Appendix E – Protected Species Habitat Assessment, Waters of the United States Delineation, and Tree Survey Reports

Appendix E1: Runway 18L/36R Rehabilitation Protected Species Habitat Assessment

21 July 2025

Ms. Esther Chitsinde
HDR Engineering, INC.
17111 Preston Rd., Suite 300
Dallas, Texas 75284

Re: Runway 18L/36R Rehabilitation - Protected Species Habitat Assessment
Four parcels totaling approximately 55.96 acres located throughout Dallas-Fort Worth International Airport, Dallas, Tarrant County, Texas

Dear Ms. Chitsinde,

Integrated Environmental Solutions, LLC (IES) performed a protected species habitat assessment on four parcels totaling approximately 55.96 acres located throughout Dallas-Fort Worth International Airport (DFW), Dallas, Tarrant County, Texas (**Attachment A, Figure 1**) to satisfy Endangered Species Act (ESA) requirements. The following report includes a list of the federally and state protected species for Tarrant County, their preferred vegetation assemblages, a summary of vegetation communities identified on the site, an evaluation of whether the vegetation communities present on the site could support a protected species, and whether future proposed actions would affect listed species.

INTRODUCTION

Federally Protected Species

Endangered Species Act

The ESA of 1973 (Public Law [P.L.] 93-205) and 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 defined as a species in danger of extinction throughout all or a significant portion of its range. A threatened species is defined as a species likely to become endangered within the near future throughout all or a significant portion of its range. Proposed species are defined as those that have been formally submitted to Congress for official listing as endangered or threatened.

The USFWS has identified species that 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 candidate 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.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (MBTA) 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. The USFWS maintains a list of migratory birds (50 CFR 10.13), which includes, as of the date of this report, over 1,000 species. Under Director's Order 225 (05 October 2021), the USFWS interprets the MBTA to prohibit the incidental take of migratory bird and will enforce the statute accordingly, which went into effect 03 December 2021. In this order incidental take means, "the taking or killing of migratory birds that results from, but is not the purpose of, an activity." The USFWS acknowledges that a wide range of activities may result in incidental take of migratory birds, as such, they have developed a priority list for those actions that would require enforcement activities.

a) The following types of conduct are not a priority for enforcement.
   (1) A member of the general public conducting otherwise legal activities that incidentally take migratory birds;
   (2) A federal agency conducting activities in accordance with a signed memorandum of understanding with the USFWS developed under Executive Order (EO) 13186 for conservation of migratory birds; or
   (3) A public or private sector entity conducting activities in accordance with applicable beneficial practices for avoiding and minimizing incidental take.
b) The USFWS prioritizes the following types of conduct for enforcement.
   (1) Incidental take that is the result of an otherwise illegal activity; or
   (2) Incidental take that:
      a. Results from activities by a public or private sector entity that are otherwise legal;
      b. Is foreseeable; and
      c. Occurs where known general or activity-specific beneficial practices were not implemented.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) (16 U.S. Code [USC] 668-668d) prohibits anyone, without a permit issued by the Secretary of the Interior, from "talking" bald or golden eagles, including their parts (including feathers), nests, or eggs. Under the BGEPA, there are criminal penalties for persons who, "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part (including feathers), nests, or egg thereof." The BGEPA defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb." Disturb is further defined as, "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) decrease its productivity, by substantially interfering with normal breeding, feeding, or sheltering behaviors, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behaviors" (50 CFR 22.6). In addition to immediate actions, the BGEPA definition also covers the effects from human-induced alterations around previously used nest sites during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment. Revisions to the BGEPA went into effect on 12 April 2024, that included new specific and general permits for unavoidable nest taking for species protection and incidental take permits associated with disturbance, wind energy, and power lines. Additionally, mitigation credits for incidental eagle takings have been created and could be required for certain incidental take permits (e.g., wind energy).

State Protected Species

The Texas Parks and Wildlife Department (TPWD) Wildlife Diversity Program (WDP) maintains a list of 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 directly reflects the federal list. However, the state has separate laws governing the listing of wildlife species as threatened or endangered. In Texas, wildlife species are designated as threatened or endangered 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), the TPWD WDP, and the Texas Natural Diversity Database (TXNDD). Information on the vegetation communities used by each wildlife species is detailed below. During the field survey, vegetation composition within and adjacent to the project site was noted to determine whether there was potential for protected species habitat. This survey was not designed to identify the presence of protected species; however, if 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 the survey area. 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. The tricolored bat (*Perimyotis subflavus*) and Texas heelsplitter (*Potamilus amphichaenus*) are listed as proposed endangered. The alligator snapping turtle (*Macrochelys temminckii*) and monarch butterfly (*Danaus plexippus*) are listed as proposed threatened. No federally listed critical habitat for these species is located within the survey area vicinity.

The TPWD lists 12 state protected species that could occur within Tarrant County, three of which are also federally listed avian species. The TPWD lists the following protected species for Tarrant County, Black Rail (*Laterallus jamaicensis*), Interior Least Tern (*Sternula antillarum athalassos*), Piping Plover, Red Knot, White-faced Ibis (*Plegadis chihi*), Whooping Crane, black bear (*Ursus americanus*), Louisiana pigtoe (*Pleurobema riddellii*), sandbank pocketbook (*Lampsilis satura*), Texas heelsplitter (*Potamilus amphichaenus*), alligator snapping turtle, and Texas horned lizard (*Phrynosoma cornutum*). 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 or the survey area from the Rare and Threatened Endangered Species of Texas (RTEST) and IPaC lists.

Site Survey

Mr. Rafael Gomez of IES evaluated the survey area on 01 July 2025. This survey was designed to provide a habitat evaluation of the overall survey area with the primary focus on the vegetation communities.

The survey area was characterized by a distinct vegetation community of **disturbed grassland**. The **disturbed grassland** was observed across all four parcels. Three of the parcels were actively used as staging areas and were largely void of vegetation due to ongoing activity. The parcel in the northeast was mowed. Dominant herbaceous species throughout all four parcels included Bermudagrass (*Cynodon dactylon*), common sunflower *(Helianthus annuus*), eastern poison ivy (*Toxicodendron radicans*), giant ragweed (*Ambrosia trifida*), Johnsongrass (*Sorghum halepense*), Kleingrass (*Panicum coloratum*), prairie bundleflower (*Desmanthus illinoensis*), prairie tea (*Croton monanthogynus*), silver bluestem (*Bothriochloa saccharoides*), smooth switchgrass (*Panicum virgatum*), and southern dewberry (*Rubus trivialis*). Woody species present included honey mesquite (*Prosopis glandulosa*) and sugarberry (*Celtis laevigata*).

CONCLUSIONS

Preferred Habitat for Federally Protected Species

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

- Piping Plover and Red Knot are protected conditionally on the basis that a proposed project involves the production of wind energy. Because this project does not meet that condition, no further consideration was required for these species.
- Whooping Cranes occur only in North America with the only known habitats in three locations, Wood Buffalo National Park, Canada; Aransas National Wildlife Refuge, Texas; and a non-migratory population in central Florida. Whooping Cranes utilize estuaries, prairie marshes, savannah, grasslands, croplands, pastures; they also use large wetland areas associated with lakes for roosting and feeding. The site does not contain adequate structure for this species. USFWS has determined that Whooping Cranes generally prefer croplands and grassland interspersed with wetlands that are generally shallow (less than 20 inches). As such, it is not likely that Whooping Cranes would occupy the site as the conditions present do not meet the parameters of their habitat.
- The tricolored bat in the Southern United States, hibernates in caves, mines, and potentially in culverts, tree cavities, and abandoned water wells, where caves or mines are scare. In the Spring, Summer, and Fall, the bat is usually found in forests, primarily roosting among deciduous hardwood tree leaves, but also has been found in Spanish moss (*Tillandsia usneoides*), pines, eastern red cedar, and occasionally artificial roosts like barns, beneath porch roofs, bridges, and concrete bunkers. The tricolored bat maintains the status of proposed endangered. It is not currently afforded protection under the ESA, at the time of this report, and no further consideration is required for this species.
- The alligator snapping turtle prefers perennial water bodies including rivers, canals, lakes, and oxbows as well as swamps, bayous, and ponds near running water. It sometimes enters brackish coastal waters. No aquatic features were identified within the survey areas. Additionally, the alligator snapping turtle maintains the status of proposed threatened. It is not currently afforded protection under the ESA, at the time of this report, and no further consideration is required for this species.
- There were no headwaters, small streams to large rivers consisting of sand, gravel, mud, or cobble within the survey area to provide habitat for the Texas heelsplitter.
- Monarch butterflies are found in a variety of habitats including native prairies, pastures, open woodlands and savannas, desert scrub, roadsides, and other habitats with abundant nectar plants, including urbanized areas. The disturbed grassland community identified within the site may comprise a suitable habitat for this species. However, the monarch butterfly is a proposed threatened species. It is not currently afforded protection under the ESA, at the time of this report, and no further consideration is required for this species.

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 for these species.

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

Species	Federal Status	State Status	Description of Habitat	Habitat Present[1]	Species Effect[2]
MAMMALS					
Black Bear (*Ursus americanus*)	---	T	Generalist. Historically found throughout Texas. In Chisos, 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. For ssp. luteolus, bottomland hardwoods, floodplain forests, upland hardwoods with mixed pine; marsh. Bottomland hardwoods and large tracts of inaccessible forested areas.	**No**	**
Tricolored Bat (*Perimyotis subflavus*)	PE	---	Forest, woodland, and riparian areas are important. Caves are very important to this species.	**No**	**
BIRDS					
Black Rail (*Laterallus jamaicensis*	---	T	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**	**
Interior Least Tern (*Sternula antillarum athalassos*)	---	E	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**	**
Piping Plover (*Charadrius melodus*)	LT	T	Beaches, sandflats, and dunes along Gulf Coast beaches and adjacent offshore islands. Also spoil islands in the Intracoastal Waterway. 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**
Red Knot (*Calidris canutus rufa*)	LT	T	Red Knots migrate long distances in flocks northward through the contiguous U.S. mainly April-June, southward July-October. Prefers shorelines of coast and bays, uses mudflats during rare inland encounters. Primary habitats include seacoasts on tidal flats and shores, beaches, and herbaceous wetland.	**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**	**
Whooping Crane (*Grus americana*)	LE	E	Potential migrants via plains throughout most of the state to the coast. Winters in coastal marshes of Aransas, Calhoun, and Refugio counties. Utilizes small ponds, marshes, and flooded grain fields for roosting and foraging.	**No**	**No**
REPTILES					
Alligator Snapping Turtle (*Macrochelys temminckii*)	PT	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**	**
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**	**
INSECTS					
Monarch Butterfly (*Danaus plexippus*)	PT	---	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 obligatory milkweed host plant (primarily Asclepias spp.), and larvae emerge after 2 to 5 days. Larvae develop through five larval	**Yes**	**

Species	Federal Status	State Status	Description of Habitat	Habitat Present[1]	Species Effect[2]
			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.		
MOLLUSKS					
Louisiana Pigtoe (*Pleurobema riddellii*)	PT	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**	**
Sandbank Pocketbook (*Lampsilis 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**	**
Texas Heelsplitter (*Potamilus amphichaenus*)	PE	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**	**

LE – Federally Listed Endangered, LT – Federally Listed Threatened, PE – Federally Proposed Endangered, PT – Federally Proposed Threatened, C – Federally Listed Candidate, E – State Listed Endangered, T – State Listed Threatened

** - This species is not currently afforded federal protection as of the date of this report

[1]*Habitat Present – Does the habitat located within the survey area match the habitat 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 16 July 2025), TPWD (published and accessed 16 July 2025), and field survey of the project site

Preferred Habitat for State Protected Species

There were 12 threatened and endangered species listed for Tarrant County, including three federally listed avian species.

- Black Rails utilize freshwater marshes and grassy swamps with dense emergent vegetation. No aquatic features were identified within the survey area. As a result, the project area does not provide suitable habitat for the Black Rail.
- The Interior Least Tern is typically found in habitats such as sand and gravel bars along braided rivers, inland beaches, and man-made structures like wastewater treatment plants and gravel mines. This species requires open, sparsely vegetated areas near water bodies to nest and forage, primarily feeding on small fish and crustaceans within proximity to nesting sites. The project area consists of disturbed grassland with no nearby large water bodies, sand or gravel bars, or other suitable nesting substrates. Given the absence of aquatic foraging habitat and appropriate nesting conditions, the project limits do not provide suitable habitat for the Interior Least Tern.
- Any occurrence of the Piping Plover, Red Knot, White-faced Ibis, and Whooping Crane would be in relation to stopover during migration; however, no suitable stopover habitat was observed within the survey area.
- Black bears occur in higher elevations where pinyon-oaks predominate, desert scrub, upland hardwoods with mixed pine, marsh, bottomland hardwoods, and large tracts of inaccessible forested areas. The black bear has been considered extirpated for this part of Texas.

- Louisiana pigtoe, sandbank pocketbook, Texas heelsplitter, and alligator snapping turtle occur in small streams and large rivers. No aquatic features were identified within any of the four parcels. Therefore, suitable habitat for these species would not be present.
- The Texas horned lizard prefers sandy bare ground with scattered clumps of vegetation which does not occur within the four parcels.

Migratory Birds

Migratory birds are located throughout Tarrant County in a variety of preferred and non-preferred habitats. The USFWS has developed a basic set of nationwide standard conservation measures to reduce impacts to migratory birds and their habitats. These conservation measures can reduce the potential for incidental take of migratory birds. USFWS does not currently have an incidental take permitting process for migratory birds. As such, conservation measures should be utilized, if practicable, to reduce the potential for incidental take.

There are three general areas of conservation measures – (1) General, (2) Habitat Protection, and (3) Stressor Management.

