Environmental Assessment

Construction and Operation of New Air Traffic Control Tower

Tulsa International Airport,

Tulsa, Oklahoma

Prepared for:

Tulsa International Airport

and

FEDERAL AVIATION ADMINISTRATION

Prepared by:

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List of Abbreviations and Acronyms

ACRES	Assessment, Cleanup, and Redevelopment Exchange System
ACM	asbestos containing materials
AGS	above ground surface
AFTIL	Airport Facilities Terminal Integration Lab
AQCR	Air Quality Control Region
ATCT	Air Traffic Control Tower
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
ft	feet
GHG	greenhouse gas
HSWA	Hazardous and Solid Waste Amendments
lbs	pounds
LOS	line of sight
IM	Industrial Moderate
IPaC	Information for Planning and Consultation
MSWLF	Municipal Solid Waste Landfill
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHD	National Hydrography Dataset
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NPIAS	National Plan of Integrated Airport Systems
NRHP	National Register of Historic Places
NWI	National Wetland Inventory

OAS	Oklahoma Archeological Survey
ODEQ	Oklahoma Department of Environmental Quality
OHS	Oklahoma Historical Society
O_3	ozone
ppm	parts per million
REC	Recognized Environmental Condition
RCRA	Resource Conservation Recovery Act
ROI	Region of Influence
RVS	Tulsa Riverside
SHPO	State Historic Preservation Office
SIP	state implementation plan
SO_x	sulfur oxides
SWPPP	Stormwater Pollution Prevention Plan
TAIT	Tulsa Airports Improvement Trust
TNW	traditionally navigable waters
TRACON	Terminal Radar Approach Control
TSP	total suspended particulate
TUL	Tulsa International Airport
USC	United States Code
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USDOT	Department of Transportation
UST	Underground Storage Tank
$\mu g/m^3$	micrograms per cubic meter
VOC	volatile organic compounds
WOTUS	Waters of the United States
WWII	World War II

1.0 Chapter 1: Purpose and Need

1.1 Introduction

The primary purpose of this Environmental Assessment (EA) is to document and evaluate the potential effects to the human health and the environment associated with the implementation of the Proposed Action as well as the ability of the alternatives to meet the purpose and need for the Proposed Action. The Proposed Action is to construct and operate a new Air Traffic Control Tower (ATCT) at the Tulsa International Airport (TUL) to replace the existing ATCT as the existing ATCT is does not meet the current FAA standards and building codes for structures, systems, life safety, and accessibility.

This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 United States Code [USC] 4321 et seq.), as implemented by the regulations promulgated by the Council on Environmental Quality (CEQ) (40 Code of Federal Regulations [CFR] §1500-1508). The principal objectives of NEPA are to ensure the careful consideration of environmental aspects of proposed actions in Federal decision-making processes and to make environmental information available to decision makers and the public before decisions are made and actions are taken. The intent of NEPA is to protect, restore, or enhance the environment through a well-informed decision-making process. The CEQ was established under NEPA to implement and oversee federal policy in this process. To this end, the CEQ issued the Regulations for Implementing the Procedural Provisions of NEPA. The CEQ regulations declare that an EA serves to accomplish the following objectives:

- Briefly provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI);
- Aid in an agency's compliance with NEPA when an EIS is not necessary; and
- Facilitate preparation of an EIS when necessary.

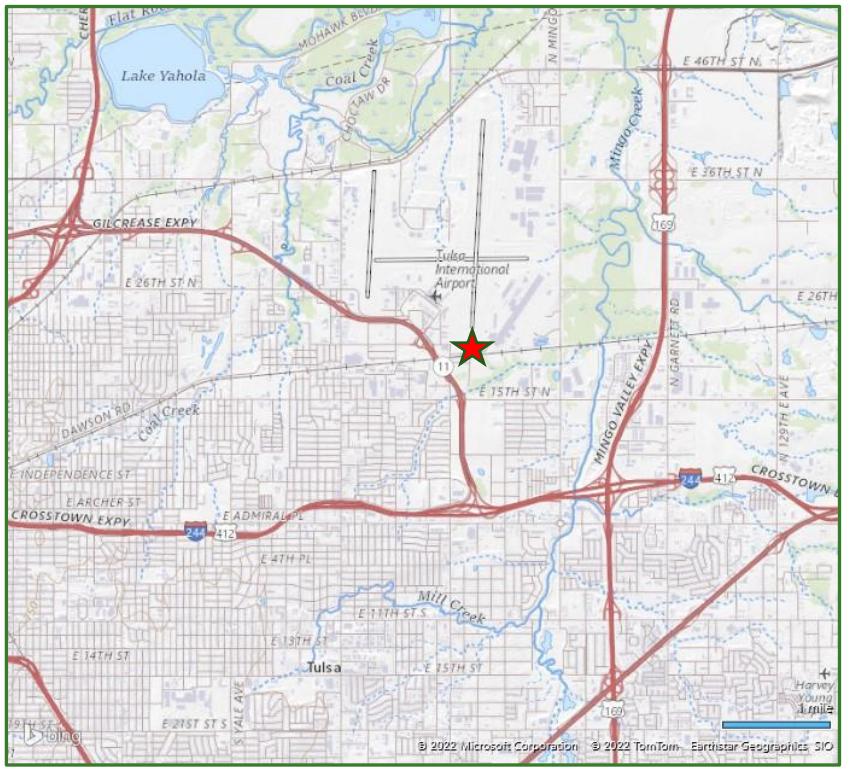
The Federal Aviation Administration (FAA) is the lead federal agency to ensure compliance with the NEPA for airport development actions. The FAA has established a process to ensure compliance with the provisions of NEPA through, FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures,* 1050.1F Desk Reference, and FAA Order 5050.4B*, NEPA Implementing Instructions for Airport*. These federal regulations establish both the administrative process and substantive scope of the environmental impact evaluation designed to ensure that deciding authorities have a proper understanding of the potential environmental consequences of a contemplated course of action. This EA has been prepared in accordance with the regulations and guidance documents.

1.2 Background Information

The TUL is located at 7777 Airport Drive, Tulsa, Oklahoma and is owned by the City of Tulsa and leased to the Tulsa Airports Improvement Trust (TAIT). The TAIT operates, manages, and administers the TUL and Tulsa Riverside (RVS). TUL is a medium sized multi-use, small hub, airport that serves air carrier, air cargo, business and general aviation (FAA 2023). TUL encompasses 4,400 acres and is one of the largest industrial employers in the region. Tenants of the TUL include: the Oklahoma Air National Guard, Army Aviation Support Facility, American Airlines Tech Ops-Tulsa, L3 Harris, Lufthansa, US Aviation, Intercontinental Jet and the Air and Space Museum. Service providers include Atlantic Aviation, BizJet, Legacy Jet Center, and Sparks Aviation (TIA 2018).

The airport was dedicated on July 3, 1928, and by the end of 1929, the Tulsa Municipal Airport led all airports in the world in paid passenger volume. In 1932 a new terminal was constructed, and in 1946 and 1955, new hangers were constructed in response to the growing need for passenger travel. The airport was renamed the TUL in 1963. In 1971-1972, a new terminal and cargo areas were constructed (Airports Guide 2016). In 2015, the terminal was renovated and includes two concourses. In September 2022, 260,489 passengers visited the TUL and operations included 8,888 flights (TIA 2022a); numbers exceeding September 2019 travel counts. The FAA projects that by 2025, the TUL will have 1,643,810 visitors and 98,313 flights which is a 20% increase in visitors and 10% increase in operations from the 2022 projections (FAA 2022a).

Figure 1 Site Location



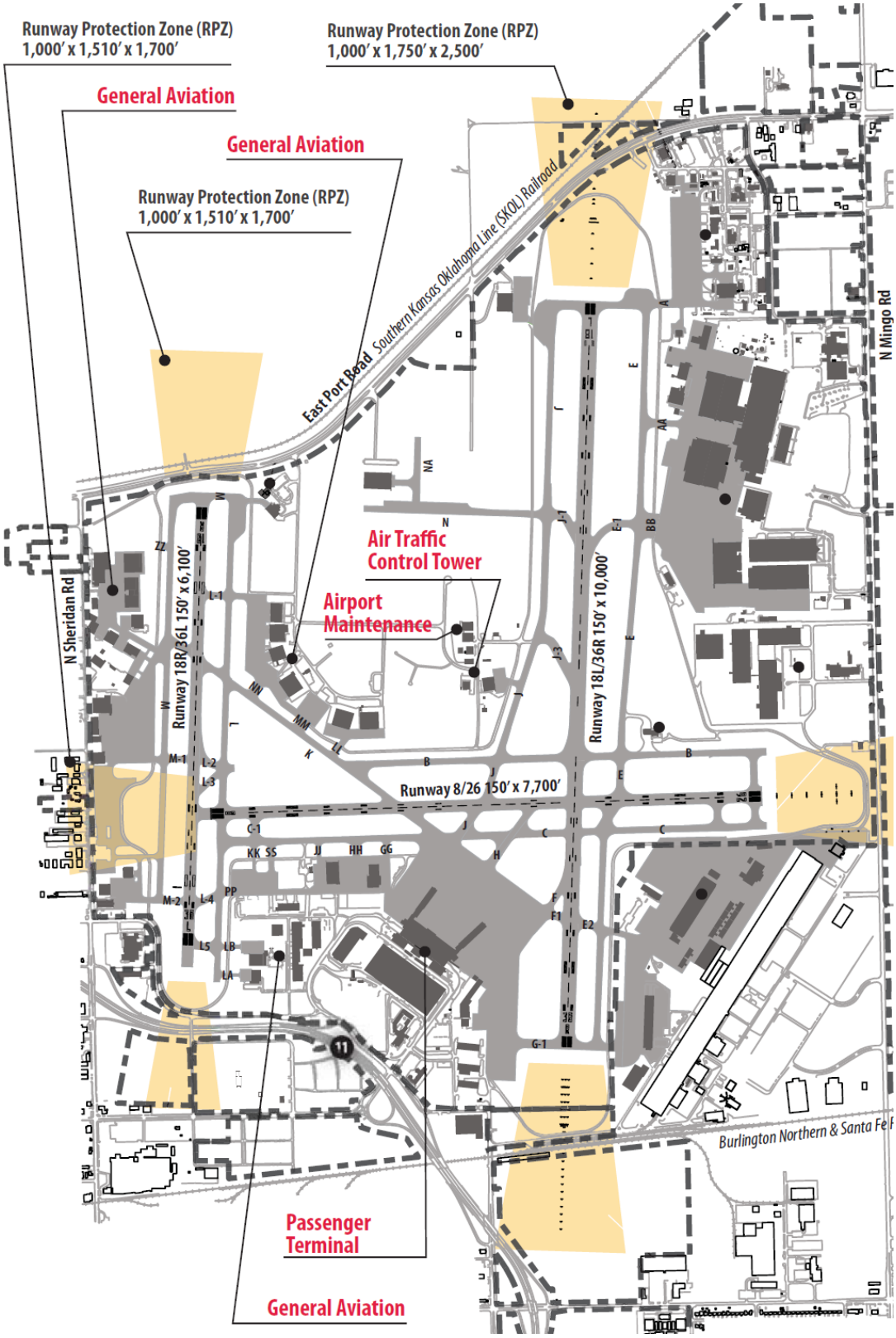
Source: ESRI World Image

The TUL has three paved runways: Runway 18L/36R with the dimensions of 9,999 x 150 feet (ft), Runway 18R/36L with the dimensions of 6,101 x 100 ft, and Runway 8/26 with the dimensions of 7,376 x 150 ft. Two of the three runways are parallel and are oriented in a general north-south direction. In 2021, the airport served 25 nonstop destinations, and as of 2022, the average daily aircraft operation is 254, with 37 percent as commercial (AirNav 2022). The third runway (Runway 8/26) is a crosswind runway, oriented in an east-west direction. The runways are supported by a system of parallel and connecting taxiways. Outside of the runway/taxiway system are landside facilities which include the passenger terminal building, passenger terminal support facilities, airport support facilities, aircraft storage and maintenance (including five aprons), fixed based operators, airport storage facilities, fuel storage, and automotive areas including parking and roadways.

The passenger terminal is located between the north-south parallel runways and south of the cross-wind runway. The terminal was constructed in 1961 and has been expanded and renovated since its construction. The terminal includes two concourses with 22 gate positions. Currently six commercial airlines serve TUL: Allegiant, American Airlines, Breeze, Delta Airlines, Southwest Airlines, and United Airlines (TIA 2022b). The terminal is surrounded by access roadways, public and employee parking, a rental car facility, two hotels, and terminal ancillary facilities.

