will be informed by the baseline data.

Mitigation and management measures will be identified in an iterative process as impacts are assessed. Design modifications and in-build controls that can sufficiently manage and or mitigate potential negative impacts will be identified and documented in the ESIA and ESMP.

1.3 ABOUT EGA AND CENTURY

1.3.1 EGA

EGA began production in 1979 in Dubai, United Arab Emirates (UAE). Cooperation between EGA and the United States started at this time with the United States supplying expertise and major equipment such as gas turbines. EGA is one of the world's largest 'premium aluminum' (metal made to customer specifications) producer. Outside of oil and gas, EGA is the biggest industrial company in the UAE. EGA supplies metal to more than 400 customers in more than 50 countries. EGA is a member of the Aluminium Stewardship Initiative, a global non-profit standards-setting and certification organization. With over 4 decades of operational experience, EGA is recognized for its technological leadership and commitment to sustainability. The voluntary undertaking of ESIA is driven by EGA's commitment to the highest sustainability standards.

In 1999, EGA America established its North American base in St. Louis. Today, EGA is one of the largest suppliers of aluminum to U.S. industries. EGA's high-quality aluminum supports tens of thousands of American jobs in aerospace, automotive, construction, energy systems, and electronics. EGA's high-purity aluminum is an important material in specialized U.S. defense applications. EGA is dedicated to safeguarding the quality of local air, water, and community health through rigorous environmental management, leading industry practices, and strict adherence to U.S. Environmental Protection Agency (USEPA) and state environmental standards.

EGA company-wide goals include:

- **Prioritize safety, always**: creating an environment where the risk of serious harm is eliminated.
- **Be our customers' most valued partner**: working together to expand the use and impact of aluminum.
- **Lead with responsible production**: reinforcing that producing a material vital to a more sustainable society is only the beginning; how EGA makes that material is just as important.
- **Build a talent-driven organization**: investing deeply in training and development to become the industrial employer of choice in EGA's host communities.
- **Advance sustainable economic growth**: maximizing EGA's contribution to local economies through quality jobs, local procurement, and support for downstream industries.
- **Innovate the future of aluminum**: continue decades of investment in technology development and industry leadership.

1.3.2 CENTURY

Century formed in 1995 and today is the largest producer of primary aluminum in the United States. Headquartered in Chicago, Illinois, Century operates three aluminum smelters across Kentucky and South Carolina and has production facilities in Iceland, the Netherlands and

Jamaica. They produce various products including Natural-Al™, billet, ingot, primary foundry alloy, sow, and molten.

Century strives to minimize the environmental impact of their operations through reducing the carbon footprint of their aluminum products, minimizing greenhouse gas emissions, and promoting the responsible use of energy and raw materials. Century also has health, safety, and social responsibility commitments including the protection of human rights and providing a fair workplace. Century aims to continuously improve their health and safety performance and integrate health and safety risk management in all aspects of their operations.

1.4 PROJECT OVERVIEW

EGA and Century are proposing to develop and operate a new aluminum smelter on a site at the Tulsa Port of Inola (TPOI) (the Project). EGA and Century will be responsible for permitting and compliance of the smelter.

The facility will use EGA's latest-generation reduction technology, which produces more aluminum with less energy and lower emissions. Best available technologies will be used across operations to ensure environmental responsibility and economic viability. The Project's operations will use advanced, high-efficiency technologies that minimize greenhouse gas (GHG) emissions, conserve energy, and reduce waste, meeting or exceeding USEPA, state, and local environmental standards.

The Project would occupy a 437.5-acre (177.0 hectare) lot at the TPOI, 2.8 miles (4.5 kilometers) west of the town of Inola, and 24 miles (38.6 kilometers) east of Tulsa, Oklahoma, United States of America. The Project Site is an undeveloped portion in an industrial park that is currently owned and managed by the TPOI. The lot is located east of the Verdigris River, which is a navigable waterway connected to the Arkansas and Mississippi Rivers. The site also has easy access to an existing rail network, power supply, and other infrastructure.

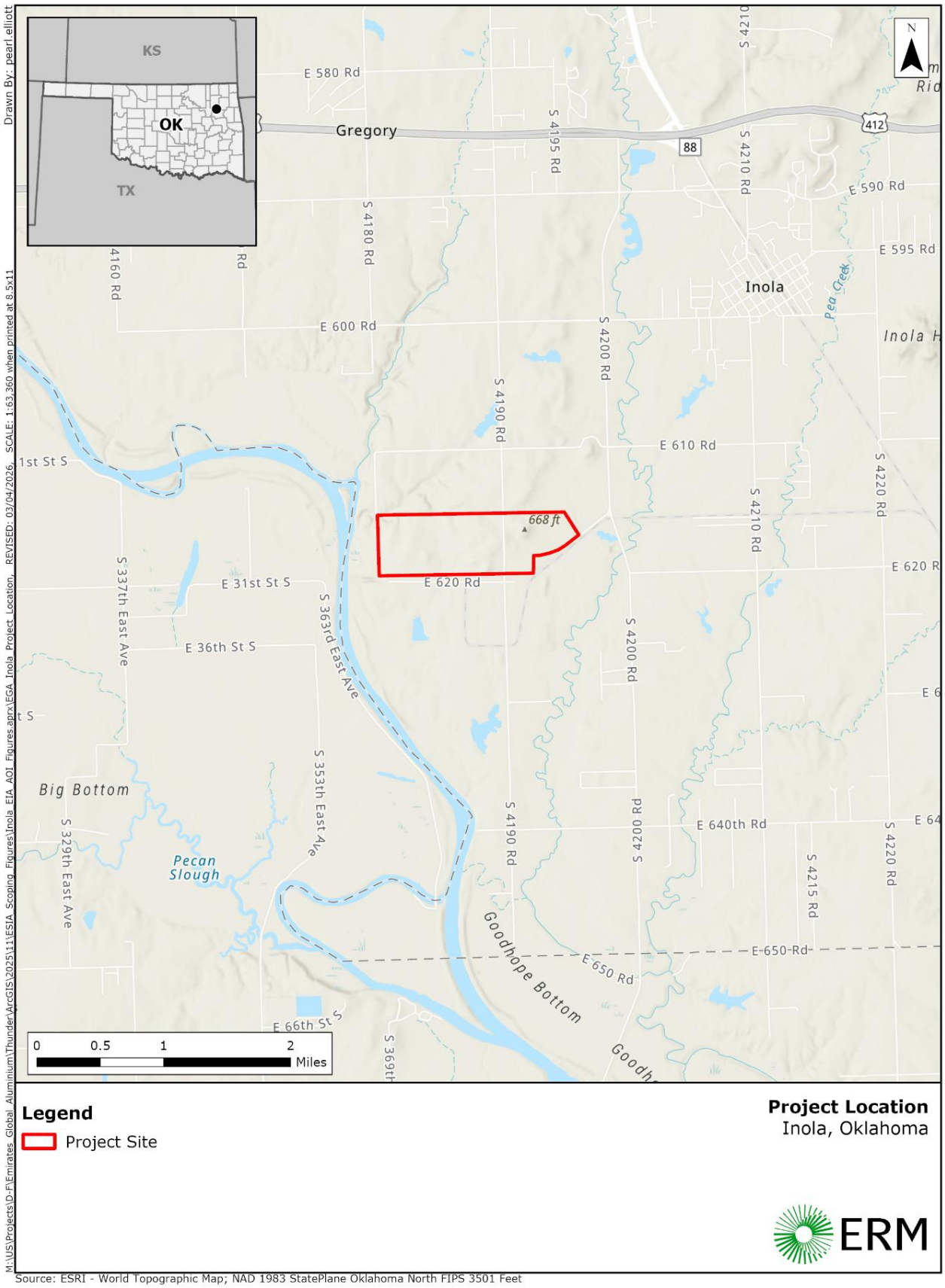

FIGURE 1-1 PROJECT LOCATION—TOPOGRAPHIC

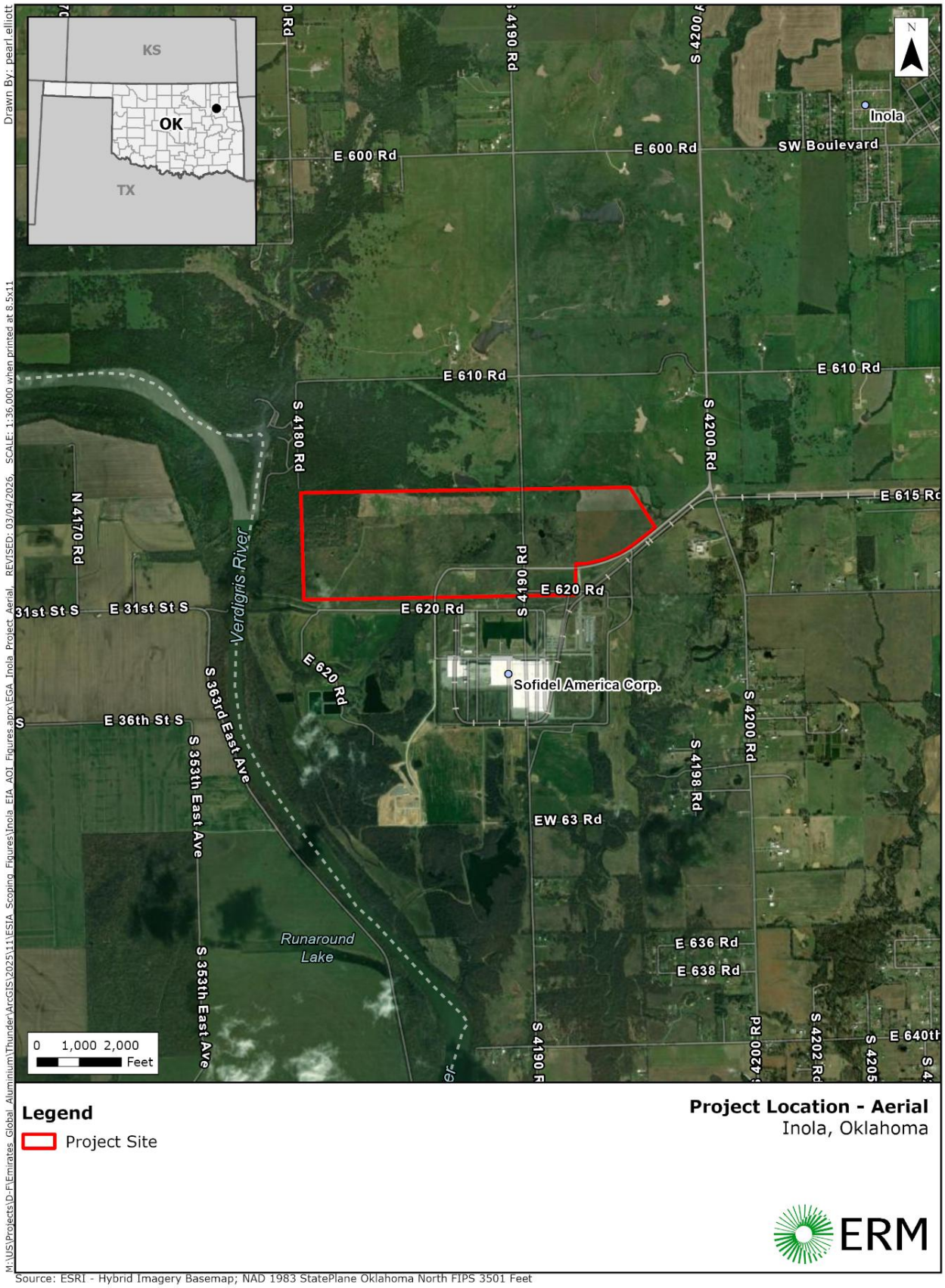

FIGURE 1-2 PROJECT LOCATION—AERIAL

1.5 LEGAL FRAMEWORK

The Project will be responsible for permitting of the Project components within the Project property. The TPOI will be responsible for permitting their projects outside of the Project property boundary, even if these TPOI projects will in part support the Project (e.g., the TPOI barge unloading facility and conveyor connecting the port to the EGA property). Permits that the Project need to consider are listed in Table 1-1. Table 1-1 is a comprehensive list of potential permits that the Project will assess for applicability.

1.5.1 NATIONAL LEGISLATION

1.5.1.1 POSSIBLE FEDERAL ENVIRONMENTAL REVIEW AND PERMITTING

If federal funding, such as a loan or grant, is provided, the funding agency, likely the U.S. Department of Energy, will determine whether provision of funding constitutes a major federal action, which would require compliance with the National Environmental Policy Act (NEPA). A permitting agency, such as the U.S. Army Corps of Engineers (USACE), may also determine that the federal permitting process for Clean Water Act section 404 permitting could trigger NEPA. If NEPA is triggered, the lead federal agency will determine the level of environmental review required based on preliminary evaluation of the significance of anticipated impacts. NEPA requirements can be fulfilled by, in order of ascending levels of impact and effort; documenting a Categorical Exclusion, or by completing an Environmental Assessment or Environmental Impact Statement.

If a federal undertaking is identified, compliance with the National Historic Preservation Act (NHPA) will be required. The permitting and/or funding agency would be responsible for leading NHPA compliance, including consultation with the Tribal Historic Preservation Office (THPO) and any federally recognized Tribes. ERM has been advised by the Muscogee (Creek) Nation that their THPO will take the lead if NHPA consultation is applicable, and that the State Historic Preservation Office (SHPO) can be advised of the THPO’s findings.

If the Project impacts jurisdictional wetlands, surface waters, or floodplains, Section 404/Section 10 individual permit or Preconstruction Notification for Nationwide Permit 39, Commercial and Institutional Development, will be required.

If the Project impacts listed species, their suitable habitat, and/or mapped Critical Habitat, an Incidental Take Permit under the Endangered Species Act will be required. A Depredation Permit Special Purpose permit under the Migratory Bird Treaty Act (MBTA) may be required if activities not covered by a standard permit, such as taking, possessing, or transporting migratory birds, their parts, nests, or eggs for depredation control, as well as those found dead, is required. Likewise, an Incidental Take Permit, Nest Take Permit, and/or Depredation Permit may be required if planned land development may impact bald eagles or their suitable foraging and nest habitat. It is unlikely that these permits will be necessary based on projected avoidance of sensitive areas. The U.S. Fish and Wildlife Service (USFWS)—Region 2 would be the permitting agency for these cases.

1.5.2 STATE AND LOCAL LEGISLATION

The site sits within the jurisdictional lands of the Muscogee (Creek) Nation, where they maintain control over criminal matters involving tribal members (McGirt v. Oklahoma, 591 U.S. 1 [2020]) (Figure 1-3). Adjacent to this area is the jurisdictional territory belonging to the Cherokee Nation. In addition, the jurisdictional area of the Osage Nation is located immediately northwest of Tulsa, and the Osage Nation claims the Project area as part of their ancestral territory. The Muscogee (Creek) Nation THPO has provided their archaeological standards, which will be implemented for any pending cultural resources survey for the Project. The Project recognizes the Muscogee (Creek) Nation THPO's interest in the Project and will continue engagement on cultural heritage topics with interested Tribes.

At a state level, the Oklahoma Department of Environmental Quality (OK DEQ)—Air Quality Division, OK DEQ—Water Quality Division, OK DEQ—Land Protection Division, the Oklahoma Water Resources Board (OWRB), and Oklahoma Corporation Commission—Petroleum Storage Tank Division are coordinating with EGA and Century in preparation for issuance of required permits or approvals for various Project activities. The Project will also register as a generator of hazardous waste with the USEPA and comply with all applicable state, federal, and local regulations.

At a local level, the Rogers County Office of the Planning Commission may require several permits covering signage, work, non-temporary generators, fire equipment, utilities, and commercial buildings (Table 1-1).

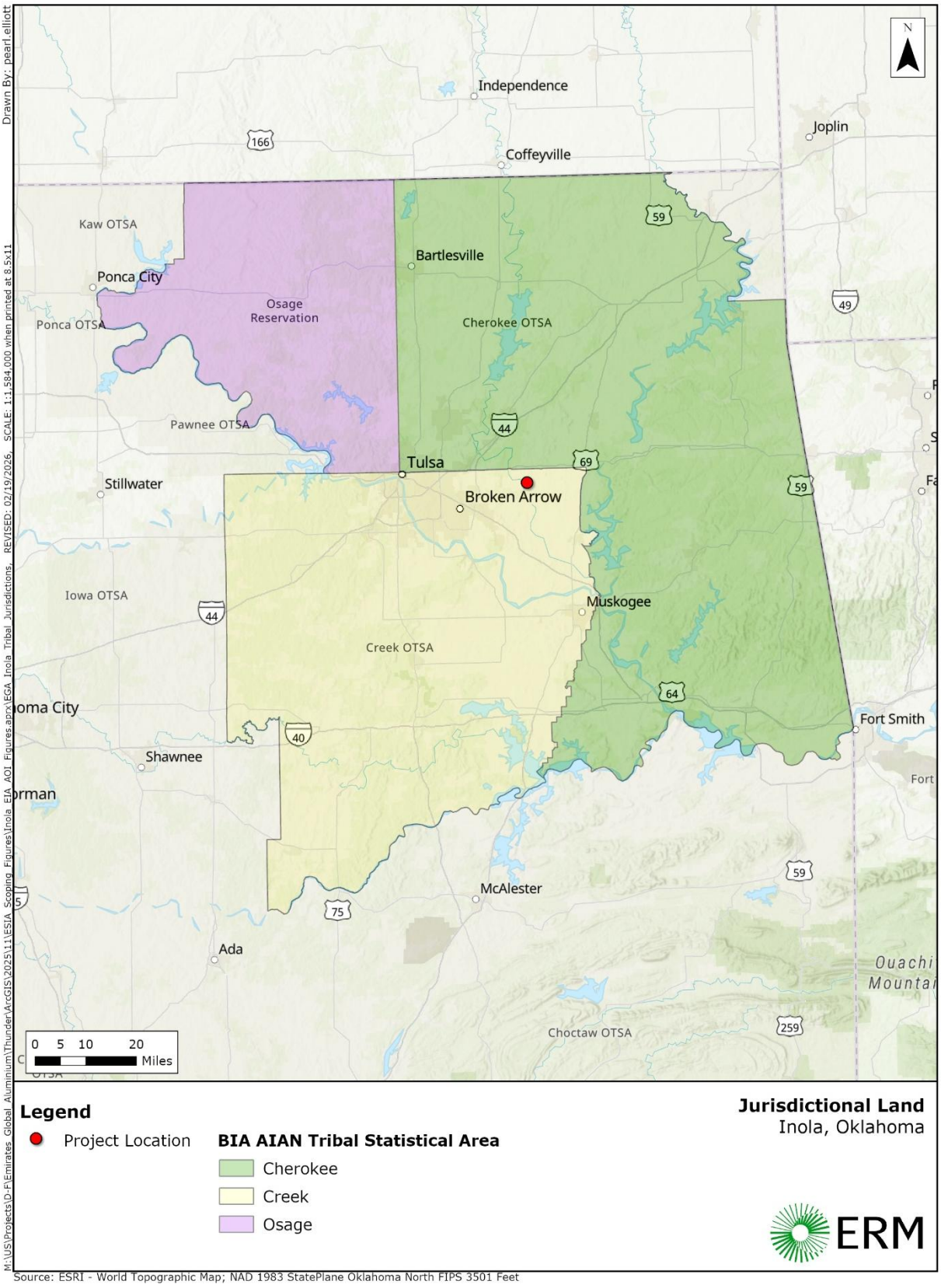

FIGURE 1-3 TRIBAL JURISDICTIONAL LANDS

TABLE 1-1 ANTICIPATED FEDERAL, STATE AND LOCAL PERMITS

Authorizing Agency	Topic / Regulation	Permit or Approval	Notes
Department of Energy and/or Army Corps of Engineers	NEPA	NEPA Environmental Impact Assessment	Needed prior to beginning construction if triggered by "major Federal action" such as grant funding (meeting certain thresholds) or permitting as determined by the respective federal agency. Potential triggers for this project include if funding is received through the Department of Energy, or if the project requires an individual permit under Section 404 of the Clean Water Act (U.S. Army Corps of Engineers).
U.S. Army Corps of Engineers—Tulsa District	Aquatic Resources (Wetlands & Waterbodies) – Waters of the U.S (WOTUS)	Section 404/Section 10 individual permit or Preconstruction Notification for Nationwide Permit 39 (Commercial and Institutional Development)	Needed prior to beginning construction if triggered by discharge of dredged or fill material to waters of the United States resulting from development needed for the Project. Pending outcome of wetland studies and project design, an individual section 404 permit could be triggered if any of the following conditions apply: • Activity results in the loss of more than 300 linear feet (91 meters) of stream bed. • Total loss of waters of the United States exceeds 0.5 acre (0.2 hectare). • Activity occurs in a designated Wild and Scenic River requiring further agency coordination or the activity involves submerged aquatic vegetation or other sensitive aquatic habitats. **Note:** The Project will be responsible for Section 404/401 impacts on their property, but TPOI is responsible for impacts for their projects.
U.S. Fish & Wildlife Services—Region 2	Endangered Species Act	Incidental Take Permit	Needed if an impact to regulated endangered species within the Project footprint is identified. Ideally, this would be done prior to facility construction to identify avoidance areas during engineering/planning. Triggered if an impact to regulated endangered species within the Project footprint is identified. Planned land development that may cause a "take" of a listed species if habitat is identified on site. This includes significant habitat modifications that kills or injures a federally listed species, including behavior impairment.

Authorizing Agency	Topic / Regulation	Permit or Approval	Notes
U.S. Fish & Wildlife Services—Region 2	Migratory Bird Treaty Act	Depredation Permit Special Purpose Permits	Triggered if an impact to regulated migratory birds within the Project footprint is identified, ideally during planning. Applicability to be determined by species research and habitat field study. A depredation permit authorizes the capture or killing of birds to reduce damage or protect other interests, such as human health safety or personal property. A special purposes permit authorizes activities not covered by a standard permit, such as taking, possessing, or transporting migratory birds, their parts, nests, or eggs for depredation control, as well as those found dead.
U.S. Fish & Wildlife Services—Region 2	Bald and Golden Eagle Protection Act	Incidental Take Permit Nest Take Permit Depredation Permit	Triggered if an impact on bald and/or golden eagles within the Project footprint is identified, ideally during planning. Planned land development that may cause a “take” of a bald or golden eagle, including disturbing, killing, harassing, or harming the species and their nests or eggs. A depredation permit is needed to haze or trap bald or golden eagles that cause damage or pose a threat to human or eagle health and safety."
USEPA Region 6 and OK DEQ—Land Protection Division	Hazardous Waste	Hazardous Waste Permitting and USEPA ID	Triggered if/when the Project starts generating, transporting, treating, storing, or disposing of hazardous waste or universal waste.
OSHA	Process Safety Management (PSM) Program	Process Safety Management Plan	Triggered if/when the Project plans to handle highly hazardous chemicals listed in the PSM standard and uses these chemicals in processes at or above specified threshold quantities. Chlorine gas used for fluxing or degassing molten aluminum could trigger the PSM program.
USEPA Region 6	Chemical Risk Management Programs	Risk Management Plan	Triggered if the Project uses, stores, manufactures, or handles one or more regulated substances listed in 40 Code of Federal Regulations (CFR) Part 68.130 and the substance is present in a process at or above its threshold quantity. Chlorine gas used for fluxing or degassing molten aluminum could trigger the Risk Management Plan program. One of three risk levels will be developed based on the operation’s relative potential for public impacts and the level of effort needed to prevent accidents at the facility.

Authorizing Agency	Topic / Regulation	Permit or Approval	Notes
USEPA / OK DEQ- Land Protection Division	Emergency Planning & Community Right-to-Know Act (EPCRA)	Toxics Release Inventory Reporting	Needed annually for reporting if the Project exceeds reporting threshold limits. Triggered if the Project: • Is included in a Toxics Release Inventory–covered North American Industry Classification System code; • The facility has 10 or more full-time employee equivalents; and • The facility manufactures, processes, or otherwise uses any EPCRA Section 313 chemical in quantities greater than established thresholds during a calendar year."
OK DEQ—Land Protection Division	Soil and Groundwater Impacts Assessment	Impacts Assessment & Work Plan Approval	Triggered if contamination is suspected or confirmed in soil or groundwater due to industrial, commercial, or waste management activities. These facilities must develop a site assessment plan and remediation plan with prior approval from the OK DEQ.
OK DEQ—Air Quality Division	Air Permitting	Prevention of Significant Deterioration Permit	Needed prior to beginning construction for a new major source or major source modifications at existing sources for pollutants where the area the source is located is in attainment or unclassifiable with the National Ambient Air Quality Standards.
OK DEQ—Air Quality Division	Air Permitting	Title V Air Operating Permit	Needed prior to beginning operations at the facility (including equipment/facility qualification) for any major source of air pollutants, where the major source threshold for any regulated air pollutant is 100 U.S. tons (91 metric tonnes) per year or 10 U.S. tons (9.1 metric tonnes) per year individual Hazardous Air Pollutants (HAP) or 25 U.S. tons (22.7 metric tonnes) per year combined HAPs.
OK DEQ—Water Quality Division	Stormwater	Notice of Intent for permit coverage under the Construction General Permit (OKR10)	Triggered for construction projects with ground disturbances equal to or greater than 1 acre (0.4 hectare), or less than 1 acre (0.4 hectare) of total land area that is part of a larger common plan of development or sale in the State of Oklahoma.
OK DEQ—Water Quality Division	Stormwater	Notice of Intent for permit coverage under the OPDES Multi-Sector General Permit (OKR05)	Needed prior to beginning operations at the facility (including equipment/facility qualification). Triggered by the Project's primary industrial activity based on the Standard Industrial Classification Codes and facility discharges industrial stormwater to waters of the state.

Authorizing Agency	Topic / Regulation	Permit or Approval	Notes
OK DEQ—Water Quality Division	Wastewater	Categorical or Significant Industrial User Permit	Needed prior to beginning operations at the facility (including equipment/facility qualification). Triggered for industrial wastewater discharge sources prior to the discharge of wastewater to a publicly owned treatment work. Applicability for categorical pretreatment standards determined if operations are considered to fall under either the Nonferrous Metals Manufacturing Category (40 CFR Part 421) and/or Aluminum Forming Category (40 CFR Part 467). Applicability as a significant industrial user is triggered if the Project is subject to a categorical pretreatment standard.
OK DEQ—Water Quality Division	Aquatic Resources (Wetlands & Waterbodies)	Section 401 Water Quality Certification	Needed prior to beginning construction. Triggered for projects requiring a federal permit, such as a USACE Section 404 permit.
Oklahoma Corporation Commission—Petroleum Storage Tank Division	Bulk Storage	Regulated Chemical and Petroleum Bulk Storage Registration	Needed 30 days prior to installing a regulated storage container within the Project footprint (before, during, and after facility construction). Triggered for storage tanks containing antifreeze, motor oil, motor fuel, gasoline, kerosene, diesel, or aviation fuel—regulated by the Oklahoma Corporation Commission's Petroleum Storage Tank Division. Underground petroleum storage tanks with capacity over 110 gallons must be registered, except for residential and non-commercial agricultural tanks with a capacity of less than 1,100 gallons. Aboveground petroleum storage tanks with a capacity over 110 gallons must be registered, except for farm and ranch tanks, emergency generator tanks, or tanks at fleet and commercial facilities less than 2,100 gallons individual storage capacity.