1) General Measures
   a) Educate all employees, contractors, and site visitors of relevant rules and regulations that protect wildlife in the State of Texas.
   b) Prior to removal of an inactive nest, ensure that the nest is not protected under the ESA or BGEPA.
   c) Do not collect birds, their parts, or nests without a valid permit.
   d) Provide enclosed solid waste receptacles at all project areas. Non-hazardous and solid wastes should be collected and deposited in on-site receptacles, which is then disposed of in accordance with all local regulations.
2) Habitat Protection
   a) Minimize project creep by clearly delineating and maintaining project boundaries.
   b) Maintain appropriate buffer distance between development activities and any wetlands or waterways protected under Clean Water Act Sections 401 and 404.
   c) Maximize the use of disturbed land for all project activities.
   d) Implement standard soil erosion and dust control measures.
3) Stressor Management
   a) Avoid direct take of adults, chicks, or eggs by scheduling vegetation removal, trimming, and grading outside of peak bird breeding season to the maximum extent practicable. If activities cannot be conducted outside of breeding season, a nest survey should be undertaken to identify active nests and remove fully documented inactive/abandoned nests. Nest removal should follow USFWS guidance, Destruction and Relocation of Migratory Bird Nest Contents (14 June 2018). Active nests should be buffered from construction activities with species-specific conditions.
   b) Avoid the introduction of invasive plants.
   c) Prevent increased lighting of native habitats during bird breeding season. Limit construction activities to the maximum extent practicable between dawn and dusk to avoid illuminating adjacent habitat areas. Avoid the use of bright white lights.
   d) Minimize prolonged human presence near nesting birds during construction and maintenance activities.
   e) Minimize collision risk with project infrastructure and vehicles.
   f) Prevent birds from becoming trapped in project structures or perching and nesting in project areas that may endanger them.
   g) Prevent the increase in noise above ambient levels during the nesting bird breeding season.
   h) Prevent the introduction of chemical contaminants into the environment.
   i) Minimize fire potential from project-related activities.

Bald and Golden Eagles

The USFWS IPaC indicated that Bald and Golden Eagles could be located within the project area; this is likely due to the proximity to the Trinity River and associated drainages. The closest Bald Eagle observation occurred approximately 9.4 miles to the southwest along the West Fork Trinity River. The project area showed no indication

of use by Bald or Golden Eagles at the time of evaluation. The TXNDD Elements of Occurrence Records did not indicate past use or knowledge of occurrence of these species in the project vicinity. The likelihood of these species occurring in the project vicinity would be considered low.

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 common to grassland areas, as well as the Cross Timbers and Blackland Prairie ecoregions of North Central Texas. It is IES's professional opinion that the proposed project will not have an effect on any unique vegetation, vegetation communities, or habitat types.

POTENTIAL TO AFFECT PROTECTED SPECIES

No preferred habitat for any of the federally or state-listed species was present within the survey area. As such, the proposed project is not expected to have any impact on the federally or state-listed threatened or endangered species.

IES appreciates the opportunity to work with you and HDR Engineering, Inc. on this project and hopes 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 rgomez@intenvsol.com, or Executive Vice President Rudi Reinecke at rreinecke@intenvsol.com.

Sincerely,

Integrated Environmental Solutions, LLC.

Mr. Rafael Gomez

Biologist

File ref: 04.165.013

ATTACHMENT A
Figures

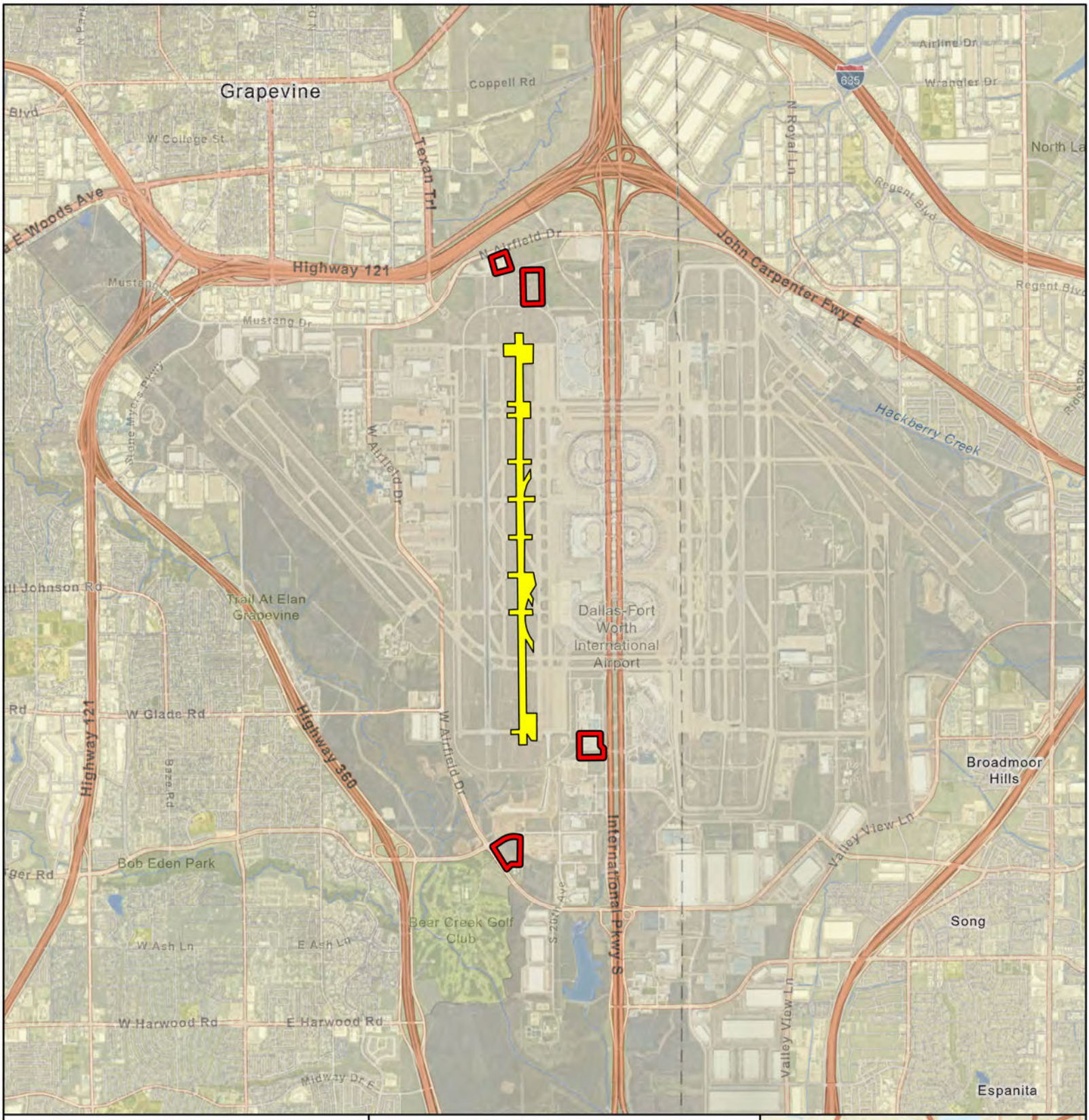


Figure 1.
General Location Map

Runway 18L/36R Rehabilitation
Dallas-Fort Worth International Airport
Tarrant County, Texas

1 in = 4,500 ft

Feet
0 4,500

N
W E
S

File Ref. 04.165.013
Date: 7/30/2025

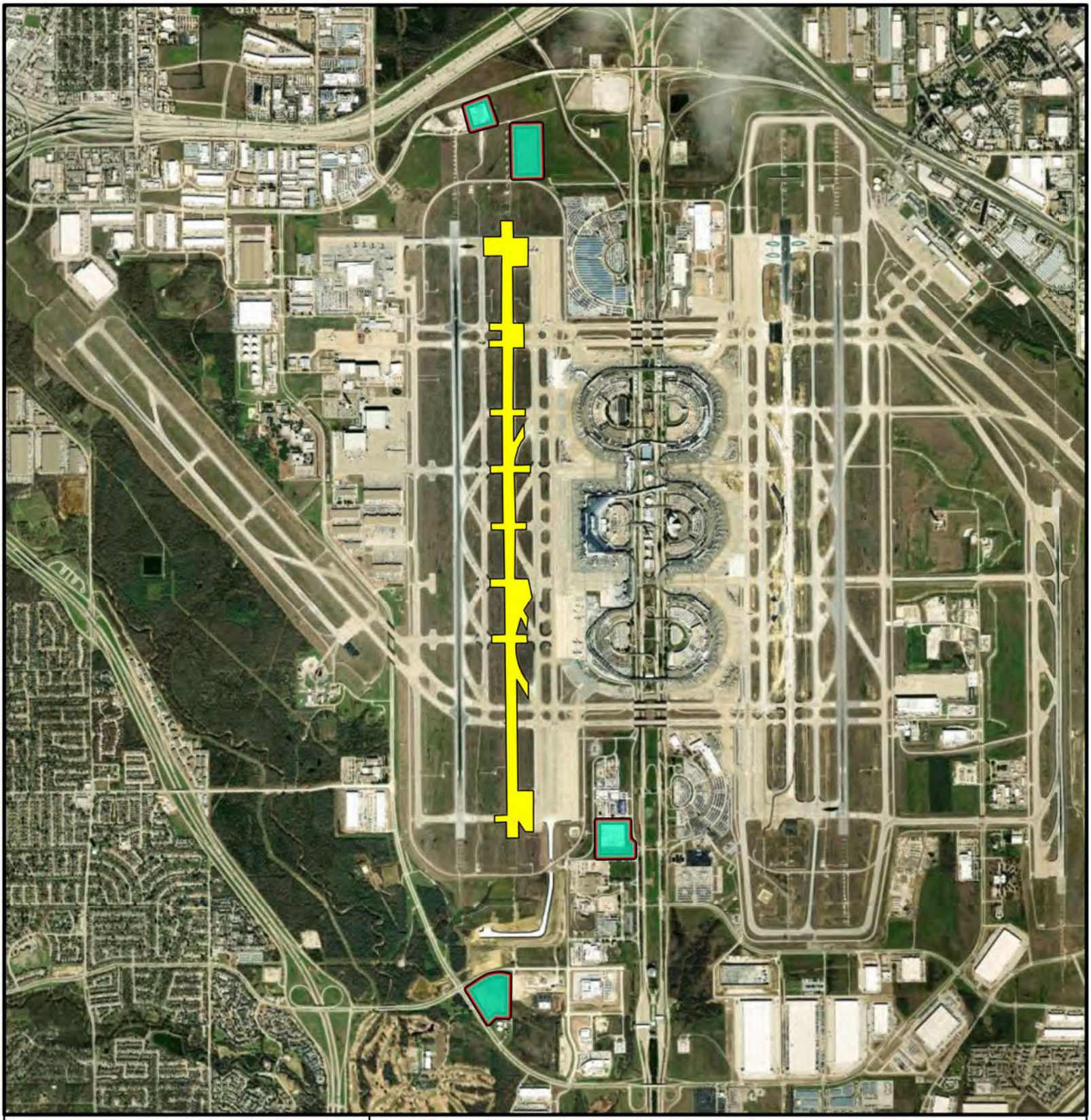


Figure 2.
Vegetation Communities

Runway 18L/36R Rehabilitation
Dallas-Fort Worth International Airport
Tarrant County, Texas

1 in = 3,000 ft

Feet
0 3,000

N
W E
S

File Ref. 04.165.013
Date: 7/30/2025

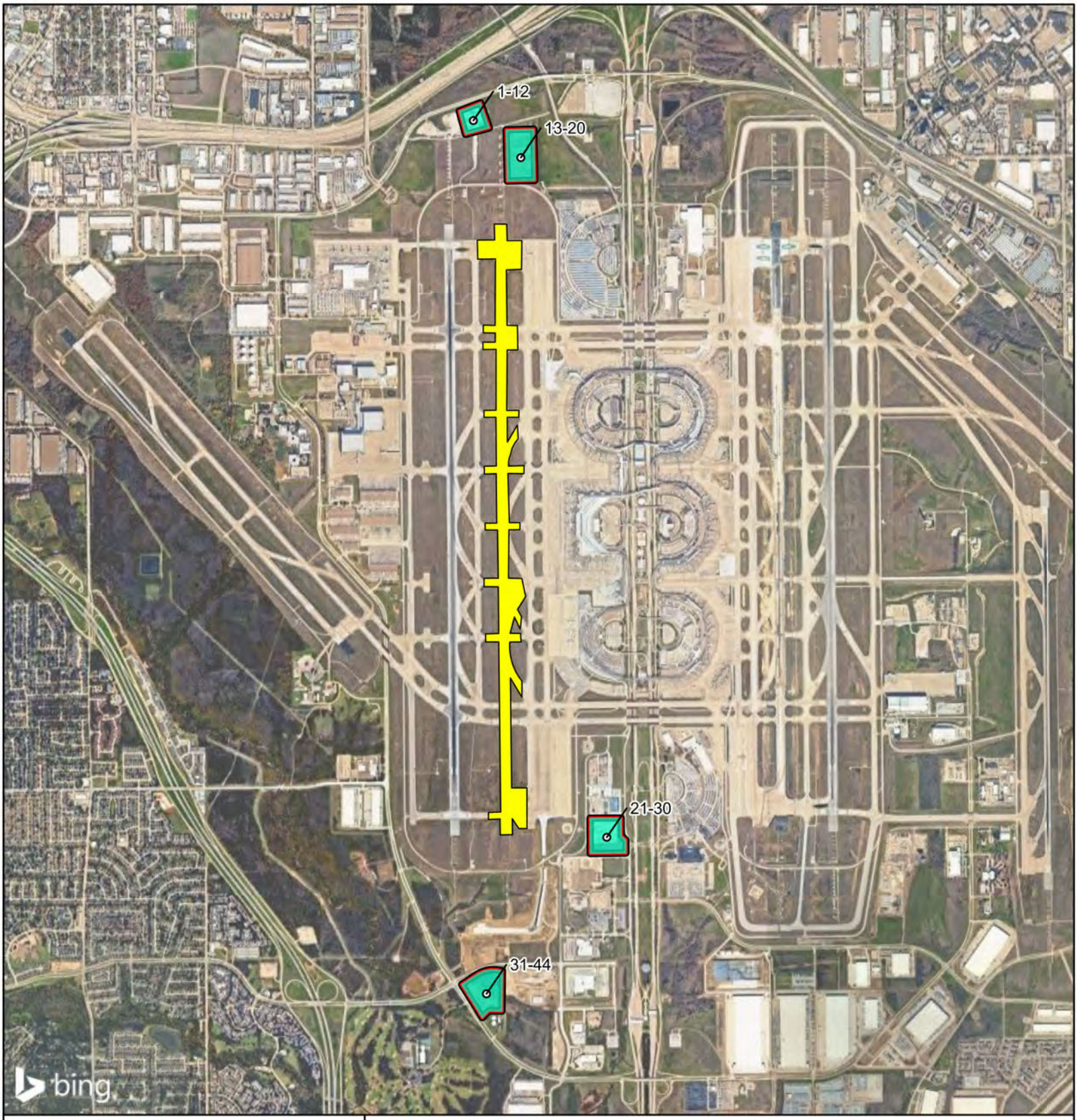
Survey Area

Runway 18L/36R

Vegetation Community

Disturbed Grassland

ATTACHMENT B
Site Photographs



Photograph Location Map

Runway 18L/36R Rehabilitation
Dallas-Fort Worth International Airport
Tarrant County, Texas