The ATCT is centrally located within the airport property, on the north side of cross wind runway and between the two north-south runways (see Figure 2). The ATCT is classified as Level 8 Airport Traffic Control-8 with a combined tower and radar approach control facility. The ATCT is owned and maintained by TAIT and leased to the FAA. The ATCT is 157 ft above ground surface (AGS) and three areas within the airfield have restricted visibility to/from ATCT; these are Taxi-lanes QQ and NN and the southern portion of Taxiway L.

Figure 2 TUL Layout



Source: TIA 2018

1.3 Proposed Project Purpose and Need

1.3.1 Purpose

The purpose of the construction and operation of a new ATCT is to improve air traffic control services to TUL while increasing visibility to taxiways.

1.3.2 Needs

The ATCT, which was commissioned in 1958 and construction as completed in 1961, has exceeded its useful life. According to the U.S. Department of Transportation (USDOT), the average ATCT facility has an expected useful life of approximately 25 to 30 years (USDOT 2008). As identified during the assessment and worker observations, the exterior of the building shows advanced signs of deterioration; elevator malfunctions; outdated and outmoded interior building systems; and regulatory non-compliant systems. The non-compliance includes building code compliance and Americans with Disabilities Act for structures, systems, life safety, and accessibility. Additionally, the current placement of the ATCT does not allow for full visibility of aircraft from the ATCT.

1.4 Federal Decision to be Made

TUL is included in the FAA's National Plan of Integrated Airport Systems (NPIAS) and is designated as a small hub, Class I, airport, on the Part 139 Airport Certification Status List. Inclusion in the NPIAS signifies that the FAA considers this airport an important part of the nation's air transportation system, which makes TUL eligible to receive federal grants under the FAA's Airport Improvement Program. As such, the FAA is the federal decision-maker concerning the funding of the grant. The TAIT will be responsible for the activities associated with the funding of the grant including construction and maintenance of the new ATCT.

The purpose of this EA is to inform the public and decision-makers of the potential environmental effects of the Proposed Action and alternatives prior to making a federal decision to move forward with any action. In this manner, federal decision-makers can make a fully informed decision, aware of the potential environmental effects of their Proposed Action. Overall, the purpose of this EA is to:

- Document the NEPA process;
- Inform decision-makers of the possible environmental effects of the Proposed Action and its considered alternatives, as well as methods to reduce these effects;
- Allow for public, regulatory agency and tribal input into the decision-making process; and
- Allow for informed decision-making by the federal government.

This decision-making includes identifying the actions that the federal government will commit to undertake to minimize environmental effects, as required under the NEPA and associated CEQ Regulations.

FAA will ultimately decide if the grant is funded and the actions associated with the funds are performed.

2.0 Chapter 2: Alternatives

2.1 Introduction

This section of the EA provides a brief history of the formulation of alternatives, identification of alternatives eliminated from further consideration, a description of the Proposed Action, and a description of the No Action Alternative. The screening criteria and the review of alternatives was developed and evaluated jointly by the FAA and TAIT to hone the number of reasonable alternatives for the Proposed Action. The Proposed Action was selected based on the evaluation and its ability to meet the Purpose and Need.

2.2 Identification of Potential Alternatives

This section discusses the alternatives selection process and defines the alternatives that were considered. The implementing procedures for NEPA establish a number of policies for federal agencies to follow in order to avoid or minimize the adverse effects of their actions. The FAA has also issued agency guidance associated with the act. Under FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, Chapter 6, EAs should be prepared with a level of analysis that identifies reasonable alternatives, including a no action alternative. Alternatives are to be considered to the same level of assessment of the proposed action. Alternatives that are eliminated from detailed analysis must be identified, along with a brief discussion of the reasons for eliminating them.

Four alternatives for the Proposed Action were considered. These alternatives included:

- Renovating the existing ATCT (Alternative 1);
- Construction of a new ATCT at Site #1 (Alternative 2);
- Construction of a new ATCT at Site #2 (Alternative 3); and
- The No Action alternative. (Alternative 4).

To develop Alternatives 2 and 3, the airport engaged the FAA in a tower siting and height study (Airport Facilities Terminal Integration Lab [(AFTIL]) in September 2019. The study was officially complete on June 17, 2021 and became effective May 2022. The study identified and analyzed the two potential locations for the new ATCT. Site #1, Alternative 2, is approximately 1,500 feet to the northwest of the existing and Site # 2, Alternative 3, is immediately to the northwest of the existing ATCT. See Figure 3 for the proposed Site #1 and #2. The study reviewed visibility, operational, and communication constraints/hazards.

Figure 3 Proposed New ATCT Locations

Alternative 1

Under this alternative, the existing ATCT would be renovated to meet current FAA standards. Renovations would include upgrading the existing communication systems including electrical to increase the existing workspace, replacing existing mechanical and plumbing systems, roof maintenance, glass replacement, upgrading stairs to current building standards, new drywall and paint, resealing of exterior walls, and repaving of the current parking area.

Renovation of the existing ATCT, Alternative 1, was dismissed from consideration due to budgetary constraints. It is estimated that renovation activities would cost an additional 4.1 million dollars above the existing maintenance budget and would not allow for expansion of

staff or capabilities or meet the mandatory workspace requirements. The constraint of the structure would not allow this alternative to meet the purpose and need of this action (meeting the requirements in FAA Orders 1600.69B, FAA Facility Security Management Program and 6480.7E, ATCT and Terminal Radar Approach Control Design Policy) and therefore was dismissed. Under this alternative the Purpose and Need of the Proposed Action would not be met as the location does not improve the visibility to taxiways from the ATCT.

Alternative 2 (Site #1)

Site #1 is located approximately 1,500 feet to the northwest of the existing ATCT. The top of the tower at the site is proposed to be 243 feet above ground surface (AGS) with the cab floor level at 238 feet AGS and eye level of 243 feet AGS. This location provided no restrictions on visibility, no operational hazards, and no safety hazards Impacts were noted to existing radio frequencies including remote communications outlets at Runway 18L, Taxiway E, and Taxiway J; remote transmitter/receiver at Runway 18R, Taxiway L, Taxiway M; and line of sight (LOS) from the current ATCT to the approach at the end of Runway 18R during construction and impacts to LOS to Taxiway J and Taxiway B LOS restrictions would be present until the existing ATCT is demolished. Remote communications outlets and remote transmitter/receiver are transceivers that extend the communication capability for ground-to-ground communication between air traffic control specialists and pilots (FAA 2022b).

Alternative 3 (Site #2)

Site #2 is located immediately to the northwest of the existing ATCT. Once constructed, the new ATCT would be 259 feet AGS with the cab floor level at 224 feet AGS and eye level of 229 feet AGS. The site passed the visibility analysis; however, the location did not provide the best view of aircraft approaching RW 36L and impacts to remote communications outlets were present. Runway 18L, Taxiway E, and Taxiway J remote communications had the potential to be impacted; and impacts to remote transmitter/receiver impacts at Runway 8, Taxiway 36L, Taxiway C2, Taxiway K, Taxiway L, and Taxiway M are anticipated. Impacts to LOS from the site to the approach end of Runway 18R would exist until the demolition of the existing ATCT. No operational hazards and safety hazards were found to be present.

Beyond the impacts to communications, the location of the alternative had the potential to provide a constraint on the growth for hangar construction/availability, south of the site. If facilities were constructed to the south of the site, visibility to aircraft would be limited; creating an unsafe environment. Due to the location of the site limiting growth at the TUL, Alternative 3 was dismissed.

Alternative 4 (No Action)

Under the No-Action Alternative, the existing ATCT would remain in its current condition. The existing ATCT would continue to receive annual and emergency maintenance, a new facility would not be constructed, and the existing ATCT would not be demolished. Under

this alternative the Purpose and Need of the Proposed Action would not be met as the location does not improve the visibility to taxiways from the ATCT.

2.3 Alternatives Retained for Analysis in This EA

2.3.1 Proposed Action (Alternative 2)

The Proposed Action is to construct a new ATCT, located approximately 1,500 feet northwest of the existing ATCT (Figure 3). The area of potential effect is identified in Figure 4. The new ATCT would be constructed to a height of 243 ft at control lab eye level, 255 ft to the top of the tower. The current ATCT is a height of 157 ft AGS, with a cab eye level of 150 ft AGS. The increased height is intended to improve visibility for controllers over existing and future hangars and was based upon the FAA Airport Traffic Control Visibility Analysis Tool (FAA 2021). The Proposed Action includes the site development, site utilities, access roads, the actual tower and base building including the Terminal Radar Approach Control (TRACON), any support buildings, and all necessary FAA control communications connections to airfield lights and NAVAIDS. The tower cab will contain 550 square feet of floor space and will contain all new FAA equipment. The new TRACON and base building will contain approximately 15,000 square feet. The current ATCT and base building will be demolished once the new tower is placed into service. All demolition debris will be transported and disposed of in accordance with local and state regulations.

The equipment, including, but not limited to communication and radar, within and currently in operation at the existing ATCT will be in use until the new ATCT is operational. The equipment is owned by the FAA, and prior to demolition of the existing ATCT, the equipment will be returned to the agency, and the agency will be responsible for its salvage and/or use as surplus equipment. The new ATCT will require new FAA-owned air traffic control equipment which will become operational upon commissioning of the new ATCT.

No land acquisition will be necessary for the Proposed Action to be implemented. The new tower will be built to minimize ambient light glare at night and be visible from all areas associated with air travel.

The Proposed Action is an approved capital item in the airport's long-term capital program and was approved by TUL signatory air carriers in June 2019. The TUL is also seeking federal funds as well as funding from the State of Oklahoma, Oklahoma Aeronautics Commission, City of Tulsa, and Tulsa County for the Proposed Action. It is estimated the Proposed Action will cost 95 million dollars.

Figure 4 Proposed Project Location

2.3.2 No-Action Alternative (Alternative 4)

Consideration of the No Action Alternative is required through NEPA per CEQ regulations. The No Action Alternative serves as a basis of comparison with other alternatives considered for detailed analysis. Under the No Action Alternative, the existing ATCT would remain in use, and the non-compliant systems and inefficient facility would remain in place and operation. Under this alternative, the purpose and need of the action would not be met.

3.0 Affected Environment and Environmental Consequenses

3.1 Introduction

This section describes the baseline, existing conditions of environmental resources (Technical Resource Areas) within the area potentially subject to effects from implementation of the alternatives. The baseline conditions presented in this section are described to the level of detail necessary to support analysis of potential impacts associated with the Proposed Action and No Action Alternative.

3.1.1 Criteria of Analysis of Impacts

After each description of the relevant baseline conditions of each considered Technical Resource Area, the potential direct and indirect effects of the Proposed Action and No Action Alternative are analyzed. The significance of an action is also measured in terms of its context and intensity. For the purposes of this analysis, the potential environmental impacts are described in terms of duration, whether they are direct or indirect, the magnitude of the impact, and whether they are adverse or beneficial. These thresholds are in accordance with FAA Order 1050.1F and are summarized in the following paragraphs:

Short-term or long term. In general, short-term impacts are those that would occur only with respect to a particular time-lined activity, for a finite period, or only during the time required for construction or installation activities. Long-term impacts are those that are more likely to be persistent and chronic.

Direct or indirect. A direct impact is caused by an action and occurs around the same time at or near the location of the action. An indirect impact is caused by an action at later in time or are farther removed in distance but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

Adverse or beneficial. An adverse impact is one having unfavorable or undesirable outcomes on the man-made or natural environment. A beneficial impact is one having positive outcomes on the man-made or natural environment.

3.1.2 Significance Criteria

Significance is based on the twin criteria of context and intensity (FAA Order 1050.1F, Section 4-3.2). Context means the affected environment in which a Proposed Action would occur; it can be local, regional, national, or all three, depending upon the circumstances. Context means that the significance of an action must be analyzed in several contexts such as society as a whole (human/national), the affected region, the affected interests, and the

locality. Significance varies with the setting of the Proposed Action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short-and long-term effects are relevant. Intensity refers to the severity of impact, ranging from negligible, minor, or moderate.

Negligible impacts are generally those that might be perceptible but are at the lower level of detection. A minor impact is slight, but detectable. A moderate impact is readily apparent. Significant impacts are those that, in their context and due to their magnitude (severity), have the potential to meet the thresholds for significance set forth in the FAA Order 1050.1F and thus, warrant heightened attention and examination for potential means for mitigation to fulfill the policies set forth in NEPA. Significance criteria for the resources fully analyzed within this EA are presented below.

