



Biological Evaluation Form and Tier I Site Assessment Form Attachments

STATE HIGHWAY (SH) 114

Fort Worth District

From: Farm-to-Market Road (FM) 1938

To: Dove Road

Main CSJ: 0353-03-100

BIOLOGICAL EVALUATION FORM AND TIER I SITE ASSESSMENT: LIST OF ATTACHMENTS

ATTACHMENT 1: DETAILED PROJECT DESCRIPTION

ATTACHMENT 2: PROJECT LOCATION (AERIAL BASE) FIGURE

ATTACHMENT 3: PROJECT LOCATION (TOPOGRAPHIC BASE) FIGURE

ATTACHMENT 4: UNITED STATES FISH AND WILDLIFE SERVICE OFFICIAL SPECIES LIST

ATTACHMENT 5: TEXAS PARKS AND WILDLIFE DEPARTMENT ANNOTATED COUNTY LIST OF RARE SPECIES FOR TARRANT COUNTY

ATTACHMENT 6: TABLE: THREATENED AND ENDANGERED SPECIES AND SPECIES OF GREATEST CONSERVATION NEED OF POTENTIAL OCCURRENCE IN TARRANT COUNTY, TEXAS

ATTACHMENT 7: TPWD TXNDD CORRESPONDENCE

ATTACHMENT 8: TXNDD ELEMENTS OF OCCURRENCE FIGURE

ATTACHMENT 9: TXNDD EOIDS WITHIN THE VICINITY OF THE PROPOSED PROJECT

ATTACHMENT 10: PROJECT EMST VEGETATION TYPES

ATTACHMENT 11: EMST MAPPED VEGETATION TYPES FIGURE

ATTACHMENT 12: OBSERVED VEGETATION TYPES

ATTACHMENT 13: OBSERVED VEGETATION TYPES FIGURE

ATTACHMENT 14: TPWD/TXDOT MOU THRESHOLD

ATTACHMENT 15: ECOREGIONS OF TEXAS FIGURE

ATTACHMENT 16: WATER RESOURCES FIGURE

ATTACHMENT 17: POTENTIAL WATERS OF THE U.S. FIGURE

ATTACHMENT 18: SOILS IN THE PROJECT AREA FIGURE

ATTACHMENT 19: URBANIZED AREA FIGURE

ATTACHMENT 20: PROJECT AREA PHOTOGRAPHS

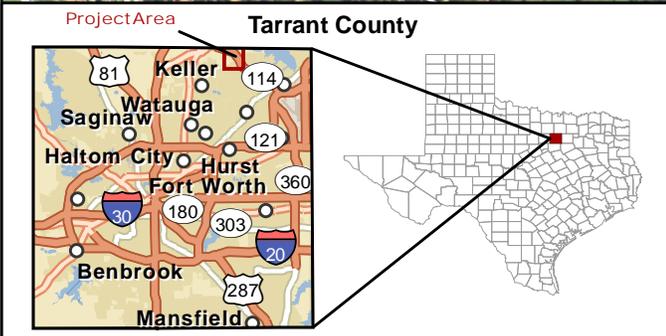
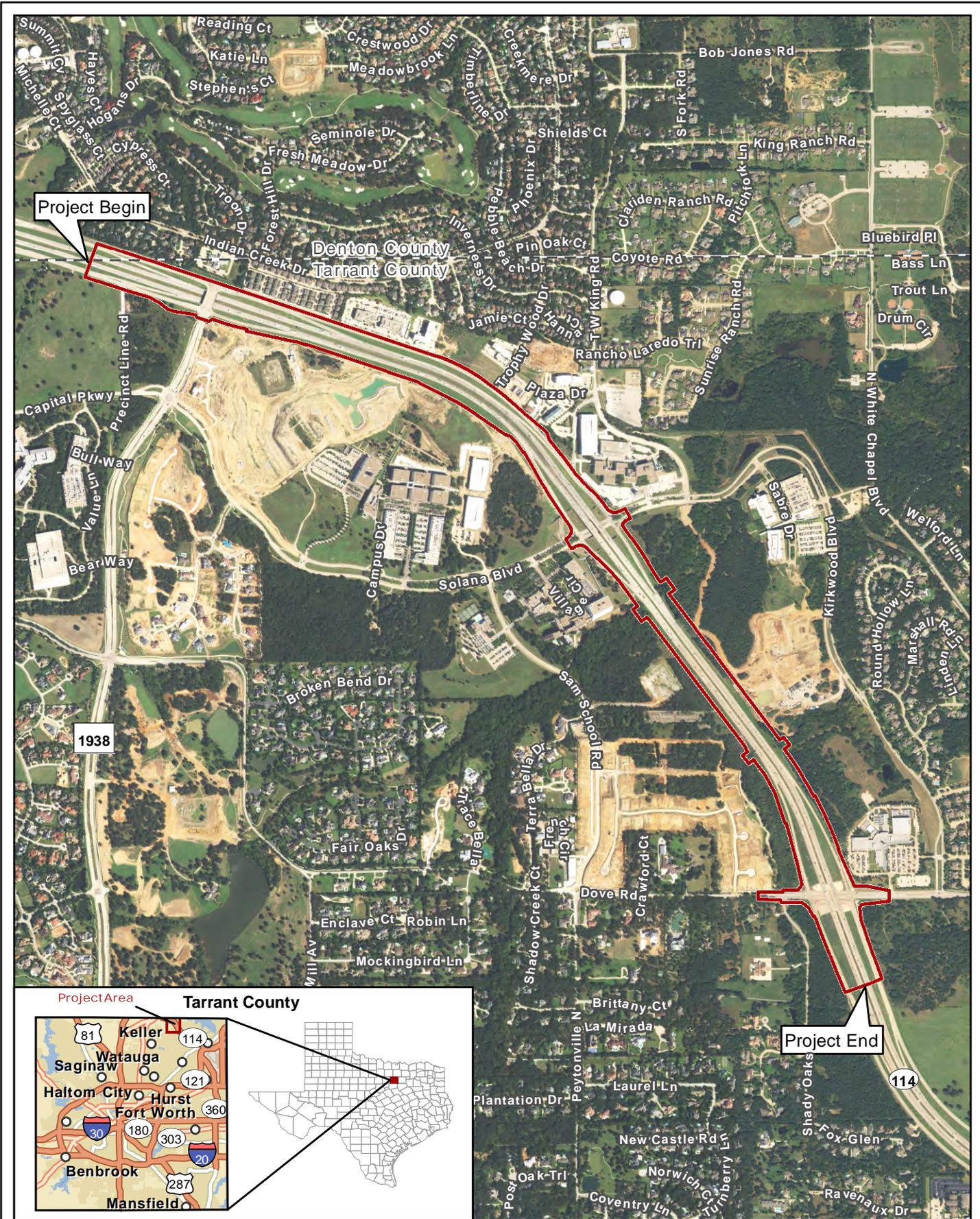
ATTACHMENT 21: PROJECT AREA PHOTOGRAPHS LOCATION FIGURE

ATTACHMENT 1: DETAILED PROJECT DESCRIPTION

The Fort Worth District of the Texas Department of Transportation proposes to add continuous two-lane frontage roads along State Highway (SH) 114 from Farm-to-Market Road (FM) 1938 (Davis Blvd) to Dove Rd to increase connectivity along this travel corridor, located in the City of Southlake, Town of Westlake, and Town of Trophy Club, Tarrant County, Texas. Additionally, the proposed project includes the reversal of the existing entrance and exit ramps from the "Diamond Configuration" to an "X Configuration" to increase mobility and safety along the SH 114 mainlanes and frontage roads. Along with these improvements, U-Turn lanes will be added along SH 114 for both eastbound and westbound directions at Kirkwood Blvd and on the west side of Dove Road.

Additional right-of-way will be needed along certain areas of the project, and it is anticipated that the needed right-of-way will be dedicated by the City of Southlake. In other areas, the project will be designed such that no additional right-of-way will be needed. In total the proposed project is located on 113.23 acres of existing right-of-way, 4.64 acres of proposed right-of-way, and 5.70 acres of temporary construction easements.

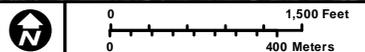
ATTACHMENT 2: PROJECT LOCATION (AERIAL BASE) FIGURE



Project Location
(Aerial Base)

SH 114 from FM 1938 to Dove Rd

Project Location

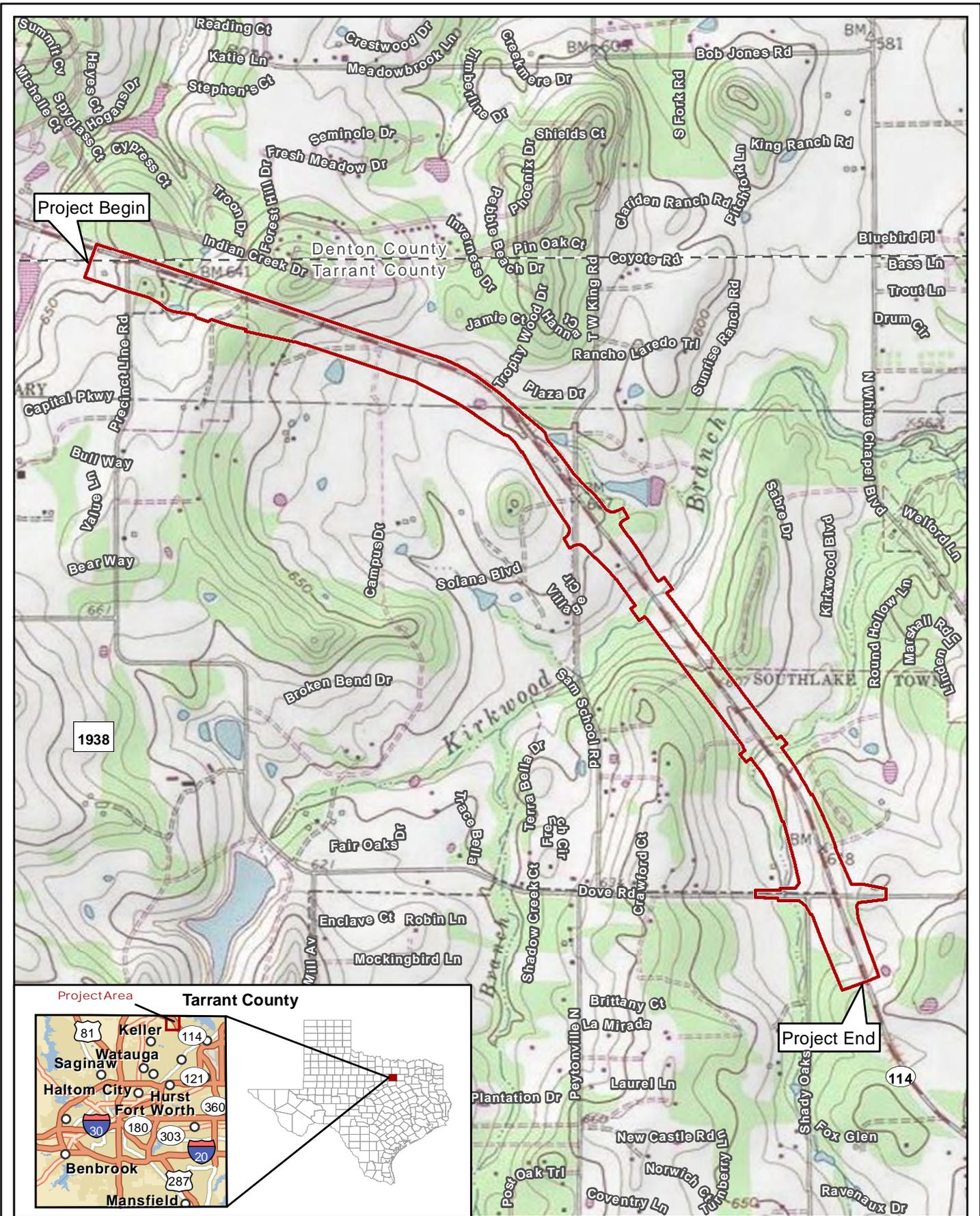


Prepared for: TxDOT	1 in = 1,500 feet
	Scale: 1:18,000
	Date: 1/9/2019

Aerial Source: NAIP (2016)

CSJ: 0353-03-100

ATTACHMENT 3: PROJECT LOCATION (TOPOGRAPHIC BASE) FIGURE

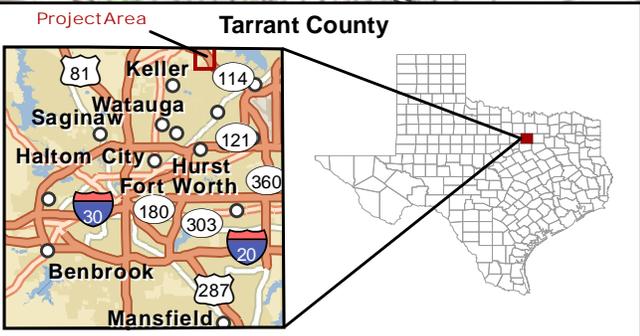


Project Begin

Project End

1938

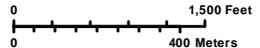
114



Project Location
(Topographic Base)

SH 114 from FM 1938 to Dove Rd

Project Location



Prepared for: TxDOT
1 in = 1,500 feet
Scale: 1:18,000
Date: 1/11/2019

Basemap Source: USGS Colleyville 7.5' Quadrangle (1981)

CSJ: 0353-03-100

***ATTACHMENT 4: UNITED STATES FISH AND WILDLIFE SERVICE OFFICIAL SPECIES
LIST***



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Arlington Ecological Services Field Office

2005 Ne Green Oaks Blvd

Suite 140

Arlington, TX 76006-6247

Phone: (817) 277-1100 Fax: (817) 277-1129

<http://www.fws.gov/southwest/es/arlingtontexas/>

<http://www.fws.gov/southwest/es/EndangeredSpecies/lists/>

In Reply Refer To:

December 18, 2018

Consultation Code: 02ETAR00-2019-SLI-0454

Event Code: 02ETAR00-2019-E-00994

Project Name: State Highway 114

Subject: List of threatened and endangered species that may occur in your proposed project location, and/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 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 direct or indirect result of the proposed action, and the effect is not discountable or insignificant. This determination requires formal section 7 consultation.

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 in the "Endangered Species Consultation Handbook" at: <http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

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

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 (<http://www.fws.gov/windenergy/>)

[eagle_guidance.html](#)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) 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: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

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

2005 Ne Green Oaks Blvd

Suite 140

Arlington, TX 76006-6247

(817) 277-1100

Project Summary

Consultation Code: 02ETAR00-2019-SLI-0454

Event Code: 02ETAR00-2019-E-00994

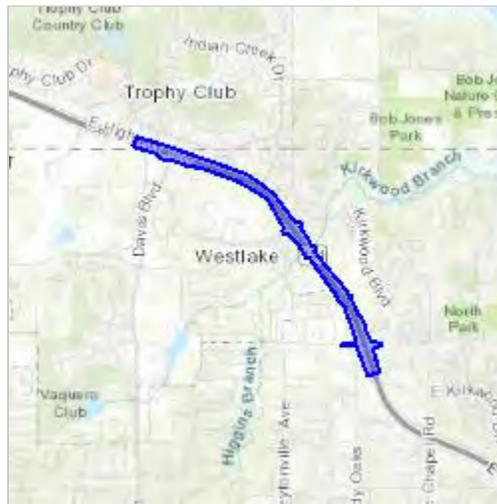
Project Name: State Highway 114

Project Type: TRANSPORTATION

Project Description: The Fort Worth District of the Texas Department of Transportation proposes to add continuous two-lane frontage roads along State Highway (SH) 114 from Farm-to-Market Road (FM) 1938 (Davis Blvd) to Dove Rd to increase connectivity along this travel corridor.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/32.979266217929634N97.16494196539563W>



Counties: Denton, TX | Tarrant, TX

Endangered Species Act Species

There is a total of 4 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 Fisheries¹, 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.
-

Birds

NAME	STATUS
<p>Least Tern <i>Sterna antillarum</i></p> <p>Population: interior pop.</p> <p>No critical habitat has been designated for this species.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/8505</p>	Endangered
<p>Piping Plover <i>Charadrius melodus</i></p> <p>Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered.</p> <p>There is final critical habitat for this species. Your location is outside the critical habitat.</p> <p>This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> ▪ Wind Energy Projects <p>Species profile: https://ecos.fws.gov/ecp/species/6039</p>	Threatened
<p>Red Knot <i>Calidris canutus rufa</i></p> <p>No critical habitat has been designated for this species.</p> <p>This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> ▪ Wind Energy Projects <p>Species profile: https://ecos.fws.gov/ecp/species/1864</p>	Threatened
<p>Whooping Crane <i>Grus americana</i></p> <p>Population: Wherever found, except where listed as an experimental population</p> <p>There is final critical habitat for this species. Your location is outside the critical habitat.</p> <p>Species profile: https://ecos.fws.gov/ecp/species/758</p>	Endangered

Critical habitats

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

***ATTACHMENT 5: TEXAS PARKS AND WILDLIFE DEPARTMENT ANNOTATED
COUNTY LISTS OF RARE SPECIES FOR TARRANT COUNTY***

TARRANT COUNTY

BIRDS

		Federal Status	State Status
American Peregrine Falcon	<i>Falco peregrinus anatum</i>	DL	T
<p>year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands.</p>			
Arctic Peregrine Falcon	<i>Falco peregrinus tundrius</i>	DL	
<p>migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands.</p>			
Bald Eagle	<i>Haliaeetus leucocephalus</i>	DL	T
<p>found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds</p>			
Henslow's Sparrow	<i>Ammodramus henslowii</i>		
<p>wintering individuals (not flocks) found in weedy fields or cut-over areas where lots of bunch grasses occur along with vines and brambles; a key component is bare ground for running/walking</p>			
Interior Least Tern	<i>Sternula antillarum athalassos</i>	LE	E
<p>The 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</p>			
Peregrine Falcon	<i>Falco peregrinus</i>	DL	T
<p>both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat.</p>			

TARRANT COUNTY

BIRDS

Federal Status State Status

Red Knot

Calidris canutus rufa

LT

Red knots migrate long distances in flocks northward through the contiguous United States mainly April-June, southward July-October. A small plump-bodied, short-necked shorebird that in breeding plumage, typically held from May through August, is a distinctive and unique pottery orange color. Its bill is dark, straight and, relative to other shorebirds, short-to-medium in length. After molting in late summer, this species is in a drab gray-and-white non-breeding plumage, typically held from September through April. In the non-breeding plumage, the knot might be confused with the omnipresent Sanderling. During this plumage, look for the knot's prominent pale eyebrow and whitish flanks with dark barring. 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.