1 in = 3,000 ft

Feet
0
3,000

N
W
E
S

File Ref. 04.165.013
Date: 7/30/2025

Survey Area

Runway 18L/36R

Photograph Location

Vegetation Community

Disturbed Grassland

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

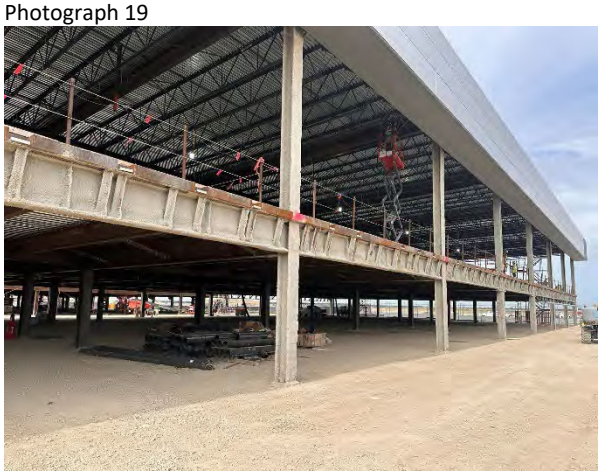
Photograph 16

Photograph 17

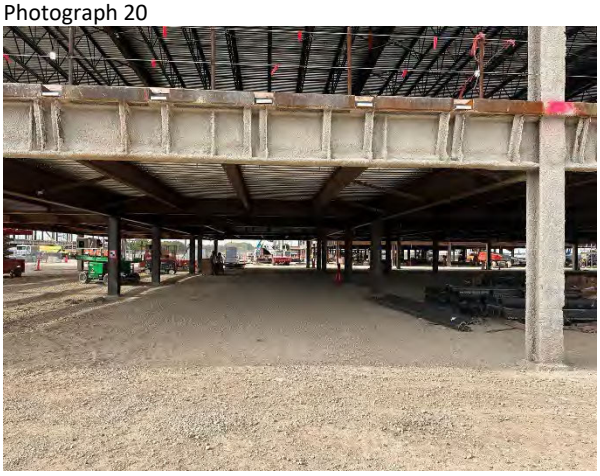
Photograph 18

Photograph 19

Photograph 20

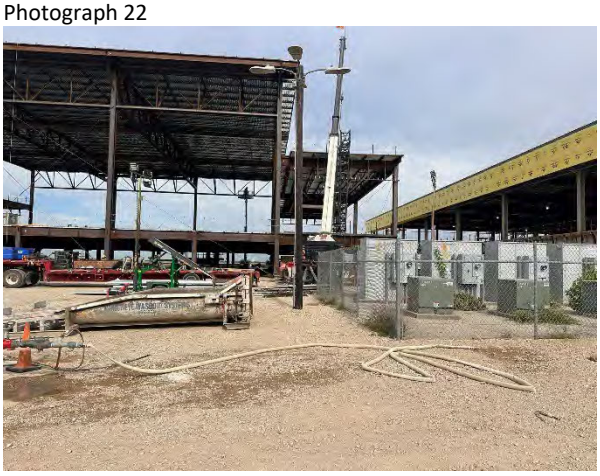


Photograph 21



Photograph 22

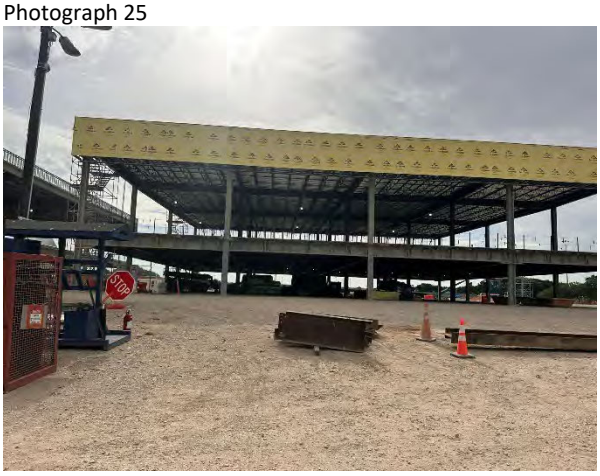
Photograph 23



Photograph 24

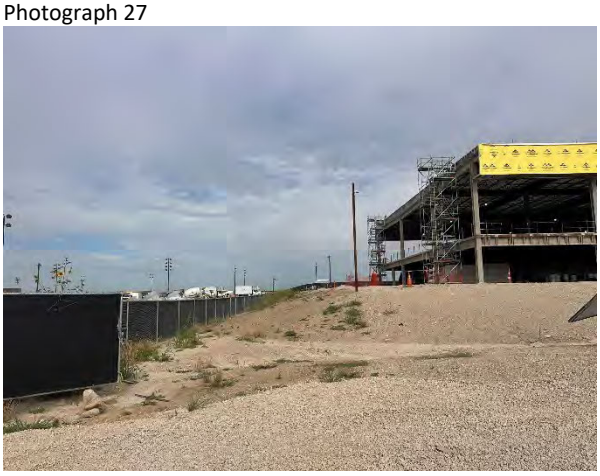
Photograph 25

Photograph 26

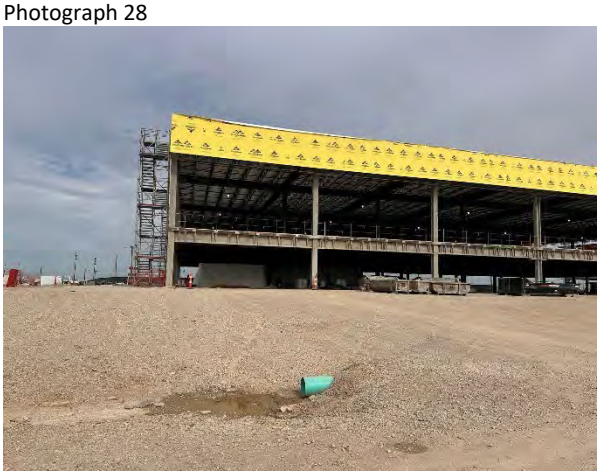


Photograph 27

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

ATTACHMENT C
Protected Species Lists

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arlington Ecological Services Field Office
17629 El Camino Real, Suite 211
Houston, TX 77058-3051
Phone: (817) 277-1100 Fax: (817) 277-1129
Email Address: arles@fws.gov

In Reply Refer To: 07/16/2025 17:59:12 UTC
Project Code: 2025-0122553
Project Name: Runway 18L/36R Rehabilitation

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

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
17629 El Camino Real, Suite 211
Houston, TX 77058-3051
(817) 277-1100

PROJECT SUMMARY

Project Code: 2025-0122553
Project Name: Runway 18L/36R Rehabilitation
Project Type: New Constr - Above Ground
Project Description: Staging Areas
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@32.867688799999996,-97.05273760620875,14z

Counties: Tarrant County, 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
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Rufa Red Knot *Calidris canutus rufa* There is **proposed** 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/1864	Threatened
Whooping Crane *Grus americana* Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/758	Endangered

REPTILES

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

CLAMS

NAME	STATUS
Texas Heelsplitter *Potamilus amphichaenus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/299	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

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.

IPAC USER CONTACT INFORMATION

Agency:	Private Entity
Name:	Rafael Gomez
Address:	301 W eldorado pkwy
Address Line 2:	suite 101
City:	McKinney
State:	TX
Zip:	75069
Email	rgomez@intenvsol.com
Phone:	9565795417

Last Update: 1/15/2025

TARRANT COUNTY

BIRDS

black rail *Laterallus jamaicensis*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. 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

Federal Status: T	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S2

interior least tern *Sternula antillarum athalassos*

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

Federal Status:	State Status: E	SGCN: N
Endemic: N	Global Rank: G4T3Q	State Rank: S1B

piping plover *Charadrius melodus*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. 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.

Federal Status: T	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S2N

rufa red knot *Calidris canutus rufa*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. Habitat: Primarily seacoasts on tidal flats and beaches, herbaceous wetland, and Tidal flat/shore. Bolivar Flats in Galveston County, sandy beaches Mustang Island, few on outer coastal and barrier beaches, tidal mudflats and salt marshes.

Federal Status: T	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4T2	State Rank: S2N

white-faced ibis *Plegadis chihi*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. 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.

Federal Status:	State Status: T	SGCN: N
Endemic: N	Global Rank: G5	State Rank: S4B

whooping crane *Grus americana*

The county distribution for this species includes geographic areas that the species may use during migration. Time of year should be factored into evaluations to determine potential presence of this species in a specific county. 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.

Federal Status: E | State Status: E | SGCN: Y
Endemic: N | Global Rank: G1 | State Rank: S1S2N

INSECTS

migratory monarch butterfly *Danaus plexippus plexippus*

Habitat description is not available at this time.

Federal Status: C | State Status: | SGCN: Y
Endemic: | Global Rank: G4T3 | State Rank: SNR

MAMMALS

black bear *Ursus americanus*

Generalist. Historically found throughout Texas. In Chisos, 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. For ssp. luteolus, bottomland hardwoods, floodplain forests, upland hardwoods with mixed pine; marsh. Bottomland hardwoods and large tracts of inaccessible forested areas.

Federal Status: | State Status: T | SGCN: Y
Endemic: N | Global Rank: G5 | State Rank: S3

tricolored bat *Perimyotis subflavus*

Forest, woodland and riparian areas are important. Caves are very important to this species.

Federal Status: PE | State Status: | SGCN: Y
Endemic: N | Global Rank: G3G4 | State Rank: S2

MOLLUSKS

Louisiana pigtoe *Pleurobema riddellii*

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]

Federal Status: PT | State Status: T | SGCN: Y
Endemic: N | Global Rank: G1G2 | State Rank: S1

sandbank pocketbook *Lampsilis satura*

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]

Federal Status: | State Status: T | SGCN: Y
Endemic: N | Global Rank: G2? | State Rank: S1

Texas heelsplitter *Potamilus amphichaenus*

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]

Federal Status: PE	State Status: T	SGCN: Y
Endemic: N	Global Rank: G1G3	State Rank: S1

REPTILES

alligator snapping turtle *Macrochelys temminckii*

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 waters edge.

Federal Status: PT	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S2

American alligator *Alligator mississippiensis*

Aquatic: Coastal marshes; inland natural rivers, swamps and marshes; manmade impoundments.

Federal Status: SAT	State Status:	SGCN: N
Endemic: N	Global Rank: G5	State Rank: S4

Texas horned lizard *Phrynosoma cornutum*

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.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S3

Appendix E2: Runway 18L/36R Rehabilitation Waters of the United States Delineation

21 July 2025

Ms. Esther Chitsinde
HDR Engineering, INC.
17111 Preston Rd., Suite 300
Dallas, Texas 75284

Re: Runway 18L/36R Rehabilitation - Waters of the United States Delineation
Four parcels totaling approximately 55.96 acres located throughout Dallas-Fort Worth International Airport, Dallas, Tarrant County, Texas

Dear Ms. Chitsinde,

Integrated Environmental Solutions, LLC (IES) performed a site survey to identify any aquatic features that meet a definition of a water of the United States on four parcels totaling approximately 55.96 acres located throughout Dallas-Fort Worth International Airport (DFW), Dallas, Tarrant County, Texas (**Attachment A, Figure 1**). This report will ultimately assess and delineate potentially jurisdictional aquatic features to ensure compliance with Clean Water Act (CWA) Sections 401 and 404.

INTRODUCTION

Waters of the United States are protected under guidelines outlined in CWA Sections 401 and 404, 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 CWA Section 404 requirements for waters of the United States.

The decision for whether a CWA Section 404 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 USEPA 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, 2007, and 2023 U.S. Supreme Court (SCOTUS) decisions. In addition to this, the Obama, Trump, and Biden administrations completed rulemaking to modify the definitions of waters of the United States. The 2023 SCOTUS decision defined a water of the United States as "a relatively permanent body of water connected to traditional interstate navigable waters." The SCOTUS also included wetlands that have a continuous surface connection with that water, in the definition of a water of the United States. This wetland connection was described as the boundary where it was difficult to determine where the 'water' ends, and the 'wetland' begins.

This 2023 SCOTUS decision is consistent with the relatively permanent water (RPW) standard identified in the previous 2007 SCOTUS decision. Until further guidance is published from the USACE or USEPA, the 2007 USACE and USEPA guidance defining a "relatively permanent water" will be used. According to this guidance, RPW are non-navigable tributaries of traditional navigable waters (TNW) that flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). In addition to this, the guidance also stipulated regulation over wetlands that directly abut such tributaries.

DEFINTIONS USED WITHIN THIS REPORT

Seasonal (intermittent) streams – The USEPA (https://www.epa.gov/cwa-404/learn-about-streams) has defined seasonal or intermittent streams as those that flow during certain times of the year when smaller upstream waters are flowing and when groundwater provides enough water for stream flow. Runoff from rainfall or other precipitation supplements the flow of seasonal stream. During dry periods, seasonal streams may not have flowing surface water. Larger seasonal streams are more common in dry areas.

Rain-dependent (ephemeral) streams – the USEPA defines rain-dependent streams as those that flow only after precipitation. Runoff from rainfall is the primary source of water for these streams. Like seasonal streams, they can be found anywhere but are most prevalent in arid areas.

Year-round (perennial) streams – the USEPA defines year-round streams as those that typically have water flowing in them year-round. Most of the water comes from smaller upstream waters or groundwater while runoff from rainfall or other precipitation is supplemental.

Pre-2015 Regulatory Framework under 33 CFR 328.3 (01 July 2014) (https://www.govinfo.gov/content/pkg/CFR-2014-title33-vol3/pdf/CFR-2014-title33-vol3-sec328-3.pdf).

(a)(1) Traditional Navigable Waters (TNW) – 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.