Air Quality. The action would cause pollutant concentrations to exceed one or more of the National Ambient Air Quality Standards (NAAQS), as established by the United States Environmental Protection Agency (USEPA) under the Clean Air Act (CAA), for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations.

Climate Change. The potential for the climate or associated measures (flooding) would be modified to the extent that safety of the public would be present or facilities, or operations would no longer be efficient or safe.

Biological resources. The U.S. Fish and Wildlife Service (USFWS) determines that the action would be likely to jeopardize the continued existence of a federally listed threatened or endangered species or would result in the destruction or adverse modification of federally designated critical habitat.

Hazardous materials, solid waste, and pollution prevention. The potential to increase the amount of hazardous materials and / or solid waste generated, and the potential to violate applicable Federal, state, tribal, or local laws or regulations regarding hazardous materials and/or solid waste management.

Historical, Architectural, Archeological, and Cultural Resources. The potential to result in ground disturbing/construction activities that may adversely affect known or unidentified cultural resources (archeological and/or historic) within the project area.

Land use. The potential to result in disturbing the current land use or resulting in a change in the current zone.

Natural resources and energy supply. The potential to result in an increase of energy supply and natural resources.

Socioeconomics. The potential to create substantial economic growth in an area, either directly or indirectly or disrupt the community through physical or economic means.

Environmental justice. The potential to lead to a disproportionately high and adverse impact to an environmental justice population (low-income or minority population).

3.2 Environmental Resources Not Affected

This section describes environmental resources that would not be affected by the Proposed Action. Therefore, this EA does not evaluate the potential for impacts for these resources and they are not discussed further in this EA.

3.2.1 Coastal Resources

Thirty-five states are eligible to participate in the Coastal Zone Management Program, and Oklahoma is not one of these thirty-five states. The study area is located more than 450 miles from the nearest Coastal Zone Management Area, which is located within Texas. Since Oklahoma is not eligible to participate within the program, the Proposed Action would not affect any coastal resources.

3.2.2 Farmlands

Construction of the Proposed Action would occur entirely on Airport property. No farmland would be acquired or converted as a result of the Proposed Action. Under Section 523(10)(B) of the Farmland Protection Policy Act (FPPA), land that is committed to urban development is not subject to provisions of the FPPA. Airport property is zoned as "Industrial Moderate" (IM) and is considered an urban use. Therefore, there would be no impact to farmlands.

3.2.3 Noise and Noise Compatible Land Use

Construction activities associated with the Proposed Action would temporarily increase noise levels in the project vicinity. Noise associated with the operation of the construction equipment would be limited to the construction period. Noise associated with construction activities does not typically generate a predicted noise exposure of 65 dB(A) DNL or greater because even at extremely high rates of operation, the equipment itself does not generate noise so intense that averaged over the period of construction that would produce 65 dB(A) DNL. The FAA's criteria for evaluating the impact of "noise energy exposure" is expressed in terms of yearly day/night average sound level (DNL). The threshold of significance for purposes of determining whether a proposed action will cause significant noise impacts is set forth in FAA Order 1050.1F. A "significant noise impact" is defined as a 1.5 decibel (or greater) increase within the 65 DNL contour over any noise sensitive area when compared to the "no action" alternative. Applying the above criteria, there would be no impact to noise. Additionally the Proposed Action does not include the modification of air traffic, which has the potential to modify the level of noise at varying locations creating no change in compatible land use. Due to the distance from sensitive receptors, no impact on residential communities associated with construction noise is anticipated.

3.2.4 Visual Effects

Construction of the Proposed Action would occur entirely on airport property. Construction activity is unlikely to occur during the nighttime hours, but if nighttime construction were to occur, it would be restricted to terminal related construction. Light emissions from any nighttime-related construction would be temporary. Additionally, the closest residences (visual receptors) are approximately 0.9 miles to southwest of the proposed location and is shielded by vegetation and airport buildings. Even with the increase in height of the new ATCT, based upon the distance from the nearest visual receptor and the surrounding land use no impact to visual effects is anticipated.

3.2.5 Light Emissions

Construction of the Proposed Action would be conducted during daylight hours; therefore no additional light sources would be generated and no impact to air operations or sensitive receptors would be present. The Proposed Action would be constructed with the required number of external lights, per FAA guidelines. Upon completion of construction, the existing ATCT would be demolished, removing light emissions associated with that building. The light emissions associated with the Proposed Action is assumed to be similar than that of the baseline condition as lighting requirements are in accordance with FAA guidelines. The closest visual receptor is located approximately 0.9 miles to southwest of the proposed location and is shielded by vegetation and airport buildings. Due to the visual barriers and the similar light emissions associated between the existing ATCT and the Proposed Action, no impact is anticipated.

3.2.6 Floodplains

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel No. 40143C0234L, effective October 16, 2012, TUL is mapped within Zone X, which lies outside the 100- and 500-year floodplain zone. Zone X is an area of minimal flood hazard. TUL is not located within a floodplain; therefore, no impact to the floodplain or structures within are anticipated (FEMA 2012).

3.2.7 Wild and Scenic Rivers

Under National Wild and Scenic Rivers System, none of the rivers identified within the system are located within the state of Oklahoma. The closest river is the Mulberry River in Arkansas, which is approximately to the 130 miles east (NPS 2023). Due to the lack of designated rivers within the vicinity, no impact is anticipated.

3.3 Comparison of the Potential Effects of the Analysis

The existing condition of the environmental resources at the area of the proposed ATCT and its vicinity that are potentially impacted are presented in Section 3. Section 3 also presents an analysis of each alternative's potential effects on the Resource Areas that were analyzed fully.

In accordance with CEQ Regulations at 40 CFR Parts 1502.14 and 1502.16, as well FAA Order 15050.1F, Table 3-1 presents the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision-maker and the public.

Table 3-1 Comparison of the Potential Effects of the Analyzed Alternatives

Resource	Proposed Action	No Alternative (Baseline)
Air Quality	Short-term, direct, minor, and adverse impacts – due to the increase emissions from heavy equipment used during the construction of Proposed Action. These impacts are less than significant.	No change – therefore, no impact.
Climate Change	Short-term, direct, minor adverse impacts and long-term, direct, beneficial impact – construction equipment associated with the construction of the new ATCT and demolition of existing ATCT will generate emissions. Increase in efficiency associated with the new facility will reduce energy consumption, which could reduce emissions. These impacts are less than significant	No change – therefore, no impact.
Biological Resources	Short-term and long-term, direct, minor, and adverse impact –construction and operation of the Proposed Action will remove the maintained lawn and replace with pavement. No listed species or migratory birds were found to inhabit the study area. These impacts are less than significant.	No change – therefore, no impact.
Water Resources	Short-term, indirect, minor, and adverse impacts – due to the increase of impervious cover and runoff. These impacts are less than significant.	No change – therefore, no impact.
Hazardous Materials, Solid Waste and Pollution Prevention	Short term, direct, minor, and adverse impact – The construction and of the Proposed Action will contribute to solid waste but will be short term and minor. These impacts are less than significant.	No change – therefore, no impact.
Cultural Resources	No adverse impact – No historic properties will be affected by the Proposed Action.	No change – therefore, no impact.
Land Use	No adverse impact - land will continue to operate as an airport and no change in land use is anticipated.	No change – therefore, no impact

Natural Resources and Energy Supply	Short term, long term, direct, minor, and adverse impact – The construction and operation of the Proposed Action will require the use of natural resources and energy supply. These impacts are less than significant.	No change – therefore, no impact.
Socioeconomics	No adverse impact - Socioeconomics may benefit from the employment opportunities for the construction and operation of the Proposed Action.	No change – No new employment opportunities for the construction and operation of the Proposed Action.
Environmental Justice	No adverse impact – A disadvantaged community is present; however, all of the impacts associate with the Proposed Action are considered less than significant.	No change – therefore, no impact.

3.4 Air Quality

The USEPA established primary and secondary NAAQS under the CAA, 42 united states code § 7401 et seq. The CAA also set emission limits for certain air pollutants from specific sources, set new source performance standards based on best demonstrated technologies, and established national emission standards for hazardous air pollutants.

The CAA specifies two sets of standards – primary and secondary – for each regulated air pollutant. Primary standards define levels of air quality necessary to protect public health, including the health of sensitive populations such as people with asthma, children, and the elderly. Secondary standards define levels of air quality necessary to protect against decreased visibility and damage to animals, crops, vegetation, and buildings. Federal air quality standards are currently established for six pollutants (known as criteria pollutants), including carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulfur oxides (SO_x), (commonly measured as sulfur dioxide [SO_2]), lead, particulate matter equal to or less than 10 micrometers in aerodynamic diameter (PM_{10}), and particulate matter equal to or less than 2.5 micrometers in aerodynamic diameter ($PM_{2.5}$). Although O_3 is considered a criteria pollutant and is measurable in the atmosphere, it is often not considered as a pollutant when reporting emissions from specific sources, because O_3 is not typically emitted directly from most emissions sources. Ozone is formed in the atmosphere from its precursors – nitrogen oxides (NO_x) and volatile organic compounds (VOCs) – that are directly emitted from various sources. Thus, emissions of NO_x and VOCs are commonly reported instead of O_3. The NAAQS for the six criteria pollutants is shown in Table 3-2.

Table 3-2 National Ambient Air Quality Standards

Pollutant	Primary/Secondary	Averaging Time	Value	Form
Carbon Monoxide (CO)	Primary	8 hours	35 ppm	No to be exceeded more than once per year
		1 hour	9 ppm	
Nitrogen Dioxide (NO_2)	Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Primary and Secondary	1 year	53 ppb	Annual Mean
Ozone (O_3)	Primary and Secondary	8 hours	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Lead (Pb)	Primary and Secondary	Rolling 3 month average	0.15 µg/m^3	Not to be exceeded
Particle Matter $_{10}$ (PM_{10})	Primary and Secondary	24 hours	150 µg/m^3	Not to be exceeded more than one per year on average over 3 years
Particle Matter $_{2.5}$ ($PM_{2.5}$)	Primary	1 year	12.0 µg/m^3	Annual mean, averaged over 3 years
	Secondary	1 year	15.0 µg/m^3	Annual mean, averaged over 3 years
	Primary and Secondary	24 hours	35 µg/m^3	98th Percentile, averaged over 3 years
	Primary	1 hour	75 ppb	99th Percentile of 1-hr daily maximum concentrations,

Pollutant	Primary/Secondary	Averaging Time	Value	Form
Sulfur Dioxide (SO_2)				averaged over 3 years
	Secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

Source: USEPA 2022a

ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter

The USEPA classifies the air quality within an Air Quality Control Region (AQCR) according to whether the region meets federal primary and secondary air quality standards. An AQCR or portion of an AQCR may be classified as attainment, non-attainment, or unclassified with regard to the air quality standards for each of the criteria pollutants. "Attainment" describes a condition in which standards for one or more of the six pollutants are met in an area. The area is considered an attainment area for only those criteria pollutants for which the NAAQS are met. "Nonattainment" describes a condition in which standards for one or more of the six pollutants are not met in an area. "Unclassified" indicated that air quality in the area cannot be classified and the area is treated as attainment. An area may have all three classifications for different criteria pollutants.

The CAA requires federal actions to conform to any applicable state implementation plan (SIP). USEPA has promulgated regulations implementing this requirement under 40 CFR Part 93. A SIP must be developed to achieve the NAAQS in non-attainment areas (i.e., areas not currently attaining the NAAQS for any pollutant) or to maintain attainment of the NAAQS in maintenance areas (i.e., areas that were non-attainment areas but are currently attaining that NAAQS). General conformity refers to federal actions other than those conducted according to specified transportation plans (which are subject to the Transportation Conformity Rule). Therefore, the General Conformity rule applies to non-transportation actions in non-attainment or maintenance areas. Such actions must perform a determination of conformity with the SIP if the emissions resulting from the action exceed applicability thresholds specified for each pollutant and classification of nonattainment. Both direct emissions from the action itself and indirect emissions that may occur at a different time or place but are an anticipated consequence of the action must be considered.

Tulsa County is currently designated as in attainment for all six criteria pollutants, meaning that this area's concentrations of the criteria pollutants are below (i.e., within) the threshold levels according to USEPA NAAQS.

3.4.1 Effects of the Proposed Action

Under the Proposed Action, construction activities would generate minor amounts of fugitive dust (PM_{10}) and gaseous emissions of CO, VOC, NOx, SO2, and $PM_{2.5}$ from the combustion of fuel by construction equipment and vehicles. These quantities would be below the de minimis levels and as the project area is located within an area that is in attainment, no additional analysis is required.