Authorizing Agency	Topic / Regulation	Permit or Approval	Notes
OK DEQ—Land Protection Division	EPCRA	EPCRA Initial Notification and Tier II Reporting	Needed annually if the facility stores hazardous chemicals in quantities greater than 10,000 pounds or extremely hazardous substances in quantities greater than 500 pounds or above the threshold planning quantity, whichever is lower. USEPA's "List of Lists" outlines applicable hazardous/extremely hazardous chemicals and thresholds. Reporting per EPCRA Section 312. An EPCRA Initial Notification is submitted to the State or Tribal Emergency Response Commission, the Local or Tribal Emergency Planning Committee, and the local fire department.
Rogers County Office of the Planning Commission	County Permit	Commercial Building Permit	Triggered by the construction of a new commercial building within the limits of the Town of Inola or Rogers County. One permit will be required for each building structure to be constructed.
Rogers County Office of the Planning Commission	County Permit	Utility / Pipeline Permit	Pertains to all utility companies, both public and private; oil companies; gas companies; pipeline companies; telephone companies; contractors; developers; engineers or any person, firm or corporation not specifically excluded by law, desiring to construct, install or locate a pipeline, utility line, cable or other facility within the boundaries of a public roadway/street or easement.
Rogers County Office of the Planning Commission	County Permit	Fire Permit	Triggered by the planned installation of fire suppression equipment, fire alarms, and kitchen hoods at the facility that will need to be reviewed by the Inola Fire Chief. One permit will be required for each building structure to be constructed.
Rogers County Office of the Planning Commission	County Permit	Generator Work Permit	Triggered by the installation, maintenance, or removal of non-temporary generators within the Town of Inola.
Rogers County Office of the Planning Commission	County Permit	Work Permit	Triggered by the need to erect, install, enlarge, alter, repair, remove, convert, or replace any electrical, gas, mechanical, or plumbing system
Rogers County Office of the Planning Commission	County Permit	Sign Permit	Triggered for any regulated sign the Project expects to post at the facility or within the city limits of Inola, Oklahoma. Any signs not specifically exempted in Section 1103 of the Rogers County Zoning Ordinances shall be permitted to construct, modify, or relocate the signs

1.6 INTERNATIONAL STANDARDS

The Project is voluntarily seeking to align the Project with Equator Principle (EP4) [1]. The EP provides an international benchmark for assessing and managing environmental and social risks for projects. The EP consists of the following principles:

- Principle 1: Review and Categorization
- Principle 2: Environmental and Social Assessment
- Principle 3: Applicable Environmental and Social Standards
- Principle 4: Environmental and Social Management System and Equator Principles Action Plan
- Principle 5: Stakeholder Engagement
- Principle 6: Grievance Mechanism
- Principle 7: Independent Review
- Principle 8: Covenants
- Principle 9: Independent Monitoring and Reporting
- Principle 10: Reporting and Transparency.

Principles 2 through 6 are directly applicable to projects' environmental and social risks and are expected to be addressed by the Project. Principle 1 (Review and Categorization), 7 (Independent Review), Principle 8 (Covenants), Principle 9 (Independent Monitoring and Reporting) and Principle 10 (Reporting and Transparency) are under the purview of the Equator Principles Financial Institutions, which is not relevant to the Project.

In calibration with EP Principle 3, the Project is voluntarily aligning the Project, which is in a Designated Country, with the IFC PS on Environmental and Social Sustainability (2012) and applicable World Bank Group Environmental Health and Safety Guidelines (2007) to ensure best-in-class risk assessment and controls. There are eight IFC PS:

- PS1 Assessment and Management of Environmental and Social Risks and Impacts provides guidance on environmental and social risk and impact identification and management through determination of the Project's footprint and its area of influence; identification of associated facilities, if any; application of the mitigation hierarchy; stakeholder engagement, design and implementation of an external grievance mechanism; and implementation of an environmental, social, and health and safety management system for the life of the Project.
- PS2 Labor and Working Conditions provides guidance on labor-related management and safe and healthy work conditions; human resources policies, health and safety procedures and the workers' grievance mechanism are key requirements of PS2.
- PS3 Resource Efficiency and Pollution Prevention provides guidance on efficient use of resources including energy and pollution prevention and abatement.
- PS4 Community Health, Safety and Security provides guidance for ensuring that adverse impacts from the Project on the receiving community are managed and controlled.

[1] https://equator-principles.com/app/uploads/The-Equator-Principles_EP4_July2020.pdf

- PS5 Land Acquisition and Involuntary Resettlement provides guidance for minimizing adverse social and economic risks and impacts from land acquisition, such as involuntary resettlement or changes in land use that could adversely affect non-tenured land users.
- PS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources provides guidance for assessing and managing the Project's potential risks and impacts on biodiversity and ecosystem services.
- PS7 Indigenous People provides guidance on the assessment and management of potential risks and impacts on Indigenous Peoples and their sacred sites.
- PS8 Cultural Heritage provides guidance on assessing and managing potential risk and impacts on cultural heritage and promotes equitable sharing of benefits arising from cultural heritage.

2. PROJECT SUMMARY

The Project is in the early design stage, so several aspects of the design, technology selection, and operational parameters remain subject to change.

2.1 PROPOSED PROJECT

The Project involves the construction and operation of a new primary aluminum production plant capable of producing 826,733 U.S. tons (750,000 metric tonnes) of aluminum in the form of P1020 ingots in various purity levels and other value-added casted products (e.g. aluminum billets, foundry products). Alumina (feedstock) and other raw materials will be delivered to the site either by river barge or rail. Alumina will be conveyed to the facility's potline, consisting of 484 pots, that will convert the alumina into aluminum through an electrochemical reduction reaction. Liquid aluminum will drop to the bottom of each pot and be transferred to the facility's casthouse to solidify the aluminum into the desired products. Final aluminum products will be shipped to customers either by river barge or rail.

A simplified diagram of the aluminum production process is provided on Figure 2-1. Note that smelting, anode production, and casting will occur at the Project – the other steps are shown to explain the overall aluminum value chain.

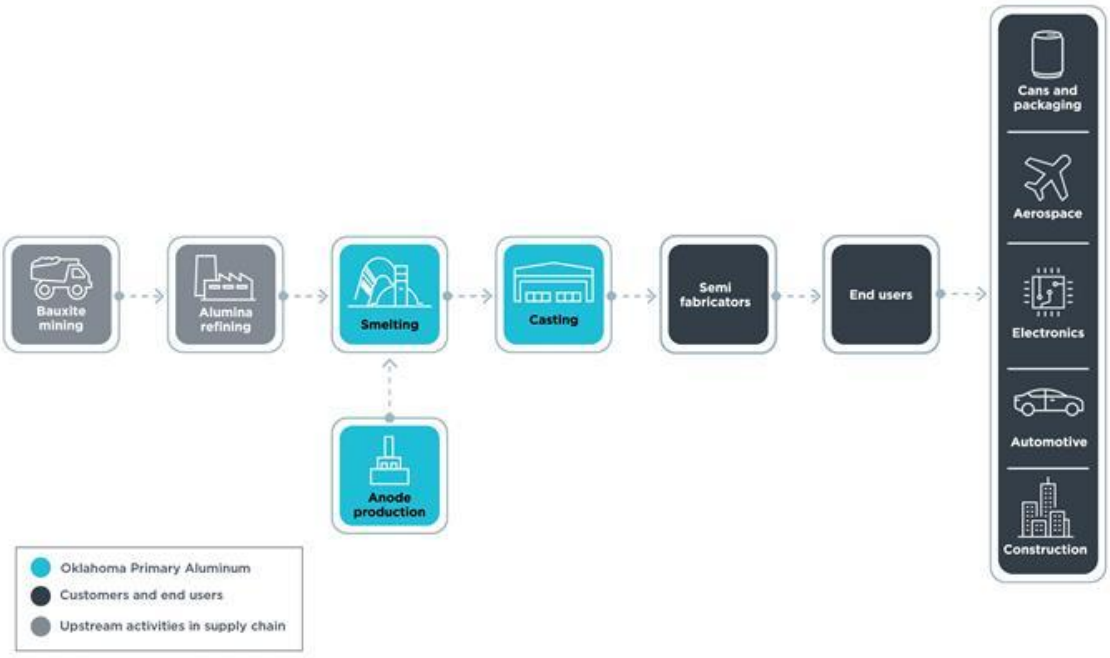

FIGURE 2-1 THE PROJECT'S ROLE IN THE ALUMINUM PRODUCTION PROCESS

2.1.1 ALUMINUM SMELTING OPERATIONS

Aluminum smelting operations will include a carbon anode plant, reduction and casting activities, raw materials handling, and maintenance and administration facilities.

The carbon plant scope includes the following facilities:

- Green anode production or paste plant
- Anode handling and storage
- Baked anode production
- Anode rodding
- Bath treatment and storage
- Carbon recycling
- Carbon area maintenance
- Electrical substations

These facilities will recycle, assemble, and bake carbon anodes that will be used for the electrochemical reduction of alumina to aluminum in the reduction area. A carbon paste plant will be constructed that will use liquid pitch, petroleum coke, and recycled carbon to create a liquid carbon paste. The paste will then be tried and formed to develop green anodes. Green anodes will be baked in a furnace, rodded, and then either stored or transferred to the reduction area to be used in the potline. Scrap paste and anodes (generally called anode butts) from this process will be recycled to generate the carbon paste. Within the paste plant, after forming, the green anodes are cooled via water spray or cooling system in tub. A fume treatment center shall be there to monitor and treat emissions generated by anode baking process.

The reduction area will include the following facilities:

- Potline
- Potline gas treatment center (GTC)/flue gas desulfurization
- Potline services (includes maintenance buildings)
- Main substation and rectifiers
- Other electrical substations
- Cathode sealing
- Crucible and tube cleaning
- Lining-Delining building

These facilities are the primary liquid aluminum melting facilities, consisting of one potline (with 484 pots). The reduction technology is based on EGA's EX Reduction Pot Technology. The potline consists of two potrooms—1A & 1B. Raw alumina and coke, received from TPOI's barge unloading area and conveyance system, will be received by the Project and stored in enclosed spaces, likely silos in a silo farm. Fresh Alumina will be sent to pots for reduction and a small portion will be sent to the GTC. Fluoride-enriched alumina from the GTC is then returned to the pots, where it is used as feedstock in the electrolytic reduction process to produce aluminum metal. The alumina will react with the carbon anodes which are produced in the carbon plant, in the presence of a molten bath composed primarily of cryolite and electricity is provided to generate pure aluminum

to flow to the bottom of each pot via gravity. Anode and cathode busbars (ring bus) will conduct electrical current from one pot to another in the potline, while the molten electrolyte bath enables the electrochemical reaction that reduces the alumina to aluminum. Emissions generated by each pot will be monitored and treated through a potline gas treatment system. Ultimately, the liquid aluminum will drop to the bottom of each pot and be transferred into crucibles and delivered to the casthouse area via metal transport vehicles to create the final products from molten aluminum.

The casthouse area will include the following facilities:

- Crucible skimming and treatment (TAC)
- Casthouse building
- Furnace area
- Casting area
- Metal product handling and storage
- Casthouse cooling water and treatment
- Dross management
- Maintenance shop
- Casthouse other ancillaries
- Electrical substations.

In the casthouse, the hot metal produced in the reduction area and the liquid metal from the scrap melting furnaces at the facility will be solidified into various product types to serve the markets of Aluminum Value-Added Products (VAP). VAPs could include P1020 sow ingots in various purity levels and other value-added casted products (e.g. aluminum billets, foundry products, etc.).

This process will allow liquid aluminum to be skimmed and treated within the crucibles in TAC, weighed, and transferred into molds to form the final VAPs through various casting machines. Molds will be baked and cooled to create the products, weighed again to verify quality, and stored at this facility until products are ready to be shipped to customers. Aluminum dross generated by the smelter will be managed as a recoverable by-product rather than a waste. Dross will be temporarily and securely stored on site in accordance with applicable regulations, prior to being transferred to a suitably qualified and permitted off-site partner for further treatment and recycling.

The smelter utilities will include:

- Electrical utilities;
- Area electrical substations;
- Mechanical utilities; and
- Plant communications and information systems.

These facilities will support all electrical, mechanical, and digital systems associated with all facilities in the Project operation, including the carbon area, the reduction area, and the casthouse.

The smelter ancillary facilities will include:

- Main gate house and truck scales;
- Central maintenance building;
- Central warehouse;
- Administration building and central laboratory; and
- Service station and mobile vehicles.

These facilities support administrative actions, including a security checkpoint to enter the property, parking, office buildings, as well as a central warehouse, the facility maintenance building, and mobile vehicle service stations. This area also includes an administrative office building central to the facility operations for the Project employees to work and meet.

The raw material storage area will include:

- Alumina handling and storage;
- Aluminum fluoride handling and storage;
- Petroleum coke handling and storage;
- Liquid pitch handling and storage;
- Lime handling and storage;
- Gypsum handling and storage;
- Alloy storage; and
- Finished product container station for export.

These facilities will hold all primary raw materials to operate the smelter, including the potline, casthouse, and carbon areas, as well as storage of finished products to be shipped to customers. It is expected that main raw materials will be received through the TPOI barge unloading facility, with materials transferred to the site through a conveyance system planned by TPOI.

2.1.2 RAIL SPUR

A rail spur will be extended from the existing line supporting the TPOI to the edge of the Project property on the southeastern edge of the Project Site. This rail spur will be used to deliver equipment and materials to the facility and possibly ship final products from the facility to their customers.

2.1.3 ELECTRICAL SWITCHYARD

The Power Step Down Substation located both on the northern edge of the Project Site will reduce the power delivered from the Guava substation to the levels needed to power the Project facility.

2.1.4 TEMPORARY FEATURES

The construction laydown area will be used to store construction equipment and materials during the construction phase of the Project. Equipment and materials will be brought to the laydown area either through public roads or through the existing TPOI barge slip southwest of the Project Site. The location of the laydown area or areas remains to be determined.

2.1.5 PROJECT INPUTS AND OUTPUTS

Inputs to the Project during operation will include raw materials including alumina, water, and power.

Outputs from the Project during operation will include solid waste, wastewater, air emissions, and aluminum in various forms.

Details regarding inputs and outputs will be developed during the design process and more information will be included in the Draft ESIA Report. For example, various backup power options are being considered as part of the security of power supply strategy, including behind-the-meter generation, redundant grid interconnection, etc.

2.1.6 PROJECT SEQUENCING

The sequencing and timing of Project construction and operation activities will be developed during the design process. Information available at that time will be included in the Draft ESIA Report.

2.1.7 KEY INBUILT PROJECT CONTROLS

Inbuilt Project controls will be determined during the design process. Project controls will include:

- Avoidance of sensitive environments (including wetlands and waterbodies) as best practicable
- Stormwater Pollution Prevention Plan
- Closed loop waste stream
- Air emission controls

Additionally, all waste water will go to nearby wastewater treatment plan (being built by TPOI for all users at TPOI and currently under construction).

2.2 ALTERNATIVES

The proposed Project has been developed through an iterative process that considered many options and alternatives to meet the Project's purpose and design criteria and EGA's and Century's sustainability goals. The following sections describe the criteria and process taken to establish the current Project location and its preliminary design. A brief description of other alternatives considered and eliminated is also provided below.

The Project is currently in its technology selection and design stage and is undergoing further engineering design and modification to account for stakeholder input through the ESIA process, as well as further engineering refinement and specification.

2.2.1 NO PROJECT ALTERNATIVE

Under the No Project Alternative, the Project would not be constructed. As such, none of the projected adverse or beneficial impacts associated with the proposed Project would occur.

2.2.2 LOCATION ALTERNATIVES

EGA performed a thorough screening of potential sites across North America to identify available sites that could potentially meet the Project criteria. Following outreach and discussion, potential

locations in 19 U.S states and Canadian provinces were considered. Each location was analyzed for its potential to meet the basic Project needs for capacity, proximity to transportation (sea, rail, road). Following this initial screening five potential sites were selected for detailed consideration.

These sites went through a thorough review for conditional analysis, risk analysis, cost analysis, as well as environmental, cultural, and historical resource impacts and risks. In addition to conducting a data-driven analysis on the workforce characteristics and quality of life for each location, interviews with local employers were held at each location to better understand the local hiring conditions of the short-listed sites.

Following this review, the TPOI site was selected as the preferred option.

2.2.3 PROJECT DESIGN ALTERNATIVES

The Project design is currently underway. Alternatives related to facility layout, emission reduction strategies, operational design efficiencies, raw material and waste management, and stormwater management strategies are among the items being considered. Design alternatives considered will be discussed in the Draft ESIA Document.

2.3 CONCURRENT AND CUMULATIVE ACTIONS

The TPOI, other nearby landowners, and utility companies are performing their own projects in parallel to the proposed Project. Several of these projects that will benefit the Project; however, these are not directly dependent actions to the Project as the respective developers are planning these activities regardless. These activities are shown in Table 2-1.

These projects will be considered concurrent actions and will be addressed in the ESIA as cumulative projects, rather than being addressed in detail as part of the Project scope. This is because while the Project may benefit from them, they are not being conducted exclusively for the Project, are not within the Project footprint, and the Project is not the developer for them.

TABLE 2-1 REVIEW OF CONCURRENT AND CUMULATIVE ACTIONS

Feature/ Activity	Responsible Owner	Description	Rationale Determination as a Concurrent Action (not connected)
Guava Substation	TPOI	A 345 kilovolt electrical switch yard is planned to be installed to the northeast of the Project Site . This substation will be used to supply power to facilities located at the TPOI. Further stepdown and feeding to the consumers shall be within the Project boundary.	The Guava substation is being installed for the TPOI and used to power future expansions/ installations to the TPOI. As a potential operator at the TPOI, the Project would use power from the Guava substation to power the facility, but the development of the substation is not dependent on the Project.

Feature/ Activity	Responsible Owner	Description	Rationale Determination as a Concurrent Action (not connected)
Inola, Oklahoma Wastewater Treatment Facility	TPOI	A wastewater treatment facility is being built by the TPOI to the south of both the Project Site and the existing barge slip at the Verdigris River. The facility is currently under construction with operations expected to start towards the end of 2026. The plant will intake and treat wastewater from facilities around the TPOI as well as the town of Inola.	The wastewater treatment facility is being installed for all users at the TPOI, including existing operator Sofidel (located south of the Project Site and to the east of the wastewater treatment facility) and future expansions/installations at the TPOI. As a potential operator at the TPOI, The Project would send its water to the waste water treatment facility, but the development of the facility is not dependent on the Project.
Industrial Park Barge Slip	TPOI	The existing barge slip is located outside the Aluminum Oklahoma Project boundary near the southwest corner of the Project Site. This slip was established in the 1970s for a nuclear power facility that was going to be built within the TPOI. The slip will be refurbished by the TPOI for future use within the port.	When the slip has been restored and operational, Aluminum Oklahoma expects to be able to use this barge slip to deliver and unload bulk materials and equipment for the construction of the facility. The barge slip is being restored by the TPOI regardless of the Project to support all current and future operations at the port.
Dredging, Barge Loading and Fleeting Area within TPOI	TPOI / USACE	TPOI will develop a barge loading and fleeting area to accommodate increased barge activity for users of the port.	The TPOI will coordinate dredging and improvement activities with the USACE—Tulsa District as part of the industrial park development. As a potential operator at the TPOI, the Project will utilize barging facilities. TPOI will develop the fleeting area to support the industrial park regardless of whether the Project will be located there.

Feature/ Activity	Responsible Owner	Description	Rationale Determination as a Concurrent Action (not connected)
Surface water intake	TPOI	Surface water from the Verdigris River is expected to be drawn to support the industrial park including the Project. Water pumps and associated intake pipes will be installed by the TPOI to draw the water from the Verdigris River with filter screens near the water inlet pipes to minimize marine life and vegetation from entering the pump system. The TPOI would operate and be responsible for any associated port infrastructure.	The TPOI requires additional water intake to support the industrial park and is responsible for associated permitting. As a potential operator at the TPOI, the Project would use water provided by TPOI.
Industrial Park Road Expansions and Modifications (S 4190 Street and E 620 Road)	TPOI	S 4190 Street and E 620 Road both lead to the TPOI. To support expanding operations and traffic to the area, the TPOI is expanding both roads.	The TPOI is expanding its own operations and road expansions in support of the industrial park. These improvements by TPOI will occur regardless of whether the Project will be located there.
Rail Extensions	TPOI	An existing rail line (connected to the Union Pacific mainline railroad) is located along E 620 Road, Inola, Oklahoma. This line is currently used to support operations for the Sofidel plant to the south of the Project Project Site. A rail extension is planned from the existing rail line to the existing barge slip.	The additional new spur which is proposed to be built specifically for the Project to transport materials from the existing rail network to the smelter site is within scope of the ESIA. The rail extension to the edge of the Project Project boundary is being done by the TPOI regardless of the Project Project so that the port can support current and future operations at the port. The rail extension outside of the Project Site is considered as a concurrent action in the scope of the ESIA.
Public Utility Extension	TPOI	To support expansion of the port, TPOI is extending public utility lines, including potable water, wastewater/sewer collection systems, and natural gas lines. These lines currently exist at the port but will be extended as most of these resources currently support the Sofidel plant.	Only specific utility extensions leading into and out of the Project Site will be in scope of the ESIA. Planned utility extensions to the industrial park are being performed by the TPOI to support expansion for current and future developments.

Source: (ERM PD TABLE—FEL2)

3. SCOPE OF ASSESSMENT

3.1 PROJECT ACTIVITIES AND RISKS FOR CONSIDERATION

Project activities have the potential to impact and/or benefit physical, biological, and socioeconomic resources, as defined and grouped below.

- Physical Resources—Climate and Meteorology, Greenhouse Gas, Air Quality, Surface Water Quality and Resources, Groundwater Quality and Resources, Noise, Geology and Soils, Topography, and Natural Hazards
- Biological Resources—Natural, Modified, and Critical Habitat; Terrestrial Flora and Fauna; Aquatic Flora and Fauna; Protected Areas; and Ecosystem Services
- Socioeconomic Resources—Social; Community and Occupational Health and Safety; Cultural Heritage; Visual; Indigenous Peoples; Local Economy

Table 3-1 and Table 3-2 describe the potentially affected resources for each activity during the construction and operations phases, respectively.

TABLE 3-1 PROJECT ACTIVITIES DURING THE CONSTRUCTION PHASE

Activity	Resources Considered
Site clearing and earthworks	Air Quality (dust) Noise Surface Water (quality and quantity) Ground Water (quality) Natural, Modified, and Critical Habitat Terrestrial Flora and Fauna Geology and Soils Protected Areas Cultural Heritage
Use of mobile construction equipment and vehicles	Greenhouse Gas (combustion emissions) Air quality (combustion emissions and dust) Terrestrial Flora and Fauna Noise Community and Occupational Health & Safety Transportation Cultural Heritage
Construction of buildings and infrastructure (smelter and electrical switch yard areas and rail spur)	Surface Water (construction stormwater) Noise Cultural Heritage Community and Occupational Health & Safety Transportation Visual
Construction waste generation and disposal	Surface Water (quality) Ground Water (quality) Community and Occupational Health & Safety Transportation
Transportation of workers, materials and equipment to the Project Site	Air Quality (Combustion emissions and dust) Noise Community and Occupational Health & Safety Transportation

Activity	Resources Considered
Construction workforce	Socioeconomics Community and Occupational Health & Safety

TABLE 3-2 PROJECT ACTIVITIES DURING OPERATIONS

Activity	Resources Considered
Receipt of raw material incoming through TPOI barge unloading facility and conveyance	Air Quality (dust and contaminates) Surface Water (quality and quantity) Ground Water (quality) Terrestrial Flora and Fauna Marine Flora and Fauna Noise Community and Occupational Health & Safety Transportation
Operation of the smelter area	Greenhouse Gas Air Quality Surface Water (quality and quantity) Ground Water (quality) Terrestrial Flora and Fauna Geology and Soils Noise Cultural Heritage Community and Occupational Health & Safety
Vehicle use for transportation of workers and products	Greenhouse Gas (combustion emissions) Air Quality (combustion emissions) Terrestrial Flora and Fauna Noise Community and Occupational Health & Safety Transportation
Waste generation and disposal	Surface Water (quality) Ground Water (quality) Community and Occupational Health & Safety Transportation
Operational workforce	Socioeconomics Community and Occupational Health & Safety
Railroad transport	Greenhouse Gas (combustion emissions) Air Quality (combustion emissions and dust) Terrestrial Flora and Fauna Noise Community and Occupational Health & Safety Transportation

3.2 UNPLANNED EVENTS

Unplanned events are those events that the Project does not intend to have occur, including events that could possibly occur as a consequence of the Project and events that could impact the Project but are not a consequence of the Project. Possible unplanned events include:

- Severe weather events, such as tornadoes, flooding, and blizzards;

- Hazardous material spills, including fuel and oil;
- Accidental gas releases;
- Environmental control equipment and process failures;
- Non-routine maintenance;
- Accidental release of construction materials (such as concrete or cement);
- Fire or explosions;
- Traffic accidents, including those involving hazardous materials;
- Unanticipated discoveries (such as cultural materials or historical hazardous waste materials);
- Power loss; and
- Vandalism or other security breaches.

The potential for and management of unplanned events will be reviewed through the design process, through required permits and associated compliance plans, and reported in the Draft ESIA Document. The Project will consider unplanned events in their design decisions, avoid them to the extent feasible, and develop appropriate management and emergency response plans.

3.3 STUDY AREA

Defining a study area is standard practice for an ESIA. It establishes the geographic boundaries within which studies are conducted—so that the ESIA can take a thorough, evidence-based look at the surrounding environment and communities, identify any areas that may warrant attention, and put appropriate measures in place where needed.

The study area generally includes the Project footprint, as well as areas that may not be physically disturbed by Project activities but may still experience impacts (e.g., because of propagation of noise levels, dispersion of air contaminants, extended community impacts) and is unique to each resource assessed. For this ESIA, the direct impacts would occur within the Project Site which refers to the Project property boundary that will encompass all Project activities (437.5 acres [177.0 hectares]) . In line with best international practice, the general study area is considered the area within 1 mile (1.6 kilometer) of the boundaries of the Project footprint, reflecting where baseline data were collected and potential effects assessed, not a specific impact radius. The following resources have more specific study areas:

- Surface Water study area: the two Hydrologic Unit Code (HUC)-12 watersheds the Project Property is within, and downstream of the Verdigris River (Figure 5-3).
- Air Quality study area: 31.1-mile (50-kilometer) radius from the Project Site is used for air dispersion modeling. Class I modeling requires a wider zone of analysis, up to 186.4 miles (300 kilometers) from the Project Site.
- Socioeconomics study area
    - Direct study area: 1.8-mile (3-kilometer) radius from the Project Site, which includes nearby properties, sensitive receptors, and the town of Inola.

- Indirect study area: 15.5-mile (25-kilometer) radius from the Project Site to capture the larger economic region recognizing that the Project's workforce and supply chain are likely to draw from beyond Inola, as Inola alone is unlikely to support the full workforce and services for the Project.

3.4 CUMULATIVE PROJECTS AND IMPACTS

Major projects do not exist in isolation. The area around any facility has a history—past land uses, existing operations, and planned future developments—and all of these together shape the environment and communities that the ESIA is designed to understand and protect.

Cumulative impact assessment looks at this broader picture. Following IFC PS 1, cumulative impacts are those that result from the combined effect of this Project together with other existing, planned, or reasonably foreseeable developments that share the same study area or draw on the same resources.

This assessment considers three layers of cumulative context:

- Historical and current conditions—Past and present activities have already shaped the baseline environment studied in this ESIA. They have also informed the regulatory standards designed to protect people and the environment—such as air quality criteria—and the identification of species and habitats already under pressure.
- Concurrent activities—Projects or activities taking place at the same time as this Project, and whose effects may overlap with it, are also considered.
- Future developments—Any planned or reasonably foreseeable project that is publicly known—for example, one that is actively going through a permitting process—and whose potential effects could interact with this Project over its lifecycle is included in the assessment.

