Appendix D includes the following:

- Appendix D1 - Protected Species Report
- Appendix D2 - Waters of the United States Delineation Report

Appendix D1 – Protected Species Report

integrated environmental solutions

30 September 2021

Ms. Sandy Lancaster
Dallas Fort Worth International Airport
3003 South Service Road, Annex Building A
DFW Airport, Texas 75261-9428

Re: CTA Development Project Dallas County - Protected Species Habitat Assessment
Sites 7 through 10 of the 13 total locations for the CTA Terminals A and C Development Project located within the Dallas Fort Worth International Airport, Dallas County

Dear Ms. Lancaster,

Integrated Environmental Solutions, LLC (IES) performed a protected species habitat assessment on the CTA Terminals A and C Development Project associated with Sites 7 through 10 of the 13 total locations within the Dallas Fort Worth International Airport, Dallas County (**Attachment A, Figure 1**). This habitat assessment was performed to satisfy the requirements regarding the Endangered Species Act (ESA). The following report is a list of the federal and state-listed protected species for Dallas County and their preferred vegetation assemblages, a summary of the vegetation communities identified on the site, an evaluation of whether the communities present on the site could support a protected species, and whether or not future proposed actions would affect listed species.

INTRODUCTION

Protected Species

Federal

The ESA of 1973 (Public Law [P.L.] 93-205) and the amendments of 1988 (P.L. 100-578) were enacted to provide a program of preservation for endangered and threatened species and to provide protection for ecosystems upon which these species depend for their survival. The ESA requires all federal agencies to implement protection programs for designated species and to use their authorities to further the purposes of the Act. Responsibility for the listing of an endangered or threatened species and for the development of recovery plans lies with the Secretary of Interior and Secretary of Commerce. The U.S. Fish and Wildlife Service (USFWS) is responsible for implementing the ESA within the United States.

An endangered species is a species, which is in danger of extinction throughout all or a significant portion of its range. A threatened species is a species likely to become endangered within the near future throughout all or a significant portion of its range. Proposed species are those, which have been formally submitted to Congress for official listing as endangered or threatened.

In addition, the USFWS has identified species, which are candidates for possible addition to the list of Endangered and Threatened Wildlife and Plants (50 Code of Federal Regulations [CFR] 17.11 and 17.12) under the ESA. The USFWS maintains a candidate list to: (1) provide advance knowledge of potential listings that could affect land planning decisions, (2) solicit input to identify candidates not requiring protection or additional species that may require protection under the ESA, and (3) solicit information needed to prioritize the order in which species will be proposed for listing. Candidate species have no legal protection under the ESA.

The Migratory Bird Treaty Act of 1918 states that it is unlawful to kill, capture, collect, possess, buy, sell, trade, or transport any migratory bird, nest, young, feather, or egg in part or in whole, without a federal permit issued in accordance with the Act's policies and regulations. However, in a recent decision the U.S. Court of Appeals for the Fifth Circuit found that for an unlawful "taking" to occur, a "deliberate act done directly and intentionally to migratory birds" would need to occur. (United States v. CITGO Petroleum Corp., No. 14-40128 [5th Cir. Sept. 4, 2015]).

State

The Texas Parks and Wildlife Department (TPWD) Wildlife Diversity Program (WDP) maintains computerized records of state-listed threatened and endangered species by county. The State of Texas does not list threatened and endangered species using the same criteria as the federal government. When the USFWS lists a plant species, the State of Texas then lists that plant. Thus, the list of threatened and endangered plants in Texas is the same as the Federal list. The state has separate laws governing the listing of animal species as threatened or endangered. Threatened and endangered animal species in Texas are those species so designated according to Chapters 67 and 68 of the Texas Parks and Wildlife Code and Section 65.171 - 65.184 of Title 31 of the Texas Administrative Code. Species that are not currently listed by the Federal government may be listed as threatened or endangered by the TPWD.

METHODOLOGY

Prior to conducting fieldwork, the list of Endangered and Threatened Wildlife and Plants under the ESA was obtained through the USFWS Information, Planning, and Conservation System (IPaC) and from the TPWD WDP and the Texas Natural Diversity Database (TXNDD). The vegetation communities used by each species was obtained and is detailed below. During the field survey, vegetation composition within and adjacent to the project site were noted to determine whether there was any potential for protected species habitat. This survey was not designed to identify the presence of protected species; however, if any species were observed, they were recorded. Photographs were taken at representative points, illustrating common vegetation communities within the survey area (**Attachment B**).

RESULTS

Literature Review

According to the USFWS, four species, Golden-cheeked Warbler (*Dendroica chrysoparia*), Piping Plover (*Charadrius melodus*), Red Knot (*Calidris canutus rufa*), and Whooping Crane (*Grus americana*) are listed as federally protected (i.e., threatened or endangered) with the potential to occur within Dallas County. Two of these species are conditionally listed as threatened within Dallas County on the basis that the proposed project is for wind energy production, Red Knot and Piping Plover. No federally listed critical habitat for these species is located within the vicinity of the survey area. The TPWD lists 14 state protected species that could occur within Dallas County. Five are also federally listed avian species; however, the Black Rail (*Laterallus jamaicensis*) is only listed by TPWD for Dallas County. The review of the TXNDD files did not indicate any unique vegetation communities, parks or natural/managed areas within the survey area.

Attachment C identifies the state and federally protected species that could potentially occur within Dallas County from the IPAC and Rare and Threatened Endangered Species of Texas (RTEST) lists.

Site Survey

Ms. Karisa Fenton and Ms. Claire Unruh of IES evaluated the survey area on 22 September 2021. This survey was designed to provide a habitat evaluation of the overall survey area with the primary focus on the plant community.

The four sites within the survey area consisted of two distinct vegetation communities, **frequently maintained grassland** and **urban matrix**. The entirety of Site 7 and the western portion of Site 8 contained the **frequently maintained grassland** vegetation community, dominated by mowed Bermudagrass (*Cynodon dactylon*). The **urban matrix** was found in the southeastern region of Site 8, and the entirety of Sites 9 and 10, and was comprised of gravel lots, buildings, and active construction areas. A small emergent wetland and associated pond were located on the

western boundary of Site 10. The wetland was dominated by saltmarsh aster (*Symphyotrichum subulatum*) and sumpweed (*Iva annua*), both common, early successional disturbance species that occupy mesic areas.

CONCLUSIONS

Preferred Habitat for Federally Protected Species

Table 1 provides a summary of the federally and state-listed species that could potentially occur within Dallas County, as well as a brief description of their habitat, whether this habitat is present within the survey area, and whether the proposed project would potentially affect the listed species.

Regarding federally listed threatened and endangered species, Golden-cheeked Warbler, Red Knot, Piping Plover, and Whooping Crane were listed for Dallas County. As these projects will not be related to wind energy, the Red Knot and Piping Plover will not be affected.

- The Golden-cheeked Warbler requires a habitat that includes forested areas dominated by Ashe juniper (*Juniperus ashei*) in mixed stands with various oaks (*Quercus* spp.). This unique vegetation community is not present within the survey area.
- Whooping Cranes utilize estuaries, prairie marshes, moist grasslands, croplands, and will use large shallow wetland areas associated with lakes for roosting and feeding. The survey area did not contain these types of vegetation communities.

As such, the habitats present within the survey area were not suitable for any of the federally listed threatened or endangered species. Nor were the habitats suitable for nesting, feeding, or stopover migration habitat for these species.

Preferred Habitat for State Protected Species

There were 14 state-listed threatened and endangered species for Dallas County, which includes all the federally listed avian species. Any occurrence of the Least Tern (*Sternula antillarum athalassos)*, Piping Plover, and White-faced Ibis (*Plegadis chihi*) would be in relation to stopover during migration; however, no suitable stopover or nesting habitat was observed within the survey area. Whooping Crane, Black Rail, and Wood Stork (*Mycteria americana*) would be unlikely to utilize the survey area, as their preferred habitat type were not present.

Black Rails utilize freshwater marshes and grassy swamps with dense emergent vegetation. While emergent vegetation was observed within the wetland, the size and location would indicate the survey area would not be suitable habitat. While this site contained a freshwater wetland, this community did not meet the parameters of the Wood Stork for roosting with no tall snags, red mangrove (*Rhizophora mangle*) dominated areas, or bald cypress (*Taxodium distichum*) dominated areas. Wood Storks utilize flooded fields and marsh habitats with shallow standing water for feeding areas, but none were observed. As such, foraging habitat potentially suitable for the Wood Stork was not present within the survey area.

Vegetation Communities

None of the vegetation observed within the survey areas would be considered unique or compose a unique vegetation type for the region. The vegetation communities described were composed of species that are not only common to grassland and forested areas, but to the Cross-Timbers and Blackland Prairie eco-regions of North Central Texas. It is IES' professional opinion that the proposed project will not have any effect on any unique vegetation, vegetation communities, or habitat types.

Table 1. Federally- and State- listed Threatened and Endangered Species Occurring or Potentially Occurring in Dallas County, Texas

Species	State Status	Federal Status	Description of Habitat	Habitat Present[1]	Species Effect[2]
BIRDS					
Black Rail (*Laterallus jamaicensis*)	T	LT	Salt, brackish, and freshwater marshes, pond borders, wet meadows, and grassy swamps; nests in or along edge of marsh, sometimes on damp ground, but usually on mat of previous years dead grasses; nest usually hidden in marsh grass or at base of Salicornia.	**No**	**No**
Golden-cheeked Warbler (*Setophaga chrysoparia)*	E	LE	Ashe juniper in mixed stands with various oaks (*Quercus* spp.). Edges of cedar brakes. Dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer.	**No**	**No**
Least Tern (*Sterna antillarum athalassos*)	E	DL	Sand beaches, flats, bays, inlets, lagoons, islands. Subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony.	**No**	**No**
Piping Plover (*Charadrius melodus*)	T	LT	Beaches, sandflats, and dunes along Gulf Coast beaches and adjacent offshore islands. Also spoil islands in the Intracoastal Waterway. Based on the November 30, 1992 Section 6 Job No. 9.1, Piping Plover and Snowy Plover Winter Habitat Status Survey, algal flats appear to be the highest quality habitat. Some of the most important aspects of algal flats are their relative inaccessibility and their continuous availability throughout all tidal conditions. Sand flats often appear to be preferred over algal flats when both are available, but large portions of sand flats along the Texas coast are available only during low-very low tides and are often completely unavailable during extreme high tides or strong north winds. Beaches appear to serve as a secondary habitat to the flats associated with the primary bays, lagoons, and inter-island passes. Beaches are rarely used on the southern Texas coast, where bayside habitat is always available, and are abandoned as bayside habitats become available on the central and northern coast. However, beaches are probably a vital habitat along the central and northern coast (i.e., north of Padre Island) during periods of extreme high tides that cover the flats. Optimal site characteristics appear to be large in area, sparsely vegetated, continuously available or in close proximity to secondary habitat, and with limited human disturbance.	**No**	**No**
Rufa Red Knot (*Calidris canutus rufa*)	T	LT	The Red Knot prefers the shoreline of coast and bays and also uses mudflats during rare inland encounters. Primary prey items include coquina clam (*Donax* spp.) on beaches and dwarf surf clam (*Mulinia lateralis*) in bays, at least in the Laguna Madre. Wintering Range includes- Aransas, Brazoria, Calhoun, Cameron, Chambers, Galveston, Jefferson, Kennedy, Kleberg, Matagorda, Nueces, San Patricio, and Willacy. Habitat: Primarily seacoasts on tidal flats and beaches, herbaceous wetland, and Tidal flat/shore.	**No**	**No**
White-faced ibis (*Plegadis chihi*)	T	---	Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.	**No**	**No**
Whooping Crane (*Grus americana*)	E	LE	Small ponds, marshes, and flooded grain fields for both roosting and foraging. Potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties.	**No**	**No**
Wood stork (*Mycteria americana)*	T	---	Prefers to nest in large tracts of baldcypress (*Taxodium distichum*) or red mangrove (*Rhizophora mangle*); forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e., active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960.	**No**	**No**

Species	State Status	Federal Status	Description of Habitat	Habitat Present[1]	Species Effect[2]
MOLLUSK					
Louisiana pigtoe (*Pleurobema riddellii*)	T	---	Occurs in small streams to large rivers in slow to moderate currents in substrates of clay, mud, sand, and gravel. Not known from impoundments (Howells 2010f; Randklev et al. 2013b; Troia et al. 2015). [Mussels of Texas 2019].	**No**	**No**
Sandbank pocketbook (*Lamsilis satura*)	T	---	Occurs in small streams to large rivers in slow to moderate current in sandy mud to sand and gravel substrate. Can occur in a variety of habitats but most common in littoral habitats such as banks or backwaters or in protected areas along point bars (Randklev et al. 2013b; Randklev et al. 2014a; Troia et al. 2015). [Mussels of Texas 2019].	**No**	**No**
Texas heelsplitter (*Potamilus amphichaenus*)	T	---	Occurs in small streams to large rivers in standing to slow-flowing water; most common in banks, backwaters and quiet pools; adapts to some reservoirs. Often found in soft substrates such as mud, silt or sand (Howells et al. 1996; Randklev et al. 2017a). [Mussels of Texas 2019].	**No**	**No**
Trinity pigtoe (*Fusconaia chunii)*	T	---	Found in a variety of habitats but most common in riffles. Inhabits various substrates though most often sand, gravel, and cobble (species was recently split from Texas Pigtoe and occurs in similar habitats; Howells 2010a; Randklev et al. 2013b; Randklev et al. 2014a; Troia et al 2015). [Mussels of Texas 2019].	**No**	**No**
INSECTS					
Monarch Butterfly (*Danaus plexippus*)	---	C	Adult monarch butterflies are large and conspicuous, with bright orange wings surrounded by a black border and covered with black veins. During the breeding season, monarchs lay their eggs on their obligate milkweed host plant (primarily *Asclepias* spp.), and larvae emerge after 2 to 5 days. Larvae develop through five larval instars (intervals between molts) over a period of 9 to 18 days, feeding on milkweed and sequestering toxic chemicals (cardenolides) as a defense against predators. The larva then pupates into a chrysalis before emerging 6 to 14 days later as an adult butterfly. There are multiple generations of monarchs produced during the breeding season, with most adult butterflies living approximately 2 to 5 weeks; overwintering adults enter into reproductive diapause (suspended reproduction) and live 6 to 9 months. Individual monarchs in temperate climates, such as eastern and western North America, undergo long-distance migration, and live for an extended period of time. In the fall, in both eastern and western North America, monarchs begin migrating to their respective overwintering sites.	**No**	**No**
REPTILES					
Alligator snapping turtle (*Macrochelys temminckii*)	T	---	Aquatic: Perennial water bodies; rivers, canals, lakes, and oxbows; also swamps, bayous, and ponds near running water; sometimes enters brackish coastal waters. Females emerge to lay eggs close to the water's edge.	**No**	**No**
Texas horned lizard (*Phrynosoma cornutum*)	T	---	Terrestrial: Open habitats with sparse vegetation, including grass, prairie, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive. Occurs to 6000 feet, but largely limited below the pinyon-juniper zone on mountains in the Big Bend area.	**No**	**No**

LE – Federally Listed Endangered, LT – Federally Listed Threatened, DL – Federally Delisted, PT – Federally Proposed Threatened, E – State Listed Endangered, T - State Listed Threatened

[1]*Habitat Present? – Do the vegetation communities located within the survey area match the requirements for that particular protected species?*

[2]*Species Effect? – Will the proposed project potentially affect a protected species?*

Data Sources: USFWS IPaC (Published and accessed 28 September 2021), TPWD (Published 22 June 2021, accessed 28 September 2021), and field survey of the survey area

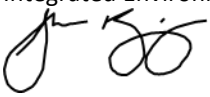
Potential to Affect Protected Species

As previously noted, habitat for any of the federally listed species and state listed species was not present within the survey area. As such, the proposed project is not expected to have any impacts on the federally or state-listed threatened or endangered species.

IES appreciates the opportunity to work with you and the Dallas Fort Worth International Airport Environmental Affairs Department on this project and hope we may be of assistance to you in the future. If you have any comments, questions, or concerns, please do not hesitate to contact me at 972-562-7672 or by email at mailto:skipp@intenvsol.com or rreinecke@intenvsol.com.

Sincerely,

Integrated Environmental Solutions, LLC.