The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land worked on and the level of construction activity. The USEPA estimates that uncontrolled fugitive dust emissions from ground-disturbing activities is emitted at a rate of 80 pounds (lbs.) of total suspended particulate (TSP) per acre day of disturbance. In a USEPA study of air sampling at a distance of 164 feet downwind from construction activities, PM_{10} emissions from various dust sources were determined based on the ratio of PM_{10} to TSP sampling data. The average PM_{10} to TSP ratios for topsoil removal, aggregate hauling, and cut and fill operation are reported as 0.27, 0.23, and 0.22, respectively. Using 0.24 as the average ratio for purposes of this analysis, the emission factor for PM_{10} dust emissions becomes 19.2 lb per acre per day of disturbance. During construction and soil removal associated with the spillway, the fugitive dust emissions would increase due to the nature of ground disturbance; however, the impact is short-term in duration. The closest residential area is approximately 1 mile away. Additionally, the USEPA estimates that the effects of fugitive dust from construction activities are reduced significantly with an effective watering program. Watering the disturbed are of the construction site twice per day with approximately 3,500 gallons per acre per day reduces TSP emissions as much as 50 percent (USEPA 2009). The effects from fugitive dust last only as long as the duration of construction activity, fall off rapidly with distance from the construction site, and do not result in long-term impacts.

Combustive emissions, which include CO, VOCs, NO_x and SO_2, from construction equipment exhaust were estimated by using USEPA-approved emissions factors for heavy-duty diesel-powered construction along with the emission factors for the estimated types and numbers of equipment expected to be used during construction. As with fugitive dust emissions, construction equipment would produce slightly elevated air pollutant concentrations on an annual basis. However, the estimated emissions would not exceed the de minimis level. Air emission calculations are provided in *Appendix B*.

There would be short-term, adverse, direct, and minor impact in air quality due to the increase emissions from heavy equipment used during the construction phase. It is assumed that after the construction phase, normal activities would resume, and there will be no increase in heavy equipment in result of the Proposed Action; therefore, no impact to air quality during the operation is anticipated.

Based upon the location of TUL and the assumption that the level of emissions associated with operating the facility will remain consistent, the Proposed Action would not have adverse significant long-term operational impacts on local air quality. No mitigation measures would be required; however, best management practices (BMPs)

should be implemented to reduce emissions during the construction. These BMPs could include:

- Use appropriate dust suppression methods during on-site construction activities. Available methods include application of water, dust palliative, or soil stabilizers; use of enclosure, covers, silt fences, or wheel washers; and suspension of earth-moving activities during high wind conditions.
- Define and post appropriate speed limits to minimize dust generated by vehicles and equipment on unpaved surfaces.
- Shut off equipment when it is not in use. Visually monitor all construction activities regularly and particularly during extended periods of dry weather and implement dust control measures in additional to scheduled period when needed

Under the Proposed Action, impacts to air quality would be short-term, minor, direct, and adverse; but not significant.

3.4.2 Effects of the No Action Alternative

Under the No Action alternative, existing conditions would be maintained, and air quality would not be affected.

3.5 Climate Change

Climate change refers to any significant changes in average climatic conditions (such as mean temperature, precipitation, or wind) or variability (such as seasonality, storm frequency, etc.) lasting for an extended period (decades or longer). Reports by the U.S. Climate Change Science Program, the National Academy of Sciences, and the United Nations Intergovernmental Panel on Climate Change provide evidence that climate change is occurring and may accelerate in the coming decades (IPCC 2022). Strong evidence supports the idea that global climate change is driven by human activities worldwide, primarily the burning of fossil fuels and tropical deforestation. These activities release carbon dioxide and other heat-trapping gases, commonly called greenhouse gases (GHGs), into the atmosphere (IPCC 2022).

Two executive orders provide a regulatory framework for reviewing projects that have the potential to impact climate change and how to mitigate for those impacts. Under EO 13990, Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, major federal actions must be reviewed for their potential impact to substantially GHG emissions or the impact of climate change on the action. Additionally, under EO 14008, Tacking the Climate Crisis at Home and Abroad, the federal agencies are to incorporate / increase the resilience of its facilities and operations, programs, assets, and mission responsibilities operations against the impacts of climate change.

The FAA is working under the interim guidance provided by CEQ on January 2023 as to how consider GHG emissions and climate change. The guidance states that agencies should quantify reasonably foreseeable direct and indirect gross and net GHG emissions increases

or reductions, both for individual pollutants and aggregated in terms of carbon dioxide equivalence.

The Tulsa area average temperatures range from 28.0 to 93.6 degrees Fahrenheit (F), with temperatures of 90 degrees or higher are often experienced from late July to early September with mild winter months with temperatures occasionally fall below zero but only last a very short time. The influence of warm moist air from the Gulf of Mexico is often noted, due to the high humidity, but the climate is essentially continental characterized by rapid changes in temperature (NOAA 2023). Global average temperature has increased approximately 1.8 degrees F from 1901 to 2016, Tulsa has an average rate of change of between 0.5 and 1 degrees F, from 1901 to 2021. (USEPA 2023a).

Flood records prior to 1900s in Tulsa are rare scarce. Due to the location of the city, impacts by flooding of the Arkansas River can be extensive and frequent. Throughout Tulsa's history flooding has occurred every two or four years and has increased in severity due to urban sprawl and modification of existing floodplains (City of Tulsa 2023). Tulsa was one of the most flood prone cities in the 1970s. Tulsa is continually improving flood management systems throughout the city.

3.5.1 Effects of the Proposed Action

Activities associated with the construction of the new ATCT and demolition of the existing ATCT may cause a temporary increase in local GHG. Combustive emissions from construction equipment exhaust, including NOx were estimated using the US EPA Motor Vehicle Emissions Simulator, MOVES3. Utilizing the NONROAD module, it was estimated that the Proposed Action would emit one ton of NOx per year of construction / demolition activities. This increase in GHG emissions is anticipated to be short-term and below quantities that would have an impact to climate change.

Upon completion of the Proposed Action, the new ATCT would utilize energy efficient heating and cooling systems along with LED lighting, reducing the energy required and utilized in comparison to the existing ATCT. The use of efficient systems has the potential to reduce GHG as the facility would require less electricity

Additionally, the ATCT and exterior equipment, will be constructed in an area that is at approximately 50 feet above the highest elevation of the nearest floodplain. The project area is 640 ft ags and the highest point (which is located to the northwest of the project area) is 590 ft ags. Due to the current flood frequency associated with the area and if flooding frequency does increase, it is anticipated the new ATCT will not be impacted by flooding; therefore no impact on the project associated with resiliency.

3.5.2 Effects of the No Action Alternative

Under the no action alternative, no additional contributors to climate change and GHGs are anticipated because no activities would occur. Conversely, the potential decrease in

electricity demand in association with more efficient building systems would not occur, and the potential to decrease GHGs would not be present.

3.5.3 Effects of Alternatives No Longer Considered

In accordance with the guidance, alternatives that were initially considered must be reviewed for potential impacts on climate change. As noted in Section 2.2, four potential alternatives were identified, which includes the Proposed Action and No-Action as well as Site #2 and renovation the existing ATCT.

Under Site #2, since the activities would include the demolition of the existing ATCT and construction of a new ATCT with the same construction parameters as the Proposed Action, the anticipated emissions to be the same as those of the Proposed Action. Under the renovation alternative, air emissions associated with equipment utilized in the demolition of the existing ATCT would not be present additionally, the air emissions associated with construction / renovation would be less since large vehicles such as graders and concrete trucks would not be utilized, decreasing quantity of fossil fuel combustion. However, as the existing ATCT does currently not utilize energy efficient equipment, lighting, and overall building systems, the renovation alternative has the potential to require additional electricity demand throughout the life of the building, which could increase GHGs if the power providers utilized fuel burning means.

3.6 Biological Resources

USFWS has the authority under the ESA to list and monitor the status of species whose populations are considered imperiled. USFWS regulations that implement the ESA are codified and regularly updated in 50 CFR Part 17. The federal process identifies potential candidate species based on biological vulnerability. The vulnerability assessment considers several factors affecting a species within its range and is linked to the best scientific data available to the USFWS. Species listed as endangered or threatened by the USFWS are afforded full protection under the ESA.

The USFWS Information for Planning and Consultation (IPaC) website was queried to generate an Official Species List for the Proposed Action Site. The search area for the query consisted of an area entirely within the Airport property approximately 5.5 acres of vacant, maintained lawn. USFWS identified six federally listed or candidate species, and 12 migratory bird species potentially in the project area (Table 3-3 and Table 3-4). No critical habitat, refuges or hatcheries were identified through the IPaC, USFWS Critical Habitat Mapper, or through a review of aerial imagery. Wetlands were not identified within the search area. The *Official Species List* can be found in *Appendix C*.

The Oklahoma Natural Heritage Inventory (ONHI) was also queried to generate a species list for Tulsa County. ONHI identified four federally listed species that are present within Tulsa County (Table 3-5). The *Federal and State Endangered, Threatened, and Candidate Species List* can be found in *Appendix C*.

Table 3-3 USFWS Species Listed for Project Area.

Species Common Name	Species Scientific Name	Status	Species Habitat	Habitat Present
Tricolored Bat	*Perimyotis subflavus*	Proposed Endangered	During the spring, summer, and fall, tricolored 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.	No; absence of suitable habitat within or near the study area.
Piping Plover	*Charadrius melodus*	Threatened	This species is a wintering migrant along the Texas Gulf coast and are known to occupy coastal habitats such as sand spots, small islands, tidal flats, shoals, and sandbars with inlets. They nest in sandy areas near water, in a variety of settings: beaches, along Atlantic coast and Great Lakes; sandbars along major rivers in northern great plains, gravel or sand flats next to alkali lakes.	No; absence of suitable habitat within or near the study area.
Red Knot	*Calidris canutus*	Threatened	This species migrates northward through the U.S. April -June, southward July - October. Prefers shoreline of coast and bays, uses mudflats during rare inland encounters; Primarily inhabits seacoasts on tidal flats and beaches,	No; absence of suitable habitat within or near the study area.

Species Common Name	Species Scientific Name	Status	Species Habitat	Habitat Present
			herbaceous wetlands, and tidal flat/shore.	
American Burying Beetle	*Nicrophorus americanus*	Threatened	Generalist. Can be found in wet meadows, partially forested loess canyons, oak-hickory forests, shrub land and grasslands, lightly grazed pastures, riparian zones, coniferous forest, and deciduous forests with open understory. Prefers well-drained soils.	No; absence of suitable habitat within or near the study area. The species prefers undeveloped areas including woodlands and grasslands for foraging, brood rearing and overwintering. The areas of grasslands can include areas of lightly grazed grasslands, but do not include mowed or maintained areas (USFWS 2023a).
Monarch Butterfly	*Danaus plexippus*	Candidate	Prefers meadows, prairies, and grasslands with flowering plants. Milkweed must be present for reproduction	No; absence of suitable habitat within or near the study area. Monarchs typically migrate through Oklahoma between March and May, migrating south in August through October. As milkweeds are the larval foodplants, breeding areas are represented by virtually all patches of milkweed in North America. Milkweed maybe present within or adjacent to the project area; however, all vegetation is mowed at regular intervals, keeping the plant short and does not create viable habitat (USFWS 2023b).
Alligator Snapping Turtle	*Macrochelys temminckii*	Proposed Threatened	Found in river systems that flow into the Gulf of Mexico. In Oklahoma, thought to be restricted to east central and	No; absence of suitable habitat within or near the study area.

Species Common Name	Species Scientific Name	Status	Species Habitat	Habitat Present
			southeastern lakes, rivers, and sloughs.	

Table 3-4 Migratory Birds for Project Area

Species Common Name	Species Scientific Name	Breeding Season	Suitable Breeding Habitat
American Golden-plover	*Pluvialis dominica*	Breeds Elsewhere	No; absence of suitable breeding habitat within or near the study area.
Bald Eagle	*Haliaeetus leucocephalus*	Breeds October 15 to August 31	No; absence of suitable breeding habitat within or near the study area.
Black-billed Cuckoo	*Coccyzus erythropthlmus*	Breeds May 15 to October 10	No; absence of suitable breeding habitat within or near the study area.
Bobolink	*Dolichonyx oryzivorous*	Breeds May 20 to July 31	No; absence of suitable breeding habitat within or near the study area.
Hudsonian Godwit	*Limosa haemastica*	Breeds Elsewhere	No; absence of suitable breeding habitat within or near the study area.
Kentucky Warbler	*Oporornis formosus*	Breeds April 20 to August 20	No; absence of suitable breeding habitat within or near the study area.
Lesser Yellowlegs	*Tringa flavipes*	Breeds elsewhere	No; absence of suitable breeding habitat within or near the study area.
Prothonotary Warbler	*Protonotaria citrea*	Breeds April 1 to July 31	No; absence of suitable breeding habitat within or near the study area.
Red-headed Woodpecker	*Melanerpes erythrocephalus*	Breeds May 10 to September 10	No; absence of suitable breeding habitat within or near the study area.

