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DRAFT

Environmental Assessment

Land Acquisition for Peaking Plant at Tinker Air Force Base, Oklahoma City, Oklahoma

December 2023

Contract Number: W912BV-22-D-0003
Task Order: W912BV22F0115

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ENVIRONMENTAL ASSESSMENT

Land Acquisition for Peaking Plant at Tinker Air Force Base, Oklahoma City, Oklahoma

Prepared By:

Auxilio Management Services

for

Tinker Air Force Base

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COVER SHEET

Title: Land Acquisition for Peaking Plant at Tinker Air Force Base (AFB), Oklahoma City, Oklahoma (OK).

Responsible Agency: Tinker AFB, 72nd Air Base Wing Civil Engineer Environmental Branch

Designation: Draft

Point of Contact: Heartsong Turnbull, Tinker AFB

Abstract: Auxilio Management Services prepared this Environmental Assessment (EA) for Tinker AFB to assess the potential environmental consequences associated with land acquisition, construction and operation of a new peaking plant, and deconstruction of an existing peaking plant at Tinker AFB, OK. Oklahoma Gas and Electric (OG&E), the owner and operator of the current peaking plant, plans to retire the two electric generating units in 2025 after 54 years in service, in accordance with OG&E's 2021 Integrated Resource Plan (IRP) as approved by regulatory authorities. The proposed project is anticipated to be completed within the next two years (fiscal year [FY] 24 to FY 25).

The purpose of the Proposed Action is to maintain Tinker AFB's energy resiliency plan and islanding capabilities in support of Tinker AFB's mission and tenants. The Proposed Action is needed to address the retirement of the current peaking plant scheduled in 2025 and to continue providing uninterrupted backup power and islanding capabilities.

Tinker AFB prepared this EA in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 United States Code 4321 et seq.), the White House Council on Environmental Quality (CEQ) regulations implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500–1508), and the Department of the Air Force (DAF) Environmental Impact Analysis Process (EIAP) (32 CFR Part 989).

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ENVIRONMENTAL ASSESSMENT

Land Acquisition for Peaking Plant at Tinker Air Force Base, Oklahoma City, Oklahoma

TABLE OF CONTENTS

Section **Page**

Section **Page**

List of Figures

List of Tables

CHAPTER 1
PURPOSE OF AND NEED FOR ACTION

1.1 INTRODUCTION

Tinker AFB, located in central Oklahoma five miles southeast of downtown Oklahoma City (Figure 1-1 and Figure 1-2), proposes to acquire and lease land to Oklahoma Gas and Electric (OG&E) who will construct a new electric peaking plant. The scope of work includes land acquisition of a parcel in proximity to Tinker AFB, lease of land to OG&E who will construct and operate a new electric peaking plant, and deconstruction of the existing electric peaking plant located on Tinker AFB. The new facility's estimated footprint is 6.5 acres.

This section provides a description of the Proposed Action, a statement of the purpose and need for the Proposed Action, and an overview of the scope of the environmental analysis, regulatory framework, public involvement activities, and other analyses relevant to the action.

1.2 TINKER AFB

Tinker AFB opened in 1942 and is home of the 72nd Air Base Wing, Oklahoma City Air Logistics Complex (OC-ALC), 552nd Air Control Wing, 507th Air Refueling Wing, 513th Air Control Group, 10th Flight Test Squadron, the U.S. Navy's Strategic Communications Wing One, the Defense Logistics Agency's Defense Distribution Depot Oklahoma City, 38th Cyberspace Engineering Installation Group, and Defense Mega-center Oklahoma City (Tinker AFB 2019).

Tinker AFB covers approximately 5,604 acres of land. Structures include a 10,000-foot runway, 11,100-foot runway, almost 700 family housing units, 48 miles of road, 458 buildings, and 57 aircraft assigned to associate units. The annual air traffic control traffic count is 34,000 to 36,000 and the annual ground traffic is approximately 20,000 (Tinker AFB 2019).

1.3 PROJECT BACKGROUND

OG&E serves more than 871,000 customers in a 30,000 square mile area of Oklahoma and western Arkansas (OG&E 2021), including Tinker AFB. Among the electric generating units owned and operated by OG&E, they operate an electric peaking plant located at Tinker AFB. Two aero-derivative simple-cycle combustion turbines (CT), with a current generating capacity of approximately 64 megawatts (MW) combined, were originally installed at OG&E's Mustang power plant site in 1971. In 1990, OG&E moved these two units to Tinker AFB creating an electric peaking plant to support the base's needs for backup power and Electrically Islanded Operation (EIO), where the base completely disconnects from the grid and is powered solely using the electric peaking plant, a key to maintaining energy resiliency and reducing overall risk to the Department of Air Force (DAF) mission objectives (AFMC 2023). OG&E also routinely operates the units at peak times to maintain regional grid voltage, with Tinker AFB being the first customer in line for power. The two units are planned to be retired in 2025 after 54 years in services; such units are commonly retired after an average of 30 years of operation (OG&E 2021).

Department of the Air Force Instruction (DAFI) 90-1701, *Installation Energy and Water Management*, requires installations to provide the energy and water necessary to support critical missions (DAF 2020a). As such, Tinker AFB in conjunction with OG&E must address the retirement of the existing peaking plant

and its support of critical missions at Tinker AFB. DAFI 90-1701 identifies primary power generation systems as playing an important role in increasing and maintaining energy resiliency and identifies Power Purchase Agreements with private utilities as a means for obtaining access to power requirements (DAF 2020b). As such, Tinker AFB continues to partner with OG&E to provide a location for an electric peaking plant (owned and operated by OG&E) while remaining a first-in-line customer to support installation backup electricity requirements and EIO support.

Tinker AFB prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 United States Code 4321 et seq.), the White House Council on Environmental Quality (CEQ) regulations implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500–1508), and the DAF EIAP (32 CFR Part 989), to evaluate the potential environmental impacts associated with implementation of the Proposed Action.

Tinker AFB aims to use this assessment to streamline NEPA compliance and facilitate the land acquisition/lease/construction process by evaluating the potential impacts of implementing these projects in one integrated document.

The EA provides sufficient evidence and analysis for determining whether an action would cause significant environmental impacts. If significant impacts are identified, an Environmental Impact Statement (EIS) would then be required. If no significant impacts are identified, then the agency may issue a Finding of No Significant Impact (FONSI) (40 CFR 1501.6). A FONSI is a decision document that briefly presents the reasons why an action would not have a significant effect on the human environment (40 CFR 1508.1(l)). As required by NEPA and the implementing regulations from CEQ and DAF, the alternative of taking no action is evaluated, providing a baseline for comparison of potential impacts from the action alternatives.

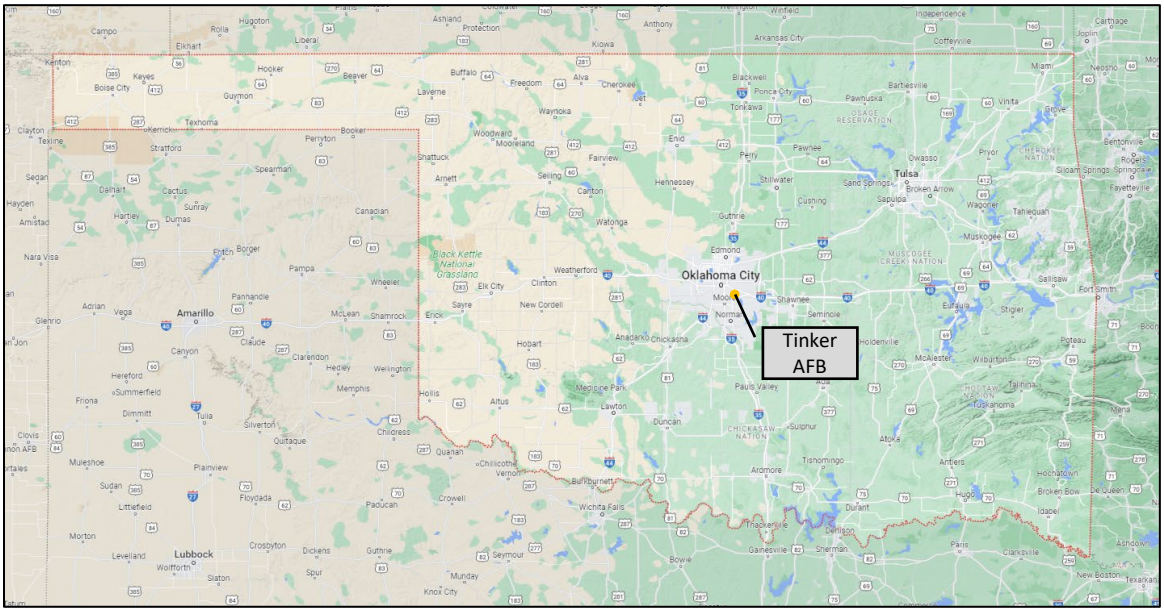

Figure 1-1. Regional Setting

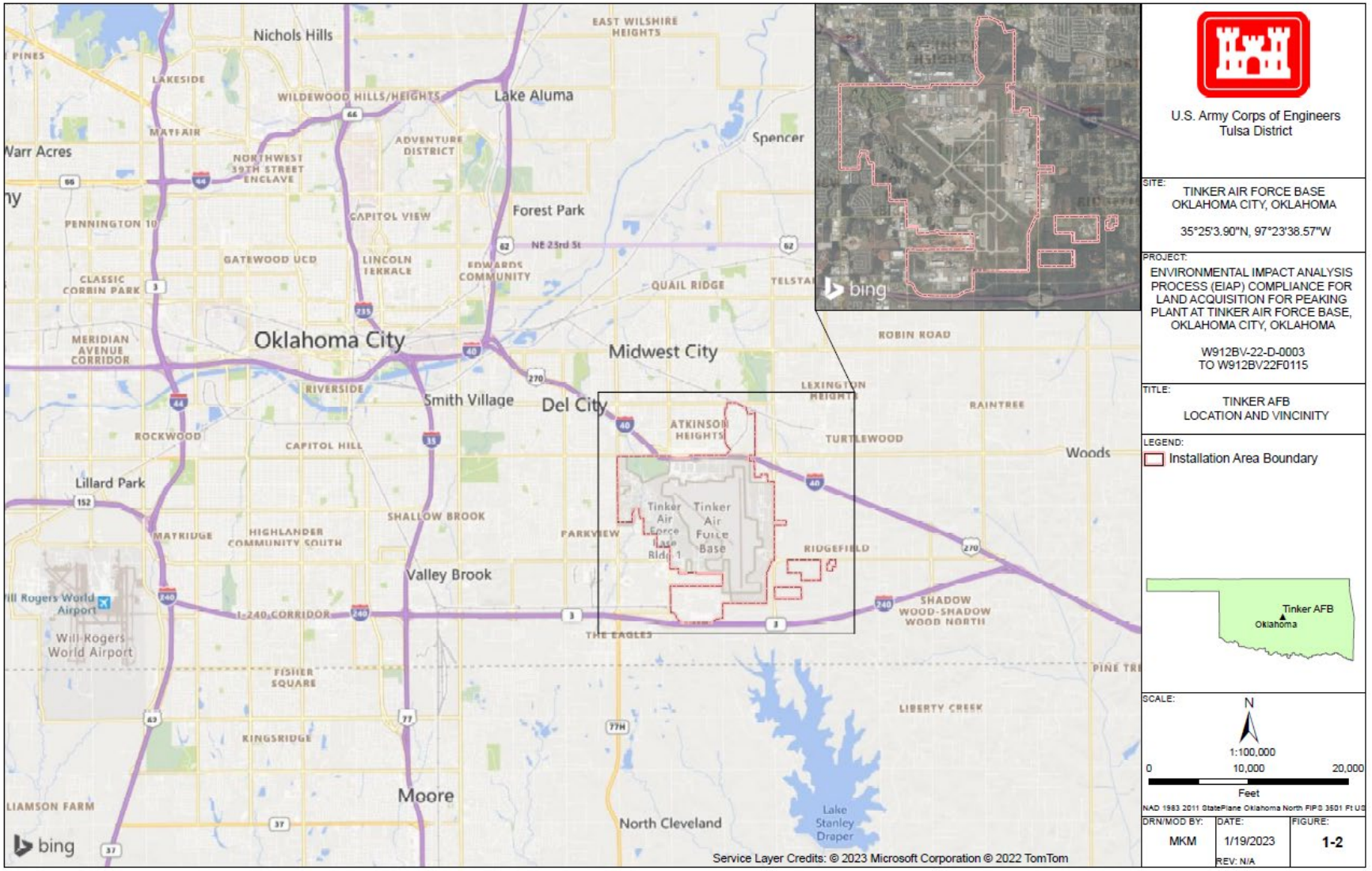

Figure 1-2. Tinker AFB Location

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1.4 PURPOSE OF PROPOSED ACTION

The **purpose** of the Proposed Action is to maintain Tinker AFB's energy resiliency[1] plan and islanding capabilities in support of Tinker AFB's mission and tenants. Tinker AFB relies on OG&E to provide reliable and redundant electricity powering base operations. Additionally, Tinker AFB's mission requires the capability for EIO, where the base completely disconnects from the grid and is powered solely by an individual power generating source such as the current electric peaking plant.

Tinker AFB in conjunction with OG&E must address the retirement of the existing peaking plant and its support of critical missions at Tinker AFB. Additionally, Tinker AFB must continue to partner with OG&E to provide a location for an electric peaking plant (owned and operated by OG&E) while remaining a first-in-line customer to support installation electricity requirements and EIO support.

1.5 NEED FOR PROPOSED ACTION

The Proposed Action is **needed** to address OG&E's planned retirement of the current electric peaking plant in 2025 and to continue providing uninterrupted backup power and islanding capabilities for Tinker AFB. The two electric generating units comprising the current electric peaking plant are planned to be retired in 2025.

1.6 COORDINATION AND CONSULTATIONS

1.6.1 Interagency and Intergovernmental Coordination and Consultations

In accordance with Executive Order (EO) 12372, *Intergovernmental Review of Federal Programs*, federal, state, and local agencies with jurisdiction that could be affected by the alternative actions will be notified and consulted during the development of this EA. Through the scoping process, Tinker AFB provides opportunities for the public to participate in the NEPA process to promote open communication and improve their decision-making process. All persons and organizations identified as having potential interest in the Proposed Action are encouraged to participate in the scoping process.

In accordance with Section 106 of the National Historic Preservation Act (NHPA) and implementing regulations (36 CFR Part 800), and Section 7 of the Endangered Species Act (ESA) implementing regulations, and the Migratory Bird Treaty Act [MBTA], findings of effect and request for concurrence will be included in correspondence to the Oklahoma State Historic Preservation Office (SHPO)/Oklahoma Archaeological Society (OAS) and the U.S. Fish and Wildlife Service (USFWS), respectively. Tinker AFB submitted correspondence with SHPO and OAS on May 22, 2023; SHPO provided concurrence on June 5, 2023, and OAS provided concurrence on June 22, 2023.

[1] 10 USC 101(e)(6) defines energy resiliency as "the ability to avoid, prepare for, minimize, adapt to, and recover from anticipated and unanticipated energy disruptions in order to ensure energy availability and reliability sufficient to provide for mission assurance and readiness, including mission essential operations related to readiness, and to execute or rapidly reestablish mission essential requirements."

Comments and concerns submitted in these processes are subsequently incorporated into the analysis of potential environmental impacts conducted as part of the EA. Appendix A of the EA contains the list of agencies consulted during this analysis and copies of correspondence.

The Department of the Air Force (DAF), as the responsible agency, is accountable for implementing the scoping and consultation processes. Through this process, DAF notifies relevant federal, state, and local agencies about the Proposed Action and alternatives. This coordination process provides DAF the opportunity to cooperate with and consider state and local views in implementing the Proposed Action or alternatives. As OG&E will be leasing the land from the DAF and will be owning and operating the electric peaking plant, they have been designated as a project proponent involved in the preparation of this EA.

1.6.2 Government to Government Consultations

Consistent with National Historic Preservation Act of 1966 implementing regulations (36 CFR Part 800), DoD Instruction 4710.02, *DoD Interactions with Federally-Recognized Tribes*, DAFI 90-2002, *Interaction with Federally-Recognized Tribes*, and Air Force Manual 32-7003, *Environmental Conservation*, the DAF is also consulting with federally recognized tribes that are historically affiliated with the geographic region being considered for the Proposed Action regarding the potential to affect properties of cultural, historical, or religious significance to the tribes. The tribal coordination process is distinct from NEPA consultation or the intergovernmental coordination processes and requires separate notification of all relevant tribes. The timelines for tribal consultation are also distinct from those of intergovernmental consultations. The Tinker AFB point of contact for Native American tribes is the Base Civil Engineer. Appendix A of the EA contains the list of tribes consulted during this analysis and copies of correspondence.

1.7 PUBLIC AND AGENCY REVIEWS

NEPA, 40 CFR Parts 1500-1508, and 32 CFR Part 989 require public and agency review of the Draft EA and Draft FONSI before approval of a FONSI and implementation of a Proposed Action. Consistent with DAF EIAP (32 CFR Part 989), the public involvement process for this EA will consist of an early public notice announcing the project and upcoming availability of a Draft EA/FONSI, publication of a Notice of Availability (NOA) of the Draft EA/FONSI, and a public comment period on the Draft EA/FONSI. Public comments will be taken into consideration during preparation of the Final EA and FONSI.

The DAF's NEPA guidance states the EA process must include at least a 30-day public comment period on the Draft EA and Draft FONSI, which starts with the publication of an NOA. The NOA was published in the Oklahoman on December 24 and 26, 2023, as the newspaper of record. The NOA was also published in the Midwest City Beacon on December 27, 2023. A copy of the Draft EA and Draft FONSI were made available at the Midwest City Library. An electronic version of the Draft EA and Draft FONSI were also made available on the Tinker AFB website.

CHAPTER 2
DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 DEVELOPMENT OF ALTERNATIVES

This chapter provides information on the Proposed Action and the No Action Alternative. The No Action Alternative serves as the baseline for identifying the impacts from the Proposed Action. NEPA, and the CEQ and DAF regulations for implementing NEPA, require all reasonable alternatives to be rigorously explored and objectively evaluated. To identify alternatives for the Proposed Action, DAF explored and considered other reasonable alternatives to the Proposed Action. Through this screening process, marginal or unsuitable alternatives were eliminated from further consideration.

2.1.1 Selection Standards

In an effort to satisfy the purpose and need for the project, the DAF developed criteria to compare and contrast alternative ways of fulfilling the objectives in accordance with 32 CFR 989.8.

Each alternative was evaluated against the following selection standards:

1. Maintain uninterrupted energy resiliency and islanding capabilities. During emergency operations, Tinker AFB is required to maintain backup power and EIO capabilities, where the base completely disconnects from the grid and is powered solely using an onsite peaking plant, throughout the project and beyond (AFMC 2023).
2. Location on or near Tinker AFB to use current infrastructure and interconnection capabilities and minimize environmental impacts. Sites on or within approximately 5 miles of Tinker AFB (and more specifically, the current peaking plant location) are preferred as the need for construction of new transmission infrastructure and right-of-way maintenance are minimized within this distance. Potential environmental impacts are increased as this distance is increased. Additionally, Tinker AFB has developed a relationship with OG&E where they are granted priority over other customers in power access generated from the peaking plant in order to secure energy resiliency at the installation ensuring DAF mission objectives are achieved. Locating the site distant from Tinker AFB would result in a loss of these privileges. Tinker AFB also benefits from energy resiliency (and reduced risks) by controlling the property through anti-terrorism/force protection (AT/FP) measures.
3. Siting requirements. A minimum site size of approximately 10 acres is required, accounting for approximately 6.5 acres for facility needs surrounded by additional acreage for buffering, fencing, a future substation, and siting flexibility. Acreage needed to provide AT/FP standoff distances meeting DoD/DAF requirements must be provided. Sites located primarily outside of floodplains and with minimal wetlands on site are preferred as site flooding can impact the operation of the power generating units and jeopardize Tinker AFB's energy resiliency.

Tinker AFB, in conjunction with OG&E, performed a siting study evaluation of potential sites on and surrounding Tinker AFB to identify potential sites capable of meeting the selection standards above. Several specific sites were considered, and ultimately, one off-site location was identified as potentially capable of satisfying the selection standards.

2.1.2 Proposed Action (Preferred Alternative)

Under the Proposed Action, the Air Force (Tinker AFB) would acquire a parcel of land neighboring Tinker AFB and lease the land to OG&E who will construct and operate a new electric peaking plant with an electrical generating capacity of approximately 90 MW. Tinker AFB and OG&E identified two 10-acre parcels located at 5500 S. Douglas Boulevard., Oklahoma City, OK, as the preferred location for the new plant. The site is an ideal location to construct the new peaking plant in order to best support the existing electrical loads on base. The land is currently owned by the Oklahoma Industries Authority and is located immediately to the east of the current facility. The parcel size allows for flexibility in laying out the new facility, including site access. Figure 2-1 depicts the current and proposed locations of the peaking plant.

Similar to the current electric peaking plant, the new electric peaking plant is anticipated to consist of two simple-cycle combustion turbines, each with an electrical generating capacity of approximately 45 MW. The exact specifications of the new units are not yet known as OG&E has not yet completed the selection process for construction of the new peaking plant. The footprint area needed for the two electrical generating units and supporting needs is approximately 6.5 acres. An additional area of approximately 3.5 acres is needed for the future addition of a substation at the site. Therefore, the total area needed to accommodate the two units with associated switchyard and substation equipment is approximately 10 acres. The approximately 10-acre area of disturbance would be located west of the road that bisects the parcel from north to south.

Plant construction would include vegetation removal and grading of the approximately 6.5-acre footprint. Road base or other surface material may be placed in areas to stabilize the surface and minimize erosion and future vegetative growth. Approximately 1 acre of the area between the plant and Douglas Boulevard would be paved for parking and site access. Natural gas infrastructure would be rerouted to the new site by installing an underground pipeline approximately ¼ mile in length, and 3-5 feet wide and deep, connecting the site to local infrastructure. The area would be fenced to prevent unauthorized access. Future plans include eliminating general traffic on Douglas Boulevard in the vicinity of Tinker AFB in conjunction with construction of an anticipated B-21 campus.

OG&E would operate and maintain the facility similar to their current facility. Operations may include on-site or remote activation and deactivation of the units. General facility maintenance may include lubrication of facility components, replacement of air filters, inspection and general repairs, and site landscape maintenance.

The existing peaking plant would be deconstructed, fencing removed from the original location, and the site would be made available for general purpose use at Tinker AFB. Depending on future uses of the area, the site may or may not be revegetated.

Figure 2-2 presents a schematic of the approximate layout of facility components at the potential site. This figure represents a preliminary layout of facility components; final location of facility components may change slightly to incorporate AT/FP standoff distances, utility avoidance, and other factors.

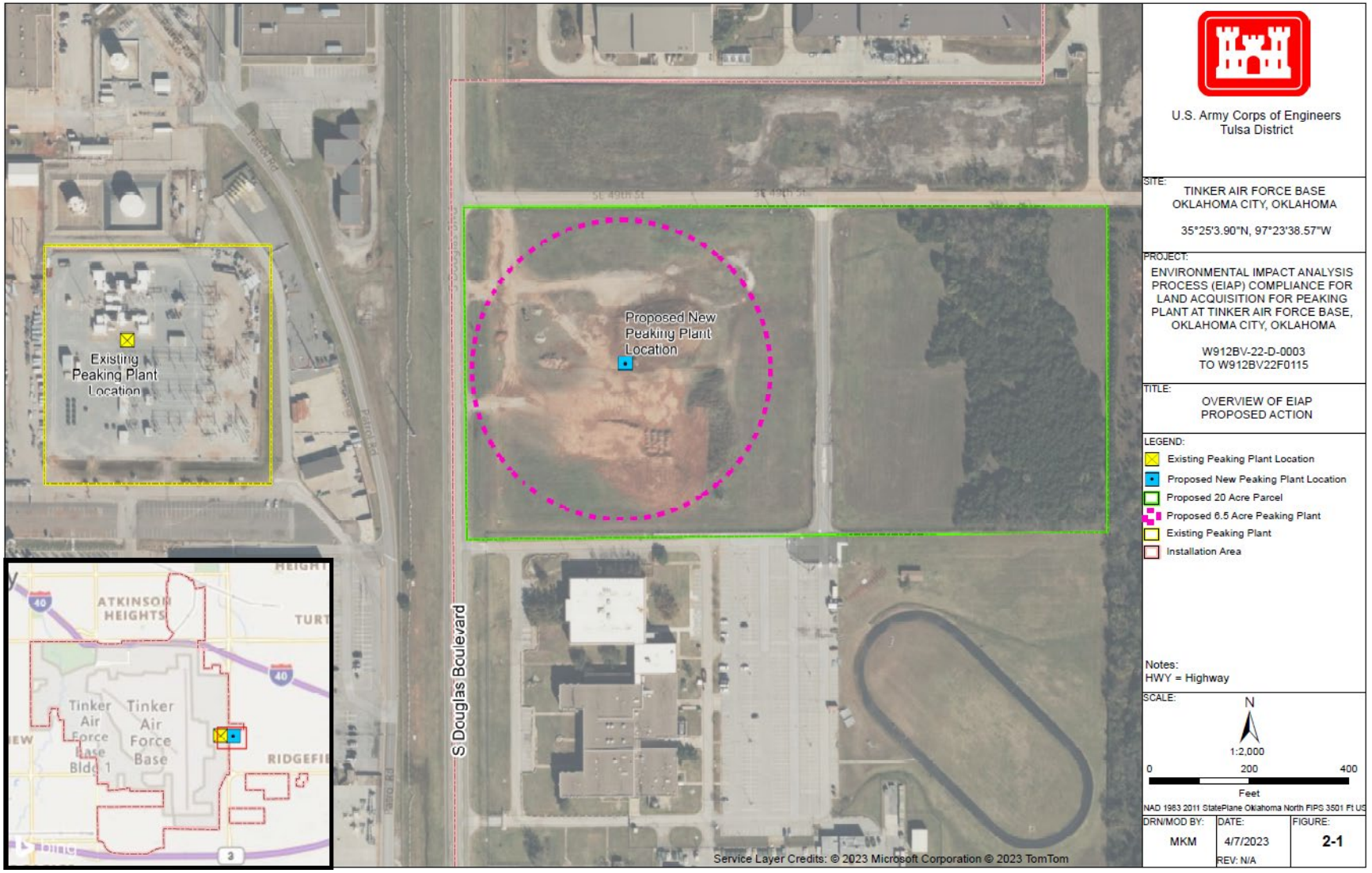

Figure 2-1. Proposed Project Location

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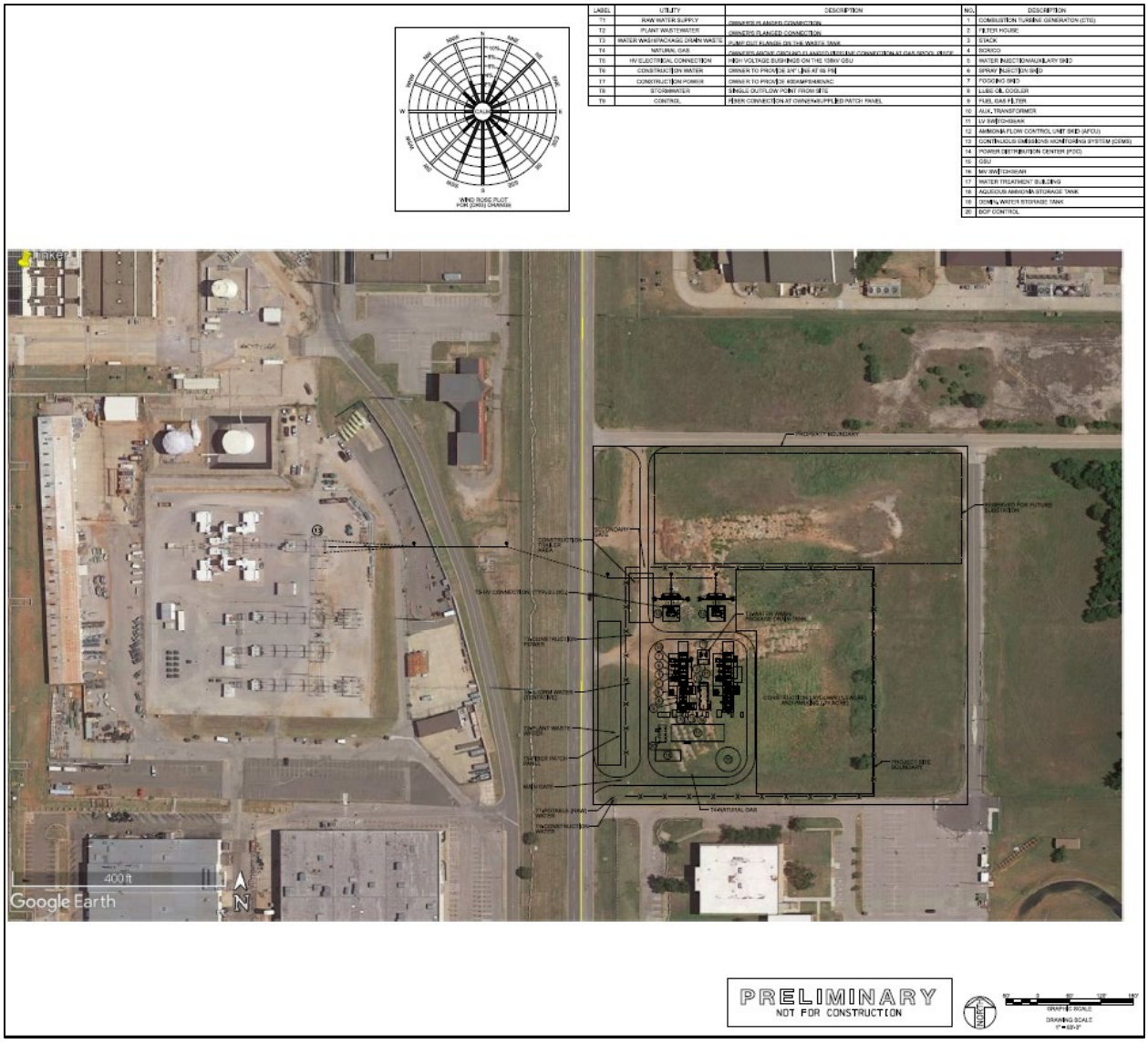


Figure 2-2. Potential Site Facility Layout

2.1.3 No Action Alternative

The No Action Alternative serves as a benchmark against which the effects of the Proposed Action can be evaluated. For this project, the No Action Alternative is defined as not taking any further action with regards to constructing a new peaking plant. The current peaking plant would remain in operation until its retirement in 2025, at which point OG&E would likely decide to construct a new peaking plant at another location where Tinker AFB would not be given privileges and priority access to power generation.