Mr. Shae Kipp
Ecologist

Attachments

File ref: 03.006.094

ATTACHMENT A

Figures

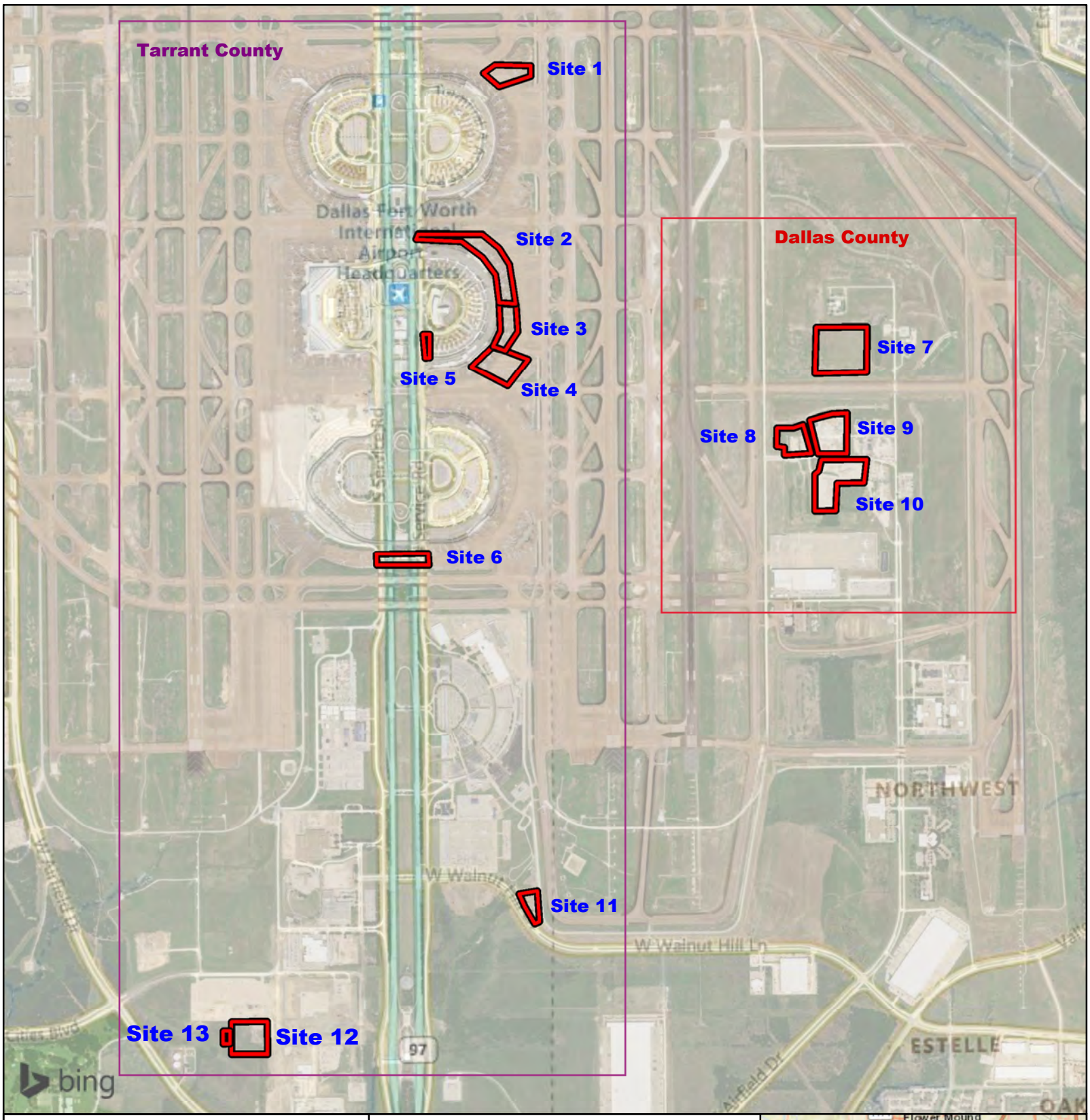


Figure 1.
General Location Map

CTA Development Project
Dallas Fort Worth International Airport
Dallas and Tarrant Counties, Texas

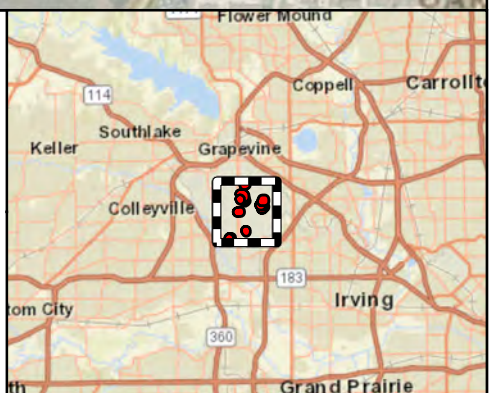
1 in = 2,000 feet

Feet
0 2,000

N
W E
S

File Ref. 03.006.094
Date: 9/28/2021

Survey Area



Area of Detail

Scale: 1 inch equals 10 miles

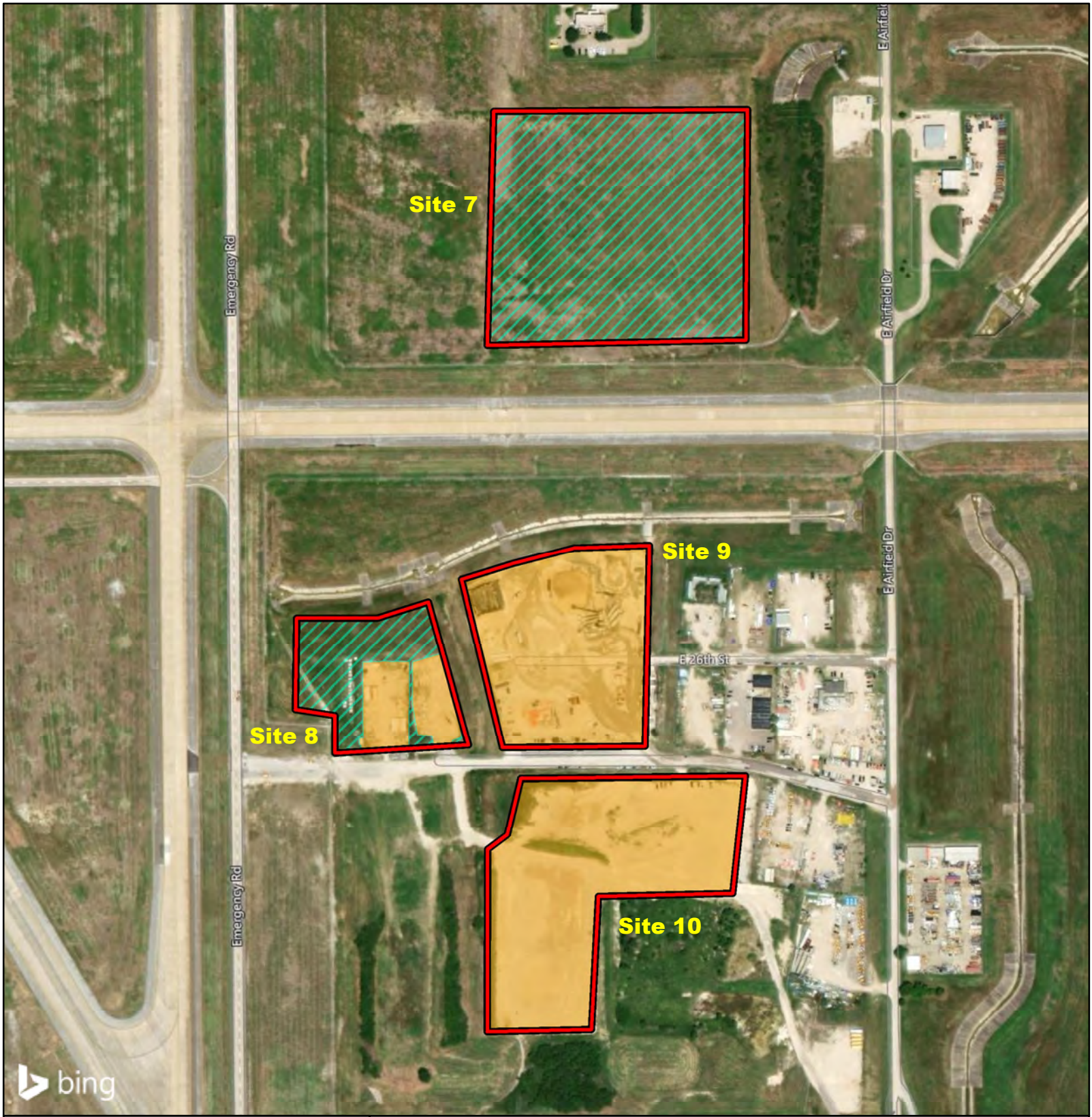


Figure 2.
Vegetation Communities Identified within the Survey Areas

Survey Area

Vegetation Communities

Frequently Maintained Grassland

Urban Matrix

N
W E
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ATTACHMENT B

Site Photographs

Photograph 1. Drainage ditch and maintained vegetation north of Staging Area 1.

Photograph 2. Maintained vegetation north of Staging Area 1.

Photograph 3. Drainage ditch and maintained vegetation north of Staging Area 1.

Photograph 4. Drainage ditch and maintained vegetation north of Staging Area 1.

Photograph 5. Representative view of the graded disturbed area at Staging Area 1.

Photograph 6. Representative view of the graded disturbed area at Staging Area 1.

Photograph 7. Representative view of the graded disturbed area at Staging Area 1.

Photograph 8. Representative view of the graded disturbed area at Staging Area 1.

Photograph 9. Representative view of the graded disturbed area at Staging Area 1.

Photograph 10. Representative view of the graded disturbed area at Staging Area 1.

Photograph 11. Representative view of the graded disturbed area at Staging Area 1.

Photograph 12. Representative view of the graded disturbed area at Staging Area 1.

Photograph 13. Representative view of the graded disturbed area at Staging Area 1.

Photograph 14. Representative view of the graded disturbed area at Staging Area 1.

Photograph 15. Representative view of the graded disturbed area at Staging Area 1.

Photograph 16. Representative view of the graded disturbed area at Staging Area 1.

Photograph 17. Representative view of the graded disturbed area at Staging Area 1.

Photograph 18. Representative view of the graded disturbed area at Staging Area 1.

Photograph 19. Representative view of the graded disturbed area at Staging Area 1.

Photograph 20. Representative view of the graded disturbed area at Staging Area 1.

Photograph 21. Representative view of the graded disturbed area at Staging Area 1.

Photograph 22. Detention area within Staging Area 1 north of East 28th Street and East Airfield Drive.

Photograph 23. Staging Area 1 fence and detention area.

Photograph 24. Representative disturbed vegetation located at Staging Area 1.

ATTACHMENT C

Protected Species Lists

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arlington Ecological Services Field Office
501 West Felix Street
Suite 1105
Fort Worth, TX 76115-3410
Phone: (817) 277-1100 Fax: (817) 277-1129
Email Address: arles@fws.gov

In Reply Refer To:
Project Code: 2023-0134510
Project Name: CTA Expansion

December 15, 2023

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

To Whom It May Concern:

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

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under section 7(a)(1) of the Act, Federal agencies are directed to utilize their authorities to carry out programs for the conservation of threatened and endangered species. Under and 7(a)(2) and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to determine whether their actions may affect threatened and endangered species and/or designated critical habitat. A Federal action is an activity or program authorized, funded, or carried out, in whole or in part, by a Federal agency (50 CFR 402.02).

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For Federal actions other than major construction activities, the Service suggests that a biological evaluation (similar to a Biological Assessment) be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

After evaluating the potential effects of a proposed action on federally listed species, one of the following determinations should be made by the Federal agency:

1. *No effect* - the appropriate determination when a project, as proposed, is anticipated to have no effects to listed species or critical habitat. A "no effect" determination does not require section 7 consultation and no coordination or contact with the Service is necessary. However, the action agency should maintain a complete record of their evaluation, including the steps leading to the determination of affect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related information.
2. *May affect, but is not likely to adversely affect* - the appropriate determination when a proposed action's anticipated effects to listed species or critical habitat are insignificant, discountable, or completely beneficial. Insignificant effects relate to the size of the impact and should never reach the scale where "take" of a listed species occurs. Discountable effects are those extremely unlikely to occur. Based on best judgment, a person would not be able to meaningfully measure, detect, or evaluate insignificant effects, or expect discountable effects to occur. This determination requires written concurrence from the Service. A biological evaluation or other supporting information justifying this determination should be submitted with a request for written concurrence.
3. *May affect, is likely to adversely affect* - the appropriate determination if any adverse effect to listed species or critical habitat may occur as a consequence of the proposed action, and the effect is not discountable or insignificant. This determination requires formal section 7 consultation.

The Service has performed up-front analysis for certain project types and species in your project area. These analyses have been compiled into *determination keys*, which allows an action agency, or its designated non-federal representative, to initiate a streamlined process for determining a proposed project's potential effects on federally listed species. The determination keys can be accessed through IPaC.

The Service recommends that candidate species, proposed species, and proposed critical habitat be addressed should consultation be necessary. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found at: https://www.fws.gov/service/section-7-consultations

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

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (https://www.fws.gov/library/collections/bald-and-golden-eagle-management). Additionally, wind energy projects should follow the wind energy guidelines (https://www.fws.gov/media/land-based-wind-energy-guidelines) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: https://www.fws.gov/media/recommended-best-practices-communication-tower-design-siting-construction-operation. The Federal Aviation Administration (FAA) released specifications for and made mandatory flashing L-810 lights on new towers 150-350 feet AGL, and the elimination of L-810 steady-burning side lights on towers above 350 feet AGL. While the FAA made these changes to reduce the number of migratory bird collisions (by as much as 70%), extinguishing steady-burning side lights also reduces maintenance costs to tower owners. For additional information concerning migratory birds and eagle conservation plans, please contact the Service's Migratory Bird Office at 505-248-7882.

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

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

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

This species list is provided by:

Arlington Ecological Services Field Office
501 West Felix Street
Suite 1105
Fort Worth, TX 76115-3410
(817) 277-1100

PROJECT SUMMARY

Project Code: 2023-0134510
Project Name: CTA Expansion
Project Type: Airport - New Construction
Project Description: Central Terminal Area Expansion, including new Terminal F at DFW International Airport
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@32.8956595,-97.03781473364748,14z

Counties: Dallas and Tarrant counties, Texas

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 2 of these species should be considered only under certain conditions.

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

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

---

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

MAMMALS

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

BIRDS

NAME	STATUS
Golden-cheeked Warbler *Setophaga chrysoparia*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/33	
Piping Plover *Charadrius melodus*	Threatened
Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/6039	
Rufa Red Knot *Calidris canutus rufa*	Threatened
There is **proposed** critical habitat for this species. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/1864	
Whooping Crane *Grus americana*	Endangered
Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/758	

REPTILES

NAME	STATUS
Alligator Snapping Turtle *Macrochelys temminckii*	Proposed Threatened
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4658	

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	

CRITICAL HABITATS

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

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

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

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

BALD & GOLDEN EAGLES

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

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

---

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

There are bald and/or golden eagles in your project area.

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

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31

PROBABILITY OF PRESENCE SUMMARY

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

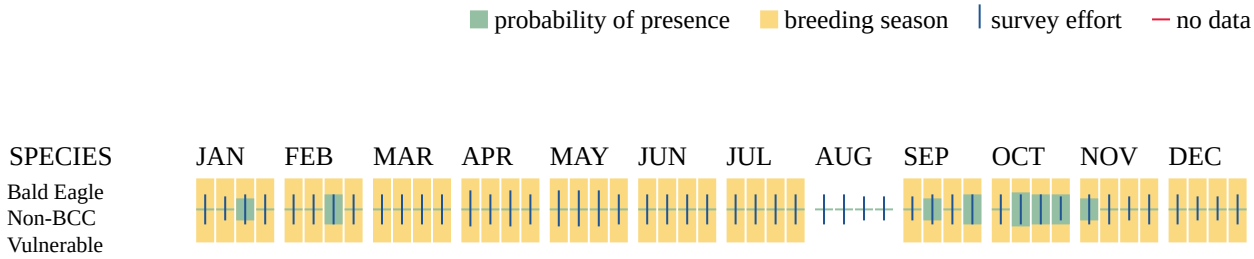
Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

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



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

MIGRATORY BIRDS

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

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

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

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

NAME	BREEDING SEASON
American Golden-plover *Pluvialis dominica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10561	Breeds elsewhere
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Little Blue Heron *Egretta caerulea* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9477	Breeds Mar 10 to Oct 15
Pectoral Sandpiper *Calidris melanotos* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9561	Breeds elsewhere
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9439	Breeds Apr 1 to Jul 31

NAME	BREEDING SEASON
Sprague's Pipit *Anthus spragueii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8964	Breeds elsewhere

PROBABILITY OF PRESENCE SUMMARY

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

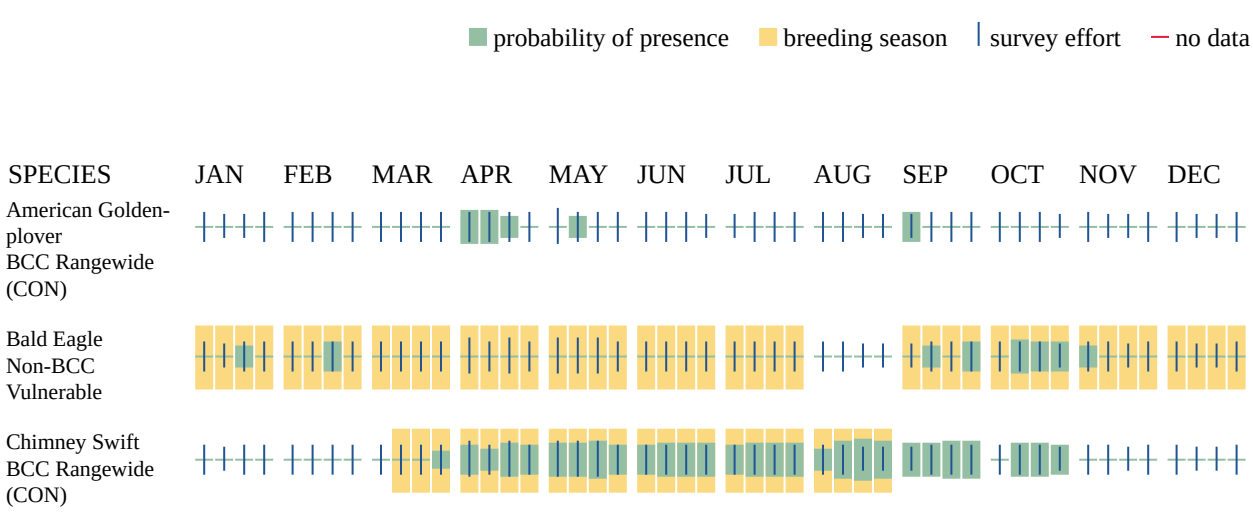
Probability of Presence (■)

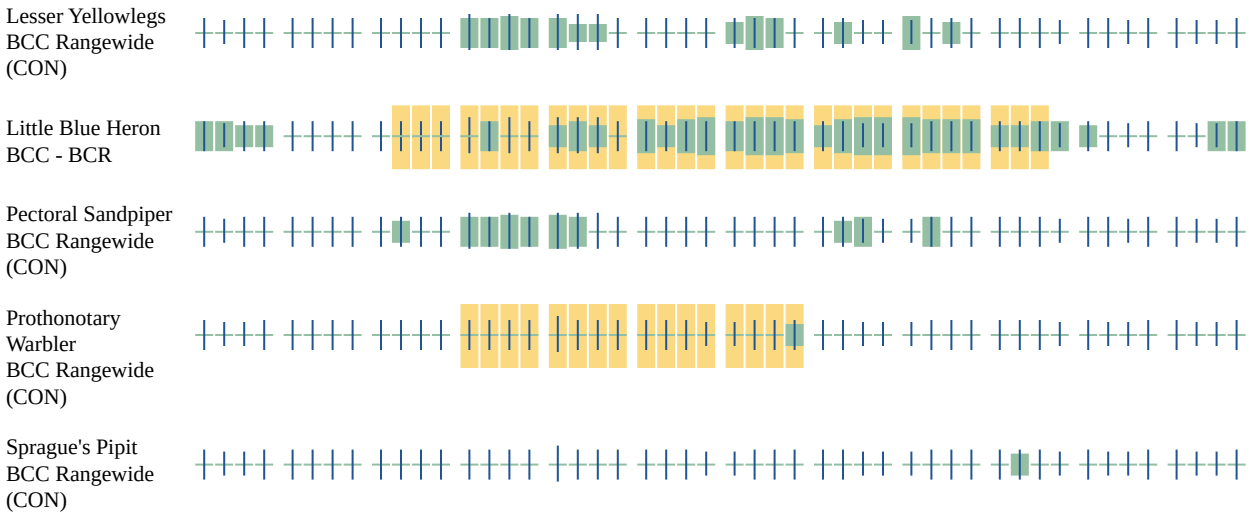
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

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





Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

WETLANDS

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

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

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

FRESHWATER POND

- PUBFh
- PUSCh

RIVERINE

- R4SBCx
- R4SBC

- R5UBH

FRESHWATER FORESTED/SHRUB WETLAND

- PSS1Ah

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Rae Lynn Schneider
Address: 301 W Eldorado Parkway Ste 101
City: McKinney
State: TX
Zip: 75069
Email rschneider@intenvsol.com
Phone: 9725627672

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Aviation Administration

integrated environmental solutions

30 September 2021

Ms. Sandy Lancaster
Dallas Fort Worth International Airport
3003 South Service Road, Annex Building A
DFW Airport, Texas 75261-9428

Re: CTA Development Project Tarrant County - Protected Species Habitat Assessment
Sites 1 through 6 and 11 through 13 of the 13 total locations for the CTA Terminals A and C Development Project located within the Dallas Fort Worth International Airport, Tarrant County

Dear Ms. Lancaster,

Integrated Environmental Solutions, LLC (IES) performed a protected species habitat assessment on the CTA Terminals A and C Development Project associated with Sites 1 through 6 and 11 through 13 of the 13 total locations within the Dallas Fort Worth International Airport, Tarrant County (**Attachment A, Figure 1**). This habitat assessment was performed to satisfy the requirements regarding the Endangered Species Act (ESA). The following report is a list of the federal and state-listed protected species for Tarrant County and their preferred vegetation assemblages, a summary of the vegetation communities identified on the site, an evaluation of whether the communities present on the site could support a protected species, and whether or not future proposed actions would affect listed species.