Species Common Name	Species Scientific Name	Breeding Season	Suitable Breeding Habitat
Ruddy Turnstone	*Arenaria interpres morinella*	Breeds elsewhere	No; absence of suitable breeding habitat within or near the study area.
Rusty Blackbird	*Euphagus carolinus*	Breeds elsewhere	No; absence of suitable breeding habitat within or near the study area.
Wood Thrush	*Hylocichla mustelina*	Breeds May 10 to August 31	No; absence of suitable breeding habitat within or near the study area.

Table 3-5 ONHI Listed Species

Species Common Name	Species Scientific Name	Status	Species Habitat	Habitat Present
American Burying Beetle	*Nicrophorus americanus*	Threatened	See Table 3-3 above	No; absence of suitable habitat within or near the study area.
Yellow-billed Cuckoo	*Coccyzus americanus*	Threatened	Use wooded habitats with dense cover and water nearby, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes. Nests in oaks, beech, hawthorn, and ash.	No; absence of suitable habitat within or near the study area.
Arkansas River Speckled Chub	*Macrhybopsis tetranema*	Endangered	Main channels of wide, shallow, sandy bottomed rivers and larger streams of the Arkansas river basin. Prefers shallow channels where currents flow over clean, fine, sand, avoid calm waters	No; absence of suitable habitat within or near the study area.

Species Common Name	Species Scientific Name	Status	Species Habitat	Habitat Present
			and silted stream bottoms, and appear more adapted for headwaters of streams.	
Arkansas River Shiner	*Notropis Girardi*	Threatened	Inhabits wide and shallow prairie rivers with sandy bottoms, though it seems to use various microhabitats within these systems throughout its life cycle. This species often congregates on the side of sandbars and ridges and rarely occur in the open water of the main river channel.	No; absence of suitable habitat within or near the study area.

The Proposed Action area does not provide suitable habitat for any of the above referenced species.

3.6.1 Effects of the Proposed Action

Implementation of the Proposed Action would remove the existing vegetation and displace the existing wildlife within the area as well as those species that use the area intermittently or seasonally for nesting. According to the Oklahoma Department of Wildlife Conservation's Ecological System Mapping, the study area is classified as Urban low Intensity, which includes areas that are built-up or partially cleared of vegetation but not entirely covered by impervious cover and includes most of the non-industrial areas within cities and towns. The area is dominated by a maintained lawn, and therefore will be unlikely to host any of the federally or state listed species or the migratory bird species. Please refer to Tables 3-3, 3-4, and 3-5 for more information on the federally listed species, migratory birds, and state listed species.

Since no critical habitat or suitable habitat of any listed species were observed through a desktop review, no impact to threatened or endangered species is anticipated. In addition, since there is a lack of vegetation such as trees and shrubs, no impact to migratory birds is anticipated. The Proposed Action is anticipated to have a determination of "no effect" to the federally listed species and migratory bird species. However, if any of these species noted in Section 3.5 are seen on site during the time of construction, all activities should be halted and a USFWS permitted Wildlife Biologist must be contacted to implement mitigation.

3.6.2 Effects of the No Action Alternative

Under the No Action alternative, existing conditions would be maintained, and no adverse impacts to wildlife or vegetation are anticipated.

3.7 Water Resources

Surface Water and Wetlands

Section 404 of the Clean Water Act (Section 404) authorizes the United States Army Corps of Engineers (USACE) to issue permits for the discharge of dredged or fill material into Waters of the United States (WOTUS). According to the rule defining WOTUS that went into effect on June 22, 2020 (Federal Register (*33CFR §328.3(a)*)), (1) traditionally navigable waters (TNW), (2) intermittent and perennial tributaries to TNWs, (3) impoundments of jurisdictional waters, and (4) wetlands adjacent to these waters may be considered jurisdictional. Under the regulations, adjacent wetlands include wetlands that:

- Abut, meaning to touch at least at one point or side of, a water identified as jurisdictional;
- Are inundated by flooding from a jurisdictional water in a typical year;
- Are physically separated from a water identified in paragraph (a)(1), (2), or (3) of this section only by a natural berm, bank, dune, or similar natural feature; or
- Are physically separated from a water identified in paragraph (a)(1), (2), or (3) of this section only by an artificial dike, barrier, or similar artificial structure so long as that structure allows for a direct hydrologic surface connection between the wetlands and the water identified in paragraph (a)(1), (2), or (3) of this section in a typical year, such as through a culvert, flood or tide gate, pump, or similar artificial feature. An adjacent wetland is jurisdictional in its entirety when a road or similar artificial structure divides the wetland, as long as the structure allows for a direct hydrologic surface connection through or over that structure in a typical year.

Additionally, the revised regulations include a list of waters that are not WOTUS (*33CFR §328.3(b)*. Excluded waters include ephemeral features, including ephemeral streams, swales, gullies, rills, and pools.

Under the pre-June 22, 2020 rules and guidance, WOTUS may include intrastate rivers and streams, including impoundments and other waters. Since the 2006 Supreme Court decision (*Rapanos v. U.S., 547 S. Ct. 715*), the USACE and EPA have continued to assert jurisdiction over traditionally navigable waters; non-navigable tributaries of traditionally navigable waters where the tributaries are relatively permanent waters (i.e. streams with perennial or Intermittent Tributary); and wetlands directly abutting such tributaries.

In Sacket v. EPA, the Supreme Court adopted a standard that the CWA only protects wetlands which are "as a practical matter indistinguishable" from traditional waters of the United States Specifically, the Court held that CWA "requires the party asserting jurisdiction over adjacent wetlands to establish first, that the adjacent body of water constitutes waters

of the United States, (i.e., a relatively permanent body of water connected to traditional interstate navigable waters); and second, that the wetland has a continuous surface connection with that water, making it difficult to determine where the water ends and the wetland begins."

National Wetland Inventory (NWI) data for the project site was reviewed to identify potential wetland areas (USFWS 2022). NWI data for the project site was published by USFWS and depicts possible wetland areas based on stereoscopic analysis of high-altitude aerial photographs. Based on a review of the project area photos documented during the Phase I Environmental Site Assessment in 2022, a review of the surrounding watershed from aerial imagery, NWI, and National Hydrography Dataset (NHD) did not identify wetland features within the site (USGS 2022). Based upon the lack of features and the definitions provided in the Navigable Waters Protection Rule, the site does not contain any potentially jurisdictional WOTUS, or any other type of wetland. To the east of the site are three detention ponds. The ponds are connected to one another through culverts but are not connected to any other waterbody.

Groundwater

Federal laws focus on controlling potential sources of groundwater contamination on a national basis. Where federal laws have provided for general groundwater protection activities such as wellhead protection programs or development of state groundwater protection strategies, implementation of these programs is typically delegated to the states, in cooperation with local governments.

A sole source aquifer is not located within the Tulsa Area, the nearest sole source aquifer is the Arbuckle-Simpson Aquifer which is approximately 113 miles to the southwest (USEPA 2023b). The estimated depth to the first occurrence to groundwater is approximately 13 feet below ground surface (Terracon 2022a). The City of Tulsa utilizes surface water from four lakes as their source for drinking water. The lakes are located within northeastern Oklahoma and include: Lake Oologah, Lake Spavinaw, Lake Eucha, and Lake Hudson (Tulsa 2023).

3.7.1 Effects of the Proposed Action

The Proposed Action would result in negligible, short-term negative indirect effects to surface water quality as jurisdictional waters are not present and with the implementation of BMPs and mitigation the impacts are not significant. No impact to groundwater is anticipated due to the lack of use of the resource and the lack of introduction to contaminants to the system.

During construction approximately over one acre of soil will be disturbed (including but not limited to parking and equipment/component storage), potentially increasing the opportunity for sediment to leave the construction site and enter surface waters, increasing sediment loading and decreasing water quality. Due to the quantity of soil disturbed, the Proposed Action would require authorization under the Oklahoma Department of

Environmental Quality (ODEQ) Stormwater General Permit for Construction Activities within the State of Oklahoma, Permit Number OKR10.

To obtain authorization under the permit, prior to any ground disturbance, a Notice of Intent must be filed with the ODEQ and a Stormwater Pollution Prevention Plan (SWPPP) prepared and implemented to minimize the impact. Implementation of the SWPPP and BMPs documented within the SWPPP are anticipated to reduce the impacts to less than significant.

Upon completion of construction activities, the project area will be overlaid with impervious surface, resulting in an increase in the amount of runoff and slightly decreasing infiltration during rain-events. The increased run-off will flow into the detention ponds located to the east of the new ATCT mitigating the slight increase in overland flow during rain events.

3.7.2 Effects of the No Action Alternative

Under the No-Action Alternative the existing land and the unimproved areas, and associated pervious cover, would remain; therefore, there the amount of runoff should not increase, groundwater infiltration would remain the same, and the potential for erosion due to disturbed soil would not be present. No impacts are anticipated.

3.8 Hazardous Materials, Solid Waste, and Pollution Prevention

This section discusses the affect hazardous materials, substances or wastes that may be released at, generated by, or required for the operation of a proposed facility may have in the context of the surrounding environment. In addition, the environmental condition of a property and proposal's management and operation activities that use or create these materials or wastes need to be evaluated to determine and manage risks to the environment and people.

A Phase I Environmental Site Assessment was conducted for the site of the new ATCT, in 2022. The assessment was conducted consistent with the procedures included in ASTM E1527-21, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (Terracon 2022a). An aircraft hangar site (approximately 800 ft south of project area) is listed as a brownfield in the Assessment, Cleanup, and Redevelopment Exchange System (ACRES) (USEPA 2022b). ACRES stores information reported by EPA brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. With certain legal exclusions and additions, the term "brownfield site" means real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. The EPA's Brownfields Program provides grants and technical assistance to communities, states, tribes, and others to assess, safely clean up and sustainability reuse contaminated properties.

Cleaning up and reinvesting in these properties protects the environment, reduces blight, and takes development pressures off greenspaces and working lands. This property acts as a storage for aircrafts and is currently developed with two pad sites and is covered with

maintained grass and is adjacent to an east / west taxiway. This site was awarded a grant by the EPA to fund cleanup activities of hazardous waste through a Cooperative Agreement. This site has undergone an assessment and is currently undergoing cleanup.

There is an additional brownfields site, located approximately 6,500 ft east of project area (USEPA 2022c). The site is located within the TUL property and has elevated levels of lead, polychlorinated biphenyl, VOCs as well as other unknown contaminants within the ground water and soil. This site has undergone assessment and is currently still undergoing cleanup. This site is currently intended to be cleaned and developed into a reusable energy site.

A hazardous waste site, *American Airlines, Inc. Maintenance & Engineering Center*, listed in the EPA Resource Conservation Recovery Act (RCRA) database (RCRAInfo), is located approximately 6,600 ft northeast of the project area (USEPA 2022d) RCRAInfo is EPA's comprehensive information system that supports the RCRA of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984 through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo also supports generation of the National Hazardous Waste Biennial Report. All generators and treatment, storage, and disposal facilities who handle hazardous waste are required to report to the EPA Administrator at least once every two years to support creation of the Biennial Report.

Two sites were identified as recognized environmental conditions (REC), a 1,000-gallon underground storage tank (UST) that was in-service between 1967 and 1984, adjacent to the former Airport Surveillance building and a leaking UST west of the Proposed Action. The UST adjacent to the Airport Surveillance building was removed; however due to the duration in which it was in use and the lack of information on the UST, a REC was identified. The site to the west of the Proposed Action is associated with Sparks Aviation and elevated levels of contaminates were present during the removal of USTs. Since contaminates were located within the subsurface, the potential for the contaminates to migrate the site through the shallow groundwater system is present; therefore that site was also identified as a REC. A Limited Site Investigation was conducted, on the proposed site, in July 2022. The investigation collected soil and groundwater samples from three locations on the site and were analyzed for Total Petroleum Hydrocarbons, and for the analytes benzene, toluene, ethylbenzene, and xylene. None of the contaminates were measured in concentrations above laboratory detection limits; therefore no impacts to subsurface soils and groundwater from the RECs were identified (Terracon 2022b).