The No Action Alternative would challenge Tinker AFB's objective of maintaining its energy resiliency plan and islanding capabilities. The No Action Alternative is not considered a reasonable alternative because it does not meet the purpose of and need for the Proposed Action. However, as required under CEQ and DAF regulations (40 CFR 1502.14[c] and 32 CFR 989.8[a]), the No Action Alternative does provide a description of the baseline conditions against which the impacts of the Proposed Action can be compared.

2.1.4 Alternatives Considered but Eliminated from Further Consideration

Tinker AFB considered the following alternatives to the proposed peaking plant location.

2.1.4.1 Alternative 1 – Existing Location

Tinker AFB considered removing the current peaking plant and rebuilding the new peaking plant in its current location. However, this would mean Tinker AFB would lose access to the backup power and EIO capabilities that the electric peaking plant provides throughout the 18-month construction duration. Generators could provide backup power to support individual facility operations for a short period (hours to days), but the use of generators to support the entire installation for 18-months would not be practicable. The existing peaking plant site is also landlocked (surrounded by other Tinker AFB buildings/operations) and could require some area expansion which is a limiting factor. Because Alternative 1 could not maintain uninterrupted energy resiliency and islanding capabilities compounded with limited acreage available for expansion, it was eliminated from further review.

2.1.4.2 Alternative 2 – Alternative Off-Site Location

Tinker AFB also considered building the new electric peaking plant at an alternative off-site location. No alternate off-site locations capable of satisfying the selection standards were identified within 5 miles of the current site (see Table 2-1). Since other off-site locations would be located further from the existing location, additional right-of-way and infrastructure would be needed to connect the new plant with the existing infrastructure. This additional distance may contribute to electric losses and greater environmental impacts. Additionally, Tinker AFB has developed a relationship with OG&E whereby hosting the peaking plant, they are granted priority to access power generated from the peaking plant for use in achieving mission objectives, including energy resiliency. Locating the site distant from Tinker AFB would result in a loss of these privileges. Tinker AFB also benefits from energy resiliency (and reduced risks) by controlling the property through AT/FP measures. Finally, locating the peaking plant at a site distant from the present location would require OG&E to perform a new interconnection study which could take two years or longer and extend past the planned retirement for the existing plant. Therefore, Alternative 2 was eliminated from further consideration.

Table 2-1. Regional Screening Results

Direction from Tinker AFB	Observations
North	Heavily developed, required land area not available.
Northwest	Heavily developed, required land area not available.
West	Heavily developed, required land area not available.
Southwest	Heavily developed, required land area not available.
South	End of runway not suitable for transmission infrastructure, transmission infrastructure requires crossing I-240, Lake Stanley Draper, no available parcels identified.
Southeast	End of runway not suitable for transmission infrastructure, no available parcels identified.
East	No obstructions, mostly suitable, available parcel identified.
Northeast	Heavily developed, required land area not available.

2.1.4.3 Alternative 3 – Alternative Energy Sources

Tinker AFB and OG&E considered renewable energy sources (primarily solar) combined with battery storage in lieu of a peaking plant powered by natural gas. However, land area requirements either on Tinker AFB or at a nearby off-site location were not available at a scale allowing Tinker AFB or OG&E to make the decision to construct and add such an asset to their operating portfolio (90 MW of power generation). For a typical 5 MW solar farm, approximately 11.5 acres are needed for solar panels, with an additional 8-10 acres required for other system hardware, spacing, etc. (GreenCoast 2023). Therefore, a solar farm producing the 90 MW project requirement would require in excess of 200 acres. Wind generation on-site is not practicable due to height restrictions at an air base and space availability. Land use requirements for wind generation are approximately 75 acres per MW (NREL 2009). Additionally, battery storage could not be rate-based to multiple customers, so any storage options would need to be fully paid for by DAF with minimal savings opportunities. Therefore, Alternative 3 was eliminated from further consideration.

2.1.5 Screening of Alternatives

Table 2-2 evaluates each alternative against the selection standards described in Section 2.1.1. The screening of alternatives indicates that for each of the potential project alternatives, DAF determined all selection standards could not be met. Therefore, DAF has eliminated these potential alternatives from further consideration.

Table 2-2. Screening of Project Alternatives

Selection Standards	Proposed Action	Alternative 1 (Existing Location)	Alternative 2 (Alternative Off-Site Location)	Alternative 3 (Alternative Energy Sources)
Maintain uninterrupted energy resiliency and islanding capabilities	Meets Standard	Standard Not Met	Meets Standard	Marginally Meets Standard
Location proximate to Tinker AFB to minimize electric loss and environmental impact	Meets Standard (<5 miles)	Meets Standard (On-Site)	Standard Not Met (>5 miles)	Standard Not Met (>5 miles)
A minimum site size of approximately 10 acres is required	Meets Standard	Standard Not Met	Meets Standard	Standard Not Met

2.2 RESOURCE AREAS ELIMINATED FROM DETAILED ANALYSIS

The determination of environmental resource areas to be analyzed versus those not carried forward for detailed analysis is part of the EA scoping process. CEQ and DAF regulations (40 CFR §1501.9(a) and 32 CFR 989.18) encourage project proponents to identify and eliminate resource areas from detailed study that are not important or have no potential to be impacted through implementation of their respective proposed actions.

The following environmental resource areas were found to have no applicability to the proposed action or the No Action Alternative, because there would be no potential for direct, indirect, or cumulative impacts. Therefore, these environmental resource areas were not carried forward for detailed analysis in this EA.

Airspace – The Proposed Action does not bring a new flying mission to Tinker AFB. Construction of a new peaking plant would not involve changes to, or use of, airspace. Therefore, the airspace resource area is not carried forward for detailed analysis in this EA.

Floodplains, Wetlands, and Coastal Zone Management – According to Federal Emergency Management Agency's (FEMA) National Flood Hazard Map (FEMA 2023), the proposed Peaking Plant site is outside of the 100-year and 500-year floodplains of drainageways in the area. The associated map includes Flood Insurance Rate Map No. 40109CO340H, effective 12/18/2009. According to the U.S. Fish and Wildlife Service's National Wetland Inventory Mapper, Soldier Creek and its tributaries lie to the north and east of the Proposed Peaking Plant site. Soldier Creek and its tributaries are mapped as freshwater forested/shrub wetlands (USFWS 2023b). No Waters of the United States, including wetlands, occur on the proposed Peaking Plant parcel. According to the National Oceanic and Atmospheric Administration (NOAA) Coastal Flood Exposure Mapper Website, there are no coastal zones in or around Tinker AFB or the proposed Peaking Plant site (NOAA 2023). Therefore, the floodplains, wetlands, and coastal zone management resource area is not carried forward for detailed analysis in this EA.

CHAPTER 3
AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES

3.1 INTRODUCTION

The following sections of this chapter describe the current conditions of the environmental resources, either man-made or natural, that would be affected by implementing the Proposed Action or the No Action Alternative. The existing conditions for relevant resources are defined to provide a meaningful baseline from which to compare potential future effects. Additionally, the potential environmental consequences that are likely to occur as a result of implementation of alternatives that are being considered and analyzed are described.

Cumulative effects on environmental resources result from the incremental effects of an action when added to the effects of other past, present, and reasonably foreseeable actions in the area. Cumulative effects can result from individually minor but collectively substantial actions taken over a period of time. In accordance with NEPA, a discussion of cumulative effects is required. Past, present, and reasonably foreseeable actions with the potential to contribute to cumulative effects of the Proposed Action have also been evaluated in this section. Future actions that are speculative are not considered in this EA. In February 2021, Tinker AFB completed an EA for the proposed development of construction and activation of the B-21 Maintenance Depot at Tinker AFB (AFCEC 2021). This project is anticipated to occur in the vicinity of the Proposed Action and could lead to potential cumulative effects. The B-21 Maintenance Depot project would include construction activities, demolition activities, renovation activities, increases in personnel, aircraft operations, aircraft maintenance operations, and utility usage.

Section 4.3 presents the environmental permits that may be required prior to implementing the Proposed Action.

3.2 AIR QUALITY AND CLIMATE CHANGE (GREENHOUSE GAS EMISSIONS)

Air quality is the degree to which the atmosphere is free of one or more contaminants (e.g., dust, fumes, gas, mist, odor, smoke, and vapor, also known as air pollutants) such as to be non-injurious to human, plant, or animal life. Air quality as a resource incorporates several components that describe the levels of overall air pollution within a region, sources of air emissions, and regulations covering air emissions.

Under the authority of the Clean Air Act (CAA) and subsequent regulations, the United States Environmental Protection Agency (USEPA) has divided the country into geographical regions known as Air Quality Control Regions (AQCR) to evaluate compliance with the National Ambient Air Quality Standards (NAAQS). The region of influence for the Proposed Action is Oklahoma County within the Central Oklahoma Intrastate AQCR (AQCR 47) (40 CFR 81.47). There are no Prevention of Significant Deterioration (PSD) sites located in the region near Tinker AFB (40 CFR 81.424).

The CAA of 1970, 42 USC Section 7401 et seq. amended in 1977 and 1990, is the primary federal statute governing air pollution. The CAA establishes NAAQS for criteria pollutants and classifies areas as to their attainment status relative to NAAQS. The six criteria pollutants with promulgated federal NAAQS are: particulate matter (PM_{10} and $PM_{2.5}$), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), lead (Pb), and ozone (O_3). The State of Oklahoma has accepted the federal standards.

Federal regulations designate air quality control regions in violation of the NAAQS as nonattainment areas (NAA) and areas that meet the NAAQS as attainment areas. An area's attainment status is determined for each of the NAAQS and provides information to evaluate the level of air quality impairment. An area previously designated nonattainment and subsequently re-designated to attainment is termed a maintenance area. A maintenance area has a maintenance plan or revision to the applicable State Implementation Plan (SIP), to ensure sustainment of the air quality standards. The General Conformity Rule (40 CFR Part 93, Subpart B) requires any federal agency responsible for an action in a nonattainment area or maintenance area to determine that action conforms to the appropriate SIP or that the action is exempt from the General Conformity Rule requirements.

Greenhouse gases (GHGs) are generated by both naturally occurring and man-made activities such as normal atmospheric activity, vehicle use, building heating and cooling, electricity generation, and other sources of combustion. Naturally occurring GHGs include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Man-made gases in addition to CO_2, CH_4, and N_2O include hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Each GHG has an estimated global warming potential value that equates the specific GHG to the global warming potential of CO_2, known as CO_2-equivalents (CO_{2e}). The CO_{2e} can be summed to review the cumulative GHG emissions.

3.2.1 Affected Environment

Federal regulations designate areas in violation of the NAAQS as nonattainment and areas with levels below the NAAQS as attainment. Oklahoma County is within Air Quality Control Region 47, which USEPA has designated as an attainment area for all criteria pollutants (USEPA 2023a). The General Conformity Rule (40 CFR Part 93) does not apply because all areas associated with the Proposed Action are in attainment.

Table 3-1 lists the emissions and operating hours associated with the existing peaking plant on Tinker AFB for the past three years (OG&E 2022).

Table 3-1. Emissions from the Existing Peaking Plant at Tinker AFB

Pollutant	Emissions per Year			Units
	2020	2021	2022	
Carbon Monoxide (CO)	6.953	6.619	19.138	tons
Nitrous Oxides (NO_X) expressed as NO_2	24.976	23.77	68.73	tons
PM_{10}-Primary (Filterable + Condensable)	0.85	0.806	2.33	tons
$PM_{2.5}$-Primary (Filterable + Condensable)	0.846	0.806	2.33	tons
Sulfur Oxides (SO_X) expressed as SO_2	0.612	0.541	1.564	tons
Volatile Organic Compounds (VOCs)	0.085	0.81	0.233	tons
Operating Hours	211.6	359.7	792.1	hours/year

Tinker AFB is a major source of air emissions and currently operates under Title V Permit No. 2021-0065-TVR3, currently under technical review. Outside of the peaking plant, emissions on base are primarily from the maintenance of aircraft, including the use of solvents, paint stripping, surface coating, jet engine testing, fuel tanks, boilers, and emergency generators. Table 3-2 lists Tinker AFB's facility-wide air emissions from all significant stationary sources.

Table 3-2. 2018 Emissions for Significant Stationary Sources at Tinker AFB

Pollutant	Emissions (tons per year)
CO	105.3
NO_X	121.7
Volatile organic compounds (VOCs)	467.3
PM_{10}	12.9
$PM_{2.5}$	9.4
SO_X	11.1

Climate and Greenhouse Gasses. Tinker AFB's average high temperature is 92.9 degrees Fahrenheit (°F) in the hottest month of July, and the average low temperature is 27.1°F in the coldest month of January. Tinker AFB has an average annual precipitation of 35.6 inches per year. The wettest time of the year is May and June with an average rainfall of 4.6 and 4.9 inches (BestPlaces, 2023).

EO 13834, *Efficient Federal Operations,* outlines policies intended to ensure that federal agencies meet statutory requirements related to energy and environmental performance of executive departments and agencies in a manner that increases efficiency, optimizes performance, eliminates unnecessary use of resources, and protects the environment. The EO specifically requires agencies within the DoD to measure and report their GHG emissions.

3.2.2 Environmental Consequences

3.2.2.1 Proposed Action

Evaluation Criteria

Estimated criteria pollutant emissions from the construction and demolition portions of the Proposed Action were calculated using the U.S. Air Force's Air Conformity Applicability Model (ACAM) Version 5.017b. ACAM outputs represent maximum emissions without the implementation of any mitigation measures that might reduce emissions. Appendix B presents the ACAM assumptions, full analysis results, and Record of Conformity Analysis (ROCA). Climate change presents a global problem caused by increasing global atmospheric concentrations of GHG emissions, and the current status of the science surrounding it does not support determining the global significance of local or regional emissions of GHGs from a particular action. Nonetheless, GHGs were quantified for the Proposed Action for purposes of disclosing the local net effects (increase or decrease) and for their potential usefulness in making a reasoned choice among alternatives.

Pollutant and GHG emissions from the operation portion of the Proposed Action were calculated using emission factors from USEPA's AP-42 for uncontrolled natural gas fired turbines (USEPA 2000).

As the operator of the proposed peaking plant, OG&E would be required to evaluate the new stationary source for permitting requirements. PSD permits for individual sources are not expected because no PSD sites are located in the region near Tinker AFB (40 CFR 81.424).

The potential emissions are estimated and compared to the General Conformity *de minimis* thresholds. The General Conformity *de minimis* threshold values are used as a conservative indicator if a project's emissions within an attainment area would exceed the NAAQS.

Air Quality Analysis

Demolition and Construction

The Proposed Action primarily involves the removal of the existing peaking plant, construction of the new peaking plant at the proposed location, and plant operation. Personnel levels would not substantially increase as a result of the implementation of the Proposed Action.

The Proposed Action would produce emissions from mobile sources during demolition and construction activities and from a new stationary source during operation. Appendix B provides detailed information on the construction and demolition elements and quantities associated with each aspect of the project.

As shown in Table 3-3, the estimated emissions from demolition and construction would be below indicators of significance designated as per the Air Force Air Quality EIAP Guide series (i.e., *de minimis* levels) (USAF 2020).

Operations

Although the exact specifications of the new peaking plant are not available, the functionality of the new plant would remain basically the same as the existing plant. Therefore, operational emissions would remain similar to baseline emissions, and would be expected to decrease from the current state as the new peaking plant would benefit from improved efficiency of newer equipment. The Proposed Action would not increase staffing levels that would lead to an increase in mobile source emissions. Operational emission estimates were calculated assuming the highest number of annual operational hours (from 2022) and emission factors for a natural gas turbine with uncontrolled emissions, as a worst-case scenario.

Climate Change Considerations

To serve as a reference point, the estimated GHG emissions were compared against the proposed NEPA GHG threshold indicator for quantitative analysis of 25,000 metric tons of CO_2e per year (refer to Table 3-3). Based on the relative magnitude of estimated GHG emissions, a general inference can be drawn regarding whether the Proposed Action would in any way be meaningful with respect to the discussion regarding climate change. As shown, emissions of GHG would be negligible when compared to the proposed NEPA GHG threshold indicator. This demonstrates that in isolation, additional GHG emissions expected as a result of the implementation of the Proposed Action would have a negligible effect on climate change.

Table 3-3. Estimated Emissions (Maximum Emissions Year by Project)

Project Phase	Emissions in Maximum Emission Year (tons/year)[1]							CO_2e (Metric tons/year)[2]
	CO	Pb	VOC	NO_x	SO_x	PM_{10}	$PM_{2.5}$	
Construction/Demolition	0.383	0.000	0.048	0.253	0.001	4.382	0.010	78.9
Operation	0.244	ND	0.006	0.951	0.010	0.006	0.014	299.7
de minimis Indicator of Significance (per year)	100	25	100	100	100	100	100	--
Do Emissions exceed *de minimis*?		**No**	**No**	**No**	**No**	**No**	**No**	**No**

Notes: [1] Rounded to the nearest thousandth.
[2] Rounded to the nearest tenth.
[3]All emissions are unmitigated, (i.e., no dust control, low volatile organic compound paint, or construction equipment idle controls, etc.).

Summary of Project Emissions and Impact

As shown in Table 3-3 and supported by the detailed calculations in Appendix B, implementation of the proposed construction and demolition activities would generate emissions less than *de minimis* levels. Operational emissions would stay the same or decrease from current conditions. Estimated GHG emissions would be well below recognized thresholds. Appendix B provides the Record of Air Analysis (ROAA), demonstrating that no further general conformity review is required. As the owner/operator of the new asset, OG&E would obtain any required CAA operating permits (see Section 4.3). Therefore, implementation of the Proposed Action would result in a less than significant impact to air quality and climate change.

3.2.2.2 No Action Alternative

Under the No Action Alternative, no change to the existing conditions would occur. Air emissions may decrease or move as the existing peaking plant will be retired in 2025. OG&E may decide to replace the asset elsewhere, outside of Tinker AFB. Therefore, implementation of the No Action Alternative would result in less than significant impacts to air quality and climate change.

3.2.3 Cumulative Effects

As shown in Table 3-3, the total annual emissions from the Proposed Action would be below *de minimis* levels and the GHG threshold identified by CEQ in draft guidance for evaluating the significance of GHG emissions. Present and future projects at Tinker AFB and throughout the Central Oklahoma Intrastate AQCR would contribute criteria pollutant and GHG emissions. As demonstrated by the current attainment status of Oklahoma County for the NAAQS, regional emissions have not resulted in an exceedance of the NAAQS. Therefore, cumulative impacts to air quality at Tinker AFB that could result from implementation of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable actions would not be significant.

3.3 CULTURAL RESOURCES

3.3.1 Affected Environment

The affected environment (or Area of Potential Effect [APE]) for cultural resources is a 10-acre parcel that adjoins the east margin of Tinker AFB and is the preferred location for the proposed construction and operation of a new electric peaking plant. Although the APE is not on Tinker AFB and is not currently owned by the U.S. government, the proposed action, including acquiring the parcel for a peaking plant, is a federal action subject to compliance with the National Historic Preservation Act (NHPA) and related federal cultural resources laws and regulations.

3.3.1.1 Cultural Resources at Tinker AFB

Cultural resources on Tinker AFB are described in the current Integrated Cultural Resources Management Plan (ICRMP) for the base (Tinker AFB 2021).

A total of 1,922 acres of Tinker AFB (34%) has been surveyed for Native American and Euro-American archaeological remains; the remaining 66% of the land on the base is heavily disturbed and exempt from the archaeological inventory. (Klinger and Smith 1992; Parsons Engineering Science Inc. 2000). The inventory yielded two Native American and four Euro-American archaeological sites; both Native

American sites (34OK-166, 34OK-167) and one Euro-American site (34OK-157) are considered eligible for the National Register of Historic Places (NRHP).

As of 2021, all buildings and structures on Tinker AFB constructed more than 50 years ago (n = 197) have been inventoried and evaluated (Klinger and Smith 1992; Woodward-Clyde Federal Services 1994, 1996; Hardlines Design Company 2001, 2005). Buildings and structures officially determined eligible for the NRHP include five individually eligible buildings and one historic district (Douglas Cargo Aircraft Manufacturing Plant Historic District), containing seven contributing elements (Tinker AFB 2021; Oklahoma Historical Society 2023).

Tinker AFB does not contain any Native American Traditional Cultural Places (TCPs) or sacred sites (Tinker AFB 2021: 85). Five Native American tribes with ancestral ties to Tinker AFB lands have been consulted: the Caddo Nation of Oklahoma, the Muscogee (Creek) Nation, the Osage Nation, the Seminole Nation, and the Wichita & Affiliated Tribes.

3.3.1.2 Cultural Resources on the Proposed Peaking Plant Site

The preferred location for the proposed electric peaking plant is a 10-acre parcel that adjoins the east margin of Tinker AFB. The parcel (account R143873000) is currently owned by Oklahoma Industries Authority, but was owned by Oklahoma County during 2003-2021. At present, there are no buildings or structures located on the parcel, although a house and several commercial/light industrial buildings were present between 1938 and 2005 (described below). Review of historic aerial photographs and satellite imagery, and a site visit conducted in March 2023, indicate that most of the parcel has been heavily disturbed by construction and demolition of these buildings and associated features (see Figure 3-1). Additionally, Oklahoma County has used the parcel for disposal of earthen fill and debris, which currently occupies roughly 50% of the surface area of the parcel.

Figure 3-1. 1963 Aerial Photograph of Affected Area

Figure 3-1 depicts a 1963 aerial photograph of the affected area, showing the former house in the southwest corner of the parcel and construction of commercial buildings in the northwest corner of the parcel (delineated by red line).

In order to inventory and evaluate cultural resources in the affected environment, Tinker AFB undertook the following steps: 1) file search for surveys and previously recorded sites on and within 1 mile of the 10-acre parcel at the OAS (performed by OAS staff on 23 March 2023); 2) archival research on the Euro-American history of the parcel, including search for relevant documents filed with Oklahoma County, and review of historic maps and aerial photographs; and 3) pedestrian walkover of the 10-acre parcel (performed by an archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards in the areas of archaeology and history on 28 March 2023).

The results of the file search indicated that (a) the 10-acre parcel had not been subject to archaeological survey, and (b) no Native American or Euro-American cultural resources have been recorded to date on the parcel.

Areas located south and east of the parcel were surveyed in 2001 by Parsons Engineering (2002) for Tinker AFB to inventory and evaluate archeological remains on land that now has been incorporated into Tinker AFB. The survey entailed a pedestrian walkover and shovel-testing of undisturbed areas. Three Euro-American sites, former 20th century homesteads, located several thousand feet south of the 10-acre parcel, were recorded; all three sites were subject to shovel testing and archival research, and all three sites were determined not eligible for the NRHP (Parsons Engineering 2002) (see Table 3-4).

Table 3-4. Archaeological Sites in the Vicinity of the Parcel

Site No.	Description	Features	Artifacts	Notes
34OK-170	subsurface feature, debris, artifacts (former homestead)	brick cellar, rubble pile, associated with well	glass fragments, nails, ceramics, wire	disturbed archaeological context
34OK-171	well(s) associated with former homestead	one and possibly two wells	no artifacts collected	heavy disturbance due to use of area for soil borrow, dump
34OK-172	foundation remains associated with former homestead	foundation remains (2 sets), debris	glass fragments, nails, ceramics, wire	disturbed archaeological context

Source: Parsons Engineering 2002.

The results of archival research on the parcel are summarized in Table 3-5. Review of documents on file with the Oklahoma County assessor and clerk & recorder, as well as historic maps and aerial photographs, revealed that the NW¼ of Section 24 (Township 11 North, Range 2 West), on which the 10-acre parcel is located, was homesteaded in 1895, but that no structures were built on the parcel until after 1938 (when the land was owned by the Luetjer family). A 1941 aerial photograph shows a house located in the southwest corner of the parcel. During the 1960s, the parcel was acquired by C.W. Curtis, and the house was demolished, while five commercial/light industrial buildings were constructed in the northwest quadrant of the parcel; several additional buildings were constructed during the early 1970s. In 2003-2005, the parcel was acquired (from the C.W. Curtis Corporation) by Oklahoma City County, and all the buildings were demolished (the current owner purchased the land from Oklahoma County in 2021).