INTRODUCTION

Protected Species

Federal

The ESA of 1973 (Public Law [P.L.] 93-205) and the amendments of 1988 (P.L. 100-578) were enacted to provide a program of preservation for endangered and threatened species and to provide protection for ecosystems upon which these species depend for their survival. The ESA requires all federal agencies to implement protection programs for designated species and to use their authorities to further the purposes of the Act. Responsibility for the listing of an endangered or threatened species and for the development of recovery plans lies with the Secretary of Interior and Secretary of Commerce. The U.S. Fish and Wildlife Service (USFWS) is responsible for implementing the ESA within the United States.

An endangered species is a species, which is in danger of extinction throughout all or a significant portion of its range. A threatened species is a species likely to become endangered within the near future throughout all or a significant portion of its range. Proposed species are those, which have been formally submitted to Congress for official listing as endangered or threatened.

In addition, the USFWS has identified species, which are candidates for possible addition to the list of Endangered and Threatened Wildlife and Plants (50 Code of Federal Regulations [CFR] 17.11 and 17.12) under the ESA. The USFWS maintains a candidate list to: (1) provide advance knowledge of potential listings that could affect land planning decisions, (2) solicit input to identify candidates not requiring protection or additional species that may require protection under the ESA, and (3) solicit information needed to prioritize the order in which species will be proposed for listing. Candidate species have no legal protection under the ESA.

The Migratory Bird Treaty Act of 1918 states that it is unlawful to kill, capture, collect, possess, buy, sell, trade, or transport any migratory bird, nest, young, feather, or egg in part or in whole, without a federal permit issued in accordance with the Act's policies and regulations. However, in a recent decision the U.S. Court of Appeals for the Fifth Circuit found that for an unlawful "taking" to occur, a "deliberate act done directly and intentionally to migratory birds" would need to occur. (United States v. CITGO Petroleum Corp., No. 14-40128 [5th Cir. Sept. 4, 2015]).

State

The Texas Parks and Wildlife Department (TPWD) Wildlife Diversity Program (WDP) maintains computerized records of state-listed threatened and endangered species by county. The State of Texas does not list threatened and endangered species using the same criteria as the federal government. When the USFWS lists a plant species, the State of Texas then lists that plant. Thus, the list of threatened and endangered plants in Texas is the same as the Federal list. The state has separate laws governing the listing of animal species as threatened or endangered. Threatened and endangered animal species in Texas are those species so designated according to Chapters 67 and 68 of the Texas Parks and Wildlife Code and Section 65.171 - 65.184 of Title 31 of the Texas Administrative Code. Species that are not currently listed by the Federal government may be listed as threatened or endangered by the TPWD.

METHODOLOGY

Prior to conducting fieldwork, the list of Endangered and Threatened Wildlife and Plants under the ESA was obtained through the USFWS Information, Planning, and Conservation System (IPaC) and from the TPWD WDP and the Texas Natural Diversity Database (TXNDD). The vegetation communities used by each species was obtained and is detailed below. During the field survey, vegetation composition within and adjacent to the project site were noted to determine whether there was any potential for protected species habitat. This survey was not designed to identify the presence of protected species; however, if any species were observed, they were recorded. Photographs were taken at representative points, illustrating common vegetation communities within the survey area (**Attachment B**).

RESULTS

Literature Review

According to the USFWS, three species, Piping Plover (*Charadrius melodus*), Red Knot (*Calidris canutus rufa*), and Whooping Crane (*Grus americana*) are listed as federally protected (i.e., threatened or endangered) with the potential to occur within Tarrant County. Two of these species are conditionally listed as threatened within Tarrant County on the basis that the proposed project is for wind energy production, Red Knot, and Piping Plover. No federally listed critical habitat for these species is located within the vicinity of the survey area. The TPWD lists 12 state protected species that could occur within Tarrant County. Four are also federally listed avian species; however, the Black Rail (*Laterallus jamaicensis*) is only listed by TPWD for Tarrant County. The review of the TXNDD files did not indicate any unique vegetation communities, parks or natural/managed areas within the survey area.

Attachment C identifies the state and federally protected species that could potentially occur within Tarrant County from the IPAC and Rare and Threatened Endangered Species of Texas (RTEST) lists.

Site Survey

Ms. Karisa Fenton and Ms. Clair Unruh of IES evaluated the survey area on 22 September 2021. This survey was designed to provide a habitat evaluation of the overall survey area with the primary focus on the plant community.

Sites 1 through 6 and 11 through 13 consisted of four distinct vegetation communities, **urban matrix, frequently maintained grassland**, **infrequently maintained grassland**, and **shrub-scrub upland**. The **urban matrix** was found throughout a majority of Sites 1 through 6, and on the eastern side of Site 12. The urban matrix was comprised of concrete lots, roads, buildings, and active construction areas. The entirety of Site 11, and the western portion of Site 5 contained the **frequently maintained grassland** vegetation community, dominated by mowed Bermudagrass (*Cynodon dactylon*). The **infrequently maintained grassland** was observed in the central region of Site 12 and was comprised of Maximilian sunflower (*Helianthus maximiliani*), meadow dropseed (*Sporobolus compositus*),

Johnsongrass (*Sorghum halepense*), white heath aster (*Symphyotrichum ericoides*), King Ranch bluestem (*Bothriochloa ischaemum*), sumpweed (*Iva annua*), Canada goldenrod (*Solidago canadensis*), prairie broomweed (*Amphiachyris dracunculoides*), Bermudagrass, and annual sunflower (*Helianthus annuus*). The **shrub-scrub upland** vegetation community was observed on the western side of Site 12 and throughout Site 13, dominated by honey mesquite (*Prosopis glandulosa*), sugarberry (*Celtis laevigata*), giant ragweed (*Ambrosia trifida*), Johnsongrass, Bermudagrass, and annual sunflower.

CONCLUSIONS

Preferred Habitat for Federally Protected Species

Table 1 provides a summary of the federally and state-listed species that could potentially occur within Tarrant County, as well as a brief description of their habitat, whether this habitat is present within the survey area, and whether the proposed project would potentially affect the listed species.

Regarding federally listed threatened and endangered species, Red Knot, Piping Plover, and Whooping Crane were listed for Tarrant County. As these projects will not be related to wind energy, the Red Knot and Piping Plover will not be affected.

- Whooping Cranes utilize estuaries, prairie marshes, moist grasslands, croplands, and will use large shallow wetland areas associated with lakes for roosting and feeding. The survey area did not contain this type of vegetation communities within.

As such, the habitats present within the survey area were not suitable for any of the federally listed threatened or endangered species. Nor were the habitats suitable for nesting, feeding, or stopover migration habitat for these species.

Preferred Habitat for State Protected Species

There were 12 state-listed threatened and endangered species for Tarrant County, which includes all the federally listed avian species. Any occurrence of the Least Tern (*Sterna antillarum athalassos*), Piping Plover, and White-faced Ibis (*Plegadis chihi*) would be in relation to stopover during migration; however, no suitable stopover or nesting habitat was observed within the survey area. Whooping Crane and Black Rail would be unlikely to utilize the survey area, as their preferred habitat type were not present.

Vegetation Communities

None of the vegetation observed within the survey areas would be considered unique or compose a unique vegetation type for the region. The vegetation communities described were composed of species that are not only common to grassland and forested areas, but to the Cross-Timbers and Blackland Prairie eco-regions of North Central Texas. It is IES' professional opinion that the proposed project will not have any effect on any unique vegetation, vegetation communities, or habitat types.

Table 1. Federally- and State- listed Threatened and Endangered Species Occurring or Potentially Occurring in Tarrant County, Texas

Species	State Status	Federal Status	Description of Habitat	Habitat Present[1]	Species Effect[2]
BIRDS					
Black Rail (*Laterallus jamaicensis*)	T	LT	Salt, brackish, and freshwater marshes, pond borders, wet meadows, and grassy swamps; nests in or along edge of marsh, sometimes on damp ground, but usually on mat of previous years dead grasses; nest usually hidden in marsh grass or at base of Salicornia.	**No**	**No**
Least Tern (*Sterna antillarum athalassos*)	E	DL	Sand beaches, flats, bays, inlets, lagoons, islands. Subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony.	**No**	**No**
Piping Plover (*Charadrius melodus*)	T	LT	Beaches, sandflats, and dunes along Gulf Coast beaches and adjacent offshore islands. Also spoil islands in the Intracoastal Waterway. Based on the November 30, 1992 Section 6 Job No. 9.1, Piping Plover and Snowy Plover Winter Habitat Status Survey, algal flats appear to be the highest quality habitat. Some of the most important aspects of algal flats are their relative inaccessibility and their continuous availability throughout all tidal conditions. Sand flats often appear to be preferred over algal flats when both are available, but large portions of sand flats along the Texas coast are available only during low-very low tides and are often completely unavailable during extreme high tides or strong north winds. Beaches appear to serve as a secondary habitat to the flats associated with the primary bays, lagoons, and inter-island passes. Beaches are rarely used on the southern Texas coast, where bayside habitat is always available, and are abandoned as bayside habitats become available on the central and northern coast. However, beaches are probably a vital habitat along the central and northern coast (i.e., north of Padre Island) during periods of extreme high tides that cover the flats. Optimal site characteristics appear to be large in area, sparsely vegetated, continuously available or in close proximity to secondary habitat, and with limited human disturbance.	**No**	**No**
Rufa Red Knot (*Calidris canutus rufa*)	T	LT	The Red Knot prefers the shoreline of coast and bays and also uses mudflats during rare inland encounters. Primary prey items include coquina clam (*Donax* spp.) on beaches and dwarf surf clam (*Mulinia lateralis*) in bays, at least in the Laguna Madre. Wintering Range includes- Aransas, Brazoria, Calhoun, Cameron, Chambers, Galveston, Jefferson, Kennedy, Kleberg, Matagorda, Nueces, San Patricio, and Willacy. Habitat: Primarily seacoasts on tidal flats and beaches, herbaceous wetland, and Tidal flat/shore.	**No**	**No**
White-faced ibis (*Plegadis chihi*)	T	---	Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.	**No**	**No**
Whooping Crane (*Grus americana*)	E	LE	Small ponds, marshes, and flooded grain fields for both roosting and foraging. Potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties.	**No**	**No**
MAMMALS					
Black Bear (*Ursus americanus*)	T	---	Historically prefers higher elevations where pinyon-oaks predominate; also occasionally sighted in desert scrub of Trans-Pecos (Black Gap Wildlife Management Area) and Edwards Plateau in juniper-oak habitat.	**No**	**No**
MOLLUSKS					
Louisiana pigtoe (*Pleurobema riddellii*)	T	---	Occurs in small streams to large rivers in slow to moderate currents in substrates of clay, mud, sand, and gravel. Not known from impoundments (Howells 2010f; Randklev et al. 2013b; Troia et al. 2015). [Mussels of Texas 2019].	**No**	**No**
Sandbank pocketbook (*Lamsilis satura*)	T	---	Occurs in small streams to large rivers in slow to moderate current in sandy mud to sand and gravel substrate. Can occur in a variety of habitats but most common in littoral habitats such as banks or backwaters or in protected areas along point bars (Randklev et al. 2013b; Randklev et al. 2014a; Troia et al. 2015). [Mussels of Texas 2019].	**No**	**No**
Texas heelsplitter (*Potamilus amphichaenus*)	T	---	Occurs in small streams to large rivers in standing to slow-flowing water; most common in banks, backwaters and quiet pools; adapts to some reservoirs. Often found in soft substrates such as mud, silt or sand (Howells et al. 1996; Randklev et al. 2017a). [Mussels of Texas 2019].	**No**	**No**

Species	State Status	Federal Status	Description of Habitat	Habitat Present[1]	Species Effect[2]
INSECTS					
Monarch Butterfly (Danaus plexippus)	---	C	Adult monarch butterflies are large and conspicuous, with bright orange wings surrounded by a black border and covered with black veins. During the breeding season, monarchs lay their eggs on their obligate milkweed host plant (primarily Asclepias spp.), and larvae emerge after 2 to 5 days. Larvae develop through five larval instars (intervals between molts) over a period of 9 to 18 days, feeding on milkweed and sequestering toxic chemicals (cardenolides) as a defense against predators. The larva then pupates into a chrysalis before emerging 6 to 14 days later as an adult butterfly. There are multiple generations of monarchs produced during the breeding season, with most adult butterflies living approximately 2 to 5 weeks; overwintering adults enter into reproductive diapause (suspended reproduction) and live 6 to 9 months. Individual monarchs in temperate climates, such as eastern and western North America, undergo long-distance migration, and live for an extended period of time. In the fall, in both eastern and western North America, monarchs begin migrating to their respective overwintering sites.	**No**	**No**
REPTILES					
Alligator snapping turtle (*Macrochelys temminckii*)	T	---	Aquatic: Perennial water bodies; rivers, canals, lakes, and oxbows; also swamps, bayous, and ponds near running water; sometimes enters brackish coastal waters. Females emerge to lay eggs close to the water's edge.	**No**	**No**
Texas horned lizard (*Phrynosoma cornutum*)	T	---	Terrestrial: Open habitats with sparse vegetation, including grass, prairie, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive. Occurs to 6000 feet, but largely limited below the pinyon-juniper zone on mountains in the Big Bend area.	**No**	**No**

LE – Federally Listed Endangered, LT – Federally Listed Threatened, DL – Federally Delisted, PT – Federally Proposed Threatened, E – State Listed Endangered, T - State Listed Threatened
C - Candidate

[1]*Habitat Present? – Do the vegetation communities located within the survey area match the requirements for that particular protected species?*

[2]*Species Effect? – Will the proposed project potentially affect a protected species?*

Data Sources: USFWS IPaC (Published and accessed 28 September 2021), TPWD (Published 22 June 2021, accessed 28 September 2021), and field survey of the survey area

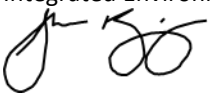
Potential to Affect Protected Species

As previously noted, habitat for any of the federally listed species and state listed species was not present within the survey area. As such, the proposed project is not expected to have any impacts on the federally or state-listed threatened or endangered species.

IES appreciates the opportunity to work with you and the Dallas Fort Worth International Airport Environmental Affairs Department on this project and hope we may be of assistance to you in the future. If you have any comments, questions, or concerns, please do not hesitate to contact me at 972-562-7672 or by email at mailto:skipp@intenvsol.com or rreinecke@intenvsol.com.

Sincerely,

Integrated Environmental Solutions, LLC.



Mr. Shae Kipp
Ecologist

Attachments

File ref: 03.006.094

ATTACHMENT A

Figures

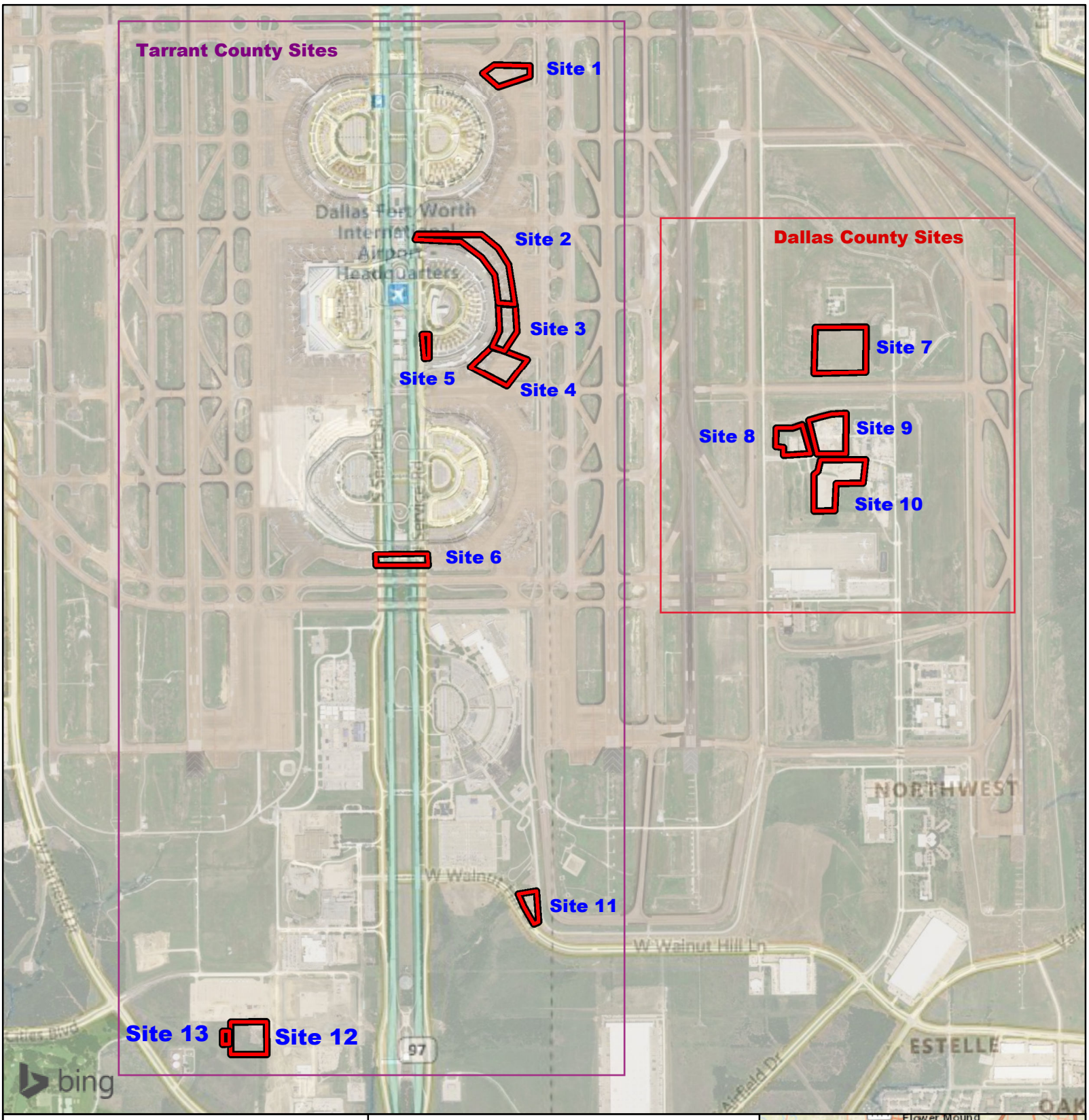


Figure 1.
General Location Map

CTA Development Project
Dallas Fort Worth International Airport
Dallas and Tarrant Counties, Texas