Effective November 1, 2017 all trash collected by the custodial service within the TUL system is to be either recycled or delivered to a renewable energy landfill. No trash collected for the Airport goes to the Municipal Solid Waste Landfill (MSWLF). Through December 2021, this initiative has rerouted almost 5,445 tons of reusable materials away from the MSWLF. Some of the initiatives include (but are not limited to):

- Cardboard, paper, plastic, glass, and aluminum recycling in administrative areas, public areas and from participating vendors; and

- Post-consumer paper products in all restrooms.

3.8.1 Effects of the Proposed Action

The Proposed Action will consist of construction activities including ground disturbance. The Proposed Action would not disturb any surface areas that are known to contain hazardous materials and no use or removal of known hazardous materials would occur. Additionally, the sites in the section above are located at such a distance that any surface and / or subsurface soil contamination associated with the sites are not anticipated to impact the project area or construction activities.

The existing ATCT, due to the age of the facility, has the potential to contain asbestos containing material (ACM). Prior to demolition activities, materials that have the potential to contain ACM will be sampled and if found to contain asbestos, will be removed and disposed of in accordance with ODEQs regulations.

Solid waste will be generated during the construction and demolition of the existing ATCT. The solid waste generated may include concrete, scrap wire, steel, sheet rock, and packing materials. Some construction activities have the potential to create hazardous wastes, and some construction materials (fuel, oil, lubricants, paints, etc.) may consist of hazardous substances. The construction contractor would be required to implement proper practices to minimize or prevent the release of hazardous substances into the environment during construction activities. Any hazardous materials that may be encountered during construction would be managed and disposed of in compliance with federal, state, and local hazardous materials management guidelines. It is anticipated that all construction waste will be transported and disposed of at a construction and demolition landfill, therefore no impact to the MSWLF is anticipated during construction and demolition activities

Upon construction, it is assumed that the number of staff within the ATCT will remain the same; therefore the waste generated by the employees would remain consistent. No adverse long-term or short-term impacts are anticipated.

3.8.2 Effects of the No Action Alternative

The No Action Alternative does not require any disruption of land or soil. Therefore, it would not affect the hazardous materials that exist at TUL or would contribute to the current hazardous materials.

3.9 Historical, Architectural, Archeological, and Cultural Resources

Cultural resources are prehistoric and historic sites, districts, structures, artifacts, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. A historic district is an area that "possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development" (NPS 1997).

The nature and potential significance of cultural resources are identified by considering the following definition: historic properties, under 36 CFR Part 800, are defined as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP)." For the purpose of these regulations, "historic properties" include artifacts, records, and remains that are related to and located within such properties. The term "eligible for inclusion in the National Register" includes both properties formally determined as such by the Secretary of Interior and all other properties that meet NRHP-listing criteria.

A Cultural Resources Desktop Assessment was prepared on August 26, 2022 (Terracon 2022c). Online database records from historical United States Geological Survey (USGS) topographic maps, historical aerial imagery, Oklahoma Interactive State Historic Preservation Office (SHPO) NRHP Web Map (OK SHPO), and the Oklahoma Landmarks Inventory for historic-age sites were reviewed. In addition, review of prehistoric and historic-age archaeological resources was conducted at the Oklahoma Archeological Survey (OAS). These sources provide information on factors that affect the likelihood of intact archaeological deposits, as well as recorded archaeological sites listed in, or eligible for listing in the NRHP within and near the study area. Several cultural resource projects have been conducted within one-mile search radius; however, no investigations have taken place within the project area. No archeological sites have been documented within the study area or within one-mile search radius.

There are no NRHP listed properties or districts within the study area or the one-mile search radius. A thematic building survey of the Tulsa Municipal Airport, now known as the Tulsa International Airport was completed in 2016. The purpose of this survey was to identify, document, and evaluate historical resources related to Oklahoma's role in training U.S. and British aviators during World War II (WWII, 1941-1945) at Oklahoma's WWII Army Air Training Fields. This survey resulted in the documentation of three buildings that relate to World War II era Army Air Training Fields; one of these, Building A, was found to be eligible for listing on the NRHP. All three buildings are listed in the Oklahoma Landmarks Inventory.

Table 3-6 WWII-era buildings documented during thematic survey.

Map ID – Name	OLI Number	NRHP Eligibility
A – Tulsa Municipal Airport Building No. 10 Engine Overhaul	101042	Eligible under Criteria A; period of significance: 1941-1945
B – Tulsa Municipal Airport Building No. 11 Customer Engine Storage	101043	Ineligible due to alternations since the period significance
C – Tulsa Municipal Airport Building No. 8 Aircraft	101044	Ineligible due to alternations since the period of significance

The earliest readily available aerial imagery is from 1954 and depicts the study area as an undeveloped parcel with developments (i.e., roads and structures) immediately adjacent to the north boundary of the study area (NETR 2022). The next available image (ca. 1967) shows a road and structure in the eastern half the study area. Later imagery (ca. 1995 and 2003) indicates the demolition of the structure and some ground disturbance to the immediate area. Current imagery (ca. 2019) shows remnant road features and the footprint of the once present structure.

The earliest topographic maps are the 1898 GLO survey map and the 1954 Tulsa, Oklahoma 7.5-minute USGS topographic quadrangle (GLO 1898; NGMDB and NGP 2022). According to the original land survey (ca. 1898) a road and partial telephone line run through Section 23, which contains the study area. The 1954 topographic map depicts the lack of development within the study area and developments immediately adjacent to the northern study area boundary. Later topographic maps (ca. 1967, 1975, and 1981) depict similar changes to the area and area of potential effects that are visible in the historical imagery.

3.9.1 Effects of the Proposed Action

A review of the public and confidential sources indicates that no previously identified archaeological or historic resources are located within the project area, and one National Register eligible resource is located within the one-mile search radius. No previous archaeological investigations are recorded within the study area. Historical imagery and topographic maps indicate there has been some previous disturbance to portions of the study area. A request for consultation under Section 106 of the National Historic Preservation Act (NHPA), and concurrence, on archeological and historic resources was made on October 5, 2022. The Oklahoma Archeological Survey (OAS) noted no impact to archeological resources was associated with the Proposed Action on November 4, 2022.

Under the Proposed Action, the existing ATCT would be removed, once construction of the new ATCT was complete and the facility in operation. Upon request of the Oklahoma Historical Society (OHS) SHPO, on October 19, 2022, the existing ATCT was reviewed for eligibility under the NRHP, due to its age (over 45 years old). The FAA provided the OHS a completed Historic Preservation Resource Identification Form and photographs documenting modifications to the structure since construction, justifying the in-eligibility of the building on the NRHP. The SHPO provided a response to the request for Section 106 consultation on January 18, 2023 (SHPO 2023) stating there are no historic properties affected by the Proposed Action. The letter also stated that the Proposed Action is located within the reservation boundaries of the Cherokee Nation and is therefore on tribal lands as defined in the NHPA and the Section 106 regulations (36 CFR Part 800). Tribal consultation was completed and all federally recognized tribes with connection to the area were contacted. The Cherokee Nation provided a response on February 8, 2023 and requested to be a consulting party; however, the Nation did not foresee this project imparting impacts to Cherokee cultural resources. No other tribes responded. Consultation letters are located in Appendix E.

Since no historic properties are present; no impacts to cultural resources are anticipated.

3.9.2 Effects of the No-Action Alternative

Under the No Action alternative, existing conditions would be maintained, and no construction of the new tower will occur. No impacts are anticipated.

3.10 Land Use

The Airport is located in the City of Tulsa and is entirely within Tulsa County. The study area is zoned in the district IM (Esri 2022). The IM district is primarily intended to group together a wide range of industrial uses that may produce some moderate adverse land use or environmental impacts in terms of their operation and appearance.

According to FAA Order 1050.1F, there are no established significance thresholds or specific independent factors to consider for land use impacts. However, the Order does state that "the determination of significant impacts exist in the land use impact category is normally dependent on the significance of other impacts." Any conflict with state and/or locally designated land uses, and zoning may not individually result in a significant impact. Potential effects related to noise and noise-compatible land use, socioeconomics, and environmental justice could also result in significant land use impacts.

3.10.1Effects of the Proposed Action

The construction of the Proposed Action would occur entirely on TUL and would be compatible with the existing airport environment. As described in 1.1., the current land use designation is "Industrial Moderate" and is intended to be used for industrial purposes. The Proposed Action would not change the land use at the study area or would not have an impact to land use.

3.10.2Effects of the No Action Alternative

The No Action Alternative does not require any disruption to the zoning or land use. Therefore, it would not affect the current land uses that exist at the TUL.

3.11 Natural Resources and Energy Supply

The Airport requires the use of consumable materials to maintain various airside facilities and services. Those materials may include asphalt, concrete, aggregate for sub-base materials, various metals associated with such maintenance, as well as fuel associate with the operation of aircraft and vehicles. Electrical power is necessary to keep the airfield operational and safe. Energy is currently not being used in the Project Study Area. Public Service Company of Oklahoma/American Electric Power supplies TUL with electricity.

The Tulsa International Airport has implemented environmentally friendly operational initiatives (TIA, 2022c). These initiatives have resulted in the reduced energy consumption, lower operational costs, and decreased use of natural resources. Some of the initiatives include (but are not limited to):

- Listed thermostat controls +/- 3 degrees.
- Automated energy controls adjust the interior lighting based on the level of natural light in the terminal.
- Incandescent runaway, taxiway, and guidance sign lights at the TUL are being replaced with LED lighting, reducing the amount of electricity both airports use to light the airfields at night.
- Electric vehicle charging stations are located in the lower level of the airport parking garage.
- Construction waste diversion initiatives to repurpose construction waste and avoid landfills.

3.11.1 Effects of the Proposed Action

The Proposed Action is expected to increase the demand for diesel fuel for construction vehicles. Temporary increase in fuel demand is expected to be minimal and would not exceed existing and future fuel supplies.

Construction of the Proposed Action would temporarily increase the use of natural resources at TUL. These resources, which could include building components such as asphalt, water, plastic, stone, metals, wood, aggregate, soils, sub-base materials, and oils. The resources listed are not rare or in short supply; therefore the quantity required for the Proposed Action would not place an undue strain on supplies.

Due to the increase in size of the new ATCT, the potential for energy consumption is present; increase in square footage of workspace requires additional heating/cooling needs and an increase in lighting requirements. However, this increase is off set by the use of energy efficient systems and improved insulation materials. The existing facility was constructed in the 1960s and the systems including heating, cooling, and lighting the facility have not been upgraded due to the cost and the inability to suspend or modify operations at the ATCT while upgrades are installed. The new ATCT would utilize energy efficient heating and cooling systems along with LED lighting, reducing the energy required and utilized. Additionally, the installation of more efficient insulation will reduce the need for consistent heating / cooling, allowing for less energy usage.

Oklahoma encompasses some of the largest natural gas and oil fields in the nation, and often times much of the energy produced in the state is a surplus and is sent to other states to meet their energy needs (U.S. Energy Information Administration 2022). With the quantity of energy the state is able to produce, the fuel demands of the Proposed Action is not anticipated to exceed the availability of energy in the region.

The Proposed Action is not anticipated to cause demand to exceed current or future supplies of natural resources or energy supplies; therefore, the Proposed Action would not exceed this factor identified in FAA Order 1050.1F and no mitigation measures are required. However, the TAIT would incorporate energy efficiency and sustainability measures wherever possible to future reduce energy consumption as a result of the Proposed Action.

3.11.2 Effects of the No Action Alternative

Under the No Action Alternative, TAIT would not construct any new facilities. Therefore, the No Action Alternative would not require the use of the natural resources typically used during construction, such as asphalt, water, plastic, stone, metals, and wood, other than the materials necessary for general maintenance purposes.

Additionally, the use of electricity by the ATCT would remain the same as the facility would remain in operation and continue to the use same quantity of energy.

3.12 Socioeconomics

The TUL serves 10 counties, one of those counties is Tulsa County. Tulsa County accounts for over 57% of the population of the service area. In 2018, Tulsa-area employment rose by 2.5 percent and manufacturing grew nearly twice as fast as overall employment, at 4.7 percent. Between 2020 and 2022, the population within Tulsa County will have increased by 1.2 percent. Approximately 66 percent of the residents on Tulsa County are in the civilian labor force, with a median household income of $60,382 (US Census 2023). Since the Proposed Action has the potential to impact those living and working near the TUL, the economic data associated with the census tracts surrounding the TUL were compared to Tulsa County.