Sprague's Pipit

Anthus spragueii

only in Texas during migration and winter, mid September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges.

Western Burrowing Owl

Athene cunicularia hypugaea

open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows

Whooping Crane

Grus americana

LE

E

potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties

FISHES

Federal Status State Status

Shovelnose sturgeon

Scaphirhynchus platyrhynchus

T/SA

T

open, flowing channels with bottoms of sand or gravel; spawns over gravel or rocks in an area with a fast current; Red River below reservoir and rare occurrence in Rio Grande

MAMMALS

Federal Status State Status

Gray wolf

Canis lupus

LE

E

extirpated; formerly known throughout the western two-thirds of the state in forests, brushlands, or grasslands

Plains spotted skunk

Spilogale putorius interrupta

catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie

TARRANT COUNTY

MAMMALS

		Federal Status	State Status
Red wolf	<i>Canis rufus</i>	LE	E
extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies			

MOLLUSKS

		Federal Status	State Status
Louisiana pigtoe	<i>Pleurobema riddellii</i>		T
streams and moderate-size rivers, usually flowing water on substrates of mud, sand, and gravel; not generally known from impoundments; Sabine, Neches, and Trinity (historic) River basins			
Sandbank pocketbook	<i>Lampsilis satura</i>		T
small to large rivers with moderate flows and swift current on gravel, gravel-sand, and sand bottoms; east Texas, Sulfur south through San Jacinto River basins; Neches River			
Texas heelsplitter	<i>Potamilus amphichaenus</i>		T
quiet waters in mud or sand and also in reservoirs. Sabine, Neches, and Trinity River basins			
Texas pigtoe	<i>Fusconaia askewi</i>		T
rivers with mixed mud, sand, and fine gravel in protected areas associated with fallen trees or other structures; east Texas River basins, Sulphur River, Cypress Creek, Sabine through Trinity rivers as well as San Jacinto River			

REPTILES

		Federal Status	State Status
Texas garter snake	<i>Thamnophis sirtalis annectens</i>		
wet or moist microhabitats are conducive to the species occurrence, but is not necessarily restricted to them; hibernates underground or in or under surface cover; breeds March-August			
Texas horned lizard	<i>Phrynosoma cornutum</i>		T
open, arid and semi-arid regions with sparse vegetation, including grass, 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; breeds March-September			
Timber rattlesnake	<i>Crotalus horridus</i>		T
swamps, floodplains, upland pine and deciduous woodlands, riparian zones, abandoned farmland; limestone bluffs, sandy soil or black clay; prefers dense ground cover, i.e. grapevines or palmetto			

PLANTS

		Federal Status	State Status
Auriculate false foxglove	<i>Agalinis auriculata</i>		
Known in Texas from one late nineteenth century specimen record labeled -Benbrook-; in Oklahoma, degraded prairies, floodplains, fallow fields, and borders of upland sterile woods; in Arkansas, blackland prairie; Annual; Flowering August - October			

TARRANT COUNTY

PLANTS

Federal Status

State Status

Glen Rose yucca

Yucca necopina

Texas endemic; grasslands on sandy soils and limestone outcrops; flowering April-June

Hall's prairie clover

Dalea hallii

GLOBAL RANK: G3; In grasslands on eroded limestone or chalk and in oak scrub on rocky hillsides; Perennial; Flowering May-Sept; Fruiting June-Sept

Osage Plains false foxglove

Agalinis densiflora

GLOBAL RANK: G3; Most records are from grasslands on shallow, gravelly, well drained, calcareous soils; Prairies, dry limestone soils; Annual; Flowering Aug-Oct

Reverchon's curfpea

Pediomelum reverchonii

GLOBAL RANK: G3; Mostly in prairies on shallow rocky calcareous substrates and limestone outcrops; Perennial; Flowering Jun-Sept; Fruiting June-July

Texas milk vetch

Astragalus reflexus

GLOBAL RANK: G3; Grasslands, prairies, and roadsides on calcareous and clay substrates; Annual; Flowering Feb-June; Fruiting April-June

Topeka purple-coneflower

Echinacea atrorubens

GLOBAL RANK: G3; Occurring mostly in tallgrass prairie of the southern Great Plains, in blackland prairies but also in a variety of other sites like limestone hillsides; Perennial; Flowering Jan-June; Fruiting Jan-May

***ATTACHMENT 6: TABLE: THREATENED AND ENDANGERED SPECIES AND SPECIES
OF GREATEST CONSERVATION NEED OF POTENTIAL OCCURRENCE IN TARRANT
COUNTY, TEXAS***

Threatened and Endangered Species, and Species of Greatest Conservation Need of Potential Occurrence in Tarrant County, Texas.

Species	Federal Status	State Status	Habitat Description	Habitat Present in Project Area?	Species Effect/ Impact	Pertinent Project Information
Plants						
Auriculate false foxglove <i>Agalinis auriculata</i>	NL	SGCN	Known in Texas from one late nineteenth century specimen record labeled -Benbrook-; in Oklahoma, degraded prairies, floodplains, fallow fields, and borders of upland sterile woods; in Arkansas, blackland prairie; Annual; Flowering August – October	Yes	May impact	Degraded prairies and borders of upland sterile woods exist within the proposed project area. Low quality habitat exists within the proposed project area in the Blackland Prairie: Disturbance or Tame Grassland vegetation type. Areas within the right-of-way are regularly maintained and were likely seeded during the construction of the road. No individuals of this species were observed during the September or December 2018 site visits.
Glen Rose yucca <i>Yucca necopina</i>	NL	SGCN	Texas endemic; grasslands on sandy soils and limestone outcrops; flowering April-June	No	No impact	No grasslands on sandy soils and limestone outcrops are located within the proposed project area. No individuals of this species were observed during the September or December 2018 site visits.
Hall's prairie clover <i>Dalea hallii</i>	NL	SGCN	GLOBAL RANK: G3; In grasslands on eroded limestone or chalk and in oak scrub on rocky hillsides; Perennial; Flowering May-Sept; Fruiting June-Sept	No	No impact	Grasslands on eroded limestone or chalk or oak scrub on rocky hillsides are not located within the proposed project area. No individuals of this species were observed during the September or December 2018 site visits.

STATE HIGHWAY (SH) 114
 CSJ: 0353-03-100

	Species	Federal Status	State Status	Habitat Description	Habitat Present in Project Area?	Species Effect/ Impact	Pertinent Project Information
	Osage Plains false foxglove <i>Agalinis densiflora</i>	NL	SGCN	GLOBAL RANK: G3; Most records are from grasslands on shallow, gravelly, well drained, calcareous soils; Prairies, dry limestone soils; Annual; Flowering Aug-Oct	Yes	May impact	Grasslands and prairie exist within the proposed project area. Low quality habitat exists within the proposed project area in the Blackland Prairie: Disturbance or Tame Grassland vegetation type. Areas within the right-of-way are regularly maintained and were likely seeded during the construction of the road. No individuals of this species were observed during the September or December 2018 site visits.
	Reverchon's scurfpea <i>Pediomelum reverchonii</i>	NL	SGCN	GLOBAL RANK: G3; Mostly in prairies on shallow rocky calcareous substrates and limestone outcrops; Perennial; Flowering Jun-Sept; Fruiting June-July	No	No impact	Shallow rocky calcareous substrates or limestone outcrops are not located within the proposed project area. No individuals of this species were observed during the September or December 2018 site visits.
	Texas milk vetch <i>Astragalus reflexus</i>	NL	SGCN	GLOBAL RANK: G3; Grasslands, prairies, and roadsides on calcareous and clay substrates; Annual; Flowering Feb-June; Fruiting April-June	Yes	May impact	Grasslands, prairies, and roadsides are located within the proposed project area. Low quality habitat exists within the proposed project area in the Blackland Prairie: Disturbance or Tame Grassland vegetation type. Areas within the right-of-way are regularly maintained and were likely seeded during the construction of the road. No individuals of this species were observed during the September or December 2018 site visits.

Species	Federal Status	State Status	Habitat Description	Habitat Present in Project Area?	Species Effect/ Impact	Pertinent Project Information
Topeka purple-coneflower <i>Echinacea atrorubens</i>	NL	SGCN	GLOBAL RANK: G3; Occurring mostly in tallgrass prairie of the southern Great Plains, in blackland prairies but also in a variety of other sites like limestone hillsides; Perennial; Flowering Jan-June; Fruiting Jan-May	Yes	May impact	Blackland prairies and hillsides are located within the proposed project area. Low quality habitat exists within the proposed project area in the Blackland Prairie: Disturbance or Tame Grassland vegetation type. Areas within the right-of-way are regularly maintained and were likely seeded during the construction of the road. No individuals of this species were observed during the September or December 2018 site visits.
Mollusks						
Louisiana pigtoe <i>Pleurobema riddellii</i>	NL	T	Little known; possibly rivers and larger streams, and intolerant of impoundment; flowing rice irrigation canals, possibly sand, gravel, and perhaps sandy-mud bottoms in moderate flows; Brazos and Colorado River basins	Yes	May impact	Three perennial streams occur within the project area (tributaries to Kirkwood Branch and Kirkwood Branch). This species is generally intolerant of impoundments. Kirkwood Branch has been heavily modified by human activity both upstream and downstream of the project area. Low quality habitat exists within the project area.
Sandbank pocketbook <i>Lampsilis satura</i>	NL	T	Small to large rivers with moderate flows and swift current on gravel, gravel-sand, and sand bottoms; east Texas, Sulfur south through San Jacinto River basins; Neches River	Yes	May impact	Three perennial streams occur within the project area (tributaries to Kirkwood Branch and Kirkwood Branch). Flows conveyed through Kirkwood Branch are slow-moving and substrate consists of hard-packed clay. This species has a low chance of occurrence within the project area. Low quality habitat exists within the project area.

Species	Federal Status	State Status	Habitat Description	Habitat Present in Project Area?	Species Effect/ Impact	Pertinent Project Information
Texas heelsplitter <i>Potamilus amphichaenus</i>	NL	T	Quiet waters in mud or sand and also in reservoirs. Sabine, Neches, and Trinity River basins	Yes	May impact	Three perennial streams occur within the project area (tributaries to Kirkwood Branch and Kirkwood Branch). Kirkwood Branch is just upstream from a large impoundment. Quiet waters in mud exist within in the proposed project area. Low quality habitat exists within the project area.
Texas pigtoe <i>Fusconaia askewi</i>	NL	T	Rivers with mixed mud, sand, and fine gravel in protected areas associated with fallen trees or other structures; east Texas River basins, Sulphur River, Cypress Creek, Sabine through Trinity rivers as well as San Jacinto River	Yes	May impact	Three perennial streams occur within the project area (tributaries to Kirkwood Branch and Kirkwood Branch). Fallen trees with protected areas occurs within the stream channel. Low quality habitat exists within the project area.
Fishes						
Shovelnose Sturgeon <i>Scaphirhynchus platyrhynchus</i>	T/SA	T	Open, flowing channels with bottoms of sand or gravel; spawns over gravel or rocks in an area with a fast current; Red River below reservoir and rare occurrence in Rio Grande	No	No effect	No open, flowing channels with sand and gravel substrate and fast currents exists within the proposed project area.
Reptiles						
Texas garter snake <i>Thamnophis sirtalis annectens</i>	NL	SGCN	Wet or moist microhabitats are conducive to the species occurrence, but is not necessarily restricted to them; hibernates underground or in or under surface cover; breeds March-August	Yes	May impact	Wet or moist microhabitats such as fallen/rotten logs are located within the proposed project area. This species has the potential to occur within the proposed project area. No individuals of this species were observed during the September or December 2018 site visits.

Species	Federal Status	State Status	Habitat Description	Habitat Present in Project Area?	Species Effect/ Impact	Pertinent Project Information
Texas horned lizard <i>Phrynosoma cornutum</i>	NL	T	Open, arid and semi-arid regions with sparse vegetation, including grass, 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; breeds March-September	No	No impact	The proposed project area is not located within an open, arid or semi-arid region. No harvester ant mounds (the primary food source of Texas horned lizards) were observed within the proposed project area. No individuals of this species were observed during the September or December 2018 site visits.
Timber rattlesnake <i>Crotalus horridus</i>	NL	T	Swamps, floodplains, upland pine and deciduous woodlands, riparian zones, abandoned farmland; limestone bluffs, sandy soil or black clay; prefers dense ground cover, i.e. grapevines or palmetto	Yes	May impact	Riparian zones with large woody debris and deciduous woodlands are located within the proposed project area. This species has the potential to occur within the project area. No individuals of this species were observed during the September or December 2018 site visits.
Birds						
American Peregrine Falcon <i>Falco peregrinus anatum</i>	DL	T	Year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands	No	No impact	No breeding or wintering habitat is present within the proposed project area. The species is a potential migrant; any use of the proposed project area would be incidental.

STATE HIGHWAY (SH) 114
 CSJ: 0353-03-100

Species	Federal Status	State Status	Habitat Description	Habitat Present in Project Area?	Species Effect/ Impact	Pertinent Project Information
Arctic Peregrine Falcon <i>Falco peregrinus tundrius</i>	DL	SGCN	Migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands	No	No impact	No breeding or wintering habitat is present within the proposed project area. The species is a potential migrant; any use of the proposed project area would be incidental.
Bald Eagle <i>Haliaeetus leucocephalus</i>	DL	T	Found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds	No	No impact	No tall trees or cliffs near water exist within the vicinity of the proposed project area. The species is a potential migrant; any use of the proposed project area would be incidental.
Henslow's Sparrow <i>Ammodramus henslowii</i>	NL	SGCN	Wintering individuals (not flocks) found in weedy fields or cut-over areas where lots of bunch grasses occur along with vines and brambles; a key component is bare ground for running/walking	Yes	May impact	Weedy fields with cutover areas exist within the proposed project area. Low quality habitat exists within the proposed project area in the Blackland Prairie: Disturbance or Tame Grassland vegetation type. No individuals of this species were observed during the September or December 2018 site visits.
Interior Least Tern <i>Sterna antillarum athalassos</i>	LE	E	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 effect	No sand or gravel bars located along the shores of open bodies of water with suitable foraging locations occur within the proposed project area.

Species	Federal Status	State Status	Habitat Description	Habitat Present in Project Area?	Species Effect/ Impact	Pertinent Project Information
Peregrine Falcon <i>Falco peregrinus</i>	DL	T	Both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat	No	No impact	No breeding or wintering habitat is present within the proposed project area. The species is a potential migrant; any use of the proposed project area would be incidental.
Piping Plover** <i>Charadrius melodus</i>	LT	NL	Wintering migrant along the Texas Gulf Coast; beaches and bayside mud or salt flats	No	No effect	No beaches or bayside mud or salt flats occur within the proposed project area. USFWS only considers affects to this species in cases of wind energy projects.
Red Knot <i>Calidris canutus rufa</i>	LT	SGCN	Red knots migrate long distances in flocks northward through the contiguous United States mainly April-June, southward July-October. The Red Knot prefers the shoreline of coast and bays and also uses mudflats during rare inland encounters. Primary prey items include clams in salt water or brackish bays. Wintering Range includes- Aransas, Brazoria, Calhoun, Cameron, Chambers, Galveston, Jefferson, Kennedy, Kleberg, Matagorda, Nueces, San Patricio, and Willacy Counties	No	No effect	No breeding or wintering habitat is present within the proposed project area. The species is a potential migrant; any use of the proposed project area would be incidental. USFWS only considers affects to this species in cases of wind energy projects.
Sprague's Pipit <i>Anthus spragueii</i>	NL	SGCN	Only in Texas during migration and winter, mid-September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges	No	No impact	No native upland prairie is located within the proposed project area. The species is a potential migrant; any use of the proposed project area would be incidental.

Species	Federal Status	State Status	Habitat Description	Habitat Present in Project Area?	Species Effect/ Impact	Pertinent Project Information
Western Burrowing Owl <i>Athene cunicularia hypugaea</i>	NL	SGCN	Open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows	Yes	May impact	Open grasslands are located within the project area. Low quality habitat exists within the proposed project area in the Blackland Prairie: Disturbance or Tame Grassland vegetation type. No mammal burrows were observed within the proposed project area during the September or December 2018 site visits.
Whooping Crane <i>Grus americana</i>	LE	E	Potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties	No	No effect	No breeding or wintering habitat is present within the proposed project area. The species is a potential migrant; any use of the proposed project area would be incidental.
Mammals						
Gray wolf <i>Canis lupus</i>	LE	E	Extirpated; formerly known throughout the western two-thirds of the state in forests, brushlands, or grasslands	No	No effect	The species is extirpated and would not be reasonably expected to occur within Tarrant County.
Plains spotted skunk <i>Spilogale putorius interrupta</i>	NL	SGCN	Catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie	Yes	May impact	Forest edges, fence rows, and woodlands with brushy areas are located within the proposed project area. This species has the potential to occur within the project area. No individuals of this species were observed during the September or December 2018 site visits.
Red wolf <i>Canis rufus</i>	LE	E	Extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies	No	No effect	The species is extirpated and would not be reasonably expected to occur within Tarrant County.

STATE HIGHWAY (SH) 114
 CSJ: 0353-03-100

Species	Federal Status	State Status	Habitat Description	Habitat Present in Project Area?	Species Effect/ Impact	Pertinent Project Information										
<p>Status Codes:</p> <table border="0"> <tr> <td>LE = Federally-Listed Endangered</td> <td>SGCN = Species of Greatest Conservation Need</td> </tr> <tr> <td>LT = Federally-Listed Threatened</td> <td>NL = Not listed</td> </tr> <tr> <td>E = State-Listed Endangered</td> <td>C = Candidate for listing</td> </tr> <tr> <td>T = State-Listed Threatened</td> <td>DL = De-listed</td> </tr> <tr> <td colspan="2">T/SA= Federally-Listed Threatened Due to Similarity of Appearance</td> </tr> </table> <p>* = Species not recognized by the USFWS as occurring within the project area but designated by TPWD as potentially occurring within the County ** = Species not recognized by TPWD as occurring within the project area but designated by the USFWS as potentially occurring within the Project Area</p>							LE = Federally-Listed Endangered	SGCN = Species of Greatest Conservation Need	LT = Federally-Listed Threatened	NL = Not listed	E = State-Listed Endangered	C = Candidate for listing	T = State-Listed Threatened	DL = De-listed	T/SA= Federally-Listed Threatened Due to Similarity of Appearance	
LE = Federally-Listed Endangered	SGCN = Species of Greatest Conservation Need															
LT = Federally-Listed Threatened	NL = Not listed															
E = State-Listed Endangered	C = Candidate for listing															
T = State-Listed Threatened	DL = De-listed															
T/SA= Federally-Listed Threatened Due to Similarity of Appearance																

Sources:

Texas Parks and Wildlife Department (TPWD). Annotated County Lists of Rare Species: Tarrant County (last revision 08/08/2018). <http://www.tpwd.state.tx.us/gis/ris/es/>, accessed December 18, 2018.