Table 3-5. Ownership of N2/S2/SW4/NW4 of Section 24, T 11 N R 2 W since 1931

Year	Grantor	Grantee	Document
2021	Oklahoma County	Oklahoma Industries Authority	warranty deed (Book 14732, Page 1377)
2003	C. W. Curtis Corporation	Oklahoma County	warranty deed (Book 8989, Page 1873)
1995	Cecile L. Curtis	C. W. Curtis Corporation	warranty deed (Book 6800, Page 2121)
1984	Clayborn W. Curtis	Cecile L. Curtis	warranty deed (Book 5153, Page 1378)
1966	C. W. Curtis	Cecile L. Curtis	warranty deed (joint) (Book 3350, Page 611)
1966	American First Title and Trust	C. W. Curtis	warranty deed (Book 3335, Page 197)
1959	Roxie Sims et al.	American First Title and Trust	warranty deed (Book 2328, Page 535)
1956	Stella Farley Luetjer (deceased)	Roxie Sims (daughter) et al.	district court order (Book 2091, Page 249)
1942	Stella Luetjer	Oklahoma Natural Gas Co.	right of way agreement (Book 321, Page 424)
1931	Robert C. Hemphill et ux.	Stella Luetjer	quit claim deed (Book 413, Page 406)

Source: Oklahoma County Clerk & Recorder

A pedestrian walkover of the directly affected area (i.e., 10-acre parcel) was conducted at transect intervals of approximately 30 feet (10 meters). Ground surface visibility varied widely due to vegetation cover and surface disturbance but averaged roughly 20%. No shovel testing was performed during the walkover. Traces of the former C. W. Curtis Corporation buildings and driveways were identified on the surface. No traces of the house formerly located in the SW corner of the parcel were observed.

Consultation with the Oklahoma State Historic Preservation Office (SHPO) and Oklahoma Archaeological Society has determined that a preconstruction archaeology survey is not required. Archival research on the early 20th century house formerly located in the southwest quadrant of the parcel failed to yield any information on its history that would meet the eligibility criteria for the NRHP (see Table 3-5). No artifacts were observed on the ground surface during a March 2023 pedestrian walkover of the parcel, and the results of shovel-testing of sites of other 20th century homesteads near the parcel revealed heavy subsurface disturbance (Parsons Engineering 2002).

Tinker AFB will consult with the five tribes that have ancestral ties to the Tinker AFB area regarding Native American TCPs and sacred sites that could be affected by the proposed action.

3.3.2 Environmental Consequences

The significance of potential impacts to cultural resources are based on an evaluation of the context and intensity of impacts to historic properties listed in or eligible for listing in the NRHP that may cause loss or destruction of significant cultural resources. Adverse effects may directly or indirectly alter a characteristic that qualifies a property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

3.3.2.1 Proposed Action

The proposed action would have no effect on historic structures that are either listed on or officially determined eligible for the NRHP. Currently, there are no buildings or structures located on the 10-acre parcel that represents the preferred site for the proposed peaking plant. No buildings or structures that are officially determined eligible for the NRHP are located less than 1,500 feet of the site of the proposed peaking plant, including the Douglas Cargo Aircraft Manufacturing Plant Historic District (i.e., the proposed action would not affect the visual setting of any previously identified historic properties, due to distance).

Consultation with the Oklahoma SHPO and Oklahoma Archaeological Society has determined that a preconstruction archaeology survey is not required. If any archaeological remains are encountered during the survey, they will be evaluated for eligibility for the NRHP in consultation with the SHPO. If any remains are determined eligible for the NRHP, Tinker AFB will develop a Memorandum of Agreement (MOA) with the SHPO to avoid or mitigate any adverse effects of the proposed action to historic properties.

In the event of an unanticipated archaeological discovery during construction activities related to the proposed action, Tinker AFB will implement the following procedures: (1) construction activities within 50 feet of the discovery shall cease (work may continue in other areas); (2) the Project Manager shall notify the Tinker AFB Cultural Resources Manager (CRM); (3) the Tinker AFB CRM shall notify the Oklahoma SHPO to report the unanticipated discoveries and determine their NRHP-eligibility status; and (4) if any remains are determined eligible for the NRHP, Tinker AFB will develop an MOA with the SHPO to avoid or mitigate any adverse effects of the proposed action to historic properties.

If consultation with the five tribes that have ancestral ties to the Tinker AFB area results in identification of any Native American TCPs and sacred sites that would be affected by the proposed action, Tinker AFB will undertake further consultation with the affected tribe or tribes to avoid or mitigate the effect to TCPs or sacred sites.

3.3.2.2 No Action Alternative

The no action alternative (current peaking plant would remain in operation until its retirement in 2025) would have *no effect* on cultural resources. Operation of the current plant is not affecting any sites or structures that are either listed on or officially determined eligible for the NRHP and is not affecting any Native American TCPs or sacred sites identified by the concerned tribes (Tinker AFB 2021).

3.3.3 Cumulative Effects

The Proposed Action is not likely to cause adverse effects on cultural resources at and near Tinker AFB. No archaeological sites have been observed within the APE. There are no NRHP eligible resources located within the APE. There are no potential Traditional Cultural Properties that have been identified in the project area. However, any ground disturbing activities could have the potential to adversely impact currently unidentified cultural resources. The Proposed Action would not cause direct or indirect impacts to NRHP-eligible resources; no adverse effects would occur. Tinker AFB would continue to perform Section 106 consultation for potential impacts to cultural resources for all undertakings as applicable. No effects from other actions or activities have been identified that, when combined with the effects of the Proposed Action, would have a significant effect on cultural resources. Therefore, cumulative impacts to cultural resources at Tinker AFB that could result from implementation of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable actions would not be significant.

3.4 BIOLOGICAL AND NATURAL RESOURCES

3.4.1 Affected Environment

Historic aerial photographs (ERIS 2023) show the west side of the proposed Peaking Plant parcel has had perpetual and frequent surficial soil disturbance for over 75 years. In the 1940s, the site was converted from prairie to agricultural land and was farmed until the 1950s. In the early 1960s, the west side of the parcel was cleared, and buildings were erected where they remained until around 2005. After 2005, the buildings were demolished, and the site remained vacant until the present. Piles of soil and construction debris have been dumped on the west side of the site since 2005, while the eastern half of the site has remained largely undisturbed. The woodland area has emerged unchecked since the early 2000s. The mixed grass prairie area near the middle of the site was slightly disturbed until the early 2010s and has since been undisturbed.

3.4.1.1 Vegetation and Wildlife

The proposed peaking plant site is comprised of three general vegetative cover types including mixed grass prairie, weedy/disturbed, and mixed woodland. The western half of the proposed peaking plant site is dominated by weedy/disturbed vegetation due to the frequent and perpetual surficial soil disturbance that has occurred in this area over many years. The eastern half of the proposed project area is equally dominated by mixed grass prairie and a swath of mixed woodland. The eastern half of the site is not expected to be impacted by the proposed project.

The vegetation communities identified above correspond to wildlife habitat types that include grassland and woodland. The grassland habitat encompasses the mixed grass prairie and the weedy/disturbed vegetation communities. The mixed woodland habitat type encompasses the mixed woodland vegetation community. These habitat types were distinguished and characterized by their associated vegetation communities and dominant species as well as their usefulness to wildlife in the area.

Mixed Grass Prairie: The mixed grass prairie vegetation community lies in the middle portion of the site between the weedy/disturbed community and the mixed woodland community. This vegetation community type is dominated by a variety of grasses including big bluestem (*Andropogon gerardi*), Indiangrass (*Sorgastrum nutans*), little bluestem (*Schizachyrium scoparium*), purpletop (*Tridens flavus*), and poverty grass (*Danthonia spicata*). Forbs found in this vegetation community include beebalm (*Monarda sp.*), hairy sunflower (*Helianthus hirsutus*), and trailing lespendeza (*Lespedeza sp.*). A small pocket of lemon sumac (*Rhus aromatica*) occurs within this community.

This vegetation community provides good foraging areas for a variety of bird species including the American robin (*Turdus migratorius*), Brewer's blackbird (*Euphagus cyanocephalus*), blue jay (*Cyanocitta cristata*), and barn swallow (*Hirundo rustica*). The dominant large mammal that occupies this habitat type is the white-tailed deer (*Odocoileus virginianus*). Several medium-sized mammals occur within this vegetation community and include the Eastern cottontail (*Sylvilagus floridanus*), raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*). Carnivores occupying this vegetation community include the coyote (*Canis latrans*). Various small mammals also occupy this vegetation community and include mouse species (*Peromyscus sp.*) and woodrat (*Neotoma sp.*) as well as other rodent species.

Weedy/Disturbed: This vegetation community lies along the western half of the proposed peaking plant construction site. This area has had surficial soil disturbance perpetually and frequently over many years. Much of this area presently has exposed and denuded soils. The dominant vegetative ground cover is bermudagrass (*Cynodon dactylon*) with pockets of weedy annuals and biennials, like sunflower (*Helianthus*

sp.). Some woody growth also occurs in this vegetation community and includes elm (*Ulmus sp.*) and red cedar (*Juniperus virginiana*) seedlings and saplings.

Common birds occurring in this habitat type include mourning dove (*Zenaida macroura*), American goldfinch (*Carduelis tristis*), house sparrow (*Passer domesticus*), Eurasian collared dove (*Streptopelia decaocto*), and Eastern meadowlark (*Sturnella magna*). Raccoons, striped skunk, and eastern cottontail are commonly found in this habitat type. Additionally, the dominant carnivore in this habitat type is the coyote.

Mixed Woodland: The mixed woodland vegetation community lies along the east side of the project parcel. Red cedar is the dominant tree within this community with various other tree species including oak (*Quercus sp.*) and hickory (*Carya sp.*). Little understory occurs in this community due to the thick canopy.

Common birds in this habitat type include the mourning dove, northern cardinal (*Cardinalis cardinalis*), Brewer's blackbird, and woodpecker (*Melanerpes sp.*). Large mammals that occupy this habitat type include white-tailed deer. Additionally, other commonly found mammals within this community type include raccoon, striped skunk, fox squirrel (*Sciurus niger*), and opossum (*Didelphis virginiana*). A variety of rodent species also occupy this habitat type.

3.4.1.2 Federally Sensitive Species

The list of Endangered and Threatened Species that may occur within and directly around the proposed project area at the proposed Peaking Plant site is presented below. This list was obtained from the U.S. Fish and Wildlife Services' (USFWS) Information for Planning and Consultation (IPaC) database mapper (USFWS 2023a). These species include the following:

- Tri-colored bat (*Perimyotis subflavus*) – Proposed Endangered
- Piping plover (*Charadrius melodus*) – Threatened
- Red knot (*Calidris canutus rufa*) – Threatened
- Whooping crane (*Grus americana*) – Endangered
- Monarch butterfly (*Danaus plexippus*) – Candidate
- Bald eagle (*Haliaeetus leucocephalus*) – Bird of Concern
- Chimney swift (*Chaetura pelagica*) – Bird of Conservation Concern
- Lesser yellowlegs (*Tringa flavipes*) – Bird of Conservation Concern
- Little blue heron (*Egretta caerulea*) – Bird of Conservation Concern
- Red-headed woodpecker (*Melanerpes erythrocephalus*) – Bird of Conservation Concern

A Biological Assessment is included as Appendix C and presents each species and their habitat requirements as well as their potential to occur within the proposed project area.

3.4.1.3 State Sensitive Species

The list of state sensitive species that may occur within or directly adjacent to the proposed project area at the proposed Peaking Plant site is presented below. The list was obtained from the Oklahoma Department of Wildlife Conservation Database (OKDW 2023). These species include the following:

- Blackside darter (*Percina maculata*) – State Threatened
- Longnose darter (*Percina nasuta*) – State Endangered
- Oklahoma cave crayfish (*Cambarus tartarus*) – State Endangered

A Biological Evaluation is included as Appendix D and presents each species and their habitat requirements as well as their potential to occur within the proposed project area.

Other Oklahoma Species of Greatest Conservation Concern that may occur within or directly adjacent to the proposed project area include:

- Least tern (*sterna antillarum*)
- Migrant loggerhead shrike (*Lanius ludovicianus migrans*)
- Snowy plover (*Charadrius alexandrines*)
- Texas horned lizard (*Phrynosoma cornutum*)

3.4.1.4 Rare Plant Species

A rare plant species, the Oklahoma penstemon (*Penstemon oklahomensis*) occurs on the southeastern side of Tinker AFB, and historical locations of Oklahoma penstemon colonies have been observed south of the proposed Peaking Plant parcel off Tinker AFB.

The Oklahoma penstemon is endemic to Oklahoma and north Texas and is found in fragmented remnant native prairie communities as well as mixed native/non-native prairie areas and disturbed, non-native vegetation types. The penstemon is a perennial cool-season forb that typically blooms in late April to early May. Multiple surveys of the proposed project area were conducted during April-May 2023; the Oklahoma penstemon was found in the eastern portion of the subject parcel, but not in any areas proposed for construction activities in the western portion of the subject parcel. The rare plant was observed in bloom in a control plot on Tinker AFB.

3.4.2 Environmental Consequences

To evaluate effects to biological and natural resources, the alternatives are reviewed with respect to a variety of factors including the following:

- Cause displacement of terrestrial or aquatic communities or loss of habitat,
- Diminish the value of habitat for wildlife or plants,
- Interfere with the movement of native resident or migratory wildlife species,
- Conflict with applicable management plans for terrestrial, avian and aquatic species and their habitat,
- Cause the introduction of noxious or invasive plant species,
- Diminish the value of habitat for fish species,
- Affect or displace endangered, threatened, or other special status species, and
- Cause encroachment on or affect designated critical habitat of a federally listed species.

3.4.2.1 Proposed Action

<u>Direct Effects</u>

Vegetative Cover and Wildlife Habitat. The proposed peaking plant facility would be constructed on the west side of the existing asphalt roadway that cuts the parcel in half. This area has been perpetually and frequently disturbed through surficial soil disturbance and establishment of weedy annuals and biennials as well as a non-native grass species, bermudagrass. Any native species that have established within the west side of the site would be lost due to the proposed construction project. However, the weedy and non-native species would be removed from the site due to the proposed construction location. Permanent loss of vegetative cover (approximately 6-10 acres), weedy and non-native as well as native species, would occur under the Preferred Alternative. Trees, shrubs, and understory vegetation and any habitat, albeit little

habitat, will be removed before and during the construction activities. These effects to vegetation and wildlife from the Preferred Alternative would be minor because the project area is already disturbed. The existing proposed Peaking Plant site is surrounded by infrastructure and urban and commercial features. The Proposed Action increases the area of hard, impervious surfaces via pavement and gravel which will reduce the surface area of bare or vegetated soils for wildlife to use for burrowing, digging, nesting, cover, and hunting.

Displacement of Wildlife. Displacement of wildlife species is likely to occur in the short-term due to noise and human activity and occupation of the site, although the area where the proposed peaking plant would be constructed is already disturbed. Due to the nature and extent of the surficial soil disturbance and lack of native vegetation at the proposed peaking plant location, extensive wildlife populations are not typically using this site, although individual urban wildlife species, such as some bird species, squirrels, raccoons, and striped skunk, may use the area as a travel corridor, for hunting and food gathering, or for resting. Increased traffic from the construction of the facility may result in an increase in wildlife-vehicle collisions; however, the increase in wildlife mortality due to vehicle collisions would be unlikely to have a significant impact on local wildlife population. After construction is complete, urban wildlife will move back into the greater project area, but some habitat resources previously present will be gone or reduced.

Sensitive Species and Critical Habitat. No critical habitat for federally protected or state sensitive species occurs in the Proposed Action Alternative project area. Therefore, implementation of the Proposed Action would have no adverse effects to federally listed or state listed species.

In total, direct effects caused by the Proposed Action would not have a significant effect on biological and natural resources.

Indirect Effects

Indirect effects to vegetation, sensitive species, and general wildlife might occur under this alternative with the establishment of weedy species after construction due to additional surficial soil disturbance. Noxious and invasive plant species may continue to establish at the proposed Peaking Plant site and invade the mixed grass prairie and mixed woodland vegetation communities over time if left unchecked. Weedy species and invasive plants reduce and eliminate native habitat and vegetative species used by wildlife, including sensitive species, causing the displacement of wildlife species. Indirect effects caused by the Proposed Action would not have a significant effect on biological and natural resources.

3.4.2.2 No Action Alternative

No direct or indirect effects on vegetation, wildlife, or sensitive species would occur under this alternative as no impact to the vegetation communities within the proposed project area would be realized.

3.4.3 Cumulative Effects

The Proposed Action Alternative would increase the footprint of land under control of Tinker AFB and widen the area of human occupation and activity adjacent to the base. Wildlife, including sensitive species, generally avoid human occupation areas due to increased activity, noise, and light pollution. Potential impacts on biological and natural resources would be minimized by following the Tinker AFB Integrated Natural Resources Management Plan (INRMP) and BMPs to implement projects efficiently and effectively, and to be protective of the environment. No effects of other actions or activities have been identified that, when combined with the effects of the Proposed Action, would have significant effects on this resource.

Therefore, cumulative impacts to biological resources at Tinker AFB that could result from implementation of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable actions would not be significant.

3.5 WATER RESOURCES

Water resources include groundwater and surface water. Wastewater and storm water management is also considered as they can potentially impact water resources. Evaluation of water resources examines the quantity and quality of the resource and its demand for various purposes. Groundwater comprises subsurface water resources, which are essential to agricultural and industrial activities. Surface water includes lakes, rivers, and streams, all of which are important for ecological, economical, recreational, and health related reasons.

The Clean Water Act (CWA) of 1972, as amended (33 USC 1251 et seq.), and the Safe Drinking Water Act of 1974, as amended (42 USC 300f et seq.) are the primary federal laws protecting the nation's waters. In addition, several applicable regulations and permits are in place to protect the quality and quantity of water in the U.S. Implementing regulation requirements include National Pollutant Discharge Elimination System (NPDES) Construction Activity General Permit (40 CFR 122-124); NPDES Industrial Permit and NPDES Municipal Separate Storm Sewer System Permit; USEPA, Subchapter D Water Programs (40 CFR 100-149); and USEPA, Subchapter N Effluent Guidelines and Standards (40 CFR 401-471).

3.5.1 Affected Environment

3.5.1.1 Groundwater

Groundwater at Tinker AFB is found under either confined or unconfined conditions. The depth to groundwater in the shallow zones which could be impacted by the project varies from a few feet below ground surface to about 70 feet below ground surface depending on the local topography. Across Tinker AFB, water can sometimes be found in shallow, thin, discontinuous perched zones located above the aquifer.

Primary subsurface water zones identified at Tinker AFB include the Hennessey Water Bearing Zone, the Upper Saturated Zone (formerly the "Perched" Zone), the Lower Saturated Zone (formerly the "Top of Regional" and "Regional" aquifers), and the Producing Zone. Tinker AFB is located in a recharge area for these water-bearing zones; groundwater is derived primarily from precipitation and from infiltration of surface streams.

The Upper Saturated Zone, the Lower Saturated Zone, and the Producing Zone are used to designate three identifiable saturated zones that comprise the upper portions of the Central Oklahoma Aquifer under Tinker AFB. The Central Oklahoma Aquifer underlies about 3,000 square miles of central Oklahoma. The shallowest two saturated zones occur in the Garber Sandstone whereas the Producing Zone spans the lower part of the Garber and extends into the Wellington Formation. The Producing Zone provides potable water and water for industrial use to the main portion of the base as well as two satellite areas to the east. Because of the increased yield from the Garber Sandstone and the Wellington Formation, this portion of the aquifer is often referred to as the Garber-Wellington Aquifer. Surrounding communities originally tapped the Central Oklahoma Aquifer, but today obtain water primarily from surface sources. The Hennessey group contains some saturation known as the Hennessey Water-bearing Zone, which overlies the Upper Saturated Zone across the southwest portion of the base; this water-bearing zone is not part of the Central Oklahoma Aquifer.

The approximate direction of groundwater flow in the Garber-Wellington Aquifer is south and southwest across the southern portion of Tinker AFB and west to northwest across the northern portion. Shallow groundwater may discharge to surface streams (gaining stream) or be recharged by streams (losing stream). Both situations occur at Tinker AFB along Crutcho Creek and Soldier Creek. In contrast, water in the Hennessey Water Bearing Zone generally flows to the northeast toward Crutcho Creek from higher topographic areas along the south boundary of Tinker AFB.

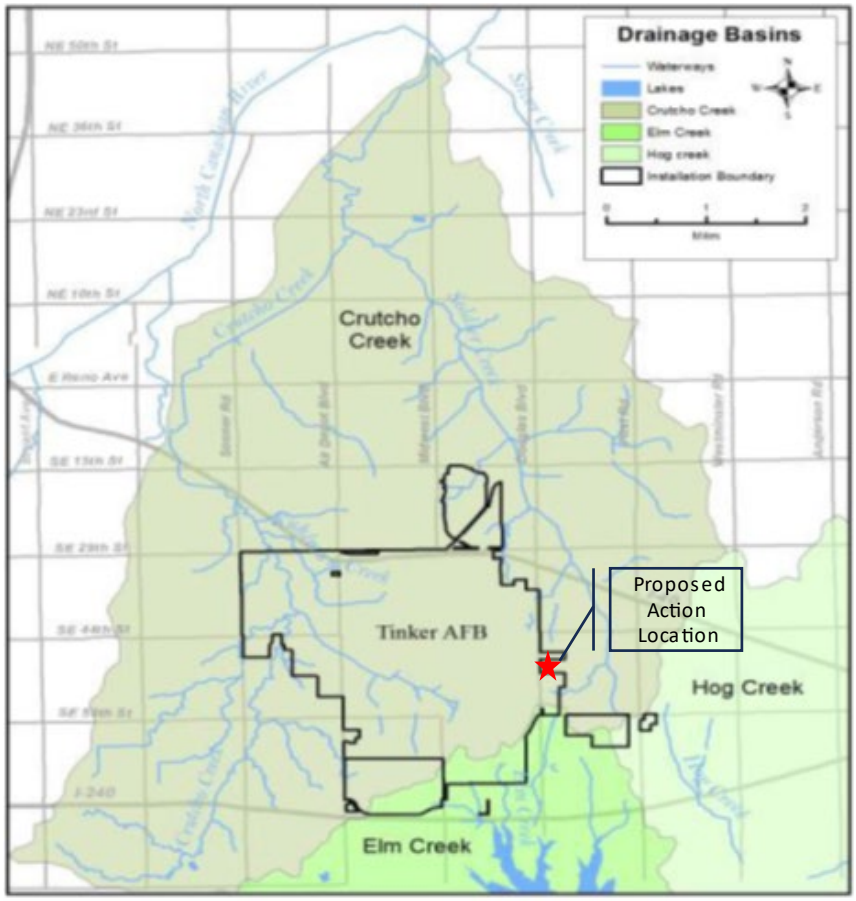
Most water from the Garber-Wellington Aquifer is of sufficient quality to be used for most industrial, agricultural, and domestic purposes. However, some contaminated groundwater plumes do exist, typically at a depth of 175 feet or shallower. These plumes are primarily a result of aircraft maintenance and overhaul operations that occurred between the mid-1940s and mid-to-late-1970s. These operations required the use of solvents and involved activities such as chrome plating which by various means led to contaminants entering ground water. Leaking fuel tanks and inappropriate waste disposal practices also contributed to the plumes.

Groundwater contamination does not pose health concerns at this time since the producing zone (i.e., depth at which water from supply wells is obtained) is 200 feet or deeper. Also, there appears to be an aquitard at approximately 200 feet, which hydraulically separates the producing zone from shallower groundwater in the aquifer (Tinker AFB 2019).

3.5.1.2 Surface Water

Surface drainage at Tinker AFB occurs in three primary drainage basins: 1) Crutcho Creek Drainage Basin, 2) Elm Creek Drainage Basin, and 3) Hog Creek Drainage Basin. The majority of Tinker AFB is drained by Crutcho Creek Drainage Basin which flows north into the North Canadian River. Eventually the North Canadian River combines with the Arkansas River, Mississippi River, and finally discharges into the Gulf of Mexico. Elm Creek and Hog Creek Drainage Basins flow south of Tinker AFB into the Little River which forms confluences with the South Canadian River, Arkansas River, Mississippi River, and discharges into the Gulf of Mexico. The Elm Creek Drainage Basin is a sensitive watershed as it supplies Lake Stanley Draper, a drinking water supply reservoir for several local communities. The reservoir is located approximately ½ mile south of Tinker AFB's southeast boundary (see Figure 3-2).

At Tinker AFB, flowing waters comprise a total of about eight linear miles. The first and second order stream segments are typically ephemeral or intermittent while the third order segment is perennial. All Tinker AFB creek flows are the result of storm water runoff and groundwater seepage (i.e., groundwater enters the stream over a longer segment of the stream than a point source), with the exception of Soldier Creek which may be spring-fed (i.e., groundwater enters the stream at a point source) where the creek starts on the north side of the Cyber Engineering Installation Group at SE 59th Street. This spring-fed stream becomes a losing stream—feeding the groundwater—a short distance downstream (Tinker AFB 2019).



Source: Tinker AFB 2019.

Figure 3-2. Area Surface Waters and Drainage Basins

3.5.1.3 Wastewater

The existing Peaking Plant is not connected to the Tinker AFB wastewater treatment system and does not discharge any wastewater from plant operations. Therefore, wastewater management is not evaluated further.

3.5.1.4 Storm Water

In 1972, the Federal Water Pollution Control Act, also known as the CWA, was amended to prohibit the discharge of pollutants to waters of the United States from any point source, unless the discharge is in compliance with a NPDES permit. Beginning in 1990, the USEPA required NPDES permit coverage for storm water discharges from construction activities that disturbed 5 or more acres of land. Small construction activities were later added as a requirement in December 2003. Small construction activities as defined by the EPA, are those "that result in a land disturbance equal to or greater than 1 acre and less than 5 acres." Also regulated as small construction activities are those "disturbing less than 1 acre…if they are part of a larger common plan of development or sale with a planned disturbance equal to or greater than one acre and less than five acres." As of September 11, 1997, the EPA delegated the Oklahoma Department of Environmental Quality (ODEQ) as the Permitting Authority for the State of Oklahoma for issuing Construction General Permit under the Oklahoma Pollution Discharge Elimination System (OPDES) program.

On April 1, 2023, the ODEQ re-issued General Permit (GP) OKR10 for Storm Water Discharges from Construction Activities within the State of Oklahoma to Tinker AFB.

In 2002, Tinker AFB met with the ODEQ, and it was determined that Tinker AFB is considered to be a common plan of development, and all construction activity on Tinker AFB would be covered under one authorization. Therefore, Tinker AFB's Storm Water Program Management Office manages all construction projects conducted on Tinker AFB to assure all requirements of GP OKR10 are met. This is achieved by establishing policies for all construction projects conducted on Tinker AFB. For all construction projects where there are any planned disturbances, the construction agency is required to follow the guidelines in Section 00-72-00: Environmental Requirements for Construction on Tinker AFB. This document requires all contractors performing construction work on Tinker AFB to comply with all requirements outlined in GP OKR10. It is the responsibility of the contractor to submit a Storm Water Pollution Prevention Plan to the Storm Water Program Manager prior to initiating any field work. This plan will provide a detailed description of procedures to control storm water runoff from the construction activity to reduce possible storm water pollution.

Beginning in May 2010, it was determined that construction activities with a land disturbance over one acre would require individual permit coverage under GP OKR10. Therefore, these construction projects are required to file for permit coverage with the ODEQ prior to Tinker AFB authorizing the Notice of Intent. Section 00-72-00 was updated to reflect these changes (Tinker AFB 2018a). The Proposed Action would require OG&E to obtain coverage under GP OKR10 (see Section 4.3).