TABLE 3-3 CUMULATIVE IMPACTS CONSIDERED

Project Name	Developer	Status	Location	Potential Overlap
Dredging, Barge Loading and Fleeting Area	TPOI	Planned	Industrial Park, between planned barging area and the Project storage silos	Barge fleeting required for industrial park. Conveyor to be built by TPOI and operated by the Project will carry materials from the fleeting area to the Project Site and will therefore be considered a Project action.
Water Intake from Verdigris River	TPOI	Planned	From River to industrial park	Will accommodate the Project needs as well as other industrial park uses.
McClellan-Kerr Arkansas River Navigation System (MKARNS)	United States Army Corps of Engineers	Operational	Verdigris River, adjacent to Project to the west	Project will use the MKARNS to send and receive goods. In 2017, the Oklahoma waterway cargo exceeded 6.2 million U.S. tons (5.6 million metric tonnes) of commodities.

Project Name	Developer	Status	Location	Potential Overlap
Tulsa Port of Catoosa	Tulsa Ports	Operational	13 miles (20.9 km) northwest of Project	2,000-acre (809.4-hectare) industrial park, barge port, and rail transload facility. Also uses MKARNS to transport goods.
Sofidel America	Sofidel	Operational	Adjacent to the Project to the south, part of TPOI	1.8 million square feet (167,225 square meters) of manufacturing and distribution space located in the same community as the Project.
Riverview Industrial Park	Tulsa Ports	Operational with expansion planned	13 miles (20.9 km) northwest of the Project	Three land leases zoned for industrial development; one is occupied and two are available for development.
ParFab Industries	Heater Specialists LLC	Operational	3 miles (4.8 km) north of the Project	100-acre (40.5-hectare) site fabricating convection modules, direct fired heaters, furnaces, heat recovery steam generator units, economizers, package boilers, and more.
Oneta powerplant	Oneta Power	Operational	11 miles (17.7 km) southwest of the Project	1,150 megawatt, combined-cycle power generation facility (natural gas).
Tulsa, Oklahoma Cement Plant	Central Plains Cement Company	Operational	15 miles (24.1 km) northwest of the Project	Portland cement manufacturing. Operational since 1961.
Claremore Wastewater Treatment Plant	City of Claremore	Operational	14 miles (22.5 km) north of the Project	City waste treatment.
Lower Bird Creek Wastewater Treatment Plant	City of Tulsa	Operational	12 miles (19 km) northwest of the Project	City waste treatment.
Verdigris Complex	CF Industries	Operational	11 miles (17.7 km) northwest of the Project	Chemical manufacturing, urea ammonium nitrate.
Haystack Ridge Estates Phase II LP and Haystack Ridge Estates Phase III LP	Oklahoma Housing Finance Agency	Planned	Inola, Rogers County	New construction of 14 homes in Inola, Rogers County.
School improvements	Inola Public Schools	Proposed	Inola, Rogers County	$60 million in investment including a new elementary school.

km = kilometers

4. IMPACT ASSESSMENT METHODOLOGY

This Scoping Report has been prepared in line with good international industry practice as defined in the World Bank Group's Environmental, Health, and Safety Guidelines (IFC 2007), and in accordance with ERM's standard practice. The primary objective of the ESIA for the Project is to identify and manage potential environmental and social impacts, opportunities, and risks associated with the Project.

Assessment of potential direct and indirect environmental and social impacts from the Project (Section 4.1 and 4.2) will be informed by assessment of the baseline data (Section 6) within the study area (Section 4.3), consultation with EGA, Century, and engineers, stakeholder input (Section 7), ESIAs for similar projects, and literature and research. This approach assesses the sensitivity of the existing environment and the magnitude of the potential impact (scale and duration). Assessment of unplanned events also considers the potential likelihood of occurrence.

The ESIA will consider the possibility of direct, indirect, and cumulative impacts of the Project during construction and operations. It will follow a systematic process to evaluate the magnitude of impacts and sensitivity of the affected resource(s), as well as the defined measures the Project proposes to avoid, reduce, and/or remedy adverse impacts and enhance potential benefits.

4.1 INTENSITY, DURATION, AND FREQUENCY

The magnitude of the impact is calculated by the intensity, duration, and frequency of the potential impacts. Definitions for these designations used throughout the ESIA are provided in Table 4-1, Table 4-2, and Table 4-3, respectively. Recognizing that impacts could be experienced differently by different resources, the definitions for intensity designations are defined in more detail, where appropriate, in the resource-specific sections of the ESIA.

TABLE 4-1 DEFINITIONS FOR INTENSITY DESIGNATIONS

Intensity Designation	Definition
Positive	Positive change from baseline
Negligible	Immeasurable or undetectable change from baseline conditions and/or minute spatial extent
Low	Minor but measurable change from baseline conditions and/or affects a small area within or near the Project Footprint
Medium	Noticeable and readily measurable change from baseline conditions and/or affects a larger area beyond the Project Footprint
High	Substantial change from baseline conditions and/or extends over a larger regional area and may cross state boundaries

TABLE 4-2 DEFINITIONS FOR DURATION DESIGNATIONS

Duration Designation	Definition
Short-term	Instantaneous to less than a week in aggregate
Medium-term	More than a week but less than a year in aggregate
Long-term	More than 1 year in aggregate

TABLE 4-3 DEFINITIONS FOR FREQUENCY DESIGNATIONS

Frequency Designation	Definition
One-Off or Episodic	Occurring occasionally and at irregular intervals
Continuous	Occurring more than occasionally or at regular intervals

To establish a consistent basis for assigning magnitude ratings based on the various impact characteristics (i.e., intensity, frequency, and duration), each of the possible combinations of characteristic designations was assigned a magnitude rating. Table 4-4 lists the various combinations of impact characteristics and the corresponding magnitude ratings that were assigned for each combination.

TABLE 4-4 IMPACT CHARACTERISTICS AND MAGNITUDE RATINGS

Intensity	Frequency	Duration	Overall Magnitude Rating
Positive	Any	Any	Positive
Negligible	Episodic	Short-term Medium-term	Negligible
Low	Episodic	Short-term	Negligible
		Medium-term	Small
Medium	Episodic	Short-term	Negligible
		Medium-term	Small
High	Episodic	Short-term	Negligible
		Medium-term	Small
Negligible	Episodic	Long-term	Negligible
Low	Episodic	Long-term	Small
Medium	Episodic	Long-term	Small
High	Episodic	Long-term	Medium
Negligible	Continuous	Short-term Medium-term	Negligible
Low	Continuous	Short-term	Small

Intensity	Frequency	Duration	Overall Magnitude Rating
		Medium-term	Small
Medium	Continuous	Short-term	Small
		Medium-term	Medium
High	Continuous	Short-term	Medium
		Medium-term	Medium
Negligible	Continuous	Long-term	Negligible
Low	Continuous	Long-term	Small
Medium	Continuous	Long-term	Medium
High	Continuous	Long-term	Large

4.2 SENSITIVITY

Multiple factors are considered when defining the sensitivity of a resource. Not all resources can be assessed according to the same criteria, so the sensitivity ratings for specific resources may be determined differently according to the resource (or the type of impact) being assessed.

While the approach for designating sensitivity ratings varies on a resource-by-resource basis, the sensitivity designations consistently used for all resources are low, medium, and high.

4.3 IMPACT SIGNIFICANCE

4.3.1 PLANNED ACTIVITIES

For potential impacts associated with planned activities of the Project, the significance of each potential impact is assigned based on evaluation of the magnitude of the impact and the sensitivity of the resource (Table 4-5). The assignment of a significance rating enables decision makers and stakeholders to understand and prioritize key potential Project impacts and consider what mitigation measures may be warranted.

TABLE 4-5 IMPACT SIGNIFICANCE RATING MATRIX FOR PLANNED ACTIVITIES

		Sensitivity/Vulnerability/Importance of Resource/Receptor		
		Low	Medium	High
Magnitude of Impact	Negligible	Negligible	Negligible	Negligible
	Small	Negligible	Minor	Moderate
	Medium	Minor	Moderate	Major
	Large	Moderate	Major	Major
	Positive	Positive		

4.3.2 UNPLANNED EVENTS

Potential risks from unplanned events related to the Project (e.g., hazardous material spills, traffic accidents, or other events with a less-than-certain chance of occurrence) do not lend themselves readily to the analysis described above for planned Project activities. Rather than assigning significance ratings (as is done for potential impacts from planned activities), the ESIA assigns risk ratings for potential risks from unplanned events. Assessing risk requires understanding:

- Potential consequence/severity of the unplanned event if it were to occur (Low, Medium, High)
- Likelihood of the unplanned event occurring (Unlikely, Possible, Likely).

TABLE 4-6 ACCIDENTAL EVENTS RISK SIGNIFICANCE

Likelihood	**Consequence/Severity**		
	Low	Medium	High
Unlikely	Minor	Minor	Moderate
Possible	Minor	Moderate	Major
Likely	Moderate	Major	Major

5. ENVIRONMENTAL AND SOCIAL RESOURCES

The characterization of the existing environmental and social baseline aims to:

- Identify the key conditions and sensitivities in the Project Site and study area;
- Provide a basis for extrapolation of current conditions, taking into consideration natural variability and changes due to factors external to the Project;
- Further understand stakeholder concerns, perceptions, and expectations regarding the Project;
- Provide data to aid in the prediction and evaluation of potential impacts of the Project;
- Inform development of appropriate mitigation measures; and
- Provide a baseline to inform assessments of future changes and of the effectiveness of mitigation measures.

5.1 PHYSICAL ENVIRONMENT

This section characterizes the physical environment baseline of the Project Site and relevant features within the study area based on desktop research and observations of the Project Site. Studies of the Project Site are being planned to obtain baseline data for noise and soils. Additional baseline studies may be planned. Studies will be used to inform Project design features to minimize impacts where feasible.

5.1.1 CLIMATE AND METEOROLOGY

The Project is located in the Osage Plains physiographic section of the larger Central Lowland region of the United States (NPS 2018). The Project and the broader region are classified as per the Köppen climate classification as a humid subtropical climate (World Bank Group 2025). In this region, the climate is characterized by long, hot, and humid summers and cool to mild winters.

The nearest location with long-term climatological record is the Tulsa International Airport (TUL) station, which is about 18.5 miles (29.8 kilometers) west-northwest of the Project Site and at a similar elevation. This station provides comprehensive observations including temperature and precipitation data (NCEI 2025). While regionally representative, it can be assumed that conditions at TUL may differ slightly from the Project Site in Inola, Oklahoma due to localized variations in terrain and land use.

5.1.1.1 TEMPERATURE

The average annual maximum temperature at the TUL station is 72 degrees Fahrenheit (°F; 22.2 degrees Celsius [°C]), with the warmest month (July) averaging a maximum of 93.6°F (34.2°C). The average annual minimum temperature is 50.6°F (10.3°C), and during the coldest month (January) the average minimum is 28°F (-2.2°C) (NCEI 2025).

5.1.1.2 PRECIPITATION

Precipitation at the TUL station averages approximately 41 inches (104 centimeters) annually, with notable seasonal variation. The wettest months occur in late spring and early summer, particularly May (5.73 inches [14.55 centimeters]) and June (4.65 inches [11.81 centimeters]), which reflects the influence of convective thunderstorms and frontal systems common in the

Southern Plains during this period. These months coincide with peak moisture transport from the Gulf of Mexico, which fuels frequent rain events. In contrast, the driest months are January (1.63 inches [4.14 centimeters]) and February (1.62 inches [4.11 centimeters]), when cold, stable air masses dominate and limit moisture availability, resulting in fewer precipitation events. Autumn months, such as October (3.78 inches [9.6 centimeters]) and September (3.85 inches [9.78 centimeters]), show moderate rainfall associated with transitional weather patterns. Overall, the distribution of precipitation aligns with the humid subtropical climate of the region, characterized by wet springs, relatively dry winters, and intermittent summer rainfall driven by convective activity.

Table 5-1 and Figure 5-1 summarize the monthly average temperature and precipitation parameters for TUL for the 1991–2020 climate normal period.

TABLE 5-1 AVERAGE MONTHLY TEMPERATURE DATA (IN DEGREES FAHRENHEIT), TUL (1991-2020)

Data	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
Avg Max Temp (°F)	48.9	54	63.3	72.1	79.7	88.4	93.6	93	84.8	73.6	61.4	50.9	72
Avg Temp (°F)	38.5	42.8	52	60.8	69.6	78.6	83.4	82.2	73.8	62.3	50.4	41	61.3
Avg Min Temp (°F)	28	31.7	40.7	49.5	59.5	68.7	73.1	71.5	62.8	50.9	39.4	31.1	50.6

Source: NCEI 2025

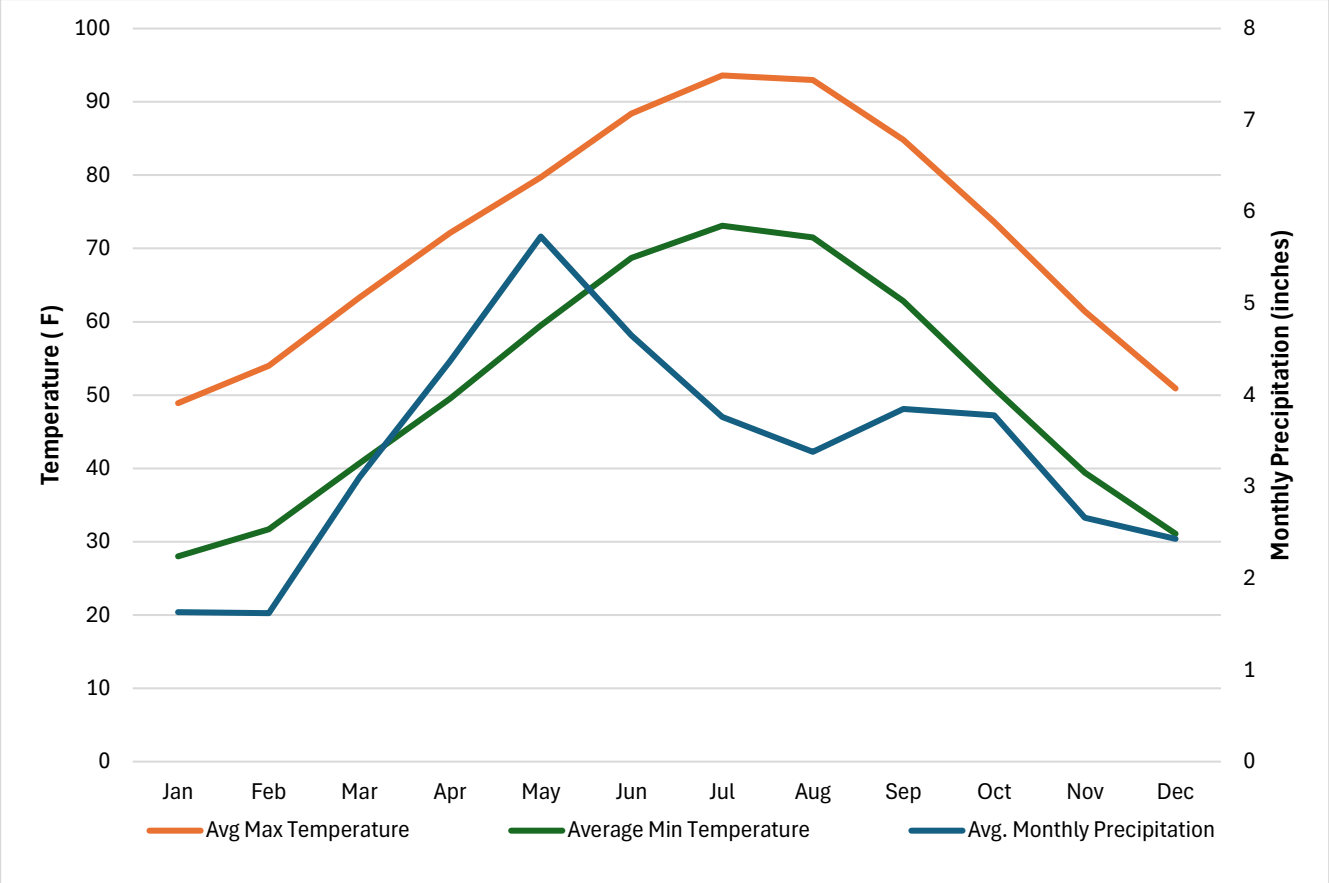

FIGURE 5-1 MONTHLY TEMPERATURE AND PRECIPITATION DATA TUL (1991-2020)

Source: NCEI 2025

Snowfall at the TUL station is relatively light, consistent with the humid subtropical climate of northeastern Oklahoma. The annual average snowfall is approximately 11.5 inches (29.2 centimeters), concentrated in the winter months. January (1.9 inches [4.8 centimeters]), February (2.4 inches [6.1 centimeters]), and March (1.9 inches [4.8 centimeters]) account for the majority of snowfall, while November (0.8 inch [2 centimeters]) and December (1.7 inches [4.3 centimeters]) occasionally experience minor accumulations. From April through October, snowfall is minimal, reflecting the region's warm seasonal temperatures.

5.1.1.3 WIND

Claremore Regional Airport is about 12 miles (19.3 kilometers) north-northeast of the Project. The wind data for Claremore Regional Airport, based on over 151,000 observations from April 2001 to August 2025, indicate that prevailing winds predominantly originate from the south and south-southeast sectors, with secondary contributions from the south-southwest and north. Calm conditions, defined as wind speeds below 2 miles per hour (mph; 3.2 kilometers per hour [kph]), account for 7.6 percent of observations. The average wind speed across the dataset is 7.2 mph (11.6 kph). Stronger winds between 10 and 19.9 mph (16.1 and 32 kph) occur primarily from the south, while wind speeds exceeding 20 mph (32.2 kph) are rare but also occur predominately from the south. This pattern reflects the regional climatology of northeastern Oklahoma, where

southerly winds dominate due to Gulf of Mexico moisture transport. Tornadoes occur in Oklahoma, and risk associated with tornadoes is assessed in Section 5.1.6.3

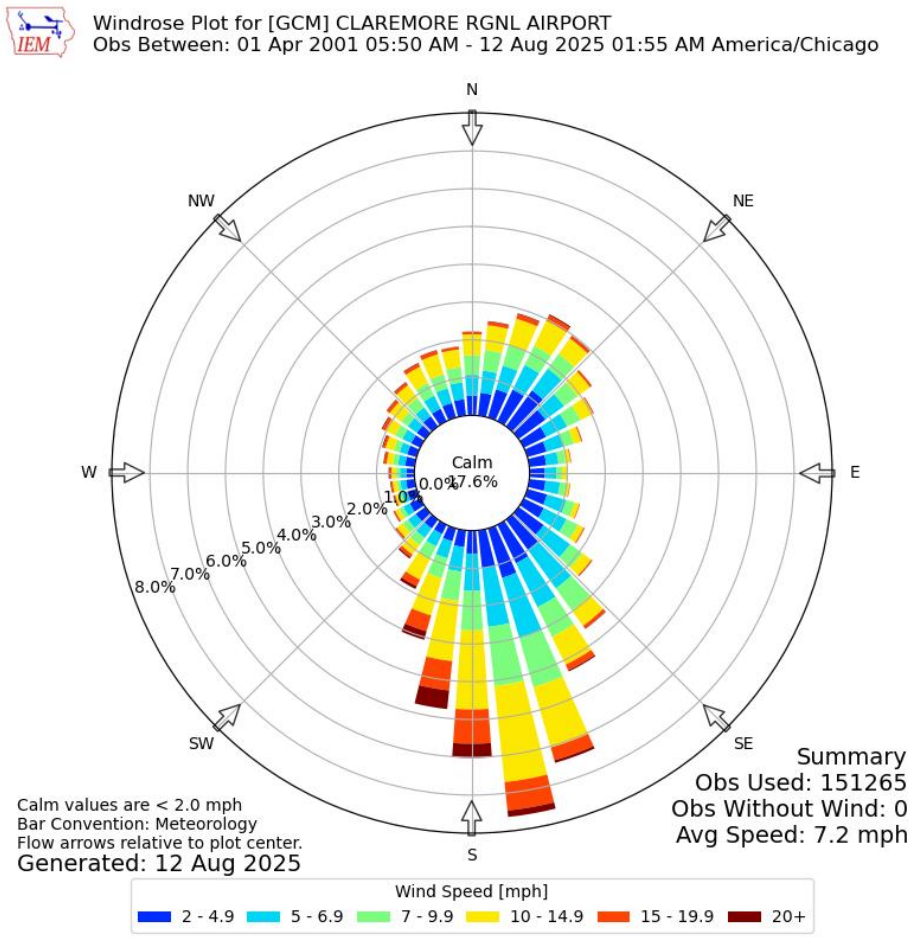

FIGURE 5-2 WIND DISTRIBUTION

Source: Iowa State University 2025

5.1.2 AIR QUALITY

The main sources of air pollution in the Inola area are agriculture, industry, commercial, and motor vehicles. The Project is subject to rigorous federal and state air permitting requirements and will meet all required standards.

Ambient background concentrations of criteria pollutants (ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), carbon monoxide (CO), sulfur dioxide (SO_2), and nitrogen dioxide (NO_2)) are measured by several state-run ambient air quality monitors in the vicinity of the proposed facility (ranging from 18.5 miles [29.8 kilometers] from the site to 27.7 miles [44.6 kilometers] from the site). The measured baseline air quality monitor data is provided in Table 5-2. These monitors provide a conservative representation of the local air quality as they are located in areas that have higher population, commercial, and industrial density than the Project location. There are no background concentration values for non-criteria pollutants that are expected to be emitted from

the Project, including total fluorides (gaseous hydrogen fluoride and particulate matter containing fluoride ions).

The expected pollutant emissions from the Project are carbon monoxide, carbon dioxide, carbon tetrafluoride, hexafluoroethane, select hazardous air pollutants, nitrogen oxides, polycyclic aromatic hydrocarbon, particulate matter (in addition to particulate matter smaller than 10 microns and smaller than 2.5 microns), sulfur dioxide, total fluorides, and volatile organic compounds. The National Ambient Air Quality Standards (NAAQS) are the maximum allowable air quality concentrations for six identified criterial air pollutants in the United States (CO, NO_2, PM2.5/PM10, O_3, SO_2, lead). Air dispersion modeling will be performed to characterize the proposed Project impacts on the ambient air quality concentrations for these criterial pollutants. The cumulative impact will be assessed by summing the Project impact and existing baseline air quality concentrations for comparison with the NAAQS.

OK DEQ does not have an air quality standard for fluorides. Other states with the existing aluminum smelters have developed ambient and vegetation standards for total fluorides (TF) and gaseous fluorides (F) to which the Project impacts will be compared.

EGA's approach to environmental management is grounded in genuine care for the health of the people and communities near this facility, not simply in demonstrating that operating conditions meet prescribed limits. The goal is not to operate at the edge of what is permitted, but to drive emissions toward the lowest levels that technology and good operational practice can deliver, reducing risk to negligible levels wherever possible. To protect air quality, the Project will use best available air pollution control technology, including advanced scrubbers and emissions reduction systems. These technologies significantly limit airborne particulates, fluorides, and greenhouse gas emissions. To evaluate air quality impacts, qualified engineers are conducting air dispersion modeling, which simulates how emissions from the facility could move through the atmosphere under different weather conditions. This helps confirm that the Project can meet and/or exceed all air quality standards so that local communities continue to breathe clean air. Monitoring data, whatever form it takes, will be used not just for compliance reporting, but as an active tool to continuously improve performance over time. The approach to data transparency and how monitoring results are communicated to the community will be addressed in the upcoming ESMP for this facility.

TABLE 5-2 AIR QUALITY BASELINE MONITORING DATA COMPARED TO THE NAAQS

Pollutant	Monitor Name	AQS ID	City, State	County	Distance to the Project (mi/km)	Averaging Period	2022-2024 Average Ambient Background Conc. (µg/m³)	NAAQS (µg/m³)
CO	Tulsa Central	40-143-1127	Tulsa, OK	Tulsa	24.2/38.9	1-hr	1725.0	40,000
						8-hr	1150.0	10,000
NO_2	Tulsa Central	40-143-1127	Tulsa, OK	Tulsa	24.2/38.9	1-hr	63.9	188
						Annual	11.3	100
PM_{10}	Tulsa Central	40-143-1127	Tulsa, OK	Tulsa	24.2/38.9	24-hr	106.0	150
$PM_{2.5}$	Glenpool	40-143-0174	Glenpool, OK	Tulsa	27.7/45.6	24-hr	19.0	35
SO_2	Tulsa Central	40-143-1127	Tulsa, OK	Tulsa	24.2/38.9	1-hr	7.9	196
O_3	Cherokee Heights	40-097-9014	Pryor, OK	Mayes	18.5/29.8	8-hr	127.6	137.4

µg/m³ = micrograms per cubic meter; AQS = Air Quality System; CO = carbon monoxide; hr = hour; km = kilometer; NAAQS = National Ambient Air Quality Standards; NO_2 = nitrogen dioxide; mi = mile; O_3 = ozone; OK = Oklahoma; PM_{10} = particular matter smaller than 10 microns; $PM_{2.5}$ = particulate matter smaller than 2.5 microns; SO_2 = sulfur dioxide

5.1.3 WATER QUALITY AND WATER RESOURCES

5.1.3.1 SURFACE WATER

The Project Site ranges from 540 feet (164 meters) (bottomlands) to 668 feet (204 meters) (hilltops) above mean sea level and features rolling topography with hilltop cuestas and sloped valleys. Most of the site is within the 110701050306 HUC-12 boundary, which drains west toward the Verdigris River, while the southeastern portion is located within the 110701050305 HUC-12 boundary and drains to Inola Creek, which ultimately flows into the Verdigris River (Figure 5-3).

The geomorphology at the site creates drainage patterns that include open-water features (ponds), wetlands, and streams. According to the USFWS National Wetlands Inventory (NWI), freshwater ponds and riverine wetlands occur within the Project Site (USFWS 2023). The United States Geological Survey (USGS) National Hydrologic Database identifies several intermittent streams associated with the NWI ponds and riverine wetlands. ERM delineated these features on 18 through 21 November 2025. The delineation survey concluded that most ponds, wetlands, and streams are likely non-jurisdictional according to USACE requirements, except for the intermittent streams and one larger pond that drains to one of the intermittent streams north of the site.

Additional field delineation is being performed to complete the survey of the site. This final wetland delineation will be used to inform design decisions of the Project layout to avoid and minimize effects where feasible.

The ponds at the Project Site appear to be man-made cattle ponds excavated and bermed within natural drainage features. Downslope margins of these ponds often support emergent wet meadow and scrub-shrub wetlands. Additional wet meadow wetlands and ephemeral streams not mapped by NWI or National Hydrologic Database were identified during delineation. Riverine environments associated with ponds were classified as ephemeral streams, except for two unvegetated intermittent streams in the northwest portion of the site, which drain westward to the Verdigris River.

The Project is located beyond the left bank (east side) of the Verdigris River, which flows south past the Project location. The Verdigris River is a navigable waterway connected to the Arkansas and Mississippi Rivers. Where it flows past the Project Site, the Verdigris River has an average annual flow of 6,376 cubic feet per second (181 cubic meters per second) (USEPA 2025). The USGS has operated a hydrometric station on the Verdigris River (ID 07176000) since 1935, which is approximately 30.3 miles (48.8 kilometers) upstream of the Project (USGS 2025). Average annual flow at this station is 4,247 cubic feet per second (120 cubic meters per second) and shows seasonal variations. The largest flows occur in the spring from April to June, while lowest flows occur in the summer during August and September. Flows during the autumn and winter are a bit larger than summer flows, although still much lower than what passes through the system in the spring.

The Project Site is not within any identified flood plains (e.g. FEMA 100 year flood) though some adjacent drainage features have floodplains that slightly encroach on the site. A flood assessment study is underway to understand how water moves across the landscape, how stormwater drains, and how the Verdigris River and adjacent tributaries might influence Project design.

Water quality data for the Verdigris River is available through the OWRB Streams Monitoring program. Discrete water quality measurements for a location approximately 5 miles (8 kilometers) upstream of the Project location (location shown on Figure 5-3) is summarized in Table 5-3 through Table 5-5. While federal and state surface water standards exist, many are narrative or site-specific and not expressed as simple numeric thresholds that can be directly compared to the available data. However, there are averages for the parameters that might be used as an unofficial benchmark for “good” water quality, which are included in Table 5-4 for context only.