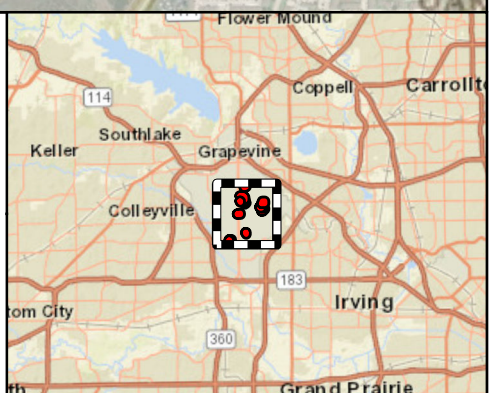
Survey Area

1 in = 2,000 feet

Feet
0 2,000

N
W E
S

File Ref. 03.006.094
Date: 9/28/2021



Area of Detail

Scale: 1 inch equals 10 miles

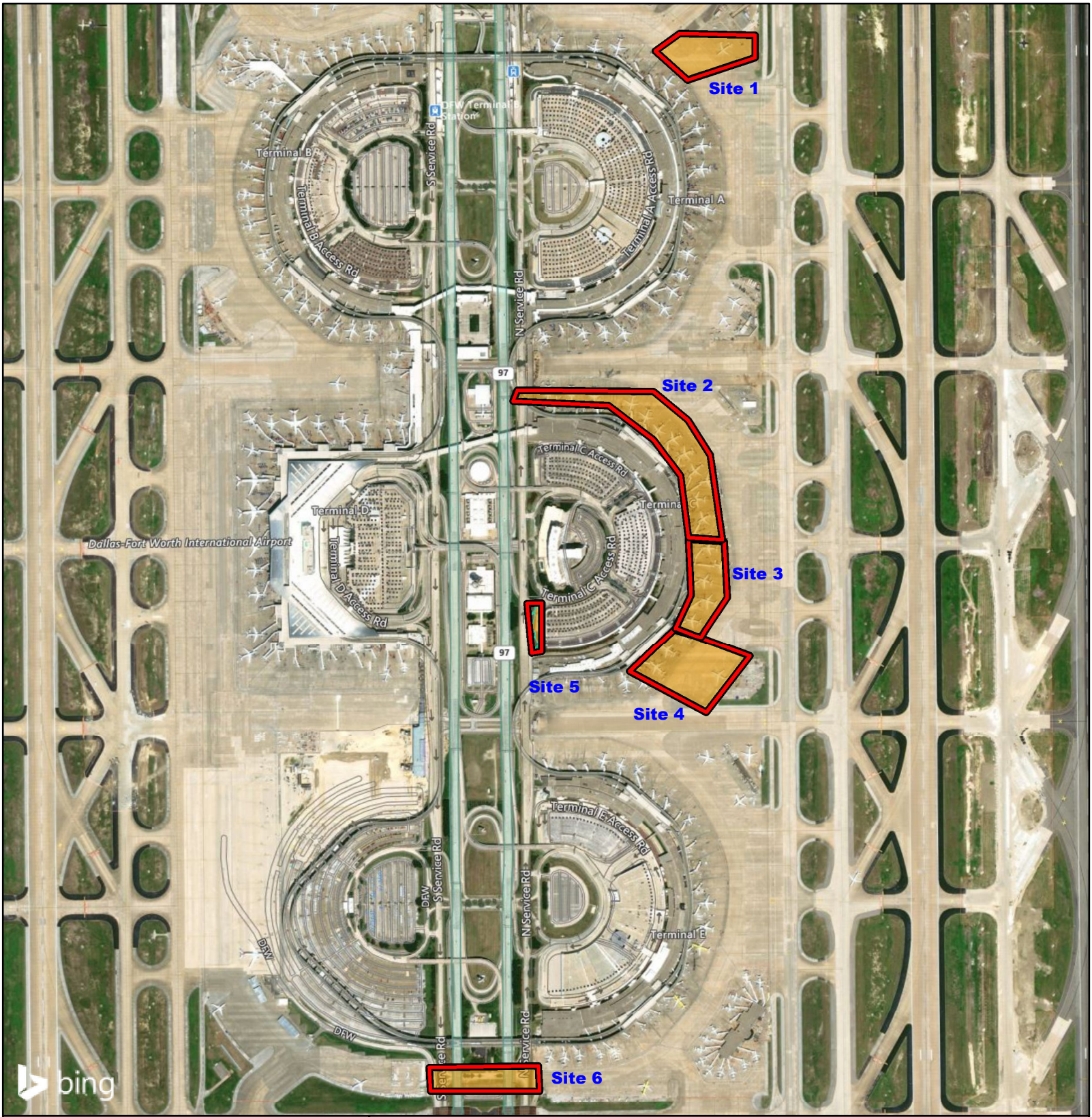


Figure 2A.
Vegetation Communities Identified within the Survey Area

CTA Development Project
Dallas Fort Worth International Airport
Tarrant County, Texas

1 in = 950 feet

Feet
0 950

N
W E
S

File Ref. 03.006.094
Date: 9/29/2021

Survey Area

Vegetation Communities

Frequently Maintained Grassland

Urban Matrix

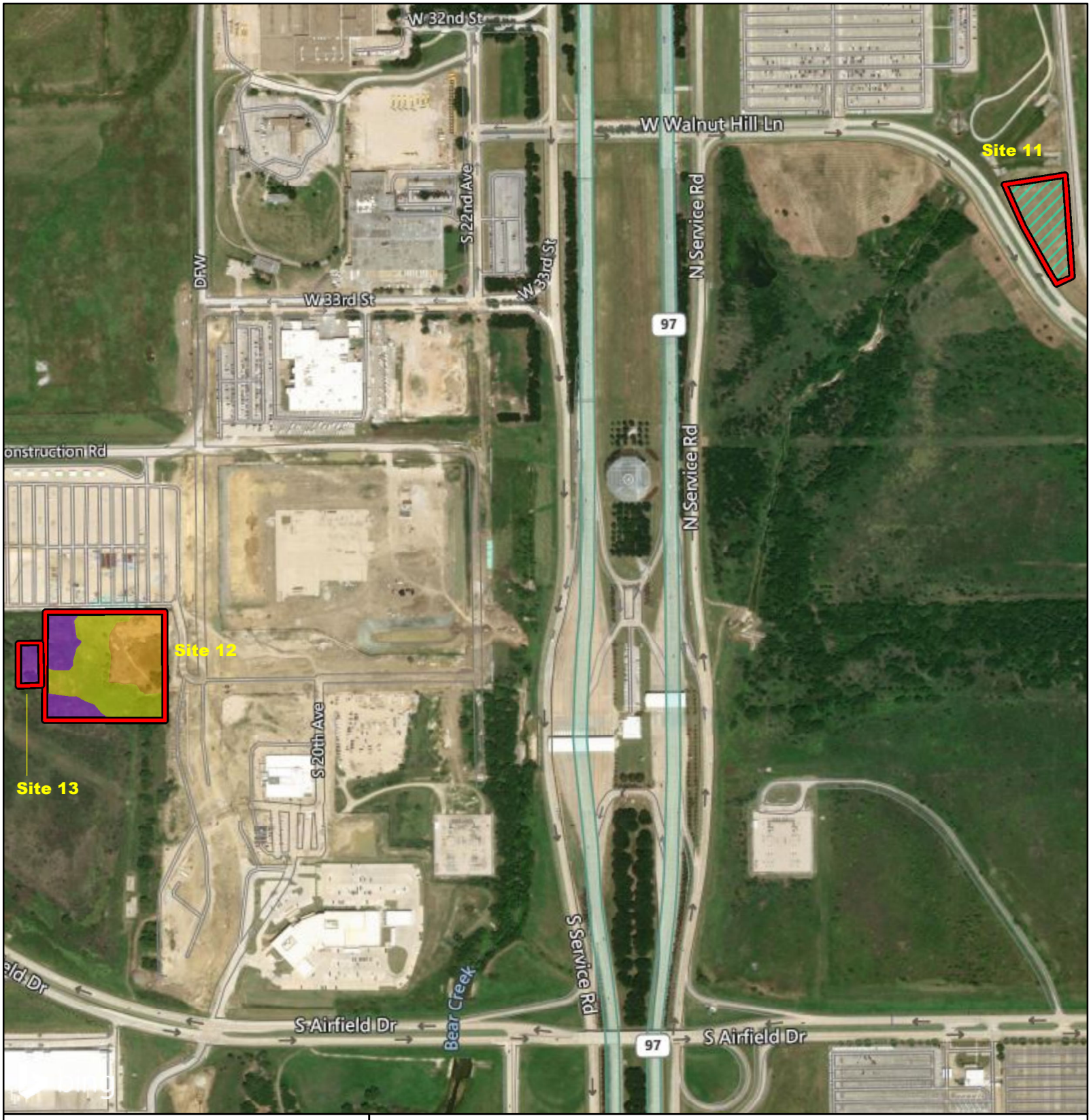


Figure 2B.
Vegetation Communities Identified within the Survey Area

Survey Area

Vegetation Communities

- Frequently Maintained Grassland
- Infrequently Maintained Grassland
- Urban Matrix
- Scrub Shrub

N
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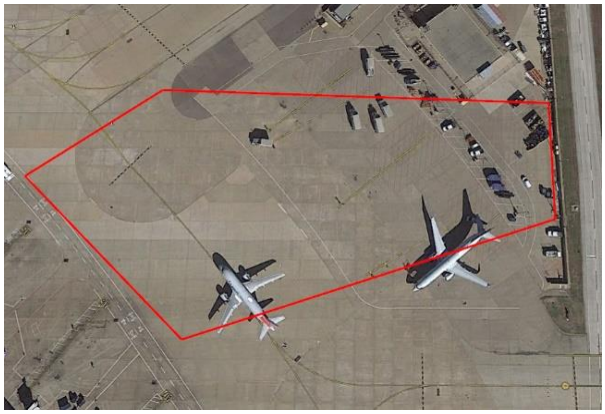
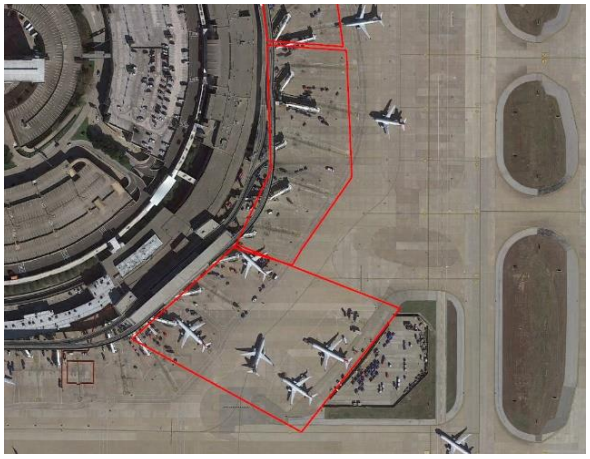
ATTACHMENT B

Site Photographs

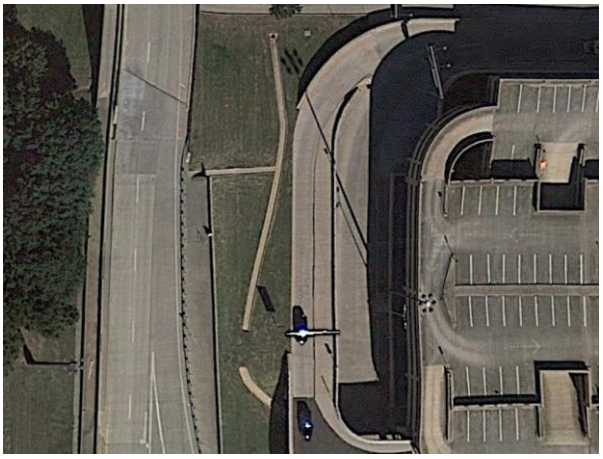


Photograph 1. Aerial photograph image of improved pavement aircraft operations area at Terminal A.

Photograph 2. Aerial photograph image of improved pavement aircraft operations area at Terminal C.



Photograph 3. Aerial photograph image of improved pavement aircraft operations area at Terminal C.

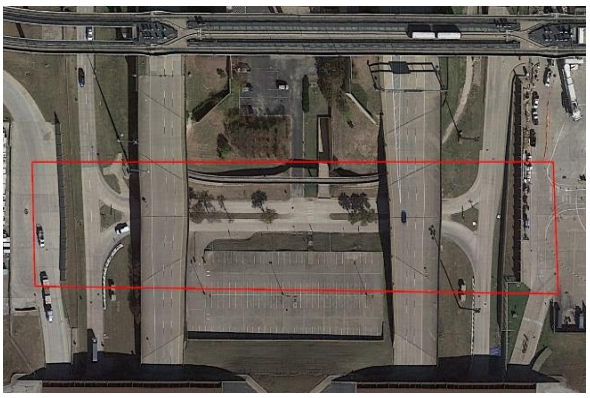


Photograph 4. Aerial photograph image of the Terminal C Garage roadway.

Photograph 5. Photograph image of the Terminal C Garage roadway.

Photograph 6. Photograph image of the cross under south of Terminal E.

Photograph 7. Photograph image of the cross under south of Terminal E.



Photograph 8. Aerial photograph image of the cross under south of Terminal E.

Photograph 9. Representative photograph of maintained vegetation north of West Walnut Hill road, south of the Southeast Emergency Road.

Photograph 10. Representative photograph of maintained vegetation north of West Walnut Hill road, south of the Southeast Emergency Road.

Photograph 11. Representative photograph of maintained vegetation north of West Walnut Hill road, south of the Southeast Emergency Road.

Photograph 12. Disturbed area south of Staging Area 3.

Photograph 13. Disturbed area south of Staging Area 3.

Photograph 14. Representative disturbed vegetation located south of Staging Area 3.

Photograph 15. Representative disturbed vegetation located south of Staging Area 3.

Photograph 16. Representative disturbed vegetation located south of Staging Area 3.

Photograph 17. Representative disturbed vegetation located south of Staging Area 3.

Photograph 18. Representative disturbed vegetation located south of Staging Area 3.

Photograph 19. Representative disturbed vegetation located south of Staging Area 3.

Photograph 20. Representative disturbed vegetation located south of Staging Area 3.

Photograph 21. Representative disturbed vegetation located south of Staging Area 3.

Photograph 22. Representative disturbed vegetation located south of Staging Area 3.

Photograph 23. Representative disturbed vegetation located south of Staging Area 3.

Photograph 24. Representative disturbed vegetation located south of Staging Area 3.

Photograph 25. Representative disturbed vegetation located south of Staging Area 3.

Photograph 26. Representative disturbed vegetation located south of Staging Area 3.

Photograph 27. Representative disturbed vegetation located south of Staging Area 3.

ATTACHMENT C

Protected Species Lists

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arlington Ecological Services Field Office
501 West Felix Street
Suite 1105
Fort Worth, TX 76115-3410
Phone: (817) 277-1100 Fax: (817) 277-1129
Email Address: arles@fws.gov

In Reply Refer To:
Project Code: 2023-0134510
Project Name: CTA Expansion

December 15, 2023

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

To Whom It May Concern:

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

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under section 7(a)(1) of the Act, Federal agencies are directed to utilize their authorities to carry out programs for the conservation of threatened and endangered species. Under and 7(a)(2) and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to determine whether their actions may affect threatened and endangered species and/or designated critical habitat. A Federal action is an activity or program authorized, funded, or carried out, in whole or in part, by a Federal agency (50 CFR 402.02).

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For Federal actions other than major construction activities, the Service suggests that a biological evaluation (similar to a Biological Assessment) be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

After evaluating the potential effects of a proposed action on federally listed species, one of the following determinations should be made by the Federal agency:

1. *No effect* - the appropriate determination when a project, as proposed, is anticipated to have no effects to listed species or critical habitat. A "no effect" determination does not require section 7 consultation and no coordination or contact with the Service is necessary. However, the action agency should maintain a complete record of their evaluation, including the steps leading to the determination of affect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related information.
2. *May affect, but is not likely to adversely affect* - the appropriate determination when a proposed action's anticipated effects to listed species or critical habitat are insignificant, discountable, or completely beneficial. Insignificant effects relate to the size of the impact and should never reach the scale where "take" of a listed species occurs. Discountable effects are those extremely unlikely to occur. Based on best judgment, a person would not be able to meaningfully measure, detect, or evaluate insignificant effects, or expect discountable effects to occur. This determination requires written concurrence from the Service. A biological evaluation or other supporting information justifying this determination should be submitted with a request for written concurrence.
3. *May affect, is likely to adversely affect* - the appropriate determination if any adverse effect to listed species or critical habitat may occur as a consequence of the proposed action, and the effect is not discountable or insignificant. This determination requires formal section 7 consultation.

The Service has performed up-front analysis for certain project types and species in your project area. These analyses have been compiled into *determination keys*, which allows an action agency, or its designated non-federal representative, to initiate a streamlined process for determining a proposed project's potential effects on federally listed species. The determination keys can be accessed through IPaC.

The Service recommends that candidate species, proposed species, and proposed critical habitat be addressed should consultation be necessary. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found at: https://www.fws.gov/service/section-7-consultations

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

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (https://www.fws.gov/library/collections/bald-and-golden-eagle-management). Additionally, wind energy projects should follow the wind energy guidelines (https://www.fws.gov/media/land-based-wind-energy-guidelines) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: https://www.fws.gov/media/recommended-best-practices-communication-tower-design-siting-construction-operation. The Federal Aviation Administration (FAA) released specifications for and made mandatory flashing L-810 lights on new towers 150-350 feet AGL, and the elimination of L-810 steady-burning side lights on towers above 350 feet AGL. While the FAA made these changes to reduce the number of migratory bird collisions (by as much as 70%), extinguishing steady-burning side lights also reduces maintenance costs to tower owners. For additional information concerning migratory birds and eagle conservation plans, please contact the Service's Migratory Bird Office at 505-248-7882.

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

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

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

This species list is provided by:

Arlington Ecological Services Field Office
501 West Felix Street
Suite 1105
Fort Worth, TX 76115-3410
(817) 277-1100

PROJECT SUMMARY

Project Code: 2023-0134510
Project Name: CTA Expansion
Project Type: Airport - New Construction
Project Description: Central Terminal Area Expansion, including new Terminal F at DFW International Airport
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@32.8956595,-97.03781473364748,14z

Counties: Dallas and Tarrant counties, Texas

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 2 of these species should be considered only under certain conditions.