A total population of 404 reside within one mile of the Project Study Area, which is less than 0.0 6 percent of the total population of Tulsa County. Table 3-7 shows the population and housing data for the census tracts that are within the Project Area and Tulsa County. Data from this census tract and Tulsa County were included for comparison purposes. The area within one mile of the Project Study Area does not contain a high-density residential area. According to the U.S. Census Bureau, 94 percent of the housing within this census tract is occupied.

Table 3-7
Population and Housing Characteristics in Project Study Area and General Study Area

Population and Housing Characteristics	Census Tracts within One mile of Project Study Area	Tulsa County
Total Population	404	650,291
Total Households	266	253,909
Average Persons per Household	1.5	2.5
Percent Housing Occupied	94%	89%
Per Capita Income	$24,179	$32,979

Source: EJSCREEN ACS Summary Report 2022 (USEPA 2022e)

Table 3-8 shows that the area within one mile of the project area has an unemployment rate of 57 percent. This is compared to Tulsa County and the state of Oklahoma.

Table 3-8
Unemployment Rate within 1 mile of Project Study Area, Tulsa County, and State of Oklahoma

	Project Study Area	**Tulsa County**	**Oklahoma**
Percent unemployed	57%	34%	3.4%

Source: EJSCREEN ACS Summary Report & U.S. Bureau of Labor Statistics

3.12.1 Effects of the Proposed Action

The Proposed Action is anticipated to have a minor short-term, temporary positive impact on the local economy as a result of construction activities within the area. The temporary positive impact would be caused by incidental spending by construction workers and the purchase of construction materials. No adverse impacts to socioeconomic resources would be anticipated.

3.12.2 Effects of the No Action Alternative

Under the No Action Alternative, TUL would not implement the Proposed Action; therefore, no construction-related employment opportunities would be present. No impact is anticipated.

3.13 Environmental Justice

According to CEQ environmental justice guidance (1997), low-income populations should be identified with the annual statistical poverty thresholds from the Bureau of the Census' Current Population Reports, Series P-60 on Income and Poverty. In identifying low-income populations, agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect.

The CEQ guidance identifies a minority as Individual(s) who are members of the following population groups: American Indian or Alaskan Natives; Asian or Pacific Islanders; Black, not of Hispanic origin; or Hispanic. Minority populations should be identified where either the minority population of the affected area exceeds 50 percent, or the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis

(1997). In identifying minority communities, agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a geographically dispersed/transient set of individuals (such as migrant workers or Native American), where either type of group experiences common conditions of environmental exposure or effect. The selection of the appropriate unit of geographic analysis may be a governing body's jurisdiction, a neighborhood, census tract, or other similar unit that is to be chosen so as to not artificially dilute or inflate the affected minority population. A minority population also exists if there is more than one minority group present and the minority percentage, as calculated by aggregating all minority persons, meets one of the above-stated thresholds.

EO 12898 requires federal agencies to identify and address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.

On April 21, 2023, EO 14096, Revitalizing Our Nation's Commitment to Environmental Justice Overall, was signed, supplementing EO 12898. The EO establishes a more robust framework with milestones for implementing environmental justice across federal agencies. The EO expands the protected categories to include Indigenous populations and individuals with disability, and it includes affordable housing as an element of achieving environmental justice. Under this EO, environmental justice' is defined as "just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability so that people:

(i) are fully protected from disproportionate and adverse human health and environmental effects (including risks) and hazards, including those related to climate change, the cumulative impacts of environmental and other burdens, and the legacy of racism or other structural or systemic barriers; and

(ii) have equitable access to a healthy, sustainable, and resilient environment in which to live, play, work, learn, grow, worship, and engage in cultural and subsistence practices."

Minority and/or low-income population are present within the county of Tulsa; however, the percentage does not represent the majority. Within Tulsa County, approximately 39% of the residents identify themselves as a minority and approximately 20% identify as low income based upon the American Community Survey and the EJScreen prepared by the Census Bureau.

Within one mile of the Proposed Project area, approximately 26% of the residents identify themselves as a minority and approximately 19% identified as low income based (USEPA 2022e). A mile radius was chosen as the ROI since the closest sensitive receptor that could be impacted by the visual aesthetics of the Proposed Action is located within 0.9 miles. This mile radius is located within Census Tract 40143011100. Beyond the socio-economic metrics, the population within the radius also exceeds the 90th percentile of individuals who have diabetes and / or heart disease and therefore would be considered to be disadvantaged community (CEQ 2023).

3.13.1 Effects of the Proposed Action

EOs 12898 and 14096, requires Federal agencies to determine if an action would have the potential to lead to a disproportionately high and adverse impact to disadvantaged communities. Disadvantaged communities can include urban and rural areas and areas within the boundaries of Tribal Nations and United States Territories. Such communities are found in geographic locations that have a significant proportion of people who have low incomes or are otherwise adversely affected by persistent poverty or inequality.

The population of minorities and lower-income residents is less than that within Tulsa County; however, are disadvantaged due to health concerns; therefore it is assumed that an disadvantaged community is present. All of the impacts associated with the Proposed Action are considered less than significant and beyond visual resources are bound to the property boundary of TUL. Since the less than significant impacts would not impact the community, no impact to this a disadvantaged community is anticipated.

3.13.2 Effects of the No Action Alternative

Under the No Action Alternative, TUL would not implement the Proposed Action; therefore, no construction-noise or modification of aesthetics would be present. The airport is not located within an area where an environmental justice population is present; therefore no impact is anticipated.

4.0 Environmental Commitments

Mitigation measures will be implemented prior to and during the design and construction of this project to reduce potential negative environmental impacts below the level of significance. Additionally, a number of common design and/or construction management measures will be implemented in accordance with good practices. Mitigation and management measures are summarized below.

Air Quality

- Use appropriate dust suppression methods during on-site construction activities. Available methods include application of water, dust palliative, or soil stabilizers; use of enclosure, covers, silt fences, or wheel washers; and suspension of earth-moving activities during high wind conditions.
- Define and post appropriate speed limits to minimize dust generated by vehicles and equipment on unpaved surfaces.
- Shut off equipment when it is not in use. Visually monitor all construction activities regularly and particularly during extended periods of dry weather and implement dust control measures in additional to scheduled period when needed

Water Resources

- Obtain authorization under OKR10 Stormwater General Permit for Construction Activities.
- Implementation of a SWPPP.
- Implement BMPs to ensure that during rain events, sediment and debris do not leave the site and increase sediment loading and pollutants entering existing stormwater system. BMPs to be utilized can include:
    - Watering of disturbed areas
    - Planning and conducting earthwork in a manner that minimizes the duration of exposure of unprotected soils
    - Rotating staging areas during construction activities
    - Maintaining temporary erosion control measures, such as berms, dikes, drains, sedimentation basins, grassing, and mulching, until permanent drainage and erosion control facilities are completed and operative
    - Mulching of disturbed areas in lieu of permanent erosion controls, such as revegetation
- If groundwater is encountered during construction activities, proper engineering controls would be incorporated into the proposed construction and operation of the structure.

Biological resources

- If federal or state listed ESA species are seen on site during the time of construction, all activities should be halted and a USFWS permitted Wildlife Biologist must be contacted to implement mitigation.

Cultural Resources

- If buried cultural resources are discovered during construction activities, construction activity should immediately cease and the SHPO and Cherokee Nation notified within 24 hours for further consultation.

5.0 Consultation

As stated in Section 1.5, per 38 CFR Part 26 and the FAA's Order 1050.1F, FAA has consulted with federal, state, and local agencies and Native American tribes concerning this Proposed Action. Comments received from all parties have been considered and incorporated within this EA. Communications received during this process are located in Appendix E.

5.1 Agency and Organization Coordination

Public participation opportunities with respect to the EA, as well as decision making on the Proposed Action, are guided by 38 CFR Part 26. Letters of Intent and Consultation letters were sent to various stakeholders including, but not limited to, the following:

- United States Fish and Wildlife Service
- Alabama-Quassarte Tribal Town
- Apache Tribe of Oklahoma
- Cherokee Nation
- Cheyenne and Arapaho Tribes
- Delaware Tribe of Indians
- Muscogee (Creek) Nation
- Osage Nation
- Wichita and Affiliated Tribes (Wichita, Keechi, Waco & Tawakonie)
- State Historic Preservation Office

The SHPO provided an initial response to the request for Section 106 consultation on October 19, 2022. The SHPO requested additional information associated with the existing ATCT. Additional documentation, including digital photographs and a Historic Preservation Resource Identification Form was provided on December 1, 2022. Upon review of the documentation, the SHPO determined that there are no historic properties affected by the Proposed Action.

Tribal consultation commenced on January 3, 2023. The federally recognized tribes were provided a site location map, site layout, and a copy of the Desktop Cultural Resources Report. The requests for consultation were mailed utilizing the certified mail, signature required, option through the US Postal Service. The Tribal Historic Preservation Officer with the Cherokee Nation, Elizabeth Toombs, provided a response on February 8, 2023. The Cherokee Nation "does not foresee this project imparting impacts to Cherokee cultural resources at this time." The Cherokee Nation requested that if items of cultural significance are discovered during the course of this project, work cease and they be contacted for further consultation. Additionally, the Cherokee Nation requested that the FAA conduct appropriate inquiries with other pertinent Historic Preservation Offices regarding historic and prehistoric resources not included in the Nation's databases or records.

As of June 20, 2023, no additional comments were received.

5.2 Public Involvement

Public involvement, beyond request for consultation letters submitted to the stakeholders noted above, was conducted through open TAIT board meetings as well as combined meetings with the Tulsa Airport Authority. Meeting agendas were made available, on-line, at least 48 hours prior to meetings.

The open meetings, that were held in which the Proposed Action was discussed are listed below. The list also includes the context in which the Proposed Action was discussed. Copies of the agenda's are in Appendix F.

- September 12, 2019
  - Accept Oklahoma Aeronautics (OAC) grant for siting location study
- November 9, 2021
  - Engineering/design firm selected for the design of the Proposed Action
- December 9, 2021
  - Five year Capital Investment Plan (2023-2027) approved, which included the Proposed Action
- July 13, 2022
  - Reimbursable agreement with FAA for design of ATCT and base building
- November 10, 2022
  - Amended contract to engineering/design firm for Proposed Action
- May 11, 2023
  - Amended contract to engineering/design firm for Proposed Action
- June 8, 2023
  - Accepted and approved pending OAC grant for Proposed Action

A news article was published on July 9, 2021, on Fox 23's website, discussing the potential federal funding of the Proposed Action. The proposed project was reported on by Channel 6, which included an interview with CEO of the TAIT, on November 9, 2022.

Additionally, information on the progress of the environmental review and permitting process is made available to the public, real-time via the Federal Infrastructure Projects, Permitting Dashboard located at: https://www.permits.performance.gov/permitting-project/dot-projects/tulsa-international-airport-new-atct-removal-existing-atct.

Upon finalization of this EA, this document will be posted on the FAA and TAIT websites.

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7.0 List of Preparers

Table 7-1 Preparers of the Environmental Assessment

Name	Agency/Organization	Resource Area
Jennifer Peters	Terracon Consultants, Inc.	Project Manager and Subject Mater Expert
Alyssa Arguijo	Terracon Consultants, Inc.	Resource Lead / Biologist
Victoria Pagano	Terracon Consultants, Inc.	Resource Lead / Cultural Resources
Katie Smith	Tulsa Airports Improvement Trust	Reviewer
Cole Brown	Tulsa Airports Improvement Trust	Reviewer

U.S. Department of Transportation
Federal Aviation Administration
Southwest Region

FINDING OF NO SIGNIFICANT IMPACT
And
RECORD OF DECISION

Construction and Operation of New Air Traffic Control Tower
Tulsa International Airport
Tulsa, OK

August 9, 2023

I. INTRODUCTION

The purpose of this Finding of No Significant Impact and Record of Decision (FONSI/ROD) is to briefly present the reasons why the approval of Federal actions supporting the funding of a grant for the proposed construction and operation of a new Air Traffic Control Tower (ATCT) at the Tulsa International Airport (TUL), which serves the metropolitan area of Tulsa, Oklahoma will not have a significant effect on the human environment. The Tulsa Airports Improvement Trust (TAIT), the owner of the airport, has requested the following Federal actions:

- Federal Aviation Administration's (FAA) approval of the revised Airport Layout Plan with the proposed development.
- Implementation of the following actions: 1) construction of a new 255-foot tall ATCT on a new location 1,500 feet northwest of the existing ATCT, 2) relocation of utilities and equipment, 3) access road and associated landside parking, 4) removal of the existing ATCT, and 5) construction of associated buildings.
- Federal funding for eligible components of the above development.

The FAA is the Federal agency responsible for the approval of the proposed federal actions outlined below and analyzed in the Environmental Assessment (EA). The FAA has determined that the Proposed Action will have no significant impact on the human environment.

Attached to this FONSI/ROD is the EA on which the finding is made.

II. SUMMARY

The EA was prepared pursuant to the provisions of the National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality (CEQ) regulations (40 C.F.R. Parts 1500-1508). Additionally, the EA meets the guidelines identified in FAA Orders 1050.1F, *Environmental Impacts: Policies and Procedures* and 5050.4B, *NEPA Implementing Instructions for Airport Actions*.

No thresholds of significance were found to be exceeded in the EA. After review of the EA and other supporting documentation, the FAA determined that a FONSI/ROD was justified for the proposed airport improvements.

Public involvement has been conducted through news articles and public board meetings. The Final EA will be released with this FONSI.

III. PURPOSE AND NEED

According to the U.S. Department of Transportation (USDOT), the average ATCT facility has an expected useful life of approximately 25 to 30 years. The current ATCT was constructed in 1961. As identified during an assessment and worker observations, the exterior of the building shows advanced signs of deterioration; elevator malfunctions; outdated and outmoded interior building systems; and regulatory non-compliant systems. The non-compliance includes building code compliance and Americans with Disabilities Act for structures, systems, life safety, and accessibility. Additionally, the current placement of the ATCT does not allow for full visibility of aircraft from the ATCT.

A. Need for the Proposed Project

The need for the Proposed Action is described in Chapter 1 in the EA. The need is supported based on TUL's role within the National Plan of Integrated Airport Systems (NPIAS) designated as a small hub, Class I airport, as it translates to the airport's level of importance within the national aviation system. In order to allow TUL to continue to fulfill its assigned role, it needs an ATCT that allows for full visibility of aircraft.

B. Purpose of the Proposed Project

The purpose of the construction and operation of a new ATCT is to improve air traffic control services to TUL while increasing visibility to taxiways. All elements associated with the proposed solution are described in Chapter 2 in the EA.

IV. ALTERNATIVES

The FAA explored and objectively evaluated reasonable alternatives that were considered practical and feasible in meeting the purpose and need. Chapter 2 of the EA describes the alternatives considered to meet the airport's purpose and need.

Two alternatives were proposed in the EA. These consisted of the Proposed Action as described above and the No Action Alternative. A detailed explanation of each alternative is provided in the EA and will not be repeated herein. Note that the No Action Alternative is always required to be analyzed in accordance with the CEQ regulations 40 CFR § 1502.14.

The FAA has determined in this FONSI/ROD that the TAIT's Proposed Action is the FAA's preferred and selected alternative. In arriving at this decision, the FAA considered all pertinent factors, including the environmental impacts as well as the FAA statutory charter in the Federal Aviation Act of 1958, as amended, to encourage and foster the development of civil aeronautics (49 U.S.C. § 40101).

V. ENVIRONMENTAL CONSEQUENCES

A. Potential Impact Resource Categories

The EA analyzed relevant environmental categories based on FAA Order 5050.4B, "*National Environmental Policy Act Implementing Instructions for Airport Projects*". Those resource categories that the selected alternative has the potential to impact are discussed below. Any mitigation measures proposed are discussed in Section VII.

i. Air Quality

Temporary increases in emissions resulting from construction activities may occur for a limited period of time. This temporary increase will also not rise to the level of significance.

ii. Climate Change

Temporary increases in greenhouse gas (GHG) resulting from construction and demolitions activities may occur for a limited period of time. Energy efficiency associated with the new ATCT has potential to decrease energy consumption, reducing emissions from power generating facilities. Neither the

temporary increase in construction GHG nor the long-term efficiencies associated with the new ATCT will rise to a significant level. (Section 3.5.1)

iii. Biological Resources

This proposed project site is located on developed airport property with high level of human presence and is regularly mowed and maintained. The construction and operation of the Proposed Action will remove the maintained lawn and replaced it with pavement. Removal of this habitat type would displace the existing generalist wildlife within the area. An updated official species list was acquired from the U.S Fish and Wildlife Service for this project with six federally listed or candidate species potentially present in the area and no designated critical habitat. Due to lack of listed species habitat and no presence of listed species, the FAA has determined that there will be *no effect* to listed species or their habitat with implementation of the Proposed Action.

iv. Water Resources

During construction approximately over one acre of soil will be disturbed (including but not limited to parking and equipment/component storage), potentially increasing the opportunity for sediment to leave the construction site and enter surface waters, increasing sediment loading and decreasing water quality. Authorization under a Stormwater General Permit for Construction Activities within the State of Oklahoma, Permit Number OKR10 will be required. With the implementation of best management activities, associated with the permit, to avoid or minimize impacts to surface water, less than significant impacts are anticipated.

v. Hazardous Materials, Solid Waste, and Pollution Prevention

Short-term and temporary impacts may occur as a result of demolition and construction activities. Prior to demolition of the existing ATCT, materials that have the potential to contain asbestos will be sampled and if found to contain asbestos, removed and disposed of in accordance with Oklahoma Department of Environmental Quality regulations. Construction best management practices will be implemented during construction. Any waste generated will be handled according to applicable local, state, and federal guidelines. These temporary construction impacts will not rise to the level of significance.

B. Resource Impact Categories Unaffected by the Commission's Proposed Action or Alternatives

The other twelve environmental resources identified in FAA Orders 1050.1F and 5050.4B were determined to not be impacted by the TAIT's Proposed Action and the No Action Alternatives. Examples of these resources include, but are not limited to, coastal resources, farmlands, cultural resources, visual effects, floodplains, light emissions, socio-economics and environmental justice, and wild and scenic rivers.

VI. AGENCY COORDINATION AND PUBLIC INVOLVEMENT

Consultation for the Proposed Action occurred with the Oklahoma State Historic Preservation Office (SHPO), Oklahoma Archeological Survey (OAS), and federally recognized tribes regarding the presence of cultural historic and/or archaeological sites located within the Area of Potential Effects. The SHPO provided an initial response to the request for Section 106 consultation and requested additional information associated with the existing ATCT. Additional documentation, including digital photographs and a Historic Preservation Resource Identification Form, was provided. Upon review of the documentation, the SHPO concurred with the FAA's determination that there are no historic properties affected by the Proposed Action.

Eight federally recognized tribes were requested to consult / participate as stakeholders. The federally recognized tribes were provided a site location map, site layout, and a copy of the Desktop Cultural Resources Report. A response from the Tribal Historic Preservation Officer with the Cherokee Nation was received. The Cherokee Nation did not foresee this project impacting Cherokee cultural resources and requested that if items of cultural significance are discovered during the course of

this project, work cease and be contacted for further consultation. All responses received are included in Appendix B of the EA.

Public involvement, beyond request for consultation letters submitted to the stakeholders was conducted through open TAIT board meetings as well as combined meetings with the Tulsa Airport Authority beginning in August 2019. No comments regarding the project were received during these meetings. Additionally, a news article was published July 9, 2021.

VII. CONDITIONS AND MITIGATION

As prescribed by 40 CFR § 1505.3, the FAA shall take steps as appropriate to the action, such as through special conditions in grant agreements, property conveyance deeds, releases, airport layout plan approvals, and contract plans and specifications and shall monitor these as necessary to assure that representations made in the EA and FONSI with respect to mitigation of impacts will be carried out. With respect to the Proposed Action, the following mitigation measures are a condition of approval:

- Implement appropriate dust suppression methods during on-site construction activities. Available methods include application of water, dust palliative, or soil stabilizers; use of enclosure, covers, silt fences, or wheel washers; and suspension of earth-moving activities during high wind conditions.
- Preparation of a Storm Water Pollution Prevention Plan and implementation of best management practices to minimize potential water quality impacts. Authorization under OKR10 Stormwater General Permit for Construction Activities must be obtained.
- If species listed under the Endangered Species Act are seen on-site during the time of construction, all activities will be halted. The U.S. Fish and Wildlife Service will be contacted and Section 7 consultation will be conducted.
- If buried cultural resources are discovered during construction activities, construction activity will immediately cease, and the SHPO and Cherokee Nation will be notified.

VIII. DECISION CONSIDERATIONS AND ADDITIONAL FINDINGS

Throughout the development of the airport, including the proposed improvements described in Part III above, the FAA has made every effort to adhere to the policies and purposes of NEPA, as stated in CEQ Regulations for Implementing NEPA, 40 CFR § 1500-1508. In its determination whether to prepare an EIS or process the EA as a FONSI/ROD, the FAA weighed the following considerations:

In accordance with 40 CFR § 1507.3 and 1501.5, FAA Orders 1050.1F and 5050.4B, represent Agency procedures to supplement the CEQ Regulations for airport development projects.

After examination of the EA as well as all other evidence available to the FAA, the FAA has determined the available record demonstrated that no thresholds indicating the potential for significant impacts were exceeded, and an EIS is not required. In addition, the FAA determined that existing evidence available to the agency clearly points to the proposed project as beneficial in fulfilling the FAA's statutory mission of promoting a safe and efficient nationwide airport system, and further study of the issues in an EIS will result only in "amassing needless detail." As the nation’s aviation agency, the FAA has the ultimate technical expertise to develop, evaluate, and select actions and alternatives that would result in safe and efficient use of U.S airspace as prescribed in 49 U.S.C. §40103(a). In accordance with 49 U.S.C. Section 44502(b), the FAA has determined that the proposed action is reasonably necessary for use in air commerce.

The EA has adequately provided the agency with the information it needs: (a) to make an informed, objective decision on the environmental effects, as well as other effects, of the proposed project; and (b) to take actions that protect, restore, and enhance the environment. The FAA weighed both the potential positive and negative consequences that this proposed action may have on the quality of the human environment. Further processing of this proposed action in an EIS would needlessly generate

additional paperwork and a rehashing of issues, while simultaneously impeding the FAA from carrying out its mission and blocking a primary goal of NEPA -- that of fostering excellent action.

In summary, the FAA opts to use a Finding of No Significant Impact based on its conclusions that the proposed project will not have a significant effect on the human environment.

I have carefully and thoroughly considered the facts contained in the attached EA. Based on that information, I find the proposed Federal action is consistent with existing national environmental policies and objectives of Section 101(a) of the National Environmental Policy Act of 1969 (NEPA) and other applicable environmental requirements. I also find the proposed Federal action will not significantly affect the quality of the human environment or include any condition requiring any consultation pursuant to section 102(2)(C) of NEPA. As a result, the FAA will not prepare an EIS for this action.

RECOMMENDED
FOR APPROVAL: _____

Environmental Protection Specialist, AR/OK Airports District Office

APPROVED: _____

Manager, AR/OK Airports District Office

DECISION AND ORDER

Construction and Operation of New Air Traffic Control Tower
Tulsa International Airport
Tulsa, OK

August 3, 2023

The FAA recognizes its responsibilities under NEPA, CEQ regulations, and its own directives. Recognizing these responsibilities, the FAA has carefully considered the objectives of the proposed projects in relation to aeronautical and environmental factors at and around the Tulsa International Airport. Based upon the above analysis, the FAA has determined that the Proposed Action meets the purpose and need of the proposed project and best implements necessary airfield modifications to meet FAA design standards.

Having carefully considered the aviation safety and operational objectives of the project, as well as being properly advised as to the anticipated environmental impacts of the proposal, under the authority delegated to me by the Administrator of the FAA, I find that the project is reasonably supported for purposes of the Commission. I certify, as prescribed by 49 U.S.C. 44502, that the proposed project is reasonably necessary for use in air commerce.

Therefore, I direct the approval of the proposed grant funding presented to the Tulsa Airports Improvement Trust by FAA. This approval is to be taken under the authority of 49 U.S.C. 40104, 44701, 47101, 47106, 47107, and 47110. The approved action is specifically described in Part IV of this FONSI/ROD and identified in the EA as the preferred alternative.

This decision constitutes an order of the Administrator reviewable in the United States Circuit Court of Appeals in accordance with the provisions of 49 U.S.C. 46110.

_____

Airports Division Director
Southwest Region

Right of Appeal

This order constitutes final agency action under 49 U.S.C. 46110. Any party to this proceeding having a substantial interest may appeal the order to the courts of appeals of the United States or the United States Court of Appeals for the District of Columbia upon petition, filed within 60 days after entry of this order.