The Project would use water provided by the TPOI and all waste water would be managed by the TPOI waste water treatment plant. The flood study will support environmentally sound stormwater management, help protect the river and avoid or minimize flood risk to the community, and inform Project design to withstand major rainfall events. Stormwater Pollution Prevention Plans and permits will be developed and implemented to prevent sediment, oils, or other materials from entering the Verdigris River during construction and operation. This includes engineered drainage systems, filtration measures, vegetation buffers, and strict controls during heavy rainfall.

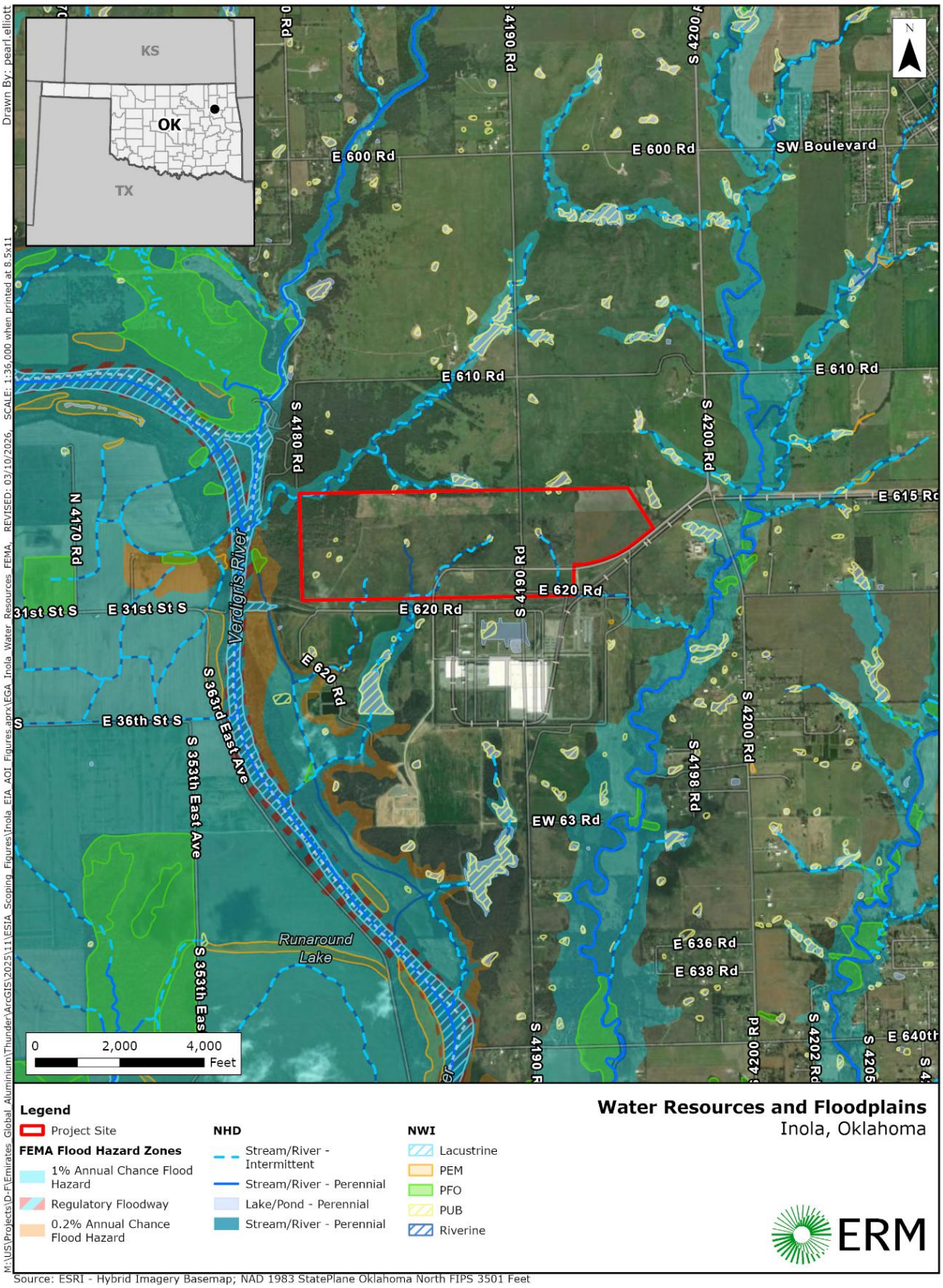

FIGURE 5-3 WATER RESOURCES AND FLOODPLAINS

TABLE 5-3 WATER QUALITY COLLECTION SITE INFORMATION

Water Quality Collection Site Information	
Organization Name	OWRB Streams Monitoring
Program Name	Flowing Water Ambient Trend Program
Monitoring Location Name	Verdigris River, US 412, Inola
Collection Dates	2/10/2020–4/27/2021
Location Coordinates	36.16570228 N, 95.61932105 W

Source: Water Quality Exchange 2025

TABLE 5-4 WATER QUALITY DATA

Characteristic	**Number of Samples**	**Value Range**	**Units**	**"Good" values for surfaces water**
Alkalinity, total	4	107–135	mg/L	20-200
Chloride, unfiltered	3	16.3–23	mg/L	below 250
Chlorophyll a, corrected for pheophytin	3	7.9–22	mg/m^3	below 10
Copper, total	1	1.77	mg/L	below 4
Dissolved oxygen (DO)	4	6.73–13.19	mg/L	5–11
Nickel, dissolved	1	1.19	mg/L	below 70
Nitrate + Nitrite, unfiltered	3	0.41–0.51	mg/L	below 10
pH	4	7.28–8.05	-	6.5-8.5
Phosphorus, total	3	0.124–0.143	mg/L	below 0.1
Specific conductance	4	359.6–420	mS/cm	200-1000
Sulfate, unfiltered	3	32.8–66.8	mg/L	0 - 250
Temperature, water	4	6.46–28	degrees Celcius	winter: 4-16; summer: 20-26
Total dissolved solids	3	218–244	mg/L	below 300
Total hardness, unfiltered	4	73–200	mg/L	60-120
Total Nitrogen, mixed forms	3	1.14–1.38	mg/L	below 0.3
Total Suspended Solids	3	18–40	mg/L	below 50
Turbidity, total	4	16.7–54	NTU	below 10

Characteristic	Number of Samples	Value Range	Units	"Good" values for surfaces water
Floating debris—severity	4	NONE–MODERATE	qualitative	
Floating foam/suds—severity	4	NONE–MODERATE	qualitative	
Oil and Grease, surface slick/sheen—severity	4	NONE–MODERATE	qualitative	
Odor Severity	4	NONE–MILD	qualitative	

µg/L = micrograms per liter; µS/cm = microsiemens per centimeter; mg/L = milligrams per liter; mg/m^3 = milligrams per cubic meter; NTU = Nephelometric Turbidity Units

Source: Water Quality Exchange 2025; Illinois Department of Health 2026; Kumar and Puri 2012; Kim et.al. 2021; Wisconsin Department of Natural Resources n.d.; Lamont-Doherty Earth Observatory 2024; Schrenk et.al. 2020; Center for Disease Control 2023c; Watershed Foundation 2026; Levings et.al. 1998; Government of Northwest Territories n.d.; Zak et.al. 2021; Continental Ponds 2022; World Health Organization 1996; ERUN 2023; Xu et.al. 2014; ERUN 2025; and California State Water Resources Control Board 2004

TABLE 5-5 WATER TEMPERATURE DATA

Temperature, water (degrees Celsius)	Temperature, air (degrees Celsius)	Date
6.46	3	2/10/2020
28.00	28	8/3/2020
23.81	19	9/22/2020
16.97	21	4/27/2021

Source: Water Quality Exchange 2025

5.1.3.2 GROUNDWATER

Groundwater within the Project Site mainly resides within a confined bedrock aquifer composed of shale and sandstone units. According to the Oklahoma Geological Survey, the groundwater quality within these shale and sandstone units is variable, with the overall quality ranging from poor to fair. Due to the presence of low permeability layers of shale and sandstone, estimations for groundwater yield from the aquifer are small, with rates as low as 0.5 gallons per minute (OGS 1989). Well records within the Oklahoma Corporation Commission database estimate the depth to groundwater in the Project area is approximately 80 feet (24 meters) below ground surface (OCC 2025).

5.1.4 GEOLOGY AND SOILS

The proposed Project is within the geologic province known as the Cherokee Platform. The bedrock at the Project Site is composed of Paleozoic-aged (298 to 323 million years ago) shale and sandstone belonging to the Boggy Formation and the Savanna and McAlester Formations (OGS 2022). The depth to bedrock at the proposed Project Site is as shallow as 10 feet (3 meters) below ground surface (OCC 2025). The thickness of the bedrock units ranges from 130 to 200 feet (40 to 61 meters).

According to the United States Department of Agriculture Natural Resource Conservation Service, the soils in the proposed Project Site include Bates-Collinsville soil (Bc), Bates and Dennis soils (BdC2), Eram-Verdigris soil (Br), Choteau silt loam (ChB), Collinsville stony loam, Dennis-Bates soil (DbC), Hector stony sandy loam (Hc), Taloka silt loam (TaA) Verdigris silty clay loam (Vf), along with soil from urban built up land (Figure 5-4; USDA 2025). These soils range from somewhat poorly drained to well drained. The soil type, drainage class, and slope percentage can affect the stability of the soil and influence the potential for flooding.

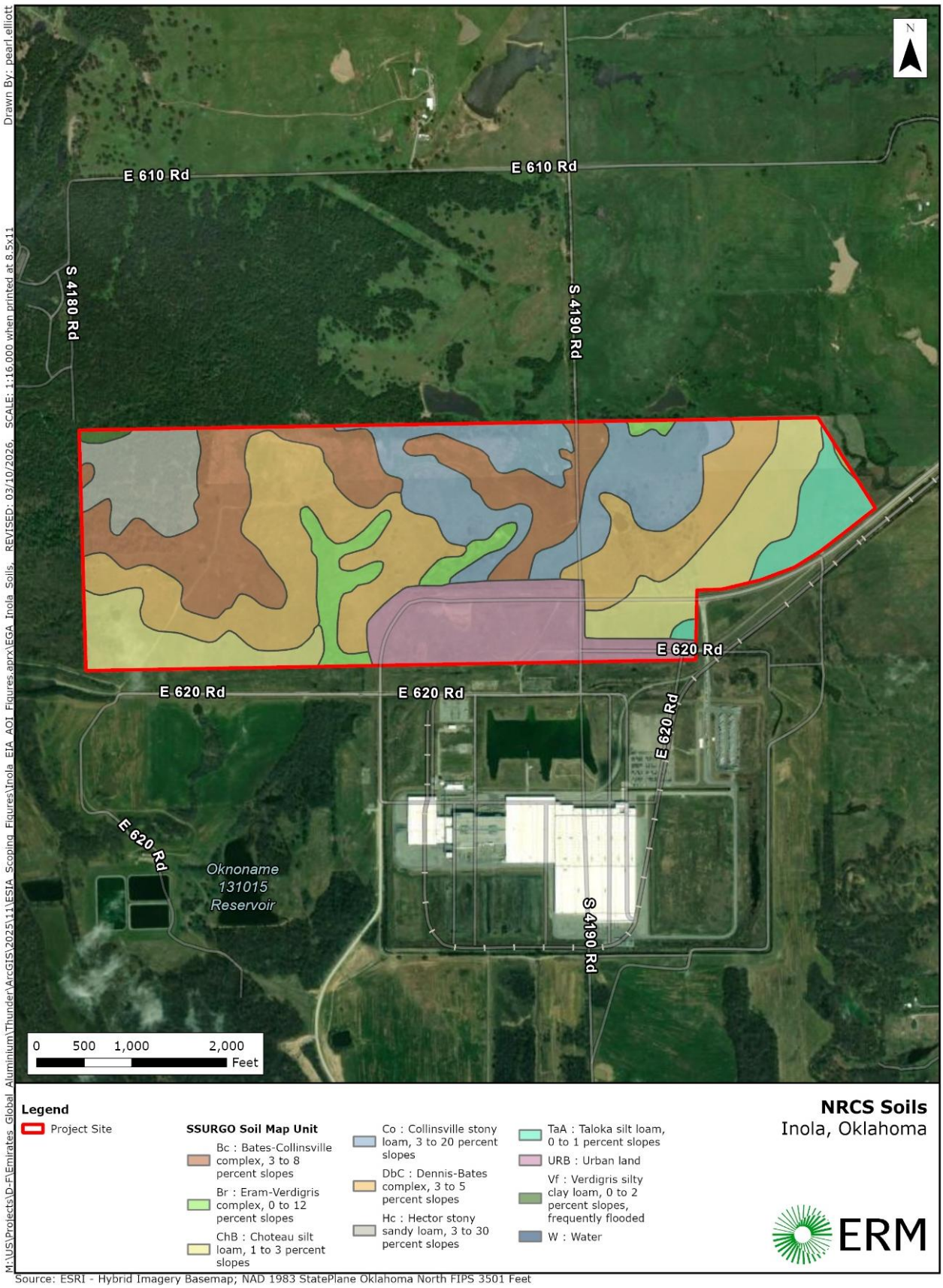

FIGURE 5-4 SOILS

5.1.5 NOISE

Although the proposed Project Site is currently undeveloped, it is located in an area that is zoned industrial which typically have ambient noise levels of 70 to 80 A-weighted decibels. The existing sound levels of the undeveloped parcel are planned to be determined by an ambient noise survey.

There are approximately 54 noise sensitive areas (NSA) located within 1 mile (1.6 kilometer) of the Project Site. These NSAs are located in all directions but are predominantly located to the northwest and southeast of the proposed Project. The nearest NSAs in each direction are summarized in Table 5-6.

Noise modeling will be conducted to predict future sound levels during construction and operation. The noise modeling findings will be used to guide placement of permanent equipment, building orientation, and noise reduction measures during construction and operation.

TABLE 5-6 NOISE SENSITIVE AREAS

NSA type	Number of NSAs	Direction	Approximate Distance of Closest Residence within NSA to Primary Boundary (feet/meters)
Residences	19	Northwest	4,622/1409
Residence	1	North	3,212/979
Residences	3	Northeast	2,917/889
Residences	5	East	1,836/560
Residences	25	Southeast	3,960/1207
Residence	1	West	3,880/1183

5.1.6 GREENHOUSE GAS AND CLIMATE CHANGE

Existing conditions for climate change are discussed for the affected resources in terms of baseline GHG emissions in the analysis area, as well as potential effects from climate change on the social, physical, and biological resources in the analysis area. To provide context for emissions associated with the Project, this section also presents GHG inventory information for national and regional sources.

5.1.6.1 NATIONAL GHG INVENTORY DATA

Compared to 1990, annual GHG emissions in the United States have decreased by 3.0 percent, based on 2022 reported data. This is down from a high of 15.2 percent above 1990 levels in 2007. There is year-to-year emissions variability due to changes in the economy, the price of fuel, weather, and other factors. The USEPA reports that 2022 annual total emissions of carbon dioxide were 1.5 percent lower than 1990 totals, total emissions of methane were 19.4 percent lower, and total emissions of nitrous oxide were 4.5 percent lower (excludes Land Use, Land Use Change, and Forestry sources). Since the early to mid-2000s, there has been a general nationwide trend of declining GHG emissions. However, this trend is not distributed evenly across economic sectors. In

2022, the latest reporting year available, transportation vehicles and electric power generation accounted for 28.4 and 24.9 percent, respectively, of U.S. emissions of GHG. Industrial sources (the reporting category that includes mining activities other than coal) account for 22.9 percent of GHG emissions nationwide.

5.1.6.2 GHG INVENTORY FOR OKLAHOMA

Table 5-7 shows the reported statewide GHG emissions within Oklahoma. Oklahoma is a relatively small contributor to U.S. GHG emissions, reflecting below 2 percent of nationwide emissions. Based on the USEPA's Greenhouse Gas Inventory Data, Oklahoma produced 133.55 million metric tonnes (MMT) of carbon dioxide equivalent in 2022 (USEPA 2022). The three highest contributing sectors to Oklahoma GHG emissions are industry (47.6 MMT), transportation (29.71 MMT), and the electric power industry (26.09 MMT).

TABLE 5-7 OKLAHOMA GHG EMISSIONS INVENTORY BY ECONOMIC SECTOR, 1990 TO 2022

Economic Sector	1990 MMT CO_{2e}	2022 MMT CO_{2e}	2022 Sector Portion of Annual Emissions	% Change, 1990 to 2022
Industry	56.4778666	47.60785168	36%	-16%
Transportation	24.13052521	29.71100264	22%	23%
Electric Power industry	36.30907096	26.09582147	20%	-28%
Agriculture	17.48517151	19.43488438	15%	11%
Commercial	5.788567813	6.173736465	5%	7%
Residential	3.925216304	4.529377214	3%	15%
Total	144.1164184	133.5526738	100%	-7%

CO_{2e} = carbon dioxide equivalent; MMT = million metric tonnes

Source: USEPA 2022

5.1.6.3 CLIMATE CHANGE PROJECTIONS

Rising GHG concentrations are expected to drive climate change, leading to shifts in temperature, precipitation patterns, and sea levels compared to historical trends, along with more frequent and intense weather events such as storms. Typically, climate change projections are developed by simulating future emissions scenarios that are calibrated using historical trends. Global circulation models are frequently used to make global high-level future projections of temperature, precipitation, and other parameters. Downscaled data from the global circulation models allow for analysis on a regional level.

The World Bank Climate Change Knowledge Portal provides a summary of climate projections from the Intergovernmental Panel on Climate Change Fifth Assessment Report (World Bank Group 2025). The projections presented here utilize the Representative Concentration Pathway 8.5 scenario, which is a worst-case scenario. In the State of Oklahoma, the monthly temperatures are expected to increase throughout all time periods. Compared to the historical reference period (1995 through 2014), the change in monthly mean temperature in the time period of 2020

through 2039 ranges from a low of 33.49°F (0.83°C) to a high of 34.77°F (1.54°C). For the time period of 2040 through 2059, the change in monthly mean temperature ranges from 34.93°F (1.63°C) to 37.02°F (2.79°C), compared to the baseline period. During the same time horizons and the same Representative Concentration Pathway 8.5 scenario, monthly average precipitation is projected to remain stable with only minimal changes. For both the 2020 through 2039 and 2040 through 2059 time periods, precipitation is projected to increase slightly in January through March and remain about the same or slightly decrease in all other months.

Analysis of climate hazards and scenarios to assess the physical climate risks that could impact the Project is ongoing. The assessment so far has focused on both acute extreme weather events and slow-onset climate drivers using data from the Global Climate Database for three climate scenarios—a low emission scenario, and worst-case scenario, and a scenario in the middle of the low and worst-case scenarios. The climate data is combined with a vulnerability assessment specific to the Project to determine the risk ratings.

For the Project Site the ERM team adjusted the vulnerability based on estimated site footprint, proximity to the Verdigris River, local topography, historic tornado paths, and additional risk information from Federal Emergency Management Agency. Climate risk scores are calculated by combining the likelihood of a hazard (climate data) with its potential consequence, which is influenced by the asset's vulnerability. As the Project designs finalize, emergency response, spill prevention, and weather resilience procedures will be developed to protect workers, nearby residents, and the environment.

Per the Global Climate Database, manufacturing infrastructure's greatest hazards are coastal and offshore, extreme winds and storms, and flooding, followed by extreme heat, landslides, water stress and drought, and wildfires. Warmer temperatures and strong winds increase the wildfire risk in Oklahoma (OK Department of Agriculture, Food, and Foresty 2025). Climate risk evaluation will inform Project design decisions.

5.2 BIOLOGICAL RESOURCES

This section characterizes the biological baseline environment of the Project Site and relevant features within the study area. The baseline draws primarily on a desktop review of publicly available sources and is supplemented by site-specific field data collected during ERM's on-site investigations in November 2025. The biological field studies performed to date (shown in yellow on Figure 5-5) included most of the Project Site (Project footprint area as shown in red on Figure 5-5) with the exception of the easternmost portion, and that a small portion of the area north of the Project Site is included. Appropriate levels of study for the Project Site will be completed during the ESIA process. As Project design is finalized, USFWS will be consulted as needed to mitigate any impacts on threatened and endangered species and critical habitats.

Protected species to be reviewed in the ESIA include those federally listed or proposed for listing under the USFWS Endangered Species Act, species protected under the MBTA and the Bald and Golden Eagle Protection Act, as well as state-listed species under Title 29 of the Oklahoma Wildlife Conservation Code and known or believed to occur in Rogers and Wagoner counties. In addition, species identified on the International Union for Conservation of Nature (IUCN) Red List for the region will be considered.

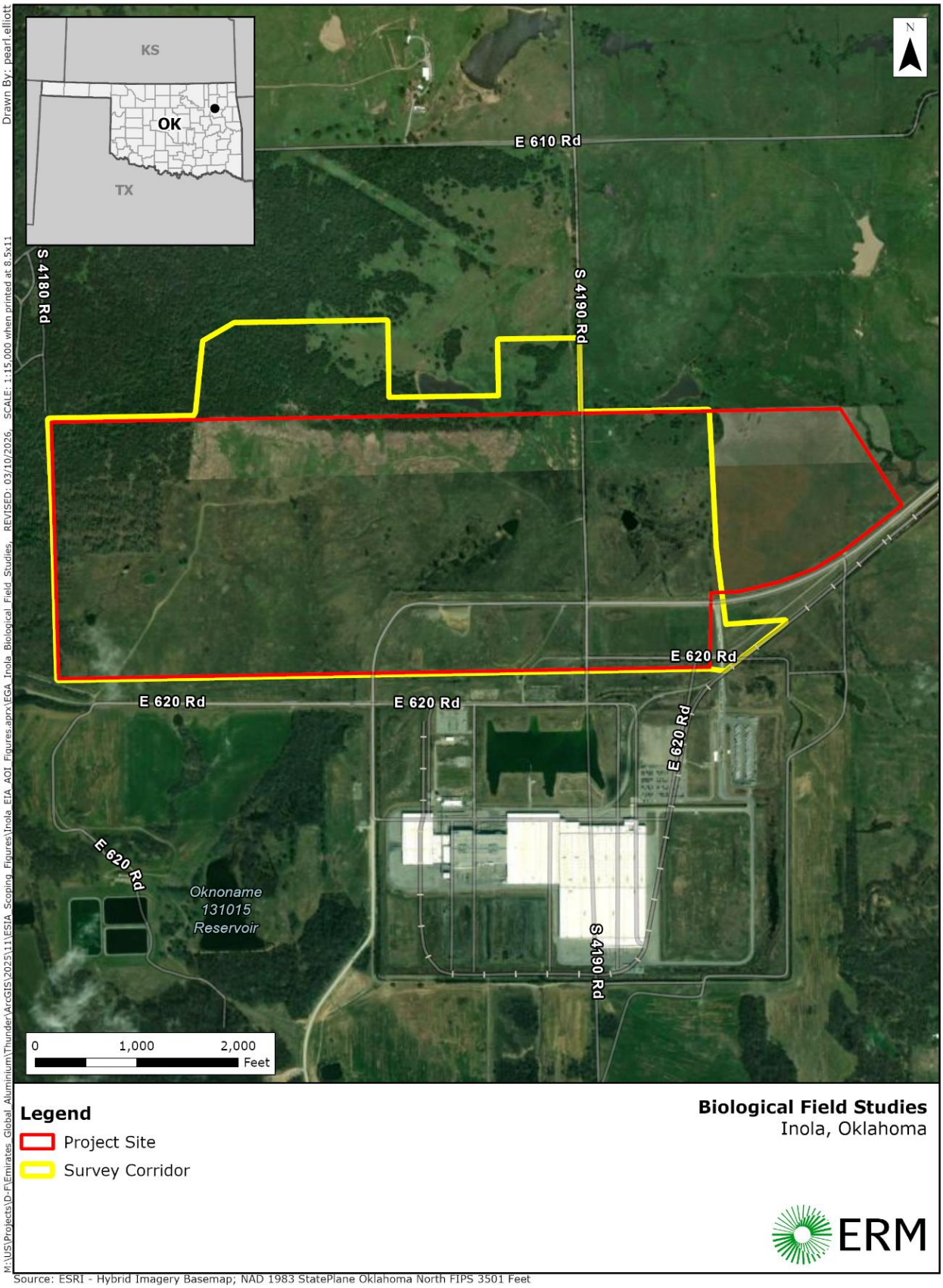

FIGURE 5-5 BIOLOGICAL FIELD STUDIES

5.2.1 NATURAL, MODIFIED, AND CRITICAL HABITATS

The Project Site is located within the Osage Cuestas (40b) Level IV Ecoregion. Natural habitats in the Osage Cuestas Ecoregion are predominantly tall grass prairie and post oak–blackjack oak forests (Woods et al. 2005). Site characteristics are consistent with this description. Much of the Project Site is considered prime farmland, which is consistent with previous land use of cattle grazing.

5.2.1.1 NATURAL COMMUNITIES

Natural communities are groups of plant and animal species that typically occur in association with each other in certain landscapes or physical environments. Factors such as vegetation composition, soil, substrate, hydrology, topography, and climate help to define a particular community. Rare and exemplary natural communities have high species diversity, multiple age classes among dominant tree species, presence of natural regeneration, standing dead snags and fallen woody debris in various stages of decomposition, an intact and fully functioning soil component, and little evidence of disturbance.

The Project Site contains some high-quality natural communities—primarily of post oak–blackjack oak forest and bottomland hardwood forest (Figure 5-6). Project design is being developed in a way to avoid or minimize impacts to the high-quality natural communities identified.

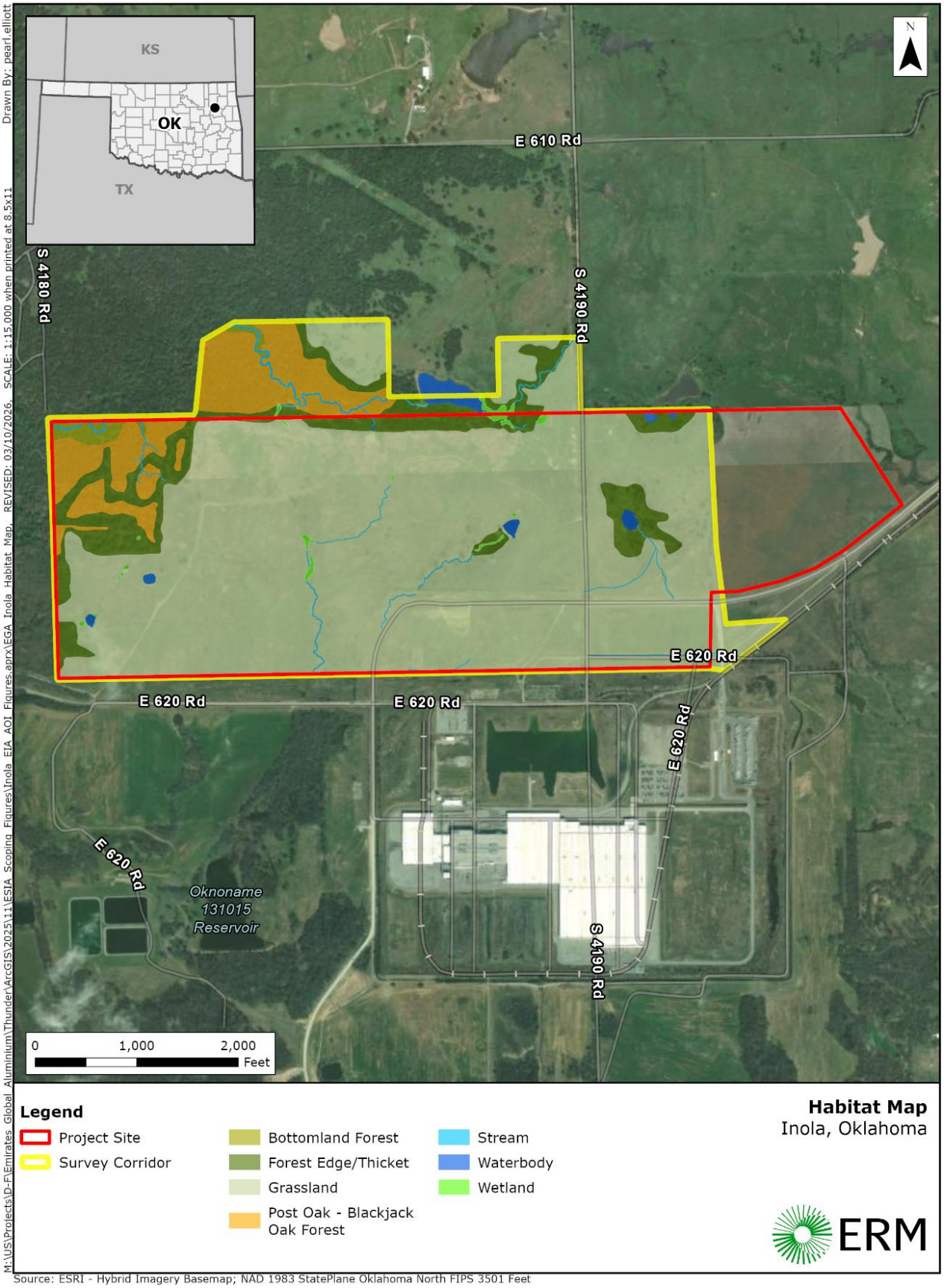

FIGURE 5-6 HABITAT MAP

5.2.1.2 MODIFIED HABITATS

The Project Site lies within modified habitat, per IFC PS6. The majority of the Project Site consists of modified or disturbed grasslands. The pre-modified—or natural community—habitat of these areas would have historically been native tallgrass prairie. Many species of native tallgrass species of vegetation persist; however, dominant species in these grassland habitats tend to be weedy and typical of disturbed grassland habitat. Other modified or disturbed habitat includes "thickets". These areas often surround man-made ponds, streams and drainages, and the hillsides surrounding these features. They consist of young trees, thick shrubs, and thorny brambles.