U.S. Fish and Wildlife Service (USFWS). Species by Project Area Report. <https://ecos.fws.gov/ipac/>, accessed December 18, 2018.

ATTACHMENT 7: TPWD TXNDD CORRESPONDENCE

From: [Texas Natural Diversity Database](#)
To: [Liz Dosser](#)
Cc: [Garrett Weiberg](#); [Katie Kuzdak](#); [Ryan Blankenship](#)
Subject: RE: Denton, Tarrant, Counties NDD search Request (SH 114- 10-Mile)
Date: Monday, January 7, 2019 10:58:34 AM
Attachments: [dosser_20190104.zip](#)

Ms. Dosser,

The Texas Natural Diversity Database (TXNDD) staff provides the following information in response to your request for data. Please read this entire message for important information regarding your request, additional data sources, and project review.

Data

The [TXNDD](#) includes federal and state listed and tracked Threatened, Endangered, and Rare species. Please note that **areas where Element Occurrence (EO) data are absent should not be interpreted as an absence of Threatened, Endangered, and Rare species.** *Given the small proportion of public versus private land in Texas, the TXNDD does not include a representative inventory of rare resources in the state. Data from the TXNDD do not provide a definitive statement as to the presence, absence, or condition of special species, natural communities, or other significant features within your project area. These data cannot substitute for an on-site evaluation by qualified biologists.*

Attached documents

The attached .zip file contains several documents that will guide you in appropriate use, restrictions, and interpretation of TXNDD data as well as a reporting form for submitting data to the TXNDD. The .zip file also includes additional supplemental documents. Below is a list of the files in the attached folder:

- **Shapefile** (*eo_[last name of requestor]_yyyymmdd.zip*) of the Threatened, Endangered and Rare species Element Occurrences made from information the TXNDD presently has available for the requested quad(s) (or within the requested county, by requested species when applicable).
- **EO Report** (*eoreport_[last name of requestor]_yyyymmdd.pdf*) of the EOs in the shapefile mentioned above. The **EO Report** includes more detailed information about each EO than what is contained in the attribute table of the shapefile. Link the information in the shapefile to the information in the **EO Report** by *EO ID*. Note that if the number of records in your request area is large, this report may not be included; however, if, in this circumstance, you would like more detailed information about a particular EO, species, or smaller geographic area, you may request those data.
- **EO List** (*eolist_[last name of requestor]_yyyymmdd.pdf*) for those requests made by USGS 7.5 minute quadrangles. The **EO List** is a list of species for which we have records in the database in the USGS 7.5 minute quadrangles *surrounding* your request area The **EO List** is to inform you of federal and state listed and tracked Threatened, Endangered, and Rare species in the area. Note that the EO list is not included in county requests.
- **County List FAQ** (*County_lists_FAQ_20150415.pdf*) produced by the Wildlife Habitat Assessment Program.
- **TXNDD Information** document (*txndd_information.docx*) that includes a background of the TXNDD, a description of past and current spatial methodology employed, and an explanation of

interpretation of the data. Global and subnational (state) conservation ranks are also explained in this document as are the shapefile attributes and EO report sections.

- **TXNDD Reporting Form** (txnnd_reporting_form.doc) for reporting observations of tracked elements to the Texas Natural Diversity Database. To submit data, fill out this form and send it to TexasNatural.DiversityDatabase@tpwd.texas.gov. Note that you can also submit data in the form of an Excel spreadsheet or written report.

Project Review, Rare Species County Lists, Project Planning, and BMPs

This email cannot substitute for an environmental review of your project by TPWD. For information on project review and to access the county lists of protected species and species of greatest conservation need with potential to occur in the county, please visit the Wildlife Habitat Assessment (WHAB) website at http://tpwd.texas.gov/huntwild/wild/wildlife_diversity/habitat_assessment/. The WHAB website includes several resources to consider while planning your project to minimize impacts to fish and wildlife resources, including information /guidelines on Wind Energy projects, Transmission Line projects, Communication Towers, and Karst Zones (Travis, Williamson, and Bexar Counties).

Ecologically Significant Stream Segments

If your information request area contains known ecologically significant stream segments, the data can be obtained at

http://tpwd.texas.gov/landwater/water/conservation/water_resources/water_quantity/sigsegs/index.phtml

Critical Habitat

If your information request area contains federally designated critical habitat, the data can be obtained at <http://ecos.fws.gov/crithab/>.

TPWD Managed Areas

We are no longer providing Managed Area shapefiles and associated Managed Area Reports. To obtain shapefiles for Wildlife Management Areas and State Park Boundaries, please visit the Texas Parks and Wildlife Department GIS Data Download page (<https://tpwd.texas.gov/gis/data/>).

Sincerely,

Bob Gottfried
Texas Natural Diversity Database Administrator
Texas Parks and Wildlife - Wildlife Division
4200 Smith School Rd
Austin, TX 78744
512-389-8744
[TXNDD Information](#)

From: Liz Dosser <elizabethd@coxmcclain.com>

Sent: Friday, January 4, 2019 3:27 PM

To: Texas Natural Diversity Database <TexasNatural.DiversityDatabase@tpwd.texas.gov>

Cc: Garrett Weiberg <garrettw@coxmcclain.com>; Katie Kuzdak <katiek@coxmcclain.com>; Ryan Blankenship <ryanb@coxmcclain.com>

Subject: Denton, Tarrant, Counties NDD search Request (SH 114- 10-Mile)

Hello,

I would like to receive TXNDD data for a proposed project in Denton and Tarrant, Counties, Texas. Can you please provide shapefiles, EO reports, EO list, and managed area information for the following USGS quadrangles?

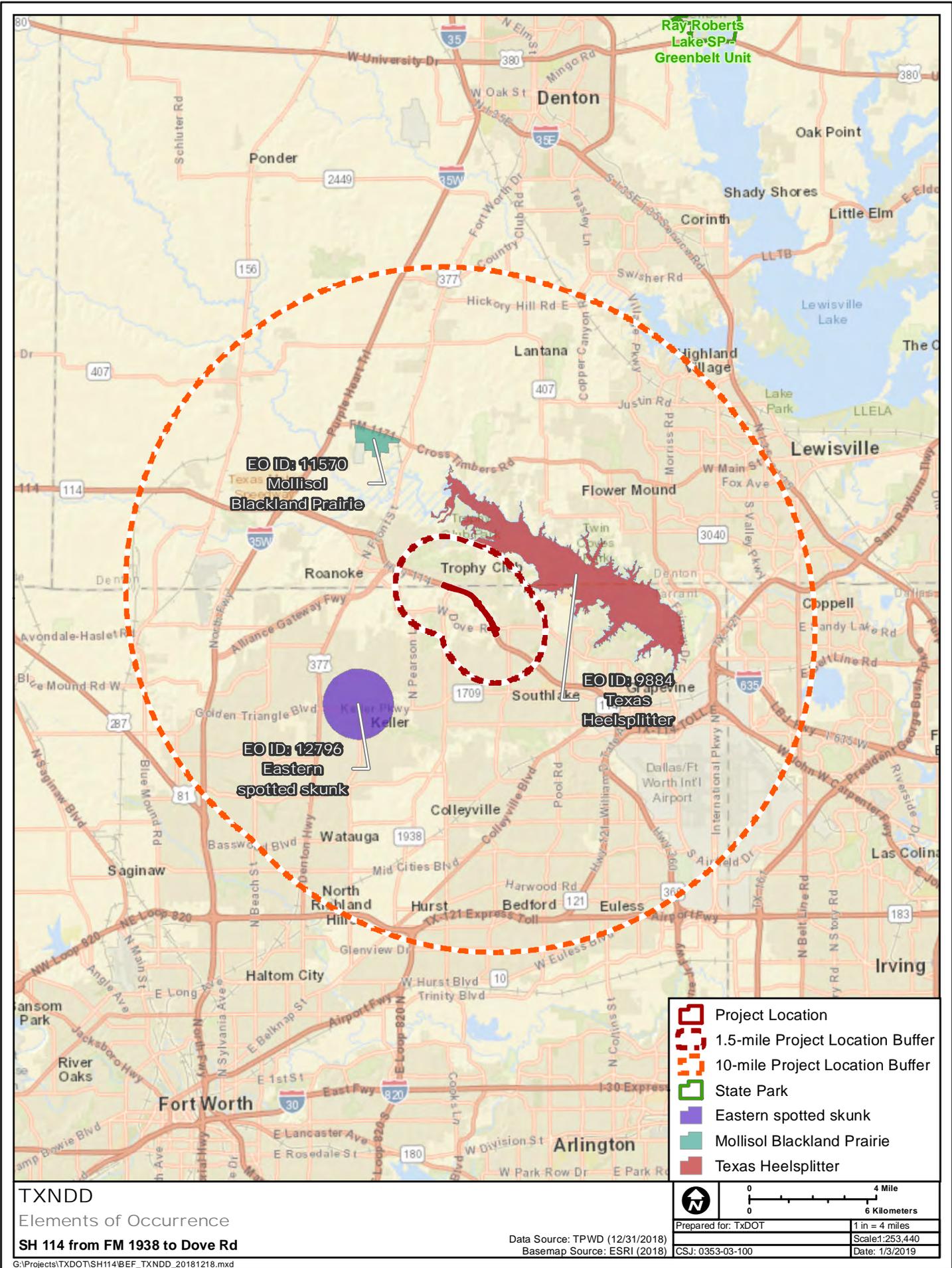
- Denton West
- Argyle
- Colleyville
- Hurst
- Ponder
- Justin
- Keller
- Haltom City
- Denton East
- Lewisville West
- Grapevine
- Euless

Thank you,
Liz

Elizabeth Yañez Dosser
Ecologist
Cox|McLain Environmental Consulting, Inc.
600 E John Carpenter Freeway, Suite 186
Irving, Texas 75062
www.coxmclain.com
469.647.4866 (office)
972.768.0683 (cell)

The information contained in this email is confidential and may be legally privileged. It is intended solely for the addressee. If you are not the intended recipient, any disclosure, copying, distribution, or any action or act of forbearance taken in reliance on it, is prohibited and may be unlawful. Any views expressed in this email are those of the individual sender, except where the sender specifically states them to be the views of Cox|McLain Environmental Consulting, Inc.

ATTACHMENT 8: TXNDD ELEMENTS OF OCCURRENCE FIGURE



TXNDD

Elements of Occurrence

SH 114 from FM 1938 to Dove Rd

G:\Projects\TXDOT\SH114\BEF_TXNDD_20181218.mxd

- Project Location
- 1.5-mile Project Location Buffer
- 10-mile Project Location Buffer
- State Park
- Eastern spotted skunk
- Mollisol Blackland Prairie
- Texas Heelsplitter



0 4 Mile
0 6 Kilometers

Prepared for: TXDOT	Scale: 1:253,440
CSJ: 0353-03-100	Date: 1/3/2019

Data Source: TPWD (12/31/2018)
Basemap Source: ESRI (2018)

ATTACHMENT 9: TXNDD EOIDs WITHIN THE VICINITY OF THE PROJECT AREA

Element Occurrence Record

Scientific Name: Potamilus amphichaenus

Occurrence #: 2

Eo Id: 9884

Common Name: Texas Heelsplitter

Track Status: Track all extant and selected historical EOs

Identification Confirmed: Y - Yes

TX Protection Status: T

Global Rank: G1G2

State Rank: S1

Federal Status:

Location Information:

Directions

Mussels were collected from Lake Grapevine.

Survey Information:

First Observation: 1975-10-31

Survey Date: 1975-10-31

Last Observation: 1975-10-31

Eo Type:

Eo Rank: E

Eo Rank Date: 1975-10-31

Observed Area:

Comments:

General

Description:

Comments: 1975 specimen: The species identification was verified by Raymond W. Neck and Robert G. Howells. Originally the specimen was deposited at Texas Christian University, Fort Worth, TX. Randklev, et al., 2010 lists the specimen in the Joseph Britton Freshwater Mussel Collection, Elm Fork Natural Heritage Museum, University of North Texas.

Protection

Comments:

Management

Comments:

Data:

EO Data: 31 Oct 1975: Three specimens were collected; one was taken alive.

Community Information:

<u>Scientific Name:</u>	<u>Stratum:</u>	<u>Dominant:</u>	<u>Lifeform:</u>	<u>Composition Note:</u>

Reference:

Citation:

Neck, Raymond W. and R. G. Howells. 1995. Interim performance reports and final report for Project No. 47: Status survey for the Texas heelsplitter. TPWD contract no. 333-0208. Submitted to Texas Parks & Wildlife Dept. 30 November 1993, 30 November 1994, and October 1995.

Randklev, Charles R., B. Lundeen, J. H. Kennedy. 2010. Summary of unpublished records for candidate mussel species from four museums in north central Texas.

Element Occurrence Record

Specimen:

Joseph Britton Freshwater Mussel Collection, Elm Fork Natural Heritage Museum, University of North Texas, Denton, TX; K. O'Kane (# 1782), Catalog # unknown, 31 Oct 1975, JBFWMC; UNT.

Element Occurrence Record

Scientific Name: Spilogale putorius **Occurrence #:** 34 **Eo Id:** 12796
Common Name: Eastern spotted skunk **Track Status:** Track all extant and selected historical EOs
Identification Confirmed: Y - Yes **TX Protection Status:**
Global Rank: G4 **State Rank:** S1S3 **Federal Status:**

Location Information:

Directions

The specimen label states that it was located 9 miles west of Grapevine, Tarrant County, TX.

Survey Information:

First Observation: 1952-03-04 **Survey Date:** 1952-03-04 **Last Observation:** 1952-03-04
Eo Type: **Eo Rank:** H **Eo Rank Date:** 1952-03-04

Observed Area:

Comments:

General

Description:

Comments:

Protection

Comments:

Management

Comments:

Data:

EO Data: 4 March 1952: Post-cranial skeleton , skin, and skull of one male preserved specimen.

Community Information:

<u>Scientific Name:</u>	<u>Stratum:</u>	<u>Dominant:</u>	<u>Lifeform:</u>	<u>Composition Note:</u>

Reference:

Citation:

Barker, Alex W. 1995. Letter and printout of catalogue cards of April to Peggy Horner, Texas Parks and Wildlife Department, Conservation Scientist, regarding *Vulpes velox*, *Vulpes macrotis*, and *Spilogale putorius interrupta* from the Dallas Museum of Natural History in Fair Park, Dallas, TX.

Ferguson, Adam. 2014. Texas Skunk Record Database regarding five species of skunk in Texas.

Schmidly, David J. 1983. Texas mammals east of the Balcones Fault Zone. Number six: The W. L. Moody, Jr. natural history series. Texas A&M University Press, College Station, TX. 400 pp.

Element Occurrence Record

Specimen:

Dallas Museum of Natural History, Dallas, TX; unknown (#unknown), Catalog #MAM000051, 4 March 1952, DaMNH.

Element Occurrence Record

Scientific Name: Schizachyrium scoparium - Andropogon gerardii - Sorghastrum nutans - Bifora americana Mollisol Grassland
Occurrence #: 11 **Eo Id:** 11570
Common Name: Mollisol Blackland Prairie **Track Status:** Track all extant and selected historical EOs
Identification Confirmed: Y - Yes **TX Protection Status:**
Global Rank: G1G2 **State Rank:** SNR **Federal Status:**

Location Information:

Directions

The site is located outside the northeastern boundary of the Northwest Regional Airport, on the north side of Hampton Road, just to the east of IH-35. The directions were created by database staff.

Survey Information:

First Observation: 2009-10-15 **Survey Date:** 2009-10-15 **Last Observation:** 2009-10-15
Eo Type: **Eo Rank:** E **Eo Rank Date:** 2009-10-15

Observed Area:

Comments:

General See the Composition Tab for other species within the area.

Description:

Comments:

Protection

Comments:

Management

Comments:

Data:

EO Data: 15 October 2009: One plant community of medium quality grass species that are 75 percent high quality and 25 percent low quality; Forb species are 100 percent low quality; Exotic species are present; Woody cover is 6-25 percent.

Community Information:

<u>Scientific Name:</u>	<u>Stratum:</u>	<u>Dominant:</u>	<u>Lifeform:</u>	<u>Composition Note:</u>
Andropogon gerardii	Herb (field)	Y	Graminoid	SFID: 23569
Bifora americana	Herb (field)	Y	Forb	SFID: 23569
Prosopis glandulosa	Tree (canopy & subcanopy)	N	Thorn tree	SFID: 23569
Schizachyrium scoparium	Herb (field)	Y	Graminoid	SFID: 23569
Sorghastrum nutans	Herb (field)	Y	Graminoid	SFID: 23569

Element Occurrence Record

Reference:

Citation:

Native Prairies Association of Texas. 2011. Tallgrass prairie survey project that includes shapefiles, excel files, documents, images, and protocol for multiple counties in Texas (2000-2013).