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

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

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

MAMMALS

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

BIRDS

NAME	STATUS
Golden-cheeked Warbler *Setophaga chrysoparia*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/33	
Piping Plover *Charadrius melodus*	Threatened
Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/6039	
Rufa Red Knot *Calidris canutus rufa*	Threatened
There is **proposed** critical habitat for this species. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/1864	
Whooping Crane *Grus americana*	Endangered
Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/758	

REPTILES

NAME	STATUS
Alligator Snapping Turtle *Macrochelys temminckii*	Proposed Threatened
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4658	

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	

CRITICAL HABITATS

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

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

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

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

BALD & GOLDEN EAGLES

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

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

---

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

There are bald and/or golden eagles in your project area.

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

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31

PROBABILITY OF PRESENCE SUMMARY

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

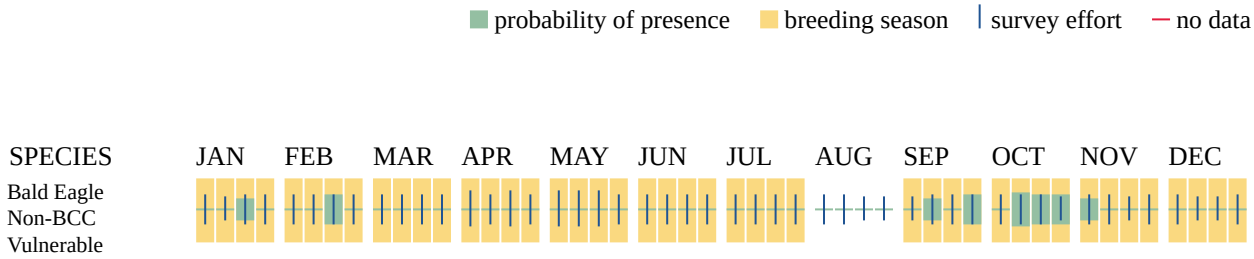
Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

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



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

MIGRATORY BIRDS

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

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

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

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

NAME	BREEDING SEASON
American Golden-plover *Pluvialis dominica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10561	Breeds elsewhere
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Little Blue Heron *Egretta caerulea* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9477	Breeds Mar 10 to Oct 15
Pectoral Sandpiper *Calidris melanotos* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9561	Breeds elsewhere
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9439	Breeds Apr 1 to Jul 31

NAME	BREEDING SEASON
Sprague's Pipit *Anthus spragueii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8964	Breeds elsewhere

PROBABILITY OF PRESENCE SUMMARY

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

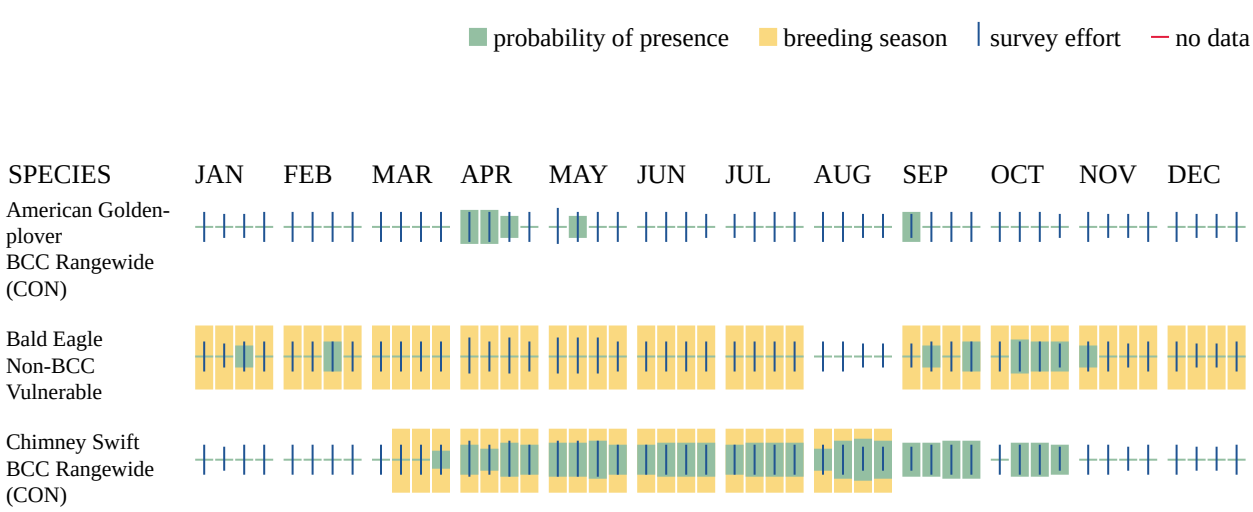
Probability of Presence (■)

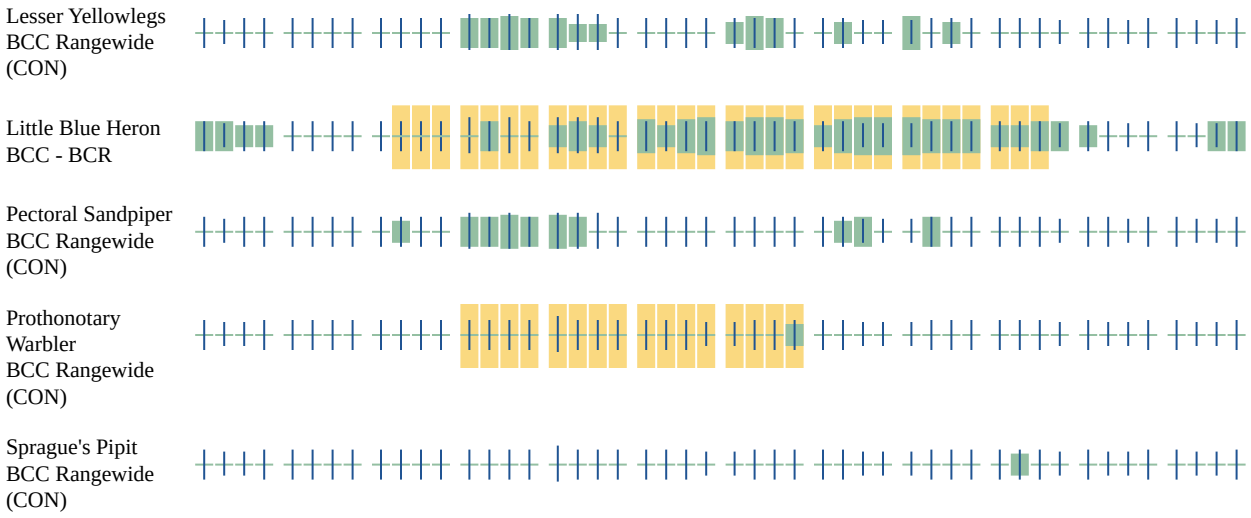
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

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





Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

WETLANDS

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

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

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

FRESHWATER POND

- PUBFh
- PUSCh

RIVERINE

- R4SBCx
- R4SBC

- R5UBH

FRESHWATER FORESTED/SHRUB WETLAND

- PSS1Ah

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Rae Lynn Schneider
Address: 301 W Eldorado Parkway Ste 101
City: McKinney
State: TX
Zip: 75069
Email rschneider@intenvsol.com
Phone: 9725627672

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Aviation Administration

Appendix D2 – Waters of the United States Delineation Report

integrated environmental solutions

30 September 2021

Ms. Sandy Lancaster
Dallas/Fort Worth International Airport
Environmental Affairs Department
3003 South Service Road, Annex Building A
DFW Airport, Texas 75261-9428

Re: CTA Development Project - Waters of the United States Delineation & Desktop Assessment
Approximately 69 acres across 13 different sites within the DFW International Airport CTA Terminals A and C Development Project located on the DFW International Airport complex, Dallas and Tarrant Counties, Texas

Dear Ms. Lancaster,

Integrated Environmental Solutions, LLC (IES) performed a site survey and desktop review to identify any aquatic features that meet a definition of a water of the United States on approximately 69 acres across 13 different sites within the DFW Airport CTA Terminals A and C Development Project located on the DFW International Airport complex, Dallas and Tarrant Counties, Texas. A desktop evaluation was conducted on Sites 1 through 7 as they were not able to be accessed due to airport regulations. A site survey was conducted on Sites 8 through 13 as they were able to be accessed via public roadways (**Attachment A, Figure 1**). This report will ultimately assess and delineate potentially jurisdictional aquatic features to ensure compliance with Sections 401 and 404 of the Clean Water Act (CWA).

INTRODUCTION

Waters of the United States are protected under guidelines outlined in Sections 401 and 404 of the CWA, in Executive Order (EO) 11990 (Protection of Wetlands), and by the review process of the Texas Commission on Environmental Quality (TCEQ). Agencies that regulate impacts to the nation's water resources within Texas include the U.S. Army Corps of Engineers (USACE), the U.S. Environmental Protection Agency (USEPA), the U.S. Fish and Wildlife Service (USFWS), and the TCEQ. The USACE has the primary regulatory authority for enforcing Section 404 requirements for waters of the United States.

The decision for whether a Section 404 of the CWA permit is required on a property is determined if there are waters of the United States present and the extent of losses of those features. The USACE and EPA have gone through rulemaking to define what is a water of the United States, independently and jointly, several times since the initial CWA. The longest standing definitions of waters of the United States were those published in 1986; however, these definitions were challenged in 2001 and 2007 U.S. Supreme Court decisions. Since then, both the Obama and Trump administration completed rulemaking to modify the definitions of waters of the United States in the Clean Water Rule in 2016 and the Navigable Water Protection Rule (NWPR) in 2020. A recent federal district court decision in Arizona struck down the NWPR but was silent on which definitions of waters of the United States would replace it. As of the date of this letter report, the USACE Fort Worth District has provided verbal guidance that the USACE will be utilizing the pre-2015 definitions (i.e., 1986 definitions combined with the *Rapanos* and *Carabell* U.S. Supreme Court decisions) to define waters of the United States. Please note, at this time there is no written guidance from USACE on this decision and whether the federal district court ruling actually applies nationwide. Furthermore, it is uncertain as to whether there will be any appeal to the federal appellate court. Therefore, this report will analyze all aquatic features within the project site to determine their applicability under both NWPR and the 1986 Rule.

Navigable Waters Protection Rule (Effective 22 June 2020)

The streamlined regulations have redefined waters of the United States as the following at 33 Code of Federal Regulations (CFR) 328.3 (a) as:

1. *The territorial seas, and waters which are currently used or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters which are subject to the ebb and flow of the tide;*
2. *Tributaries;*
3. *Lakes and ponds, and impoundments of jurisdictional waters; and*
4. *Adjacent wetlands*

The following features are excluded from jurisdiction at 33 CFR 328.3 (b) as:

1. *Lake/pond/impoundment or wetland that does not contribute surface water flow directly or indirectly to an (a)(1) water and is not inundated by flooding from an (a)(1)-(a)(3) water in a typical year, surface water channel that does not contribute surface water flow directly or indirectly to an (a)(1) water in a typical year, or Water or water feature that is not identified in (a)(1)-(a)(4) and does not meet the other (b)(1) sub-categories;*
2. *Groundwater, including groundwater drained through subsurface drainage systems;*
3. *Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool;*
4. *Diffuse stormwater run-off over upland or directional sheet flow over upland;*
5. *Ditch that is not an (a)(1) or (a)(2) water;*
6. *Prior converted cropland;*
7. *Artificially irrigated area, including fields flooded for agricultural production, that would revert to upland should application of irrigation water to that area cease;*
8. *Artificial lake/pond constructed or excavated in upland or a non-jurisdictional water, so long as the artificial lake or pond is not an impoundment of a jurisdictional water;*
9. *Water-filled depression constructed/excavated in upland/non-jurisdictional water incidental to mining/construction or pit excavated in upland/non-jurisdictional water to obtain fill/sand/gravel;*
10. *Stormwater control feature constructed or excavated in upland or in a non-jurisdictional water to convey, treat, infiltrate, or store stormwater runoff;*
11. *Groundwater recharge, water reuse, or a wastewater recycling structure constructed or excavated in upland or in a non-jurisdictional water; and*
12. *Waste treatment system.*

Further definitions located at 33 CFR 328.3 (c) include:

(1) *Adjacent wetlands*. The term adjacent wetland means wetlands that:

i. Abut, meaning to touch at least one point or side of, a water identified in paragraph (a)(1), (2), or (3) of this section;

ii. Are inundated by flooding from a water identified in paragraph (a)(1), (2), or (3) of this section in a typical year;

iii. 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 the section in atypical 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 direct hydrologic connection through or over that structure in a typical year.

(6) *Lakes and ponds, and impoundments of jurisdictional waters*. The term lakes and ponds, and impoundments of jurisdictional waters means standing bodies of open water that contribute surface water flow to a water identified in paragraph (a)(1) of this section in a typical year either directly or through one or more waters identified in paragraph (a)(2), (3), or (4) of this section. A lake, pond, or impoundment of a jurisdictional water does not lose its jurisdictional status if it contributes surface water flow to a downstream jurisdictional water in a typical year through a channelized nonjurisdictional surface water feature, through a culvert, dike, spillway, or similar artificial feature, or through a debris pile, boulder field, or similar natural feature. A lake or pond, or impoundment of a jurisdictional water is also jurisdictional if it is inundated by flooding from a water identified in paragraph (a)(1), (2), or (3) of this section in a typical year.

(12) *Tributary*. The term tributary means a river, stream, or similar naturally occurring surface water channel that contributes surface water flow to a water identified in paragraph (a)(1) of this section in a typical year either directly or through one or more waters identified in paragraph (a)(2), (3), or (4) of this section. A tributary must be perennial or intermittent in a typical year. The alteration or relocation of a tributary does not modify its jurisdictional status as long as it continues to satisfy the flow conditions of this definition. A tributary does not lose its jurisdictional status if it contributes surface water flow to a downstream jurisdictional water in a typical year through a channelized nonjurisdictional surface water feature, through a subterranean river, through a culvert, dam, tunnel, or similar artificial feature, or through a debris pile, boulder field, or similar natural feature. The term tributary includes a ditch that either relocates a tributary, is constructed in a tributary, or is constructed in an adjacent wetland as long as the ditch satisfies the flow conditions of this definition.

1986 Waters of the United States Definitions and Rapanos Decision

The definition of waters of the United States, in 33 CFR 328.3, includes waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, wetlands, sloughs, wet meadows, or natural ponds and all impoundments of waters otherwise defined as waters of the United States. Also included are wetlands adjacent to waters (other than waters that are themselves wetlands). The term *adjacent* is defined as bordering, contiguous, or neighboring. Jurisdictional wetlands are a category of waters of the United States and have been defined by the USACE as areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Waters of the United States are defined in 33 CFR 328.3 (a), 13 November 1986, as:

1. *All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;*
2. *All interstate waters including interstate wetlands;*
3. *All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters:*
    i. *Which are or could be used by interstate or foreign travelers for recreational or other purposes; or*
    ii. *From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or*
    iii. *Which are used or could be used for industrial purposes by industries in interstate commerce;*
4. *All impoundments of waters otherwise defined as waters of the United States under the definition;*
5. *Tributaries of waters identified in paragraphs (a)(1)-(4) of this section;*
6. *The territorial seas;*

7. *Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1)-(6) of this section.*

On 05 June 2007, the USACE and the USEPA issued joint guidance on delineation of waters on the United States based on the U.S. Supreme Court decisions in *Rapanos* and *Carabell*. Under this guidance, potential waters of the United States have been classified as traditional navigable waters (TNW), relatively permanent waters (RPW) (i.e., having flow most of the year or at least seasonally), or non-RPWs. This guidance states that TNWs and RPWs and contiguous or adjacent wetlands to these aquatic features are waters of the United States. Wetlands that are bordering, contiguous, or neighboring another water of the United States is considered adjacent. Additionally, wetlands that are within the 100-year floodplain of another water of the United States are also considered adjacent. Non-RPWs, wetlands contiguous or adjacent to non-RPWs, and isolated wetlands must undergo a "significant nexus" test on a case-by-case basis to determine the jurisdictional nature of these aquatic features. Under the "significant nexus" test a water feature must have substantial connection to a TNW by direct flow, or by indirect biological, hydrologic, or chemical connection. Under the "significant nexus" test the USACE District Engineer must submit the jurisdictional determination (JD) to the regional USEPA office, which makes the decision whether to move the JD to Headquarters USACE to make the final determination.

This guidance does not void the January 2001 decision of the U.S. Supreme Court in Solid Waste Agency of Northern Cook County (SWANCC) v. USACE which disallowed regulation of isolated wetlands under the CWA through the "Migratory Bird Rule." Previously, the USACE assumed jurisdiction over isolated waters of the United States based on its 1986 preamble stating that migratory birds used these habitats. The "Migratory Bird Rule" provided the nexus to interstate commerce and thus protection under the CWA. However, the new guidance does require that the "significant nexus" test be performed in addition to an analysis of other potential interstate commerce uses for isolated waters.

METHODOLOGY

Prior to conducting the desktop evaluation and fieldwork, the U.S. Geological Survey (USGS) topographic map (**Attachment A, Figures 2A** and **2B**), the *Soil Survey of Dallas County* and *the Soil Survey of Tarrant County, Texas*, and the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) digital soil databases for Dallas and Tarrant Counties (**Attachment A, Figure 3**), the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) (**Attachment A, Figure 4**), and recent and historic aerial photographs of the proposed survey area were studied to identify possible aquatic features that could meet the definition of waters of the United States and areas prone to wetland development. Ms. Karisa Fenton and Ms. Claire Unruh of IES conducted the delineation in the field in accordance with the USACE procedures on 22 September 2021.

Wetland determinations and delineations were performed on location using the methodology outlined in the 1987 Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineer Wetland Delineation Manual: Great Plains Region (Version 2.0). The presence of a wetland is determined by the positive indication of three criteria (i.e., hydrophytic vegetation, hydrology, and hydric soils). Potential jurisdictional boundaries for other water features (i.e., non-wetland) were delineated in the field at the ordinary high-water mark (OHWM). The 33 CFR 328.3 (c)(7) defines OHWM as the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Water feature boundaries were recorded on a Trimble GeoExplorer XT Global Positioning System (GPS) unit capable of sub-meter accuracy. Photographs were also taken at representative points within the survey area (**Attachment B**). Routine wetland determination data forms are provided in **Attachment C**. Historic aerial photographs, from Environmental Data Resources, Inc. (EDR), were used in the jurisdictional determination of some aquatic features, are included in **Attachment D.**

RESULTS

Background Review

Topographic Setting

The USGS topographic maps (Grapevine 7.5' Quadrangle 1959, revised 1982; Euless 7.5' Quadrangle 1959; revised 1992) illustrate one blue line feature within the survey area. The blue line feature is depicted meandering through the southern region of Site 8 and continuing into the northwestern region of Site 9, oriented southwest-to-northeast (*see* **Attachment A, Figure 2A**). The 2019 version of the Grapevine and Euless 7.5' Quadrangle maps illustrates the blue line feature in similar alignment (*see* **Attachment A, Figure 2B**). The overall topography was illustrated with slopes oriented west-to-east in Sites 1 through 11 and north-to-south in Sites 12 and 13. The maximum elevation of the property was approximately 580 feet above mean sea level (amsl) and a minimum elevation of approximately 520 feet amsl.