(a)(2) Interstate Waters including wetlands

(a)(3) Other Waters – 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 purpose by industries in interstate commerce;"

(a)(4) Impoundments – impoundments of waters otherwise identified as waters of the United States.

(a)(5) Tributaries – tributaries of waters identified in paragraphs (a)(1) through (a)(4)

(a)(6) Territorial Seas

(a)(7) Adjacent Wetlands – wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1) through (6).

USEPA Updates for Tribes and States on "Waters of the United States" 15 November 2023 – Pre-2015 Regulatory Regime Terminology (https://www.epa.gov/system/files/documents/2023-11/wotus-overview_tribes-and-states_11-15-23_508.pdf).

Relatively Permanent Waters – include tributaries that typically have flowing or standing water year-round or flowing water continuously at least seasonally (e.g., typically 3 months). The duration of seasonal flowing or standing water may vary regionally, but the tributary must have predictable flowing water seasonally.

Non-Relatively Permanent Waters – include tributaries that have flowing or standing water only in response to precipitation or that do not have continuously flowing or standing water at least seasonally.

Continuous Surface Connection

Under the *Rapanos* guidance (https://usace.contentdm.oclc.org/utils/getfile/collection/p16021coll5/id/1411), a continuous surface connection per the plurality opinion required a physical connection. In the case of wetlands, a continuous surface connection would exist between a RPW tributary and a wetland that directly abuts, that being not separated by uplands, a berm, dike, or other similar features. It is noted that per 33 CFR 328.3 (b), wetlands are defined as those 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, which does not require surface water to be continuously present between the wetland and the tributary.

The Sixth Circuit U.S. Court of Appeals in United States v. Cundiff (05-5469, 05-5905, 07-5630, 04 February 2009) (https://caselaw.findlaw.com/court/us-6th-circuit/1098928.html) determined that, "Although the term continuous surface connection clearly requires surface flow, it does not mean that only perpetually flowing creeks satisfy the (Rapanos) plurality test." Given that wetlands, by definition are inundated or saturated soils that can support under normal circumstances a prevalence of vegetation typically adapted to those soil conditions, then the "… connection requires some kind of dampness such that polluting a wetland would have a proportionate effect on the traditional waterway." Additionally, Cundiff created a continuous surface connection through the excavation of ditches with "largely uninterrupted permanent surface water flow" that rerouted flow away from the wetland directly into the adjacent creeks. The Court found that there was no difference whether the channel that provides the relatively permanent flow was man-made or naturally formed.

Sackett (https://www.supremecourt.gov/opinions/22pdf/21-454_4g15.pdf) reinforced this definition by clearly indicating that a continuous surface connection must be established at the point where it is difficult to determine where the 'water' (RPW) and 'wetland' begins. The Fifth Circuit U.S. Court of Appeals in Lewis vs. United States (21-30163, 18 December 2023) (https://cases.justia.com/federal/appellate-courts/ca5/21-30163/21-30163-2023-12-18.pdf?ts=1702945817) further identified that a continuous surface connection from wetlands to a RPW tributary could not be established through non-waters of the United States with a distant and speculative connection to a RPW, then a TNW, following the Sackett definition that the CWA "extends to only those wetlands with a continuous surface connection to bodies that are waters of the United States in their own right, so that they are indistinguishable from those waters."

METHODOLOGY

Prior to conducting fieldwork, the U.S. Geological Survey (USGS) topographic map (**Attachment A, Figures 2A** and **2B**), the *Soil Survey of Tarrant County, Texas*, and the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) digital soil databases for Tarrant County (**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. Mr. Rafael Gomez of IES conducted the delineation in the field in accordance with the USACE procedures on 01 July 2025.

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 Juniper Systems Geode GNS3S Global Positioning System (GPS) unit capable of sub-meter accuracy. Photographs were also taken at representative points within the survey area (**Attachment B**).

RESULTS

Background Review

Topographic Setting

The USGS topographic maps (Grapevine 7.5' Quadrangle 1959, revised 1982, and 2022; Euless 7.5' Quadrangle 1959, revised 1960, and 2022) do not depict any water features within the four parcels (*see* **Attachment A, Figure 2A** and **2B**). The overall site topography was illustrated with slopes oriented southeast-to-northwest in the northern two

parcels and south and west in the southern two parcels. The maximum site elevation was approximately 600 feet above mean sea level (amsl) with a minimum site elevation of approximately 540 feet amsl.

Soils

The USDA NRCS Web Soil Survey identified five soil map units within the survey area, Houston Black clay, 1 to 3 percent slopes; Urban land, 0 to 16 percent slopes; Heiden clay, 1 to 3 percent slopes; Houston Black-Urban land complex, 1 to 4 percent slopes; and Ferris-Heiden complex, 2 to 5 percent slopes. The Houston Black clay, 1 to 3 percent slopes occur throughout the largest portion of the survey area (42 percent coverage). This series consists of moderately deep, well drained, very slowly permeable soils, with very high runoff, and high water availability capacity. None of these soil map units were listed as hydric soil on the Hydric Soils of Texas list prepared by the National Technical Committee for Hydric Soils (accessed 11 July 2025, Tarrant County, Texas) (*see* **Attachment A, Figure 3**). Hydric soils are described as soils that are sufficiently wet in the upper part to develop anaerobic conditions during the growing season.

FEMA FIRM

The FEMA FIRM (Tarrant County; Map Panel 48439C0120K; effective 25 September 2009) shows all four parcels within Zone X (Areas determined to be outside the 0.2 percent annual chance floodplain) (*see* **Attachment A, Figure 4**).

Weather History

The weather history for Wunderground.com Silent Dave WX weather station (KTXEULES41) recorded 0.30 inch of precipitation during the 7-day period and a total of 2.25 inches during the 30-day period, prior to the site visit (**Attachment C**). An analysis of the data indicates two multiple-day rain events within the past 30 days (0.94 inch on 08 and 09 June and 0.89 inch on 11 and 12 June). 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 (32.9374942, -97.0624960W) (*see* **Attachment C**).

Field Investigation

The survey area was characterized by a distinct vegetation community of **disturbed grassland**. The **disturbed grassland** was observed across all four parcels. Three of the parcels were actively used as staging areas and were largely void of vegetation due to ongoing activity. The parcel in the northeast was mowed at the time of evaluation. Dominant herbaceous species throughout all four parcels included Bermudagrass (*Cynodon dactylon*), common sunflower *(Helianthus annuus*), eastern poison ivy (*Toxicodendron radicans*), giant ragweed (*Ambrosia trifida*), Johnsongrass (*Sorghum halepense*), Kleingrass (*Panicum coloratum*), prairie bundleflower (*Desmanthus illinoensis*), prairie tea (*Croton monanthogynus*), silver bluestem (*Bothriochloa saccharoides*), smooth switchgrass (*Panicum virgatum*), and southern dewberry (*Rubus trivialis*). Woody species present included honey mesquite (*Prosopis glandulosa*) and sugarberry (*Celtis laevigata*).

No water features nor any water were observed exiting the survey area. Water from the local watershed around the two northwestern parcels flows northwest into the Cottonwood Branch, which flows northeast into Denton Creek. Denton Creek flows east into the Elm Fork Trinty River which converges with the West Fork Trinity River, flowing into the Trinity River, a TNW. Water from the local watershed around the two southern parcels flows west into Big Bear Creek, which flows south into Bear Creek. Bear Creek flows southeast into the West Fork Trinity River which ultimately flows into the Trinity River, a TNW.

CONCLUSIONS

To summarize the delineation, no water features were identified within the site boundary (*see* **Attachment A, Figure 5**).

This delineation is based on professional experience in the approved methodology 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 the 2023 SCOTUS decision, USACE regulations at 33 CFR 328.3, the joint USACE/USEPA guidance relating to the definition of an RPW and the Regulatory Guidance Letter (RGL) 08-02. While IES believes our

delineation to be accurate, the final authority to interpret the regulations lies solely with the USACE and USEPA. The USACE Headquarters in association 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, and 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 can 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 HDR Engineering, INC. 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 myself or Rudi Reinecke at 972-562-7672 (rgomez@intenvsol.com or rreinecke@intenvsol.com).

Sincerely,

Integrated Environmental Solutions, LLC.

Mr. Rafael Gomez
Biologist

Attachments

File ref: 04.165.013

ATTACHMENT A
Figures

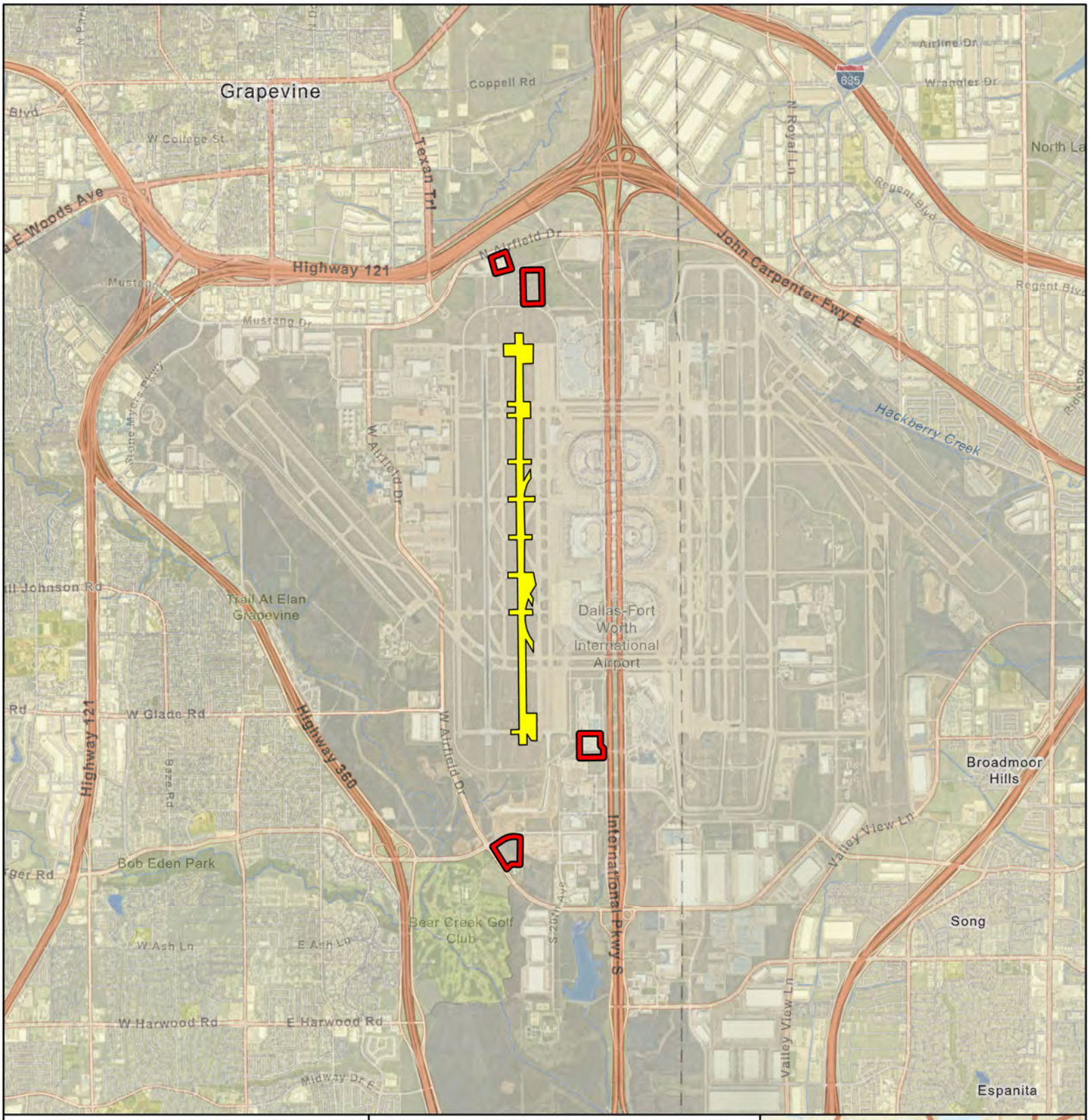


Figure 1.
General Location Map

Runway 18L/36R Rehabilitation
Dallas-Fort Worth International Airport
Tarrant County, Texas

1 in = 4,500 ft

Feet
0 4,500

N
W E
S

File Ref. 04.165.013
Date: 7/30/2025

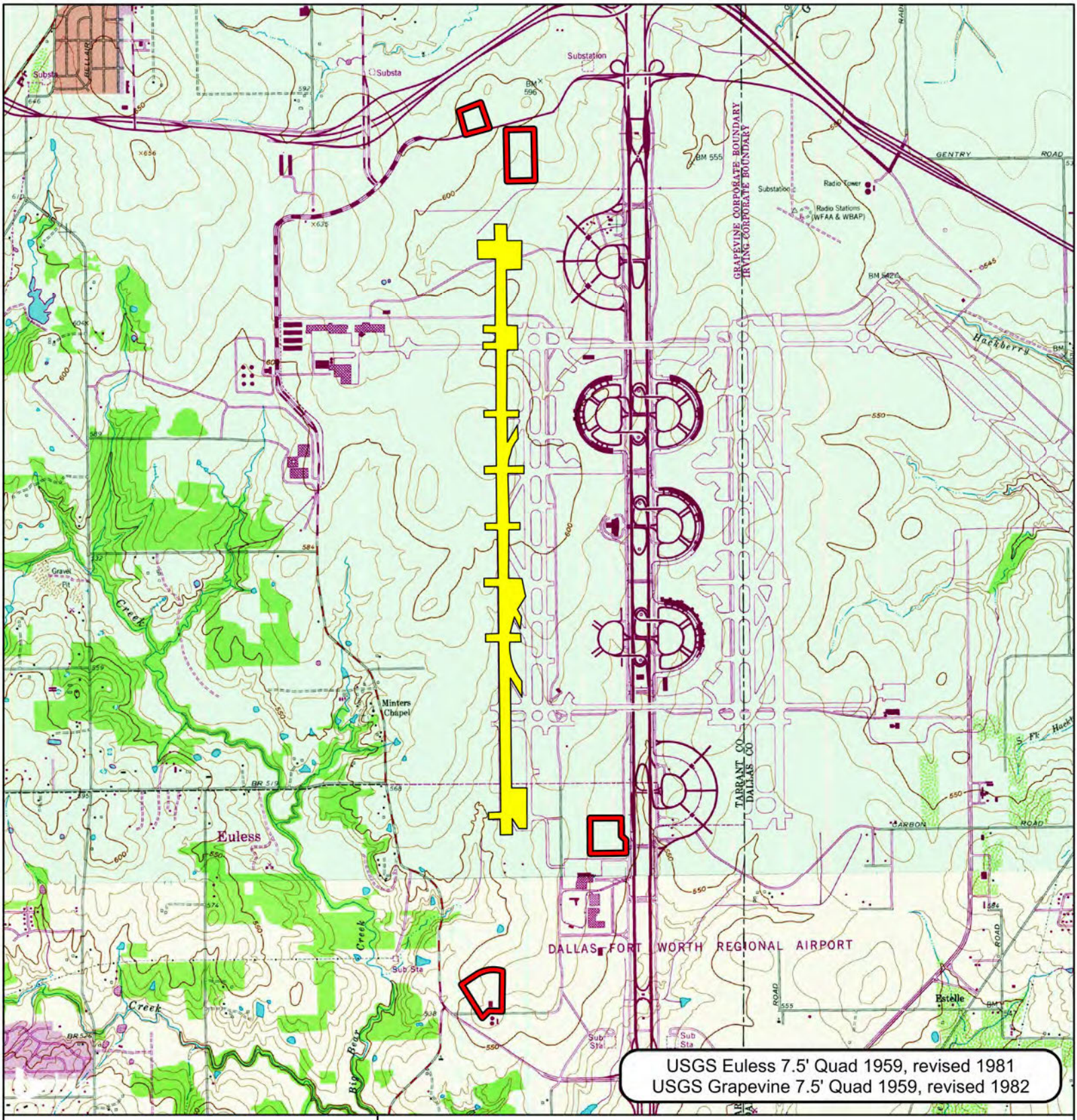


Figure 2A.
Topographic Setting

Runway 18L/36R Rehabilitation
Dallas-Fort Worth International Airport
Tarrant County, Texas