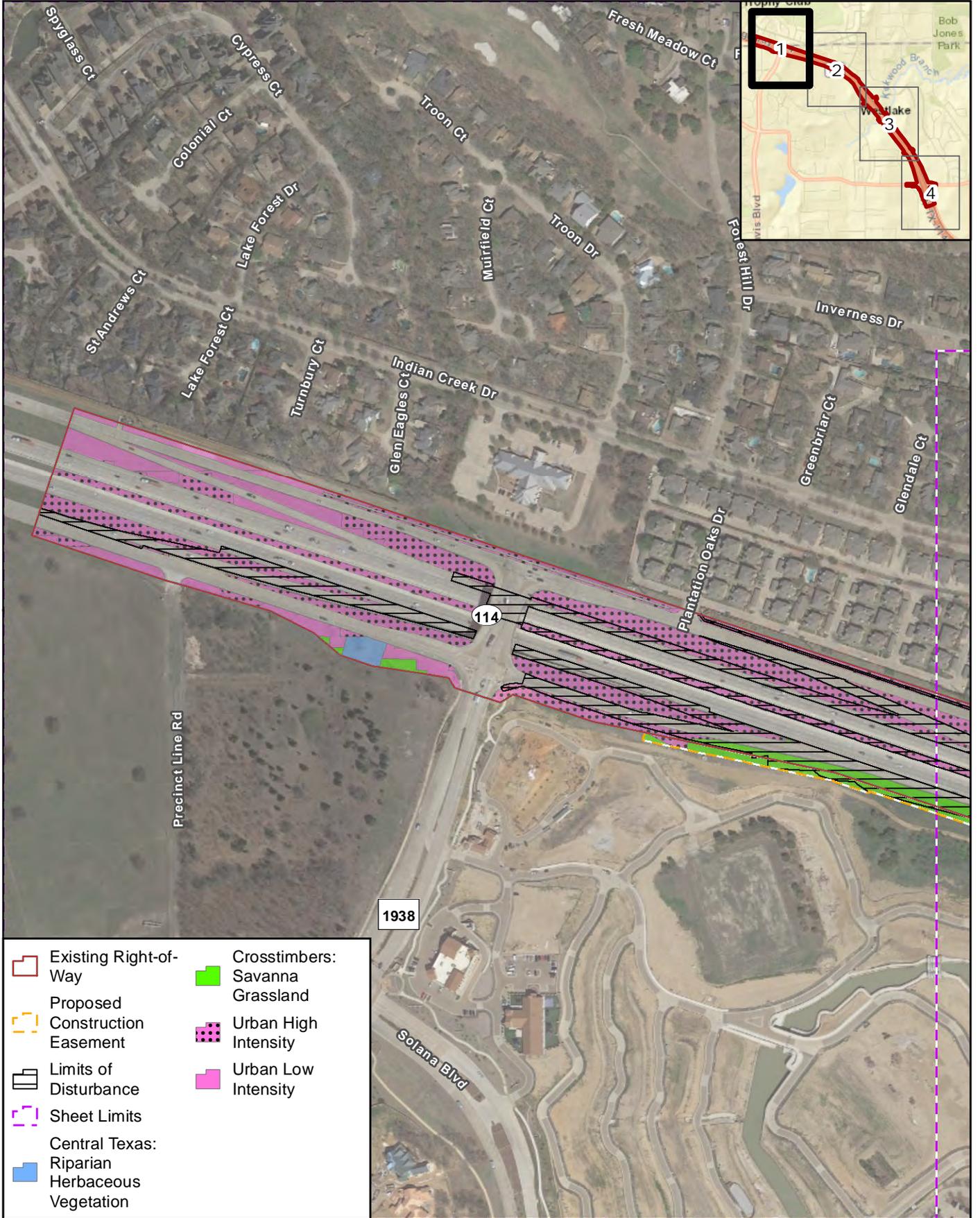
Specimen:

ATTACHMENT 10: PROJECT EMST VEGETATION TYPES

Project EMST Vegetation Types

MOU Habitat	Ecosystem Name	Common Name	acres
Crosstimbers Woodland and Forest			
	Crosstimbers Oak Forest and Woodland		
		Crosstimbers: Post Oak Woodland	7.021
		Crosstimbers: Savanna Grassland	2.091
MOU Habitat Sum acres			9.112
Disturbed Prairie			
	Native Invasive Shrub and Woodland		
		Native Invasive: Mesquite Shrubland	2.352
MOU Habitat Sum acres			2.352
Floodplain			
	Southeastern Great Plains Floodplain Forest		
		Central Texas: Floodplain Hardwood Forest	1.189
MOU Habitat Sum acres			1.189
Riparian			
	Southeastern Great Plains Riparian Forest		
		Central Texas: Riparian Hardwood Forest	1.201
		Central Texas: Riparian Herbaceous Vegetation	0.203
MOU Habitat Sum acres			1.404
Urban			
	Urban		
		Urban High Intensity	15.53
		Urban Low Intensity	28.393
MOU Habitat Sum acres			43.924
Sum acres			57.98

ATTACHMENT 11: EMST MAPPED VEGETATION TYPES FIGURE



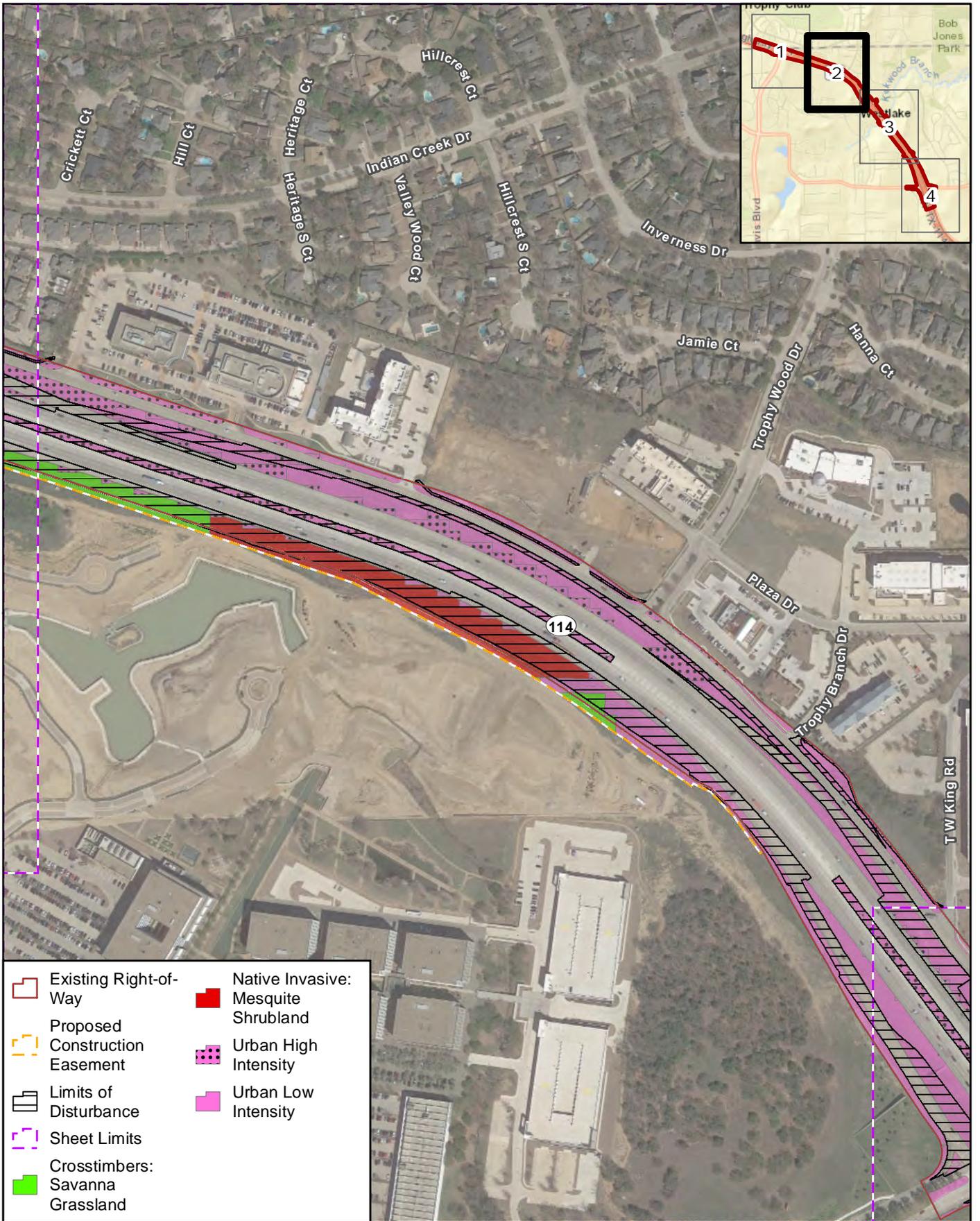
- Existing Right-of-Way
- Proposed Construction Easement
- Limits of Disturbance
- Sheet Limits
- Savanna Grassland
- Urban High Intensity
- Urban Low Intensity
- Central Texas: Riparian Herbaceous Vegetation
- Crosstimbers:

EMST Mapped Vegetation Types

Sheet 1 of 4

SH 114 from FM 1938 to Dove Rd

	0	400 Feet
	0	120 Meters
Prepared for: TxDOT		1 in = 400 feet
Data Source: TxDOT/TPWD EMST/MoRAP (2013)		Scale: 1:4,800
Aerial Source: Google (2018)		Date: 1/16/2019
CSJ: 0353-03-100		



- Existing Right-of-Way
- Proposed Construction Easement
- Limits of Disturbance
- Sheet Limits
- Crossttimbers: Savanna
- Grassland
- Native Invasive: Mesquite Shrubland
- Urban High Intensity
- Urban Low Intensity

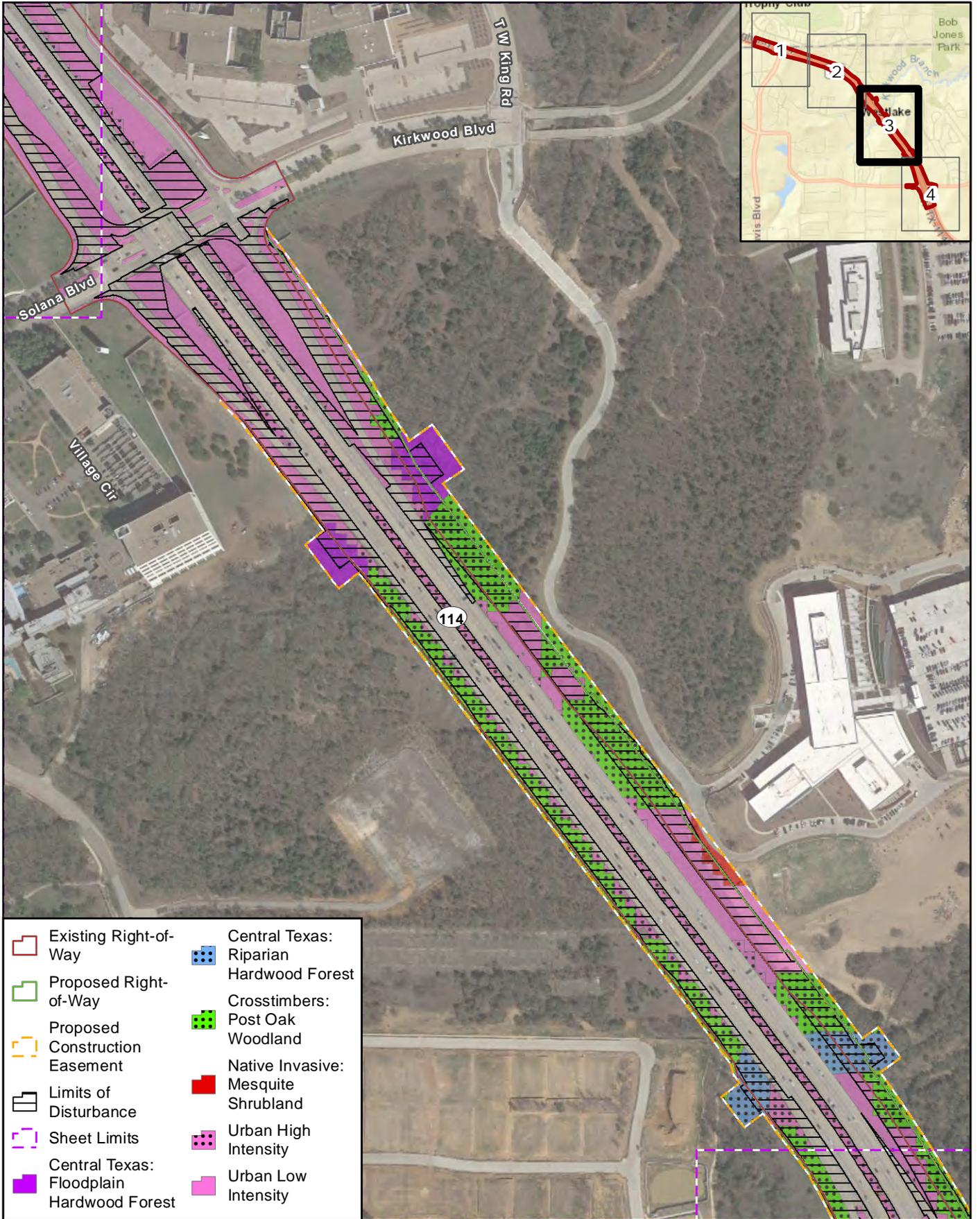
EMST Mapped Vegetation Types

Sheet 2 of 4

SH 114 from FM 1938 to Dove Rd

Data Source: TxDOT/TPWD EMST/MoRAP (2013)
Aerial Source: Google (2018)

	0 400 Feet
	0 120 Meters
Prepared for: TxDOT	1 in = 400 feet
CSJ: 0353-03-100	Scale: 1:4,800
	Date: 1/16/2019



- | | |
|---|---|
| Existing Right-of-Way | Central Texas: Riparian Hardwood Forest |
| Proposed Right-of-Way | Crosstimbers: Post Oak Woodland |
| Proposed Construction Easement | Native Invasive: Mesquite Shrubland |
| Limits of Disturbance | Urban High Intensity |
| Sheet Limits | Urban Low Intensity |
| Central Texas: Floodplain Hardwood Forest | |

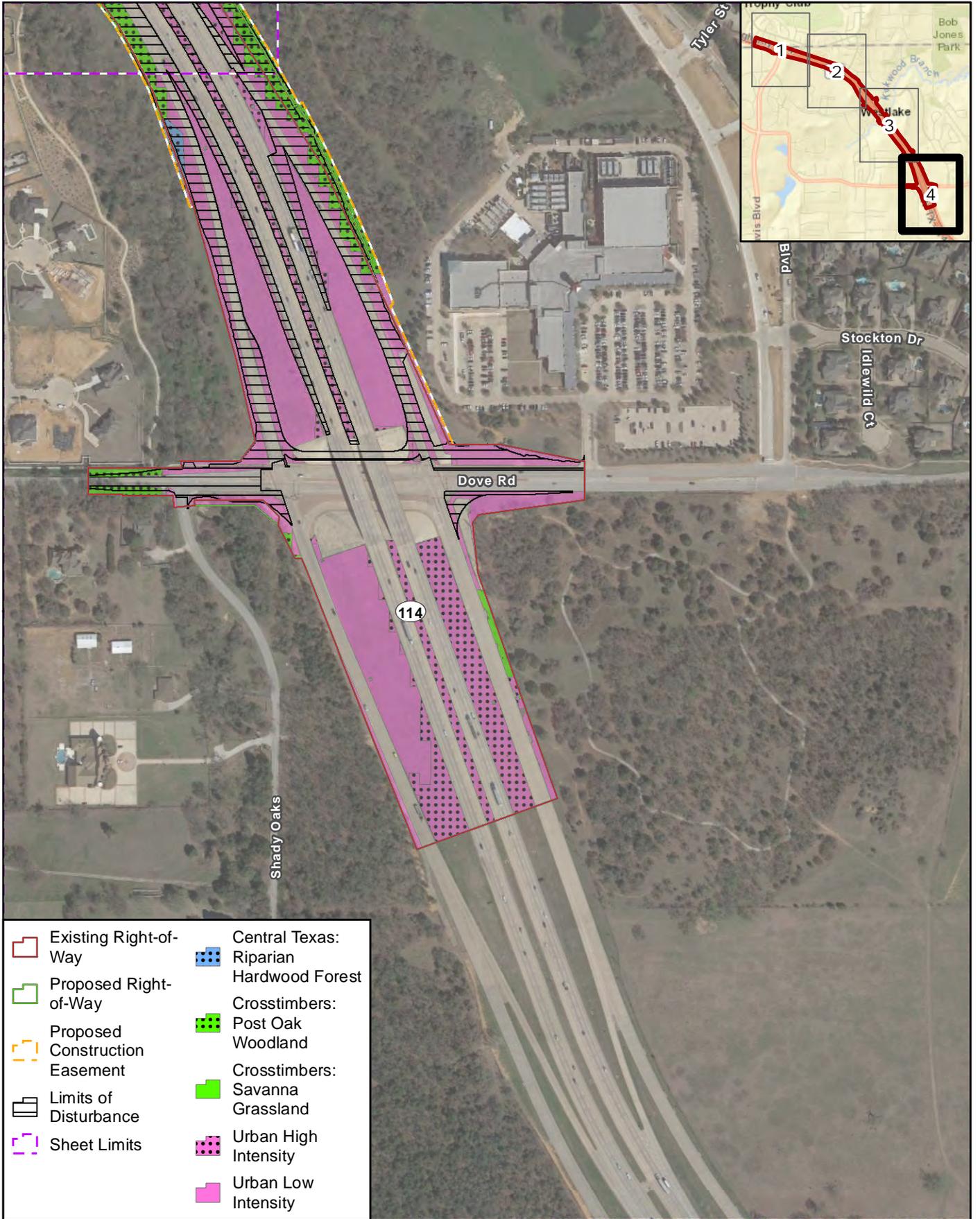
EMST Mapped Vegetation Types

Sheet 3 of 4

SH 114 from FM 1938 to Dove Rd

Data Source: TxDOT/TPWD EMST/MoRAP (2013)
Aerial Source: Google (2018)

	0 400 Feet
	0 120 Meters
Prepared for: TxDOT	1 in = 400 feet
CSJ: 0353-03-100	Scale: 1:4,800
	Date: 1/16/2019



- | | |
|--------------------------------|----------------------------------|
| Existing Right-of-Way | Central Texas: Riparian |
| Proposed Right-of-Way | Hardwood Forest |
| Proposed Construction Easement | Crossttimbers: Post Oak Woodland |
| Limits of Disturbance | Crossttimbers: Savanna Grassland |
| Sheet Limits | Urban High Intensity |
| | Urban Low Intensity |

EMST Mapped Vegetation Types

Sheet 4 of 4

SH 114 from FM 1938 to Dove Rd

Data Source: TxDOT/TPWD EMST/MoRAP (2013)
Aerial Source: Google (2018)

	0	400 Feet
	0	120 Meters
Prepared for: TxDOT	1 in = 400 feet	
CSJ: 0353-03-100	Scale: 1:4,800	Date: 1/16/2019

ATTACHMENT 12: OBSERVED VEGETATION TYPES

Description of Observed Vegetation

Vegetation observed within the project area is not accurately represented by the mapped EMST. Observed vegetation generally consists of four observed vegetation types within the proposed project area. Existing vegetation within the project area, as observed during the September and December 2018 field investigation, is described below. Observed vegetation may be impacted by the proposed project within the limits of disturbance.



Photo 1: Observed Vegetation Type 1: Urban Low Intensity

Observed Vegetation Type 1: Urban Low Intensity (corresponds with MOU Urban habitat type), is dominated by a thick herbaceous layer of Bermudagrass (*Cynodon dactylon*), St. Augustine grass (*Stenotaphrum secundatum*), yellow bluestem (*Bothriochloa ischaemum*), Johnsongrass (*Sorghum halepense*), brownseed paspalum (*Paspalum plicatulum*), horseweed (*Conyza canadensis*), and great ragweed (*Ambrosia trifida*). This vegetation type lacks any canopy cover and is routinely maintained. This observed vegetation type is located along the corridor in existing medians and along the shoulders of State Highway (SH) 114. These areas are highly disturbed and were likely seeded at one time. Approximately 53.47 acres of Observed Vegetation Type 1 is located within the project area, however only 22.80 acres would be potentially impacted by the proposed project. Photograph taken in the northern extent of the project area in the grass median, viewing southeast. For photo location, see photo 41 on Attachment 21 of the Supplemental Attachments.