Soils

The *Soil Survey of Dallas County, Texas* identified four soil map units within the survey area, Ferris-Heiden complex, 5 to 12 percent slopes; Heiden clay, 1 to 3 percent slopes; Heiden clay, 2 to 5 percent slopes, eroded; and Houston Black-Urban land complex, 0 to 4 percent slopes. The *Soil Survey of Tarrant County, Texas* identified four soil map units within the survey area, Heiden clay, 1 to 3 percent slopes; Houston Black clay, 1 to 3 percent slopes; Houston Black-Urban land complex, 1 to 4 percent slopes; and Urban land. None of these soil map units were listed as a hydric soil on the Hydric Soils of Texas list prepared by the National Technical Committee for Hydric Soils (accessed 29 September 2021, Dallas and Tarrant Counties, Texas) (*see* **Attachment A, Figure 3**). Hydric soils are described as those soils that are sufficiently wet in the upper part to develop anaerobic conditions during the growing season.

FEMA FIRM

The FEMA FIRM (Dallas and Tarrant Counties; Map Panel 4439C0120K; effective 25 September 2009; 48113C0145K; effective 07 July 2014 and Map Panels 48439C0235L, and 48113C0285L; effective 03 March 2019) shows the entire survey area to be within Zone X (Areas determined to be outside the 0.2 percent annual chance floodplain) (*see* **Attachment A, Figure 4**).

Historic Aerial Photographs

Historic aerial photographs from an aerial photograph decade package from EDR were also reviewed to understand the sequence of events that have occurred in Site 10 of the survey area (*see* **Attachment D**). Site 10 was evaluated due to the presence of a pond and wetland. The following paragraphs provide a description of the aerial photographs based on site conditions:

1942-1968 – Site 10 is characterized as an active agricultural property comprised of pastureland. A drainage is depicted outside of the western boundary. The surrounding area is comprised of pastureland, drainages, and scattered homesteads.

1972 – Dirt roads are visible across Site 10. The drainage to the west has been channelized and an impoundment has been excavated to the north.

1979 – The roads are no longer visible and the impoundment to the north has been filled. A commercial complex has been constructed south of Site 10.

1984 – Site 10 has been entirely cleared.

1990 – Dark color signatures are visible in the channel to the west, indicating potential inundation.

1995 – Airport runways and buildings have been constructed surrounding Site 10 and a road has been cleared along the northern boundary. The drainage to the north that was previously impounded has been channelized and routed through a concrete channel.

2005-2012 – The eastern region of Site 10 has been cleared. Canopy cover has increased along the drainage to the west, and the area to the south.

2016 – A lot has been partially cleared in the southern region.

Weather History

The weather history for Wunderground.com Edwards weather station (KTXEULES47) recorded no rainfall in the 7-day period prior to and during the evaluation, and a total of 0.20 inch during the 30-day period prior to the site visit. The Antecedent Precipitation Tool (APT) indicated that the conditions on-site at the time of the evaluation were considered hydrologically "normal" based on the 30-year climactic average (32.885619 °N, -97.040544 °W).

Field Investigation

The 13 sites within the survey area consisted of four distinct vegetation communities: **urban matrix**, **frequently maintained grassland**, **infrequently maintained grassland**, and **shrub-scrub upland**. The **urban matrix** was found throughout a majority of Sites 1 through 6, 8 through 10, and the eastern side of Site 12. The urban matrix was comprised of concrete lots, roads, buildings, and active construction areas. The entirety of Sites 7 and 11, and the western portions of Sites 5 and 8 contained the **frequently maintained grassland** vegetation community, dominated by mowed Bermudagrass (*Cynodon dactylon*). The **infrequently maintained grassland** was observed in the central region of Site 12 and was comprised of Maximilian sunflower (*Helianthus maximiliani*), meadow dropseed (*Sporobolus compositus*), Johnsongrass (*Sorghum halepense*), white heath aster (Symphyotrichum ericoides), King Ranch bluestem (*Bothriochloa ischaemum*), sumpweed (*Iva annua*), Canada goldenrod (*Solidago canadensis*), prairie broomweed (*Amphiachyris dracunculoides*), Bermudagrass, and annual sunflower (*Helianthus annuus*). The **shrub-scrub** upland vegetation community was observed on the western side of Site 12 and throughout Site 13, dominated by honey mesquite (*Prosopis glandulosa*), sugarberry (*Celtis laevigata*), giant ragweed (*Ambrosia trifida*), Johnsongrass, Bermudagrass, and annual sunflower.

Water from Sites 1 through 10 flows east into Hackberry Creek, then into the Elm Fork Trinity River, and ultimately into the Trinity River, a TNW. Water from Sites 11 through 13 flows south into Big Bear Creek, then into the West Fork Trinity River, and ultimately into the Trinity River, a TNW.

Desktop Evaluation

Aquatic features within Sites 1 through 7 were identified and delineated using both the National Hydrography Dataset (NHD) and historic and recent aerial photography. Sites 8 through 13 were field verified after a review of the available secondary data. **Table 1** and the following paragraphs detail the aquatic features identified within the survey sites at the time of evaluation (**Attachment A, Figure 5** and **6**).

Table 1. Aquatic Features Identified within the Survey Area

Water Identification	Hydrology Characteristics	Area (Acre)	Length (Linear Feet)
Wetland 1	Seasonally Saturated	0.01	---
Ditch 1	Ephemeral	0.03	267
Pond 1	Seasonally Inundated	0.03	---

**Actual acreage less than 0.01 acre*

Wetland 1 was an emergent wetland observed along the western boundary of Site 10, adjacent to Pond 1. The wetland appeared to form when the construction site to the east was cleared, and construction activities resulted in the formation of a berm outside of the construction fenceline allowing water to pool in the space between the fence and berm after rainfall. Hydrologic vegetation was dominated by saltmarsh aster (*Symphyotrichum subulatum*), and sumpweed (*Iva annua*). Hydric soils were indicated by a Depleted Matrix with a matrix color of 10YR 4/2 with redoximorphic concentrations of 5YR 4/6 in the pore linings and matrix. Hydrologic indicators consisted of drainage patterns, surface soil cracks, and a positive FAC-Neutral test.

Ditch 1 was a shallow, concrete-lined, stormwater drainage ditch within Site 5. Based on historic and recent aerial photography, Ditch 1 appears to have been constructed prior to 1995 to convey excess stormwater from the surrounding roads, lots, and fields. The USGS topographic map does not illustrate a blue line feature in the location of Ditch 1 and the shallow nature of the concrete channel suggests that the man-made feature replaced a swale.

Ditch 1 appeared dry in all aerial photographs. As such, it is IES' professional opinion that Ditch 1 would be considered an ephemeral feature.

Pond 1 was a small, artificial pond located along the western boundary of Site 10 with no OHWMs entering or exiting the pond. A review of aerial photography indicates Pond 1 was excavated in 2020, along the edge of a construction site with a small berm constructed across the gradient to capture sheet flow. Pond 1 was inundated at the time of the evaluation. Given the relatively small size of the pond and its location high in the watershed, it is IES' professional opinion that Pond 1 be considered seasonally inundated.

POTENTIAL JURISDICTIONAL ASSESSMENT

Due to the uncertainty associated with the definitions of waters of the United States and thereby the jurisdiction of features, IES is providing an analysis of jurisdiction based on the current NWPR and the former definitions using the *Rapanos* and *Carabell* decisions.

Navigable Waters Protection Rule (Effective 22 June 2020)

Table 2 provides an overview of the jurisdictional assessment of the aquatic features located within the survey area under the NWPR. Under this rule, none of the aquatic features located within the survey area would be considered a water of the United States (*see* **Attachment A, Figure 5**). **Wetland 1** was adjacent to an isolated pond and **Ditch 1** was a man-made ephemeral ditch; therefore, these features do not meet the definition of an adjacent wetland, or a replacement of a jurisdictional water and would not be subject to regulation. **Pond 1** does not contribute water flow through a surface connection to any intermittent or perennial water; therefore, it would not meet a definition of a jurisdictional pond or impoundment under the NWPR.

Table 2. Jurisdictional Assessment of Aquatic Features under the NWPR

Water Identification	Hydrology Characteristics	NWPR Classification
Wetland (b)(1)		
Wetland 1	Seasonally Saturated	Wetland
Ditch (b)(5)		
Ditch 1	Ephemeral	Ditch
Artificial Pond (b)(8)		
Pond 1	Seasonally Inundated	Artificial Pond

[1](a)(1-4) definitions are regulated under Section 404 of the CWA, while (b)(1-12) are excluded from regulation

1986 Waters of the United States Definitions and Rapanos Decision

The 05 June 2007 USACE and USEPA jointly published instructional guidebook is intended to provide the USACE field staff a national standard operating procedure for conducting jurisdictional determinations. The guidebook was prepared by combining all prior applicable provisions, regulations, statutes, and case laws pertaining to the CWA. All terms, definitions, and conclusions regarding the jurisdictional nature of the aquatic features used within this report are derived directly, as they are practiced, from the guidance. The following outlines the applicable interpretations of the guidance appropriate for this situation. **Table 3** provides an overview of the jurisdictional assessment of the aquatic features under the 1986 Waters of the United States definitions and the *Rapanos* decision (**Attachment A, Figure 6**).

Table 3. Jurisdictional Assessment of Aquatic Features Under the 1986 Definitions

Water Identification	Post-*Rapanos* Water Classification	33 CFR 328.3 Definition
Non-Jurisdictional Features		
Wetland 1	Seasonally Saturated	---
Ditch 1	Ephemeral	---
Pond 1	Artificial Pond	---

Non-Jurisdictional Features

Wetland 1

Wetland 1 was identified along a short swale, upstream of a pond that ran along a construction fence. Wetland 1 was neither adjacent to or abutting any non-RPWs or RPWs and lacked a significant nexus to a TNW. As such, Wetland 1 does not meet a definition of a water of the United States and would not be regulated under Section 404 of the CWA.

Ditch 1

Based on the historic aerial photography, Ditch 1 was excavated in an upland area prior to 1995 to convey surface hydrology off the surrounding roads, concrete lots, and fields. The entire ditch was dry in all aerial photographs. The USGS topographic map does not illustrate a blue line feature in the location of Ditch 1 and the shallow, concrete-lined channel suggests that the stormwater ditch replaced a swale. Current site conditions indicate that the ditch is ephemeral and does not carry relatively permanent flow. Under the 2007 guidance:

Drainage ditches would not be subject to jurisdiction under Section 404 of the CWA by definition, as such features;

- are not tributaries of waters, impoundment of waters, or are waters as defined in paragraphs (a)(1) through (7) of the CWA 33 CFR 328.3;
- are not TNW's or wetlands adjacent to a TNW, nor are they non-navigable tributaries of a TNW with relatively permanent flow or wetlands that abut such tributaries; and
- in accordance with the Rapanos guidance, ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water, are generally not considered to be waters of the United States.

Generally, under the guidance, features that do not have the physical characteristics of a tributary or a wetland and only convey sporadic flow with a speculative connection to a TNW are not considered waters of the United States.

Pond 1

Based on evidence provided by recent aerial photographs, Pond 1 was an artificial pond constructed in 2020. Pond 1 was constructed along a fence line on the edge of a construction site by excavating and placing earthen fill across the natural gradient of the landscape in such a manner to collect and redirect upslope sheet flow. Under the 2007 guidance:

Pond 1 would not be subject to jurisdiction under Section 404 of the CWA, by definition, as it;

- is not a natural pond, impoundment of waters, or a water as defined in paragraphs (a)(1)-(7) of the CWA 33 CFR 328.3;
- is not a TNW or wetland adjacent to a TNW, nor is it a non-navigable tributary of a TNW with relatively permanent flow or wetlands that abut such tributaries; and
- as clarified under 33 CFR 323.2 (b), The term *lake* … As used in this regulation, the term does not include artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water for such purposes as stock watering, irrigation, settling basins, cooling, and rice growing.

CONCLUSIONS

To summarize the delineation, a wetland, a ditch, and a pond were identified and delineated within the survey area. A summary of these features' characteristics is presented in **Table 1** and a summary of the jurisdictional assessment is presented in **Table 2** under the NWPR and in **Table 3** for the 1986 waters of the United States definitions and the *Rapanos* decision.

Under the ***NWPR,*** and the ***1986 waters of the United States definitions*** and the *Rapanos* decision, none of the identified aquatic features would be waters of the United States.

This delineation is based on professional experience in the approved methodology, photograph interpretation and assessing the desktop resources, and from experience with the USACE Fort Worth District regulators; however, this delineation does not constitute a jurisdictional determination of waters of the United States. This delineation has been based on the professional experience of IES staff and our interpretation of USACE regulations at 33 CFR 328.3, the joint USACE/USEPA guidance regarding the *Rapanos* and *Carabell* decisions, IES' interpretation of the NWPR, current judicial reviews, and the Regulatory Guidance Letter (RGL) 08-02. While, IES believes our delineation to be accurate, final authority to interpret the regulations lies solely with the USACE and USEPA. The USACE Headquarters in association with the USEPA often issue guidance that changes the interpretation of published regulations. USACE/USEPA guidance issued after the date of this report has the potential to invalidate the report conclusions and/or recommendations, which may create the need to reevaluate the report conclusions. IES has no regulatory authority, as such, proceeding based solely upon this report does not protect the Client from potential sanction or fines from the USACE/USEPA. The Client acknowledges that they have the opportunity to submit this report to the USACE for a preliminary jurisdictional determination for concurrence prior to proceeding with any work within aquatic features located on the survey area. If the Client elects not to do so, then the Client proceeds at their sole risk.

IES appreciates the opportunity to work with you and the Dallas Fort Worth International Airport Environmental Affairs Department on this project, and we hope we may be of assistance to you in the future. If you have any comments, questions, or concerns, please do not hesitate to contact us. We can be reached at 972-562-7672 or by email at mailto:skipp@intenvsol.com or rreinecke@intenvsol.com.

Sincerely,

Integrated Environmental Solutions, LLC.

Mr. Shae Kipp
Ecologist

Attachments

File ref: 03.006.094

ATTACHMENT A
Figures

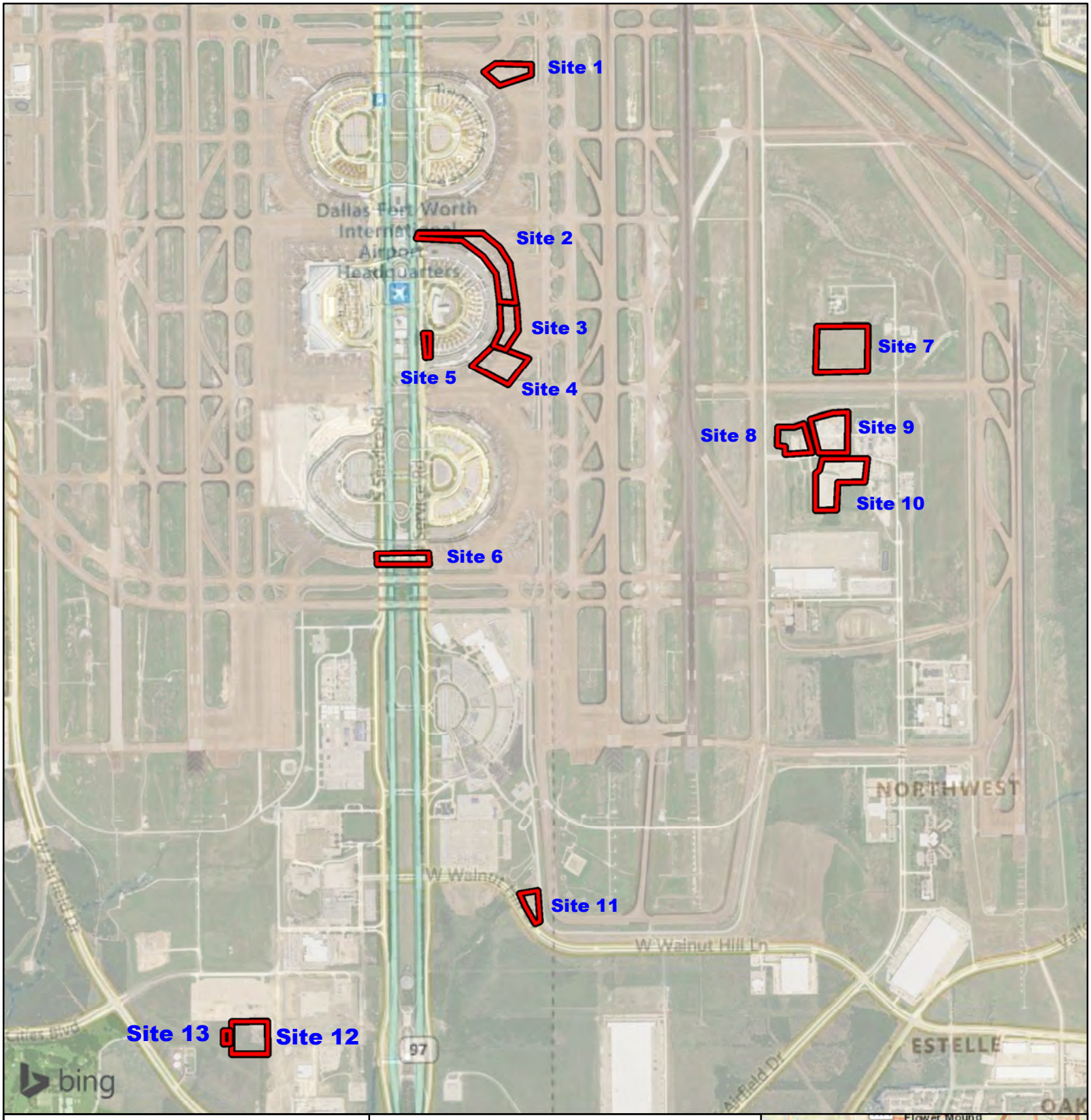


Figure 1.
General Location Map

CTA Development
Cities of Irving, Euless, Grapevine, and Coppell
Dallas and Tarrant Counties, Texas