1 in = 3,000 ft

Feet
0 3,000

N
W E
S

File Ref. 04.165.013
Date: 7/30/2025

Survey Area

Runway 18L/36R

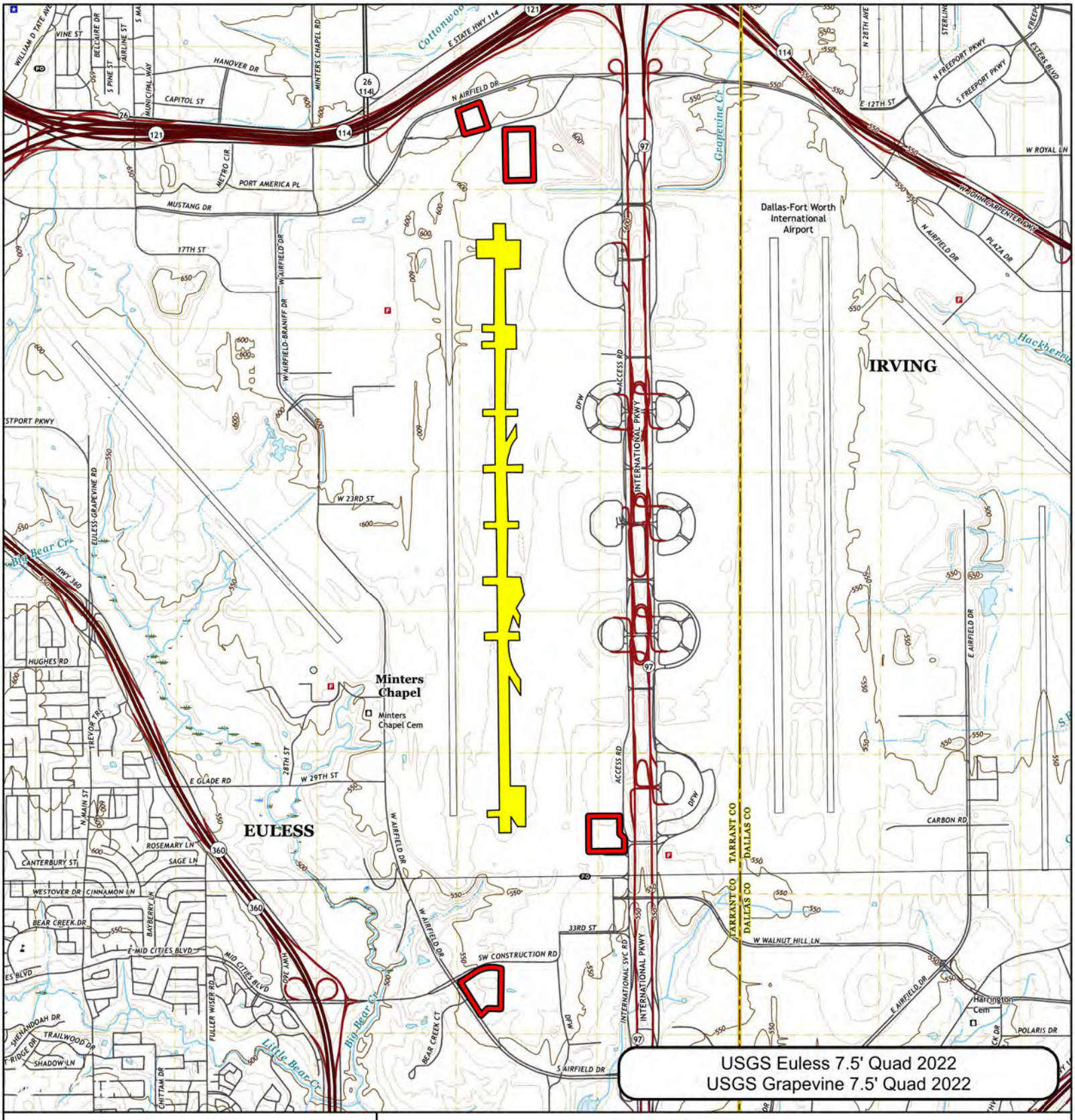


Figure 2B.
Topographic Setting

Survey Area

Runway 18L/36R

Runway 18L/36R Rehabilitation
Dallas-Fort Worth International Airport
Tarrant County, Texas

1 in = 3,000 ft

Feet
0 3,000

N
W E
S

File Ref. 04.165.013
Date: 7/30/2025

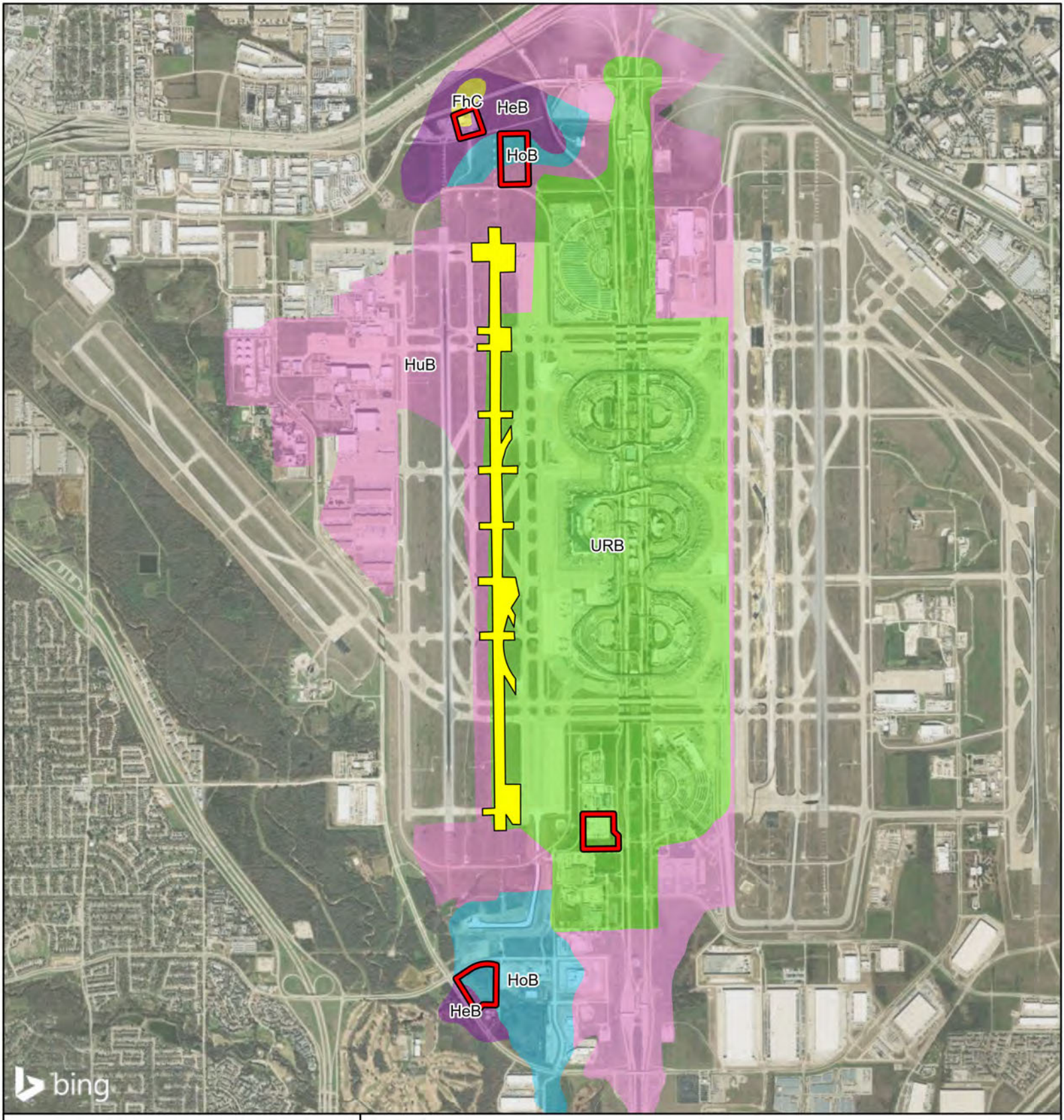


Figure 3.
Soils Map

Runway 18L/36R Rehabilitation
Dallas-Forth Worth International Airport
Tarrant County, Texas

1 in = 3,000 ft
Feet
0
3,000

N
W
E
S

File Ref. 04.165.013
Date: 7/30/2025

Survey Area
Runway 18L/36R
Soil map units outside of the survey area

Soil Map Units

FhC - Ferris-Heiden complex, 2 to 5 percent slopes
HeB - Heiden clay, 1 to 3 percent slopes
HoB - Houston Black clay, 1 to 3 percent slopes
HuB - Houston Black-Urban land complex, 1 to 4 percent slopes
URB - Urban land, 0 to 16 percent slopes

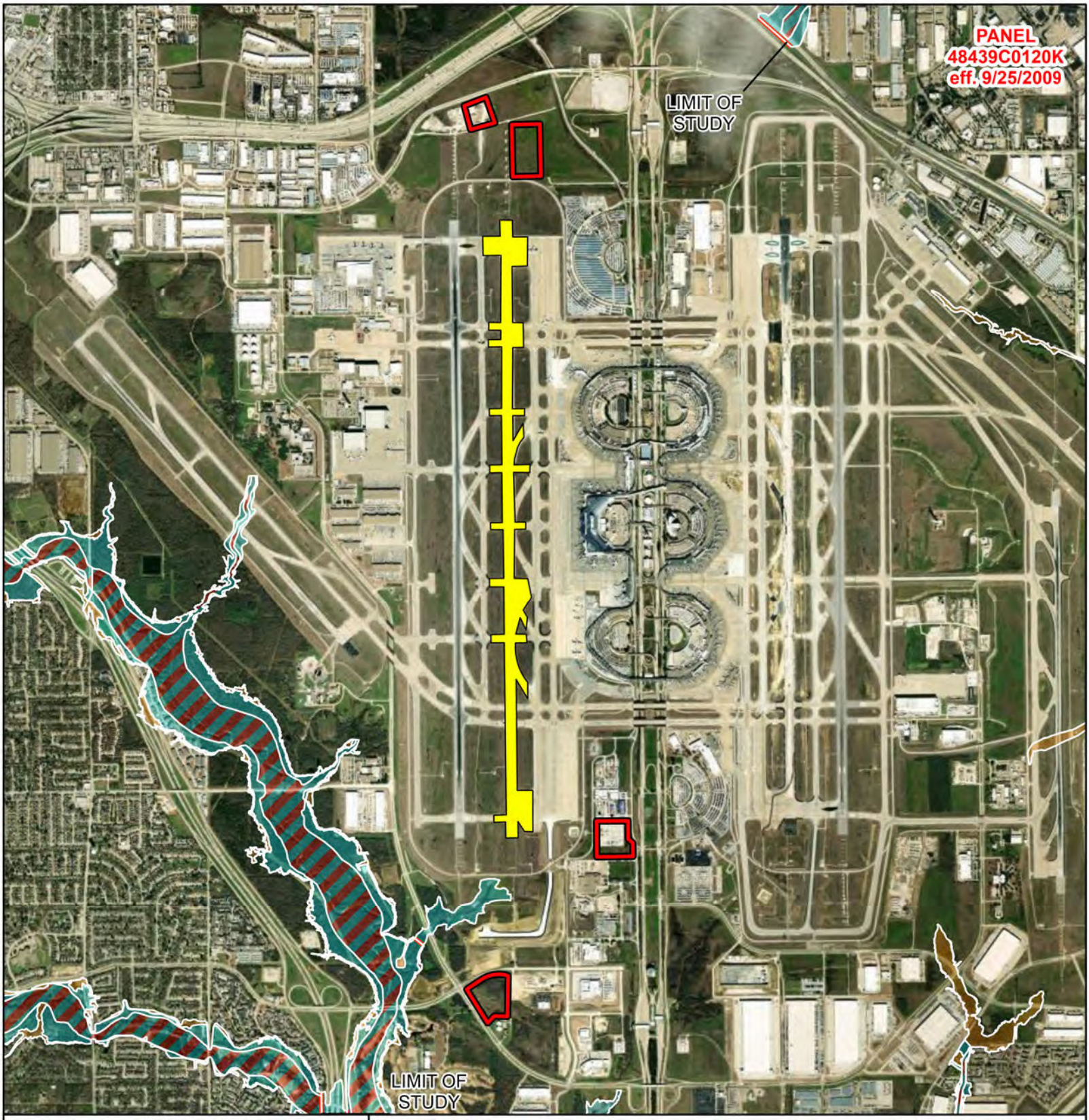


Figure 4.
Federal Emergency Management Agency Flood Insurance Rate Map

Runway 18L/36R Rehabilitation
Dallas-Fort Worth International Airport
Tarrant County, Texas