Photo 2: Observed Vegetation Type 2: Central Texas: Riparian Hardwood Forest

Observed Vegetation Type 2: Central Texas: Riparian Hardwood Forest (corresponds with MOU Riparian habitat type), is dominated by a canopy of black willow (*Salix nigra*), boxelder (*Acer negundo*), and American elm (*Ulmus americana*) with a height of 6 to 25 feet and an average diameter at breast height (DBH) of 4 to 8 inches. Herbaceous vegetation is generally sparse and consists of Indian woodoats (*Chasmanthium latifolium*). Thick mats of saw greenbrier (*Smilax bona-nox*) and eastern poison ivy (*Toxicodendron radicans*) exist in the woody vine stratum. Observed Vegetation Type 2 is located along the banks of Kirkwood Branch and the unnamed tributaries to Kirkwood Branch. These areas are small remnant pockets of unmaintained native vegetation along stream banks. Approximately 1.04 acres of Observed Vegetation Type 2 is located within the project area, however only 0.41 acres would be potentially impacted by the proposed project. Photograph taken at Crossing #1 within the central extent of the project area, viewing southwest. For photo location, see photo 42 on Attachment 21 of the Supplemental Attachments.



Photo 3: Observed Vegetation Type 3: Cross Timbers: Post Oak Woodland

Observed Vegetation Type 3: Cross Timbers: Post Oak Woodland (corresponds with MOU Crosstimbers: Woodland and Forest habitat type), is dominated by a thick canopy of post oak (*Quercus stellata*), blackjack oak (*Quercus marilandica*), live oak (*Quercus virginiana*), and Ashe's juniper (*Juniperus ashei*) with a height of 10 to 30 feet and an average DBH of 4 to 18 inches. The sapling/shrub stratum consists of yaupon (*Ilex vomitoria*). The understory is nearly unvegetated but did include grasses such as Indian woodoats, Johnsongrass, and switchgrass (*Panicum virgatum*). Saw greenbrier dominated the woody vine stratum. This vegetation type is mostly located along the edges of the right-of-way near fencelines and property boundaries. Approximately 3.24 acres of Observed Vegetation Type 3 is located within the project area, however only 2.85 acres would be potentially impacted by the proposed project. Photo taken on the westbound frontage road of SH 114, viewing east. For photo location, see photo 43 on Attachment 21 of the Supplemental Attachments.

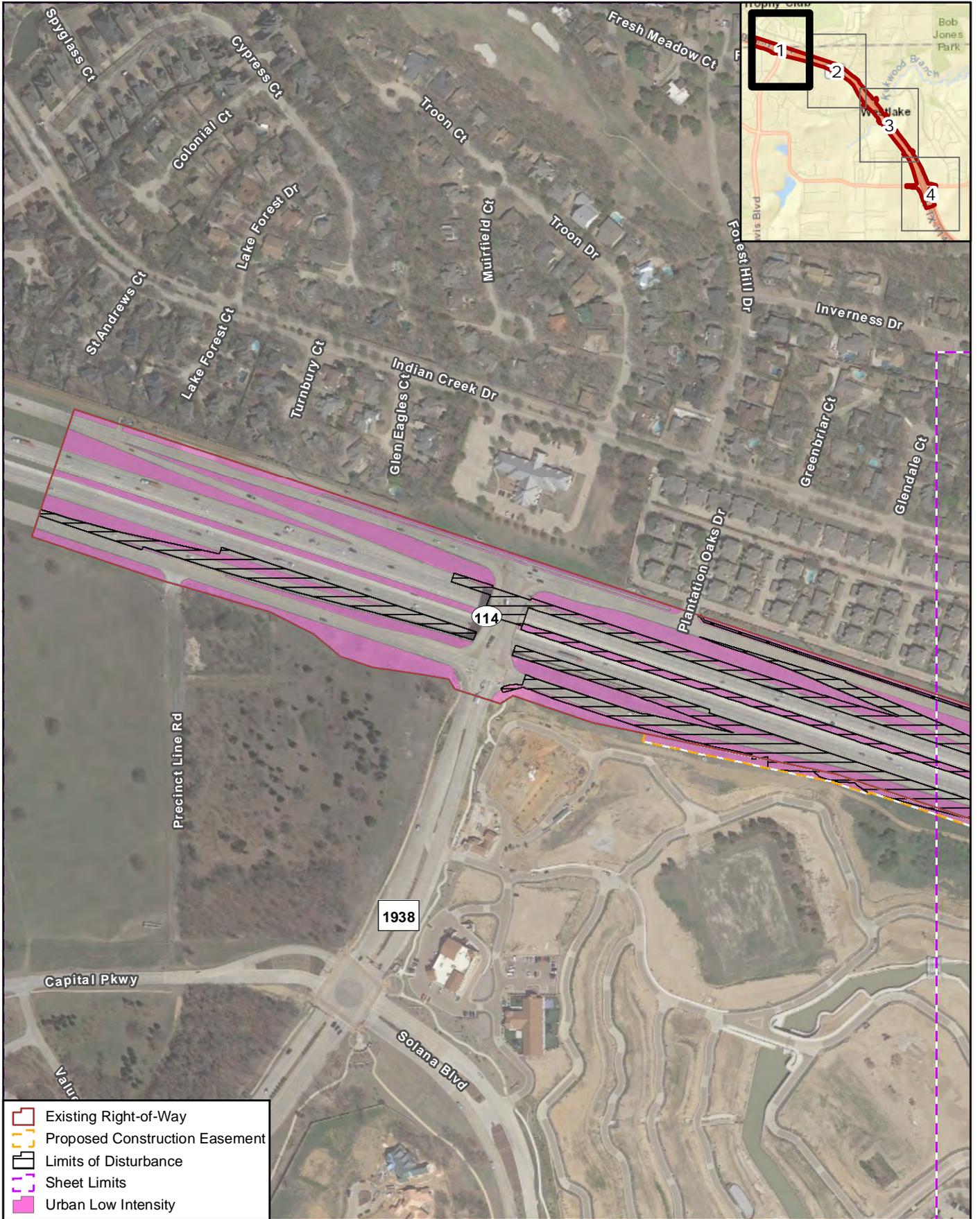


Photo 4: Observed Vegetation Type 4: Blackland Prairie: Disturbance or Tame Grassland

Observed Vegetation Type 4: Blackland Prairie: Disturbance or Tame Grassland (corresponds with MOU Disturbed Prairie habitat type), is dominated by a herbaceous layer of Johnsongrass, curly dock (*Rumex crispus*), southern dewberry, and lateflowering thoroughwort (*Eupatorium serotinum*). Woody vegetation is sparse and consisted of small saplings of black willow, post oak, and winged elm (*Ulmus alata*). Observed Vegetation Type 4 is located along the banks of the smaller unnamed tributaries to Kirkwood Branch. These areas consist of unmaintained native vegetation where non-native/invasive species have encroached. Approximately 0.24 acres of Observed Vegetation Type 3 is located within the project area, however only 0.23 acres would be potentially impacted by the proposed project. Photograph taken at Crossing #2 within the southern extent of the project area, viewing south. For photo location, see photo 44 on Attachment 21 of the Supplemental Attachments.

Impacts to Vegetation Types Observed within the Project Area					
Observed Vegetation Type	Acres with the Project Area	Disturbance Acreage	Corresponding MOU Type	MOU Threshold (acres)	Threshold Exceeded?
Urban Low Intensity	53.47	22.80	Urban	None	No
Central Texas: Riparian Hardwood Forest	1.04	0.41	Riparian	0.10	Yes
Cross Timbers: Post Oak Woodland	3.24	2.85	Crosstimbers: Woodland and Forest	2.0	Yes
Blackland Prairie: Disturbance or Tame Grassland	0.24	0.23	Disturbed Prairie	3.0	No
Total	57.99	26.29			

ATTACHMENT 13: OBSERVED VEGETATION TYPES FIGURE

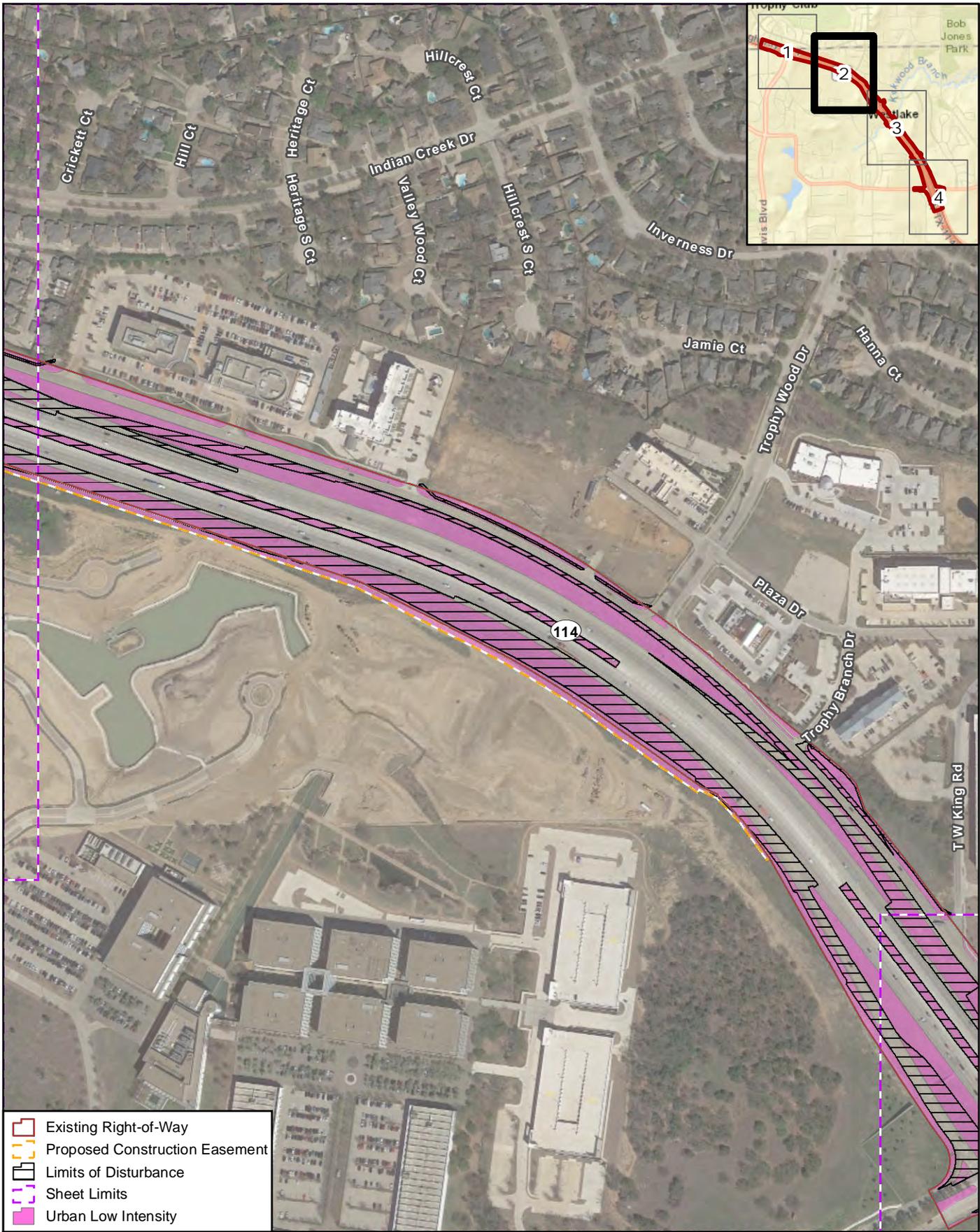


Observed Vegetation Types

Sheet 1 of 4

SH 114 from FM 1938 to Dove Rd

	0	400 Feet
	0	120 Meters
Prepared for: TxDOT	1 in = 400 feet	
Data Source: CMEC (2018)	Scale: 1:4,800	
Aerial Source: Google (2018)	Date: 1/16/2019	
CSJ: 0353-03-100		

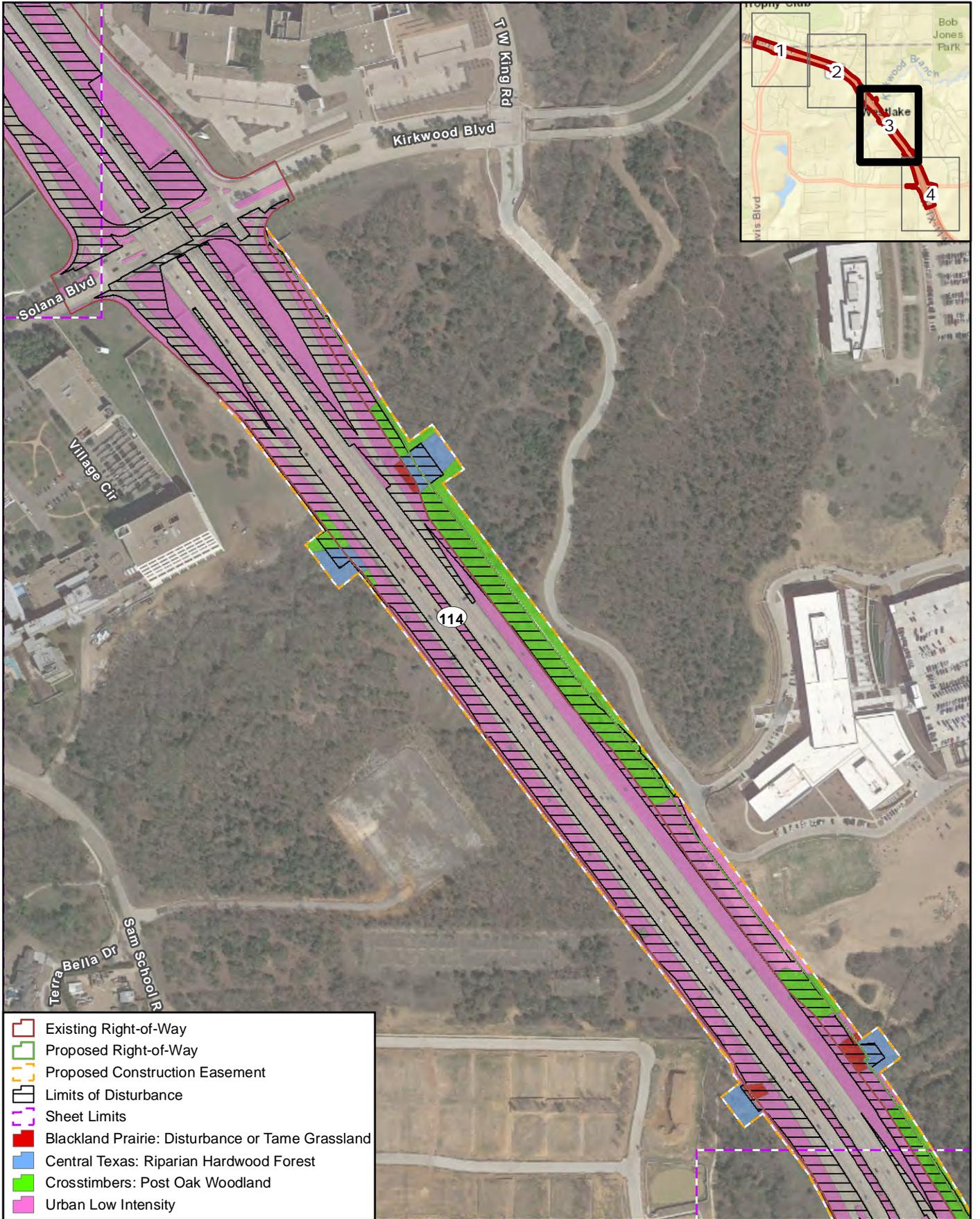


Observed Vegetation Types

Sheet 2 of 4

SH 114 from FM 1938 to Dove Rd

	0	400 Feet
	0	120 Meters
Prepared for: TxDOT	1 in = 400 feet	
Data Source: CMEC (2018)	Scale: 1:4,800	
Aerial Source: Google (2018)	Date: 1/16/2019	
CSJ: 0353-03-100		



-  Existing Right-of-Way
-  Proposed Right-of-Way
-  Proposed Construction Easement
-  Limits of Disturbance
-  Sheet Limits
-  Blackland Prairie: Disturbance or Tame Grassland
-  Central Texas: Riparian Hardwood Forest
-  Crosstimbers: Post Oak Woodland
-  Urban Low Intensity

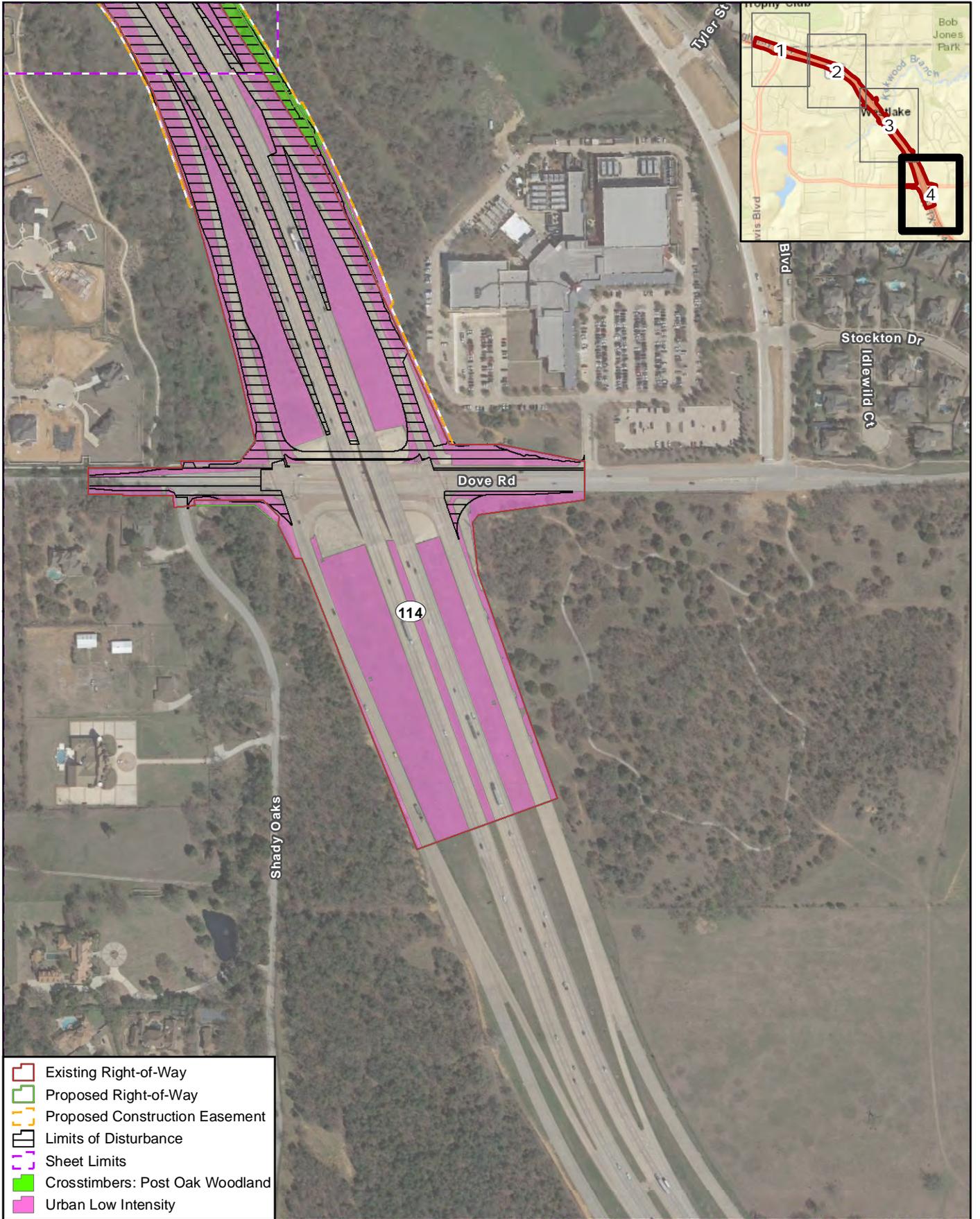
Observed Vegetation Types

Sheet 3 of 4

SH 114 from FM 1938 to Dove Rd

	0 400 Feet
	0 120 Meters
Prepared for: TxDOT	1 in = 400 feet
Data Source: CMEC (2018) Aerial Source: Google (2018)	Scale: 1:4,800
CSJ: 0353-03-100	Date: 1/16/2019