1 in = 2,000 feet

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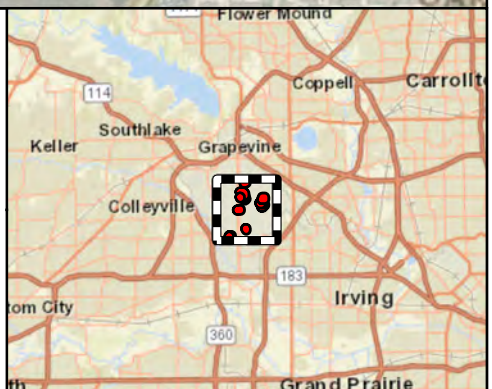
File Ref. 03.006.094
Date: 9/28/2021

Survey Area



Area of Detail

Scale: 1 inch equals 10 miles

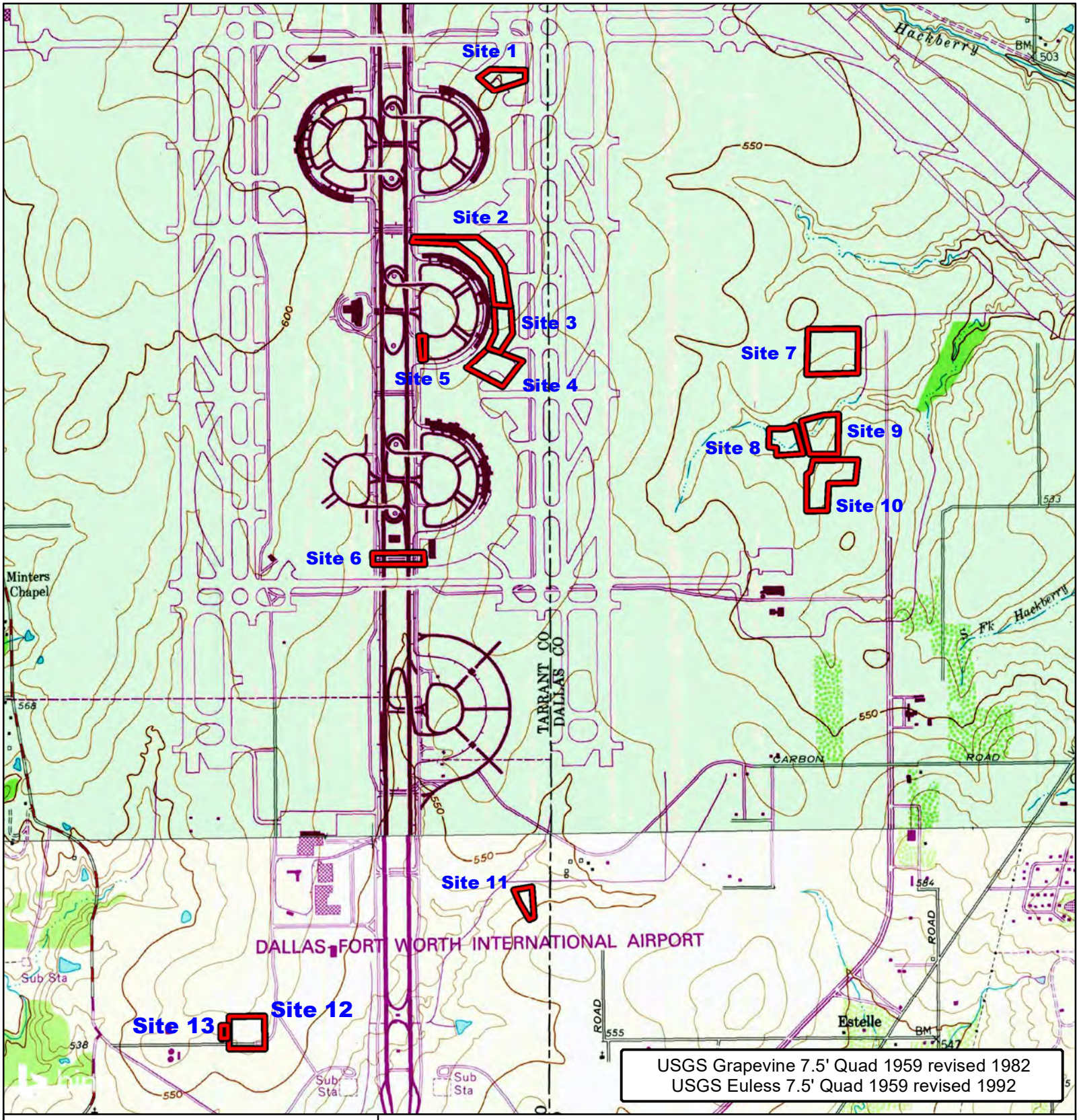


Figure 2A.
Topographic Setting

CTA Development
Cities of Irving, Euless, Grapevine, and Coppell
Dallas and Tarrant Counties, Texas

1 in = 2,000 feet

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File Ref. 03.006.094
Date: 9/28/2021

Survey Area

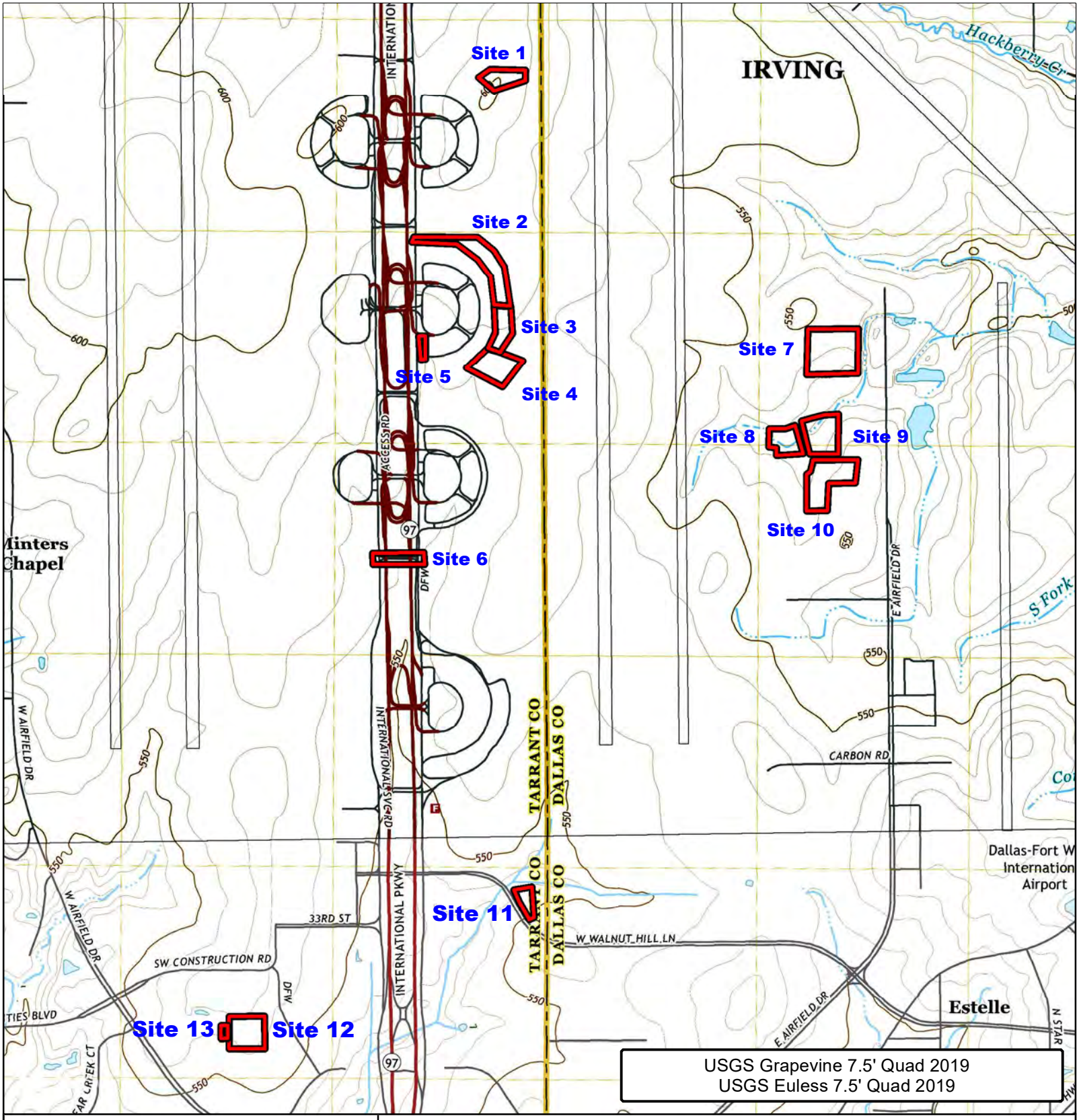

Figure 2B.
Topographic Setting

CTA Development
Cities of Irving, Euless, Grapevine, and Coppell
Dallas and Tarrant Counties, Texas

1 in = 2,000 feet

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File Ref. 03.006.094
Date: 9/28/2021

Survey Area

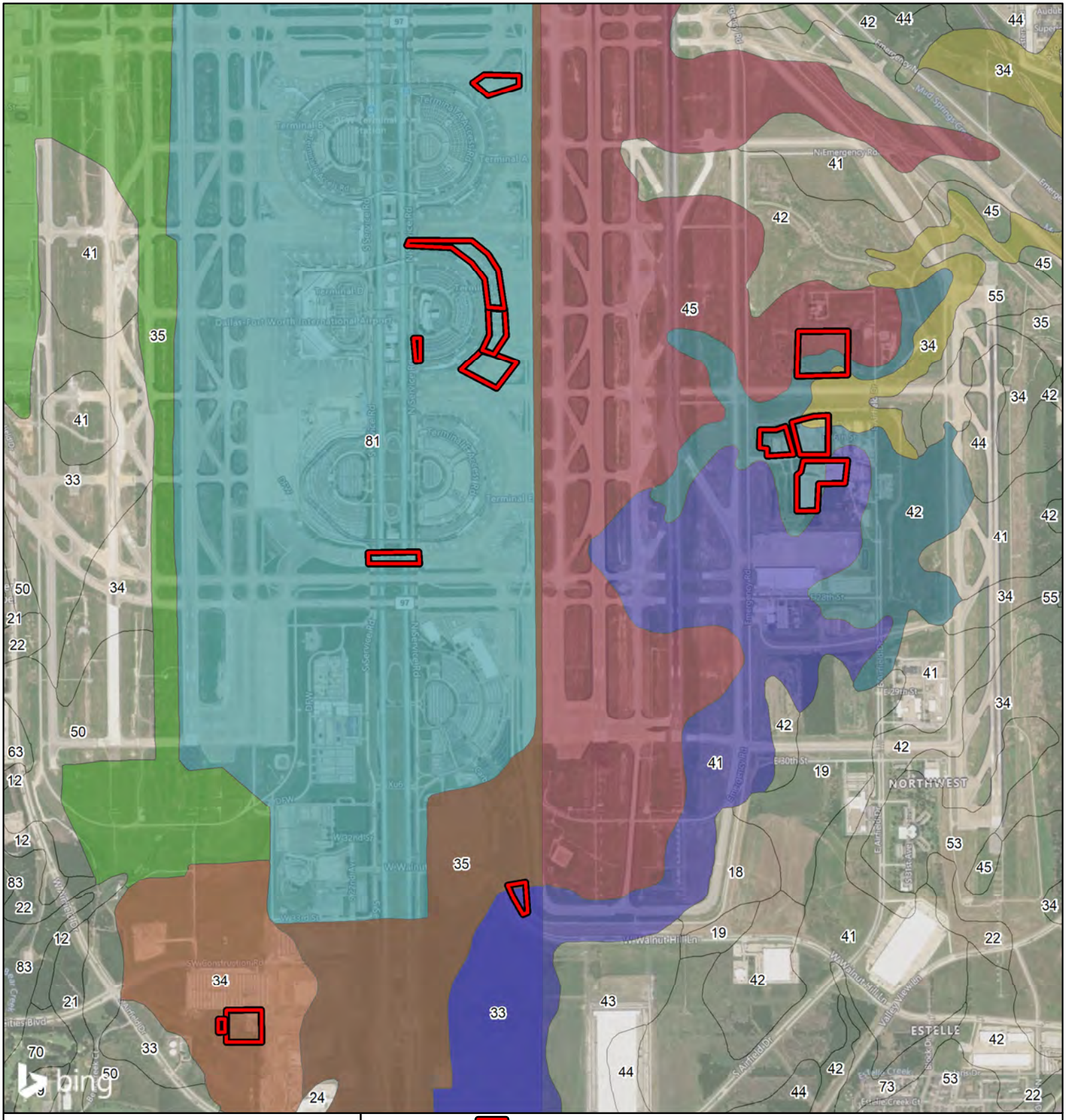

Figure 3.
Soils Map

CTA Development
Cities of Irving, Euless, Grapevine, and Coppell
Dallas and Tarrant Counties, Texas

1 in = 2,000 feet

Feet
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File Ref. 03.006.094
Date: 9/29/2021

Survey Area
Soil map units outside survey area

Soil Map Units - Dallas County

- 34- Ferris-Heiden complex, 5 to 12 percent slopes
- 41- Heiden clay, 1 to 3 percent slopes
- 42- Heiden clay, 2 to 5 percent slopes, eroded
- 45- Houston Black-Urban land complex, 0 to 4 percent slopes

Soil Map Units - Tarrant County

- 33 - Heiden clay, 1 to 3 percent slopes
- 34 - Houston Black clay, 1 to 3 percent slopes
- 35 - Houston Black-Urban land complex, 1 to 4 percent slopes
- 81 - Urban land

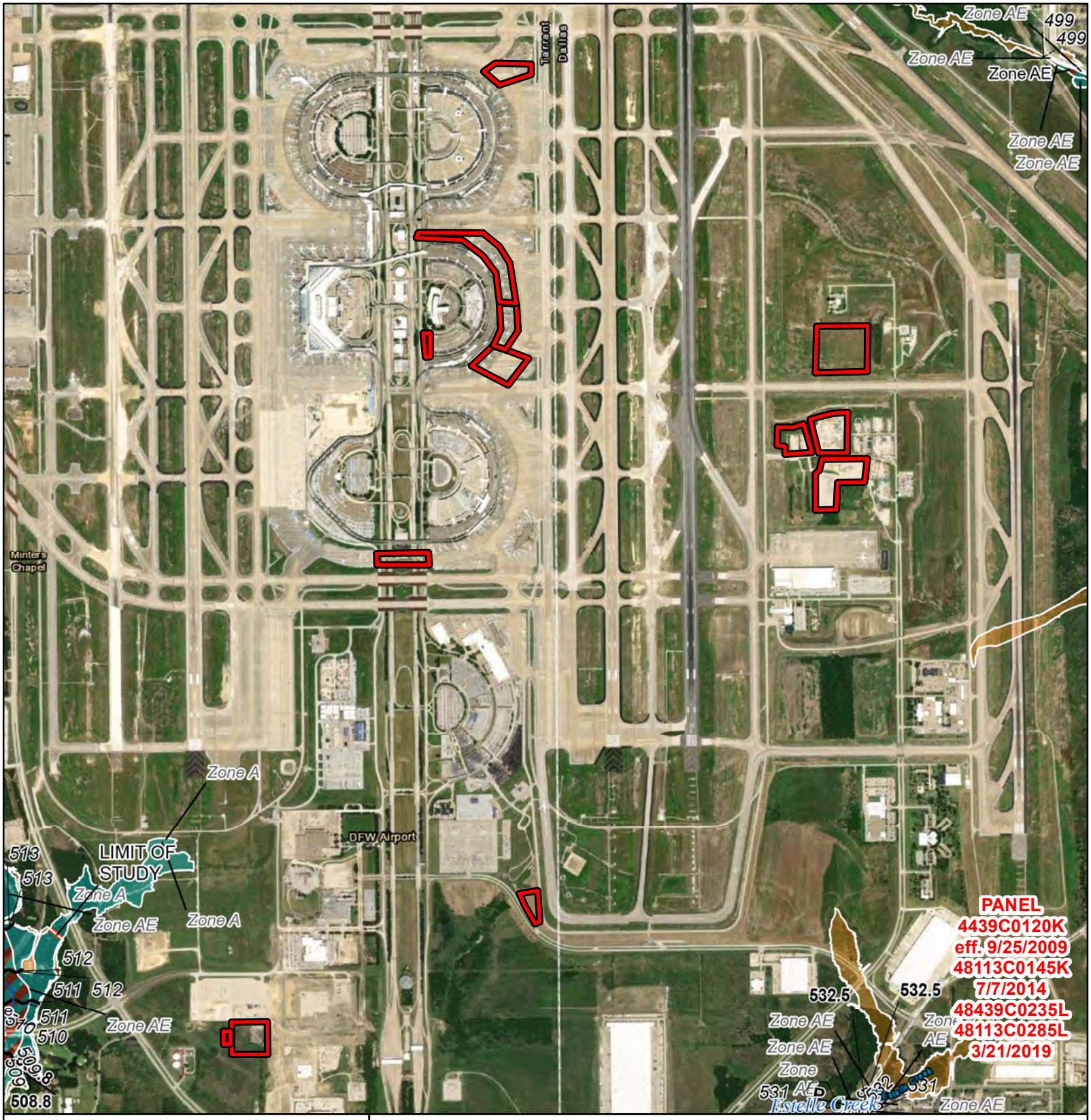

Figure 4.
Federal Emergency Management Agency Flood Insurance Rate Map

CTA Development
Cities of Irving, Euless, Grapevine, and Coppell
Dallas and Tarrant Counties, Texas

1 in = 2,000 feet

Feet
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File Ref. 03.006.094
Date: 9/29/2021

Survey Area

FEMA FIRM Zone Descriptions

- Zone X - Areas determined to be outside the 0.2% annual chance floodplain
- Zone X - Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood
- Zone A - Special Flood Hazard Areas subject to inundation by the 1% annual chance flood; No base flood elevations determined
- Zone AE - Special Flood Hazard Areas subject to inundation by the 1% annual chance flood; Base flood elevations determined
- Zone AE - Floodway areas in Zone AE