1 in = 3,000 ft
Feet
0
3,000

File Ref. 04.165.013
Date: 7/30/2025

N
W E
S

Survey Area

Runway 18L/36R

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

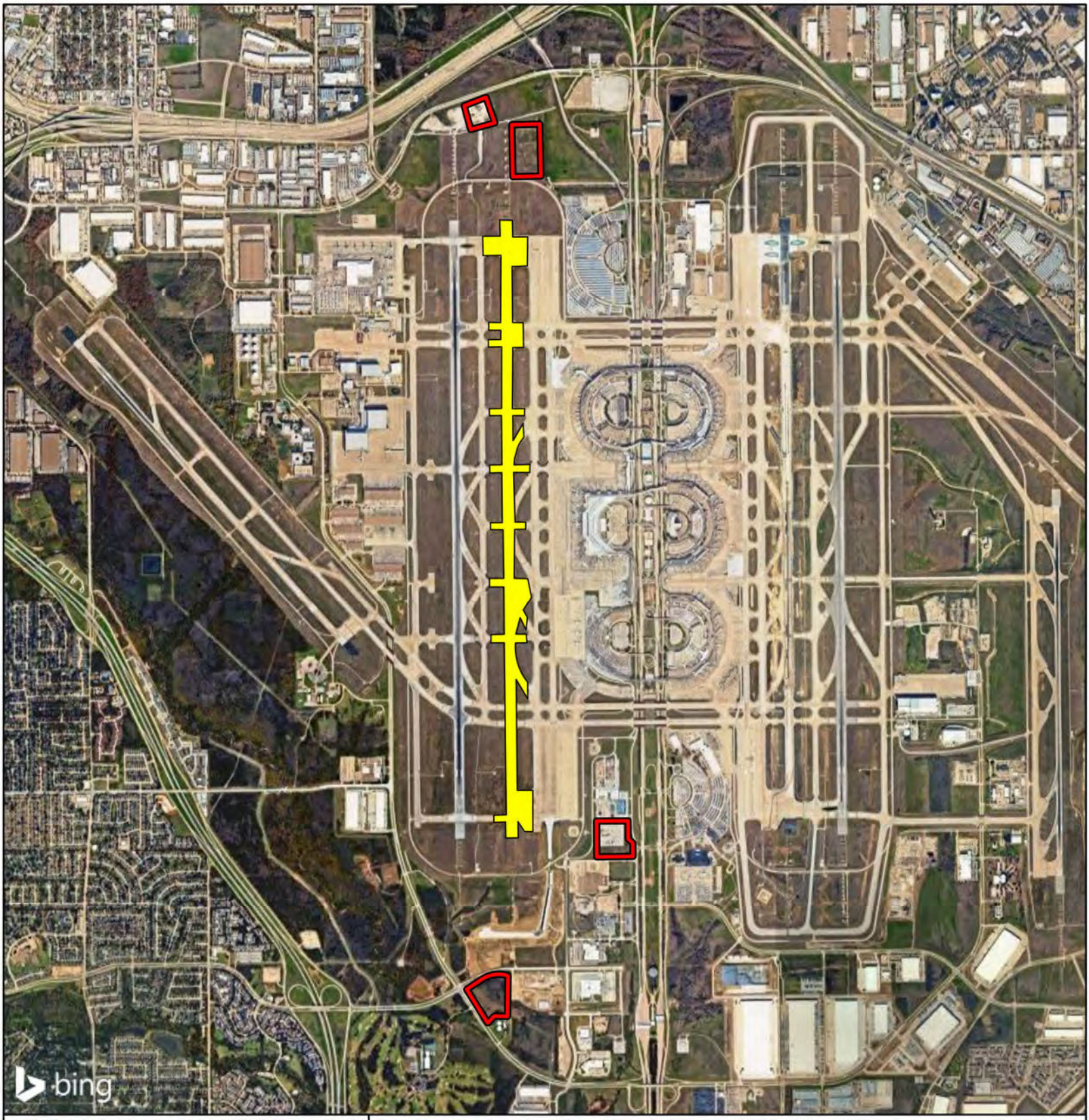


Figure 5.
Aquatic Features Identified within the Survey Area

Survey Area

Runway 18L/36R

Runway 18L/36R Rehabilitation
Dallas-Fort Worth International Airport
Tarrant County, Texas

1 in = 3,000 ft

Feet

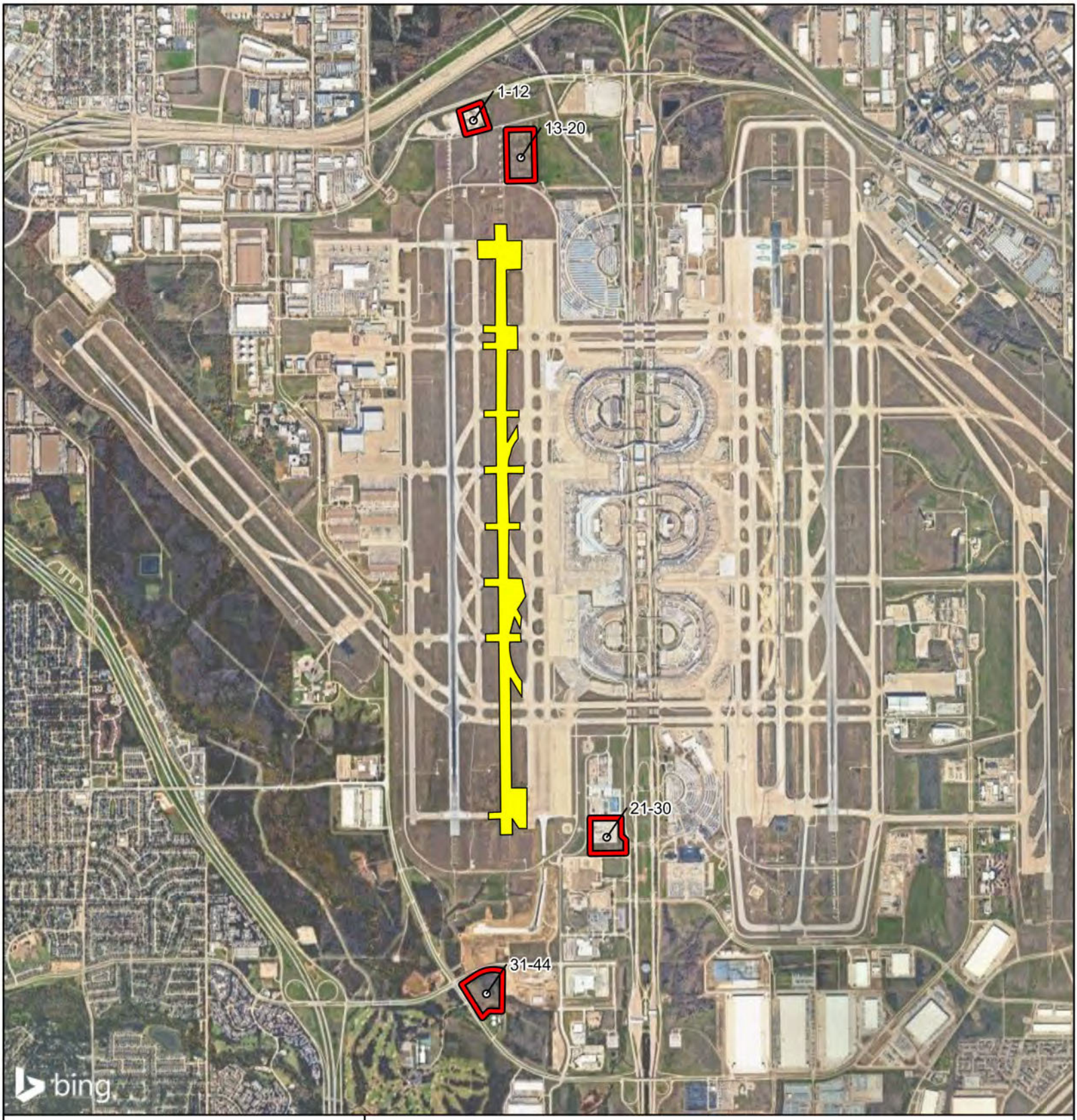
0 3,000

N
W E
S

File Ref. 04.165.013
Date: 7/30/2025

* No Aquatic Features were identified within the Survey Areas

ATTACHMENT B
Site Photographs



Photograph Location Map

Runway 18L/36R Rehabilitation
Dallas-Fort Worth International Airport
Tarrant County, Texas

1 in = 3,000 ft

Feet
0 3,000

N
W E
S

File Ref. 04.165.013
Date: 7/30/2025

Survey Area

Runway 18L/36R

Photograph Location

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

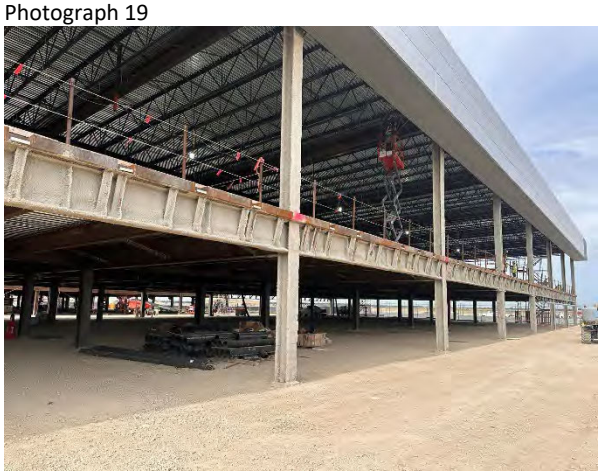
Photograph 16

Photograph 17

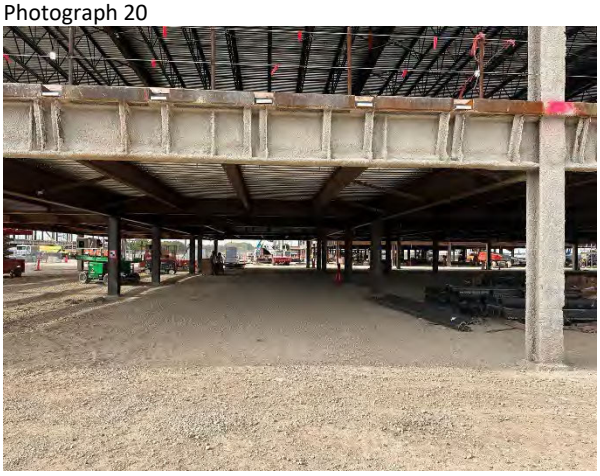
Photograph 18

Photograph 19

Photograph 20

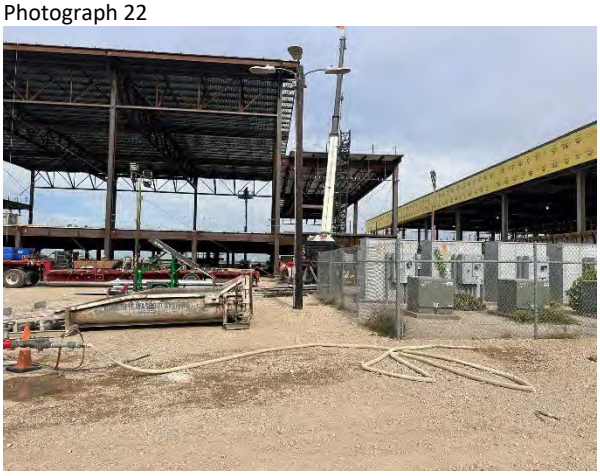


Photograph 21



Photograph 22

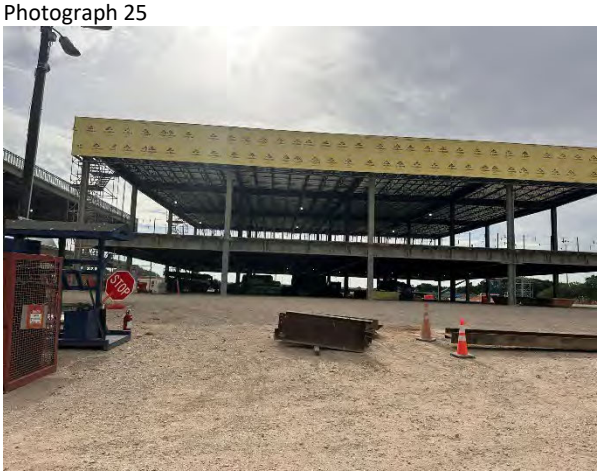
Photograph 23



Photograph 24

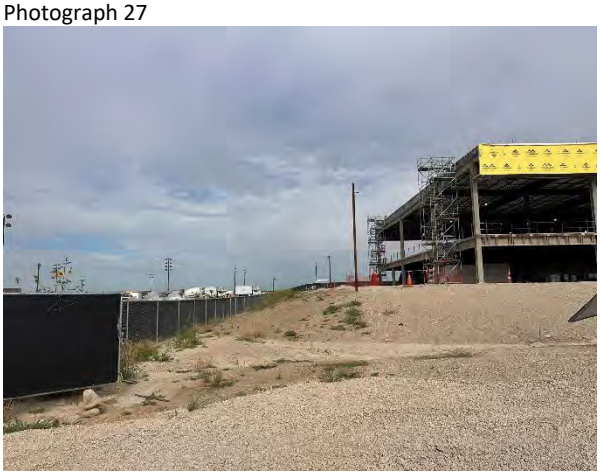
Photograph 25

Photograph 26



Photograph 27

Photograph 28



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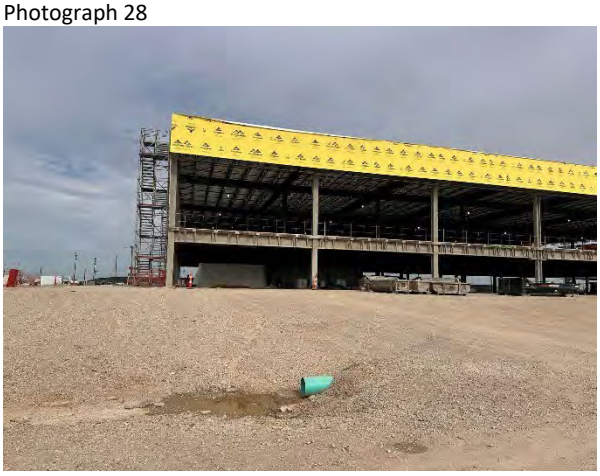