G:\Projects\TXDOT\SH114\BEF_Observed_Veg_20190115.mxd



-  Existing Right-of-Way
-  Proposed Right-of-Way
-  Proposed Construction Easement
-  Limits of Disturbance
-  Sheet Limits
-  Crossttimbers: Post Oak Woodland
-  Urban Low Intensity

Observed Vegetation Types

Sheet 4 of 4

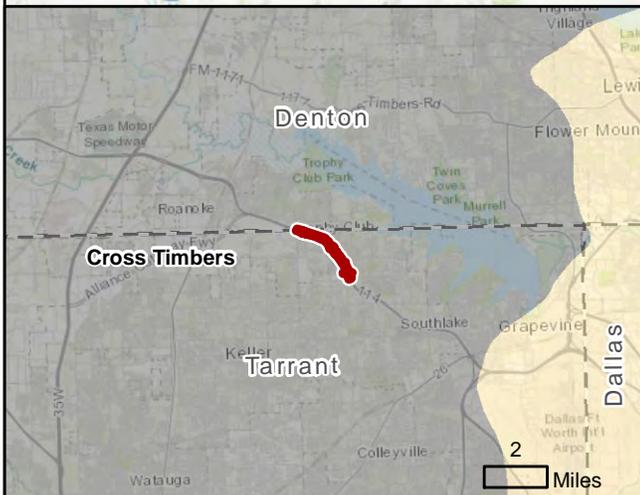
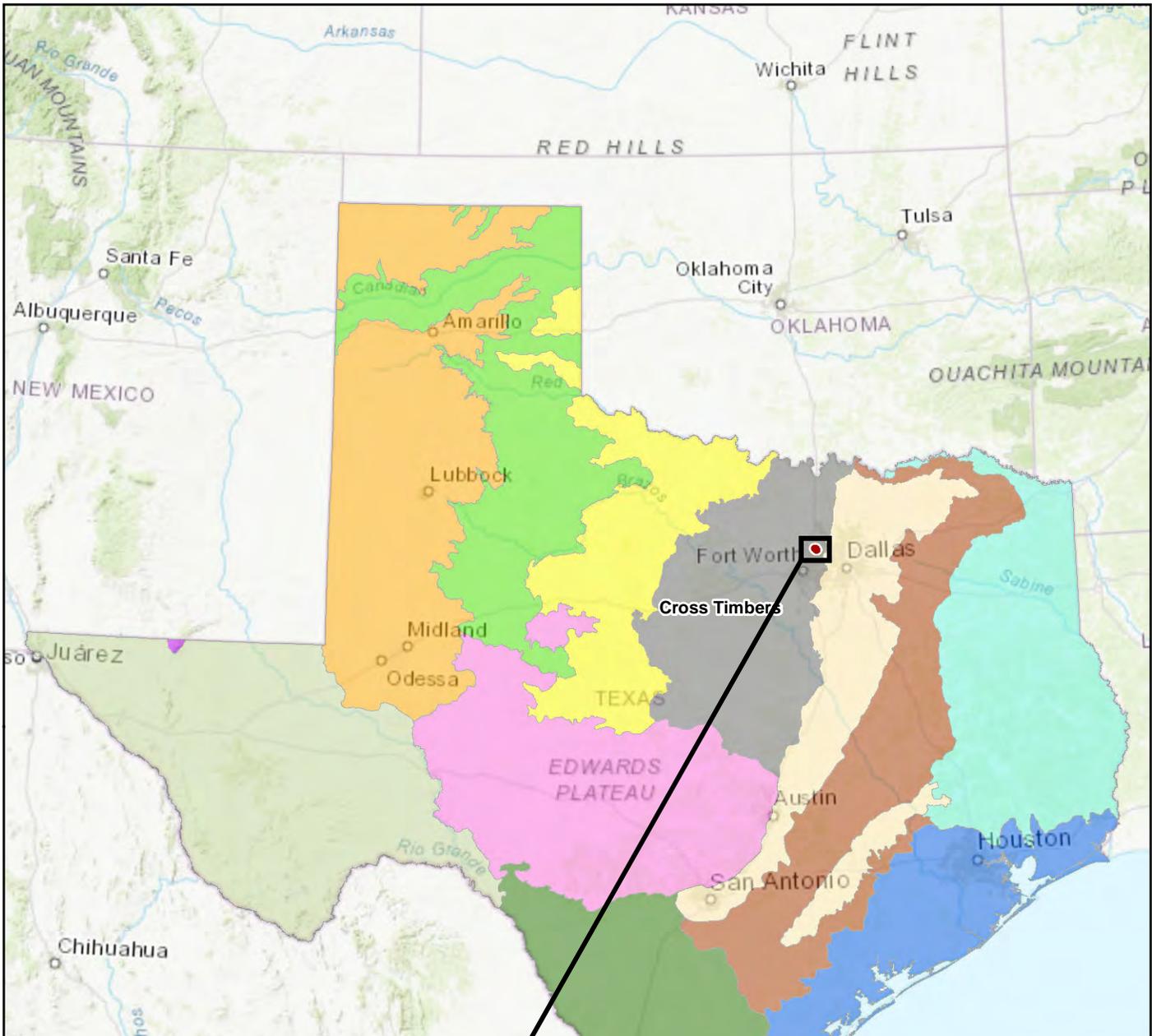
SH 114 from FM 1938 to Dove Rd

	0 400 Feet
	0 120 Meters
Prepared for: TxDOT	1 in = 400 feet
Data Source: CMEC (2018) Aerial Source: Google (2018)	Scale: 1:4,800
CSJ: 0353-03-100	Date: 1/16/2019

ATTACHMENT 14: TPWD/TXDOT MOU THRESHOLD

Ecoregion — Cross Timbers (CRTB)	
MOU Types	Threshold (acre)
Agriculture	10
Breaks, Cliffs, Barrens	1
Crosstimbers Woodland and Forest	2
Disturbed Prairie	3
Edwards Plateau Savannah, Woodland, and Shrubland	2
Riparian	0.1
Llano Acidic Woodland, Glade	0.1
Mixed, Arid, Sand Grassland	1
Post Oak Savanna	1
Tallgrass Prairie, Grassland	0.1
Tobosa Grassland	1
Western Wetlands, Riparian	0.1

ATTACHMENT 15: ECOREGIONS OF TEXAS FIGURE



	Project Location
	Arizona/New Mexico Mountains
	Central Great Plains
	Chihuahuan Deserts
	Cross Timbers
	East Central Texas Plains
	Edwards Plateau
	High Plains
	South Central Plains
	Southern Texas Plains
	Southwestern Tablelands
	Texas Blackland Prairies
	Western Gulf Coastal Plain

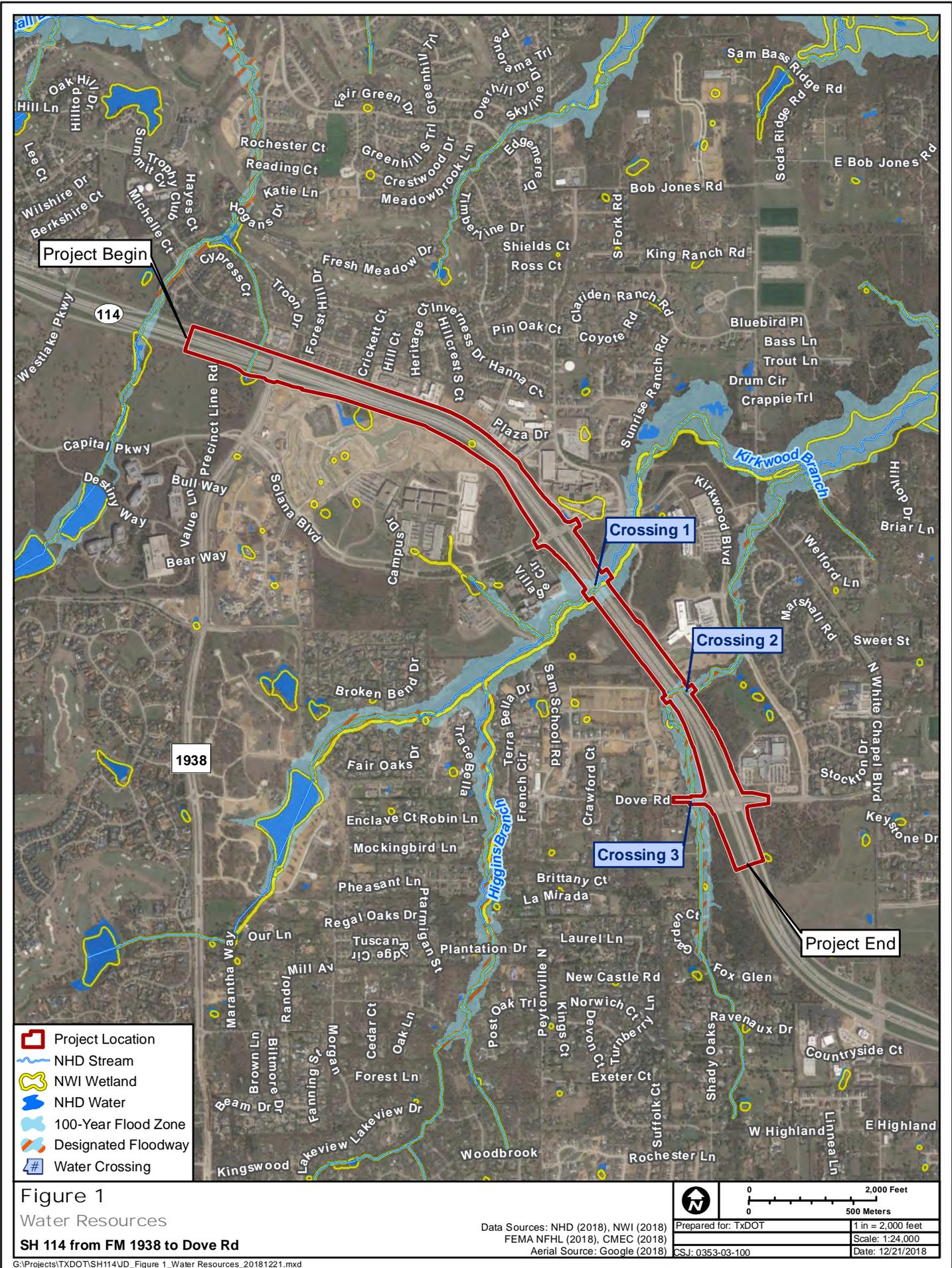
Ecoregions
of Texas

SH 114 from FM 1938 to Dove Rd

	0	110 Miles
	0	150 Kilometers
Prepared for: TxDOT	1 in = 110 miles	
Basemap Source: ESRI (2018)	Scale: 1:6,969,600	
CSJ: 0353-03-100	Date: 12/19/2018	

Data Source: TCAP (2011)/EPA (2004)
Basemap Source: ESRI (2018)

ATTACHMENT 16: WATER RESOURCES FIGURE



Project Begin

Crossing 1

Crossing 2

Crossing 3

Project End

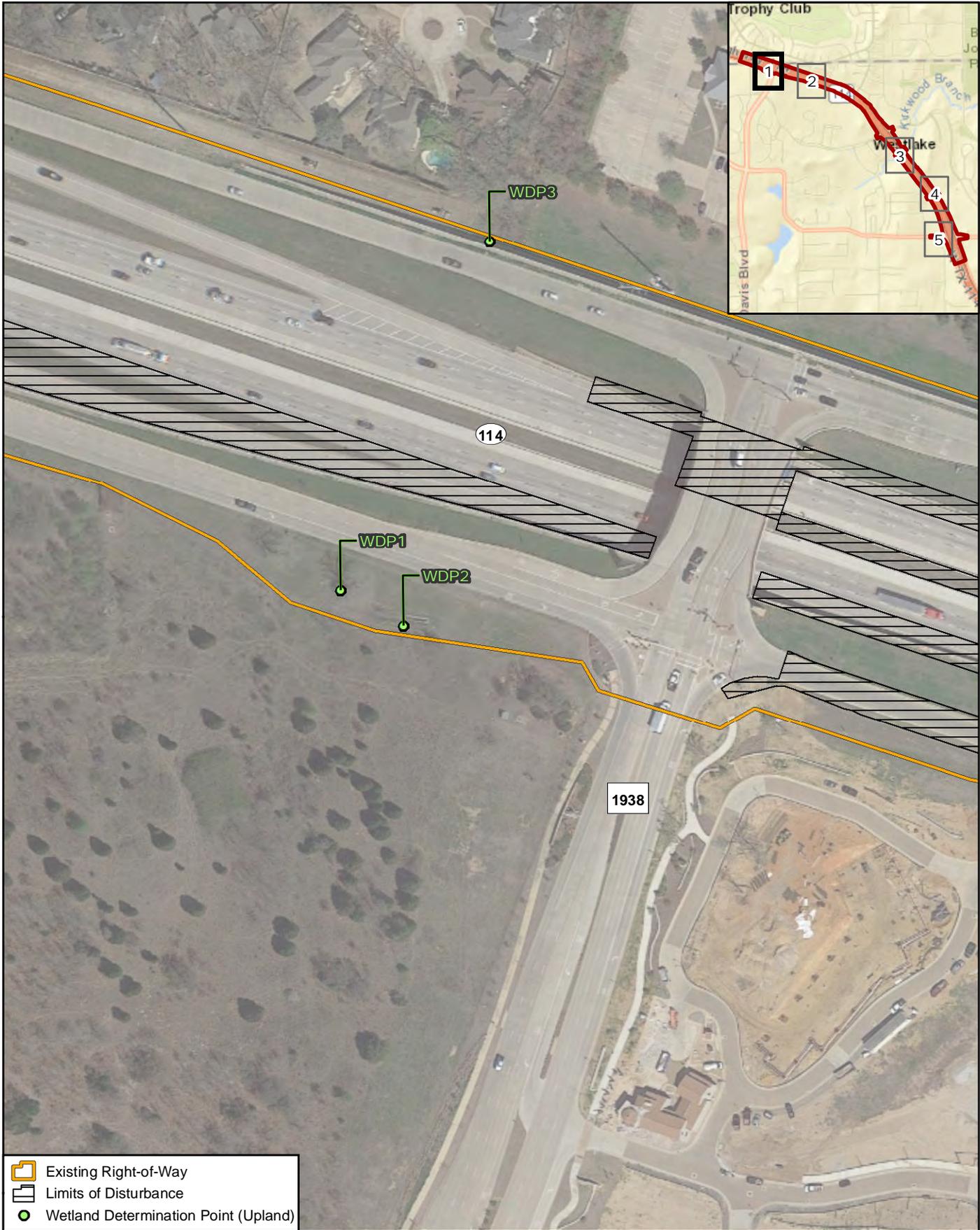
114

1938



0 2,000 Feet
 0 500 Meters

ATTACHMENT 17: POTENTIAL WATERS OF THE U.S. FIGURE



-  Existing Right-of-Way
-  Limits of Disturbance
-  Wetland Determination Point (Upland)

Potential Waters of the U.S.