Surface water at Tinker AFB occurs in three mainstream systems, one which drains to the north (current Crutcho Creek with Kuhlman and Soldier Creek tributaries) and two to the south (current East Elm Creek and West Hog Creek). The north-flowing stream system originates approximately two miles south of Tinker AFB's current southern boundary with on-base portions of the system composed of twelve first order segments, two second order segments, and one third order segment. The south-flowing systems consist of only first and second order tributaries with higher order tributaries located off base. Stream flows are generated primarily by precipitation runoff (Tinker AFB 2018a).

3.5.2 Environmental Consequences

Evaluation criteria for effects on water resources are based on water availability, quality, and use, and associated regulations. A proposed action would have significant effects on water resources if it were to do one or more of the following:

- Substantially reduce water availability or supply to existing users.
- Exceed safe annual yield of water supply sources.
- Substantially adversely affect water quality.
- Endanger public health by creating or worsening health hazard conditions.
- Threaten or damage unique hydrologic characteristics.
- Violate established laws or regulations adopted to protect water resources.

3.5.2.1 Proposed Action

Groundwater

No significant impacts to groundwater resources are anticipated to result from implementation of the proposed project. Neither the existing peaking plant nor the proposed peaking plant access groundwater.

Potential impacts to groundwater include contamination from minor spills or leaks associated with installation and/or maintenance vehicles and machinery. Installation of underground utility connections are not anticipated to be deep enough to encounter groundwater. Adherence to the spill response measures described in the Tinker AFB Spill Prevention, Control, and Countermeasures (SPCC) Plan would minimize the potential for spills and guide the quick clean-up for any spills that could occur.

The Proposed Action would not result in an increase in the number of personnel accessing or operating the peaking plant, and no water intensive processes are proposed. Therefore, no additional strain on the regional water supply would occur. Implementation of the Proposed Action would result in a less than significant impact to groundwater.

Surface Water

Potential indirect impacts from construction activities could result in additional sediment loads being transported to surface waters downstream of the proposed project area. Implementation of the Proposed Action could result in up to 10 acres of additional impervious surfaces, which could cause an increase in storm water runoff. Pervious surfaces will be incorporated to the fullest extent practicable to reduce storm water runoff and maintain the property at its pre-development hydrology state. The impacts from storm water runoff can be managed by following the best management practices outlined in the Tinker AFB Storm Water Pollution Prevention Plan and any storm water pollution prevention plans developed specifically for this project. If detailed site design necessitates a storm water impoundment, such a feature would be located fully within the Proposed Action site boundary and is not expected to be of significant size.

The Tinker AFB Storm Water Pollution Prevention Plan (Tinker AFB 2018a) encourages the minimization of construction and demolition related disturbances to protect natural features and soils by implementing source controls. The Proposed Action would follow the applicable measures and BMPs in the Tinker AFB Storm Water Pollution Plan. Implementation of the Proposed Action would result in a less than significant impact to surface water.

3.5.2.2 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented. Groundwater, surface water, wastewater, and storm water would continue to be managed in accordance with Tinker AFB, federal, state, and local regulations. Water resources would not be changed from their current conditions. Therefore, implementation of the No Action Alternative would result in less than significant impacts to water resources.

3.5.3 Cumulative Effects

Potential effects to water resources would be from ground-disturbing activities at Tinker AFB. Potential impacts would be minimized by following the recommendations in the INRMP and SWPPP (Tinker AFB 2018a, Tinker AFB 2019) and use of BMPs. The Proposed Action would not (1) reduce water availability to or interfere with the supply of existing users; (2) exceed safe annual yield of water supplies; (3) adversely affect water quality or endanger public health by creating or worsening adverse health hazards; (4) threaten or damage unique hydrologic characteristics; or (5) violate established water resources laws or regulations. No effects of other actions or activities have been identified that, when combined with the effects of the Proposed Action, would have significant effects on this resource. Therefore, cumulative impacts to water resources at Tinker AFB that could result from implementation of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable actions would not be significant.

3.6 GEOLOGY AND SOILS

3.6.1 Affected Environment

Tinker AFB is located in the Central Redbed Plains section of the Central Lowland Physiographic Province, which is characterized by level to gently rolling hills, broad flat plains, and bottomlands bisected by small- to medium-sized water courses. The average annual rainfall for Tinker is approximately 31.8 inches. Base elevations range from approximately 1,200 feet above mean sea level (amsl) (Crutcho Creek - northwestern portion of Tinker AFB) to 1,310 feet amsl (southeast portion of Tinker AFB). Impervious areas consist mainly of buildings and paved areas (roads, runways, tarmac and parking lots) (Tinker AFB 2018a).

According to the United States Department of Agriculture Natural Resources Conservation Service, Tinker AFB's soils are comprised of five major associations (Tinker AFB 2018a):

1. Kirkland-Urban Land-Renthin: Areas of very deep and deep well drained, clayey soils in areas of Urban land; on prairie uplands, not prime farmland;
2. Littleaxe-Stephenville: Deep and moderately deep, well drained, loamy soils on forested uplands, not prime farmland;
3. Renthin-Grainola-Peidmont: Deep and moderately deep, well drained, clayey soils on prairie uplands, not prime farmland;
4. Stephenville-Harrah-Darsil: Very deep, moderately deep, and shallow, well drained and excessively drained, loamy and sandy soils on forested uplands, not prime farmland;
5. Teller-Urban Land-Norge: Areas of very deep, well drained, loamy soils and areas of urban land; on terraces, not prime farmland.

The Proposed Action location is comprised of these same soil types.

Tinker AFB is classified into four basic categories that are used when determining construction site estimates. The categories describe the permeability of the surface at future construction sites.

1. Improved grounds (paved/built) – highly developed land occupied by buildings, roads, parking lots, runways, and other permanent structures. Runoff coefficient ranging from 0.70 – .95.
2. Improved grounds (turf/landscape beds) – highly maintained areas such as lawns, athletic fields, golf course, cemeteries, and landscape plantings on which personnel annually plan and perform intensive maintenance activities. Grass in these areas is normally maintained at a height of 2-4 inches during the growing season. Runoff coefficient ranging from 0.50 – 0.70.
3. Semi-improved grounds − periodically maintained grounds where maintenance is performed primarily for operational reasons (such as erosion and dust control, bird control, and visual clear zones). This land use classification includes areas adjacent to runways, taxiways, and aprons; runway clear zones; lateral safety zones; rifle and pistol ranges; ammunition storage areas; antenna facilities; and golf course roughs. These areas are mowed less often to maintain grass height typically between 7-14 inches. Runoff coefficient ranging from 0.20 – 0.50.
4. Unimproved grounds – basically areas of relatively low vegetation maintenance such as woodlands or other natural areas like Glenwood and the base Urban Greenway. Unimproved grounds are areas not classified as 'improved' or 'semi-improved'. Grounds include natural woodland and grassland areas, ponds, wetlands, creeks, and other areas where natural vegetation is allowed to grow essentially unimpeded by maintenance activities. Runoff coefficient ranging from 0.10 – 0.30.

3.6.2 Environmental Consequences

This section discusses potential impacts to soil resources located within the footprints of the proposed project. Impacts to soils can result from disturbances (e.g., grading during construction activities) that expose soil to wind or water erosion. Protection of unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards are considered when evaluating the potential impacts of a proposed action on geological resources. Generally, adverse impacts can be avoided or minimized if proper construction techniques, erosion-control measures, and structural engineering design are incorporated into project development.

Impacts on geology and soils would be significant if they would substantially alter the geology that controls groundwater quality, distribution of aquifers and confining beds, and groundwater availability; or change the soil composition, structure, or function (including prime farmland and other unique soils) within the environment.

3.6.2.1 Proposed Action

Under the Proposed Action, installation and day-to-day activities would not affect geological features. The proposed project area is currently undeveloped. Soils are currently being stockpiled on the western portion of the site; this activity would cease, and stockpiled soils would be spread over the site and graded to level the site and promote efficient drainage. Plant construction would also include vegetation removal and placement of road base or other surface material to stabilize the surface and minimize erosion and future vegetative growth in the project area.

The Tinker AFB Storm Water Pollution Prevention Plan (Tinker AFB 2018a) encourages the minimization of construction and demolition related disturbances to protect natural features and soils by implementing source controls. The Proposed Action would follow the applicable measures and BMPs in the Tinker AFB Storm Water Pollution Plan. Implementation of the Proposed Action would result in a less than significant impact to geology and soils.

3.6.2.2 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented. There would be no change to the existing conditions. Therefore, implementation of the No Action Alternative would result in less than significant impacts to geology and soils.

3.6.3 Cumulative Effects

Potential effects to geology and soils would be from ground-disturbing activities at Tinker AFB. No effects of other actions or activities have been identified that, when combined with the effects of the Proposed Action, would have significant effects on this resource. Therefore, cumulative impacts to geology and soils at Tinker AFB that could result from implementation of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable actions would not be significant.

3.7 NOISE AND VIBRATION / ACOUSTIC ENVIRONMENT

Noise is defined as any sound that is undesired by the recipient and typically includes sounds not present in the natural environment, such as sounds emanating from aircraft; highways; and industrial, commercial, and residential sources. Noise generally interferes with normal activities or otherwise diminishes the quality

of the natural environment. Noise may be intermittent or continuous, steady or impulsive, stationary or transient.

The standard measurement unit of sound is the decibel (dB), which represents the relationship between a measured sound pressure level and the minimum sound level a person with good hearing can detect reported on a logarithmic scale. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by three dB, and a halving of the energy would result in a three dB decrease, both of which are generally accepted as the smallest change that is easily detected by the human ear.

The human ear is not equally sensitive to all frequencies within the sound spectrum. Therefore, sound can be characterized by several methods. The most common method is the "A-weighted" sound level (dBA), which gives greater weight to the frequencies audible to the human ear by filtering out noise frequencies not audible to the human ear. Human judgments of the relative loudness or annoyance of a sound correlate well with the dBA levels of those sounds. Therefore, the dBA scale is used for measurements and standards involving the human perception of noise.

The construction and operation of new facilities generates noise. Construction-related noise is associated with the operation of construction equipment and vehicles, both in transit to/from and at the project site. Equipment noise levels also vary as a function of the usage factor or percentage of time the equipment is employed.

Ground-borne vibration is commonly associated with noise since vibration sources include many of the same sources (for example, construction equipment and vehicles) and may also interfere with normal activities or otherwise diminish the quality of the natural environment. Ground-borne vibration is not a common environmental problem, as it is unusual for vibration from sources such as road vehicles to be perceptible, even in locations close to major roads. Perceptible vibration sources for projects similar to that analyzed in this EA include construction-related equipment (for example, heavy earth-moving equipment).

Local noise ordinances are codified in the Midwest City, OK Code of Ordinances, Chapter 26, *Noise*. Exterior noise standards are designated, with reduced noise standards designated between the hours of 10:00 PM and 7:00 AM (Midwest City 2023). These noise standards range from 50 dBA to 70 dBA, depending on the noise zone and the time of day, with allowances for exceedances in excess of the noise standards.

3.7.1 Affected Environment

Noise-sensitive land uses were identified surrounding the peaking plant area. Noise-sensitive land uses include:

- Nearby residential areas – approximately 0.5 miles northeast, with isolated residences within 0.25 miles of the site
- Schools – nearest approximately 1.67 miles east southeast (Barnes Elementary School)
- Hospitals – nearest approximately 1.35 miles north (SSM Health St. Anthony Healthplex)
- Hotels/motels – none in the vicinity
- Churches/cemeteries – nearest approximately 0.75 miles southeast (Clear Springs Mechek Cemetery), 0.9 miles east (Eastpoint Baptist Church), and approximately 0.9 miles southeast (Sooner Rose Baptist Church)
- Libraries – none in the vicinity
- Public Parks – none in the vicinity

Tinker AFB is generally consistent with a suburban setting. Aircraft noise is generally the dominant noise source and is heaviest along the Tinker AFB flightline to the west of the project site. Other noise sources in the area include mobile sources (such as personal and commercial vehicles) and stationary sources (such as heating, ventilation, and air conditioning units attached to buildings). Vehicle traffic and associated noise is heaviest along Douglas Boulevard, which borders both the current peaking plant site (to the east) and the proposed peaking plant site (to the west).

Baseline sound levels were measured at the existing peaking plant site at Tinker AF. Sound levels were measured using an Extech Instruments Model 407736 digital sound level meter, which meets American National Standards Institute S1.4-1983 and International Electrotechnical Commission 60651 Type II standards. The meter's internal calibration feature was checked prior to obtaining measurements, and the meter was operated on the A-weighting scale with slow response using a porous windscreen.

- Approximately 100 feet northeast of operating generator at site fence = 65 dbA (November 17, 2022, 8:02 AM)

3.7.2 Environmental Consequences

The significance of impacts from noise and vibration is based on whether the exposure of receptors to construction or operation noise levels would exceed regulatory thresholds or if persons or structures would be subject to excessive ground-borne vibration.

3.7.2.1 Proposed Action

Under the Proposed Action, demolition/construction activities associated with peaking plant construction and removal would occur. These activities would be accompanied by a conservatively predicted short-term noise level increase to approximately 80 dBA at 100 feet from the source and 67 dBA at 500 feet from the source (comparable to traffic sound levels from a nearby freeway). The increase in noise levels in the vicinity of the construction activities would be short-term but noticeable. As the distance from the source is increased, the noise levels attributable to the demolition/construction activities continue to decrease as they approach existing background sound levels.

The perceived impacts from the increase in noise levels would depend on the receptor and site-specific conditions (including sound shielding). The predicted increases in noise levels would be consistent with typical urban construction projects, activities could be scheduled for normal daytime business hours, and proper equipment maintenance and noise shielding would minimize noise level increases from construction activities. Sound levels, in the immediate vicinity of the construction activities averaged over an entire day may approach the USEPA-recommended noise level standards.

Demolition/construction activities would include vibration-producing activities (such as excavation, grading and clearing). Depending on the specific demolition/construction equipment used and operations involved, short-term increases in ground vibration may result. The increase in vibration levels in the vicinity of the construction activities would be short-term but noticeable. Activities would be limited to daytime hours and would be anticipated to be a minor disturbance to neighboring receptors.

Demolition/construction-related noise impacts would be adverse, short-term, and potentially moderate in magnitude (approaching USEPA threshold levels), depending on the receptor type and proximity to the project location. Demolition/construction-related vibration impacts would also be adverse, short-term, and potentially moderate in magnitude, depending on the receptor type and proximity to the project location. Due to the short-term and intermittent nature of the increased noise levels not exceeding USEPA threshold

levels, together with the noise impacts being primarily limited to daytime periods, the demolition/ construction-related noise impacts would be less than significant.

Routine operations at Tinker AFB would not significantly increase sound levels from existing background levels. Traffic-related noise levels may increase in the vicinity of the proposed new facilities but would not be expected to increase disproportionately from current levels typical of urban settings. Routine operation would not be expected to increase vibration levels.

Operation-related noise impacts would be minor. Operation-related vibration impacts would not be expected. Therefore, implementation of the Proposed Action would result in a less than significant impact to noise and vibration.

3.7.2.2 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented, and the existing peaking plant would continue to be utilized until its eventual retirement. No significant changes to current noise levels would occur. Therefore, implementation of the No Action Alternative would result in a less than significant impacts to noise and vibration.

3.7.3 Cumulative Effects

Potential effects from increases in noise would be short term and potentially moderate due to the limited use of heavy equipment and trucks during construction activities. The Proposed Action would not (1) result in the violation of applicable federal, state, or local noise ordinance; (2) create incompatible land uses for areas with sensitive noise receptors outside the installation boundary; or (3) be loud enough to threaten or harm human health when PPE is properly utilized. No effects of other actions or activities have been identified that, when combined with the effects of the Proposed Action, would have significant effects on this resource. The implementation of the B-21 Maintenance Depot project would likely present noise and vibration impacts in excess of those predicted for the Proposed Action, but the Proposed Action would not significantly contribute to an increase in area noise and vibration impacts over current levels. Therefore, cumulative impacts to noise and vibration at Tinker AFB that could result from implementation of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable actions would not be significant.

3.8 Land Use and Aesthetics

Land use is defined by the physical and functional arrangement of and interrelationships between structures, transportation systems, utilities, uses, and open lands. Human decisions and actions create, influence, and are subject to these physical and functional systems.

Land use generally refers to the management and use of land by people. The attributes of land use include general land use patterns, land ownership, land management plans, and special use areas. General land use patterns characterize the types of uses within a particular area. Specific uses of land typically include residential, commercial, industrial, agricultural, military, and recreational. Land use also includes areas set aside for preservation or protection of natural resources, wildlife habitat, vegetation, or unique features. Management plans, policies, ordinances, and regulations determine the types of uses that protect specially designated or environmentally sensitive uses.

For the purposes of this land use analysis, the Region of Interest for the Proposed Action and No Action Alternative includes the land area associated with the existing peaking plant inside the Tinker AFB boundary and the 20-acre parcel of land proposed for acquisition for the new peaking plant.

3.8.1 Affected Environment

Tinker AFB covers approximately 5,580 acres of land and is approximately 90% developed. Structures include a 10,000-foot runway, 11,200-foot runway, almost 700 family housing units, 48 miles of road, 717 buildings, and 57 aircraft assigned to associate units. The annual air traffic control traffic count (arrivals, departures, and practice approaches) is 34,000 to 36,000 and the annual ground traffic (aircraft and vehicle operations) is approximately 20,000 (Tinker AFB 2019).

Tinker AFB is near Oklahoma City, Oklahoma, which is centrally located in Oklahoma County. Additionally, portions of land within the installation boundary fall within Midwest City and unincorporated areas of Oklahoma County. The installation is approximately nine miles southeast of the center of Oklahoma City by road.

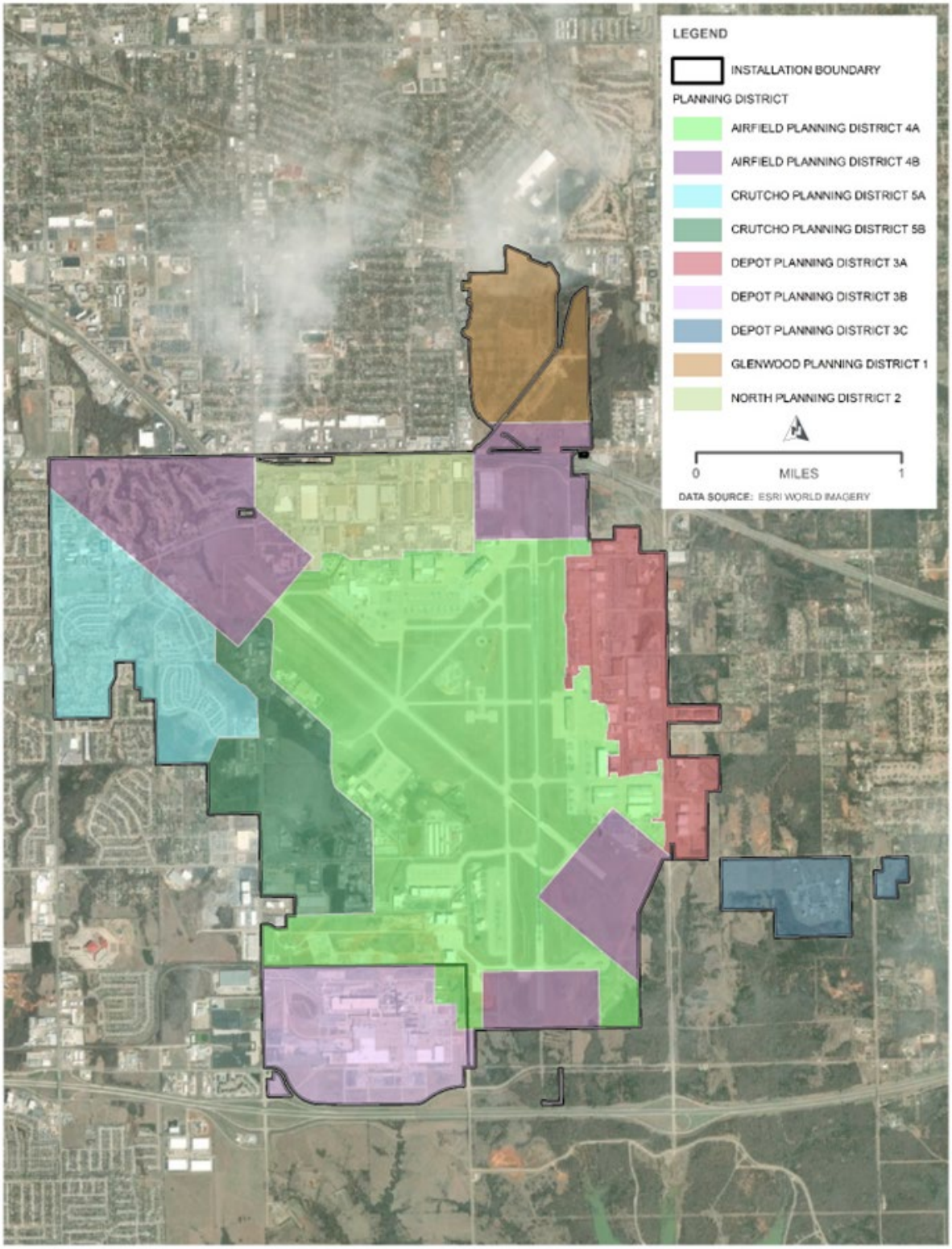
Oklahoma City includes approximately 662 square miles of land where zoning is enforced through a city-wide zoning ordinance. General zoning categories used by the city include, but are not limited to, agricultural, residential, office, commercial, retail, and industrial. Oklahoma City designates the land containing Tinker AFB as residential and industrial. The land area of the proposed new peaking plant, adjacent to the east portion of the installation, is currently undeveloped and zoned for industrial.

Tinker AFB is federally owned and operated by DAF. The installation is divided into five planning districts (see Figure 3-3), which contain areas of similar land use. The Airfield Planning District covers portions of the middle, southeast, northwest, and northeast installation, and includes runways, overruns, taxiways, aircraft parking areas, airfield clear areas, aircraft operations and maintenance hangars, aircraft facilities, and aircrew training facilities. The North Planning District is within the northern portion of the installation and also includes mainly administrative, industrial, and commercial land uses. The Crutcho Planning District is located in the western portion of the installation and includes housing and recreation land uses. The Depot Planning District covers east and south areas of the installation and includes mainly administrative, industrial, and commercial land uses. The Existing Peaking Plant is located in the Depot Planning District 3A.

3.8.2 Environmental Consequences

Potential impacts to land use are evaluated with respect to the extent, context, and intensity of the impact in relation to relevant regulations, guidelines, and scientific documentation. The methodology to assess impacts to individual land uses requires identification of those uses and determination of the degree to which they would be affected by each action. The significance of potential land use impacts is based on the level of land use sensitivity in affected areas. In general, land use impacts would be significant if they would:

- Be inconsistent or noncompliant with applicable land use plans or policies.
- Preclude the viability of existing land use.
- Preclude continued use or occupation of an area.
- Be incompatible with adjacent land uses to the extent that public health or safety is threatened.
- Conflict with airfield planning criteria established to ensure the safety and protection of human life and property.



Source: AFCEC 2021.

Figure 3-3 Tinker AFB Planning Districts

3.8.2.1 Proposed Action

The proposed new peaking plant will be located at 5500 S. Douglas Boulevard., Oklahoma City, OK, adjacent to the east side of Tinker AFB. This parcel and the surrounding area are zoned as industrial and are compatible with the proposed use. Tinker AFB has not identified any significant, adverse impacts to land use that would result from implementation of any of the Proposed Action.

The Proposed Action is not predicted to result in significant adverse aesthetic impacts. The land surrounding the proposed new plant location is also industrial, thus the aesthetics of the new peaking plant would be consistent with the surrounding area. Therefore, implementation of the Proposed Action would result in a less than significant impact to land use and aesthetics.

3.8.2.2 No Action Alternative

Under the No Action Alternative, there would be no land use impacts. The proposed new peaking plant would not be constructed. The existing peaking plant would remain in operation, until its retirement in 2025. Therefore, implementation of the Proposed Action would result in a less than significant impact to land use and aesthetics and could present a negative impact to mission objectives.

3.8.3 Cumulative Effects

The implementation of the B-21 Maintenance Depot project would likely bring land use and aesthetics changes to the area, but these changes would not present incompatibilities with the proposed land uses nor present significant changes to area aesthetics in an area currently dominated by industrial uses. Therefore, cumulative impacts to land use and aesthetics at Tinker AFB that could result from implementation of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable actions would not be significant.

3.9 INFRASTRUCTURE AND UTILITIES

The utility systems described and analyzed include potable water, electricity, natural gas, storm water, and solid waste. The description of each utility system focuses on existing infrastructure, current usage, and any predefined capacity or limitation as set forth in permits or regulations.

3.9.1 Affected Environment

Electricity. Electricity at Tinker AFB is supplied by OG&E. The installation currently uses approximately 350,000 megawatt hours (MWh) of electricity annually. Nearly 72 emergency power generators provide backup power to key facilities in the event of an emergency.

OG&E has an electric generation capacity of 7,240 MW and currently serves more than 890,000 customers throughout a 30,000 square mile service territory in central Oklahoma and west Arkansas (OG&E 2023). The net demand of electricity for OG&E customers was 6,004 MW in 2023 and is forecasted to be 6,088 MW by 2025 (OG&E 2021).

The two existing, OG&E owned, combustion turbine peaking plant units at Tinker AFB provide a net 64 MW as needed and grant Tinker AFB first rights to reliable and redundant electricity powering base operations as well as islanding capabilities. OG&E regularly uses the peaking plant at times to maintain regional grid voltage. The existing plant is planned to be retired in 2025.

Natural Gas. Natural gas at Tinker AFB is provided by Oklahoma Natural Gas via a government supply contract administrated by the Defense Energy Supply Center and delivered at three metered delivery points. Natural gas on the installation is used as fuel for steam-producing boilers, providing space heating, domestic water heating, process applications, and as the fuel source for the current peaking plant. The majority of the system was built in the 1950s and has not been upgraded since then (Tinker AFB 2017a). Oklahoma Natural Gas also supplies natural gas to the Oklahoma City Region and much of Oklahoma (ONE Gas Inc. 2023).

Communications. The communications system at Tinker AFB consists of underground copper fiber optic cable networks. An FY2017 project was proposed to upgrade the communications system and increase fiber optic capacity at the southern end of the installation (Tinker AFB 2017). The proposed site for the new peaking plant is not currently contiguous with the main Tinker AFB, but it is anticipated that the site will become contiguous in the near future. However, communications systems with the peaking plant allowing remote operation of the facility will be provided by OG&E as part of the peaking plant infrastructure.

Potable Water. The existing peaking plant does not require a potable water connection, although fire hydrants are available nearby for emergency use. Potable water at Tinker AFB is supplied by 22 on-installation groundwater wells that range in depth from 380 feet to 706 feet. Supplementary potable water is purchased from the Oklahoma City municipal water supply.

Solid Waste. Solid waste generated at Tinker AFB is picked up for off-site disposal in a licensed landfill facility and handled by a private contractor. Construction and demolition debris are not included in the contract for solid waste disposal. Therefore, construction contractors are primarily responsible for the disposal and recycling of construction waste. Several best management practices (BMPs) for waste management are applied at Tinker AFB and are outlined in an Integrated Solid Waste Management Plan. Based on information available for solid waste management at Tinker AFB, the solid wastes generated pose no constraints to operation and development at the installation (Tinker AFB 2017b).