Photograph 30

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

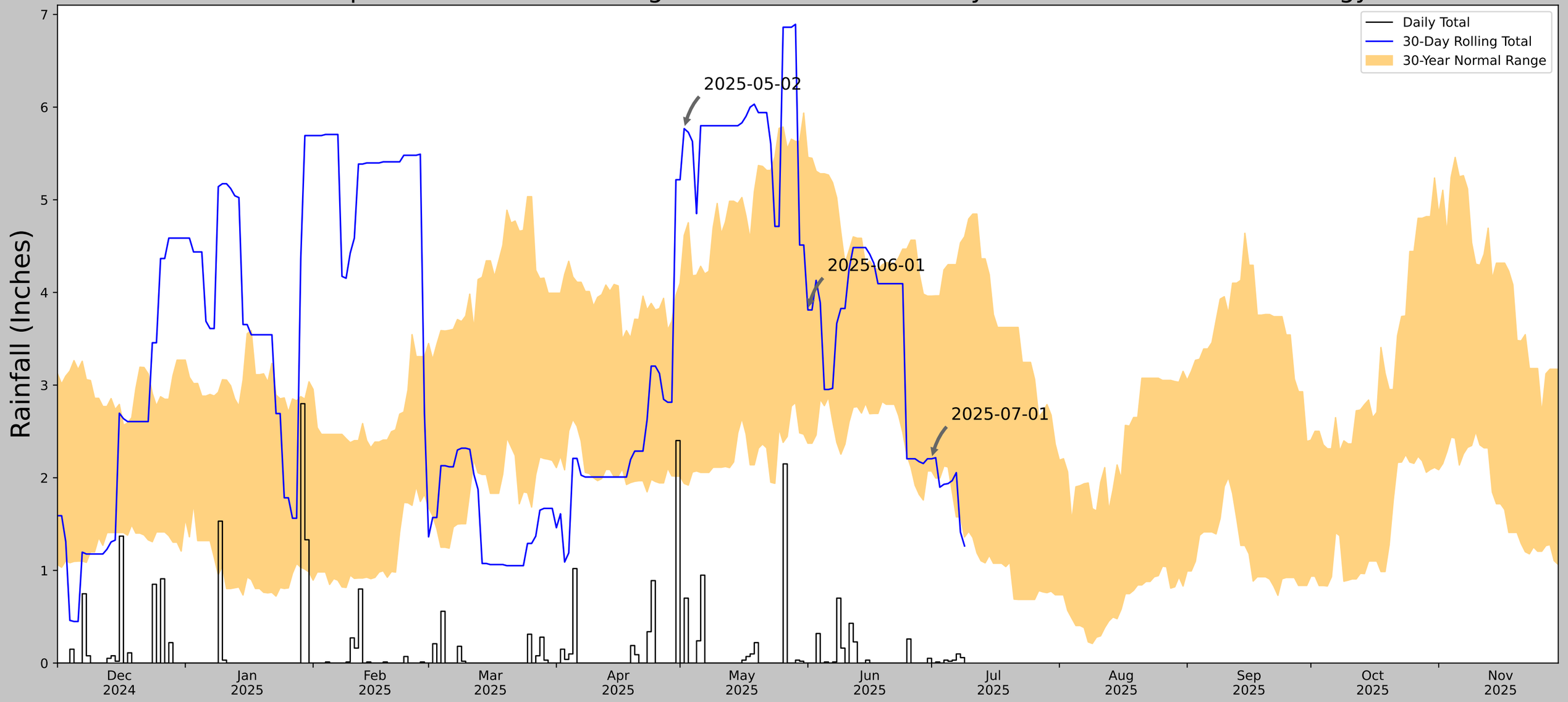
Photograph 44

ATTACHMENT C
Climatological Data

Silent Dave WX - KTXEULES41 30-Day Meteorlogical Weather Data
City of Fort Worth, Tarant County

	Temperature			Dew Point			Humidity			Speed			Pressure		Precip. Accum.
Date	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Low	Sum
6/1/2025	91.6 °F	77.4 °F	68.4 °F	76.3 °F	68.1 °F	62.8 °F	92 %	74 %	59 %	16.1 mph	2.1 mph	0.0 mph	29.98 in	29.82 in	0.00 in
6/2/2025	94.1 °F	82.8 °F	73.4 °F	76.1 °F	72.9 °F	70.5 °F	93 %	74 %	48 %	15.4 mph	3.5 mph	0.0 mph	29.96 in	29.84 in	0.00 in
6/3/2025	91.2 °F	82.1 °F	74.7 °F	76.6 °F	73.7 °F	71.8 °F	94 %	77 %	58 %	19.7 mph	4.7 mph	0.0 mph	29.94 in	29.76 in	0.02 in
6/4/2025	80.2 °F	72.6 °F	65.5 °F	72.3 °F	67.7 °F	63.3 °F	97 %	85 %	69 %	12.5 mph	3.0 mph	0.0 mph	30.02 in	29.86 in	0.00 in
6/5/2025	91.2 °F	78.6 °F	70.7 °F	77.7 °F	71.8 °F	67.6 °F	92 %	80 %	61 %	11.0 mph	2.4 mph	0.0 mph	30.11 in	29.90 in	0.02 in
6/6/2025	94.5 °F	85.4 °F	78.6 °F	76.1 °F	74.4 °F	72.5 °F	86 %	71 %	52 %	15.7 mph	3.3 mph	0.0 mph	30.01 in	29.87 in	0.00 in
6/7/2025	94.8 °F	86.0 °F	78.4 °F	78.6 °F	75.1 °F	73.6 °F	88 %	71 %	54 %	14.1 mph	2.9 mph	0.0 mph	29.98 in	29.84 in	0.00 in
6/8/2025	98.2 °F	85.9 °F	68.4 °F	79.5 °F	75.0 °F	67.6 °F	97 %	71 %	51 %	39.6 mph	3.0 mph	0.0 mph	29.95 in	29.74 in	0.62 in
6/9/2025	92.5 °F	78.8 °F	68.0 °F	72.5 °F	69.5 °F	67.1 °F	99 %	75 %	49 %	19.7 mph	2.9 mph	0.0 mph	30.02 in	29.72 in	0.32 in
6/10/2025	79.7 °F	76.0 °F	70.3 °F	74.3 °F	70.0 °F	66.0 °F	93 %	82 %	67 %	20.4 mph	1.3 mph	0.0 mph	30.09 in	29.94 in	0.00 in
6/11/2025	79.3 °F	72.9 °F	69.6 °F	73.2 °F	70.0 °F	68.2 °F	99 %	91 %	78 %	13.9 mph	1.9 mph	0.0 mph	30.07 in	29.97 in	0.65 in
6/12/2025	85.5 °F	75.5 °F	69.3 °F	72.7 °F	70.4 °F	68.7 °F	99 %	85 %	61 %	10.5 mph	1.7 mph	0.0 mph	29.99 in	29.85 in	0.24 in
6/13/2025	93.2 °F	80.1 °F	70.2 °F	77.4 °F	72.7 °F	68.9 °F	98 %	79 %	57 %	13.0 mph	2.8 mph	0.0 mph	29.98 in	29.88 in	0.00 in
6/14/2025	94.3 °F	83.8 °F	74.5 °F	79.9 °F	74.7 °F	68.4 °F	87 %	75 %	57 %	12.5 mph	2.9 mph	0.0 mph	30.03 in	29.93 in	0.00 in
6/15/2025	87.3 °F	77.8 °F	69.4 °F	75.9 °F	71.5 °F	65.7 °F	95 %	82 %	51 %	19.7 mph	2.8 mph	0.0 mph	30.17 in	29.88 in	0.10 in
6/16/2025	96.8 °F	82.6 °F	69.3 °F	78.4 °F	73.4 °F	68.5 °F	98 %	76 %	53 %	9.6 mph	1.6 mph	0.0 mph	30.02 in	29.86 in	0.00 in
6/17/2025	93.6 °F	85.6 °F	76.5 °F	76.1 °F	73.4 °F	71.2 °F	85 %	68 %	53 %	19.2 mph	4.4 mph	0.0 mph	29.94 in	29.77 in	0.00 in
6/18/2025	94.5 °F	85.5 °F	78.3 °F	77.2 °F	74.0 °F	71.1 °F	86 %	70 %	49 %	15.7 mph	3.8 mph	0.0 mph	30.02 in	29.81 in	0.00 in
6/19/2025	96.1 °F	86.1 °F	76.1 °F	78.1 °F	74.8 °F	72.9 °F	91 %	70 %	50 %	16.6 mph	2.9 mph	0.0 mph	30.12 in	30.00 in	0.00 in
6/20/2025	95.9 °F	86.8 °F	79.2 °F	76.8 °F	75.2 °F	73.0 °F	89 %	69 %	51 %	18.6 mph	3.9 mph	0.0 mph	30.09 in	29.94 in	0.00 in
6/21/2025	93.9 °F	85.5 °F	77.4 °F	75.9 °F	73.5 °F	70.5 °F	89 %	69 %	48 %	17.0 mph	5.1 mph	0.0 mph	30.05 in	29.93 in	0.00 in
6/22/2025	94.3 °F	85.0 °F	76.5 °F	75.2 °F	73.1 °F	69.6 °F	90 %	69 %	47 %	17.9 mph	4.9 mph	0.0 mph	30.11 in	30.00 in	0.00 in
6/23/2025	94.3 °F	84.8 °F	76.5 °F	76.5 °F	73.9 °F	70.5 °F	92 %	71 %	49 %	16.3 mph	3.4 mph	0.0 mph	30.16 in	30.06 in	0.00 in
6/24/2025	94.8 °F	85.1 °F	76.5 °F	75.0 °F	72.8 °F	70.2 °F	88 %	68 %	47 %	19.2 mph	2.8 mph	0.0 mph	30.21 in	30.07 in	0.00 in
6/25/2025	89.2 °F	79.8 °F	72.1 °F	78.6 °F	73.1 °F	69.1 °F	99 %	80 %	60 %	13.0 mph	2.0 mph	0.0 mph	30.17 in	30.03 in	0.30 in
6/26/2025	93.0 °F	82.8 °F	74.7 °F	75.9 °F	73.3 °F	70.5 °F	93 %	75 %	50 %	13.6 mph	3.1 mph	0.0 mph	30.10 in	29.94 in	0.00 in
6/27/2025	94.5 °F	84.2 °F	74.8 °F	76.5 °F	72.9 °F	70.3 °F	92 %	70 %	50 %	13.2 mph	2.9 mph	0.0 mph	30.08 in	29.97 in	0.00 in
6/28/2025	95.0 °F	86.2 °F	77.9 °F	76.5 °F	73.3 °F	71.1 °F	86 %	67 %	49 %	14.3 mph	3.5 mph	0.0 mph	30.09 in	29.96 in	0.00 in
6/29/2025	95.5 °F	86.7 °F	78.1 °F	75.2 °F	72.6 °F	69.3 °F	83 %	64 %	47 %	15.2 mph	3.3 mph	0.0 mph	30.05 in	29.93 in	0.00 in
6/30/2025	96.1 °F	85.0 °F	75.2 °F	75.2 °F	72.7 °F	69.1 °F	87 %	68 %	47 %	19.5 mph	3.8 mph	0.0 mph	30.10 in	29.92 in	0.00 in

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	32.9374942, -97.0624960
Observation Date	2025-07-01
Elevation (ft)	606.841
Drought Index (PDSI)	Mild wetness (2025-06)
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-07-01	2.073228	3.961024	2.204724	Normal	2	3	6
2025-06-01	2.372441	5.457087	3.811024	Normal	2	2	4
2025-05-02	1.938583	4.616929	5.767717	Wet	3	1	3
Result							Normal Conditions - 13

US Army Corps of Engineers

ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
DAL-FTW WSCMO AP	32.8975, -97.0219	543.963	3.63	62.878	1.862	11353	90

Appendix E3: Runway 18L/36R Rehabilitation Tree Survey

21 July 2025

Ms. Esther Chitsinde
HDR Engineering, INC.
17111 Preston Rd., Suite 300
Dallas, Texas 75284

Re: Runway 18L/36R Rehabilitation Tree Survey – Approximately 55.96 acres associated with 4 parcels located throughout Dallas-Fort Worth International Airport, Tarrant County, Texas

Dear Ms. Chitsinde:

Integrated Environmental Solutions, LLC (IES) conducted a tree survey in accordance with the Dallas Fort Worth International Airport (DFW) Tree Ordinance. Through coordination with the client, all trees 6 inches diameter breast height (DBH) (except Chinaberry, honey locust, and red mulberry) are to be surveyed within the 55.96-acre tracts located at DFW, Tarrant County, Texas (**Attachment A, Figure 1**). The survey limits were developed from a graphic provided by your office depicting the boundary of the development. IES investigated the limits of the survey area on 01 July 2025 for all trees with the above-specified diameter (**Attachment A, Figure 2**). The trees were measured, recorded, and marked with aluminum tags that specify a number corresponding to the attached maps and data tables.

Table 1. Unprotected Tree Species

Common Name	Botanical Name
Chinaberry	*Melia azedarach*
honey locust	*Gleditsia triacanthos*
red mulberry	*Morus rubra*

During the survey, IES identified and located 2 trees within the survey area totaling 28.8 diameter inches. Total canopy coverage was estimated to be 0.02 percent of the total area between all four parcels. Tree species recorded included honey mesquite (*Prosopis glandulosa*) and sugarberry (*Celtis laevigata*) (**Attachment B**).

IES appreciates the opportunity to work with you and HDR Engineering, INC. on this project. Please note that the results of this tree survey are only valid for 12 months as trees are living organisms and in North Texas, depending upon species, grow between 1 to 4 feet per year (on average could achieve 1.2 inches DBH per year) under normal climatic conditions. Tree locations were recorded using a Juniper Systems Geode GNS3S Global Positioning System (GPS) unit, which can provide sub-meter accuracy, but should not be considered equivalent to a Registered Professional Land Surveyor (RPLS) survey grade data. IES recommends that prior to development planning, a RPLS tie in all tree locations for engineering plan development to ensure location accuracy on design plans. In the event there are any questions or if we can provide any further assistance, please contact me at rreinecke@intenvsol.com or (972) 562-7672.