Sheet 1 of 5

SH 114 from FM 1938 to Dove Rd

	0 150 Feet
	0 45 Meters
Prepared for: TxDOT	
1 in = 150 feet	
Scale: 1:1,800	
Date: 2/27/2019	
CSJ: 0353-03-100	

Data Sources: NHD (2018),
 FEMA NFHL (2018), CMEC (2018)
 Aerial Source: Google (2018)



-  Existing Right-of-Way
-  Proposed Construction Easement
-  Limits of Disturbance
-  Wetland Determination Point (Upland)

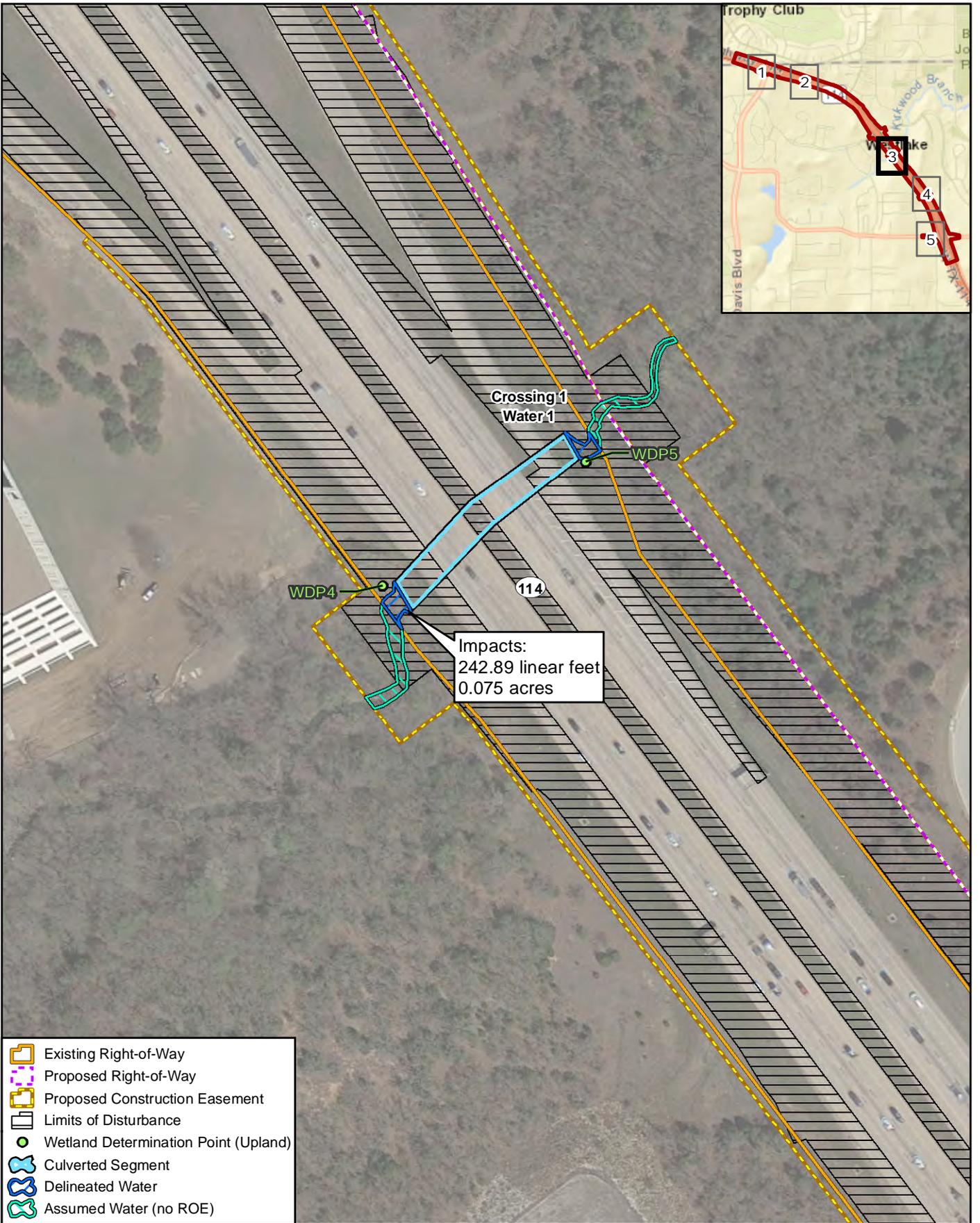
Potential Waters of the U.S.

Sheet 2 of 5

SH 114 from FM 1938 to Dove Rd

	0 150 Feet
	0 45 Meters
Prepared for: TxDOT	1 in = 150 feet
Scale: 1:1,800	Date: 2/27/2019
CSJ: 0353-03-100	

Data Sources: NHD (2018),
 FEMA NFHL (2018), CMEC (2018),
 Aerial Source: Google (2018)



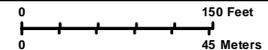
Impacts:
242.89 linear feet
0.075 acres

-  Existing Right-of-Way
-  Proposed Right-of-Way
-  Proposed Construction Easement
-  Limits of Disturbance
-  Wetland Determination Point (Upland)
-  Culverted Segment
-  Delineated Water
-  Assumed Water (no ROE)

Potential Waters of the U.S.

Sheet 3 of 5

SH 114 from FM 1938 to Dove Rd



Data Sources: NHD (2018),
FEMA NFHL (2018), CMEC (2018)
Aerial Source: Google (2018)

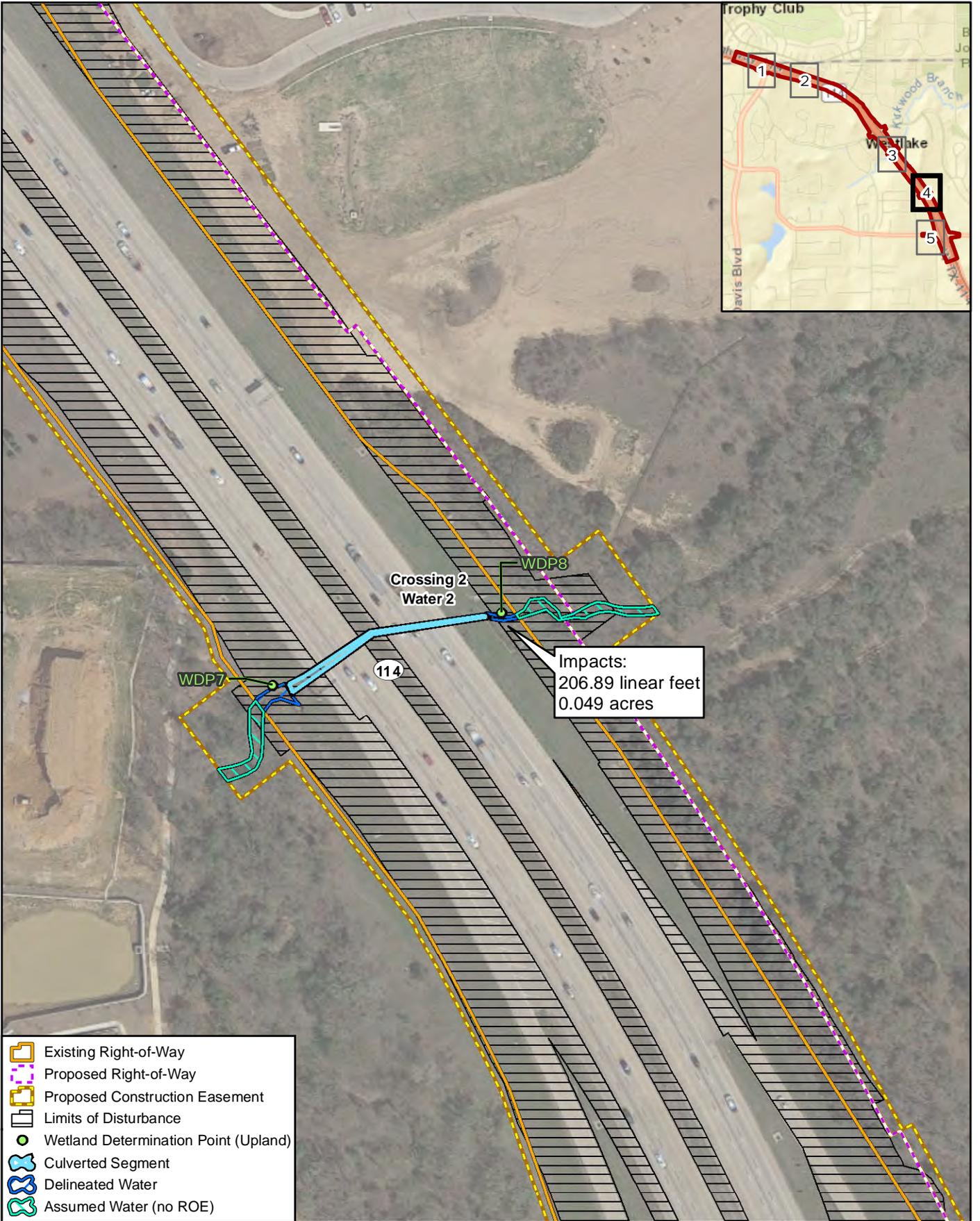
Prepared for: TxDOT

1 in = 150 feet

Scale: 1:1,800

CSJ: 0353-03-100

Date: 2/27/2019



Impacts:
206.89 linear feet
0.049 acres

- Existing Right-of-Way
- Proposed Right-of-Way
- Proposed Construction Easement
- Limits of Disturbance
- Wetland Determination Point (Upland)
- Culverted Segment
- Delineated Water
- Assumed Water (no ROE)

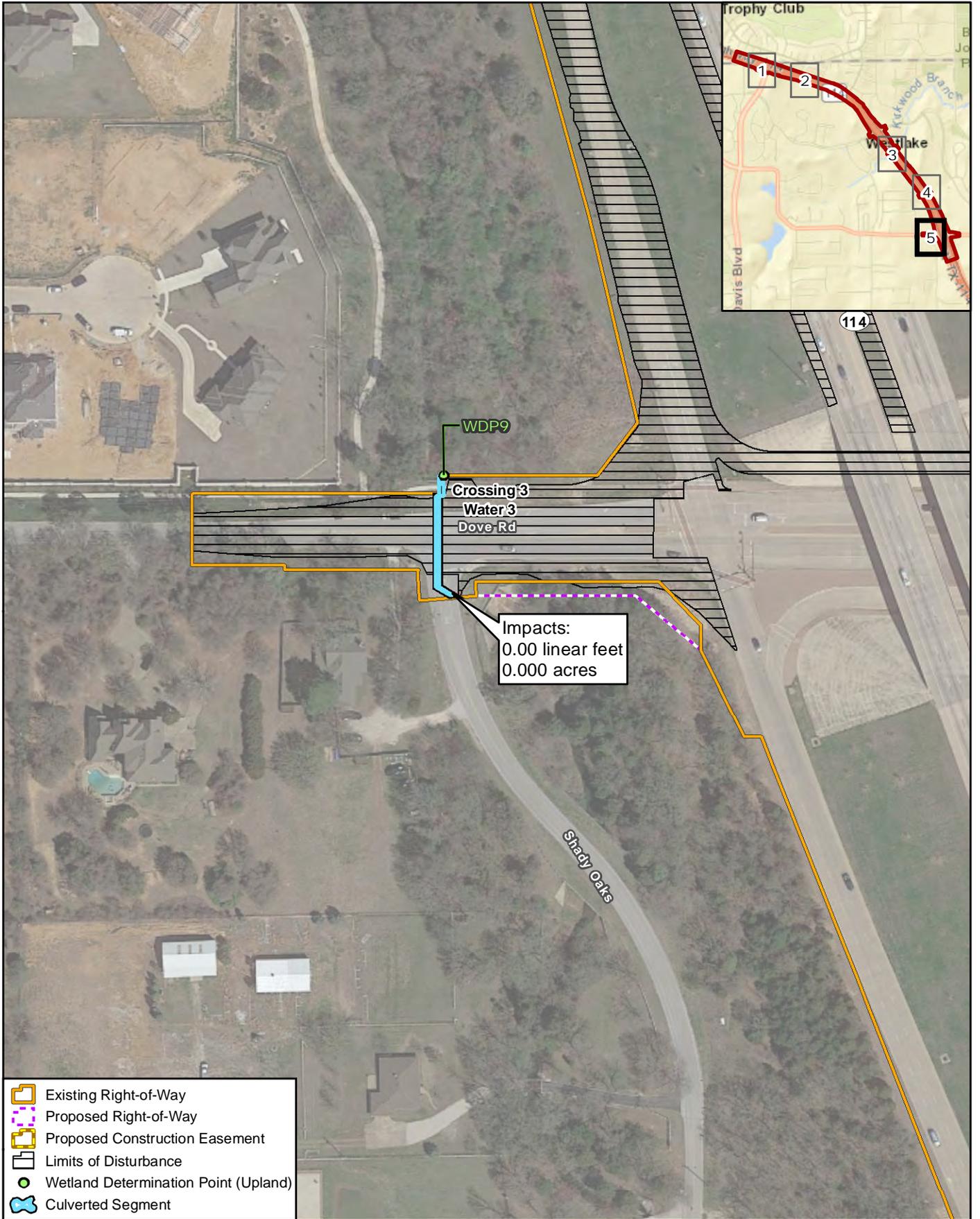
Potential Waters of the U.S.

Sheet 4 of 5

SH 114 from FM 1938 to Dove Rd

	0	150 Feet
	0	45 Meters
Prepared for: TxDOT		1 in = 150 feet
Data Sources: NHD (2018), FEMA NFHL (2018), CMEC (2018)		Scale: 1:1,800
Aerial Source: Google (2018)		Date: 2/27/2019
CSJ: 0353-03-100		

G:\Projects\TXDOT\SH114\BEF_Crossings_20190227.mxd



-  Existing Right-of-Way
-  Proposed Right-of-Way
-  Proposed Construction Easement
-  Limits of Disturbance
-  Wetland Determination Point (Upland)
-  Culverted Segment

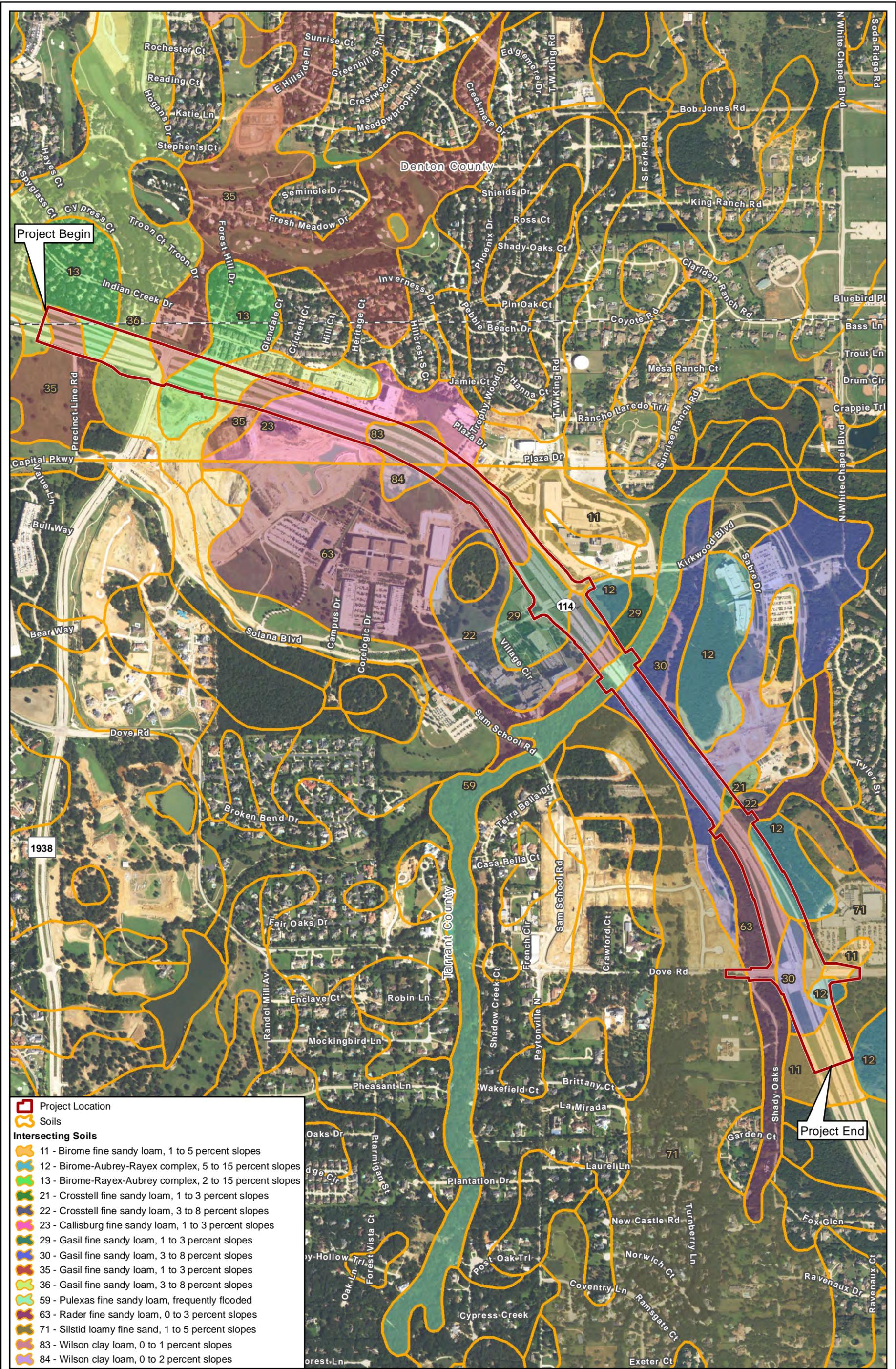
Potential Waters of the U.S.