5.2.1.3 IUCN CRITICAL HABITATS

Critical Habitats as defined by IFC PS6 consist of areas with high biodiversity value for IUCN Red List species.

The species included in this Critical Habitat review will include Red List species under IUCN with a listing status of *Near Threatened*, *Vulnerable*, *Endangered*, and *Critically Endangered*. Species categorized as *Least Concern* will be excluded from this analysis. Federal and state-listed species with no IUCN rating will also be excluded from this analysis.

Only species with a likelihood of occurrence within the Project Site classified as Possible, Likely, or Confirmed will be reviewed for Critical Habitat. Critical Habitat presence for species with an Unlikely potential of occurrence will be regarded as "None" for species with an Unlikely potential for occurrence. Detailed methods and results of this evaluation will be presented in the ESIA. Appendix A provides a summary table of this evaluation.

5.2.2 TERRESTRIAL FLORA AND FAUNA

5.2.2.1 GENERAL TERRESTRIAL FLORA AND FAUNA

Post Oak–Blackjack Oak Forest

The post oak–blackjack oak forest is the most widespread community type in eastern Oklahoma. At the Project Site, it is characterized by a closed canopy of mature oaks and sparse ground cover over rolling hills and slopes. Post oak (*Quercus stellata*) is the dominant species, followed by blackjack oak (*Q. marilandica*) and black hickory (*Carya texana*). Pecan (*C. illinoinensis*) occurs occasionally, and sugarberry (*Celtis laevigata*) is common in the subcanopy. Slopes transitioning to bottomland forest support increased dominance of northern red oak (*Q. rubra*) and black oak (*Q. velutina*). Ground cover is generally absent due to thick leaf litter; however, wood fern (*Dryopteris* sp.) is frequently observed at tree bases. Forest structure changes along some creek plateaus, where the canopy opens and soils become thinner. Reindeer lichen (*Cladonia* sp.) was observed at one location, indicating an area with minimal disturbance from logging or cattle grazing. This forest type continues off site for hundreds of acres. Overall, the post oak–blackjack forest observed is considered high-quality and high-value habitat from an ecological and wildlife value perspective. Mast-production from oaks and hickories are a high-value food source for numerous species of wildlife.

Bottomland Hardwood Forest

Bottomland hardwood forests follow river and stream floodplain corridors across the state. The ERM November 2025 habitat survey of the bottomland hardwood forests in the northwestern portion of the Project Site identified natural forested areas dominated by pin oak (*Quercus palustris*), American sycamore (*Platanus occidentalis*), and American elm (*Ulmus americana*). Chinkapin oak (*Quercus muehlenbergii*), a wetland-associated species, was also observed within this community. The understory supported native sedges (*Carex* spp.), white avens (*Geum canadense*), and cutleaf grapefern (*Sceptridium dissectum*). One non-native species, beefsteak plant (*Perilla frutescens*), was common in bottomland areas. This forest type is associated with an intermittent stream tributary that partially flows within the Project Site and continues off site to meet the Verdigris River. Overall, the bottomland hardwood forest observed is considered high-quality and high-value habitat from an ecological and wildlife value perspective. Numerous species of birds use bottomland hardwood forests as migratory corridors.

Thickets and Forest Edge

Thickets and forest edge represent disturbed or modified woody habitats that arose from human land use. Forest edge typically extends 50 to 100 feet (15 to 30 meters) into the forest before transitioning to oak–hickory forest. Past clearing activities within post oak–blackjack oak forest have extended additional edge conditions within forest interiors. Thickets occur around open-water features, along streams, and as isolated patches within grasslands. While mature oaks and American elm may be present, a higher proportion of trees in these areas are fallen or standing snags. Vegetation is dominated by successional and invasive species, including eastern red cedar (*Juniperus virginiana*), winged elm (*Ulmus alata),* Callery pear (*Pyrus calleryana*), rusty black haw (*Viburnum rufidulum*), and possum haw (*Ilex decidua*). Ground cover commonly consists of dense Oklahoma blackberry (*Rubus oklahomus*), Japanese honeysuckle (*Lonicera japonica*), Chinese bush clover (*Lespedeza cuneata*), and Spanish needles (*Bidens bipinnata*). Although these habitats are considered low-quality from an ecological perspective, they support high abundance and diversity of bird and small mammal species, with flocks of songbirds frequently observed. The dead and dying trees observed provide habitat for bats and cavity-nesting birds. Several rabbits were flushed in these areas.

Grasslands

Historically, this community type occurred as tallgrass prairie, a once-widespread natural community across eastern Oklahoma, interspersed with post oak–blackjack oak forest. Due to its current disturbed condition, ERM classifies this area as grasslands rather than tallgrass prairie. Grasslands occupy the majority of the Project Site and are dominated by native species adapted to disturbed habitats. Evidence of recent cattle grazing was observed, and aerial imagery indicates significant ground disturbance (earthwork activity) occurred around 2023. During the November 2025 site visit, dominant species included lanceleaf ragweed (*Ambrosia bidentata*), broomsedge bluestem (*Andropogon virginicus*), and white heath aster (*Symphyotrichum ericoides*). Interspersed species, often in monotypic patches, included sneezeweed (*Helenium amarum*), prairie broomweed (*Amphiachyris dracunculoides*), curly-cup gumweed (*Grindelia squarrosa*), and woolly croton (*Croton capitatus*). Common non-native species included Bermuda grass (*Cynodon dactylon*) and cheatgrass (*Bromus tectorum*). Bird diversity and abundance is high in these

grasslands, particularly among species that utilize dense herbaceous groundcover for shelter, foraging, and nesting.

Terrestrial Fauna

During field investigations, ERM documented incidental observations of wildlife within the Project Site. These observations provide a snapshot of species presence but do not represent a comprehensive inventory. For example, many small birds observed at a distance could not be identified to species, and numerous insects (e.g., grasshoppers) were noted but not recorded to species level. The following paragraphs summarize general patterns and notable findings from these observations.

Northern harrier (*Circus hudsonius*) was observed daily hunting over grasslands in the eastern portion of the Project Site during November 2025 field investigations, indicating potential year-round residency and nesting. Barred owl (*Strix varia*) was detected within the post oak–blackjack oak forest, suggesting possible nesting during the breeding season. Red-tailed hawk (*Buteo jamaicensis*) was frequently observed throughout the Project Site. Several stick nests were documented; however, species attribution could not be confirmed. Multiple flocks of migratory songbirds were observed utilizing grassland and thicket habitats within the Project Site as non-breeding wintering areas. Cedar waxwing (*Bombycilla cedrorum*), dark-eyed junco (*Junco hyemalis*), Lincoln's sparrow (*Melospiza lincolnii*), and white-crowned sparrow (*Zonotrichia leucophrys*) were among the species observed that breed in northern North America but overwinter in Oklahoma and other parts of the southern United States.

All migratory avian species are protected under the MBTA, which prohibits the take of adults, chicks, and eggs.

Mammals commonly observed within the Project Site include white-tailed deer (*Odocoileus virginianus*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), and eastern cottontail rabbit (*Sylvilagus floridanus*). These species were confirmed during field investigations. Additional mammals likely present, based on habitat suitability, include fox squirrel (*Sciurus niger*), striped skunk (*Mephitis mephitis*), and several bat species, which may utilize forested areas and snags for roosting. Herpetofauna observed include multiple snake species; other reptiles potentially present in the area include copperhead (*Agkistrodon contortrix*) and timber rattlesnake (*Crotalus horridus*), both of which favor wooded habitats and rocky outcrops typical of the site's terrain.

5.2.2.2 STATE AND FEDERAL RARE AND PROTECTED TERRESTRIAL SPECIES

Publicly available data from the USFWS and the Oklahoma Biodiversity Information System (OBIS) indicate the potential presence of federally listed terrestrial species—proposed threatened, threatened, and endangered—within the study area. These include the federally endangered gray bat (*Myotis grisescens*), Indiana bat (*Myotis lucifugus*), and whooping crane (*Grus americana*); the federally threatened piping plover (*Charadrius melodus*), rufa red knot (*Calidris canutus rufa*), American burying beetle (*Nicrophorus americanus*), and western prairie fringed orchid (*Platanthera praeclara*), and the proposed endangered tricolored bat (*Perimyotis subflavus*).

No state-listed terrestrial species were identified in an OBIS county-wide search for Rogers and Wagoner counties. However, some federally listed species were included in the OBIS output that

were not included in the USFWS Information for Planning and Consultation (IPaC) report. Review of USGS Breeding Bird Survey shows that the nearest Breeding Bird Survey route ("Keetonville") begins 13 miles (20.9 kilometers) northwest of the Project Site. The nearest eBird hotspot ("Bluff Landing") is located 3.5 miles (5.6 kilometers) south of the Project Site. No threatened or endangered species of birds have been documented at the Keetonville survey route or Bluff Landing hot spot.

The master list of species was reviewed for their potential of occurrence, ranging from Unlikely, Possible, Likely, and Confirmed. Results of this review are included in Appendix A.

5.2.2.3 IUCN RED LIST TERRESTRIAL SPECIES

A total of 53 terrestrial species categorized as *Vulnerable* or higher on the IUCN Red List were identified through the IUCN Red List database query for the Project Site and study area. These species include four mammals, 39 birds, three insects, two plants, and four fungi. Note that the IUCN Red List database has an extremely wide search radius of 1243 miles (2,000 kilometers) around the study area and is based on the entire range of each species, not on documented occurrences; thus, the IUCN species list very likely over-states the number of species that may be present, necessitating the need to conduct biological surveys.

Of these IUCN-listed species, the following were confirmed during ERM's November 2025 field investigations: eastern meadowlark (*Sturnella magna*), Harris' sparrow (*Zonotrichia querula*), killdeer (*Charadrius vociferus*), northern bobwhite (*Colinus virginianus*), and American elm. Additional species from the IUCN list may utilize the Project Site but have not been directly observed.

The master list of species was reviewed for their potential of occurrence, ranging from Unlikely, Possible, Likely, and Confirmed. Results of this review are included in Appendix A.

5.2.3 FRESHWATER AQUATIC FLORA AND FAUNA

This section describes the freshwater aquatic flora communities and fauna observed or likely to occur based on desktop review and a field habitat assessment that occurred in November 2025. These results will be used to aid in determining the likelihood of occurrence of state and federal rare and protected species and species listed in the IUCN Red List.

5.2.3.1 GENERAL FRESHWATER AQUATIC FLORA AND FAUNA

For the purposes of the ESIA, aquatic flora will include wetland-associated plant species as well as true aquatic species.

Verdigris River

The Verdigris River lies approximately 950 feet (290 meters) west of the Project Site and is within the study area. As stated in Section 5.1.3.1, the entire Project Site drains to the Verdigris River (or its tributaries), and on-site forests are contiguous with off-site forests that connect to the river. Due to this significant ecological linkage, the Verdigris River is included in this description.

The stretch of Verdigris River nearest the Project Site lacks a sandy shoreline, gravel bars, or mudflats, precluding shorebirds from foraging and nesting. Banks are steeply sloped and forested

to the water's edge, with localized rip-rap installed for stabilization. The USACE had previously channelized the river to facilitate barge navigation, though remnants of its original sinuosity persist as flooded backwaters that provide slower-moving water compared to the main channel.

Ponds

Most open-water features within the Project Site consist of freshwater ponds that are largely unvegetated or support only sparse aquatic vegetation. Submerged and emergent species were documented in a limited number of ponds, including water purslane (*Ludwigia palustris*) and the invasive brittle waternymph (*Najas minor*). Pond margins vary in structure, with some supporting emergent wetland vegetation, while others with steeper banks transition abruptly to early successional thicket habitat. Among these features, only one pond exhibited notable ecological value, characterized by high floristic diversity. Located along the northern boundary of the Project Site and extending off site to the north, this large pond supports a population of American lotus (*Nelumbo lutea*) and a diverse wet meadow fringe, contributing significantly to the site's overall habitat complexity and biodiversity.

Within the Project Site, open-water features such ponds support an abundance of Blanchard's cricket frog (*Acris blanchardi*), as documented during field investigations. These features likely provide habitat for aquatic insects, aquatic larvae of numerous invertebrates, including dragonflies, damselflies, midges, and mayflies. Such organisms in their adult phase form an important food source for bats and aerial-foraging birds. While these ponds are unlikely to support diverse fish populations, smaller fish species are likely present, especially in the larger and more ecologically diverse pond located at the northern Project Site boundary.

Wetlands

Wetlands within the Project Site are primarily associated with the margins of ponds and streams and exhibit a composition typical of emergent wetland communities. Dominant species include lake sedge (*Carex lacustris*), lady's thumb (*Persicaria* spp.), water-plantain (*Alisma subcordatum*), seed box (*Ludwigia alternifolia*), switchgrass (*Panicum virgatum*), and witchgrass (*P. capillare*), with occasional occurrences of non-native species such as barnyard grass (*Echinochloa crus-galli*). Of particular ecological significance is a high-quality wet meadow adjoining the large pond along the northern boundary of the Project Site, which supports American lotus. This wetland community exhibits high floristic diversity, including a diverse assemblage of sedges (*Carex* spp.), spikerushes (*Eleocharis* spp.), arrowheads (*Sagittaria* spp.), and lady's thumb, contributing to the overall habitat complexity and biodiversity of the site.

Ephemeral Streams

Ephemeral streams occur within both forested and herbaceous habitats. These features range from low-gradient, shallow channels that may support vegetation to higher-gradient channels associated with topographic drainage and are typically unvegetated.

Ephemeral streams primarily provide habitat for terrestrial species, as they remain dry for most of the year. At the time of November 2025 field investigations, no ephemeral streams had flowing water, though occasional, small isolated pools of water or soil saturation were observed, providing hydration and micro-habitat for many species.

Intermittent Streams

The Project Site contains one intermittent stream associated with bottomland forest that drains directly into the Verdigris River, and two tributary intermittent steams that drain into the bottomland intermittent stream. These streams retain natural sinuosity and have not been manipulated. In some areas, such as bends, these streams have deeply incised, unvegetated banks, and a gravelly stream bed, which indicate that they move a high volume of water during storm events. Where these streams are straight, upland vegetation, including trees, may grow up to the stream edge.

Intermittent streams primarily provide habitat for terrestrial species, as they remain dry for most of the year. At the time of November 2025 field investigations, no streams had flowing water.

Several intermittent streams within the Project Site contained isolated pools of water that persist during low-flow conditions. These remnant pools provide an important water source for local wildlife and were observed supporting numerous small flocks of birds and refugia for cricket frogs. Such features enhance the ecological value of the site by offering critical hydration and foraging opportunities for avian species and other fauna, particularly during dry periods when surface water is limited.

During periods of high-water levels, these streams may also provide temporary and important breeding and local migratory habitat for small fish and herpetofauna, including fry, tadpoles, and turtle movement to suitable upland nesting sites.

5.2.3.2 AQUATIC FAUNA

State and Federal Rare and Protected Freshwater Aquatic Species

Publicly available data from the USFWS IPaC and the OBIS indicate the potential presence of federally listed aquatic species— endangered, threatened, and proposed threatened —within the study area. These include the federally endangered Neosho mucket (*Lampsilis rafinesqueana*); the federally threatened Arkansas River shiner (*Notropis girardi*), Neosho madtom (*Noturus placidus*), Ozark cavefish (*Troglichthys rosae*), shovelnose sturgeon (*Scaphirhynchus platorynchus*), rabbitsfoot (*Theliderma cylindrica*), and western fanshell (*Cyprogenia aberti*); and the proposed threatened alligator snapping turtle (*Macrochelys temminckii*).

Two of these species—Neosho mucket and Arkansas River shiner—are also state listed as endangered and threatened, respectively. No other state-listed species were identified in an OBIS county-wide search for Rogers County and adjacent Wagoner County. However, some federally listed species were included in the OBIS output that were not presented in the USFWS IPaC output. Because state-level data on species occurrence may differ than available federal data, these additional federally listed species have been conservatively retained for further review in ESIA.

The master list of species was reviewed for their potential of occurrence, ranging from Unlikely, Possible, Likely, and Confirmed. Results of this review are included in Appendix A.

IUCN Red List Freshwater Aquatic Species

For the purposes of this list, aquatic fauna species are those that spend the majority of their lives in water. A total of 14 aquatic species categorized as *Vulnerable* or higher on the IUCN Red List were identified through the IUCN Red List database query for the Project Site and study area. These species include one reptile, seven fish, one arthopod, and five mussels.

The master list of species was reviewed for their potential of occurrence, ranging from Unlikely, Possible, Likely, and Confirmed. Results of this review are included in Appendix A.

5.2.4 PROTECTED AREAS AND AREAS OF BIODIVERSITY IMPORTANCE

No private, local, state, or federal protected areas occur within the Project footprint or study area. The nearest protected area is a 3,740-acre (1513.5-hectare) United States Department of Agriculture Natural Resource Conservation Service Wetland Reserve Program conservation easement, located approximately 4.75 miles (7.6 kilometers) northwest of the Project Site. Historically, a portion of the Project Site was included in the "Rocky Point Public Use Area," which is no longer in existence.

There are no National Audubon Society Important Bird Areas in the region. The closest Important Bird Area is Tallgrass Prairie Preserve, approximately 60 miles (96.6 kilometers) northwest of the Project Site.

5.2.5 ECOSYSTEM SERVICES

Ecosystem functions, goods, and services refer to all the resources and processes supplied by natural ecosystems that benefit people (including businesses) in one way or another, either directly or secondarily through the maintaining of other ecosystem functions. According to the Millennium Ecosystems Assessments (2005), ecosystem services can be classified into four broad groups: Provisioning, Regulating, Supporting, and Cultural services.

- Provisioning services refer to the products obtained from the ecosystems (water, food, wood, etc.).
- Regulating services refers to the benefits obtained from the regulation of the ecosystem processes (regulation of water, climate, diseases, etc.).
- Supporting services refer to all the ecosystem services that are necessary for the production of all other ecosystem services such as soil formation or retention.
- Cultural services are the non-material benefits people obtain from ecosystems through spiritual enrichment, cognitive development, or recreation.

5.2.5.1 ECOSYSTEM SERVICES SCREENING

The goal of ecosystem services screening is to arrive at a comprehensive list of the ecosystem services potentially present on the Project Site and evaluate the likelihood of ecosystem presence. Screening of ecosystem services draws upon existing information and specialist knowledge on the ecosystems, habitats and communities present in the Project Site.

Ecosystem services that will be considered are provided in Table 5-8.

TABLE 5-8 LIST OF ECOSYSTEM SERVICES POTENTIALLY PRESENT IN THE PROJECT SITE

Ecosystem Service	Description, Examples
Food: fish	Fish caught for subsistence or commercial sale in rivers downstream of the Project
Food: wild plants	Wild plants collected in natural areas for consumption
Food: wild meat	Animals hunted primarily for food
Food: cultivated crops	Annual and permanent crops grown for subsistence use and commercial sale
Livestock grazing	Sedentary and nomadic livestock grazing
Biomass fuel	Wood, dung, and plant matter collected for fuel
Timber and wood products	Wood collected for local use or for sale as timber, wood pulp, paper
Non-wood fibers and resins	Grasses collected for thatching, brooms, and crafts
Freshwater	Freshwater for bathing, drinking, irrigation, laundry, household, and industrial use
Natural medicines	Natural medicines and other biological material for commercial or domestic use
Ornamental resources	Pelts, carved or decorative animal products, live animal trade
Genetic resources	Genes and genetic information used for animal breeding, plant improvement, and biotechnology
Regulation of air quality	The influence ecosystems have on air quality by extracting chemicals from the atmosphere (i.e., serving as a "sink") or emitting chemicals or other pollutants to the atmosphere (i.e., serving as a "source")
Climate regulation: global	Carbon sequestration (impacts on global climate change)
Climate regulation: local	Regulation of temperature, shade air quality by vegetated areas
Regulation of water timing and flows	Influence ecosystems have on the timing and magnitude of water runoff, flooding, and aquifer recharge
Water purification and waste treatment	Role played by vegetation / wetlands in the filtration and decomposition of organic wastes and pollutants and the assimilation and detoxification of compounds
Fire regulation	Regulation of fire frequency and intensity (e.g., dense forest can provide firebreaks)
Pest regulation	Predators from forests, grassland areas, etc. may control pests attacking crops or livestock
Disease regulation	Influence ecosystems have on the incidence and abundance of human pathogens
Erosion & sedimentation regulation	Role of vegetation / wetlands in regulating erosion on slopes and riparian areas and sedimentation of rivers
Pollination	Birds, insects, and some small mammals pollinate certain flora species, including some agricultural crops

Ecosystem Service	Description, Examples
Soil formation	Natural soil-forming processes in vegetated areas
Primary production & habitat provision	Formation of biological material and habitat creation by plants through photosynthesis and nutrient assimilation
Nutrient & water cycling	Flow of nutrients (e.g., nitrogen, sulfur, phosphorus, carbon) and water through ecosystems
Spiritual or religious value	Natural spaces or species with spiritual or religious importance
Traditional practices	Cultural value placed on traditional practices such as hunting, fishing, crafts, and use of natural resources
Recreation and tourism	Use of natural spaces and resources for tourism and recreation (e.g., swimming, boating, hunting)
Aesthetic value	Cultural value placed on the aesthetic value provided by landscapes, natural landmarks
Educational and inspirational values	Information derived from ecosystems used for intellectual development, culture, art, design, and innovation
Non-use value of biodiversity (e.g., existence, bequest value)	Species and areas valued globally as of high conservation value

5.3 SOCIOECONOMICS

The direct socioeconomic study area (SSA) includes the Project Site, adjacent industrial park tenants, residences and sensitive receptors (such as churches, schools, hospitals, or prisons) within 3 miles (4.8 kilometers) of the site, and the town of Inola, as the nearest population center (Figure 5-7). For reporting purposes, Census Tract (CT) 505.02 was used to represent the Project and adjacent industrial park tenants as this CT encompasses both. CT 308 and CT 505.01 encompass residences and sensitive receptors within a 3-mile (4.8-kilometer) radius of the site and are thus used representatively to account for that population.

EGA and Century are completing socioeconomic studies to estimate job creation, business activity, local tax benefits, and potential changes in community services and infrastructure needs. This helps local and state partners plan for economic growth and public service demands.

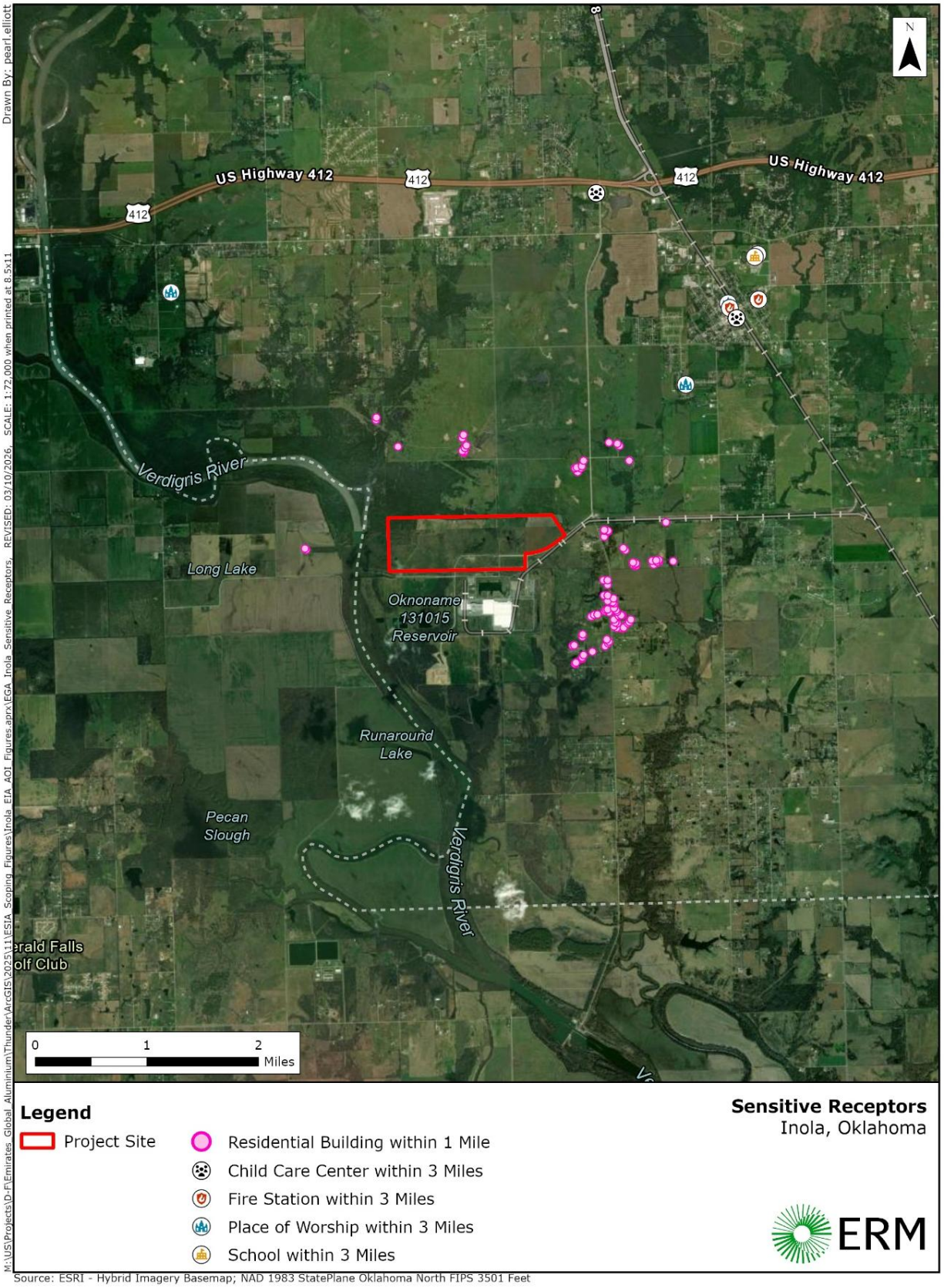

FIGURE 5-7 SENSITIVE RECEPTORS WITHIN 1 AND 3 MILES

Inola and the immediate surrounding area are rural and unlikely to be able to fully support the Project with construction supplies, labor, and the services to support workers. As such, the wider indirect SSA includes regional communities within approximately 25 miles (40.2 kilometers), including Claremore and the Tulsa Metropolitan Statistical Areas (MSA), and the Muscogee (Creek) Nation, Cherokee Nation, and Osage Nation tribal jurisdictions. These communities represent the regional infrastructure and service providers that are most likely to provide access to labor, supplies, and other services. From the three tribal jurisdictions, data for Rogers and Wagoner counties were extracted to represent the most immediate neighbors to the Project. The Project is located in Rogers County, and Wagoner County is immediately adjacent to the Project, on the opposite side of the Verdigris River. The Tulsa MSA consists of seven Oklahoma counties (Creek, Okmulgee, Osage, Pawnee, Rogers, Tulsa, and Wagoner). Claremore is Rogers County's seat (Oklahoma Employment Security Commission 2023). All of the counties included in the Tulsa MSA are also located in one of the tribal jurisdictions. As such, there is considerable overlap in the data presented for the indirect SSA and data should not be considered cumulatively.

The direct and indirect SSAs are different for cultural heritage and are addressed in Section 5.3.6 accordingly.

5.3.1 DEMOGRAPHICS

Oklahoma demographics are included throughout this section for comparative purposes only to understand how the direct and indirect SSAs relate to the state as a whole. Table 5-9 and 5-10 present demographic information on the direct and indirect SSAs. Apart from the town of Inola and the Osage Reservation, the direct and indirect SSAs have all grown in population since 2010 (Table 5-9). Both the direct and indirect SSAs are majority white alone, not Hispanic or Latino. While the direct SSA and the indirect SSA include Muscogee (Creek) Nation, Cherokee Nation, and Osage Nation jurisdictional lands, Native Americans are not a majority population in either SSA (5-10). Tribal considerations are discussed in Section 5.3.7.

In general, the direct and indirect SSAs have a population below poverty lower than the state average for Oklahoma, except for the Cherokee Oklahoma Tribal Statistical Area (OTSA) (Table-10).

TABLE 5-9 POPULATION CHANGE OVER TIME 2010–2023

Area	Population 2010	Population 2023	Population Change (%)
Oklahoma	3,675,339	3,995,260	8.7
Direct SSA			
Inola	1,914	1,863	(2.7)
CT 308	2,477	3,817	54.1
CT 505.01	2,764	3,312	19.8
CT 505.02	3,348	3,362	0.4

Area	Population 2010	Population 2023	Population Change (%)
Indirect SSA			
Cherokee OTSA	496,119	517,108	4.2
Creek OTSA	742,695	822,902	10.8
Osage Reservation	47,192	45,963	(2.6)
Tulsa MSA	917,367	1,026,209	11.9
Rogers County	85,044	97,235	14.3
Wagoner County	70,232	84,339	20.1
Claremore City	18,416	19,921	8.2

Source: USCB 2010 and USCB 2023b

5.3.1.1 VULNERABLE POPULATIONS

Vulnerable populations are defined as groups of people who are generally at higher risk for adverse health outcomes due to their race, ethnicity, socioeconomic status, age, or other demographic factors. For the vulnerable populations analysis, the direct SSA was subdivided further into census block groups, a subsection of CTs (Figure 5-8). As per Table 5-11, in general, the direct SSA is less diverse demographically than Oklahoma as a whole and has a smaller low-income population, defined as the population below the poverty level. CT 505.02, block group 3 has a low-income population roughly 5 percent higher than the state average and as such, could be considered a potentially vulnerable population based on socioeconomic data. Smaller pockets of vulnerable people may exist within census block groups, even if the census block group is not considered a vulnerable population.

TABLE 5-10 COMMUNITY ETHNICITY, RACE, AND LOW-INCOME DEMOGRAPHICS

Area	Total Population	White (Not Hispanic) (%)	Black or African American (%)	American Indian and Alaskan Native (%)	Asian (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority[a] (%)	Population Below Poverty Level (%)
Oklahoma	3,995,260	62.8	6.9	6.8	2.3	0.2	0.3	8.5	12.3	37.2	15.0
Direct SSA											
Inola	1,863	70.6	1.4	10.1	0.5	0.0	0.4	13.8	3.1	29.4	7.5
CT 308	3,817	73.7	1.1	8.2	2.0	0.0	0.4	10.6	4.2	26.3	5.6
CT 505.01	3,312	77.1	1.4	7.7	0.2	0.0	0.0	10.5	3.0	22.9	4.2
CT 505.02	3,362	74.4	0.8	7.9	2.5	0.0	0.2	9.8	4.4	25.6	12.2
Indirect SSA											
Cherokee OTSA	517,108	57.9	5.3	15.7	1.3	0.1	0.3	10.3	9.1	42.1	16.2
Creek OTSA	822,902	62.4	6.9	6.9	3.1	0.1	0.3	8.8	11.5	37.6	13.8
Osage Reservation	45,963	62.2	10.2	10.6	0.2	0.0	0.2	12.1	4.5	37.8	12.5
Tulsa MSA	1,026,209	61.7	7.5	6.8	2.8	0.1	0.3	8.8	12.0	38.3	13.4
Rogers County	97,235	69.5	0.9	12.1	1.7	0.1	0.4	9.5	5.9	30.5	9.5
Wagoner County	84,339	67.6	3.4	8.1	2.1	0.0	0.4	10.2	8.2	32.4	8.6

Area	Total Population	White (Not Hispanic) (%)	Black or African American (%)	American Indian and Alaskan Native (%)	Asian (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority[a] (%)	Population Below Poverty Level (%)
Claremore City	19,921	64.2	1.8	17.1	0.9	0.2	0.1	9.3	6.4	35.8	12.5

Source: USCB 2023c and 2023d

Gray shading indicates reference data. Potentially vulnerable populations are shaded green.
[a] "Minority" refers to people who reported their ethnicity and race as something other than non-Hispanic White.

TABLE 5-11 VULNERABLE POPULATIONS

Area	Total Population	White (Not Hispanic) (%)	Black or African American (%)	American Indian and Alaskan Native (%)	Asian (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority[a] (%)	Population Below Poverty Level (%)
Oklahoma	3,995,260	62.8	6.9	6.8	2.3	0.2	0.3	8.5	12.3	37.2	15.0
CT 505.01, BG 1	1,327	79.5	0.6	8.1	0.5	0.0	0.0	9.9	1.5	20.5	2.8
CT 505.01, BG 2	1,985	75.6	2.0	7.5	0.0	0.0	0.0	10.9	4.0	24.4	5.3
CT505.02, BG 1	1,777	73.3	0.7	8.9	1.1	0.0	0.4	12.3	3.3	26.7	7.6
CT 505.02, BG 2	607	81.5	1.0	8.2	2.3	0.0	0.0	3.6	3.3	18.5	15.0

Area	Total Population	White (Not Hispanic) (%)	Black or African American (%)	American Indian and Alaskan Native (%)	Asian (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority[a] (%)	Population Below Poverty Level (%)
CT 505.02, BG 3	978	72.0	0.8	5.9	5.1	0.0	0.0	9.0	7.2	28.0	19.8
CT 308, BG 1	1,490	71.3	2.8	10.4	5.0	0.0	1.0	6.4	3.2	28.7	3.8
CT 308, BG 2	2,327	75.2	0.0	6.7	0.0	0.0	0.0	13.2	4.8	24.8	6.8

Source: USCB 2023c and 2023d

Gray shading indicates reference data. Potentially vulnerable populations are shaded green.
[a] "Minority" refers to people who reported their ethnicity and race as something other than non-Hispanic White.
CT = census tract; BG = block group

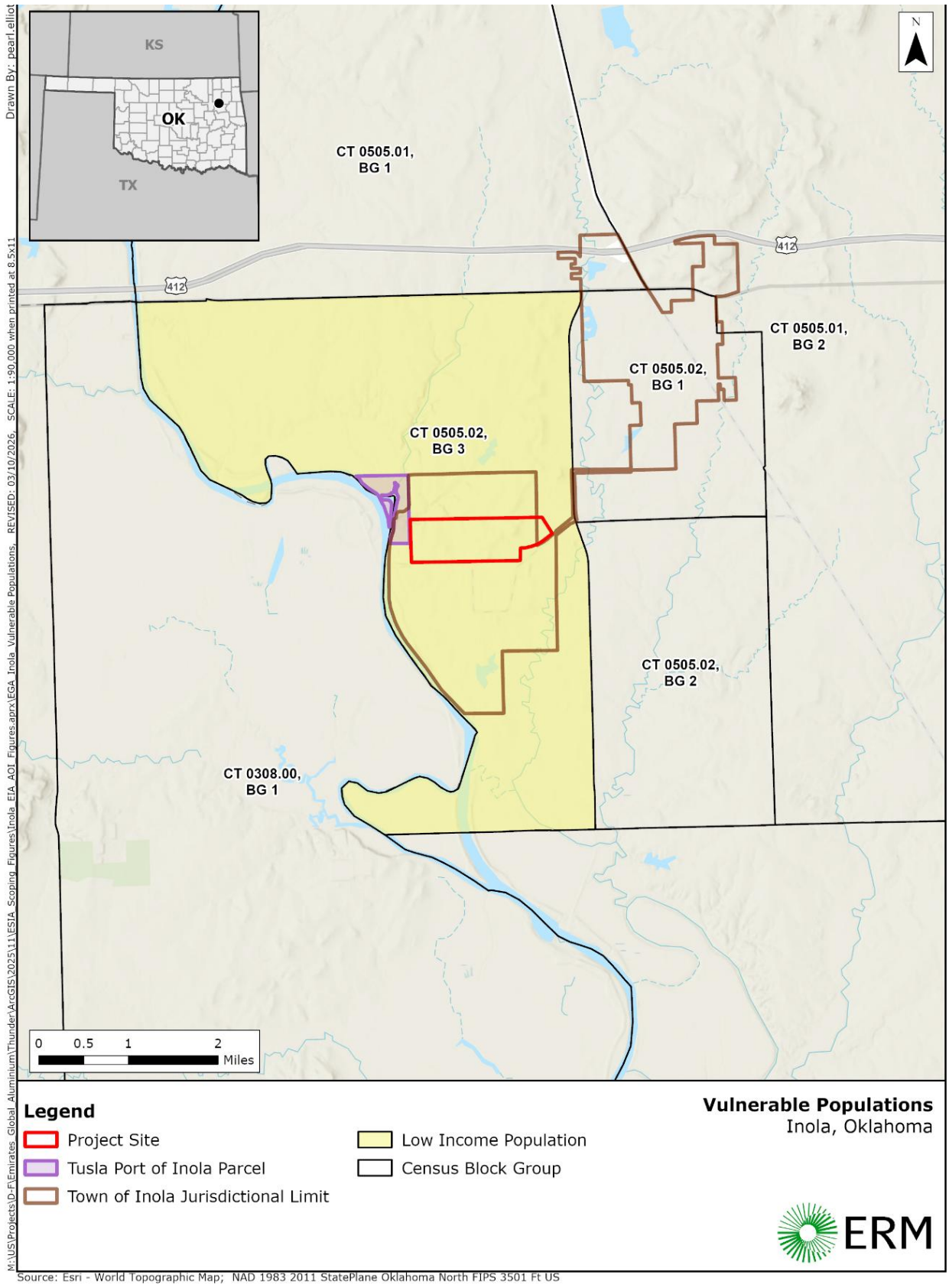

FIGURE 5-8 VULNERABLE POPULATIONS WITHIN DIRECT SSA

TABLE 5-12 AGE AND SEX

Area	Median Age	Population under age 18 (%)	Population aged 65+ (%)	Male (%)	Female (%)
Oklahoma	36.9	24.1	16.1	49.8	50.2
Direct SSA					
Inola	36.3	22.9	17.0	50.6	49.4
CT 308	37.4	25.0	14.0	57.5	42.5
CT 505.01	34.7	25.4	16.9	47.0	53.0
CT 505.02	36.9	24.3	18.5	48.5	51.5
Indirect SSA					
Cherokee OTSA	38.6	24.4	17.5	49.7	50.3
Creek OTSA	37.4	24.2	16.1	49.3	50.7
Osage Reservation	43.3	21.3	20.9	50.5	49.5
Tulsa MSA	37.3	24.5	15.9	49.4	50.6
Rogers County	39.3	23.2	16.9	50.1	49.9
Wagoner County	38.8	23.8	16.9	49.8	50.2
Claremore City	36.2	22.0	19.8	48.2	51.8

Source: USCB 2023a and 2023i

5.3.2 EDUCATION, ECONOMY, AND INDUSTRY

Table 5-13 includes information on education attainment, unemployment, median household income, and poverty. Using the Headwaters Economics Bureau of Land Management socioeconomic reporting, Rogers and Wagoner County job industry changes between 2001 and 2022 show that while most industries increased job availability in that period, there are notable job industries that saw a percent decrease: farm industry jobs decreased 23.9 percent in Wagoner County and 22.8 percent in Rogers County, manufacturing industry jobs decreased by 32.1 percent in Rogers County, and utilities industry jobs decreased by 58.3 percent in Rogers County (BLM 2025a and 2025c). The industry that saw the largest growth in jobs between 2001 and 2022 in Rogers County was management of companies, up 68.1 percent. In Wagoner County, utilities saw the greatest increase, up 88.9 percent (BLM 2025a and 2025c).

Except in CT 505.02, where manufacturing is the largest industry by number of employees, education, health care and social assistance is the industry with the highest percentage of employees in the direct and indirect SSA. Retail trade and manufacturing were commonly the second and third largest industries across the direct and indirect SSA. Overall, unemployment rates are on average with the state, though in Inola the 8.1 percent unemployment rate is nearly twice the state average. Educational attainment within the direct and indirect SSA are in line with state averages. The median income across the direct and indirect SSA is variable, though largely

in line with state averages. CT 308 has the largest median income ($99,750) and Claremore City the lowest ($57,120) (Table 5-13).

TABLE 5-13 SELECTED ECONOMIC CHARACTERISTICS

Area	Population aged 16+ in labor force	Population aged 16+ in labor force (%)	Unemployment Rate (%)	Median Household Income ($)	Population aged 25+ with at least a high school diploma (%)	1st largest industry by employment numbers	2nd largest industry by employment numbers	3rd largest industry by employment numbers
Oklahoma	1,925,085	61.3	4.9	63,603	89.1	Educational services, and health care and social assistance	Retail trade	Professional, scientific, and management, and administrative and waste management services
Direct SSA								
Inola	948	63.2	8.1	60,500	89.5	Educational services, and health care and social assistance	Manufacturing	Professional, scientific, and management, and administrative and waste management services
CT 308	1,939	65.8	1.2	99,750	90.9	Educational services, and health care and social assistance	Manufacturing	Retail trade
CT 505.01	1,557	62.0	1.0	91,250	87.6	Educational services, and health care and social assistance	Manufacturing	Construction

Area	Population aged 16+ in labor force	Population aged 16+ in labor force (%)	Unemployment Rate (%)	Median Household Income ($)	Population aged 25+ with at least a high school diploma (%)	1st largest industry by employment numbers	2nd largest industry by employment numbers	3rd largest industry by employment numbers
CT 505.02	1,590	60.3	6.0	68,269	86.1	Manufacturing	Educational services, and health care and social assistance	Retail trade
Indirect SSA								
Cherokee OTSA	238,375	58.7	5.5	59,140	88.0	Educational services, and health care and social assistance	Manufacturing	Retail trade
Creek OTSA	405,378	62.8	5.0	66,899	90.4	Educational services, and health care and social assistance	Retail trade	Manufacturing
Osage Reservation	20,314	54.1	5.4	60,482	89.6	Educational services, and health care and social assistance	Retail trade	Manufacturing
Tulsa MSA	511,915	63.7	5.2	67,823	90.1	Educational services, and health care and social assistance	Retail trade	Manufacturing

Area	Population aged 16+ in labor force	Population aged 16+ in labor force (%)	Unemployment Rate (%)	Median Household Income ($)	Population aged 25+ with at least a high school diploma (%)	1st largest industry by employment numbers	2nd largest industry by employment numbers	3rd largest industry by employment numbers
Rogers County	49,281	63.7	4.7	77,688	92.2	Educational services, and health care and social assistance	Retail trade	Transportation and warehousing, and utilities
Wagoner County	42,206	63.6	4.8	78,520	91.7	Educational services, and health care and social assistance	Manufacturing	Retail trade
Claremore City	9,640	60.0	5.7	57,120	92.4	Educational services, and health care and social assistance	Arts, entertainment, and recreation, and accommodation and food services	Retail trade

Source: USCB 2023h and USCB 2023j

5.3.3 SOCIAL INFRASTRUCTURE

5.3.3.1 HOUSING, VACANCY, AND COMMUTING

High in-commuting rates may indicate the presence of a "bedroom" community in an adjacent county and/or the presence of a regional service center. This scenario can separate tax revenues from demands for services, complicating fiscal planning for local governments. In Rogers County, 56.1 percent of the population work outside the county and in Wagoner County 72.3 percent of workers travel outside the county for work. Nationally only 25.3 percent of workers travel outside their home county for work (BLM 2025a and 2025c). Given the proximity of both counties to the Tulsa MSA, it is likely that many of those who commute outside of their county are working in the Tulsa MSA, where there are more opportunities for employment. The average commute for workers in Rogers and Wagoner counties was 23 to 24 minutes, further supporting the theory that many residents of Rogers and Wagoner counties commute to the Tulsa MSA for work (BLM 2025a and 2025c).

Areas with low vacancy rates may struggle to accommodate population influxes connected with new projects. The national vacancy rate in 2023 was 10.4 percent. In Rogers County the vacancy rate was 7.7 percent, in Wagoner County 8.8 percent, and in Tulsa County 9.1 percent (BLM 2025a, 2025b, and 2025c).

Headwaters Economics' Neighborhoods at Risk report (Table 5-14) shows 8.9 percent of occupied housing units in Rogers County are mobile homes, compared to 5.1 percent nationally. In Wagoner County 10.6 percent of occupied housing units are mobile homes. While those are higher than the national rates, the percentages decreased slightly between 2010 and 2023 (-1.3 percent in Rogers County and -0.5 percent in Wagoner County) (Headwaters Economics 2025a-l). These findings are particularly significant due to the occurrence of extreme weather events, such as tornadoes and flooding, in the area. In general, more urban areas such as Tulsa, Creek OTSA (which includes Tulsa), and Claremore City have a higher-than-average number of rental homes.

Rental homes are more likely to be less well-maintained and typically renters pay a greater percentage of their annual income in rent than homeowners (Headwaters Economics 2025a). Housing costs and availability will also be a factor in the viability of introducing a project to a location. Nationally, 49.7 percent of renter households spend more than 30 percent of their household income on rent (USCB 2024).

TABLE 5-14 SELECTED HOUSING STATISTICS

Area	Mobile Homes (%)	Rental Homes (%)	Median Contract Rent ($)	Median Housing Costs with Mortgage ($)	Median Housing Costs without Mortgage ($)	Median Home Value in 2023 ($)
Oklahoma	7.5	34.2	772	1,479	496	191,477
Direct SSA						
Inola	6.1	27.6	686	1,225	518	175,512

Area	Mobile Homes (%)	Rental Homes (%)	Median Contract Rent ($)	Median Housing Costs with Mortgage ($)	Median Housing Costs without Mortgage ($)	Median Home Value in 2023 ($)
CT 308	18.0	11.5	637	1,670	436	278,512
CT 505.01	15.2	13.9	647	1,573	508	235,046
CT 505.02	13.1	16.6	691	1,325	527	191,477
Indirect SSA						
Cherokee OTSA	11.9	29.7	687	1,362	442	173,143
Creek OTSA	5.1	36.1	825	1,530	544	209,914
Osage Reservation	13.6	21.7	533	1,415	481	177,469
Tulsa	1.3	48.0	828	1,527	534	195,288
Rogers County	8.9	22.2	783	1,537	521	228,866
Wagoner County	10.6	19.0	801	1,498	510	222,480
Claremore City	2.8	45.9	766	1,261	513	177,675

Source: Headwaters Economics 2025a, 2025b, 2025c, 2025d, 2025e, 2025f, 2025g, 2025h, 2025i, 2025j, 2025k, and 2025l; USCB 2023f and 2023g

Nationally, 27.4 percent of homeowners pay more than 30 percent of the household income to their mortgage. In Rogers County, that percentage is 21.1 percent and in Wagoner County it is 20.1 percent. For renters the national percentage of those who pay more than 30 percent of household income in rent is 46.9 percent. In Rogers County 37.2 percent of renters pay over 30 percent of household income in rent and in Wagoner County it is 40.2 percent (Headwaters Economics 2025j and 2025l).

There are few vacant homes are available for rent or sale within the direct SSA. Tulsa MSA and the Creek OTSA, within which Tulsa is largely located, contain the most available rental stock (Table 5-15).

TABLE 5-15 VACANCY STATISTICS

Area	Vacant (#)	For Rent (%)	Rented, Not Occupied (%)	For Sale or Sold, Not Occupied (%)	For Seasonal, Recreational, or Occasional Use (%)	Other Vacant (%)
Oklahoma	220,256	17.7	2.4	11.6	14.1	54.2
Direct SSA						

Area	Vacant (#)	For Rent (%)	Rented, Not Occupied (%)	For Sale or Sold, Not Occupied (%)	For Seasonal, Recreational, or Occasional Use (%)	Other Vacant (%)
Inola	67	3.0	14.9	11.9	0.0	70.1
CT 308	81	0.0	0.0	0.0	0.0	100.0
CT 505.01	110	0.0	0.0	8.2	28.2	63.6
CT 505.02	157	1.3	12.1	5.1	0.0	81.5
Indirect SSA						
Cherokee OTSA	35,466	9.5	1.3	8.1	29.0	52.1
Creek OTSA	36,704	20.8	4.8	11.5	11.9	51.0
Osage Reservation	2,727	6.4	1.8	6.7	14.4	70.8
Tulsa	42,888	19.6	4.6	11.9	7.9	56.0
Rogers County	2,984	10.1	2.1	18.5	7.8	61.6
Wagoner County	2,966	9.1	1.0	9.9	15.2	64.8
Claremore City	680	22.8	3.2	15.0	2.4	56.6

Source: USCB 2023e

5.3.3.2 HEALTHCARE

People who lack health insurance are disadvantaged by several different mechanisms. They may avoid or delay diagnoses, treatment, and/or medication and thus may increase their odds of poor health. They do not have a regular place of care, and they are not benefitting from the standard of care afforded to many Americans. The Neighborhoods at Risk report from Headwaters Economics for Rogers County shows 11.3 percent of the Rogers County population do not have health insurance, compared to a national rate of 8.6 percent. In Wagoner County 11.5 percent of the population do not have health insurance (Headwaters Economics 2025j and 2025l).

The national ratio of population to primary care physicians is 1,330:1. The national ratio of population to dentists is 1,360:1. In Rogers County, the population to primary care physicians ratio is 2,690:1 and the population to dentist ratio is 2,250:1. In Wagoner County 3650:1 is the population to primary care physicians ratio and 5780:1 is the population to dentist ratio (County Health Rankings and Roadmaps 2025a and 2025b). The counties have both metropolitan and rural living conditions with residents in the Tulsa MSA. Services and access to health infrastructure are often better in less rural locations.

5.3.3.3 EDUCATION

Several public school districts are within the direct and indirect SSAs. Table 5-16 includes public schools in Rogers and Wagoner counties, as well as the largest public school district covering Tulsa MSA, the Tulsa School District, to provide a representative picture of public schools within the direct and indirect SSAs which would support school-aged children of temporary or permanent workers associated with the Project.

There are 10 colleges and universities within Tulsa, including The University of Tulsa, University of Oklahoma—Tulsa, and Oklahoma State University—Tulsa, which provide opportunities for higher education and advanced degrees (Oklahoma State Regents for Higher Education 2025).

TABLE 5-16 PUBLIC SCHOOL STATISTICS

District	County	Grade Span	Total Schools (#)	Total Students (#)	Teacher/ Student Ratio
Claremore	Rogers	Pre-K–12	6	3,884	1 : 15.25
Coweta	Wagoner	Pre-K–12	8	3,595	1 : 17.10
Okay	Wagoner	Pre-K–12	2	367	1 : 15.25
Porter Consolidated	Wagoner	Pre-K–12	2	560	1 : 16.51
Wagoner	Wagoner	Pre-K–12	4	2,023	1 : 13.86
Tulsa	Tulsa	Pre-K–12	69	33,562	1 : 18.44

Source: NCES 2024a, 2024b, 2024c, 2024d, 2024e, 2024f

5.3.3.4 EMERGENCY RESPONSE

Inola Fire Department, a volunteer fire department, is responsible for Inola and surrounding areas, including the Project area. The department is trained to respond to industrial facilities emergencies and chemical fires (Inola Oklahoma 2025). The Inola Police Department will respond to nearby calls in the Inola area, as needed (Inola Oklahoma 2025). The Rogers County Sheriff's Office can also respond to emergencies within Rogers County (Rogers County Sheriff's Office 2025). TPOI is planning additional emergency response for the industrial park which will be in place prior to start of the Project operations. The Project may have emergency response support at the Project Site as well, to be determined during Project design discussions and described in the Draft ESIA Document.

5.3.3.5 UTILITIES

The Tulsa Port Authority allocated the use of pandemic relief funds to transition Inola's wastewater treatment system from a lagoon system to a treatment plant at the port and the 2,200-acre (890.3-hectare) industrial park. A centralized wastewater treatment plant at the Port of Inola is in development and is slated to be completed in October 2026, before the Project would be operational.

Water used for the Project will be surface waters and are permitted for such use (see Section 5.1.3: Water Quality and Water Resources). PSO will provide electricity and is currently discussing details with EGA and Century.

The Project will generate solid and hazardous waste; plans for managing these wastes are in development. All wastes will be managed as required by applicable regulations.

5.3.4 COMMUNITY AND OCCUPATIONAL HEALTH AND SAFETY

5.3.4.1 COMMUNITY HEALTH

Health-related social needs are the day-to-day living conditions (e.g., access to food, housing, transportation, utilities, and personal safety) that directly affect a person's health and ability to receive care. Unmet social needs can impact health through disease outcomes, such as chronic stress, and in further impacting the ability to access needed resources. Unmet social needs themselves may be influenced by larger structural determinants of health and may be differentially experienced by people of vulnerable population groups.

Overall, the prevention and health status indicators are worse than the national average for the SSA counties and population centers (Tables 5-17 and 5-18). Food insecurity numbers for Inola and Tulsa are greater than the national average. The lack of access to fresh food has consequences for public health and higher rates of nutrition-related disease are exacerbated by those service gaps. In all health-related social needs categories, Tulsa has the greatest health-related social needs (Table 5-18).

TABLE 5-17 CENTERS FOR DISEASE CONTROL AND PREVENTION PLACES HEALTH OUTCOMES

Area	Asthma among Adults (crude prevalence %)	Cancer or melanoma among adults (crude prevalence %)	Chronic obstructive pulmonary disease among adults (crude prevalence %)	Coronary heart disease among adults (crude prevalence %)	Diagnosed diabetes among adults (crude prevalence %)	Obesity among adults (crude prevalence %)
United States	9.9 (9.7–10.1)	8.2 (8.0–8.3)	6.8 (6.6–6.9)	6.8 (6.7–7.0)	12.0 (11.8–12.2)	33.3 (33.0–33.6)
Direct SSA						
Town of Inola	12.5 (11.1–14.1)	7.9 (7.1–8.8)	9.4 (8.5–10.4)	8.4 (7.7–9.3)	13.1 (11.5–15.0)	43.1 (36.6–49.8)
Indirect SSA						
Rogers County	11.5 (10.2–13.0)	8.3 (7.5–9.2)	7.9 (7.0–8.8)	7.8 (7.0–8.6)	12.4 (10.8–14.1)	41.0 (34.7–47.6)
Wagoner County	11.9 (10.5–13.5)	8.3 (7.4–9.1)	7.6 (6.9–8.5)	7.6 (6.8–8.4)	12.2 (10.7–14.1)	43.6 (36.8–50.9)
City of Tulsa	12.2 (10.9–13.6)	7.1 (6.4–7.7)	8.2 (7.4–9.0)	7.8 (7.1–8.5)	13.4 (12.0–15.0)	38.8 (34.9–42.8)

Source: CDC Places 2023a and 2023b

TABLE 5-18 CENTERS FOR DISEASE CONTROL AND PREVENTION PLACES HEALTH-RELATED SOCIAL NEEDS

Area	Received food stamps in the past 12 months among adults (crude prevalence %)	Food insecurity in the past 12 months among adults (crude prevalence %)	Housing insecurity in the past 12 months among adults (crude prevalence %)	Utility services threat in the past 12 months among adults (crude prevalence %)	Lack of reliable transportation in the past 12 months among adults (crude prevalence %)
United States	11.8 (11.5–12.0)	13.9 (13.6–14.3)	11.8 (11.6–12.1)	7.5 (7.3–7.7)	8.2 (7.9–8.4)
Direct SSA					
Town of Inola	19.0 (16.8–21.3)	19.2 (17.3–21.3)	15.6 (13.8–17.5)	11.6 (10.2–13.1)	11.9 (10.8–13.0)
Indirect SSA					
Rogers County	10.4 (9.0–11.9)	12.1 (10.6–13.6)	11.2 (9.7–12.6)	8.1 (7.1–9.3)	8.1 (7.3–8.9)
Wagoner County	11.3 (9.8–13.0)	12.8 (11.2–14.4)	11.9 (10.4–13.5)	8.5 (7.4–9.7)	8.2 (7.3–9.0)

Area	Received food stamps in the past 12 months among adults (crude prevalence %)	Food insecurity in the past 12 months among adults (crude prevalence %)	Housing insecurity in the past 12 months among adults (crude prevalence %)	Utility services threat in the past 12 months among adults (crude prevalence %)	Lack of reliable transportation in the past 12 months among adults (crude prevalence %)
City of Tulsa	21.1 (19.1–23.2)	20.6 (18.8–22.7)	17.3 (15.6–19.3)	12.8 (11.4–14.5)	11.9 (10.9–13.1)

Source: CDC Places 2023a and 2023b

5.3.4.2 PUBLIC SAFETY

The Project will primarily use barges to transport raw and finished products, then rail, and will use roads as a tertiary backup. Most traffic associated with the Project will be staff commuting and smaller deliveries. U.S. Route (US) 412 is the main road through Inola which connects Inola to Tulsa to the west and across the Arkansas-Oklahoma border to the east. Oklahoma Department of Transportation (ODOT) expects traffic volumes to rise along this stretch over the next 25 years and proposed a plan in 2023 to upgrade US 412 into a freeway (ODOT is specifically seeking to have US 412 designated as an Interstate highway) to improve mobility and safety along the road (ODOT 2023a) (See Section 5.3.9 for more information on transportation).

Other facets of public safety could include community cohesion and antisocial behavior among temporary or permanent project hires, which could be at an increased risk if significant numbers of non-local people are hired. As well, unplanned events (see Section 4.3.2) can introduce public safety concerns depending on the size and nature of the event. Section 5.3.3.4 includes information on emergency response services, including local police and fire departments, which would respond to public safety events as necessary.

5.3.5 LAND USE

The land where the Project is located is within the TPOI and is zoned for heavy industrial use. It is expected that it will be used for industrial purposes regardless of whether the Project is constructed. The Verdigris River is used for commercial and recreational use, including kayaking, boating, and fishing. The nearest public use area along the Verdigris River is Bluff Landing, roughly 3.5 miles (5.6 kilometers) south of the Project (Recreation.gov 2025).

5.3.6 CULTURAL HERITAGE

The proposed Project Site is located approximately 0.25 mile (0.4 kilometer) to the east of the Verdigris River, a significant tributary to the Arkansas River. Approximately 26 miles (42 kilometers) to the southeast, the Verdigris River flows into the Arkansas River, which then flows into Nesho River shortly after. As a result of this confluence, this region of Oklahoma is known as the Three Forks area (OHS 2025a). Rivers and waterways around the world were frequently preferred zones of habitation for ancient peoples, as they provided valuable resources, access to water, and a thoroughfare for transportation. This region of Oklahoma is no different, and archaeological evidence indicates that people have been living in the region since at least 5000

before common era. By the late eighteenth century, French fur traders also recognized the rivers of this region as useful route for transporting exploited resources downriver for shipment back east, setting up outposts along the river (OHS 2025a).

A cultural heritage baseline study that consists of an evaluation of both Tangible and Intangible Cultural Heritage includes a combination of desktop analysis, archaeological and historic architecture surveys, and community engagement interviews is planned.

5.3.6.1 TANGIBLE CULTURAL HERITAGE

Tangible cultural heritage consists of "(i) tangible moveable or immovable objects, property, sites, structures, or groups of structures, having archaeological (prehistoric), paleontological, historical, cultural, artistic, and religious values; (ii) unique natural features or tangible objects that embody cultural values, such as sacred groves, rocks, lakes, and waterfalls; and (iii) certain instances of intangible forms of culture that are proposed to be used for commercial purposes such as cultural knowledge, innovations, and practices, of communities embodying traditional lifestyles" (IFC PS 8 2012).

The natural setting of the Project Site along the banks of a major tributary of the Arkansas River and the topography of the area suggest an environment that would have been favored for both short-term and long-term precontact settlements. This, as well as the complex history of the region following the arrival of European settlers and the rise of the U.S. Government, suggest there is high potential for the discovery of previously unrecorded archaeological sites. Furthermore, the Caddo Claremore Mound lies less than 20 miles (32.2 kilometers) to the north along the Verdigris River in a comparable environment. There is a possibility similar sites exist within the study area.

To establish a baseline, review of previously documented site records managed by the Oklahoma SHPO, the Oklahoma Archaeological Survey, and the National Register for Historic Places will be completed. This review will examine archaeological sites, historic structures, monuments, and other documented cultural resources.

Once this data has been compiled, an archaeological survey team will conduct a systematic field survey of the proposed Project Site. To date, no statewide guidance for archaeological survey and reporting has been created by the Oklahoma SHPO. In the absence of this guidance, the surveyors will follow the guidelines for archaeological survey and reporting presented in the *Archaeological Standards for the Muscogee (Creek) Nation* and the *Osage Nation Historic Preservation Office: Archaeological Survey Standards* to collect baseline data, and all state and national regulations will be followed.

A historic architecture survey will also be done through and examination of maps and photo documentation of historic structures in the study area, confirmed by field observations as needed.

5.3.6.2 INTANGIBLE CULTURAL HERITAGE

As defined by the *Convention for the Safeguarding of the Intangible Cultural Heritage* (UNESCO 2003), intangible cultural heritage "means the practices, representations, expressions, knowledge, skills—as well as the instruments, objects, artefacts and cultural spaces associated therewith—that communities, groups and, in some cases, individuals recognize as part of their cultural

heritage." Such resources and knowledge are often passed down from generation to generation and are typically poorly documented.

To evaluate intangible cultural heritage, interviews with potentially affected communities, mainly Native American Tribes with traditional or ancestral ties to the land in the Project area, will be conducted. This may also include other, non-indigenous communities who have long-standing connections to the Project area as well.

5.3.6.3 RELEVANT REGULATORY FRAMEWORK

In addition to the guidelines present in the IFC PS, cultural heritage is also protected by the following regulatory framework:

- Section 106 of the National Historic Preservation Act—requires federal agencies and their designees/authorized representatives to consider the effects of federal undertakings on cultural resources that are listed on or eligible for the National Register of Historic Places.
- The Oklahoma Antiquities Law (53 Oklahoma Statute §53-361)—pertains to the protection of archaeological sites listed on the State Register of Historic Places or state owned and/or operated property subject to taking, salvage, excavation, restoration, or scientific or educational studies (www.OU.edu: n.d.)
- Burial Desecration Law (21 Oklahoma Statute §21.1168.0-1168.6)—pertains to the protection of human remains and associated burial goods in unmarked graves on state and private land (www.OU.edu: n.d.).

5.3.7 TRIBAL CONSIDERATIONS

The complex tribal history of the region, and in particular the Project Site, serves as an example of the cruelty of the U.S. Government's attitude and approach to Native American Tribes during the nineteenth century. The Louisiana Purchase in 1803 brought a broad swath of territory that included Oklahoma under control of the U.S. Government, but numerous Native American Tribes inhabited the region, as they had for generations, and exercised their ancestral ties to the land. Both the Osage Nation and the Quapaw Nation have ancestral ties to the land in the area, having arrived in eastern Oklahoma around 1200 common era (OHSB 2025). The Caddo Nation also have a long history in the Project vicinity. The study area is located within the boundaries of the Caddo Mississippian cultural complex and there are multiple precontact burial mounds and mound complexes in the region. A subset of the larger Mississippian culture, the Caddo Mississippian culture complex developed over the span of 500 years, before beginning to decline around 1350 common era (NPS 2025). As American expansion pushed west, it forced members of the Cherokee Nation to shift west as well, which resulted in an increase in inter-tribal conflict. Following the Indian Removal Act of 1830, the U.S. Government forced the Cherokee Nation to relocate to Oklahoma while the Osage and Quapaw Nations were forcibly removed from their lands to areas along the Verdigris River in Kansas.

At the same time, the forced removals of Tribes resulted in the Muscogee (Creek) Nation being relocated from lands in Alabama and Georgia to Oklahoma. Mapping as early as 1836 shows the Project Site as being located within the Muscogee Creek Reservation (U.S. Topographic Bureau 1836). Tribal boundaries continually shifted throughout the nineteenth century before Oklahoma

gained statehood in 1907, though in 1901, on the eve of statehood, the Project Site was still part of the Muscogee (Creek) Reservation (Figure 5-9). At the time it was widely presumed that the establishment of the state had disestablished the American Indian reservations in Oklahoma, converting the reservations into "former reservations" and placing the land therein under state jurisdiction. In the late 20th century, this status quo was challenged several times in court ultimately culminating in the 2020 *McGirt v. Oklahoma* decision which found, as part of its conclusion, that the Muscogee (Creek) Nation's reservation was not in fact disestablished regarding criminal jurisdiction. Following that, the Oklahoma courts have affirmed nine other tribe's reservations as being established within Oklahoma, including the Cherokee Nation's reservation to the north of the Project (Kickingbird 2023).

While only the Muscogee (Creek) and Cherokee Nations have reservation land in Rogers County, a review of U.S. Department of Housing and Urban Development Tribal Directory Assessment Tool, nine federally recognized Tribes are likely to be interested in projects within Rogers County as a result of ancestral ties to the land (Table 5-19).

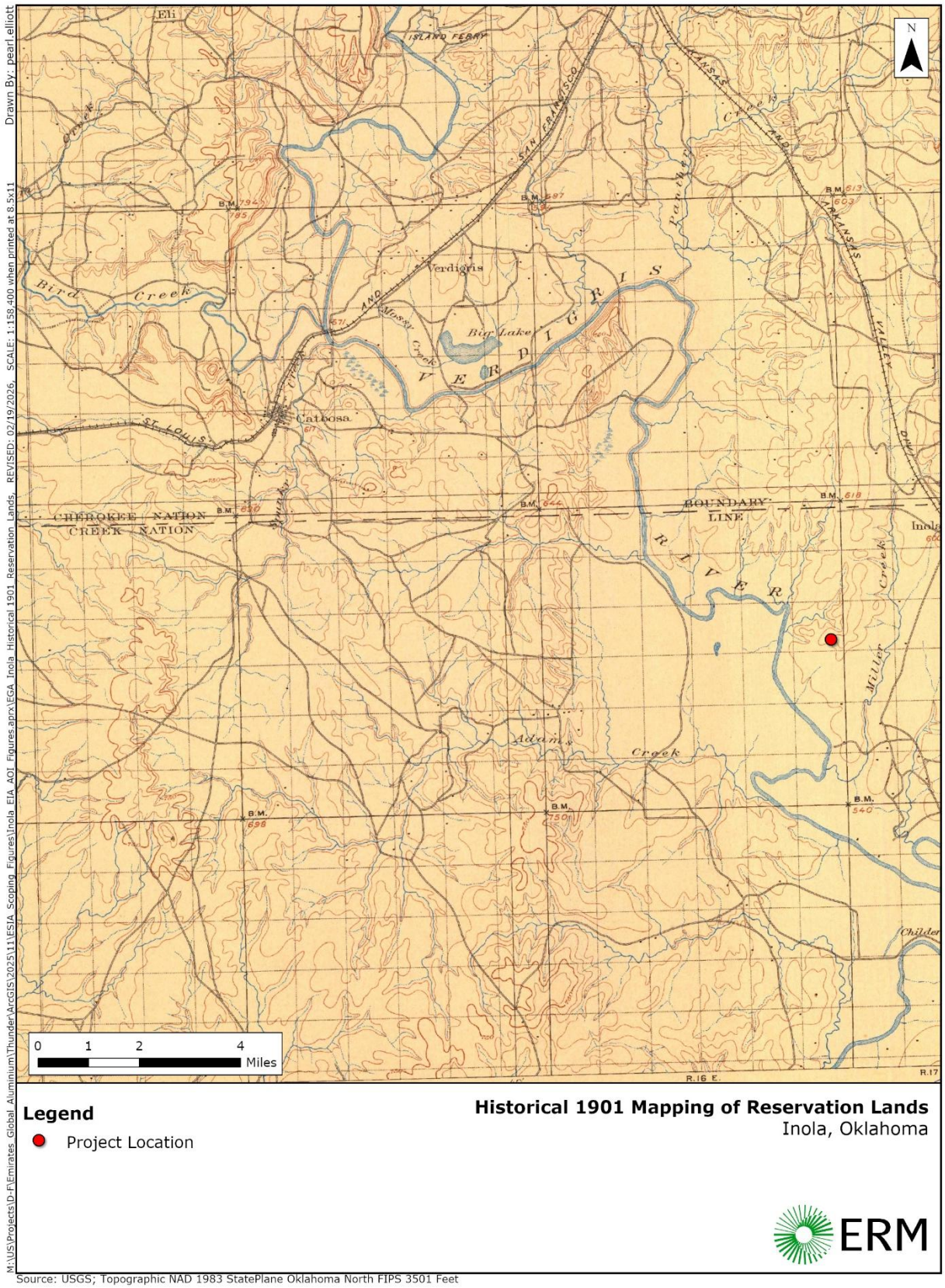

FIGURE 5-9 HISTORICAL 1901 MAPPING OF RESERVATION LANDS

TABLE 5-19 AMERICAN INDIAN TRIBES LIKELY TO BE INTERESTED IN ENGAGEMENT

American Indian Tribe	Present-day Location of Tribal Offices
Alabama-Quassarte Tribal Town	Wetumka, Oklahoma
Apache Tribe of Oklahoma	Anadarko, Oklahoma
Caddo Nation of Oklahoma	Binger, Oklahoma
Cherokee Nation	Tahlequah, Oklahoma
Cheyenne and Arapaho Tribes, Oklahoma	Concho, Oklahoma
Delaware Tribe of Indians	Bartlesville, Oklahoma
Muscogee (Creek) Nation	Muscogee, Oklahoma
Osage Nation	Pawhuska, Oklahoma
Wichita and Affiliated Tribes (Wichita, Keechi, Waco and Tawakonie), Oklahoma	Anadarko, Oklahoma

Source: TDAT 2025

5.3.8 VISUAL

As described in Section 5.2.2, the Project Site occupies modified or disturbed grasslands within the Osage Cuestas Ecoregion. The landscape in this area consists of gently rolling hills along the east bank of the Verdigris River. The western portion of this property (closest to the river) is blanketed by dense, primarily deciduous forest (with some patches of evergreen trees). The eastern portion of the site is primarily covered by grasses, with occasional shrubs, particularly along natural and human-made drainages. This landscape provides extensive views that are occasionally interrupted by low ridges and other landforms that provide a limited extent of topographic relief.

Due to location, topography, and vegetation, few publicly accessible views of the Project Site exist. The closest residence (a farm property north of E 610 Road) is approximately 0.35 mile (0.56 kilometer) east of the Project Site (Table 5-6). Views of the Project Site from this residence are likely blocked by vegetation and topography. Views from the west bank of the Verdigris River are also blocked by deciduous vegetation, although some intermittent views may be available from E 620 Road (which is not directly connected to the road of the same name within the TPOI property) during leaf-off conditions in the late fall, winter, and early spring.

The Project will conduct a screening study to assess the how the Project could be visible from the surrounding environment.

5.3.9 TRANSPORTATION

The Project is expected to generate road and vessel traffic during construction, for transport of Project modules, components, construction materials, consumable supplies, and workers to and from the Project Site. During operations, the Project would generate road traffic associated with workers, incoming raw materials, and potentially product shipments, as well as vessel and rail traffic associated with product shipments.

Table 5-20 describes the existing major roads that would serve the Project Site. ODOT has proposed to upgrade US 412 to a freeway (ODOT 2023a), although this upgrade is not funded for construction (ODOT 2025a). ODOT is constructing a new interchange on US 412 at 4190 Road (ODOT 2023b), with construction expected to be complete by 2027 (ODOT 2025a). As stated in Table 2-1, the TPOI plans to upgrade the portion of 4190 Road within TPOI property. Upgrades to 4190 Road north of the port property are not currently listed in ODOT's State Transportation Improvement Program (ODOT 2024) or other readily available lists of approved or planned transportation upgrades (ODOT 2025a).

TABLE 5-20 MAJOR ROADS

Road	Extent	Description	AADT (2023)
US 412	East of SR 88	Freeway with 2 travel lanes in each direction, a center median, paved shoulders and grade-separated interchanges	21,500
	West of SR 88		20,600
SR 88 (North Broadway Avenue)	North of US 412	Undivided minor arterial road with 1 travel lane in each direction and no shoulders	4,700
	South of US 412		5,700

Source: ODOT 2025b

AADT = annual average daily traffic; SR = Oklahoma State Route; US = U.S. Route

The TPOI (where the Project would be located) includes an existing barge basin and quay on the Verdigris River, a navigable waterway connected to the Arkansas and Mississippi Rivers. The Project Site is approximately 8 to 10 days (via barge) from the Port of New Orleans. TPOI proposes a new barge fleeting and unloading area north of the Project boundary, as previously described.

The TPOI is served by the Verdigris Southern railroad, a shortline railroad owned by the port. As stated in Table 2-1, this shortline currently serves the Sofidel property within the port, although the port intends to add a spur along E 620 Road to serve the barge dock. The Project would require its own spur connection to the existing rail system within the port property. The Verdigris Southern connects to the Union Pacific Railroad line that runs through Inola and provides access to the nationwide Class I freight railroad system. Usage data for the Union Pacific Railroad are not readily available.

6. STAKEHOLDER ENGAGEMENT

The Project has identified the relevant stakeholders and the framework that the Project will follow for engagement.

6.1 KEY STAKEHOLDERS

The following stakeholder groups were identified as key stakeholders for the Project:

- Local and state government entities relevant to the Project
- Local businesses including potential suppliers and existing EGA customers within Oklahoma
- Academia including local technical colleges
- Schools including Inola Public Schools and neighboring high schools
- Residents of Inola
- Tribes, including Muscogee (Creek) Nation, Cherokee Nation, Osage Nation and possibly others
- Potential workers and staff including candidates for workforce development participation

The following affected stakeholder groups have been identified in the SSA:

- Communities in the SSA and landowners near the Project footprint
- Affected Landowners
- Vulnerable groups in the SSA.

Stakeholders will be kept informed and have opportunity to participate through the ESIA and permitting process. Communication channels will involve online and newspaper advertisements and messaging, as well as community meetings and events open for public or through invite. Stakeholder engagement will be ongoing throughout the Project's lifecycle.

6.2 COMMUNITY AND WORKER FEEDBACK MECHANISMS

EGA and Century have developed community and worker feedback channels that will enable effective, accessible communication including a dedicated Project phone number, email address, and website for workers, community members, and other stakeholders to use. This will serve as the grievance mechanism required for ESIA. The Project will use the feedback channels to resolve concerns promptly and transparently.

Email: OklahomaPrimaryAluminum@erm.com
Website: https://oklahomaprimaryaluminum.com/en/contact-us
Phone: 855-617-6105

Figure 6-1 shows the general community and worker feedback process being planned.

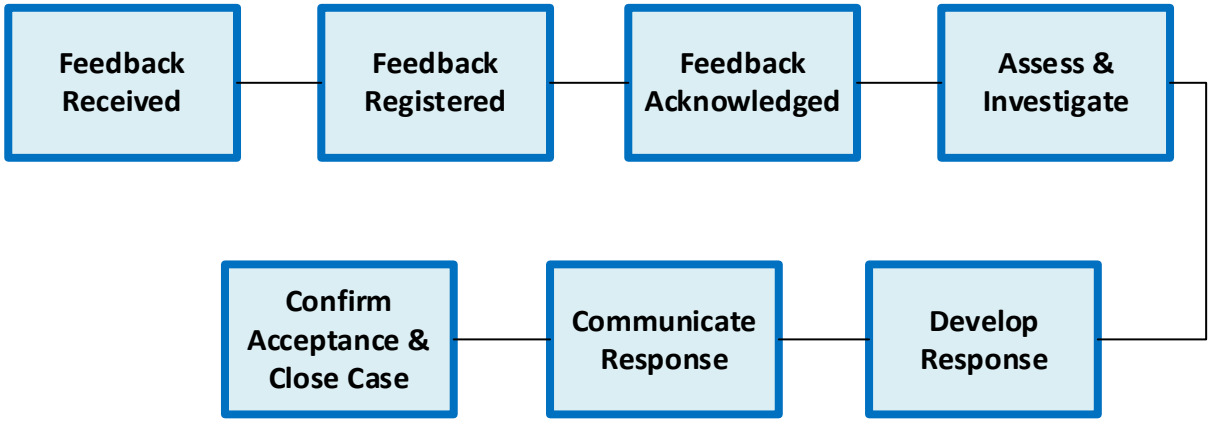

FIGURE 6-1 COMMUNITY AND WORKER FEEDBACK PROCESS

6.3 TRIBAL ENGAGEMENT

The Project is located on Muscogee (Creek) Nation jurisdiction land, very near the boundary of Cherokee Nation jurisdiction land and within the ancestral lands of the Osage Nation. EGA has engaged in initial discussions with the Muscogee (Creek) Nation, Cherokee Nation, and the Osage Nation. Each of these Tribes have expressed interest in the Project and have requested additional information as it becomes available. Additional Tribes identified by the Tribal Directory Assessment Tool (Section 5.3.7) will be consulted regarding cultural heritage interests in and near the Project Site and in the study area.

6.4 OPPORTUNITIES FOR STAKEHOLDER INPUT

Engagement opportunities specific to ESIA will include the ESIA Scoping Public Meeting at which this Scoping Report will be discussed and the Draft ESIA Document Public Meeting, which are focused on receiving public input regarding the ESIA process and topics pertinent to ESIA. Additional engagement opportunities will be ongoing during Project development, including:

- Meetings and events such as one-on-one and small group interactions, public presentations, open houses, workshops, facility tours;
- Written communication such as press releases, bulletins, newsletters; and
- Digital outreach via the Project website and social media.

6.5 ENGAGEMENT AND INPUT RECEIVED TO DATE

EGA has engaged informally with some of the key stakeholders noted in Section 6.1 and has heard a variety of concerns and questions regarding the Project, including the following:

- When will a final decision be made to proceed with the Project?
- Will the Project be a source of noise or odors, or pollution to air and water?
- What economic benefits will the Project bring to the community?
- Will the Project increase flood risk?
- Will the Project increase truck traffic in Inola?
- How will the Project impact taxes and property values?

- Can the Project help support education and employment in Inola?
- How will the additional tax revenue benefit the community (schools, roads, services)?
- When will more information about the Project be available?

EGA and Century are just entering the design phase of the Project and are planning to initiate more public education and outreach as Project information becomes available.

7. ADDITIONAL SUPPORTING STUDIES

EGA and Century are committed to completing a comprehensive review of the environmental and social risks. Based on current understanding of the Project and its risk and opportunities, the following studies and events are being considered or are planned to further inform the Project's baseline and impact assessment:

- Development of the Project Description and inbuilt controls (such as air emission scrubbers)
- Ambient noise monitoring
- Cultural resources survey
- Additional geology and soil survey
- Additional wetland/waterbody and biodiversity survey
- Flood study
- Visual Impact Assessment
- Socioeconomic impact and benefits study
- Air quality modeling
- ESIA Scoping Public Meeting
- Draft ESIA Document Public Meeting
- Ongoing engagement with Tribes and stakeholders

8. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

An ESMP will be developed as part of the ESIA process and made available along with the draft ESIA and Final ESIA. The ESMP is the implementation framework for managing and mitigating the impacts identified during the ESIA process and will include identification of responsible persons as well as monitoring and reporting requirements. The ESMP developed for the Project will be based on the management frameworks plans currently implemented at operating EGA facilities and will align with the requirements of the ESIA.

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APPENDIX A U.S. FISH AND WILDLIFE SERVICE INFORMATION FOR CONSULTATION AND PLANNING FOR THE PROJECT SITE

APPENDIX A U.S. FISH AND WILDLIFE SERVICE INFORMATION FOR CONSULTATION AND PLANNING FOR THE PROJECT SITE

Name	Status[1]	Habitat Summary	Potential Presence	Critical Habitat
Mammals				
Eastern Spotted Skunk *Spilogale putorius*	Federal: None State: Take Prohibitions; SGCN IUCN: Vulnerable	Forested areas with dense cover; grasslands, shrublands.	**Unlikely.** Suitable forested habitat is present; however, Project is outside of range for species. The plains spotted skunk (*S. interrupta*) was recently split from this species. Plains spotted skunk is within range, and presence is "**Possible**". The USFWS determined that listing of plains spotted skunk is not warranted. It is not listed in IUCN.	**None.** Species is not likely to be present.
Gray Bat *Myotis grisescens*	Federal: Endangered State: None IUCN: None	Roosts in caves throughout year. Winter caves are deep with good air flow. Summer caves within 1km of river/reservoir. Forage in forested area along streams/lakes.	**Unlikely.** Summer foraging habitat along the Verdigris River riparian zone and contiguous adjacent forest and woodland. Abandoned mines are present approximately 10 miles west of Site. None known within range for summer roosting. The ODWC considers this species outside of range in Rogers County.	**Not Applicable.** No IUCN status.
Indiana Bat *Myotis sodalis*	Federal: Endangered State: None IUCN: Near Threatened	Summer in forested areas with roosts in forests, fencelines, or wooded edge; forage in forested habitats, edges, and riparian areas. Winter in underground caves or abandoned mines.	**Unlikely.** The ODWC considers this species outside of range for Rogers County. and is known only in southeast Oklahoma during migration only.	**None.** Species is not likely to be present.

Name	Status[1]	Habitat Summary	Potential Presence	Critical Habitat
Little Brown Bat *Myotis lucifugus*	Federal: Under Review for Listing State: None IUCN: Endangered	Forages over water or woodlands near water. Roosts in man-made structures, caves, or hollow trees.	**Unlikely.** The ODWC considers this species outside of range for Rogers County. and is known only in the easternmost counties in Oklahoma.	**None.** Species is not likely to be present.
Tricolored Bat *Perimyotis subflavus*	Federal: Proposed Endangered State: None IUCN: Vulnerable	Forested along waterways for foraging. Roosts in trees, caves, rock crevices, man-made structures. Overwinters in caves and mines.	**Likely.** Suitable foraging and summer roosting habitat is present. Species is within range.	**None.** Tricolored bat is not endangered or critically endangered under IUCN; it is not a range-restricted or endemic species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.
Birds				
Bald Eagle *Haliaeetus leucocephalus*	Federal: BGEPA; MBTA State: SGCN IUCN: Least Concern	Forest adjacent and up to two miles from large bodies of water supporting prey. Nests primarily in large, super-canopy trees.	**Possible.** Suitable forested habitat is present along the Verdigris River and extending eastward into the Project Site.	**None.** Bald eagle is not endangered or critically endangered under IUCN; it is not a range-restricted or endemic species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.
Black-bellied Plover *Pluvialis squatarola*	Federal: MBTA State: None IUCN: Vulnerable	Stop over in harvested agricultural wet fields, sod farms, sporting fields, wet prairies, and the muddy or gravelly edges of lakes, ponds, and rivers.	**Unlikely.** Unlikely migrant through Oklahoma - most migrate along the eastern US coastline. Many on-site ponds have muddy edges, but are small in size. Herbaceous vegetation too tall for species use.	**None.** Species is not likely to be present.

Name	Status[1]	Habitat Summary	Potential Presence	Critical Habitat
Blackpoll Warbler *Setophaga striata*	Federal: MBTA State: None IUCN: Near Threatened	Stop over in scrubby thickets and mature evergreen and deciduous forests.	**Possible.** Spring migration only. Fall migration is a nonstop flight. Rogers County is on the western edge of migration range.	**None.** Blackpoll warbler is not endangered or critically endangered under IUCN; it is not a range-restricted or endemic species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.
Bobolink *Dolichonyx oryzivorus*	Federal: MBTA State: None IUCN: Near Threatened	Marshes and large fields with a mixture of grasses and broad-leaved plants like legumes and dandelions.	**Likely.** Migration only. Suitable habitat is plentiful.	**None.** Bobolink is not endangered or critically endangered under IUCN; it is not a range-restricted or endemic species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.
Brewer's Blackbird *Euphagus cyanocephalus*	Federal: MBTA State: None IUCN: Near Threatened	Grasslands, marshes, meadows, woodland, coastal scrub, chaparral, and sagebrush – as well as many human-created habitats	**Likely.** Over-wintering resident in Oklahoma. Suitable habitat is plentiful.	**None.** Brewer's blackbird is not endangered or critically endangered under IUCN; it is not a range-restricted or endemic species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.
Buff-breasted Sandpiper *Calidris subruficollis*	Federal: MBTA State: SGCN IUCN: Vulnerable	Dry, flat habitats including sod farms, short prairies, and many kinds of agricultural fields, so long as they are not covered by water or heavy vegetation	**Unlikely.** Migration only. Grasslands are rolling, tall, and densely vegetated.	**None.** Species is not likely to be present.

Name	Status[1]	Habitat Summary	Potential Presence	Critical Habitat
Cerulean Warbler *Setophaga cerulea*	Federal: MBTA State: SGCN IUCN: Near Threatened	Migration across mature forested slopes, river valleys, and bottomlands. Nesting high in canopies with clear understory.	**Possible.** Possible migratory (unlikely breeding) habitat in bottomlands. Northeast Oklahoma is nearly out of range for the species.	**None.** Cerulean warbler is not endangered or critically endangered under IUCN; it is not a range-restricted or endemic species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.
Chestnut-collared Longspur *Calcarius ornatus*	Federal: MBTA State: SGCN IUCN: Vulnerable	Shortgrass prairie, black-tailed prairie dog towns, fallow fields, and crop fields	**Unlikely.** Available habitat is tall and dense - not preferred habitat.	**None.** Species is not likely to be present.
Chimney Swift *Chaetura pelagica*	Federal: MBTA, BCC State: None IUCN: Vulnerable	Breeding in chimneys (urban), hollow trees, tree cavities, or caves. Forage over open terrain, forests, and ponds.	**Possible.** Summer foraging habitat along the Verdigris River riparian zone and contiguous adjacent forest and and grasslands. Natural nesting habitat (e.g., hollow trees) may be present.	**None.** Chimney swift is not endangered or critically endangered under IUCN; it is not a range-restricted or endemic species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.
Chuck-will's-widow *Antrostomus carolinensis*	Federal: MBTA State: None IUCN: Near Threatened	Breeds in pine, oak-hickory, and other forests	**Likely.** Suitable habitat is plentiful.	**None.** Chuck-will's-widow is not endangered or critically endangered under IUCN; it is not a range-restricted or endemic species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.

Name	Status[1]	Habitat Summary	Potential Presence	Critical Habitat
Common Grackle *Quiscalus quiscula*	Federal: MBTA State: None IUCN: Near Threatened	Open woodland, forest edge, grassland, meadows, swamps, marshes, and palmetto hammocks, and human landscapes	**Likely.** Suitable habitat is plentiful.	**None.** Common grackle is not endangered or critically endangered under IUCN; it is not a range-restricted or endemic species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.
Dunlin *Calidris alpina*	Federal: MBTA State: None IUCN: Near Threatened	Migration stop over in sewage treatment ponds, moist harvested agricultural fields, and muddy edges of farm ponds, rivers, and lakes. Typically, they select areas where the water is less than 2 inches deep.	**Possible.** Migration only. Cattle ponds with muddy (mudflat) shorelines could be used by species	**None.** Dunlin is not endangered or critically endangered under IUCN; it is not a range-restricted or endemic species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.
Eastern Meadowlark *Zonotrichia querula*	Federal: MBTA State: None IUCN: Near Threatened	Native grasslands and prairies; pastures	**Confirmed.** Dozens observed during November 2025 field investigations in all areas of grassland and thicket habitat	**None.** Eastern meadowlark is not endangered or critically endangered under IUCN; it is not a range-restricted or endemic species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.

Name	Status[1]	Habitat Summary	Potential Presence	Critical Habitat
Eastern Whip-poor-will *Antrostomus vociferus*	Federal: MBTA State: SGCN IUCN: Near Threatened	Deciduous or evergreen-deciduous forest with little or no underbrush, close to open areas	**Possible.** Suitable habitat is plentiful. Rogers County is the western edge of breeding range.	**None.** Eastern whip-poor-will is not endangered or critically endangered under IUCN; it is not a range-restricted or endemic species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.
Evening Grosbeak *Hesperiphona vespertina*	Federal: MBTA State: None IUCN: Vulnerable	Coniferous and mixed forests for breeding; overwinters in maple forest habitat	**Unlikely.** Outside of range for breeding. Uncommon migrant and winter resident in Oklahoma.	**None.** Species is not likely to be present.
Greater Prairie-chicken *Tympanuchus cupido*	Federal: None State: SGCN IUCN: Near Threatened	Small patches of oak woodland and extensive prairie; mixed-grass and tallgrass prairie few trees.	**Unlikely.** Though within historic range, Greater Prairie-chicken is no longer extant in this part of Oklahoma.	**None.** Species is not likely to be present.
Greater Yellowlegs *Tringa melanoleuca*	Federal: MBTA State: None IUCN: Near Threatened	Fresh and brackish wetlands, including mudflats, marshes, lake and pond edges, wet meadows, sewage ponds, and flooded agricultural fields	**Possible.** Some migratory stopover habitat is present.	**None.** Greater yellowlegs is not listed as endangered or critically endangered under IUCN; it is not a range-restricted species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.

Name	Status[1]	Habitat Summary	Potential Presence	Critical Habitat
Harris's Sparrow *Zonotrichia querula*	Federal: MBTA State: SGCN IUCN: Near Threatened	Overwinters in south-central great plains. Hedgerows, agricultural fields, shrubby pastures, backyards, and shrubby areas near streams.	**Confirmed.** Dozens observed in thickets and shrubby patches within grasslands	**Unlikely.** Harris's sparrow is not listed as endangered or critically endangered under IUCN; Project site habitat is not of significant importance, but it is a somewhat range-restricted species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.
Horned Grebe *Podiceps auritus*	Federal: MBTA State: None IUCN: Vulnerable	Migration and possible overwintering only. Any body of water, including rivers, if large enough for landing and take-off and provides foraging	**Possible.** Migration stopover possible at northern pond only. All ponds are too small to provide foraging and habitat for overwintering.	**None.** Horned grebe is not listed as endangered or critically endangered under IUCN; it is not a range-restricted species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.
Hudsonian Godwit *Limosa haemastica*	Federal: MBTA State: SGCN IUCN: Vulnerable	Spring migration only. Open wetlands such as lakes, large rainwater pools, flooded agricultural areas, freshwater impoundments, and wet pastures	**Possible.** Large pond at northern Project boundary may provide suitable stopover habitat.	**None.** Hudsonian godwit is not listed as endangered or critically endangered under IUCN; it is not a range-restricted species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.

Name	Status[1]	Habitat Summary	Potential Presence	Critical Habitat
Ivory-billed Woodpecker *Campephilus principalis*	Federal: Endangered, Proposed for Delisting; MBTA State: None IUCN: Critically Endangered	Undisturbed areas of mature forest that included both dry uplands and flooded swamps.	**Unlikely.** Presumed extirpated; available forest is not large enough (within Project Site plus contiguous off site) to support species. Historic range did not include northeastern Oklahoma.	**None.** Species is not likely to be present.
Killdeer *Charadrius vociferus*	Federal: MBTA State: None IUCN: Near Threatened	Open areas such as sandbars, mudflats, and grazed fields	**Confirmed.** Killdeer calls were heard near the large pond located at the northern Project boundary during habitat assessments.	**None.** Killdeer is not listed as endangered or critically endangered under IUCN; it is not a range-restricted species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.
King Rail *Rallus elegans*	Federal: MBTA State: SGCN IUCN: Near Threatened	Freshwater marshes and brackish marshes with concealing vegetation. Avoids areas with woody vegetation. Particular about water levels.	**Unlikely.** Suitable habitat is not present within the Project Site; NE Oklahoma is out of range.	**None.** Species is not likely to be present.
Least Sandpiper *Calidris minutilla*	Federal: MBTA State: None IUCN: Near Threatened	Migration stop-over on coastal mudflats, rocky shorelines, and inland habitats including wet meadows, flooded fields, and muddy edges of lakes, ponds, and ditches.	**Possible.** Migration only. Cattle ponds with muddy (mudflat) shorelines could be used by species	**None.** Least sandpiper is not listed as endangered or critically endangered under IUCN; it is not a range-restricted species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.

Name	Status[1]	Habitat Summary	Potential Presence	Critical Habitat
Lesser Yellowlegs *Tringa flavipes*	Federal: MBTA State: None IUCN: Vulnerable	Fresh and brackish wetlands, including mudflats, marshes, lake and pond edges, wet meadows, and flooded agricultural fields.	**Possible.** Migration only. Cattle ponds with muddy (mudflat) shorelines could be used by species	**None.** Lesser yellowlegs is not listed as endangered or critically endangered under IUCN; it is not a range-restricted species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.
Loggerhead Shrike *Lanius ludovicianus*	Federal: MBTA State: SGCN IUCN: Near Threatened	Open country with short vegetation and well-spaced shrubs or low trees, particularly those with spines or thorns. They frequent agricultural fields, pastures, old orchards, riparian areas, desert scrublands, savannas, prairies, golf courses, and cemeteries.	**Likely.** Ideal habitat is present with plenty of shrub nesting habitat within an open grassland landscape and thorny food-cache habitat	**None.** Loggerhead shrike is not listed as endangered or critically endangered under IUCN; it is not a range-restricted species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.
Long-billed Dowitcher *Limnodromus scolopaceus*	Federal: MBTA State: None IUCN: Near Threatened	Lakes, ponds, marshes, flooded fields, and sewage ponds but can also sometimes be found on river margins, tidal flats, and river mouths.	**Unlikely.** Migration only, and eastern Oklahoma is largely out of range	**None.** Species is not likely to be present.
Marbled Godwit *Limosa fedoa*	Federal: MBTA State: None IUCN: Vulnerable	Shortgrass prairies near wetlands	**Unlikely.** Suitable habitat is not present, and Oklahoma is largely out of migratory range.	**None.** Species is not likely to be present.

Name	Status[1]	Habitat Summary	Potential Presence	Critical Habitat
Northern Bobwhite *Colinus virginianus*	Federal: MBTA State: SGCN IUCN: Near Threatened	Agricultural fields, grasslands, open pine or pine-hardwood forests, and grass-brush rangelands. Avoid mature woodlands.	**Confirmed.** Approximately 30 bobwhite flushed by vehicle on field road on 11.20.2025	**None.** Northern bobwhite is not listed as endangered or critically endangered under IUCN; it is not a range-restricted species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.
Piping Plover *Charadrius melodus*	Federal: Threatened; MBTA State: SGCN IUCN: Near Threatened	Forage on coastal beaches, sandflats, and mudflats that are exposed during low tide	**Unlikely.** Migration only, usually stopping at reservoirs. Suitable habitat is not present.	**None.** Species is not likely to be present.
Ruddy Turnstone *Arenaria interpres*	Federal: MBTA State: None IUCN: Near Threatened	Stop along coastal rocky and sandy beaches, mudflats, and shorelines of freshwater lakes	**Unlikely.** Suitable stopover habitat is not present.	**None.** Species is not likely to be present.
Rufa Red Knot *Calidris canutus rufa*	Federal: Threatened; MBTA State: None IUCN: Near Threatened	Migratory only. Stop over locations include shorelines (mudflats) of large lakes or freshwater marshes.	**Unlikely.** Very rarely observed during migration. Suitable habitat of large mudflats is not present.	**None.** Species is not likely to be present.
Rusty Blackbird *Euphagus carolinus*	Federal: MBTA, BCC State: SGCN IUCN: Vulnerable	Wooded wetlands and riparian areas. Also includes various open woodlands, scrub, pastures, and cultivated lands	**Likely.** Site is within overwintering range and suitable habitat is present along bottomlands, streams, and riparian zones.	**None.** Rusty blackbird is not listed as endangered or critically endangered under IUCN; it is not a range-restricted species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.

Name	Status[1]	Habitat Summary	Potential Presence	Critical Habitat
Semipalmated Sandpiper *Calidris pusilla*	Federal: MBTA State: None IUCN: Near Threatened	Stop over at sewage ponds, ephemeral wetlands (rain pools), beaches, tidal mudflats and sandbars, and freshwater impoundments with shallow margins	**Unlikely.** Stopover habitat must be particularly rich in food sources to sustain long-distance migration. Suitable habitat is not present.	**None.** Species is not likely to be present.
Short-billed Dowitcher *Limnodromus griseus*	Federal: MBTA State: None IUCN: Vulnerable	Manmade environments such as impoundments, sewage ponds, and flooded farm fields as well as in muddy margins of rivers, lakes, and bays	**Unlikely.** Stopover habitat must be particularly rich in food sources to sustain long-distance migration. Suitable habitat is not present.	**None.** Species is not likely to be present.
Sprague's Pipit *Anthus spragueii*	Federal: MBTA State: SGCN IUCN: Vulnerable	Mixed-grass prairie, usually in vegetation no more than 6–12 inches tall, scattered shrubs and little bare ground.	**Unlikely.** Suitable stopover habitat is not present.	**None.** Species is not likely to be present.
Stilt Sandpiper *Calidris himantopus*	Federal: MBTA State: None IUCN: Near Threatened	Freshwater environments such as marshes, ponds, and rainwater pools, but they also frequent flooded pastures, wet agricultural fields, and impoundments.	**Unlikely.** Stopover habitat must be particularly rich in food sources to sustain long-distance migration. Suitable habitat is not present.	**None.** Species is not likely to be present.
White-rumped Sandpiper *Calidris fuscicollis*	Federal: MBTA State: None IUCN: Vulnerable	Freshwater habitats, including wet agricultural fields, sod farms, freshwater impoundments, and marshes with muddy margins.	**Unlikely.** Stopover habitat must be particularly rich in food sources to sustain long-distance migration. Suitable habitat is not present.	**None.** Species is not likely to be present.
Whooping Crane *Grus americana*	Federal: Endangered; MBTA State: SGCN IUCN: Endangered	Migratory: gently rolling grasslands foraging in croplands and shallow, freshwater wetlands.	**Unlikely.** Though within migratory range; Site is unlikely to be used as a stop-over spot. No wet meadows or agricultural fields present.	**None.** Species is not likely to be present.

Name	Status[1]	Habitat Summary	Potential Presence	Critical Habitat
Reptiles				
Alligator Snapping Turtle *Macrochelys temminckii*	Federal: Proposed Threatened State: Take Prohibition; SGCN IUCN: Endangered	Typically slow moving, deep rivers with downed trees and other cover and basking sites. Nesting in sandy uplands up to several miles from aquatic habitat.	**Possible.** Presence unlikely except nesting within the westernmost edge of Project site in association with the Verdigris River. On-site water bodies too small and isolated to support species.	**Possible.** Alligator snapping turtle is endangered under IUCN, but habitat of significant importance is not present within the Project footprint; it is a somewhat range-restricted species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.
Fish				
American Eel *Anguilla rostrata*	Federal: None State: SGCN IUCN: Endangered	Freshwater, big and medium rivers, creeks.	**Unlikely.** Verdigris River located wholly off site; very unlikely to occur in on-site tributaries.	**None.** Species is not likely to be present.
Arkansas Darter *Etheostoma cragini*	Federal: None State: SGCN IUCN: Near Threatened	Prefers spring-fed headwaters and creeks with cool, clear, shallow water, slow current, and herbaceous vegetation. Range: Neosho River watershed.	**Unlikely.** On-site streams and tributaries are not spring-fed and are dry most of the year.	**None.** Species is not likely to be present.
Arkansas River Shiner *Notropis girardi*	Federal: Threatened State: Threatened; SGCN IUCN: Vulnerable	Wide freshwater rivers or creeks. Turbid waters of broad, shallow, unshaded channels. Silt and sand bottoms. Range: Arkansas River watershed.	**Unlikely.** Verdigris River located wholly off site. On-site tributary leading to the river is unsuitable habitat: narrow, intermittent, and shaded.	**None.** Species is not likely to be present.

Name	Status[1]	Habitat Summary	Potential Presence	Critical Habitat
Neosho Madtom *Noturus placidus*	Federal: Threatened State: SGCN IUCN: Near Threatened	Freshwater, medium-gradient streams fairly clear water, loosely packed gravel-pebble. Range: Cottonwood and Neosho Rivers in eastern Kansas and northeastern Oklahoma; lower Illinois River in east-central Oklahoma (at least formerly)	**Unlikely.** Project Site is out of range for the species.	**None.** Species is not likely to be present.
Ozark Cavefish *Troglichthys rosae*	Federal: Threatened State: SGCN IUCN: Near Threatened	Freshwater, dark cave waters primarly clear streams with chert or rubble bottom. Range is Springfield Plateau.	**Unlikely.** Project Site is out of range for the species.	**None.** Species is not likely to be present.
Paddlefish *Polyodon spathula*	Federal: None State: SGCN IUCN: Vulnerable	Low-flowing water of large and medium-sized rivers, river-margin lakes, channels, oxbows, backwaters, impoundments	**Unlikely.** Verdigris River located wholly off site. On-site tributary leading to the river is unsuitable habitat: narrow and intermittent.	**None.** Species is not likely to be present.
Shovelnose Sturgeon *Scaphirhynchus platorynchus*	Federal: Threatened State: SGCN IUCN: Vulnerable	Large, freshwater, turbid rivers with sand mixed with gravel or mud	**Unlikely.** Verdigris River located wholly off site. On-site tributary leading to the river is unsuitable habitat: narrow and intermittent.	**None.** Species is not likely to be present.
Insects				
American Burying Beetle *Nicrophorus americanus*	Federal: Threatened State: SGCN IUCN: None	Open pastures and grasslands and open oak-hickory forests, but broad vegetation tolerance. Prefers moist, loose, well-drained soils, like sandy loam.	**Possible.** Some sandy loam present on site. Other soils may also be suitable during dry periods, particularly when churned up and loosened by cattle or wildlife activity.	**Not Applicable.** No IUCN status.

Name	Status[1]	Habitat Summary	Potential Presence	Critical Habitat
Arogos skipper *Atrytone arogos*	Federal: None State: None IUCN: Endangered	Relatively undisturbed prairies or grasslands	**Unlikely.** Available grasslands are highly disturbed from previous land use activities.	**None.** Species is not likely to be present.
Monarch Butterfly *Danaus plexippus*	Federal: Proposed Threatened State: None IUCN: Vulnerable	Milkweed for breeding, flowering plants for foraging	**Likely.** Possibly no breeding habitat; however, pass-through migration habitat is abundant. Some milkweed observed, but no large populations. At a minimum, the Project Site may be used for nectaring and migratory movement.	**None.** Monarch butterfly is not listed as endangered or critically endangered under IUCN; habitat of significant importance is not present within the Project footprint; it is not a range-restricted species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.
Ottoe Skipper *Hesperia ottoe*	Federal: None State: None IUCN: Endangered	Mid-grass to tall grass undisturbed prairies on the Great Plains	**Unlikely.** Available grasslands are highly disturbed from previous land use activities.	**None.** Species is not likely to be present.
Regal Fritillary *Argynnis idalia*	Federal: Threatened State: Threatened IUCN: Vulnerable	Lives in native tallgrass prairies, wet meadows, and marshes across North America, needing undisturbed grasslands with violets for its caterpillars and diverse flowers for adult nectar.	**Possible.** Native violets are required to support the larval phase of this species. Unknown if violets are present. Floral resources are likely sufficient to support adult butterflies. At a minimum, the Project Site may be used for nectaring and local movement.	**None.** Regal fritillary is not listed as endangered or critically endangered under IUCN; habitat of significant importance is not present within the Project footprint; it is not a range-restricted species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.

Name	Status[1]	Habitat Summary	Potential Presence	Critical Habitat
Southern Plains Bumble Bee *Bombus fraternus*	Federal: Under Review State: SGCN IUCN: Endangered	Open prairies, meadows, and grasslands with shallowed-corolla, flowering plants with shallow corollas for nectar access by this short-tongued bumble bee.	**Possible.** Suitable habitat is present. Potential nectaring species of plants were observed.	**Possible.** Southern plains bumble bee is endangered under IUCN, but habitat of significant importance is not present within the Project footprint; it is a somewhat range-restricted species; Project Site is not a congregatory spot; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.
Arthopods				
Cave Crayfish *Cambarus subterraneus*	Federal: Under Review State: SGCN IUCN: Critically Endangered	Known from 3 caves in Delaware County, OK	**Unlikely.** Outside of range. No known caves, and none seen. Exceedingly rare species with very limited range.	**None.** Species is not likely to be present.
Kiamichi Crayfish *Orconectes saxatilis*	Federal: None State: Endangered; SGCN IUCN: Critically Endangered	Permanent streams and springs in the Ouachita Mountain ecoregion, particularly the Upper Kiamichi River watershed in southeastern Oklahoma	**Unlikely.** Outside of range.	**None.** Species is not likely to be present.
Oklahoma Cave Crayfish *Cambarus tartarus*	Federal: None State: Endangered; SGCN IUCN: Critically Endangered	lives exclusively in subterranean limestone cave streams within the Ozark Highlands of Oklahoma	**Unlikely.** Outside of range. No known caves, and none seen.	**None.** Species is not likely to be present.

Name	Status[1]	Habitat Summary	Potential Presence	Critical Habitat
Mollusks				
Black Sandshell *Ligumia recta*	Federal: None State: SGCN IUCN: Near Threatened	Medium-sized to large rivers in locations with strong current and substrates of coarse sand and gravel with cobbles	**Unlikely.** The Project will not directly affect the Verdigris River. On-site tributary to Verdigris River is Intermittent, which cannot support mussels. Possibly extirpated from the Verdigris River.	**None.** Species is not likely to be present.
Neosho Mucket *Lampsilis rafinesqueana*	Federal: Endangered State: Endangered; SGCN IUCN: Endangered	Freshwater, large streams and small rivers with gravel substrate.	**Unlikely.** The Project will not directly affect the Verdigris River. On-site tributary to Verdigris River is Intermittent, which cannot support mussels. Possibly extirpated from the Verdigris River.	**None.** Species is not likely to be present.
Purple Wartyback *Cyclonaias tuberculata*	Federal: None State: None IUCN: Near Threatened	Medium-sized to small streams or in the main channel of large rivers with gravel/mud bottom	**Unlikely.** The Project will not directly affect the Verdigris River. On-site tributary to Verdigris River is Intermittent, which cannot support mussels.	**None.** Species is not likely to be present.
Rabbitsfoot *Theliderma cylindrica*	Federal: Threatened State: SGCN IUCN: Near Threatened	Freshwater medium streams to large rivers with moderate to swift currents and sand, sediment, or gravel substrate	**Unlikely.** The Project will not directly affect the Verdigris River. On-site tributary to Verdigris River is Intermittent, which cannot support mussels.	**None.** Species is not likely to be present.
Western Fanshell *Cyprogenia aberti*	Federal: Threatened State: SGCN IUCN: None	Freshwater medium sized rivers in flowing water only. Rock, gravel, and soft mud bottoms.	**Unlikely.** The Project will not directly affect the Verdigris River. On-site tributary to Verdigris River is Intermittent, which cannot support mussels.	**Not Applicable.** No IUCN status.

Name	Status[1]	Habitat Summary	Potential Presence	Critical Habitat
Plants				
American Elm *Ulmus americana*	Federal: None State: None IUCN: Endangered	Floodplain forest	**Confirmed.** Very common on site, especially bottomlands and around wetlands.	**Unlikely.** American elm is endangered under IUCN, but habitat of significant importance is not present within the Project footprint; it is not a range-restricted species; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.
Green Ash *Fraxinus pennsylvanica*	Federal: None State: None IUCN: Critically Endangered	Commonly found in floodplains, along streambanks, in swamps, and bottomlands across eastern and central North America	**Likely.** Very common in OK, especially bottomlands and around wetlands.	**Unlikely.** Green Ash is critically endangered under IUCN**,** but habitat of significant importance is not present within the Project footprint; it is not a range-restricted species; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.
Kentucky Coffee Tree *Gymnocladus dioicus*	Federal: None State: None IUCN: Vulnerable	Moist soils of bottomland forests, floodplains, and riverbanks, often on limestone soils, preferring full sun but also found on wooded hillsides and disturbed areas across the central and eastern U.S	**Possible.** Species is considered relatively uncommon throughout its range.	**None.** Kentucky coffee tree is not listed as endangered or critically endangered under IUCN; habitat of significant importance is not present within the Project footprint; it is not a range-restricted species; no threatened or unique ecosystems present; Project Site is not associated with key evolutionary processes.

Name	Status[1]	Habitat Summary	Potential Presence	Critical Habitat
Western Prairie Fringed Orchid *Platanthera praeclara*	Federal: Threatened; Possibly Extirpated State: None IUCN: Endangered	Tallgrass prairies and sedge meadows, full sun on moist to wet, undisturbed sites.	**Unlikely.** All potential habitat is disturbed and/or man-made.	**None.** Species is not likely to be present.
Fungi				
Ash Tree Bolete *Boletinellus merulioides*	Federal: None State: None IUCN: Vulnerable	Deciduous forests supporting ash trees	**Unlikely.** Outside of range.	**None.** Species is not likely to be present.
Bitter Tooth *Hydnellum scabrosum*	Federal: None State: None IUCN: Near Threatened	Hardwood and mixed deciduous-conifer forests	**Unlikely.** Outside of range.	**None.** Species is not likely to be present.
Lavender Baeospora *Baeospora myriadophylla*	Federal: None State: None IUCN: Vulnerable	Moist hardwood or conifer forests	**Unlikely.** Outside of range.	**None.** Species is not likely to be present.
Orange Polypore *Hapalopilus croceus*	Federal: None State: None IUCN: Vulnerable	Deciduous, primarily oak forests	**Unlikely.** Outside of range.	**None.** Species is not likely to be present.