Sincerely,

Integrated Environmental Solutions, LLC.

Rudi Reinecke
ISA Certified Arborist #TX-3922A

I Rudi Reinecke, being a landscape architect, certified arborist, certified forester, certified ecologist, or professional with a degree in a related field and the required experience, attest that the identification, size, and location of trees noted on this survey are correct and that all trees six (6) or more inches in diameter at breast height have been shown.

Signature: _____ *Date:* 21 July 2025

Attachments
File ref: 04.165.013

ATTACHMENT A

Figures

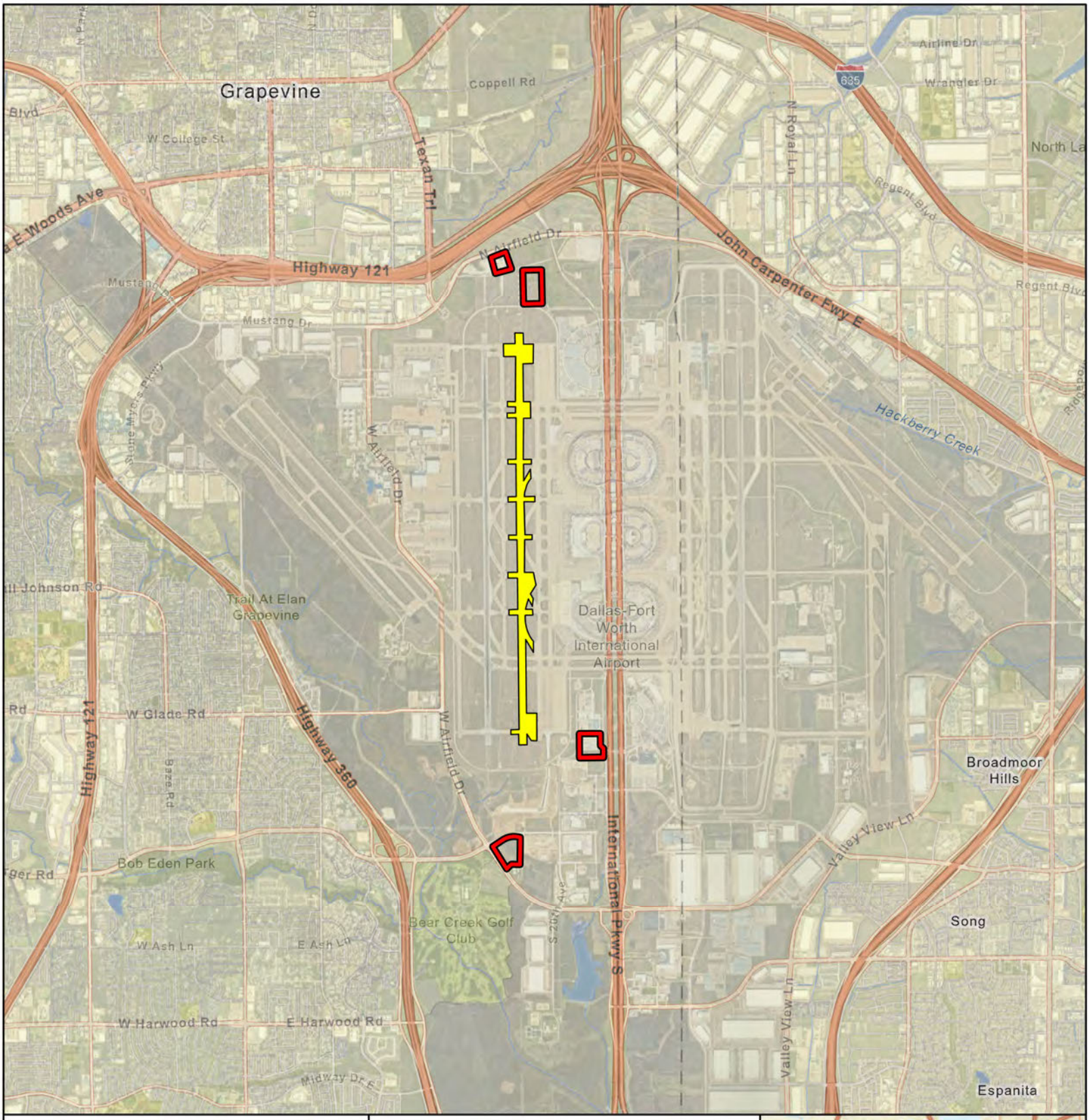


Figure 1.
General Location Map

Runway 18L/36R Rehabilitation
Dallas-Fort Worth International Airport
Tarrant County, Texas

1 in = 4,500 ft

Feet
0 4,500

N
W E
S

File Ref. 04.165.013
Date: 7/30/2025

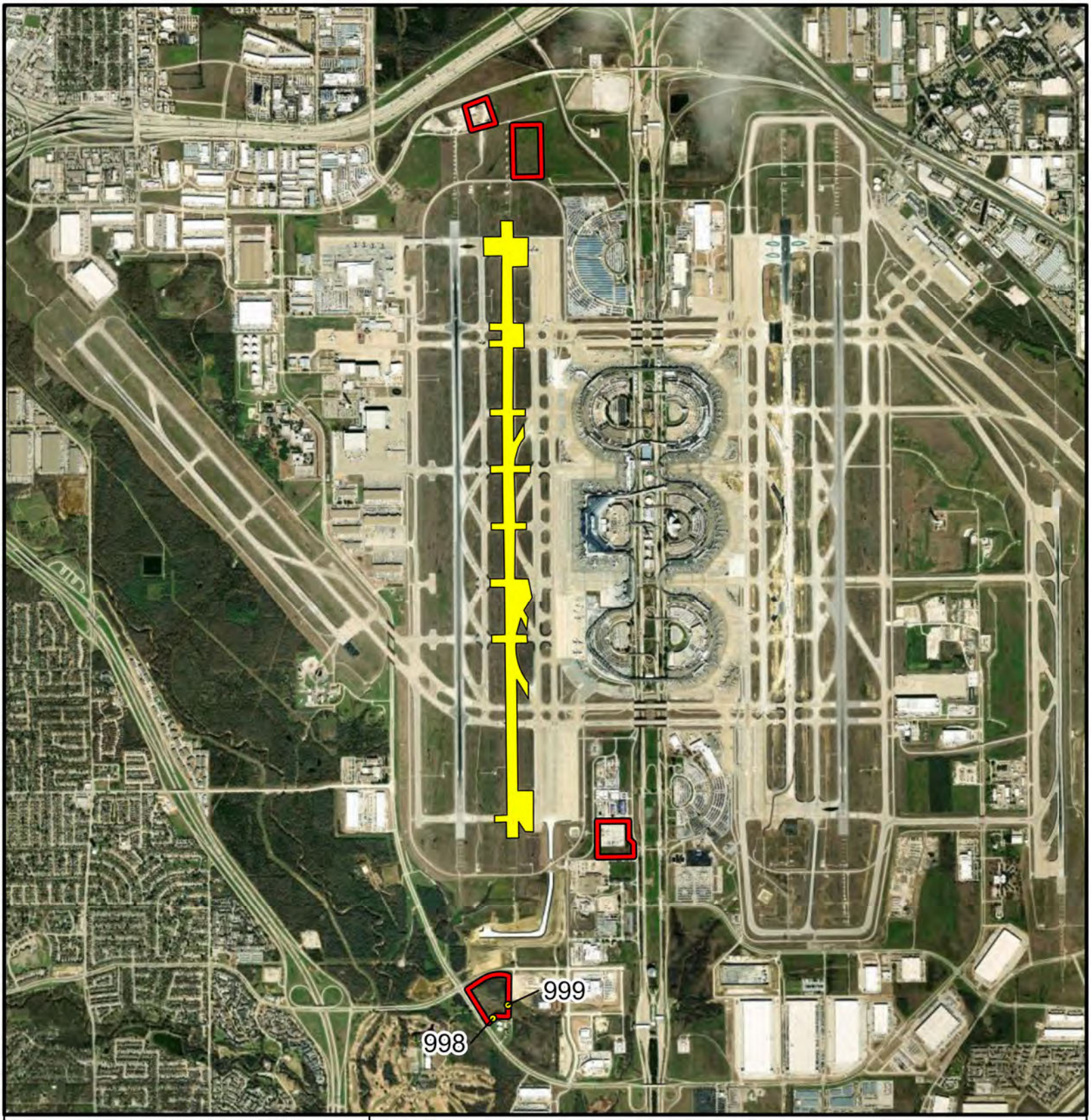


Figure 2.
Tree Locations Identified Within the Survey Area

Runway 18L/36R Rehabilitation
Dallas-Fort Worth International Airport
Tarrant County, Texas

1 in = 3,000 ft

Feet
0
3,000

N
W
E
S

File Ref. 04.165.013
Date: 7/30/2025

Survey Area

Runway 18L/36R

Tree Location

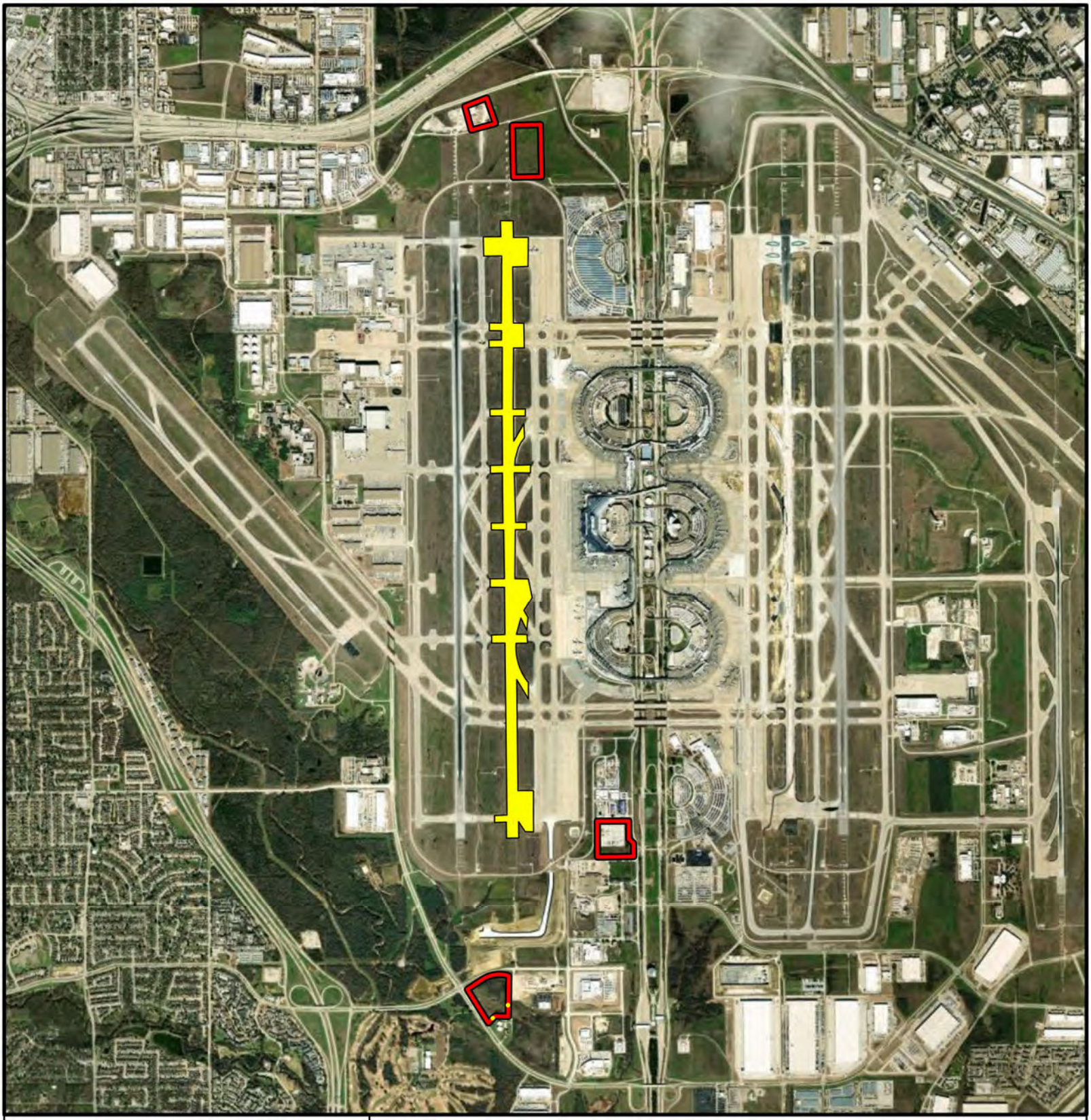


Figure 3.
Canopy Coverage

Runway 18L/36R Rehabilitation
Dallas-Fort Worth International Airport
Tarrant County, Texas

1 in = 3,000 ft

Feet
0 3,000

N
W E
S

File Ref. 04.165.013
Date: 7/30/2025

Survey Area

Runway 18L/36R

Canopy Coverage (0.02%)

Figure 3A.
Canopy Coverage

Runway 18L/36R Rehabilitation
Dallas-Fort Worth International Airport
Tarrant County, Texas

1 in = 250 ft

Feet
0 250

N
W E
S

File Ref. 04.165.013
Date: 7/30/2025

Survey Area

Canopy Coverage (0.02%)

ATTACHMENT B

Tabular Tree Data

Runway 18L/36R Rehabilitation Tree Survey Tabular Data
Dallas-Fort Worth International Airport

Tree Number	Diameter at Breast Height (Inches)	Species	Scientific Name	Nativity	Canopy Radius (Feet)	Multiple Trunks	Critical Root Zone (Feet)	General Condition	Lean (%)	Dead / Missing Bark	Sapwood Damage	Heartwood Damage	Latitude	Longitude
999	12.1	sugarberry	*Celtis laevigata*	Native	12	Yes	12	Healthy	61-90	No	No	No	32.86726821	-97.05145158
998	16.7	honey mesquite	*Prosopis glandulosa*	Native	12	Yes	17	Healthy	61-90	No	No	No	32.86645708	-97.05260309