Sheet 5 of 5

SH 114 from FM 1938 to Dove Rd

	0 150 Feet
	0 45 Meters
Prepared for: TxDOT	1 in = 150 feet
Data Sources: NHD (2018), FEMA NFHL (2018), CMEC (2018)	Scale: 1:1,800
Aerial Source: Google (2018)	Date: 2/27/2019
CSJ: 0353-03-100	

ATTACHMENT 18: SOILS IN THE PROJECT AREA FIGURE



- Project Location
- Soils
- Intersecting Soils**
- 11 - Birome fine sandy loam, 1 to 5 percent slopes
- 12 - Birome-Aubrey-Rayex complex, 5 to 15 percent slopes
- 13 - Birome-Rayex-Aubrey complex, 2 to 15 percent slopes
- 21 - Crosstell fine sandy loam, 1 to 3 percent slopes
- 22 - Crosstell fine sandy loam, 3 to 8 percent slopes
- 23 - Callisburg fine sandy loam, 1 to 3 percent slopes
- 29 - Gasil fine sandy loam, 1 to 3 percent slopes
- 30 - Gasil fine sandy loam, 3 to 8 percent slopes
- 35 - Gasil fine sandy loam, 1 to 3 percent slopes
- 36 - Gasil fine sandy loam, 3 to 8 percent slopes
- 59 - Pulexas fine sandy loam, frequently flooded
- 63 - Rader fine sandy loam, 0 to 3 percent slopes
- 71 - Silstid loamy fine sand, 1 to 5 percent slopes
- 83 - Wilson clay loam, 0 to 1 percent slopes
- 84 - Wilson clay loam, 0 to 2 percent slopes

Project Area Soils

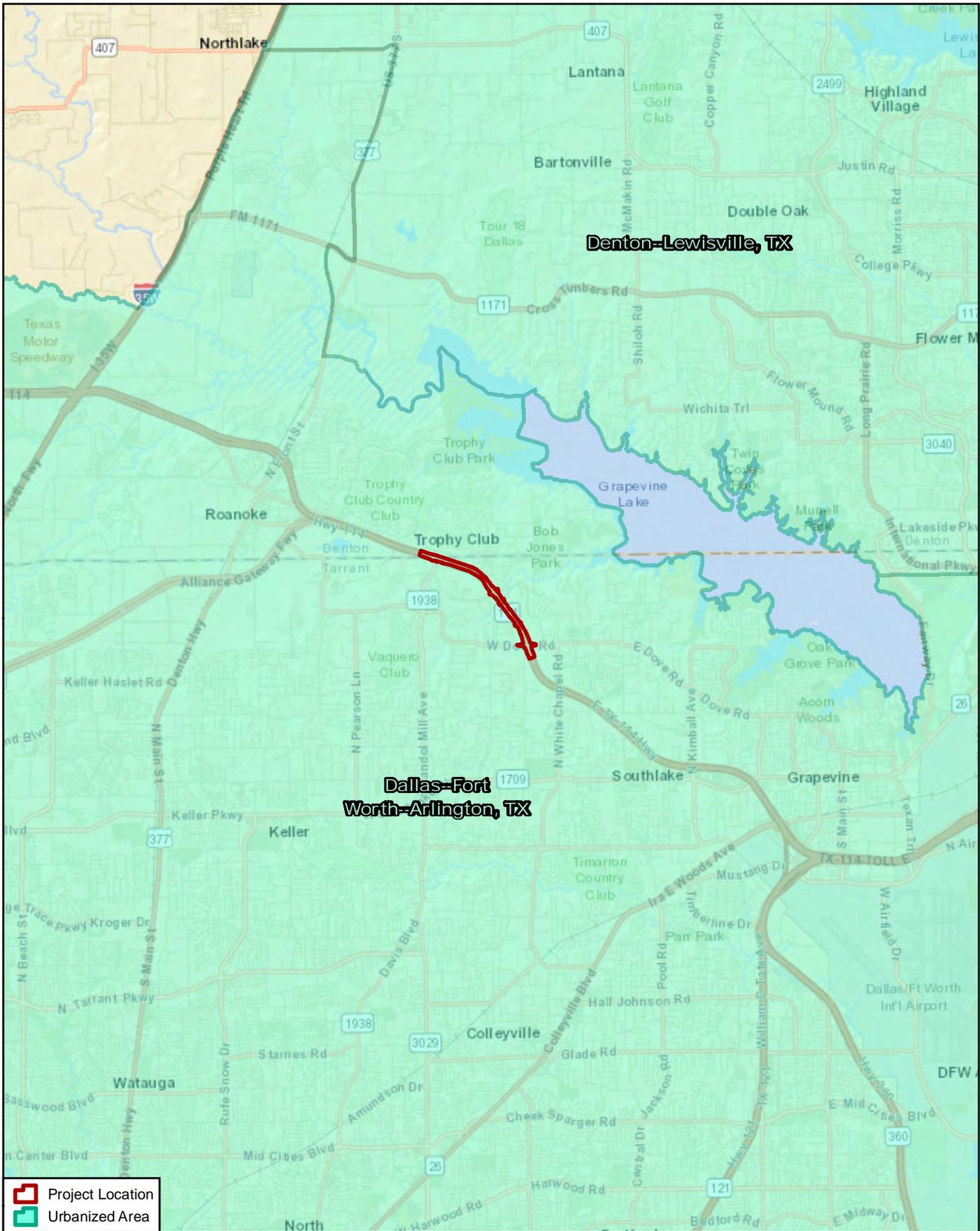
SH 114 from FM 1938 to Dove Rd

G:\Projects\TXDOT\SH114\BEF_Soils_20190111.mxd

	Prepared for: TXDOT	
	Data Source: NRCS (2018) Aerial Source: NAIP (2016)	1 in = 1,000 feet Scale: 1:12,000 Date: 1/11/2019

CSJ: 0353-03-100

ATTACHMENT 19: URBANIZED AREA FIGURE



- Project Location
- Urbanized Area

Urbanized Area
in the Project Vicinity

SH 114 from FM 1938 to Dove Rd

	0	2 Miles
	0	3 Kilometers
Prepared for: TxDOT		1 in = 10,560 feet
Data Source: U.S. Census Bureau (2010) Basemap Source: ESRI (2018)		Scale: 1:126,720
CSJ: 0353-03-100		Date: 1/18/2019

ATTACHMENT 20: PROJECT AREA PHOTOGRAPHS



**PHOTO 1: THE WESTERN TERMINUS OF THE PROJECT AREA ON THE STATE HIGHWAY (SH) 114 WESTBOUND FRONTAGE ROAD (RD).
VIEWING EAST.**



PHOTO 2: THE WESTERN TERMINUS OF THE PROJECT AREA ON THE SH 114 WESTBOUND FRONTAGE RD. VIEWING WEST.



PHOTO 3: THE WESTERN TERMINUS OF THE PROJECT AREA ON THE SH 114 EASTBOUND FRONTAGE RD. VIEWING EAST.



PHOTO 4: THE WESTERN TERMINUS OF THE PROJECT AREA ON THE SH 114 EASTBOUND FRONTAGE RD. VIEWING WEST.



PHOTO 5: AN UPLAND MANMADE DRAINAGE DITCH LOCATED WITHIN THE NORTHERN EXTENT OF THE PROJECT AREA. VIEWING WEST.



PHOTO 6: SH 114 EASTBOUND FRONTAGE RD. INTERSECTION AT DAVIS BOULEVARD (BLVD). VIEWING EAST.



PHOTO 7: SH 114 EASTBOUND FRONTAGE RD. INTERSECTION AT DAVIS BLVD. VIEWING WEST.



PHOTO 8: SH 114 EASTBOUND FRONTAGE RD. INTERSECTION AT DAVIS BLVD. VIEWING NORTH.



PHOTO 9: SH 114 EASTBOUND FRONTAGE RD. INTERSECTION AT DAVIS BLVD. VIEWING SOUTH.



PHOTO 10: AN UPLAND MANMADE DRAINAGE DITCH (CLASSIFIED AS A PUBHX-FRESHWATER POND ON THE NATIONAL WETLAND INVENTORY DATASET. VIEWING SOUTHEAST.



PHOTO 11: A FLUSH MOUNT GRATE INLET LOCATED WITHIN THE UPLAND MANMADE DRAINAGE DITCH.



PHOTO 12: SH 114 EASTBOUND FRONTAGE RD. INTERSECTION AT SOLANA BLVD. VIEWING SOUTHEAST.



PHOTO 13: SH 114 EASTBOUND FRONTAGE RD. INTERSECTION AT SOLANA BLVD. VIEWING NORTHWEST.



PHOTO 14: SH 114 EASTBOUND FRONTAGE RD. INTERSECTION AT SOLANA BLVD. VIEWING NORTHEAST.



PHOTO 15: SH 114 EASTBOUND FRONTAGE RD. INTERSECTION AT SOLANA BLVD. VIEWING SOUTHWEST.



PHOTO 16: SH 114 WESTBOUND FRONTAGE RD. INTERSECTION AT KIRKWOOD BLVD. VIEWING SOUTHEAST.



PHOTO 17: SH 114 WESTBOUND FRONTAGE RD. INTERSECTION AT KIRKWOOD BLVD. VIEWING NORTHWEST.



PHOTO 18: SH 114 WESTBOUND FRONTAGE RD. INTERSECTION AT KIRKWOOD BLVD. VIEWING NORTHEAST.



PHOTO 19: SH 114 WESTBOUND FRONTAGE RD. INTERSECTION AT KIRKWOOD BLVD. VIEWING SOUTHWEST.



PHOTO 20: UPSTREAM VIEW OF WATER 1 (A PERENNIAL STREAM) AT CROSSING #1, SOUTHWEST OF SH 114. VIEWING SOUTHWEST.



PHOTO 21: DOWNSTREAM VIEW OF WATER 1 (A PERENNIAL STREAM) AT CROSSING #1, SOUTHWEST OF SH 114. VIEWING NORTHEAST.



PHOTO 22: UPSTREAM VIEW OF WATER 1 (A PERENNIAL STREAM) NORTHEAST OF SH 114. VIEWING SOUTHWEST.

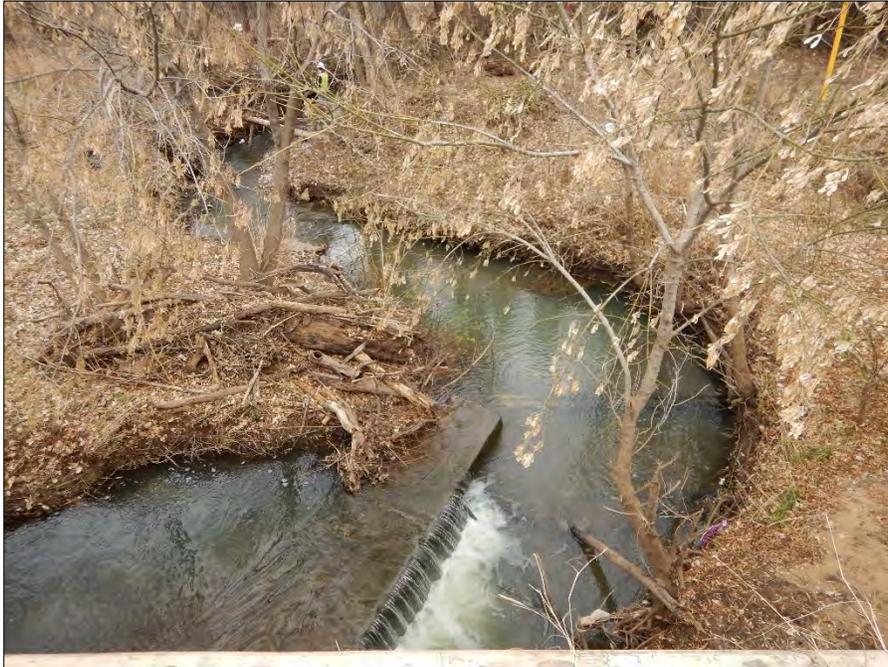


PHOTO 23: DOWNSTREAM VIEW OF WATER 1 (A PERENNIAL STREAM) NORTHEAST OF SH 114. VIEWING NORTHEAST.



PHOTO 24: AN INACTIVE BARN SWALLOW NEST OBSERVED WITHIN THE CULVERT AT CROSSING #1.



PHOTO 25: UPSTREAM VIEW OF WATER 2 (A PERENNIAL STREAM) AT CROSSING #2, SOUTHWEST OF SH 114. VIEWING SOUTH.



PHOTO 26: DOWNSTREAM VIEW OF WATER 2 (A PERENNIAL STREAM) AT CROSSING #2, SOUTHWEST OF SH 114. VIEWING EAST.



PHOTO 27: UPSTREAM VIEW OF WATER 2 (A PERENNIAL STREAM) AT CROSSING #2, NORTHEAST OF SH 114. VIEWING WEST.



PHOTO 28: DOWNSTREAM VIEW OF WATER 2 (A PERENNIAL STREAM) AT CROSSING #2, NORTHEAST OF SH 114. VIEWING EAST.



PHOTO 29: UPSTREAM VIEW OF WATER 3 (A PERENNIAL STREAM) AT CROSSING #3 NORTH OF DOVE RD. VIEWING SOUTH.

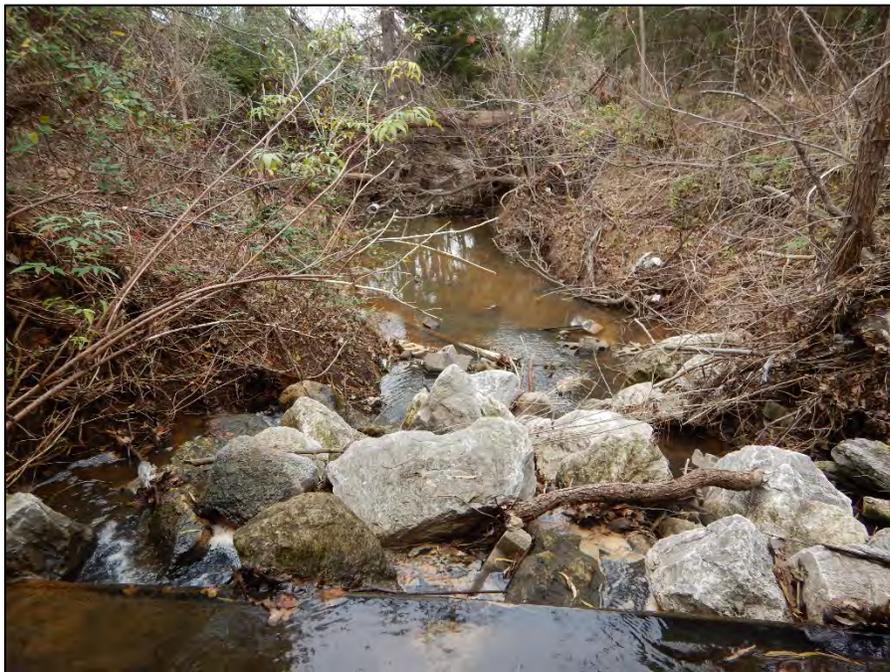


PHOTO 30: DOWNSTREAM VIEW OF WATER 3 (A PERENNIAL STREAM), OUTSIDE OF THE PROJECT AREA, NORTH OF DOVE RD. VIEWING NORTH.



PHOTO 31: UPSTREAM VIEW OF WATER 3 (A PERENNIAL STREAM), OUTSIDE OF THE PROJECT AREA, SOUTH OF DOVE RD. VIEWING SOUTHEAST.



PHOTO 32: DOWNSTREAM VIEW OF WATER 3 (A PERENNIAL STREAM) AT CROSSING #3 SOUTH OF DOVE RD. VIEWING NORTHWEST



PHOTO 33: SH 114 EASTBOUND FRONTAGE RD. INTERSECTION AT DOVE RD. VIEWING NORTH.



PHOTO 34: SH 114 EASTBOUND FRONTAGE RD. INTERSECTION AT DOVE RD. VIEWING SOUTH.



PHOTO 35: SH 114 EASTBOUND FRONTAGE RD. INTERSECTION AT DOVE RD. VIEWING EAST.



PHOTO 36: SH 114 EASTBOUND FRONTAGE RD. INTERSECTION AT DOVE RD. VIEWING WEST.



PHOTO 37: SH 114 WESTBOUND FRONTAGE RD. INTERSECTION AT DOVE RD. VIEWING NORTH.



PHOTO 38: SH 114 WESTBOUND FRONTAGE RD. INTERSECTION AT DOVE RD. VIEWING SOUTH.



PHOTO 39: SH 114 WESTBOUND FRONTAGE RD. INTERSECTION AT DOVE RD. VIEWING EAST.

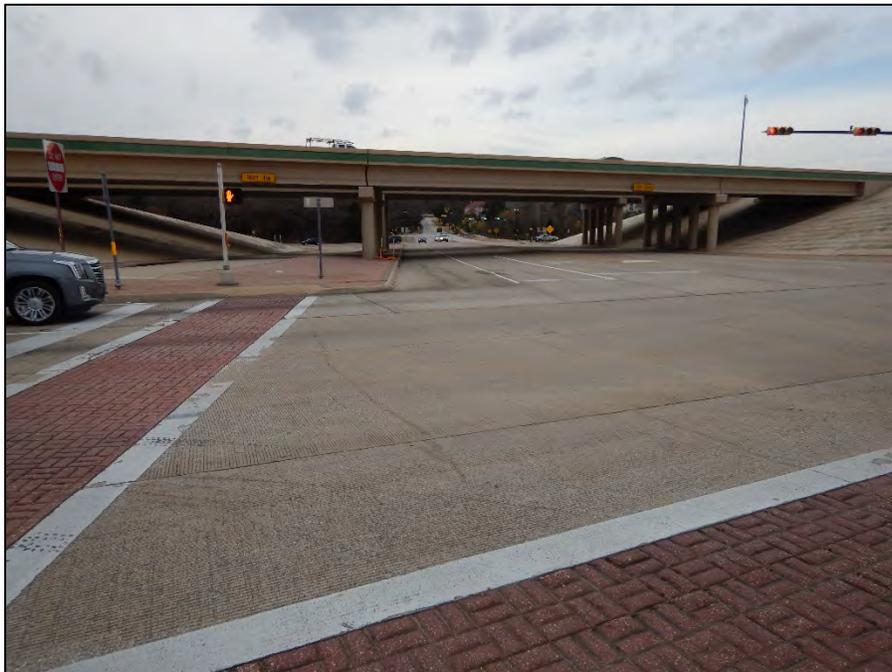


PHOTO 40: SH 114 WESTBOUND FRONTAGE RD. INTERSECTION AT DOVE RD. VIEWING WEST.



PHOTO 41: TYPICAL URBAN LOW INTENSITY VEGETATION TYPE OBSERVED WITHIN THE PROJECT AREA.



PHOTO 42: TYPICAL CENTRAL TEXAS: RIPARIAN HARDWOOD FOREST VEGETATION TYPE OBSERVED WITHIN THE PROJECT AREA.



PHOTO 43: TYPICAL CROSS TIMBERS: POST OAK WOODLAND VEGETATION TYPE OBSERVED WITHIN THE PROJECT AREA.



PHOTO 44: TYPICAL BLACKLAND PRAIRIE: DISTURBANCE OR TAME GRASSLAND VEGETATION TYPE OBSERVED WITHIN THE PROJECT AREA.



PHOTO 45: THE EASTERN TERMINUS OF THE PROJECT AREA AT THE SH 114 WESTBOUND FRONTAGE RD. VIEWING WEST.



PHOTO 46: THE EASTERN TERMINUS OF THE PROJECT AREA AT THE SH 114 WESTBOUND FRONTAGE RD. VIEWING EAST.



PHOTO 47: THE EASTERN TERMINUS OF THE PROJECT AREA AT THE SH 114 EASTBOUND FRONTAGE RD. VIEWING WEST.



PHOTO 48: THE EASTERN TERMINUS OF THE PROJECT AREA AT THE SH 114 EASTBOUND FRONTAGE RD. VIEWING EAST.

ATTACHMENT 21: PROJECT AREA PHOTOGRAPHS LOCATION FIGURE



-  Project Location
-  Photo Location

Photo Locations

Sheet 1 of 3

SH 114 from FM 1938 to Dove Rd

	0	500 Feet
	0	150 Meters
Prepared for: TxDOT		1 in = 500 feet
Data Source: CMEC (2018) Aerial Source: Google (2018)		Scale: 1:6,000
CSJ: 0353-03-100		Date: 2/25/2019



-  Project Location
-  Water Crossing
-  Photo Location
-  Nest Photo

Photo Locations

Sheet 2 of 3

SH 114 from FM 1938 to Dove Rd

	0 500 Feet
	0 150 Meters
Prepared for: TxDOT	1 in = 500 feet
Data Source: CMEC (2018) Aerial Source: Google (2018)	Scale: 1:6,000
CSJ: 0353-03-100	Date: 2/25/2019



-  Project Location
-  Water Crossing
-  Photo Location

Photo Locations

Sheet 3 of 3

SH 114 from FM 1938 to Dove Rd

	0	500 Feet
	0	150 Meters
Prepared for: TxDOT		1 in = 500 feet
Data Source: CMEC (2018) Aerial Source: Google (2018)		Scale: 1:6,000
CSJ: 0353-03-100		Date: 2/25/2019