3.9.2 Environmental Consequences

The significance of potential impacts to utilities and infrastructure is based on whether an action would require or result in the construction of new water supply or new water or wastewater treatment facilities or expansion of existing facilities, require or result in the construction of new electricity or natural gas generation or transmission facilities, or require or result in the construction of communications lines or expansion of existing facilities, the construction of which could cause adverse environmental effects.

3.9.2.1 Proposed Action

Electricity. Short-term, negligible, adverse impacts on the electrical system at Tinker AFB would be expected from the implementation of the Proposed Action during the switch over from the existing to the new peaking plant. Temporary electrical disruptions could occur when connecting natural gas and transferring transmission line connections. However, disruptions would be temporary and coordinated with area users prior to potential interruptions. Critical missions can be supported during this short, temporary period with existing backup generators.

Electrical infrastructure including transmission lines are in place for the existing peaking plant. The proposed new peaking plant location (across the street from the existing plant) will minimize the need for additional transmission infrastructure, ground disturbance, and electrical losses associated with transmitting electricity over longer distances.

Long-term, significant beneficial impacts on the Tinker AFB electrical system would occur from the construction of a new peaking plant. The new plant would provide 90 MW of peaking capacity and allow Tinker AFB to maintain first energy rights for backup power and EIO capabilities.

Natural Gas. Short-term, negligible, adverse impacts on the natural gas distribution system at Tinker AFB would be expected from the implementation of the Proposed Action during the existing facility demolition and new facility construction. Temporary interruptions in natural gas supply would occur when connecting the new facility to the existing natural gas supply line. However, disruptions would be temporary and coordinated with area users beforehand. The short-term interruption in peaking plant operation could be handled by existing building generators as needed.

No long-term, adverse effects to the natural gas system would occur because it is not anticipated that the new peaking plant facilities would require a significantly greater amount of natural gas supply than the existing peaking plant or if the peaking plant was simply retired and not replaced.

Communications. Short-term, negligible, adverse impacts on the communications system at Tinker AFB would be expected from the implementation of the Proposed Action. Temporary interruptions would occur when the existing and new facilities are disconnected from or connected to the communication system during demolition or construction. However, disruptions would be temporary and coordinated with area users prior to potential interruptions.

Long-term, minor, beneficial impacts on the communications system at the installation would occur from the demolition of the old facility and removal of outdated communications infrastructure, and the installation of upgraded communications systems at the new peaking plant.

Potable Water. Negligible impacts on the water distribution system would be expected from the implementation of the Proposed Action during facility demolition and construction. Water is not part of the combustion turbine energy production process; thus, water use is not expected to change significantly from the existing usage. The new peaking plant will be connected to water supply from Oklahoma City Water Utilities Trust. Nearby fire hydrants provide water access in case of emergency. Water necessary for construction activities, such as dust suppression, would have a negligible effect on the installation's overall water supply capacity.

Solid Waste. Short-term, minor, adverse impacts on solid waste management at Tinker AFB would be expected from the creation of demolition and construction debris. Solid waste generated from the Proposed Action would consist of building materials such as solid pieces of concrete, and metals (e.g., conduit, piping, and wiring, substation infrastructure). To maximize landfill diversion rates, contractors would be required to recycle construction and demolition debris in accordance with applicable federal and installation policies. In some cases, construction debris can be reused in place or repurposed at another facility. The contractor would be responsible for disposing of non-recyclable debris at permitted disposal facilities. Long-term, minor, adverse impacts on solid waste management would occur from the addition of debris in local landfills from construction activities, permanently reducing the landfill capacity of the area. However, the additional solid waste generation would not exceed capacities of the existing waste management facilities. Waste generation associated with operation of the new peaking plant is not expected to differ from existing conditions and would be negligible.

Implementation of the Proposed Action would result in a less than significant impact to infrastructure and utilities.

3.9.2.2 No Action Alternative

Under the No Action Alternative, no effect to the potable water, solid waste or communication systems would be expected. The new peaking plant would not be constructed, and the existing plant would operate until its 2025 planned retirement. At that time, natural gas usage at Tinker AFB may decrease as it would no longer be used for electricity production, creating a minor benefit. However, Tinker AFB would lose its backup power and EIO capabilities, resulting in an unacceptable risk to mission objectives. Therefore, implementation of the No Action Alternative would not have a significant adverse impact to infrastructure and utilities but may jeopardize the ability to complete mission objectives unless another electricity source is identified to provide backup power and EIO capabilities.

3.9.3 Cumulative Effects

Potential effects to utilities and infrastructure would be minimal from peaking plant operations at Tinker AFB. No effects of other actions or activities have been identified that, when combined with the effects of the Proposed Action, would have significant effects on this resource. Therefore, cumulative impacts to utilities and infrastructure at Tinker AFB that could result from implementation of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable actions would not be significant.

3.10 SOLID AND HAZARDOUS MATERIALS/WASTE

The terms “hazardous materials” and “hazardous waste” refer to substances that, because of their quantity, concentration, or physical, chemical, or infectious characteristic, could present substantial danger to public health or the environment when released into the environment.

Products containing hazardous materials that could result in the generation of hazardous waste include fuel, adhesives, sealants, corrosion prevention compounds, hydraulic fluids, lubricants, oils, paints, polishes, thinners, and cleaners. The key federal regulatory requirements related to hazardous materials and waste include:

- RCRA of 1976, as amended (42 USC 6901 et seq.);
- Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986, as amended (42 USC 11001-11050);
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended (42 USC 9601-9675);
- Spill Prevention, Control and Countermeasure Rule (40 CFR 112);
- USEPA Regulation on Identification and Listing of Hazardous Waste (40 CFR 261);
- USEPA Regulation on Standards for the Management of Used Oil (40 CFR 279);
- USEPA Regulation on Designation, Reportable Quantities, and Notification (40 CFR 302);
- EO 14057, Catalyzing Clean Energy Industry and Jobs through Federal Sustainability;
- Toxic Substances Control Act (TSCA) of 1976, as amended (15 USC 2601 et seq.);
- CAA of 1970, as amended (42 USC 7401 et seq.); and
- ASTM E1527, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

DAF regulations address the management and safe handling of hazardous materials and wastes in accordance with applicable federal and state regulations, including:

- AFMAN 32-7002, Environmental Compliance and Pollution Prevention

Impacts on solid and hazardous materials and waste management would be considered significant if a Proposed Action resulted in noncompliance with applicable federal and state regulations or increased the amounts of solid or hazardous waste generated or produced beyond Tinker AFB's current waste management procedures and capacities. Impacts on the Installation Restoration Program would be considered adverse if the federal action disturbed or created contaminated sites resulting in negative effects on human health or the environment.

DAF installations manage hazardous materials and waste in accordance with AFMAN 32-7002. Tinker AFB has implemented installation-wide oil and hazardous substance integrated contingency; stormwater pollution prevention; and hazardous waste management plans. These plans define roles and responsibilities, address record keeping requirements, and provide spill contingency and response requirements (Tinker AFB 2016, Tinker AFB 2018b, Tinker AFB 2019).

DAF is performing site due diligence (environmental site assessment) under separate contract to determine the level of liability or risk (if any) associated with property acquisition.

3.10.1 Affected Environment

Minimal hazardous materials and waste are generated by the existing peaking plant. OG&E conducts routine maintenance and is responsible for any generated waste. Hazardous materials typically used at the existing plant include petroleum products (e.g., oils, hydraulic fluids), coolants and refrigerants, paints, and cleaning chemicals. Hazardous waste is not generated from plant operations.

Tinker AFB is a RCRA Large Quantity Generator (USEPA identification number OK1571724391) (Tinker AFB 2018c). RCRA Large Quantity Generators generate more than 1,000 kilograms of hazardous waste in any one month. Hazardous materials, hazardous wastes, and petroleum products are used and generated at several locations at Tinker AFB (Tinker AFB 2018b).

Solid waste generated at Tinker AFB is picked up for off-site disposal in a licensed landfill facility and handled by a private contractor. Construction and demolition debris are not included in the Tinker AFB contract for solid waste disposal. Therefore, construction contractors are primarily responsible for the recycling and disposal of construction wastes. Several BMPs for waste management, including good housekeeping practices, spill control, and employee training, are applied at Tinker AFB and are outlined in the Tinker AFB Integrated Solid Waste Management Plan. Based on information available for solid waste management at Tinker AFB, the solid waste generated poses no constraints to operation and development at the installation (Tinker AFB 2017b). Minimal solid waste is generated from current plant operations.

In March 2022, DAF completed a record search of documents, interviews with site users, and a site inspection to determine the environmental conditions of, and concerns relative to, the subject property. The Environmental Baseline Survey (EBS) identified the potential for a UST to be present on site; Tinker AFB performed ground-penetrating radar investigations and has not located the UST, suggesting it has been removed from the site (GPRS 2022). Prior landfill operations on the site are reported to have accepted only construction and demolition waste and should not have negatively affected the site. The EBS concluded that additional investigation, such as subsurface and surface soil testing and groundwater testing, are recommended to obtain a more complete evaluation of environmental risks associated with the site (Tinker AFB 2022). In November 2023, surface and subsurface soil samples were collected from seven locations across the site to identify any potential contamination resulting from prior operations on-site or from adjacent properties. Analytical results concluded the following (Auxilio 2023):

- No VOCs were detected for any samples.
- No semi volatile organic compounds (SVOC) were detected in exceedance of industrial regional screening levels (RSL) for any samples.
- Arsenic concentrations in all soil samples ranged from 1.26 mg/kg to 4.83 mg/kg, with some exceeding the industrial RSL of 3.0 mg/kg. Background arsenic concentrations in Oklahoma soil range from 0.75 mg/kg to 33.6 mg/kg with a median of 3.96 mg/kg (Zhang 2018). Given the consistency of the arsenic concentrations at the project site, the exceedances are likely attributed to the natural soil composition of the area. No other metals exceeded their respective industrial RSL.

None of the concentrations of SVOCs or metals detected in the surface and subsurface soil samples at the subject property would suggest contamination from prior landfill activities on-site or on neighboring properties. The detected SVOC concentrations are likely a result of the environmental setting of the subject property adjacent to a heavily trafficked roadway. As such, significant soil remediation activities are not anticipated to be necessary.

3.10.2 Environmental Consequences

The significance of potential effects from the use and generation of solid and hazardous materials/waste is based on an evaluation of the rate of waste generation, the ability of waste disposal facilities to handle the generated waste, and the hazards associated with the materials used and wastes generated.

3.10.2.1 Proposed Action

Under the Proposed Action, it is estimated that minimal hazardous materials will be used during construction of the new peaking plant and removal of the existing peaking plant. Additionally, no hazardous waste generation is anticipated. During operation of the new peaking plant, general facility maintenance may include lubrication of facility components, replacement of air filters, inspection and general repairs, and site landscape maintenance.

Construction of the new peaking plant and removal of the existing peaking plant is expected to generate solid waste, including scrap concrete located on the proposed site and site infrastructure at the existing site. Solid waste will be recycled to the extent practicable or disposed at appropriate disposal facilities. The amount of solid waste generated by new facility operations is expected to remain similar to current operations. Special wastes, such as debris contaminated with asbestos, lead-based paint, or polychlorinated biphenyls, could also be generated during removal activities. Such waste would be disposed at appropriate disposal facilities. Impacts from waste generation are predicted to be minor as quantities generated would not be expected to exceed the capacity of disposal facilities.

Implementation of the Proposed Action would result in a less than significant impact to solid and hazardous materials/waste.

3.10.2.2 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented. Hazardous materials and waste would continue to be managed in accordance with Tinker AFB, federal, state, and local regulations. Therefore, implementation of the No Action Alternative would result in less than significant impacts to hazardous materials and wastes.

3.10.3 Cumulative Effects

Implementation of the Proposed Action would not result in a significant impact from hazardous materials, solid waste, hazardous waste, toxic substances, or contaminated sites. When combined with other projects identified in the cumulative effects region, there is a potential for an increase in impacts from hazardous materials or wastes being handled improperly; however, each project would comply with the applicable regulations pertaining to hazardous materials and wastes, contaminated sites and toxic substances. The B-21 Maintenance Depot project would result in a change in mission activity and an increase in personnel; thus, there could be an increase in the use, storage, generation, or disposal of hazardous materials or wastes at Tinker AFB. In all projects, regardless of the ultimate volume of material generated for disposal, required abatement and waste management planning and control measures would be implemented. With regard to the potential to displace toxic substances such as asbestos-containing materials, lead-based paint, and polychlorinated biphenyls, all Tinker AFB projects that include a demolition element may contribute to the volume of toxic substances removed, transported, and disposed of, especially when the subject facility was constructed prior to 1978. All toxic material abatement would continue to occur in compliance with all applicable federal, state, and local regulations. The management, transport, and remediation of hazardous wastes, toxic substances, and contaminated sites at Tinker AFB would continue to occur in compliance with all applicable federal, state, and local regulations. Therefore, cumulative impacts to hazardous materials, hazardous wastes, toxic substances, and contaminated sites at Tinker AFB that could result from implementation of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable actions would not be significant.

3.11 TRANSPORTATION AND PARKING

Transportation refers to the movement of people and goods on a local and regional transportation network, consisting of roads, transit facilities, bicycle lanes, and other modes of transportation. Roads are commonly classified based on their intended function in terms of adjacent land use access, travel distance and speed, and connections to other roadways. Interstate highways and other freeways are designed to maximize travel distance and speed while providing minimal or no access to fronting land uses. By contrast, local roads provide direct access to adjacent property while having substantially lower speeds than freeways or arterial highways. Transit facilities consist of local and regional bus services and both light rail and heavy rail transit. Other transportation facilities include emerging travel modes and technologies, such as micromobility services (for example, shared dockless electric scooters). Parking relates to balancing the existing and projected demand for vehicle parking with supply, which is commonly provided in surface lots, multi-level structures, and on-street parking (for example, angled and parallel parking).

3.11.1 Affected Environment

Tinker AFB can be accessed from 10 gates, all of which allow vehicular traffic to enter the installation. Traffic volume entering the installation peaks between 5:00 a.m. and 8:00 a.m. and traffic volume exiting the installation peaks between 3:00 p.m. and 5:00 p.m. The existing peaking plant is located within Tinker AFB (controlled access) and is enclosed by an interior fence. The site is accessed from the northeast where operations and maintenance staff park vehicles in an area covered in gravel and road base. Staff requirements for the peaking plant are minimal, and traffic and parking are of low concern for this facility.

Douglas Boulevard, a minor arterial roadway, borders Tinker AFB to the east and is located immediately west of the proposed peaking plant site. The proposed site is accessed off of Douglas Boulevard. In the

vicinity of the site, Douglas Boulevard supports approximately 14,000 vehicles per day, with a peak volume of approximately 1,600 vehicles per hour (ACOG 2023).

3.11.2 Environmental Consequences

The significance of potential impacts to transportation and parking is based on the operational capacity and physical condition of the urban and rural roadway networks. An impact would be significant if the current roadway network is insufficient to accommodate changes in traffic circulation or if a substantial increase in hazardous conditions for motorists, bicyclists, or pedestrians is created.

3.11.2.1 Proposed Action

Construction and removal activities include the installation of the new peaking plant facility, delivery of construction materials and equipment, worker commuting, and the removal of equipment from the current peaking plant. As the new plant is a relatively small facility, the number of material deliveries to the site is also relatively small. The construction workforce would be limited to only a few vehicles at any time and would have a minimal impact on area traffic volume. Similarly, the removal of the existing plant would be limited to relatively few waste disposal trips and associated workforce commuters. The workforce requirements to complete these activities are small, and the increase in traffic to and from the sites would not be noticeable. The Proposed Action would result in a minor temporary increase in traffic volumes for the duration of construction and removal activities.

The Proposed Action would not result in any substantial change in operational personnel levels. The resulting impact to transportation and parking would be negligible and would not significantly change from current operations.

3.11.2.2 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented and would involve no changes to the existing plant. Operation of the existing peaking plant would cease due to facility retirement. This change in operations would not result in a change to area transportation or parking as the facility is minimally staffed on a periodic basis. Therefore, no new impacts on transportation and/or parking at Tinker AFB or within the region would occur.

3.11.3 Cumulative Effects

Implementation of the Proposed Action would result in a minor temporary increase in traffic volumes for the duration of construction and removal activities but would not result in any significant change from current operations. The contribution of the Proposed Action is comparatively small when considered in the context of Tinker AFB and the region as a whole. Additionally, due to the small contribution of area traffic, impacts from the Proposed Action when considered cumulatively with other area projects, including the B-21 Maintenance Depot project, are also small. At the completion of construction, transportation impacts from construction activities would cease. Therefore, cumulative impacts to transportation and parking at Tinker AFB that could result from implementation of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable actions would not be significant.

3.12 SAFETY AND OCCUPATIONAL HEALTH

A safe environment is one in which there is no potential, or an optimally reduced potential, for death, serious bodily injury or illness, or property damage. The elements of an accident-prone environment include the presence of unnecessary hazards and an exposed population at risk of encountering hazards. This section addresses the current conditions for military personnel and civilian safety, as well as health and safety following the implementation of the Proposed Action.

3.12.1 Affected Environment

The existing peaking plant is located in a fenced/locked area within Tinker AFB. Tinker AFB is a controlled access facility, and unauthorized access to the existing peaking plant location is very limited. OG&E personnel perform routine maintenance of the existing peaking plant that follows OG&E, Tinker AFB, and current industry standards for occupational health and safety.

3.12.2 Environmental Consequences

An impact on health and safety would be considered significant if implementation of the Proposed Action were to substantially increase the risks associated with aircraft activities, safety of personnel, contractors, military personnel, or the local community; hinder the ability of Tinker AFB or the surrounding community to respond to an emergency; or introduce new health or safety risks for which DAF or the surrounding community is not prepared or does not have adequate management and response plans in place.

3.12.2.1 Proposed Action

The proposed location for the new peaking plant is outside of Tinker AFB. Similar to the existing peaking plant, a perimeter fence and locked gate will be installed to enclose the area and prevent unauthorized access.

No aspects of the proposed construction and demolition activities are expected to create new or unique ground safety issues. Emergency response plans would be updated to capture the new facility. Operations and Maintenance procedures, as they relate to ground safety, are conducted by OG&E personnel, and would not change from current conditions. All activities would continue to be conducted in accordance with applicable regulations, technical orders, and Air Force Occupational Safety and Health (AFOSH) standards.

Short-term safety risks are associated with any construction or demolition activity, including those activities associated with the Proposed Action. However, adherence to standard safety practices would minimize any potential risks.

No unique construction practices or materials would be required as part of the Proposed Action. All construction activities would be conducted in compliance with all applicable OSHA regulations to protect workers. Tinker AFB does not anticipate any significant safety impacts to result from the construction, demolition, or operational activities proposed based on expected compliance with AFOSH and OSHA requirements.

3.12.2.2 No Action Alternative

Under the No Action Alternative, no effect to the safety and occupational health of Tinker AFB would be expected. The facilities would not be installed, and Tinker AFB would not be altered from its current state. Operation of the existing peaking plant would cease due to facility retirement. This change in operations

would not result in a significant change to safety and health but may result in small safety improvements. Therefore, implementation of the No Action Alternative would result in a less than significant impact to safety and occupational health.

3.12.3 Cumulative Effects

The implementation of the B-21 Maintenance Depot project would bring safety and occupation health risks commonly associated with construction projects. Potential operational impacts from the B-21 Maintenance Depot project would be similar to those existing at Tinker AFB. Therefore, cumulative impacts to safety and occupational health at Tinker AFB that could result from implementation of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable actions would not be significant.

3.13 SOCIOECONOMICS

Socioeconomic resources are defined as the basic elements associated with the human environment, generally including factors associated with regional demographics and economic activity. Demographics can be described by the number, distribution, and composition of population and households. Economic activity is represented by the region's major industries, employment, and income characteristics. Direct impacts on either of these two fundamental socioeconomic indicators are typically accompanied by changes in other components, such as altered housing availability, education, and local and regional trends in economy and industry.

3.13.1 Affected Environment

Socioeconomic resources are described using demographic and employment measures, as these measures influence the local economy, community services, and housing demand. Table 3-6 presents socioeconomic statistics for an area within three miles of the project area; as any impacts are predicted to be localized near the project area since Tinker AFB is located within a large metropolitan area.

Table 3-6. Socioeconomic Statistics

Area	County	Population (within 3 miles)	Population Density (persons per square mile)
Tinker AFB	Oklahoma	25,183	846
Source: U.S. Census Bureau (USCB) 2023.			

This population density is indicative of a rural-to-suburban setting. Tinker AFB is located near the greater Oklahoma City, OK metropolitan area. As such, an available workforce to support construction activities and facility operations and maintenance needs currently exists in the immediate area.

3.13.2 Environmental Consequences

Potential impacts to socioeconomics would be considered significant if the project displaced populations, residents, or businesses to accommodate construction, generated an economic loss or gain without the capacity to absorb a decrease or increase, placed a demand on suitable housing that exceeds availability, or induced growth without adequate supporting infrastructure.

3.13.2.1 Proposed Action

The Proposed Action would not result in any substantial change in personnel levels. Any potential impacts from minor changes in staffing are anticipated to be negligible. No significant changes to population, income levels, housing, or local tax revenues are anticipated. Given the large metropolitan area of Oklahoma City, OK, it is assumed that the project construction and operation activities could be accomplished with a local workforce, resulting in a minor and short-term localized beneficial impact to socioeconomic resources. Therefore, implementation of the Proposed Action would result in a less than significant impact to socioeconomics.

3.13.2.2 No Action Alternative

Under the No Action Alternative, construction and operation of a new peaking plant would not occur, and no adverse or beneficial impacts to socioeconomic resources would occur. Operation of the existing peaking plant would cease due to facility retirement. This change in operations would not result in a change to socioeconomics as the facility is minimally staffed on a periodic basis. Therefore, implementation of the No Action Alternative would result in a less than significant impact to socioeconomics.

3.13.3 Cumulative Effects

The implementation of the B-21 Maintenance Depot project would result in an increase in personnel levels; however, given the large metropolitan area of Oklahoma City, OK, it is assumed that the project construction and operation activities would result in a relatively minor and potentially short-term localized beneficial impact to socioeconomic resources. Therefore, cumulative impacts to socioeconomics at Tinker AFB that could result from implementation of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable actions would not be significant.

3.14 COMMUNITY SERVICES

Community services are provided by public and non-profit agencies and organizations to support and enhance the community with educational, protective, medical, and recreational services. These services include local community hospitals and clinics, fire/rescue and emergency medical services, law enforcement, local schools, and parks and recreation facilities.

3.14.1 Affected Environment

Tinker AFB is located near the Oklahoma City, OK metropolitan area. As such, significant community services are available to the population supporting activities at Tinker AFB. Many of the community services supporting Tinker AFB functions are provided directly by the DAF, including local law enforcement and medical and fire response capabilities.

3.14.2 Environmental Consequences

Potential impacts to community services would be considered significant if the project changed the number of users of community services that exceed existing capacity, changed the demand for emergency and public protection services that would increase response times based on existing personnel resources and equipment, or changed the funding needed to sustain services or to increase access to services.

3.14.2.1 Proposed Action

The Proposed Action would not result in any substantial change in personnel levels. No significant additional load is expected to be placed on the fire or police departments as the result of the Proposed Action. Tinker AFB security forces and fire department services would respond to the new facility location, similarly to response services at the existing plant location. This is not expected to result in an increase in personnel requirements for either response service. Expanded use of other public or community services as a result of the Proposed Action is not expected. Therefore, implementation of the Proposed Action would result in a less than significant impact and a potentially beneficial impact to community services.

3.14.2.2 No Action Alternative

Under the No Action Alternative, construction and operation of a new peaking plant would not occur, and less than significant impacts to community services would result.

3.14.3 Cumulative Effects

The implementation of the B-21 Maintenance Depot project would result in an increase in personnel levels; however, given the large metropolitan area of Oklahoma City, OK, it is assumed that the project construction and operation activities would result in a relatively minor impact to community services. Therefore, cumulative impacts to community services at Tinker AFB that could result from implementation of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable actions would not be significant.

3.15 Environmental Justice

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, specifies that each federal agency shall "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."

3.15.1 Affected Environment

Environmental justice applies to potential adverse environmental impacts disproportionately borne by minority or low income populations. Environmental justice includes protection from health and safety risks if the potential for such risks are driven by an environmental impact. Table 3-7 presents environmental justice statistics for an area within three miles of the project area; as any impacts are predicted to be localized near the project area. The Demographic Index is an average of the two demographic indicators that are of primary interest in evaluating potential environmental justice impacts: minority population and low income population. Table 3-7 also shows the percentile rank in the U.S. of the project area.

Table 3-7. Environmental Justice Statistics

Area	County	Minority Population (percentile in U.S.)	Low Income Population (percentile in U.S.)	Demographic Index (percentile in U.S.)
Tinker AFB	Oklahoma	34% (55)	34% (60)	35% (58)
Source: USEPA 2023b.				

Minority and low-income populations in the area are generally located nearer Oklahoma City, northwest of Tinker AFB (opposite from the Proposed Action location).

3.15.2 Environmental Consequences

An analysis of environmental justice determines whether a disproportionate share of adverse human health or environmental impacts from implementing a federal action would be borne by minority or low-income populations.

3.15.2.1 Proposed Action

Construction and operational impacts from the Proposed Action would be limited to the project vicinity, which is located in an area that has a lower minority and low-income population than the national average as demonstrated by a demographic index of 35% (58th percentile in the U.S.) (Table 3-7). Project areas are not in the immediate vicinity of areas with higher concentrations of children, such as schools, and potential health and safety risks to children would be minimal. No significant adverse environmental or health impacts are predicted from the Proposed Action, and therefore, environmental or health impacts would not be disproportionately borne by any environmental justice community.

The Proposed Action would occur on government property following land acquisition. Under the Proposed Action, standard job site safety measures would be implemented, which include securing equipment, materials, and vehicles, and neutralizing safety hazards during construction. No new land use activities that might potentially impact minority/low income populations or children would be introduced. Therefore, as projected impacts from the Proposed Action are considered to be less than significant, there would be no disproportionate impact to minority or low income populations or children from implementation of the Proposed Action.

3.15.2.2 No Action Alternative

Under the No Action Alternative, construction and operation of a new peaking plant would not occur. Operation of the existing peaking plant would cease due to facility retirement. This change in operations would not result in an impact to minority or low-income populations or children as the facility is minimally staffed on a periodic basis. Therefore, there would be no disproportionate impact to minority or low-income populations or children.

3.15.3 Cumulative Effects

The implementation of the B-21 Maintenance Depot project would be limited to the same project vicinity as the Proposed Action. As no significant adverse environmental or health impacts are predicted from the Proposed Action, cumulative impacts to environmental justice at Tinker AFB that could result from

implementation of the Proposed Action when added to the effects of other past, present, and reasonably foreseeable actions would not be significant.

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CHAPTER 4
PERSONS AND AGENCIES CONSULTED/COORDINATED

4.1 NEPA PROCESS AND PUBLIC INVOLVEMENT

As stated in the DAF's EIAP (32 CFR Part 989), public involvement for an EA may include public engagement during scoping and drafting and finalizing the EA through publication of notices or public meetings. The public involvement process for this EA consisted of an early public notice announcing the project and upcoming availability of a Draft EA/FONSI, publication of a Notice of Availability of the Draft EA/FONSI, and a public comment period on the Draft EA/FONSI.

The DAF's NEPA guidance states the EA process must include at least a 30-day public comment period on the Draft EA, which starts with the publication of an NOA. The NOA was published in the Oklahoman on December 24 and 26, 2023, as the newspaper of record. The NOA was also published in the Midwest City Beacon on December 27, 2023. A copy of the Draft EA and Draft FONSI were made available at the Midwest City Library. An electronic version of the Draft EA and Draft FONSI were also made available on the Tinker AFB website.

4.2 AGENCY COORDINATION

During the scoping process for this EA, Tinker AFB contacted federal, state, and local agencies with oversight responsibilities related to this project. Tinker AFB submitted correspondence with SHPO and OAS on May 22, 2023; SHPO provided concurrence on June 5, 2023, and OAS provided concurrence on June 22, 2023. Additionally, Tinker AFB contacted five tribes culturally affiliated with the lands operated by Tinker AFB, notifying them of the proposed project activities. Agency and tribal correspondence was addressed on August 3, 2023. The Caddo Nation of Oklahoma issued a finding of no effect. The four remaining tribes have not yet responded. Table 4-1 and Table 4-2 list the agencies and tribes contacted, respectively. Correspondence is included in Appendix A.

Table 4-1. Interagency Correspondence List

U.S. Environmental Protection Agency Region 6 Robert Houston, Chief, Office of Planning and Coordination 1201 Elm Street, Suite 500 Dallas, TX 75270	**U.S. Army Corps of Engineers, Tulsa District** Col. Timothy Hudson, Commander and District Engineer 2488 81st Street Tulsa, OK 74137
U.S. Fish and Wildlife Service Oklahoma Ecological Services Field Office Susan Minnick 9014 East 21st Street Tulsa, OK 74129-1428	**National Park Service, Intermountain Region** Kate Hammond, Regional Director 12795 West Alameda Pkwy. Lakewood, CO 80228
U.S. Geological Survey, Oklahoma-Texas Water Science Center Timothy Raines, Director 202 NW 66th Street Oklahoma City, OK 73116	**Oklahoma Geological Survey** Nick Hayman, Director 100 E. Boyd St. Norman, OK 73109

Oklahoma Department of Environmental Quality Scott Thompson, Executive Director 707 N. Robinson Oklahoma City, OK 73102	**State Historic Preservation Office – Oklahoma Historical Society** Lynda Ozan, Deputy State Historic Preservation Officer 800 Nazih Zuhdi Drive Oklahoma City, OK 73105
Oklahoma Archaeological Survey Amanda Regnier, Director 111 East Chesapeake St. Norman, OK 73019-5111	**Oklahoma Department of Wildlife Conservation** J. D. Strong, Director 1801 N. Lincoln P.O. Box 53465 Oklahoma City, OK 73152
Oklahoma Department of Transportation Tim Gatz, Executive Director 200 N.E. 21st Street Oklahoma City, OK 73105	**Oklahoma Conservation Commission** Oklahoma County Conservation District Becky Inmon, District Manager 4850 N. Lincoln Blvd., Suite B Oklahoma City, OK 73105-3326
Oklahoma Corporation Commission Todd Hiett, Chairman 2101 N. Lincoin Blvd. P.O. Box 52000 Oklahoma City, OK 73152-2000	**Oklahoma Water Resources Board** Julie Cunningham, Executive Director 3800 N. Classen Blvd. Oklahoma City, OK 73118
U.S. Department of Agriculture, Natural Resources Conservation Service Tine Jerome, State Conservationist 100 USDA, Ste. 206 Stillwater, OK 74074-2651	**Association of Central Oklahoma Governments** Mark Sweeney, Executive Director 4205 N. Lincoln Blvd. Oklahoma City, OK 73105
Midwest City Planning Commission Emily Richey, Planning Manager 100 N. Midwest Blvd. Midwest City, OK 73110	**Midwest City Floodplain Administrator** Patrick Menefee, Floodplain Administrator 100 N. Midwest Blvd. Midwest City, OK 73110-4327

1

Table 4-2. Tribal Correspondence List

Caddo Nation of Oklahoma Jonathan Rohrer, THPO P.O. Box 487 Binger, OK 73009	**Muscogee Creek Nation** Turner Hunt, THPO P.O. Box 580 Okmulgee, OK 74447
Osage Nation Andrea Hunter, THPO 1071 Grandview, Ave. Pawhuska, OK 74056	**Seminole Nation of Oklahoma** Ben Yahola, THPO P.O. Box 1498 Wewoka, OK 74884
Wichita and Affiliated Tribes Terri Parton, President P.O. Box 729 Anadarko, OK 73005	

4.3 PERMITS AND APPROVALS

Table 4-3 lists environmental permits or other approvals that may need to be obtained prior to implementing the Proposed Action in this EA.

Table 4-3. Environmental Permits and Agreements

Agency	Project Stage	Environmental Permit, Compliance, or Coordination	Key Requirements
Air Quality			
Oklahoma Department of Environmental Quality (ODEQ) Air Quality Division (AQD)	Prior to construction	AQD Construction Permit	A construction permit application is required before a new source is constructed or an existing source is modified. OG&E will be responsible for obtaining the construction permit.
ODEQ AQD	Prior to operation	AQD Operating Permit	An operating permit is issued after construction is completed and demonstration is made that the source is capable of meeting applicable emissions limitations and air pollution control requirements. OG&E will be responsible for obtaining the operating permit.
Water Resources			
ODEQ	Prior to construction	ODEQ OPDES General Permit OKR10 for Stormwater Discharges from Construction Activities within the State of Oklahoma	Construction projects that propose to disturb more than one acre of the ground surface must obtain and comply with the ODEQ OPDES General Permit OKR10 for Stormwater Discharges from Construction Activities within the State of Oklahoma. OG&E will be responsible for obtaining the permit.
Floodplains and Wetlands			
U.S. Army Corps of Engineers (USACE)	Prior to construction – If placement of dredged or fill material into a jurisdictional water of the U.S. is involved	Clean Water Act Section 404 permit	If the project includes impacts to jurisdictional waters or wetlands (not anticipated at this time), USACE will be consulted and an approved jurisdictional determination (AJD) and/or wetland delineation will be required. OG&E would be responsible for obtaining the permit if required.

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CHAPTER 5
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CHAPTER 6
LIST OF PREPARERS

Department of the Air Force
Tinker AFB – 72 ABW
Heartsong Turnbull – Community Planner
USACE
U.S. Army Corps of Engineers, Tulsa District
Gerard Randolph – NEPA Task Order Manager
Contractor Staff
Auxilio Management Services
Douglas Schlagel, P.E., CHMM – Project Manager/Environmental Engineer, B.S. Chemical Engineering, 27 years' experience
Kelli Price – Program Manager, 14 years' experience
Melissa Mitton, P.E. – Environmental Engineer, M.S. Civil and Environmental Engineering, 5 years' experience
Taylor Cordts – Environmental Engineering, B.S. Chemical Engineering, 2 years' experience
Tiglas Ecological Services
Darcy Tiglas – Biologist, M.S. Environmental Science, 32 years' experience
Dr. John Hoffecker – Professional Archaeologist, Ph.D. Anthropology, 41 years' experience

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CHAPTER 7
LIST OF ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
ACAM	Air Conformity Analysis Model
ACOG	Association of Central Oklahoma Governments
AFB	Air Force Base
AFI	Air Force Instruction
AFOSH	Air Force Occupational Safety and Health
AJD	Approved Jurisdictional Determination
amsl	above mean sea level
APE	Area of Potential Effect
AQCR	Air Quality Control Region
AQD	Air Quality Division
AT/FP	Anti-Terrorism/Force Protection
BMP	Best Management Practice
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_{2e}	Carbon Dioxide Equivalent
CRM	Cultural Resources Manager
CT	Combustion Turbine
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DAF	Department of the Air Force
DAFI	Department of the Air Force Instruction
dB	decibel
dBA	A-weighted decibel
EA	Environmental Assessment
EBS	Environmental Baseline Survey
EGF	Electrical Generation Facility
EIAP	Environmental Impact Analysis Process
EIO	Electrically Islanded Operation
EIS	Environmental Impact Statement
EO	Executive Order
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Endangered Species Act

FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
FY	Fiscal Year
GHG	Greenhouse Gases
GP	General Permit
HFC	Hydrofluorocarbon
ICRMP	Integrated Cultural Resources Management Plan
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
INRMP	Integrated Natural Resources Management Plan
IPaC	Information for Planning and Consultation
IRP	Integrated Resource Plan
MBTA	Migratory Bird Treaty Act
MOA	Memorandum of Agreement
MW	megawatt
MWh	megawatt hours
N_2O	Nitrous Oxide
NAA	Non-Attainment Area
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	Ozone
OAS	Oklahoma Archaeological Survey
OC-ALC	Oklahoma City Air Logistics Complex
ODEQ	Oklahoma Department of Environmental Quality
OG&E	Oklahoma Gas and Electric
OK	Oklahoma
OKDW	Oklahoma Department of Wildlife Conservation
OPDES	Oklahoma Pollutant Discharge Elimination System
Pb	Lead
PFC	Perfluorocarbons
$PM_{2.5}$	Particulate Matter less than 2.5 microns
PM_{10}	Particulate Matter less than 10 microns
PSD	Prevention of Significant Deterioration
ROAA	Record of Air Analysis
ROCA	Record of Conformity Analysis
RSL	Regional Screening Level

SARA	Superfund Amendments and Reauthorization Act
SF_6	Sulfur Hexaflouride
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SO_x	Sulfur Oxides
SPCC	Spill Prevention, Control, and Countermeasures
SVOC	Semi-Volatile Organic Compound
TCP	Traditional Cultural Property
TSCA	Toxic Substances Control Act
USACE	U.S. Army Corps of Engineers
USCB	U.S. Census Bureau
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VOC	Volatile Organic Compound

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APPENDIX A – PUBLIC NOTIFICATIONS/IICEP

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 72D AIR BASE WING (AFMC)
TINKER AIR FORCE BASE, OKLAHOMA

Stephanie Wilson
Base Civil Engineer
7535 5th Street
Tinker AFB, OK 73145

22 May 2023

Lynda Ozan
Deputy State Historic Preservation Officer
State Historic Preservation Office
Oklahoma Historical Society
800 Nazih Zuhdi Drive
Oklahoma City, OK 73105

Re: Section 106 Consultation Regarding Proposed Construction of an Electrical Generation Facility (Peaking Plant) for Tinker Air Force Base, Oklahoma City, Oklahoma

Dear Ms. Ozan,

Tinker Air Force Base (AFB) is initiating a consultation with the Oklahoma State Historic Preservation Officer (SHPO) and Tribal Historic Preservation Officers (THPOs) of concerned tribes under the provisions of Section 106 of the National Historic Preservation Act (NHPA), regarding a proposed action on an off-base location in Oklahoma City, Oklahoma.

Tinker AFB proposes to acquire land adjoining the east boundary of the installation and construct and operate a new electric peaking plant with an electrical generating capacity of approximately 90 megawatts (MW). The purpose of the proposed action is to maintain Tinker AFB's energy resiliency plan and islanding capabilities to support its missions and tenants. The project area is a privately-owned 10-acre parcel located in I.P.M., Township 11 North Range 2 West, Section 24, NW 1/4. The proposed action includes acquisition of the parcel, construction and operation of a new electric peaking plant, and deconstruction of the existing on-base electric peaking plant (which is scheduled for retirement). The estimated footprint of the proposed peaking plant facility is approximately 6.5 acres.

In order to inventory and evaluate cultural resources in the affected environment, Tinker AFB undertook the following steps: 1) defined an Area of Potential Effect (APE) for the proposed action; 2) conducted a file search for surveys and previously recorded sites on and within 1 mile of the APE at the Oklahoma Archaeological Survey (performed by OAS staff on 23 March 2023); 3) undertook archival research on the Euro-American history of the parcel, including search for relevant documents filed with the county, and review of historic maps and aerial photographs; and 4) performed a pedestrian walkover of the 10-acre parcel (by an archaeologist who meets the Secretary of the Interior's *Professional Qualifications Standards* in the areas of archaeology and history on 28 March 2023).

Tinker AFB defined the APE for the proposed electric peaking plant that includes the 10-acre parcel. The location and boundaries of the APE are shown on a portion of the USGS 7.5-minute quadrangle map (Choctaw) and on recent satellite imagery for the area in Attachment A.

The results of the file search indicated that: (a) the 10-acre parcel had not been subject to archaeological survey, and (b) no Native American or Euro-American cultural resources have been recorded to date on the parcel.

Areas located south and east of the parcel were surveyed in 2001 by Parsons Engineering for Tinker AFB to inventory and evaluate archeological remains on land that now has been incorporated into Tinker AFB. The survey entailed a pedestrian walkover and shovel-testing of undisturbed areas. Three Euro-American sites, former 20th century homesteads, located several thousand feet south of the APE, were recorded; all three sites were subject to shovel testing and archival research, and all three sites were determined not eligible for the National Register of Historic Places (NRHP). Information on the three sites is presented below.

Site No.	Description	Features	Artifacts	Notes
34OK-170	subsurface feature, debris, artifacts (former homestead)	brick cellar, rubble pile, associated with well	glass fragments, nails, ceramics, wire	disturbed archaeological context
34OK-171	well(s) associated with former homestead	one and possibly two wells	no artifacts collected	heavy disturbance due to use of area for soil borrow, dump
34OK-172	foundation remains associated with former homestead	foundation remains (2 sets), debris	glass fragments, nails, ceramics, wire	disturbed archaeological context

The parcel (account R143873000) is currently owned by Oklahoma Industries Authority but was owned by Oklahoma County during 2003-2021. At present, there are no buildings or structures located on the parcel, although a house and several commercial/light industrial buildings were present between 1938 and 2005 (described below).

Review of documents on file at the Oklahoma County assessor and clerk & recorder, as well as historic maps and aerial photographs, revealed that the NW¼ of Section 24 (Township 11 North, Range 2 West), on which the 10-acre parcel is located, was homesteaded in 1895, but that no structures were built on the parcel until after 1938, when the land was owned by the Luetjer family. A history of ownership of the land since the early 1930s is summarized below.

Year	Grantor	Grantee	Document
2021	Oklahoma County	Oklahoma Industries Authority	warranty deed (Book 14732, Page 1377)
2003	C. W. Curtis Corporation	Oklahoma County	warranty deed (Book 8989, Page 1873)
1995	Cecile L. Curtis	C. W. Curtis Corporation	warranty deed (Book 6800, Page 2121)
1984	Clayborn W. Curtis	Cecile L. Curtis	warranty deed (Book 5153, Page 1378)
1966	C. W. Curtis	Cecile L. Curtis	warranty deed (joint) (Book 3350, Page 611)
1966	American First Title and Trust	C. W. Curtis	warranty deed (Book 3335, Page 197)
1959	Roxie Sims et al.	American First Title and Trust	warranty deed (Book 2328, Page 535)

Year	Grantor	Grantee	Document
1956	Stella Farley Luetjer (deceased)	Roxie Sims (daughter) et al.	district court order (Book 2091, Page 249)
1942	Stella Luetjer	Oklahoma Natural Gas Co.	right of way agreement (Book 321, Page 424)
1931	Robert C. Hemphill et ux.	Stella Luetjer	quit claim deed (Book 413, Page 406)

A 1941 aerial photograph shows a house located in the southwest corner of the parcel during the period when it was owned by Stella Luetjer. During the 1960s, the parcel was acquired by C.W. Curtis, and the house was demolished, while five commercial/light industrial buildings were constructed in the northwest quadrant of the parcel; several additional buildings were constructed during the early 1970s. A 1963 aerial photograph of the parcel and APE is shown in Attachment A.

In 2003-2005, the parcel was acquired (from the C.W. Curtis Corporation) by Oklahoma County, and all the buildings were demolished. The county has used the parcel as a dump for disposal of earthen fill and debris. The recent satellite imagery of the APE in Attachment A illustrates the impact of its use as a dump by the county.

A pedestrian walkover of the APE was conducted on an east-west axis at transect intervals of approximately 30 feet (10 meters). Ground surface visibility varied widely due to vegetation cover and surface disturbance but averaged roughly 20%. No shovel testing was performed during the walkover. Traces of the former C. W. Curtis Corporation buildings and driveways were identified on the surface. No traces of the house formerly located in the southwest corner of the parcel were observed. A photograph taken during the pedestrian walkover is included in Attachment A.

Tinker AFB has determined that the proposed action would have no effect on historic properties, based on the results of the file search, archival research, and pedestrian walkover. Both archival research and the pedestrian walkover documented extensive surface and subsurface ground disturbance on most of the APE, illustrated by the 1963 photograph and recent satellite imagery, as well as by photographs taken during the March 2023 walkover. Accordingly, Tinker AFB concluded that a Class III archaeology survey entailing shovel-testing of subsurface deposits is not warranted.

No artifacts greater than 50 years in age were encountered during the pedestrian walkover. Archival research on the early 20th century house formerly located in the southwest quadrant of the APE failed to yield any information on its history that would meet the eligibility criteria for the NRHP. The file search revealed that historic resources in the vicinity of the APE are represented by 20th century Euro-American homesteads that have been shovel-tested and determined not eligible for the NRHP. All of the resources in the vicinity of the APE exhibited substantial subsurface disturbance (i.e., potential loss of integrity).

Tinker AFB seeks concurrence with this determination of effect for the proposed action from the Oklahoma SHPO.

Sincerely

STEPHANIE WILSON, 72 ABW/CE
Base Civil Engineer

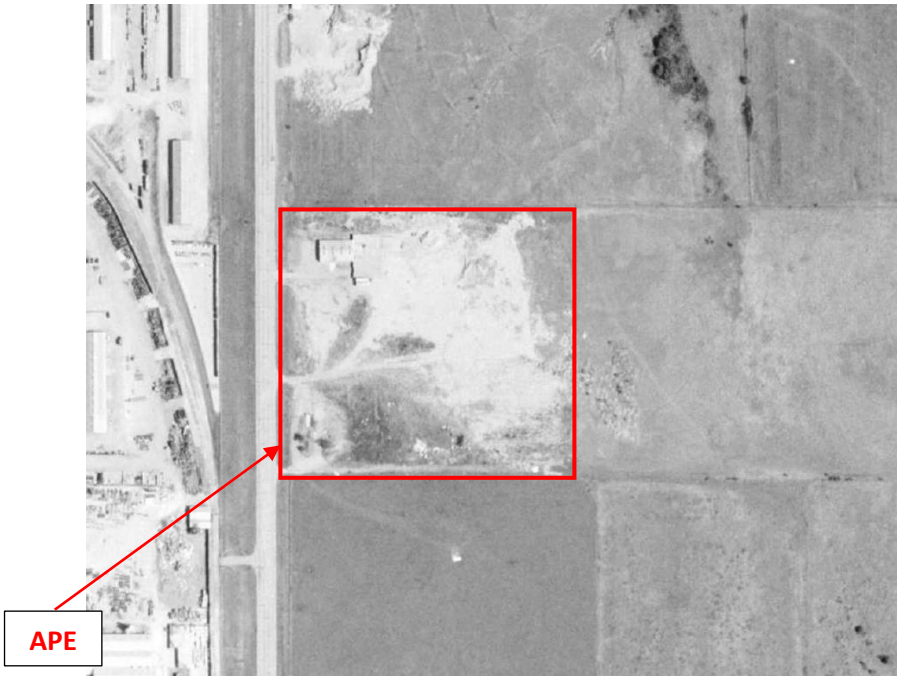
Attachment:
Attachment A Photos/Map

Attachment A

Township 11 North, Range 2 West, Section 24 NW¼

USGS 7.5-minute quadrangle: *Choctaw* (1975)

Attachment A



historic aerial photograph (1963)

looking southwest from the northeast quadrant (3/28/23)

Oklahoma Historical Society
State Historic Preservation Office

June 5, 2023

Ms. Stephanie Wilson, Base Civil Engineer
72 ABW/CE
7535 5th Street
Tinker AFB, OK 73145

RE: File #1661-23; Tinker AFB Proposed Off-Base Construction of Electrical Generation Facility (Peaking Plant), Oklahoma County

Dear Ms. Wilson:

We have received and reviewed the documentation submitted on the referenced project. Additionally, we have examined the information contained in the Oklahoma Landmarks Inventory (OLI) files and other materials on historic resources available in our office. We find that there are no known historic properties affected within the referenced project's area of potential effect.

In addition to our review, you must contact the Oklahoma Archeological Survey (OAS), 111 East Chesapeake, #102, Norman OK 73019-5111 (#405-325-7211, FAX #405-325-7604), to obtain a determination about the presence of prehistoric resources that may be eligible for the National Register of Historic Places. Should the OAS conclude that there are no prehistoric archaeological sites or other types of "historic properties," as defined in 36 CFR Part 800.16(l), which are eligible for inclusion in the National Register of Historic Places within the project area and that such sites are unlikely to occur, we concur with that opinion.

The OAS may conclude that an on-site investigation of all or part of the project impact area is necessary to determine the presence of archaeological resources. In the event that such an investigation reveals the presence of prehistoric archaeological sites, we will defer to the judgment of the OAS concerning whether or not any of the resources should be considered "historic properties" under the Section 106 review process. If sites dating from the historic period are identified during the survey or are encountered during implementation of the project, additional assessments by the State Historic Preservation Office will be necessary.

Should further correspondence pertaining to this project be necessary, please reference the above underlined file number. If you have any questions, please contact Kristina Wyckoff, Historical Archaeologist, at 405-521-6381. Thank you.

Sincerely,

Lynda Ozan
Deputy State Historic
Preservation Officer

LO:pm

800 Nazih Zuhdi Drive, Oklahoma City, OK 73105-7917
405-521-6249 | Fax 405-522-0816 | www.okhistory.org/shpo

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 72D AIR BASE WING (AFMC)
TINKER AIR FORCE BASE, OKLAHOMA

Stephanie Wilson
Base Civil Engineer
7535 5th Street
Tinker AFB, OK 73145

22 May 2023

Kary Stackelbeck, State Archaeologist
Oklahoma Archaeological Survey
111 East Chesapeake
Norman, OK 73019

Re: Section 106 Consultation Regarding Proposed Construction of an Electrical Generation Facility (Peaking Plant) for Tinker Air Force Base, Oklahoma City, Oklahoma

Dear Ms. Stackelbeck,

Tinker Air Force Base (AFB) is initiating a consultation with the Oklahoma State Historic Preservation Officer (SHPO) and Tribal Historic Preservation Officers (THPOs) of concerned tribes under the provisions of Section 106 of the National Historic Preservation Act (NHPA), regarding a proposed action on an off-base location in Oklahoma City, Oklahoma.

Tinker AFB proposes to acquire land adjoining the east boundary of the installation and construct and operate a new electric peaking plant with an electrical generating capacity of approximately 90 megawatts (MW). The purpose of the proposed action is to maintain Tinker AFB's energy resiliency plan and islanding capabilities to support its missions and tenants. The project area is a privately-owned 10-acre parcel located in I.P.M., Township 11 North Range 2 West, Section 24, NW 1/4. The proposed action includes acquisition of the parcel, construction and operation of a new electric peaking plant, and deconstruction of the existing on-base electric peaking plant (which is scheduled for retirement). The estimated footprint of the proposed peaking plant facility is approximately 6.5 acres.

In order to inventory and evaluate cultural resources in the affected environment, Tinker AFB undertook the following steps: 1) defined an Area of Potential Effect (APE) for the proposed action; 2) conducted a file search for surveys and previously recorded sites on and within 1 mile of the APE at the Oklahoma Archaeological Survey (performed by OAS staff on 23 March 2023); 3) undertook archival research on the Euro-American history of the parcel, including search for relevant documents filed with the county, and review of historic maps and aerial photographs; and 4) performed a pedestrian walkover of the 10-acre parcel (by an archaeologist who meets the Secretary of the Interior's *Professional Qualifications Standards* in the areas of archaeology and history on 28 March 2023).

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34OK-171	well(s) associated with former homestead	one and possibly two wells	no artifacts collected	heavy disturbance due to use of area for soil borrow, dump
34OK-172	foundation remains associated with former homestead	foundation remains (2 sets), debris	glass fragments, nails, ceramics, wire	disturbed archaeological context

The parcel (account R143873000) is currently owned by Oklahoma Industries Authority but was owned by Oklahoma County during 2003-2021. At present, there are no buildings or structures located on the parcel, although a house and several commercial/light industrial buildings were present between 1938 and 2005 (described below).

Review of documents on file at the Oklahoma County assessor and clerk & recorder, as well as historic maps and aerial photographs, revealed that the NW¼ of Section 24 (Township 11 North, Range 2 West), on which the 10-acre parcel is located, was homesteaded in 1895, but that no structures were built on the parcel until after 1938, when the land was owned by the Luetjer family. A history of ownership of the land since the early 1930s is summarized below.

Year	Grantor	Grantee	Document
2021	Oklahoma County	Oklahoma Industries Authority	warranty deed (Book 14732, Page 1377)
2003	C. W. Curtis Corporation	Oklahoma County	warranty deed (Book 8989, Page 1873)
1995	Cecile L. Curtis	C. W. Curtis Corporation	warranty deed (Book 6800, Page 2121)
1984	Clayborn W. Curtis	Cecile L. Curtis	warranty deed (Book 5153, Page 1378)
1966	C. W. Curtis	Cecile L. Curtis	warranty deed (joint) (Book 3350, Page 611)
1966	American First Title and Trust	C. W. Curtis	warranty deed (Book 3335, Page 197)
1959	Roxie Sims et al.	American First Title and Trust	warranty deed (Book 2328, Page 535)
1956	Stella Farley Luetjer (deceased)	Roxie Sims (daughter) et al.	district court order (Book 2091, Page 249)

Year	Grantor	Grantee	Document
1942	Stella Luetjer	Oklahoma Natural Gas Co.	right of way agreement (Book 321, Page 424)
1931	Robert C. Hemphill et ux.	Stella Luetjer	quit claim deed (Book 413, Page 406)

A 1941 aerial photograph shows a house located in the southwest corner of the parcel during the period when it was owned by Stella Luetjer. During the 1960s, the parcel was acquired by C.W. Curtis, and the house was demolished, while five commercial/light industrial buildings were constructed in the northwest quadrant of the parcel; several additional buildings were constructed during the early 1970s. A 1963 aerial photograph of the parcel and APE is shown in Attachment A.

In 2003-2005, the parcel was acquired (from the C.W. Curtis Corporation) by Oklahoma County, and all the buildings were demolished. The county has used the parcel as a dump for disposal of earthen fill and debris. The recent satellite imagery of the APE in Attachment A illustrates the impact of its use as a dump by the county.

A pedestrian walkover of the APE was conducted on an east-west axis at transect intervals of approximately 30 feet (10 meters). Ground surface visibility varied widely due to vegetation cover and surface disturbance but averaged roughly 20%. No shovel testing was performed during the walkover. Traces of the former C. W. Curtis Corporation buildings and driveways were identified on the surface. No traces of the house formerly located in the southwest corner of the parcel were observed. A photograph taken during the pedestrian walkover is included in Attachment A.

Tinker AFB has determined that the proposed action would have no effect on historic properties, based on the results of the file search, archival research, and pedestrian walkover. Both archival research and the pedestrian walkover documented extensive surface and subsurface ground disturbance on most of the APE, illustrated by the 1963 photograph and recent satellite imagery, as well as by photographs taken during the March 2023 walkover. Accordingly, Tinker AFB concluded that a Class III archaeology survey entailing shovel-testing of subsurface deposits is not warranted.

No artifacts greater than 50 years in age were encountered during the pedestrian walkover. Archival research on the early 20th century house formerly located in the southwest quadrant of the APE failed to yield any information on its history that would meet the eligibility criteria for the NRHP. The file search revealed that historic resources in the vicinity of the APE are represented by 20th century Euro-American homesteads that have been shovel-tested and determined not eligible for the NRHP. All of the resources in the vicinity of the APE exhibited substantial subsurface disturbance (i.e., potential loss of integrity).

Tinker AFB seeks concurrence with this determination of effect for the proposed action from the Oklahoma Archaeological Survey.

Sincerely

STEPHANIE WILSON, 72 ABW/CE
Base Civil Engineer

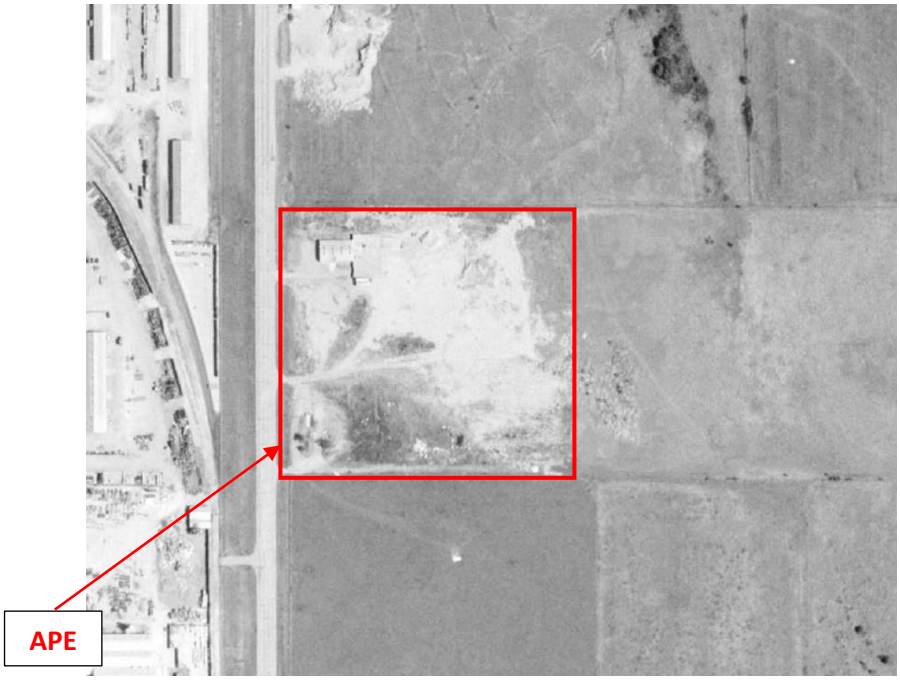
Attachment:
Attachment A Photos/Map

Attachment A

Township 11 North, Range 2 West, Section 24 NW¼

USGS 7.5-minute quadrangle: *Choctaw* (1975)

Attachment A



historic aerial photograph (1963)

looking southwest from the northeast quadrant (3/28/23)

Oklahoma Archeological Survey

THE UNIVERSITY OF OKLAHOMA

June 22, 2023

Tinker Air Force Base
Attn: Stephanie Wilson
Base Civil Engineer
7535 5th St.
Tinker AFB, OK 73145

Re: OAS FY23-1930 USAF Tinker Air Force Base (AFB) Proposed Construction of an Electrical Generation Facility (Peaking Plant) for Tinker Air Force Base.
Legal Description: SW ¼ NW ¼ Section 24, T11N, R2W, Oklahoma County, Oklahoma.

Dear Ms. Wilson:

The Community Assistance Program staff of the Oklahoma Archeological Survey has reviewed the above referenced project to identify areas that may potentially contain prehistoric or historic archeological materials (historic properties). The location of your project has been crosschecked with the state site files containing approximately 27,000 archaeological sites, which are currently recorded for the state of Oklahoma. No Sites are listed as occurring within your project area, and based on the topographic and hydrologic setting, no archaeological materials are likely to be encountered. Thus, an archaeological field inspection is not considered necessary. Please contact this office at (405) 325-7211 if buried archaeological materials such as chipped stone tools, pottery, bone, historic crockery, glass, metal items or building materials are exposed during construction activities.

This environmental review and evaluation are done in cooperation with the State Historic Preservation Office, Oklahoma Historical Society. The responsible federal agency or their official delegate must also have a letter from that office to document consultation pursuant to Section 106 of the National Historic Preservation Act.

In addition to our review comments, under 36CFR Part 800.3 you are reminded of your responsibility to consult with the appropriate Native American tribe/groups to identify any concerns they may have pertaining to this undertaking and potential impacts to properties of traditional and/or ceremonial value.

Sincerely,

John E. Hueffed
Staff Archaeologist

Kary L. Stackelbeck, Ph.D.
State Archaeologist

: dkg
cc: SHPO

Tribe	Summary Response	Section 106 Letter	Follow-up Correspondence
Caddo Nation of Oklahoma	email received 8/4/2023; no objection to the project	Mailed Certified Mail on 3 Aug 2023	complete
Muscogee (Creek) Nation		Mailed Certified Mail on 3 Aug 2023	emailed 8/17, emailed 9/14/23
Osage Nation	9/15 Osage Nation requested an extension for review	Mailed Certified Mail on 3 Aug 2023	emailed 8/17, emailed 9/14/23
Seminole Nation		Mailed Certified Mail on 3 Aug 2023	emailed 8/17, email exchange 8/25, follow up email 9/14
Wichita and Affiliated Tribes		Mailed Certified Mail on 3 Aug 2023	emailed 8/17, emailed 9/14/23

EPA, Robert Houston		certified letter 3 Aug 2023	emailed 8/16/2023

From:	Kirstie M. Conway
To:	TURNBULL, HEARTSONG CIV USAF AFMC 72 ABW/CENPD
Subject:	[Non-DoD Source] DOD, AF, Tinker AFB, Construction and Operation of New Electric Peaking Plant and Deconstruction of Existing On-Base Peaking Plant Facility, Oklahoma County, Oklahoma
Date:	Thursday, September 14, 2023 1:25:11 PM
Attachments:	image001.png

Good afternoon, Ms. Turnbull,

The Osage Nation would like to provide comment on the project known as DOD, AF, Tinker AFB, Construction and Operation of New Electric Peaking Plant and Deconstruction of Existing On-Base Peaking Plant Facility, Oklahoma County, Oklahoma. However, due to the large volume of projects under review, I am writing to request an extension. In the meantime, if the status of this project changes, I would appreciate if you let me know. Thank you for your patience and for consulting with the Osage Nation.

Best Regards,

Michaela Conway
Archaeologist, MA, RPA
Osage Nation Historic Preservation Office
627 Grandview Avenue, Pawhuska, OK 74056
Office: 918-287-5274 | Fax: 918-287-5376Material
kirstie.conway@osagenation-nsn.gov
https://www.osagenation-nsn.gov/who-we-are/historic-preservation

Starting October 1, 2022 the Osage Nation Historic Preservation Office is changing the project notification process. **All project notifications and reports must be emailed to s106@osagenation-nsn.gov** Include the Lead Agency, Project Name and Number, and TCNS Number (if available) on the subject line.

From: TURNBULL, HEARTSONG CIV USAF AFMC 72 ABW/CENPD
To: Ben Yahola
Cc: Ted Underwood; Mary Cruz
Subject: RE: Section 106 letter re: construction of Tinker Peaking Plant

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Mr. Yahola,

I wanted to follow up with you regarding the Environmental Assessment of the Tinker Peaking Plant. Are there any questions or concerns that you would like to have addressed? If so, please let me know and I will be happy to assist.

Respectfully,

Heartsong Turnbull
Community Planner
72 ABW/CENPD
Tinker AFB
405-734-2074

From: Ben Yahola <yahola.b@sno-nsn.gov>
Sent: Thursday, August 24, 2023 3:55 PM
To: TURNBULL, HEARTSONG CIV USAF AFMC 72 ABW/CENPD <heartsong.turnbull@us.af.mil>
Cc: Ted Underwood <underwood.t@sno-nsn.gov>; Mary Cruz <Cruz.M@sno-nsn.gov>
Subject: [Non-DoD Source] RE: Section 106 letter re: construction of Tinker Peaking Plant

Hello Heartsong Turnbull,

I am the Seminole Nation Tribal Historic Preservation Officer and Ted Underwood is the Director of the department. Mr. David Frank is employed by the Thlopthlopco Tribal Town.
I have the information and will respond after review.
Have a great evening.

Ben Yahola
SNO THPO
918-289-8389

From: TURNBULL, HEARTSONG CIV USAF AFMC 72 ABW/CENPD <heartsong.turnbull@us.af.mil>
Sent: Thursday, August 24, 2023 1:09 PM
To: Ben Yahola <yahola.b@sno-nsn.gov>
Subject: FW: Section 106 letter re: construction of Tinker Peaking Plant

Good Afternoon Mr. Yahola,

I got an undeliverable notice on my below email to Mr. Frank. I tried calling today (405-257-7200) to see if I had the correct contact information but I did not reach anyone. I'm assuming people were on their lunch break. It was that time. I have attached copies of a Section 106 letter for Seminole Nation review. This notification is in regards to the construction of a new electrical peaking plant on the east side of Tinker Air Force Base. I have attached a Description of Proposed Action and Alternatives to provide more information about the project. Please let me know if you have any questions or concerns. Also let me know if I have the correct points of contact for these inquiries.

I appreciate your time.

Very respectfully,

Heartsong Turnbull
Community Planner
72 ABW/CENPD
Tinker AFB
405-734-2074

From: TURNBULL, HEARTSONG CIV USAF AFMC 72 ABW/CENPD
Sent: Thursday, August 17, 2023 9:27 AM
To: franks.D@sno-nsn.gov
Subject: Section 106 letter re: construction of Tinker Peaking Plant

Good Morning Mr. Frank,

I would like to follow up with you and confirm receipt of the Section 106 letter regarding the proposed acquisition of property and construction of a peaking plant for Tinker Air Force Base. I have attached the Description of Proposed Action and Alternatives as well as a copy of the letter that was originally sent. Please let me know if you have any questions or concerns about the proposed project in this location.

Very respectfully,

Heartsong Turnbull
Community Planner
72 ABW/CENPD
Tinker AFB
405-734-2074

APPENDIX B – AIR QUALITY ANALYSIS

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Tinker Air Force Base
Land Acquisition for Peaking Plant
Appendix B: Air Quality Analysis Support

Table 1. ACAM Construction and Demolition Assumptions				
Site Grading			**Units**	**Assumptions**
Duration	1 Month			
Site Grading Area	10 acres	435600	ft2	
Amount of material hauled on-site		0	yd3	
Amount of material hauled off-site		400	yd3	
Average Hauling truck capacity		14	yd3	
Hauling Truck round trip		10	miles	
Worker commute		20	miles	Workers travelling from Oklahoma City, 10 miles away
Trenching				
Duration	14 days			
Area		3960	ft2	.25 miles long by 3 ft wide
Amount of material hauled on-site		147	yd3	1 foot of sand in bottom of trench
Amount of material hauled off-site				
Average Hauling truck capacity		14	yd3	
Hauling Truck round trip		10	miles	
Worker commute		20	miles	Workers travelling from Oklahoma City, 10 miles away
Building Construction				
Duration	2 months			
Building Categoty	Commercial or Retail			
Area of Building		12000	ft2	From google earth of existing building
Height of building		8	ft	
Hauling Truck round trip		10	miles	
Worker commute		20	miles	
Existing Plant Demolition				
Duration	1 months			
Area of Building		12000	ft2	From google earth of existing building
Height of building		8	ft	
Hauling Truck round trip		10	miles	
Worker commute		20	miles	Workers travelling from Oklahoma City, 10 miles away

Table 2. Estimated New Peaking Plant Operation Emission Calculations

Constant	Value	Units	Source
Average Natural Gas Heating Value	0.00102	Mmbtu/scf	USEPA 2000
Pound to ton Conversion Factor	2000	lb/ton	
Natural Gas Conversion Factor	7.36	scf/kWh	USEIA 2023
2022 Peaking Plant Operating Hours	792.1	hours/year	Tinker AFB 2023
KW to MW Conversion	1000	KW/MW	
Ton to Metric Ton Conversion Factor	0.907185	Metric ton/ton	
Methane CO2 Equivalent	25		EuroStat 2023
N2O CO2 Equivalent	298		EuroStat 2023

Pollutant	Emission Factor lb/Mmbtu	Emissions ton/year
NO2	0.32	0.951
CO	0.082	0.244
SO2	0.0034	0.010
VOC	0.0021	0.006
PMc	0.0047	0.014
PMf	0.0019	0.006

Greenhouse Gases	Emission Factor lb/Mmbtu	Emissions ton/year	CO2e Emissions Metric ton/year
CO2	110	327.055	296.6993191
Methane	0.0086	0.025569748	0.579912305
N2O	0.003	0.00891968	2.411356284
Total GHG Emissions (CO2e - Metric Ton/year)			**299.413**

Notes:
lb = pound
SCF = Standard Cubic Foot
KWh = Kilowatt hour
Mmbtu = million british thermal units
KW = Kilowatt
MW = Megawatt
CO2e = CO2 equivalent
All emission factors were taken from USEPA 2020, AC-42 Vol. I Section 3.1 Stationary Gas Turbines, assuming uncontrolled emissions.

Sources:
Eurostat, 2023. Glossary:Carbon dioxide equivalent. Accessed 25 May 2023. Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Carbon_dioxide_equivalent#:~:text=The%20carbon%20dioxide%20equivalent%20for,(GWP%20of%20the%20gas).

US Energy information Administration (USEIA), 2023. FAQs - How much coal, natural gas, or petroleum is used to generate a kilowatthour of electricity?. Accessed on 25 May 2023. Available at: https://www.eia.gov/tools/faqs/faq.php?id=667&t=6#:~:text=Natural%20gas%E2%80%930.14%20kWh%2Fcubic,Petroleum%20liquids%E2%80%9312.69%20kWh%2Fgallon

USEPA, 2000. AP-42, Vol. I, 3.1: Stationary Gas Turbines.

Tinker AFB, 2023. 2020-2022 Peaking Plant Emissions. Personal Communication.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: TINKER AFB
State: Oklahoma
County(s): Oklahoma
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Tinker AFB Peaking Plant EA - New Plant located Off-Site east of Tinker AFB

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2024

e. Action Description:

Under the Proposed Action, the Air Force (Tinker AFB) would acquire a parcel of land neighboring Tinker AFB and lease the land to OG&E who will construct and operate a new electric peaking plant with an electrical generating capacity of approximately 90 MW. Tinker AFB and OG&E identified a 20-acre parcel located at 5500 S. Douglas Boulevard., Oklahoma City, OK, as the preferred location for the new plant. The site is an ideal location to construct the new peaking plant in order to best support the existing electrical loads on base. The land is currently owned by the Oklahoma Industries Authority and is located immediately to the east of the current facility. The parcel size allows for flexibility in laying out the new facility, including site access. Figure 2-1 depicts the current and proposed locations of the peaking plant.

Similar to the current electric peaking plant, the new electric peaking plant is anticipated to consist of two simple-cycle combustion turbines, each with an electrical generating capacity of approximately 45 MW. The footprint area needed for the two electrical generating units and supporting needs is approximately 6.5 acres. An additional area of approximately 3.5 acres is needed for addition of a substation at the site. Therefore, the total area needed to accommodate the two units with associated switchyard and substation equipment is approximately 10 acres. The exact specifications of the new units are not yet known as OG&E has not yet completed the selection process for construction of the new peaking plant.

Plant construction would include vegetation removal and grading of the approximately 6.5-acre footprint. Road base or other surface material may be placed in areas to stabilize the surface and minimize erosion and future vegetative growth. The area would be fenced to prevent unauthorized access. Future plans include eliminating general traffic on Douglas Boulevard in the vicinity of Tinker AFB.

OG&E would operate and maintain the facility similar to that for the current facility. Operations may include on-site or remote activation and deactivation of the units. General facility maintenance may include lubrication of facility components, replacement of air filters, inspection and general repairs, and site landscape maintenance.

f. Point of Contact:

Name: Douglas Schlagel, PE, PMP, CHMM
Title: Sr. Program Manager
Organization: Auxilio Management Services
Email: dschlagel@auxiliomanagement.com
Phone Number: (303) 999-2145

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

_____ applicable
__X__ not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicator and are summarized below.

Analysis Summary:

2024

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.048	100	No
NOx	0.253	100	No
CO	0.383	250	No
SOx	0.001	250	No
PM 10	4.382	250	No
PM 2.5	0.010	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	78.9		

2025 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	100	No
NOx	0.000	100	No
CO	0.000	250	No
SOx	0.000	250	No
PM 10	0.000	250	No

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

PM 2.5	0.000	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	0.0		

None of estimated annual net emissions associated with this action are above the insignificance indicators, indicating no significant impact to air quality.Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs.No further air assessment is needed.

Douglas J. Schlagel

Douglas Schlagel, PE, PMP, CHMM, Sr. Program Manager

12/21/23

DATE

APPENDIX C – BIOLOGICAL ASSESSMENT

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BIOLOGICAL ASSESSMENT FOR FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES FOR THE LAND ACQUISITION SITE FOR THE CONSTRUCTION OF A PEAKING PLANT AT TINKER AIR FORCE BASE IN OKLAHOMA CITY, OKLAHOMA

Prepared For:

Auxilio Management Services
51 West 4th Avenue
Denver, Colorado 80223

Prepared by:

Darcy A. Tiglas
5015 Swainsona Drive
Loveland, Colorado 80537
970-222-2151

June 2023

BIOLOGICAL ASSESSMENT FOR FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES FOR THE LAND ACQUISITION SITE FOR THE CONSTRUCTION OF A PEAKING PLANT AT TINKER AIR FORCE BASE IN OKLAHOMA CITY, OKLAHOMA

INTRODUCTION

The Endangered Species Act of 1973, as amended, under oversight by the U.S. Fish and Wildlife Service (USFWS), directs Federal agencies to conserve endangered and threatened species and to ensure that actions authorized, funded, or implemented are not likely to jeopardize the continued existence of any threatened or endangered species, or result in the destruction of their critical habitats. Additionally, many birds are protected under the Migratory Bird Treaty Act of 1918 as well as the Bald and Golden Eagle Protection Act of 1940 and consultation with the USFWS for this project may include species that are not federally listed but deemed sensitive and worthy of evaluation in the areas of the proposed project.

This Biological Assessment evaluates the possible effects to endangered and threatened species known or that may occur at the proposed land acquisition site for the construction of a peaking plant at Tinker Air Force Base in Oklahoma City, Oklahoma.

PROPOSED ACTION

Project Name

The project name is the Land Acquisition for Peaking Plant at Tinker Air Force Base (AFB), Oklahoma City, Oklahoma.

PROPOSED PROJECT AND PURPOSE

An Environmental Assessment (EA) was prepared for Tinker AFB to assess the potential environmental consequences associated with land acquisition, construction of a new peaking plant, and deconstruction of an existing peaking plant at Tinker AFB, OK. Oklahoma Gas and Electric (OG&E). The owner and operator of the current peaking plant plans to retire the two electric generating units in 2025 after 54 years in service, in accordance with OG&E's 2021 Integrated Resource Plan (IRP) as approved by regulatory authorities. The proposed project is anticipated to be completed within the next three years (fiscal year [FY] 23 to FY 25). The estimated required footprint of the new facility is approximately 6.5 acres.

The purpose of the Proposed Action is to maintain Tinker AFB's energy resiliency plan and islanding capabilities in support of Tinker AFB's mission and tenants. The Proposed Action is needed to address the retirement of the current peaking plant scheduled in 2025 and to continue providing uninterrupted backup power and islanding capabilities.

Under the Proposed Action, the Air Force (Tinker AFB) would acquire a parcel of land neighboring Tinker AFB and lease the land to OG&E who will construct and operate a new

electric peaking plant with an electrical generating capacity of approximately 90 MW. Tinker AFB and OG&E identified two 10-acre parcels located at 5500 S. Douglas Boulevard., Oklahoma City, OK, as the preferred location for the new plant. The site is an ideal location to construct the new peaking plant in order to best support the existing electrical loads on base. The land is currently owned by the Oklahoma Industries Authority and is located immediately to the east of the current facility. The parcel size allows for flexibility in laying out the new facility, including site access. Similar to the current electric peaking plant, the new electric peaking plant is anticipated to consist of two simple-cycle combustion turbines, each with an electrical generating capacity of approximately 45 MW. The exact specifications of the new units are not yet known as OG&E has not yet completed the selection process for construction of the new peaking plant. The footprint area needed for the two electrical generating units and supporting needs is approximately 6.5 acres. An additional area of approximately 3.5 acres is needed for the future addition of a substation at the site. Therefore, the total area needed to accommodate the two units with associated switchyard and substation equipment is approximately 10 acres. The approximately 10-acre area of disturbance would be located west of the road that bisects the parcel from north to south.

Plant construction would include vegetation removal and grading of the approximately 6.5-acre footprint. Road base or other surface material may be placed in areas to stabilize the surface and minimize erosion and future vegetative growth. Approximately 1 acre of the area between the plant and Douglas Boulevard would be paved for parking and site access. Natural gas infrastructure would be rerouted to the new site by installing an underground pipeline approximately ¼ mile in length, and 3-5 feet wide and deep, connecting the site to local infrastructure. The area would be fenced to prevent unauthorized access. Future plans include eliminating general traffic on Douglas Boulevard in the vicinity of Tinker AFB in conjunction with construction of an anticipated B-21 campus.

OG&E would operate and maintain the facility similar to that of the current facility. Operations may include on-site or remote activation and deactivation of the units. General facility maintenance may include lubrication of facility components, replacement of air filters, inspection and general repairs, and site landscape maintenance.

The existing peaking plant would be deconstructed, fencing removed from the original location, and the site would be made available for general purpose use at Tinker AFB. The site would not be revegetated.

ACTION AREAS

Construction of the Proposed Action would disturb approximately 10 acres. The Proposed Action would entail the Air Force (Tinker AFB) would acquiring a parcel of land neighboring Tinker AFB and lease the land to OG&E who will construct and operate a new electric peaking plant with an electrical generating capacity of approximately 90 MW. The footprint area needed for the two electrical generating units and supporting needs is approximately 6.5 acres. An additional area of approximately 3.5 acres is needed for the future addition of a substation at the site. Therefore, the total area needed to accommodate the two units with associated switchyard and substation equipment is approximately 10 acres. The approximately 10-acre area of

disturbance would be located west of the road that bisects the parcel from north to south. The proposed project is anticipated to be completed within the next three years (fiscal year [FY] 23 to FY 25). **Figure 1** presents a map of the proposed project area.

LISTED SPECIES

The list of species considered in this analysis includes proposed endangered, endangered, threatened, and candidate species that may occur within and directly around the proposed project area at the proposed acquisition property. This list was obtained from the USFWS' (2023a) Information for Planning and Consultation (IPaC) database mapper for the project area. **Appendix A** presents the Official USFWS Species List. These species include the following:

- Tri-colored bat (*Perimyotis subflavus*) Proposed Endangered
- Piping plover (*Charadrius melodus*) Threatened
- Red knot (*Calidris canutus rufa*) Threatened
- Whooping crane (*Grus americana*) Endangered
- Monarch butterfly (*Danaus plexippus*) Candidate

ANALYSIS OF EFFECTS

No Action Alternative

Direct and Indirect Effects
No direct or indirect effect to sensitive species would occur under the No Action Alternative as no impact to the existing vegetation community within the proposed project area would be realized.

Cumulative Effects
No cumulative effects are expected from the No Action Alternative.

Proposed Action

Direct Effects
No critical habitat for federally protected species occurs in the Proposed Action Alternative project area. Thus, sensitive species and their critical habitat requirements are not present within the project area, because none to minimal and limited opportunities for the listed species occur within the already disturbed site. Therefore, implementation of the Proposed Action Alternative would have no adverse effects to federally listed or state listed species.

Indirect Effects
Indirect effects to sensitive species will not occur under the Proposed Alternative as habitat is already diminished and compromised at the proposed project area. The area is laden with surficial soils disturbance and dominated by pockets of weedy annuals and biennials with large areas of denuded soils. However, the preparation and implementation of a weed abatement plan will control the establishment of weedy species within and adjacent to the proposed project area.

Figure 1
Project Area Map
Land Acquisition for a Peaking Plant at Tinker AFB

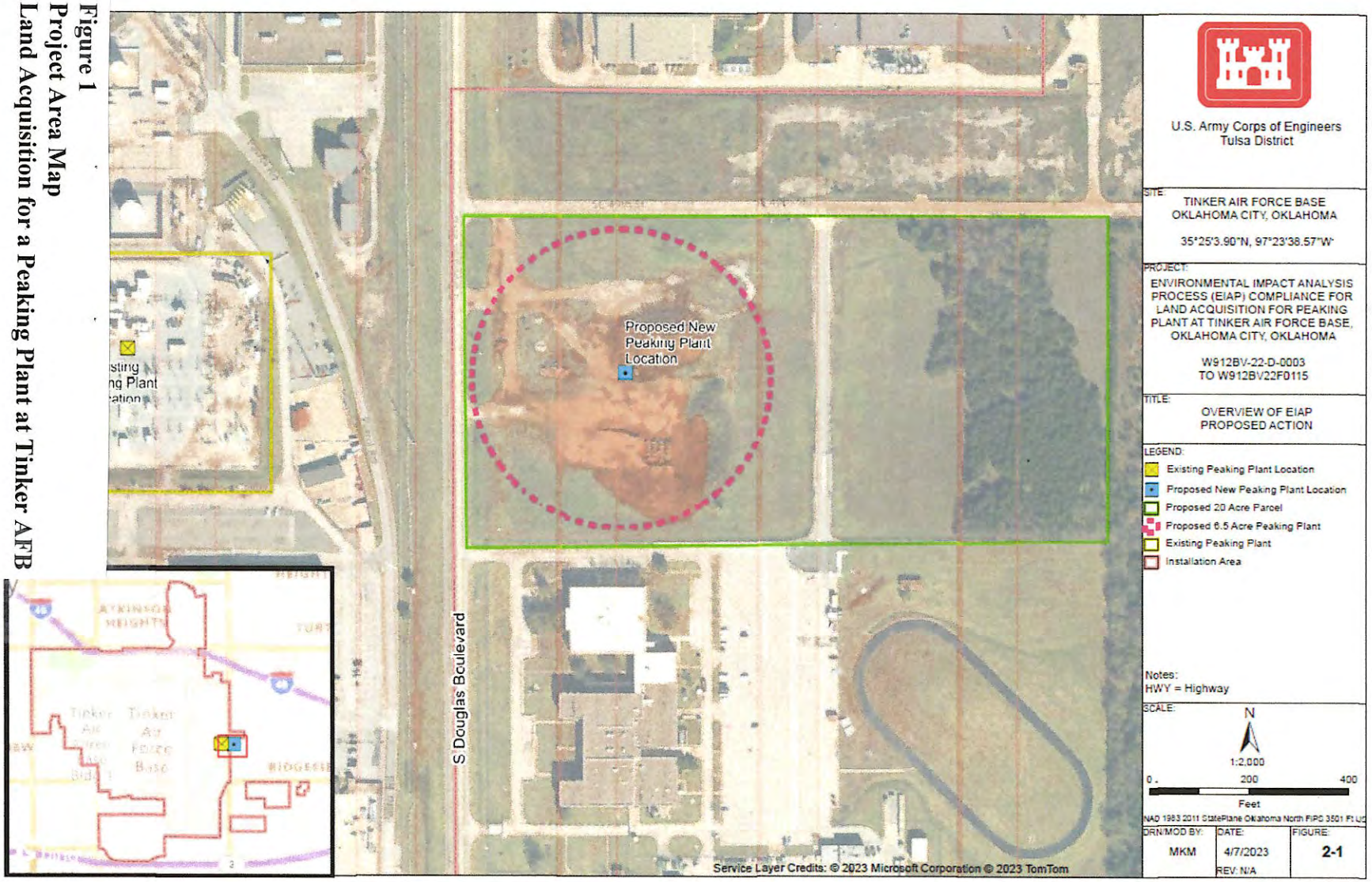

Figure 1. Proposed Project Location

Cumulative Effects

No cumulative effects are expected from the implementation of the Proposed Action. The removal of the existing weedy species and covering the denuded soils with rock may assist in limiting the transport of surficial denuded soils from wind and rainfall. Although annual and biennial vegetative species provide little forage food value for wildlife, including sensitive species, they do provide limited and minimal cover and forage food value with seed production. Overall, the positive and negative effects from the implementation of the proposed project are equal. Weedy species diminish the native vegetation communities and the removal of this 10-acre parcel of weeds will be a benefit to the native vegetation communities in the surrounding area.

VEGETATION COMMUNITIES OCCURRING AT THE PROPOSED PROJECT SITE

The proposed peaking plant site is comprised of three general vegetative cover types including mixed grass prairie, weedy/disturbed, and mixed woodland. The western half of the proposed peaking plant site is dominated by weedy/disturbed vegetation due to the frequent and perpetual surficial soil disturbance that has occurred in this area over many years. The eastern half of the proposed project area is equally dominated by mixed grass prairie and a swath of mixed woodland. The eastern half of the site is not expected to be impacted by the proposed project. The vegetation communities identified above correspond to wildlife habitat types that include grassland and woodland. The grassland habitat encompasses the mixed grass prairie and the weedy/disturbed vegetation communities. The mixed woodland habitat type encompasses the mixed woodland vegetation community. These habitat types were distinguished and characterized by their associated vegetation communities and dominant species as well as their usefulness to wildlife in the area.

Mixed Grass Prairie: The mixed grass prairie vegetation community lies in the middle portion of the site between the weedy/disturbed community and the mixed woodland community. This vegetation community type is dominated by a variety of grasses including big bluestem (*Andropogon gerardi*), Indiangrass (*Sorgastrum nutans*), little bluestem (*Schizachyrium scoparium*), purpletop (*Tridens flavus*), and poverty grass (*Danthonia spicata*). Forbs found in this vegetation community include beebalm (*Monarda sp.*), hairy sunflower (*Helianthus hirsutus*), and trailing lespendeza (*Lespedeza sp.*). A small pocket of lemon sumac (*Rhus aromatica*) occurs within this community. This community will not be disturbed as part of the peaking plant construction area.

Weedy/Disturbed: This vegetation community lies along the western half of the proposed peaking plant construction site. This area has had surficial soil disturbance perpetually and frequently over many years. Much of this area presently has exposed and denuded soils. The dominant vegetative ground cover is bermudagrass (*Cynodon dactylon*) with pockets of weedy annuals and biennials, like sunflower (*Helianthus sp.*). Some woody growth also occurs in this vegetation community and includes elm (*Ulmus sp.*) and red cedar (*Juniperus virginiana*) seedlings and saplings.

Mixed Woodland: The mixed woodland vegetation community lies along the east side of the project parcel. Red cedar is the dominant tree within this community with various other tree

species including oak (*Quercus sp.*) and hickory (*Carya sp.*). Little understory occurs in this community due to the thick canopy.

According to the U.S. Fish and Wildlife Service's National Wetland Inventory Mapper, no wetlands occur within the project area (USFWS 2023b). No drainageways or ponded, diked, or impounded water features occur within the proposed project area.

FEDERALLY SENSITIVE SPECIES

A Federally Sensitive Species List was obtained from the USFWS (2023a) for the proposed project area. A description of each species and their habitat requirements as well as their potential to occur within the proposed project area is presented below.

Tri-colored bat (*Perimyotis subflavus*). According to the USFWS (2023c), this bat is a small insectivorous bat that is distinguished by its unique tri-colored fur and often appears yellowish to nearly orange. During the winter, this species is found in caves and abandoned mines, although they can be found roosting in road-associated culverts where they exhibit shorter torpor bouts and forage during warm nights. During the spring, summer, and fall, tri-colored bats are found in forested habitats where they roost in trees, primarily among leaves of live or recently dead deciduous hardwood trees, but may also be found in Spanish moss, pine trees, and occasionally human structures.

There is no potential for the tri-colored bat to occur within the project area because no caves, abandoned mines, culverts, hardwood trees, pine trees, or structures occur within the project area.

Piping plover (*Charadrius melodus*). According to the USFWS (2023d), this species occurs in unvegetated sand or pebble beaches on shorelines or islands in freshwater and saline wetlands as well as open shorelines and sandbars of rivers and large reservoirs. This bird is pale brown above and lighter below with a black band across the forehead. The bill is orange with a black tip and the legs are orange as well. In winter, all birds lack a breast and head band. The range of this species includes Alabama, Arkansas, Colorado, Connecticut, Delaware, Florida, Georgia, Iowa, Kansas, Louisiana, Maine, Maryland, Massachusetts, Mississippi, Montana, Nebraska, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Oklahoma, Rhode Island, South Carolina, South Dakota, Texas, Virginia, and Wyoming.

There is no potential for the piping plover to occur within the project area because no water bodies, drainages, or wetlands occur within the project area.

Red knot (*Calidris canutus rufa*). According to the USFWS (2023e), the red knot is a robin-sized shorebird that occurs in flocks, sometimes with other species. The bird is finely mottled with dark and light gray as well as black and light ochre coloring with stripes on the crown, throat, breast, and sides of the head. This species occupies larger wetlands and shorelines of waterbodies and large rivers. The knot breeds in the central Canadian Arctic and it winters at the southern tip of South America. The range of this species within the United States includes Alabama, Arkansas, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Kansas,

Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Texas, Virginia, West Virginia, and Wisconsin.

There is no potential for this species to occur within the project area because no water bodies, drainages, or wetlands occur within the project area.

Whooping crane (*Grus americana*). According to the USFWS (2023f), the whooping crane is the tallest bird in North America. This species is snowy white in color except for black primaries and sparse black bristly feathers on the carmine crown and malar region of the head. The birds also have a dark gray-black wedge-shaped patch on the back of the neck. This species occurs in wetlands and on shorelines of large waterbodies and rivers. In July of 2010, the wild population of this species was estimated to be 383 individuals. Only one self-sustaining population occurs at Aransas-Wood Buffalo National Park in Canada. Their range includes Kansas, Montana, Nebraska, North Dakota, Oklahoma, South Dakota, Texas, and Wisconsin.

There is no potential for this species to occur within the project area because no water bodies, drainages, or wetlands occur within the project area.

Monarch butterfly (*Danaus plexippus*). According to the USFWS (2020), the monarch butterfly is large and conspicuous with bright orange wings surrounded by a black border and covered with black veins. The black border has a double row of white spots present on the upper side and lower side of the forewings and hindwings. The monarch butterfly requires a diversity of blooming nectar resources which they feed on throughout their migration routes and breeding grounds. Monarchs need milkweed for both oviposition and larval feeding within the nectar resource plant communities. Milkweed is usually associated with mesic areas and riparian corridors, but some milkweed varieties occur in more arid areas as well.

No opportunities occur within the project area for this species because of the abundance of weedy species, the lack of milkweed within the western side of the proposed project area, and the lack of water resources within the proposed project area.

DETERMINATION

The proposed action *will have no affect* any of the five listed species identified by the IPaC database for this proposed project location due to the lack of suitable habitat for any of the five species described above and the habitat types present on the proposed project area.

PREPARERS

This Biological Assessment was completed by Darcy A. Tiglas, Tiglas Ecological Services, in June 2023.

REFERENCES AND SUPPORTING INFORMATION SOURCES

U.S. Fish and Wildlife Service (USFWS). 2020. Monarch (*Danaus plexippus*) Species Status Assessment Report. V2.1. 126 pp.

USFWS. 2023a. Information for Planning and Consultation (IPaC) Database Mapper Website. https://www.fws.gov/southwest/es/Oklahoma. Last accessed on March 1, 2023.

USFWS. 2023b. National Wetland Inventory Website. https://www.fws.gov/wetlands/data/Mapper/html. Last accessed on March 1, 2023.

USFWS. 2023c. Species Profile for Tri-colored Bat (*Perimyotis subflavus*). https://ecos.fws.gov/ecp0/profile/speciesProfile.action?spcode=PESU. June 16, 2023.

USFWS. 2023d. Species Profile for Piping Plover (*Charadrius melodus*). http://ecos.fws.gov/ecp0/profile/speciesProfile?sld=6039. June 16, 2023.

USFWS. 2023e. Species Profile for Red Knot (*Calidris canutus rufa*). http://ecos.fws.gov/ecp0/profile/speciesProfile?sld=1864. June 16, 2023.

USFWS. 2020f. Species Profile for Whooping Crane (*Grus americana*). http://ecos.fws.gov/ecp0/profile/speciesProfile?sld=758. June 16, 2023.

APPENDIX A
OFFICIAL USFWS SPECIES LIST

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
Phone: (918) 581-7458 Fax: (918) 581-7467

In Reply Refer To:
Project Code: 2023-0050622
Project Name: Tinker AFB Peaking Plant EA

March 01, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
(918) 581-7458

PROJECT SUMMARY

Project Code: 2023-0050622
Project Name: Tinker AFB Peaking Plant EA
Project Type: Acquisition of Lands
Project Description: Tinker AFB proposes to construct a peaking plant at an adjacent site just east of the existing AFB boundary.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@35.41427985,-97.36847889166305,14z

Counties: Oklahoma County, Oklahoma

ENDANGERED SPECIES ACT SPECIES

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Whooping Crane *Grus americana* Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/758	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Jul 31
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25

NAME	BREEDING SEASON
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Little Blue Heron *Egretta caerulea* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 10 to Oct 15
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

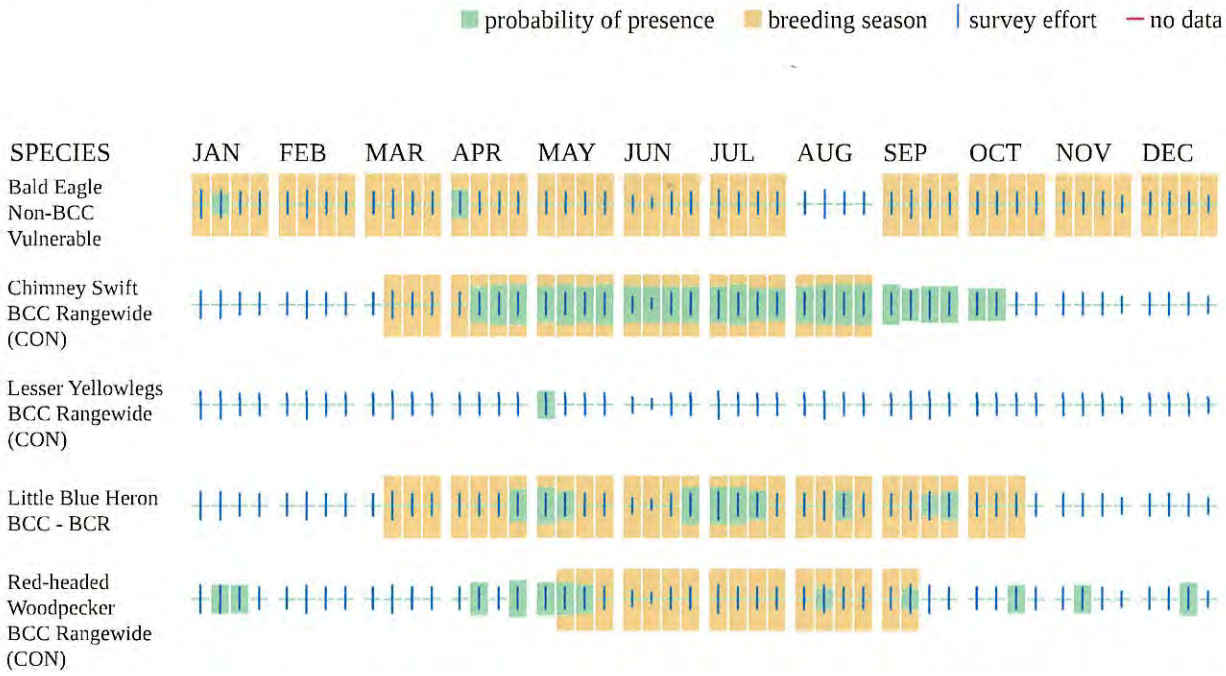
Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

MIGRATORY BIRDS FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point

within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no

data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

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APPENDIX D – BIOLOGICAL EVALUATION

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BIOLOGICAL EVALUATION FOR STATE SENSITIVE SPECIES FOR THE LAND ACQUISITION SITE FOR THE CONSTRUCTION OF A PEAKING PLANT AT TINKER AIR FORCE BASE IN OKLAHOMA CITY, OKLAHOMA

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BIOLOGICAL EVALUATION FOR STATE SENSITIVE SPECIES FOR THE LAND ACQUISITION SITE FOR THE CONSTRUCTION OF A PEAKING PLANT AT TINKER AIR FORCE BASE IN OKLAHOMA CITY, OKLAHOMA

INTRODUCTION

This Biological Evaluation addresses species identified as threatened or endangered by Oklahoma Department of Wildlife Conservation and are considered possibly present or have habitat present within the proposed land acquisition parcel for the construction of a peaking plant at Tinker Air Force Base in Oklahoma City, Oklahoma. State sensitive species have no protection under the Endangered Species Act of 1973, as amended, but are evaluated for impacts from projects occurring within Federal lands in the spirit of the Act. Consideration of these sensitive species helps to protect them from future up-listing.

PROPOSED ACTION

Project Name

The project name is the Land Acquisition for Peaking Plant at Tinker Air Force Base (AFB), Oklahoma City, Oklahoma.

PROPOSED PROJECT AND PURPOSE

An Environmental Assessment (EA) was prepared for Tinker AFB to assess the potential environmental consequences associated with land acquisition, construction of a new peaking plant, and deconstruction of an existing peaking plant at Tinker AFB, OK. Oklahoma Gas and Electric (OG&E). The owner and operator of the current peaking plant plans to retire the two electric generating units in 2025 after 54 years in service, in accordance with OG&E's 2021 Integrated Resource Plan (IRP) as approved by regulatory authorities. The proposed project is anticipated to be completed within the next three years (fiscal year [FY] 23 to FY 25). The estimated required footprint of the new facility is approximately 6.5 acres.

The purpose of the Proposed Action is to maintain Tinker AFB's energy resiliency plan and islanding capabilities in support of Tinker AFB's mission and tenants. The Proposed Action is needed to address the retirement of the current peaking plant scheduled in 2025 and to continue providing uninterrupted backup power and islanding capabilities.

Under the Proposed Action, the Air Force (Tinker AFB) would acquire a parcel of land neighboring Tinker AFB and lease the land to OG&E who will construct and operate a new electric peaking plant with an electrical generating capacity of approximately 90 MW. Tinker AFB and OG&E identified two 10-acre parcels located at 5500 S. Douglas Boulevard., Oklahoma City, OK, as the preferred location for the new plant. The site is an ideal location to construct the new peaking plant in order to best support the existing electrical loads on base. The land is currently owned by the Oklahoma Industries Authority and is located immediately to the east of the current facility. The parcel size allows for flexibility in laying out the new facility, including site access. Similar to the current electric peaking plant, the new electric peaking plant is anticipated to consist of two simple-cycle combustion turbines, each with an electrical generating capacity of approximately 45 MW. The exact specifications of the new units are not yet known as OG&E has not yet completed the selection process for construction of the new peaking plant. The footprint area needed for the two electrical generating units and supporting needs is approximately 6.5 acres. An additional area of approximately 3.5 acres is needed for the future addition of a substation at the site. Therefore, the total area needed to accommodate the two units with associated switchyard and substation equipment is approximately 10 acres. The approximately 10-acre area of disturbance would be located west of the road that bisects the parcel from north to south.

Plant construction would include vegetation removal and grading of the approximately 6.5-acre footprint. Road base or other surface material may be placed in areas to stabilize the surface and minimize erosion and future vegetative growth. Approximately 1 acre of the area between the plant and Douglas Boulevard would be paved for parking and site access. Natural gas infrastructure would be rerouted to the new site by installing an underground pipeline approximately ¼ mile in length, and 3-5 feet wide and deep, connecting the site to local infrastructure. The area would be fenced to prevent unauthorized access. Future plans include eliminating general traffic on Douglas Boulevard in the vicinity of Tinker AFB in conjunction with construction of an anticipated B-21 campus.

OG&E would operate and maintain the facility similar to that of the current facility. Operations may include on-site or remote activation and deactivation of the units. General facility maintenance may include lubrication of facility components, replacement of air filters, inspection and general repairs, and site landscape maintenance.

The existing peaking plant would be deconstructed, fencing removed from the original location, and the site would be made available for general purpose use at Tinker AFB. The site would not be revegetated.

ACTION AREAS

Construction of the Proposed Action would disturb approximately 10 acres. The Proposed Action would entail the Air Force (Tinker AFB) would acquiring a parcel of land neighboring Tinker AFB and lease the land to OG&E who will construct and operate a new electric peaking plant with an electrical generating capacity of approximately 90 MW. The footprint area needed for the two electrical generating units and supporting needs is approximately 6.5 acres. An additional area of approximately 3.5 acres is needed for the future addition of a substation at the site. Therefore, the total area needed to accommodate the two units with associated switchyard and substation equipment is approximately 10 acres. The approximately 10-acre area of disturbance would be located west of the road that bisects the parcel from north to south. The proposed project is anticipated to be completed within the next three years (fiscal year [FY] 23 to FY 25). **Figure 1** presents a map of the proposed project area.

LISTED SPECIES

The list of species considered in this analysis includes threatened and endangered species identified by Oklahoma Department of Wildlife Conservation that may occur within and directly around the proposed land acquisition site. The list of state sensitive species that may occur within or directly adjacent to the proposed project area at the proposed Peaking Plant site is presented below. The list was obtained from the Oklahoma Department of Wildlife Conservation Database (2023a) based on data for sensitive waters and watersheds within Oklahoma as well as by county. These species include the following:

- Blackside darter (*Percina maculata*) State Threatened
- Longnose darter (*Percina nasuta*) State Endangered
- Oklahoma cave crayfish (*Cambarus tartarus*) State Endangered

ANALYSIS OF EFFECTS

No Action Alternative

Direct and Indirect Effects
No direct or indirect effects to sensitive species would occur under the No Action Alternative as no impact to the existing vegetation community within the proposed project area would be realized.

Cumulative Effects
No cumulative effects are expected from the No Action Alternative.

Figure 1
Project Area Map
Land Acquisition for a Peaking Plant at Tinker AFB

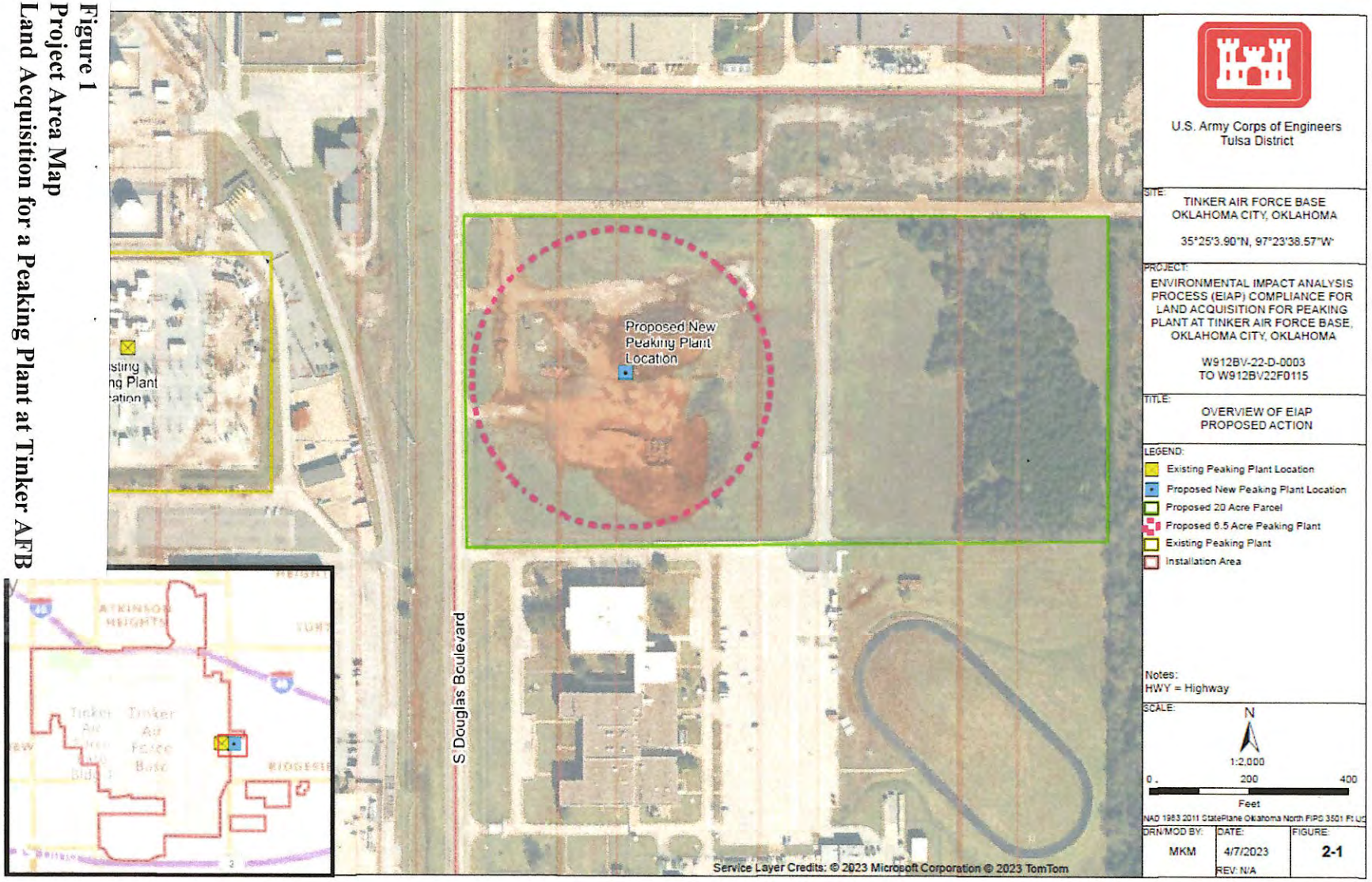

Figure 1. Proposed Project Location

Proposed Action

Direct Effects
No critical habitat for state protected species occurs in the Proposed Action Alternative project area. Thus, sensitive species and their critical habitat requirements are not present within the project area, because no suitable habitat occurs within the proposed project area.

Indirect Effects
Indirect effects to state sensitive species will not occur under the Proposed Alternative as no suitable habitat occurs within the proposed project area.

Cumulative Effects
No cumulative effects are expected from the implementation of the Proposed Action on state sensitive species. No suitable habitat for the three Oklahoma State threatened and endangered species that could potentially occur within the proposed project area occurs within the proposed project area.

VEGETATION COMMUNITIES OCCURRING AT THE PROPOSED PROJECT SITE

The proposed peaking plant site is comprised of three general vegetative cover types including mixed grass prairie, weedy/disturbed, and mixed woodland. The western half of the proposed peaking plant site is dominated by weedy/disturbed vegetation due to the frequent and perpetual surficial soil disturbance that has occurred in this area over many years. The eastern half of the proposed project area is equally dominated by mixed grass prairie and a swath of mixed woodland. The eastern half of the site is not expected to be impacted by the proposed project.

The vegetation communities identified above correspond to wildlife habitat types that include grassland and woodland. The grassland habitat encompasses the mixed grass prairie and the weedy/disturbed vegetation communities. The mixed woodland habitat type encompasses the mixed woodland vegetation community. These habitat types were distinguished and characterized by their associated vegetation communities and dominant species as well as their usefulness to wildlife in the area.

Mixed Grass Prairie: The mixed grass prairie vegetation community lies in the middle portion of the site between the weedy/disturbed community and the mixed woodland community. This vegetation community type is dominated by a variety of grasses including big bluestem (*Andropogon gerardi*), Indiangrass (*Sorgastrum nutans*), little bluestem (*Schizachyrium scoparium*), purpletop (*Tridens flavus*), and poverty grass (*Danthonia spicata*). Forbs found in this vegetation community include beebalm (*Monarda sp.*), hairy sunflower (*Helianthus hirsutus*), and trailing

lespendeza (*Lespedeza sp.*). A small pocket of lemon sumac (*Rhus aromatica*) occurs within this community. This community will not be disturbed as part of the peaking plant construction area.

Weedy/Disturbed: This vegetation community lies along the western half of the proposed peaking plant construction site. This area has had surficial soil disturbance perpetually and frequently over many years. Much of this area presently has exposed and denuded soils. The dominant vegetative ground cover is bermudagrass (*Cynodon dactylon*) with pockets of weedy annuals and biennials, like sunflower (*Helianthus sp.*). Some woody growth also occurs in this vegetation community and includes elm (*Ulmus sp.*) and red cedar (*Juniperus virginiana*) seedlings and saplings.

Mixed Woodland: The mixed woodland vegetation community lies along the east side of the project parcel. Red cedar is the dominant tree within this community with various other tree species including oak (*Quercus sp.*) and hickory (*Carya sp.*). Little understory occurs in this community due to the thick canopy.

According to the U.S. Fish and Wildlife Service's National Wetland Inventory Mapper, no wetlands occur within the project area (USFWS 2023). No drainageways and/or ponded, diked, or impounded water features occur within the proposed project area.

STATE SENSITIVE SPECIES

A Threatened and Endangered Species list was obtained from the Oklahoma Department of Wildlife Conservation online database (2023a). A description of each species and their habitat requirements as well as their potential to occur within the proposed project area is presented below.

Blackside darter (*Percina maculata*). According to the Oklahoma Department of Wildlife Conservation (2023b) and Wikipedia (2023a), this species of freshwater fish is ray-finned. It inhabits streams and rivers in the Mississippi River watershed. Like other darters, it prefers rocky riffles and sandy runs, but is tolerant of pools and still water as well.

There is no potential for the blackside darter to occur within the project area because no drainages, ponds, or other open or running water features occur within the proposed project area.

Longnose darter (Percina nasuta). According to the Oklahoma Department of Wildlife Conservation (2023c) and Wikipedia (2023b), this species is mostly yellow with a stripe of dark blotches down the lateral line. It is characterized by a long, pointed snout that can be darker colored than the rest of its body. This species

occurs in three river systems across the southern Missouri Ozarks, the Ouachita Mountains in Arkansas, and eastern Oklahoma. Populations are sporadic and occur in small pockets in these upland streams where riffles and pools with clean gravel and boulders occur for spawning and they also inhabit the slower pools over sand and silt after spawning.

There is no potential for the longnose darter to occur within the project area because no drainages, ponds, or other open or running water features occur within the proposed project area.

Oklahoma Cave Crayfish (*Cambarus tartarus*). According to the Oklahoma Department of Wildlife Conservation (2023d), this species is small and averages no more than three inches in length with a white or colorless appearance. It has no external eyes but has thin pinches and legs. This species is found only in shallow groundwater aquifers underneath portions of the Spavinaw and Saline Creek watersheds in Oklahoma. It is considered a state endemic.

There is no potential for the Oklahoma cave crayfish to occur within the project area because no caves occur within the proposed project area.

DETERMINATION

The proposed action will not affect any of the state sensitive species presented above.

PREPARERS

This Biological Evaluation was completed by Darcy A. Tiglas, Tiglas Ecological Services, in June, 2023.

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