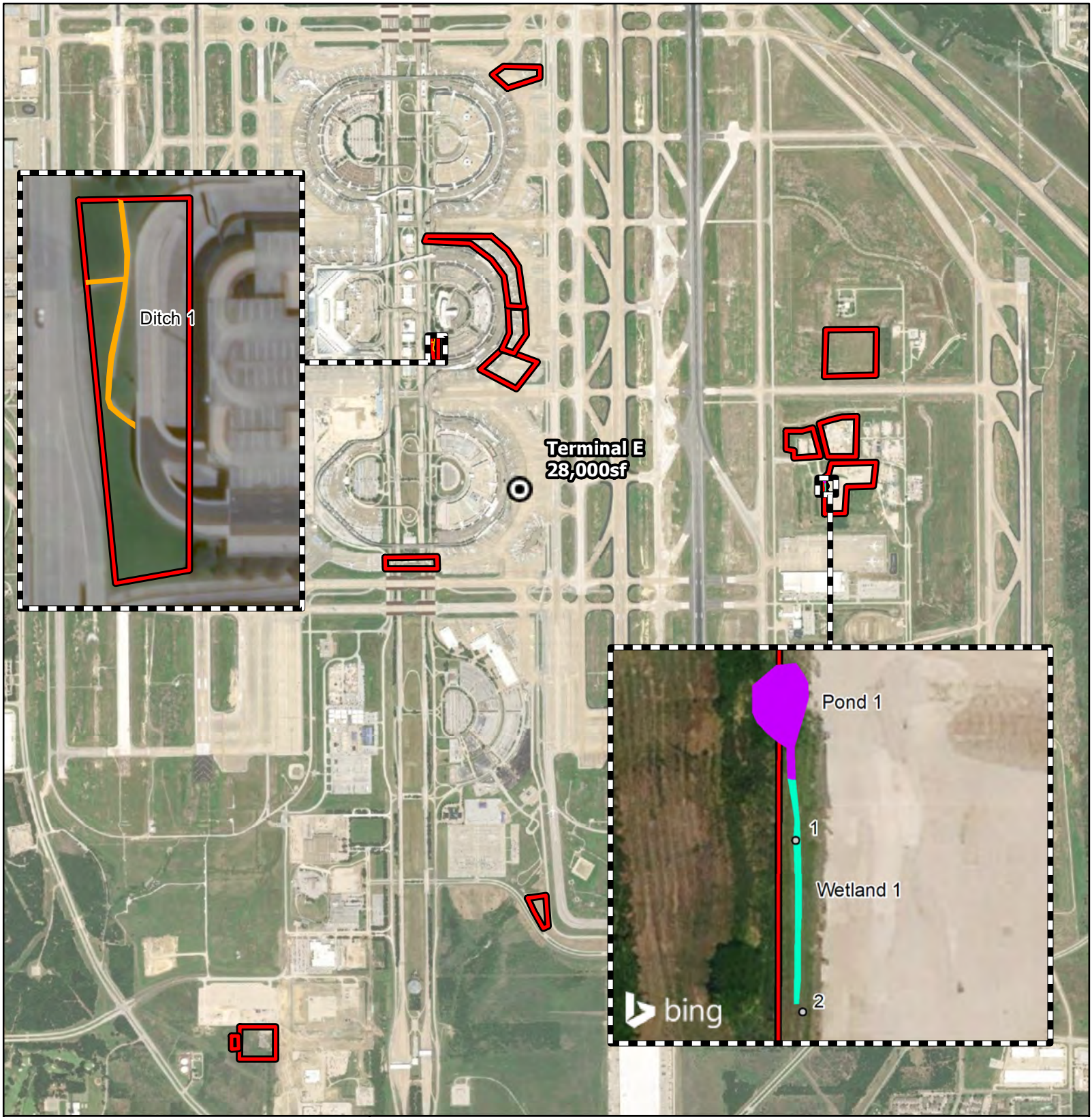

Figure 5.
NWPR Aquatic Features Identified within the Survey Area

CTA Development
Cities of Irving, Euless, Grapevine, and Coppell
Dallas and Tarrant Counties, Texas

1 in = 2,000 feet

Feet
0 2,000

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File Ref. 03.006.094
Date: 9/29/2021

Survey Area
Wetland Determination Data Form

Aquatic Features Excluded From Jurisdiction

Wetland (b)(1)
Ditch (b)(5)
Artificial Pond (b)(8)

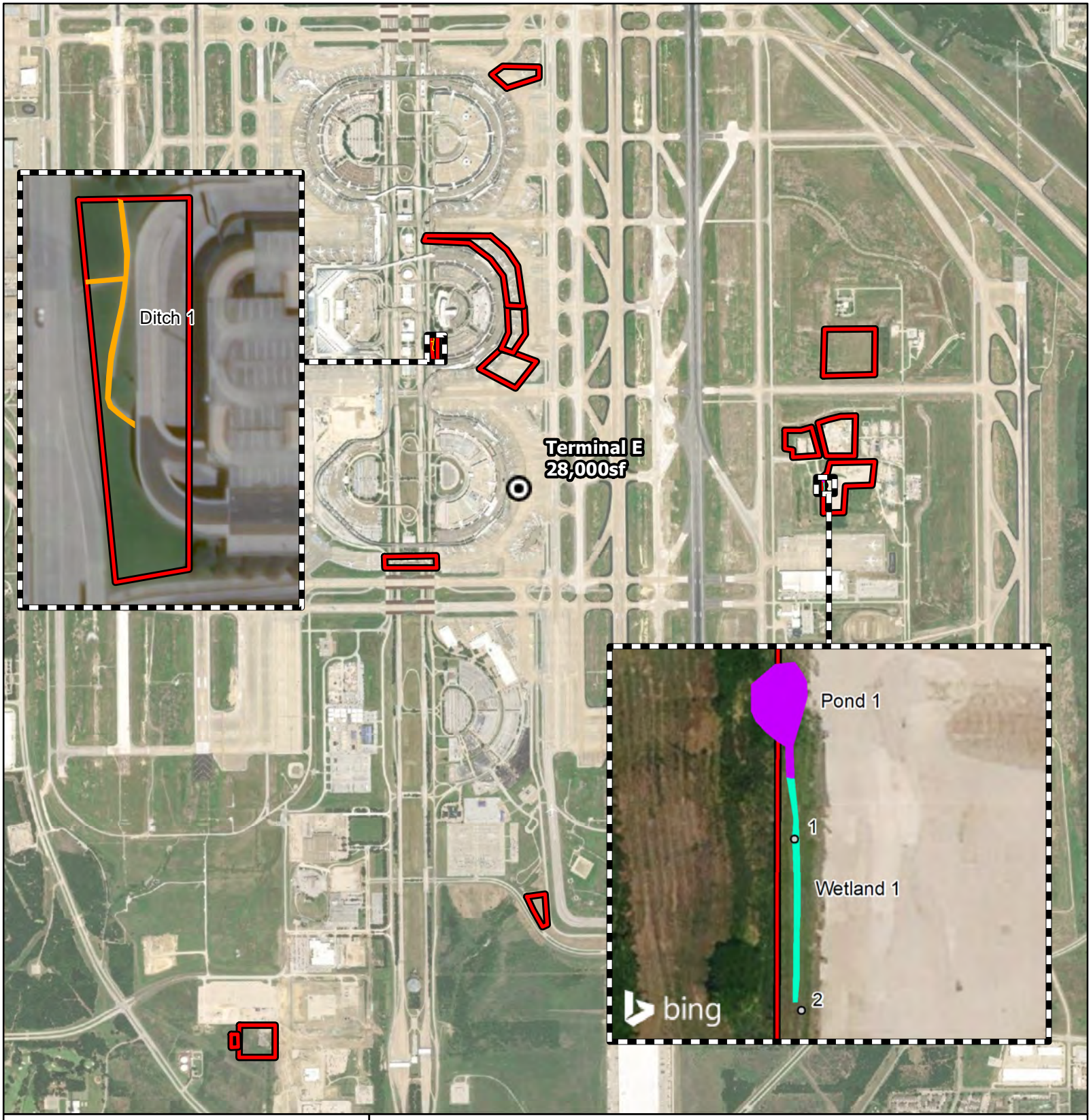

Figure 6.
Pre-2015 Aquatic Features Identified within the Survey Area

CTA Development
Cities of Irving, Euless, Grapevine, and Coppell
Dallas and Tarrant Counties, Texas

1 in = 2,000 feet

Feet
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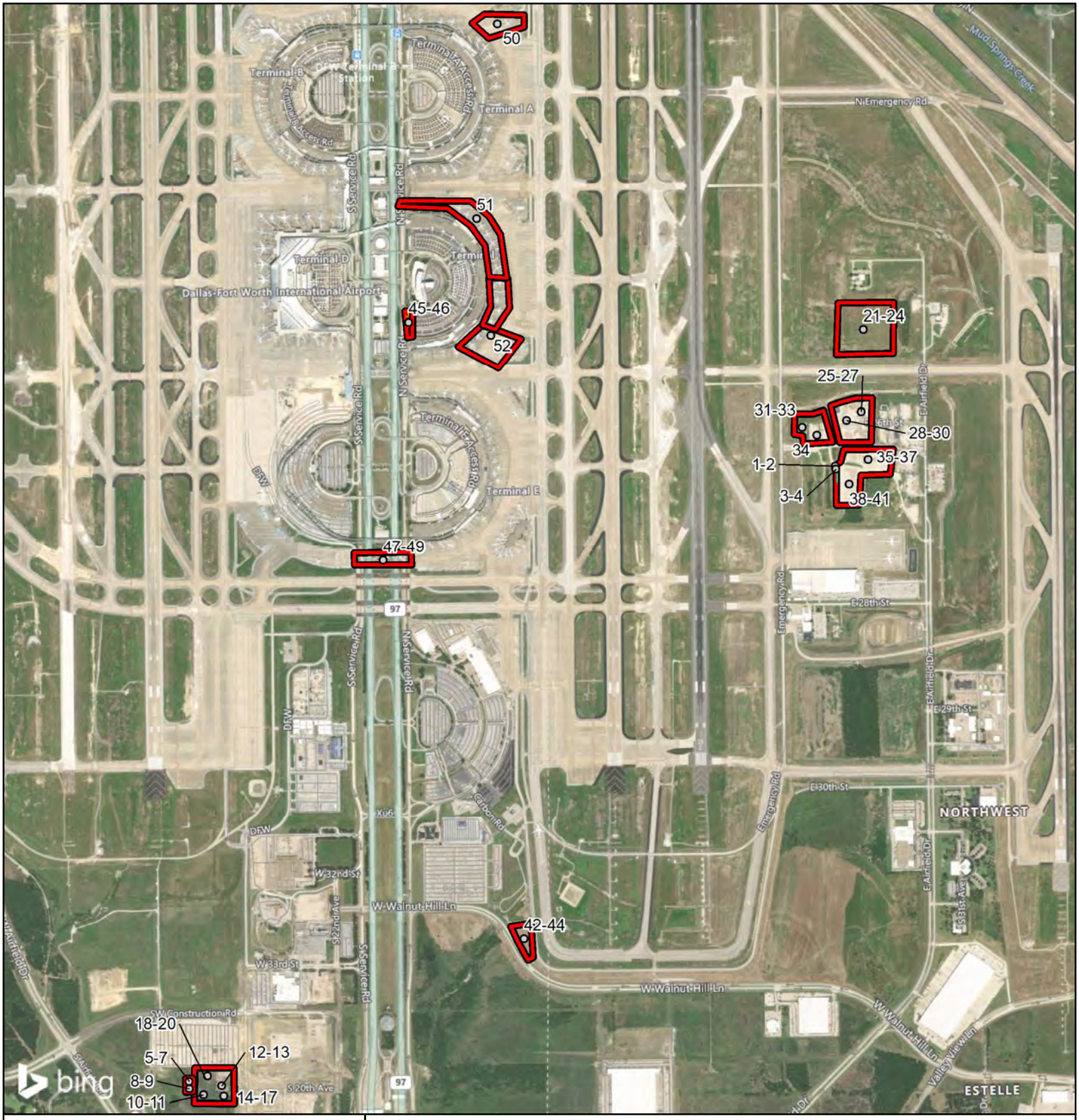
File Ref. 03.006.094
Date: 9/29/2021

Survey Area
Wetland Determination Data Form

Aquatic Features Excluded From Jurisdiction

Wetland, Isolated
Ditch, Ephemeral
Artificial Pond

ATTACHMENT B
Site Photographs



Photograph Location Map

CTA Development
DFW International Airport
Dallas and Tarrant Counties, Texas

1 in = 1,800 feet

Feet
0
1,800

File Ref. 03.006.094
Date: 9/29/2021

N
W E
S

Survey Area
Photograph Location

Aquatic Features Excluded From Jurisdiction

Wetland, Isolated
Ditch, Ephemeral
Artificial Pond

Photograph 1

Photograph 2

Photograph 3

Photograph 4

Photograph 5

Photograph 6

Photograph 7

Photograph 8

Photograph 9

Photograph 10

Photograph 11

Photograph 12

Photograph 13

Photograph 14

Photograph 15

Photograph 16

Photograph 17

Photograph 18

Photograph 19

Photograph 20

Photograph 21

Photograph 22

Photograph 23

Photograph 24

Photograph 25

Photograph 26

Photograph 27

Photograph 28

Photograph 29

Photograph 30

Photograph 31

Photograph 32

Photograph 33

Photograph 34

Photograph 35

Photograph 36

Photograph 37

Photograph 38

Photograph 39

Photograph 40

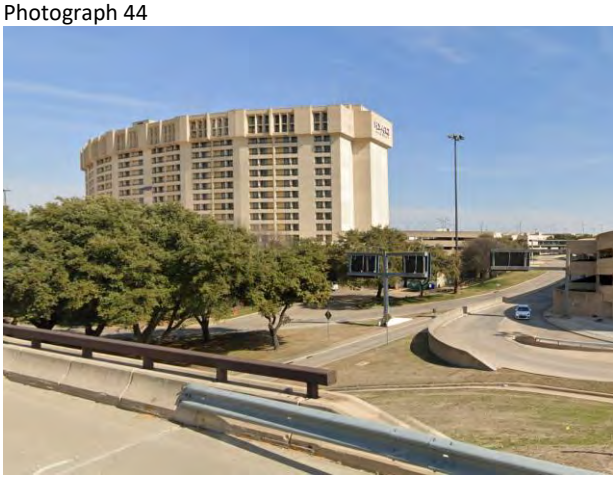
Photograph 41

Photograph 42

Photograph 43

Photograph 44

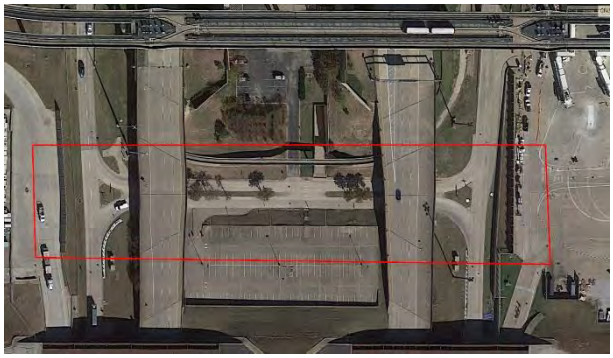
Photograph 45*



Photograph 46*

Photograph 47*

Photograph 48*



Photograph 49*

Photograph 50*

Photograph 51*

Photograph 52*

*Aerial Images and Street View Images from Google Earth

ATTACHMENT C
Routine Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: CTA Development Project | City/County: DFW Airport/Tarrant | Sampling Date: 9/22/2021

Applicant/Owner: Dallas/Fort Worth International Airport, Environmental Affairs Department | State: TX | Sampling Point: 1

Investigator(s): Karisa Fenton; Claire Unruh | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Swale | Local relief (concave, convex, none): Concave | Slope %: 0-1

Subregion (LRR): J | Lat: 32.889606 N | Long: -97.019763 W | Datum: NAD 1983

Soil Map Unit Name: Heiden clay, 2 to 5 percent slopes, eroded | NWI Classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are vegetation, ☐ Soil, ☐ Or hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are vegetation, ☐ Soil, ☐ Or hydrology ☐ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒	No ☐	Is the Sampled Area within a wetland?	**Yes** ☒ **No** ☐
Hydric Soil Present?	Yes ☒	No ☐		
Wetland Hydrology Present?	Yes ☒	No ☐		

Remarks: Swale adjacent to pond along construction fenceline.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot Size: 30' Radius)	Absolute % Coverage	Dominant Species?	Indicator Status
1. *N/A*			
2.			
3.			
4.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot Size: 15' Radius)			
1. *N/A*			
2.			
3.			
4.			
5.			
	0 = Total Cover		

Herb Stratum (Plot Size: 5' Radius)			
1. *Iva annua*	40	Yes	FAC
2. *Symphyotrichum subulatum*	35	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	75 = Total Cover		

Woody Vine Stratum (Plot Size: 15' Radius)			
1. *N/A*			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 25

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply By:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A=

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- Yes 2 - Dominance Test is > 50%
- 3 - Prevalence Index is ≤ 3.0[1]
- 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks:

SOILS

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Loc[2]	Texture	Remarks
0-16	10 YR 4/2	97	5 YR 4/6	3	C	PL/M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR F)**
- ☐ 1 cm Muck (A9) (**LRR F, G, H)**
- ☐ Depleted below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ☐ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ High Plains Depressions (F16 **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 CM Muck (A9) **(LRR I, J)**
- ☐ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ☐ Dark Surface (S7) **(LRR G)**
- ☐ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distributed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** ☒ **No** ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☒ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☒ Drainage patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes? ☐ No? ☒ Depth (inches): N/A

Water Table Present? Yes? ☐ No? ☒ Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes? ☐ No? ☒ Depth (inches): N/A

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: CTA Development Project | City/County: DFW Airport/Tarrant | Sampling Date: 9/22/2021

Applicant/Owner: Dallas/Fort Worth International Airport, Environmental Affairs Department | State: TX | Sampling Point: 2

Investigator(s): Karisa Fenton; Claire Unruh | Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): None | Slope %: 0-1

Subregion (LRR): J | Lat: 32.889606 N | Long: -97.019763 W | Datum: NAD 1983

Soil Map Unit Name: Heiden clay, 2 to 5 percent slopes, eroded | NWI Classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are vegetation, ☐ Soil, ☐ Or hydrology ☐ Significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are vegetation, ☐ Soil, ☐ Or hydrology ☐ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ☒	Is the Sampled Area within a wetland?	Yes ☐ No ☒
Hydric Soil Present?	Yes ☐	No ☒		
Wetland Hydrology Present?	Yes ☐	No ☒		

Remarks: Hillslope upslope of wetland swale, along construction fenceline. Upland berm evident between wetland and downslope area.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot Size: 30' Radius)	Absolute % Coverage	Dominant Species?	Indicator Status
1. *N/A*			
2.			
3.			
4.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot Size: 15' Radius)			
1. *N/A*			
2.			
3.			
4.			
5.			
	0 = Total Cover		

Herb Stratum (Plot Size: 5' Radius)			
1. *Helianthus annuus*	40	Yes	FACU
2. *Sorghum halepense*	40	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	80 = Total Cover		

Woody Vine Stratum (Plot Size: 15' Radius)			
1. *N/A*			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 20

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply By:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A=

Hydrophytic Vegetation Indicators:

_____ 1 - Rapid Test for Hydrophytic Vegetation

_____ 2 - Dominance Test is > 50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOILS

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10 YR 4/2	100					Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR F)**
- ☐ 1 cm Muck (A9) (**LRR F, G, H)**
- ☐ Depleted below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ☐ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
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- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
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Indicators for Problematic Hydric Soils[3]:

- ☐ 1 CM Muck (A9) **(LRR I, J)**
- ☐ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ☐ Dark Surface (S7) **(LRR G)**
- ☐ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distributed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes? ☐ No? ☒ Depth (inches): N/A

Water Table Present? Yes? ☐ No? ☒ Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes? ☐ No? ☒ Depth (inches): N/A

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: