Tier I Site Assessment

Main CSJ: 0016-01-113 and 0015-13-077
Form Prepared By: Anastasia Mogilevski, Atkins North America, Inc.
Date of Evaluation: January 22, 2021
Proposed Letting Date: March 2022
☐ *Project not assigned to TxDOT under the NEPA Assignment MOU*
District(s): Austin
County(ies): Hays, Travis
Roadway Name: Interstate 35 (I-35)
Limits From: State Highway 71
Limits To: State Highway 45 Southeast
Project Description: The project description is available in TxDOT's Environmental Compliance Oversight System (ECOS).

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 9, 2019, and executed by FHWA and TxDOT.

1. No — Is the project limited to a maintenance activity exempt from coordination?
   http://txdot.gov/inside-txdot/division/environmental/maintenance-program.html

2. No — Has the project previously completed coordination with TPWD?

3. Yes — Is the project within range of a state threatened or endangered species or SGCN and suitable habitat is present?

*Explain:

The Project is expected to occur within areas of existing TxDOT right of way (ROW), proposed ROW, construction easements, and drainage easements (Project Area). Habitat within the Project Area is heavily disturbed by the I-35 facility.

Marginal suitable habitat is present for one state threatened species within the Project Area: Texas fatmucket (Lampsilis bracteata), and 11 SGCN species within the Project Area: cave myotis bat (Myotis velifer), Correll's false dragon head (Physostegia correllii), Guadalupe bass (Micropterus treculii), Greenman's bluet (Houstonia parviflora), Mexican free-tailed bat (Tadarida brasiliensis), narrowleaf brickelbush (Brickellia eupatoriodes var. gracillima), net-leaf bundleflower (Desmanthus reticulatus), Texas garter snake (Thamnophis sirtalis annectens), Texas milk vetch (Astragalus reflexus), Texas shiner (Notropis amabilis), and tree dodder (Cuscuta exaltata).

The suitable habitat is present within the streams, woodlands, and grasslands that occur within the Project Area. However, the suitable habitat is considered marginal due to size, condition, and proximity to urbanized ROW. Work activities within Onion Creek may potentially impact fish species like the Guadalupe Bass and Texas shiner. In addition, bat calls and droppings were observed underneath bridge crossings within the Project Area, and therefore the SGCN bat species listed have the potential to occur within the Project Area.

SGCN were analyzed and that only those included on the Tier 1 form may be impacted. All other SGCN will not be impacted by the project.

Date TPWD County List Accessed: January 22, 2021

Date that the NDD was accessed: January 22, 2021

What agency performed the NDD search? TPWD

No — Does the BMP PA eliminate the requirement to coordinate for all species?

Comments:

The Project Area is within the range and habitat of one state threatened mollusk, one SGCN reptile, two SGCN fish, two SGCN bats, and six SGCN plants, as identified by the TPWD's County List of Rare, Threatened, and Endangered species, which triggers the TxDOT-TPWD MOU need for BMP implementation.

Established BMPs will be implemented for the cave myotis bat, Guadalupe bass, Texas fatmucket, and Texas garter snake, which will eliminate coordination for these species. TxDOT will coordinate with TPWD for the remaining species.

4. No — NDD and TCAP review indicates adverse impacts to remnant vegetation?

5. No — Does the project require a NWP with PCN or IP by USACE?

6. No — Does the project include more than 200 linear feet of stream channel for each single and complete crossing of one or more of the following that is not already channelized or otherwise maintained:

7. No — Does the project contain known isolated wetlands outside the TxDOT ROW that will be directly impacted by the project?

8. Yes — Would the project impact at least 0.10 acre of riparian vegetation?

*Explain:

The Project would disturb approximately 1.5 acres of riparian vegetation.

9. Yes — Does project disturb a habitat type in an area equal to or greater than the area of disturbance indicated in the Threshold Table Programmatic Agreement?

*Explain:

Approximately 8.0 acres of Tallgrass Prairie, Grassland MOU would be disturbed, which is greater than the MOU impact threshold of 0.1 acres for this MOU type. Approximately 1.5 acres of Riparian MOU type would be disturbed, which is greater than the MOU impact threshold of 0.1 acre. Lastly, approximately 11.9 acres of Disturbed Prairie would be disturbed, which exceeds the MOU impact threshold of 2.0 acres.

*Attach associated file of EMST output (Mapper Report or other Excel File which includes MOU Type, Ecosystem Name, Common/Vegetation Type Name) in ECOS

Excel File Name:

EMST (Jan. 2021).XML

9.1. Yes Is there a discrepancy between actual habitat(s) and EMST mapped habitat(s)?

*Explain:

The EMST vegetation types observed by a qualified ecologist within the Project Area did not completely correspond to the EMST mapped vegetation types. Vegetation types within the Edwards Plateau Savannah, Woodland, and Shrubland category were identified in the EMST mapped vegetation dataset, but were not observed in the Project Area. The observed vegetation also lacked Row crops, Native Invasive: Mesquite Shrubland, and Central Trexas: Riparian Deciduous Shrubland. Additionally, Central Texas: Riparian Herbaceous Vegetation was observed, whereas the EMST mapped vegetation included Central Texas: Floodplain Herbaceous Vegetation.

EMST mapped vegetation types include Barren; Central Texas: Floodplain Hardwood Forest; Central Texas: Floodplain Hardwood - Evergreen Forest; Blackland Prairie: Disturbance or Tame Grassland; Edwards Plateau: Deciduous Oak - Evergreen Motte and Woodland; Edwards Plateau: Savanna Grassland; Edwards Plateau: Oak - Hardwood Motte and Woodland; Edwards Plateau: Ashe Juniper Motte and Woodland; Edwards Plateau: Oak - Ashe Juniper Slope Forest; Edwards Plateau: Oak - Hardwood Slope Forest; Edwards Plateau: Live Oak Motte and Woodland; Native Invasive: Mesquite Shrubland; Native Invasive: Juniper Shrubland; Native Invasive: Juniper Woodland; Native Invasive: Deciduous Woodland; Central Texas: Riparian Hardwood Forest; Central Texas: Floodplain Herbaceous Vegetation; Central Texas: Riparian Deciduous Shrubland; Row Crop; Urban High Intensity; and Urban Low Intensity. Mapped EMST vegetation types within the Project Area are illustrated in Attachment A, Figure 2.

Observed vegetation types include Central Texas: Floodplain Hardwood Forest; Blackland Prairie: Disturbance or Tame Grassland; Native Invasive: Mesquite Shrubland; Native Invasive: Deciduous Woodland; Central Texas: Riparian Herbaceous Vegetation; Central Texas: Riparian Hardwood Forest; Urban; High Intensity; and Urban Low Intensity. Observed EMST vegetation types within the Project Area are illustrated in Attachment A, Figure 3.

Total acres of EMST mapped vegetation and observed vegetation types are presented in Attachment C.

Attach file showing discrepancy between actual and EMST mapped habitat(s).
File Name:

EMST (Jan. 2021).XML

Is TPWD Coordination Required?

Yes

☒ Early Coordination

☐ Administrated Coordination - Must be conducted through ENV-NRM

BMPs Implemented or EPICs included (as necessary):

Bat BMPs (cave myotis bat, Mexican free-tailed bat):
• For activities that have the potential to impact structures, cliffs or caves, or trees; a qualified biologist will perform a habitat assessment and occupancy survey of the feature(s) with roost potential as early in the planning process as possible or within one year before project letting.
• For roosts where occupancy is strongly suspected but unconfirmed during the initial survey, revisit feature(s) at most four weeks prior to scheduled disturbance to confirm absence of bats.
• If bats are present or recent signs of occupation (i.e., piles of guano, distinct musky odor, or staining and rub marks at potential entry points) are observed, take appropriate measures to ensure that bats are not harmed, such as implementing non-lethal exclusion activities or timing or phasing of construction.

• Exclusion devices can be installed by a qualified individual between September 1 and March 31. Exclusion devices should be used for a minimum of seven days when minimum nighttime temperatures are above 50°F AND minimum daytime temperatures are above 70°F. Prior to exclusion, ensure that alternate roosting habitat is available in the immediate area. If no suitable roosting habitat is available, installation of alternate roosts is recommended to replace the loss of an occupied roost. If alternate roost sites are not provided, bats may seek shelter in other inappropriate sites, such as buildings, in the surrounding area. See Section 2: Standard Recommendations for recommended acceptable methods for excluding bats from structures.
• If feature(s) used by bats are removed as a result of construction, replacement structures should incorporate bat-friendly design or artificial roosts should be constructed to replace these features, as practicable.
• In all instances, avoid harm or death to bats. Bats should only be handled as a last resort and after communication with TPWD.

Terrestrial reptile BMPs (Texas garter snake):
• Apply hydromulching and/or hydroseeding in areas for soil stabilization and/or revegetation of disturbed areas where feasible. If hydromulching and/or hydroseeding are not feasible due to site conditions, utilize erosion control blankets or mats that contain no netting or contain loosely woven, natural fiber netting is preferred. Plastic netting should be avoided to the extent practicable.
• Inform contractors that if reptiles are found on project site allow species to safely leave the project area.
• Avoid or minimize disturbing or removing downed trees, rotting stumps, and leaf litter where feasible.
• Contractors will be advised of potential occurrence in the project area, and to avoid harming the species if encountered.

Fish BMPs (Texas shiner, Guadalupe bass at the Onion Creek crossing):
• Water Quality BMPs:
•Minimize the use of equipment in streams and riparian areas during construction. When possible, equipment access should be from banks, bridge decks, or barges.
•When temporary stream crossings are unavoidable, remove stream crossings once they are no longer needed and stabilize banks and soils around the crossing.

Freshwater Mussel BMPs (Texas fatmucket at the Onion Creek crossing):
• Survey project footprint for state listed species where appropriate habitat exists. If mussels are discovered during surveys; relocate state listed species and SGCN mussels under TPWD authorization and implement Water Quality BMPs (described above under Fish BMPs).

For the Correll's false dragon head, Greenman's bluet, Mexican free-tailed bat, narrowleaf brickelbush, net-leaf bundleflower, Texas milk vetch, Texas shiner, and tree dodder, contractors will be advised of potential occurrence in the Project Area, to avoid harming the species if encountered.

TxDOT Contact Information

Name: Shelly Eason

Phone Number: (512) 832-7001

E-mail: shelly.eason@txdot.gov

Suggested Attachments

Aerial Map (with delineated project boundaries)

USFWS T&E List

TPWD T&E List

Species Analysis Summary

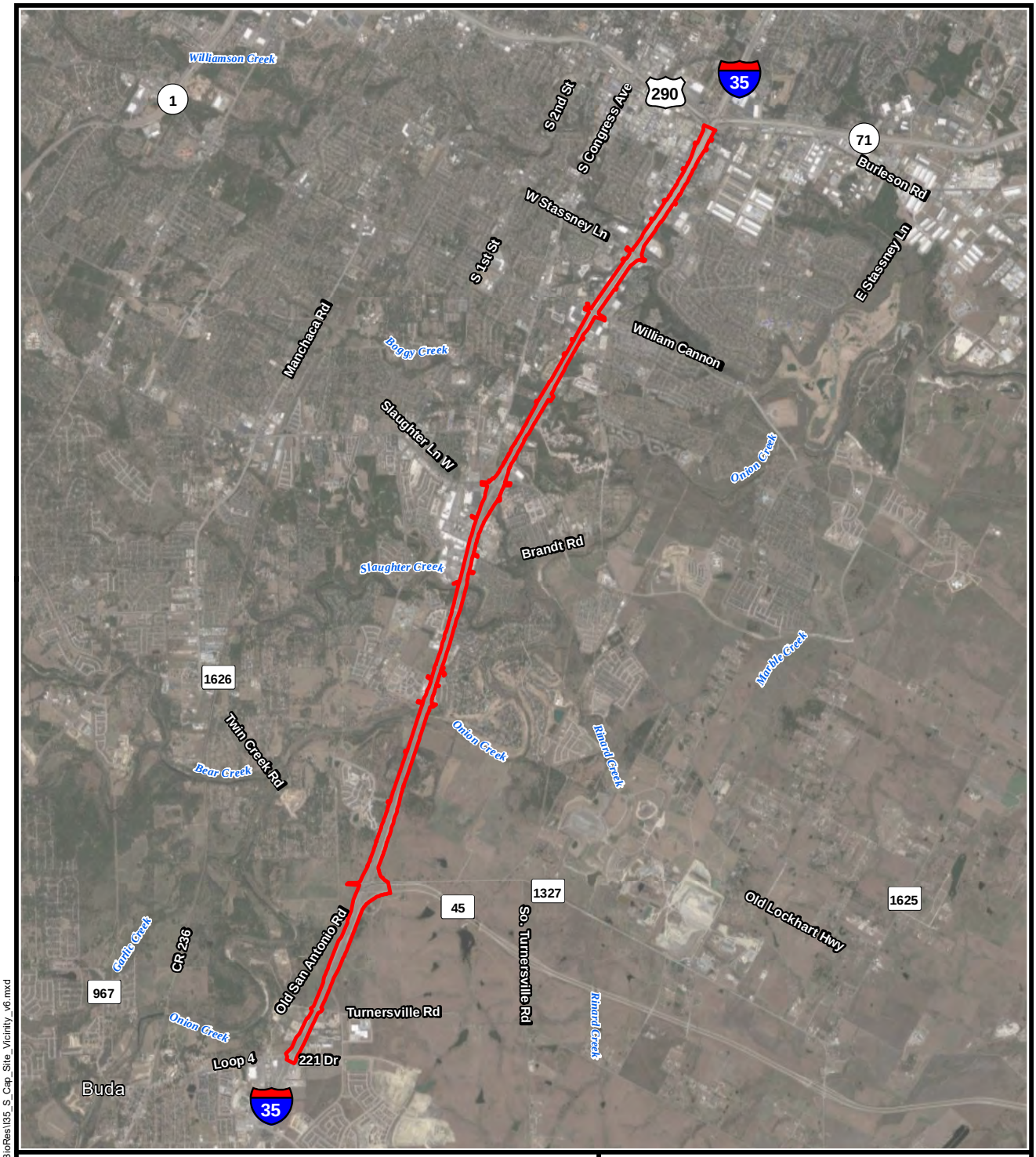
NDD EOID List and Tracked Managed Areas (Required for TPWD Coordination)

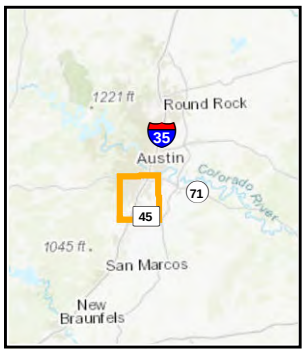
EMST Project MOU Summary Table (Required for TPWD Coordination)

TPWD SGCN List

Photos (Required for TPWD Coordination)

Previous TPWD Coordination Documentation (if applicable)





Project Area

0 2,500 5,000

Feet

Google, TNRIS. Texas Google Imagery Service. 2018. 1:80,000; generated by Atkins; using ArcMap. < https://tnris.org/texas-google-imagery/> (29 September 2020).

mobility 35 CAPITAL AREA

Figure 1
Site Vicinity

Capital Express South
US 290W/SH 71 to SH 45SE

AUSTIN, TRAVIS AND HAYS COUNTIES, TEXAS
CSJs 0015-13-077, 0016-01-113

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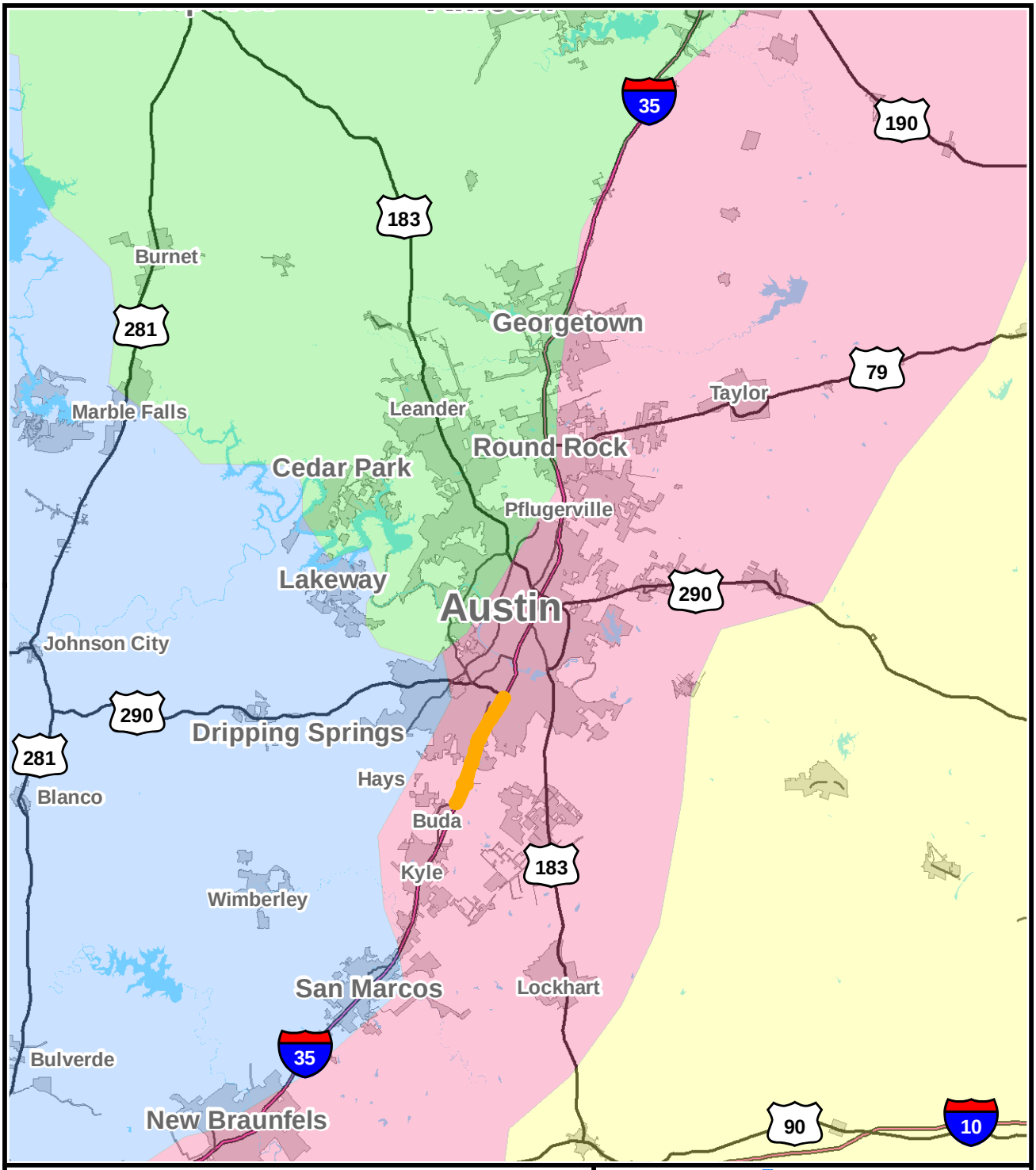

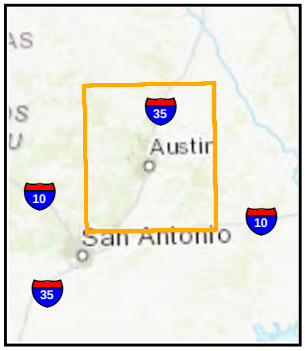

Project Area

Ecoregion

- Blackland Prairie
- Cross Timbers
- Edwards Plateau
- Post Oak Savanah

0 30,000 60,000

Feet

Esri, DeLorme, HERE, USGS, Intermap, iPC, NRCAN, METI, TomTom. World Street Map. March 2014. 1:800,000; generated by Atkins; using ArcMap. <http://server.arcgisonline.com/ArcGIS/rest/services/World_Street_Map/MapServer> (29 September 2020); Gould Ecological Regions, TPWD Wildlife Division (1/9/2004)

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Figure 2
Gould Ecoregions

Capital Express South
US 290W/SH 71 to SH 45SE

AUSTIN, TRAVIS AND HAYS COUNTIES, TEXAS
CSJs 0015-13-077, 0016-01-113

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Industrial Blvd
Santiago St
Governors Row
Directors Blvd
E Saint Elmo Rd
Terry O Ln
Meinardus Dr
Shelby Ln
Sheraton Ave
Freidrich Ln
Sponberg Dr
Old Castle Rd
Windledge Dr
Seminole Dr
Weidemar Ln
Tilbury Ln
Colonial Park Blvd
Newcastle Dr
Teri Rd
Merritt Dr
Merritt Cir
Sussex Dr
Pepper Ln
Fort Mason Dr
Fort Clark Dr
Presidio Rd
Ponciana Loop
Deadwood Dr
Ponciana Dr
Williamson Creek
71
35
45
Buda
Existing ROW
Proposed ROW
Construction Easement
Drainage Easement
Edwards Plateau: Deciduous Oak - Evergreen Motte and Woodland
Urban High Intensity
Urban Low Intensity
Bridge ID #s
0 250 500 Feet
Google, TNRIS, Texas Google Imagery Service. 2018. 1:6,000; generated by Atkins; using ArcMap. < https://tnris.org/texas-oogle-imagery/> (10/1/2020); TPWD (2013)
mobility 35 CAPITAL AREA
Figure 3
EMST Mapped Vegetation Types
Capital Express South
US 290W/SH 71 to SH 45SE
AUSTIN, TRAVIS AND HAYS COUNTIES, TEXAS
CSJs 0015-13-077, 0016-01-113
Sheet 1 of 8
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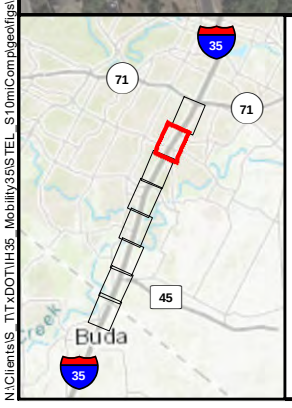
E Stassney Ln
Little Texas Ln
Mira Dr
Crow Ln
N Bluff Dr
Nelms Dr
Sneed Cv
Williamson Creek
35
William Cannon Dr
E William Cannon Dr
Circle S Rd
Bitter Creek Dr
Old Lockhart Hwy
Boggy Creek Dr
Deer Run Dr
Spruce Gum Ln
Oak Motte Ln
Blue Meadow Dr
Chaparral Rd
Corral Ln



- Existing ROW
- Proposed ROW
- Construction Easement
- Drainage Easement
- Edwards Plateau: Deciduous Oak - Evergreen Motte and Woodland
- Edwards Plateau: Savanna Grassland
- Urban High Intensity
- Urban Low Intensity

Bridge ID #s

142270001513678

0 250 500 Feet

Google, TNRIS. Texas Google Imagery Service. 2018. 1:6,000; generated by Atkins; using ArcMap. < https://tnris.org/texas-oogle-imagery/> (10/1/2020); TPWD (2013)

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Figure 3

EMST Mapped Vegetation Types

Capital Express South
US 290W/SH 71 to SH 45SE

AUSTIN, TRAVIS AND HAYS COUNTIES, TEXAS
CSJs 0015-13-077, 0016-01-113

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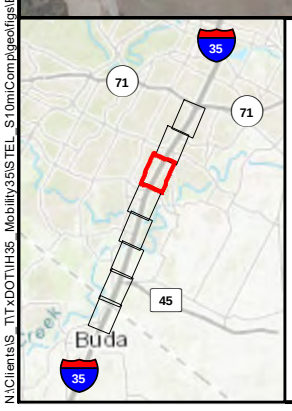
Corral Ln
Alegre Pass
Tranquilo Trl
Dittmar Rd E
35
142270001513127
Boggy Creek
Foremost Dr
S Congress Ave
Ralph Ablanedo Dr
Cullen Ln
275



- Existing ROW
- Proposed ROW
- Construction Easement
- Drainage Easement
- Edwards Plateau: Ashe Juniper Motte and Woodland
- Edwards Plateau: Deciduous Oak - Evergreen Motte and Woodland
- Native Invasive: Deciduous Woodland
- Native Invasive: Juniper Woodland
- Urban High Intensity
- Urban Low Intensity

Bridge ID #s

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0 250 500 Feet

Google, TNRIS, Texas Google Imagery Service. 2018. 1:6,000; generated by Atkins; using ArcMap. < https://tnris.org/texas-oogle-imagery/> (10/1/2020); TPWD (2013)

mobility 35 CAPITAL AREA

Figure 3

EMST Mapped Vegetation Types

Capital Express South
US 290W/SH 71 to SH 45SE

AUSTIN, TRAVIS AND HAYS COUNTIES, TEXAS
CSJs 0015-13-077, 0016-01-113

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142270001601003

142270001601190

142270001601064

142270001601189

142270001513678

Slaughter Ln

Slaughter Ln W

Judy Dr

Oak Hill Ln

Meridian Oak Cv

Meridian Oaks Ln

Charlotte Estates Dr

Narrow Glen Pkwy

Pioneer Forest Dr

Idlewide Run Dr

Turk Ln

Brandt Rd

Petrified Forest Dr

Big Boggy Trl

Wind Cave Trl

Buffalo Lake Ln

Anahuac Trl

Isle Royale Way

Mount Ranier Dr

National Park Blvd

Minute

Yellowstone Dr

Big Thicket Dr

Channel Island Dr

Slaughter Creek

275

35

71

45

Buda

- Existing ROW
- Proposed ROW
- Construction Easement
- Drainage Easement
- Barren
- Central Texas: Floodplain Hardwood Forest
- Central Texas: Riparian Hardwood Forest
- Edwards Plateau: Ashe Juniper Motte and Woodland
- Edwards Plateau: Deciduous Oak - Evergreen Motte and Woodland
- Edwards Plateau: Oak - Hardwood Motte and Woodland
- Edwards Plateau: Oak - Hardwood Slope Forest
- Edwards Plateau: Savanna Grassland
- Native Invasive: Deciduous Woodland
- Native Invasive: Mesquite Shrubland
- Urban High Intensity
- Urban Low Intensity

Bridge ID #s

0 250 500 Feet

Google, TNRIS, Texas Google Imagery Service. 2018. 1:6,000; generated by Atkins; using ArcMap. < https://tnris.org/texas-oogle-imagery/> (10/1/2020); TPWD (2013)

mobility 35 CAPITAL AREA

Figure 3

EMST Mapped Vegetation Types

Capital Express South
US 290W/SH 71 to SH 45SE

AUSTIN, TRAVIS AND HAYS COUNTIES, TEXAS
CSJs 0015-13-077, 0016-01-113

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142270001601452
142270001601197
142270001601069
142270001601004
142270001601198
142270001601199
142270001513678
Slaughter Creek
Onion Creek
Brezza Ln
Old San Antonio Rd
Royal Lytham Dr
Innisbrook Dr
Muirfield Cir
La Costa Dr
Pine Valley Dr
Pinehurst Dr
Baltusrol Dr
Legends Ln
Hazeltine Ln
Pebble Beach Dr
Apple Valley Cir
Boca Raton Dr
Preston Trails Cv
Preston Trails Dr
Crown Colony Dr
Inverrary Cir
Coral Gables Ct
Point Clear Ct
Onion Creek Ct
1626
35
Farrah Ln
Onion Creek Pkwy
Buda
71
45

Existing ROW
Proposed ROW
Construction Easement
Drainage Easement
Blackland Prairie: Disturbance or Tame Grassland
Central Texas: Floodplain Hardwood Forest
Central Texas: Floodplain Herbaceous Vegetation
Central Texas: Riparian Deciduous Shrubland
Edwards Plateau: Deciduous Oak - Evergreen Motte and Woodland
Edwards Plateau: Live Oak Motte and Woodland
Edwards Plateau: Oak - Hardwood Slope Forest
Native Invasive: Deciduous Woodland
Native Invasive: Mesquite Shrubland
Urban High Intensity
Urban Low Intensity

Bridge ID #s

0 250 500 Feet

Google, TNRIS, Texas Google Imagery Service, 2018, 1:6,000; generated by Atkins; using ArcMap, < https://tnris.org/texas-oogle-imagery/> (10/1/2020); TPWD (2013)

mobility 35 CAPITAL AREA

Figure 3

EMST Mapped Vegetation Types

Capital Express South
US 290W/SH 71 to SH 45SE

AUSTIN, TRAVIS AND HAYS COUNTIES, TEXAS
CSJs 0015-13-077, 0016-01-113

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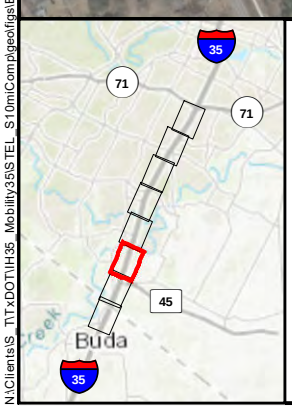
Onion Creek

35

Camino Vaquero Pkwy

Estancia Pkwy

Blackwell Ave



- Existing ROW
- Proposed ROW
- Construction Easement
- Drainage Easement
- Blackland Prairie: Disturbance or Tame Grassland
- Central Texas: Floodplain Herbaceous Vegetation
- Edwards Plateau: Deciduous Oak - Evergreen Motte and Woodland
- Edwards Plateau: Live Oak Motte and Woodland
- Edwards Plateau: Oak - Hardwood Motte and Woodland
- Edwards Plateau: Savanna Grassland
- Native Invasive: Deciduous Woodland
- Native Invasive: Mesquite Shrubland
- Row Crops
- Urban High Intensity
- Urban Low Intensity

N

Bridge ID #s

142270001513678

0 250 500 Feet

Google, TNRIS. Texas Google Imagery Service. 2018. 1:6,000; generated by Atkins; using ArcMap. < https://tnris.org/texas-oogle-imagery/> (10/1/2020); TPWD (2013)

mobility 35 CAPITAL AREA

Figure 3

EMST Mapped Vegetation Types

Capital Express South
US 290W/SH 71 to SH 45SE

AUSTIN, TRAVIS AND HAYS COUNTIES, TEXAS
CSJs 0015-13-077, 0016-01-113

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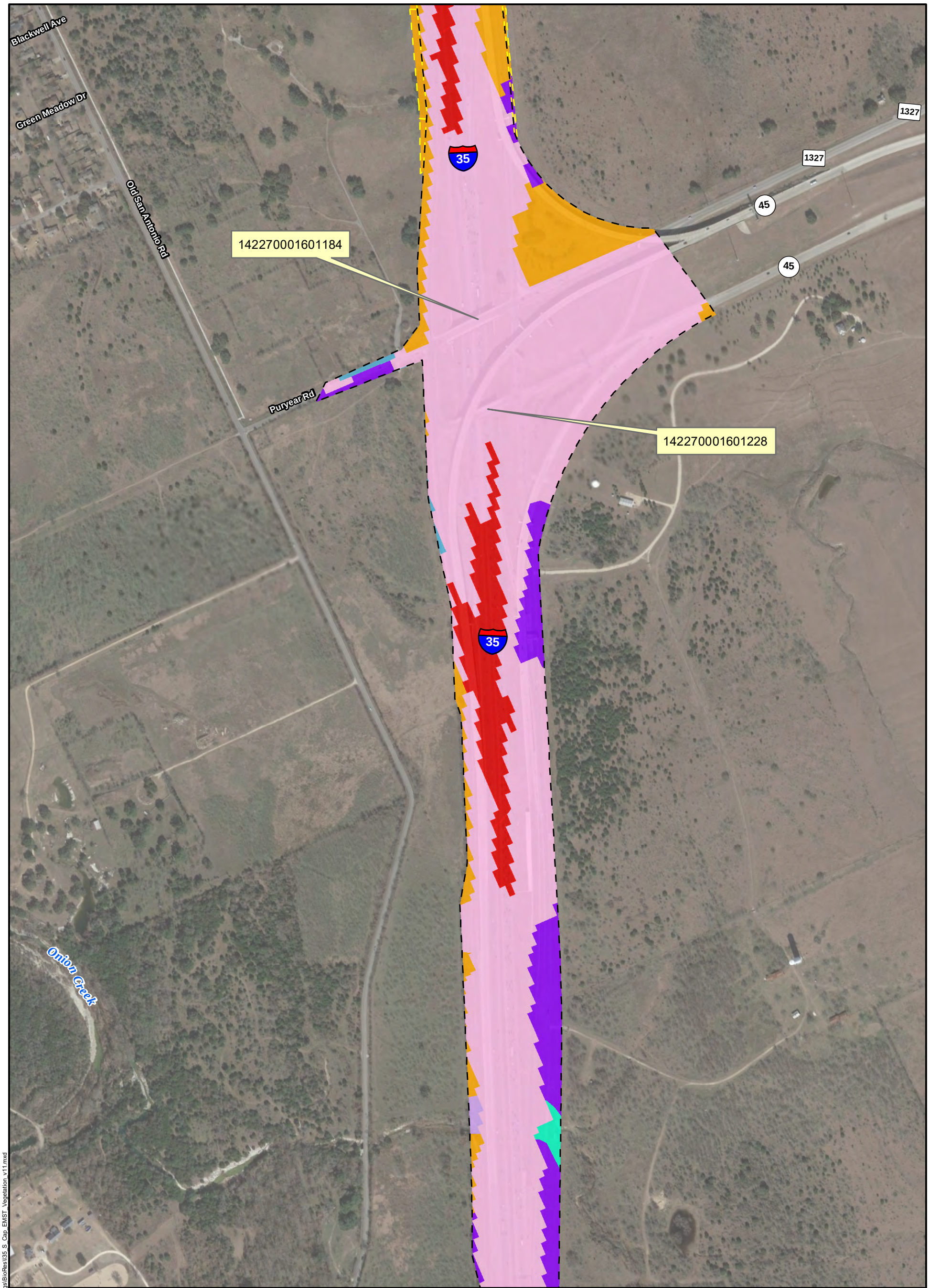

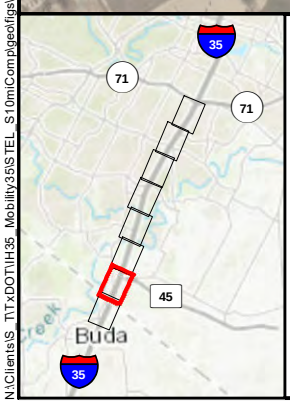

- Existing ROW
- Proposed ROW
- Construction Easement
- Drainage Easement
- Blackland Prairie: Disturbance or Tame Grassland
- Central Texas: Floodplain Deciduous Shrubland
- Central Texas: Floodplain Herbaceous Vegetation
- Edwards Plateau: Savanna Grassland
- Native Invasive: Mesquite Shrubland
- Urban High Intensity
- Urban Low Intensity

Bridge ID #s

142270001513678

0 250 500 Feet

Google, TNRIS, Texas Google Imagery Service. 2018. 1:6,000; generated by Atkins; using ArcMap. < https://tnris.org/texas-oogle-imagery/> (10/1/2020); TPWD (2013)

mobility 35 CAPITAL AREA

Figure 3

EMST Mapped Vegetation Types

Capital Express South
US 290W/SH 71 to SH 45SE

AUSTIN, TRAVIS AND HAYS COUNTIES, TEXAS
CSJs 0015-13-077, 0016-01-113

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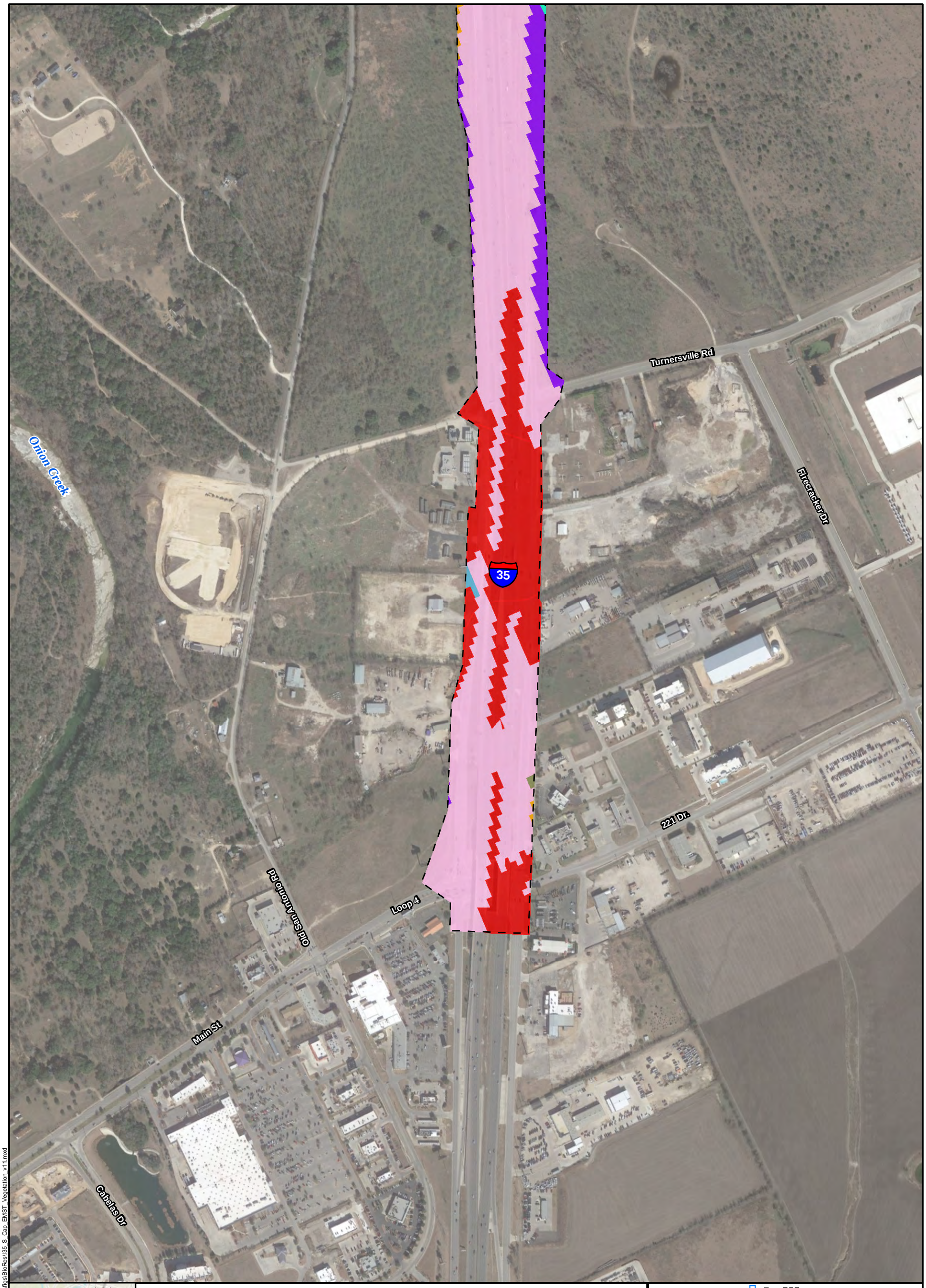

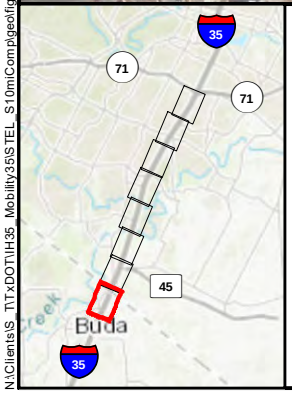

- Existing ROW
- Proposed ROW
- Construction Easement
- Drainage Easement
- Blackland Prairie: Disturbance or Tame Grassland
- Central Texas: Floodplain Deciduous Shrubland
- Edwards Plateau: Savanna Grassland
- Native Invasive: Mesquite Shrubland
- Row Crops
- Urban High Intensity
- Urban Low Intensity

Bridge ID #s

142270001513678

0 250 500 Feet

Google, TNRIS. Texas Google Imagery Service. 2018. 1:6,000; generated by Atkins; using ArcMap. < https://tnris.org/texas-oogle-imagery/> (10/1/2020); TPWD (2013)

mobility 35 CAPITAL AREA

Figure 3

EMST Mapped Vegetation Types

Capital Express South
US 290W/SH 71 to SH 45SE

AUSTIN, TRAVIS AND HAYS COUNTIES, TEXAS
CSJs 0015-13-077, 0016-01-113

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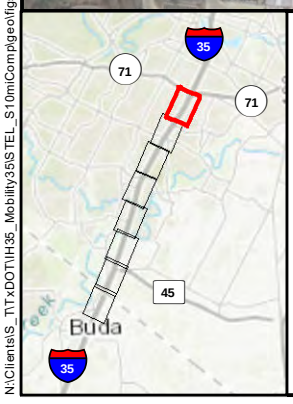

Existing ROW
Construction Easement
Proposed ROW
Drainage Easement
Central Texas: Riparian Hardwood Forest
Urban High Intensity
Urban Low Intensity

0 250 500 Feet

Google, TNRIS. Texas Google Imagery Service. 2018. 1:6,000; generated by Atkins; using ArcMap.
< https://tnris.org/texas-google-imagery/> (29 September 2020); TPWD (2013)

Figure 4

EMST Observed Vegetation Types

Capital Express South
US 290W/SH 71 to SH 45SE

AUSTIN, TRAVIS AND HAYS COUNTIES, TEXAS
CSJs 0015-13-077, 0016-01-113

Sheet 1 of 8

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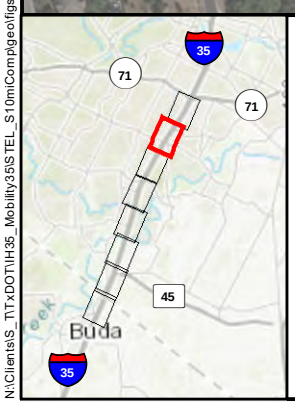
E Stassney Ln
Mira Dr
Little Texas Ln
Crow Ln
N Bluff Dr
Nelms Dr
Sneed Cv
Williamson Creek
35
William Cannon Dr
E William Cannon Dr
Circle S Rd
Bitter Creek Dr
Boggy Creek Dr
Old Lockhart Hwy
Deer Run Dr
Spruce Gum Ln
Oak Motte Ln
Blue Meadow Dr
Chaparral Rd
Corral Ln



Existing ROW
Construction Easement
Proposed ROW
Drainage Easement
Urban High Intensity
Urban Low Intensity

0 250 500 Feet

Google, TNRIS. Texas Google Imagery Service. 2018. 1:6,000; generated by Atkins; using ArcMap.
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Figure 4

EMST Observed Vegetation Types

Capital Express South
US 290W/SH 71 to SH 45SE

AUSTIN, TRAVIS AND HAYS COUNTIES, TEXAS
CSJs 0015-13-077, 0016-01-113

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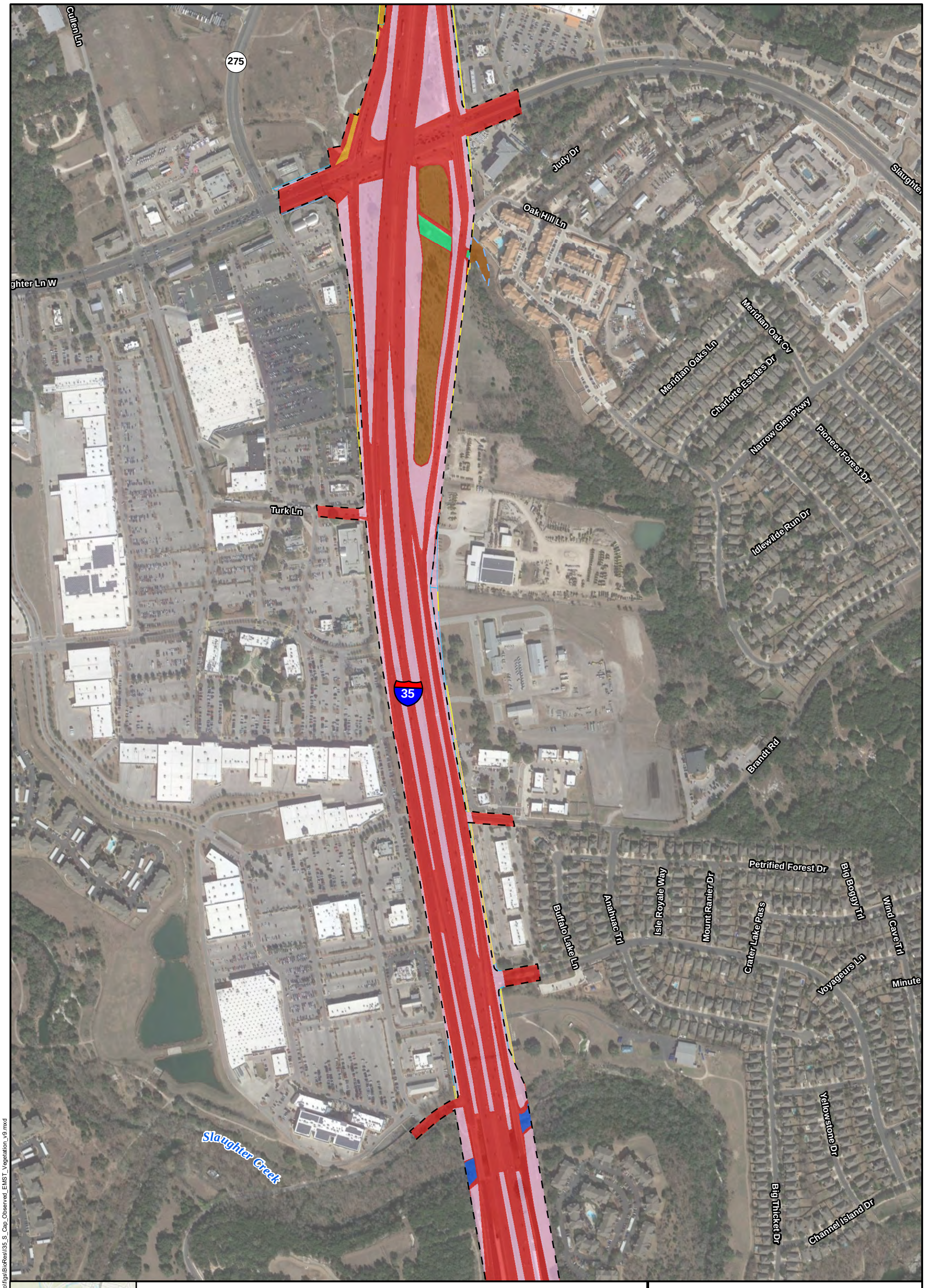
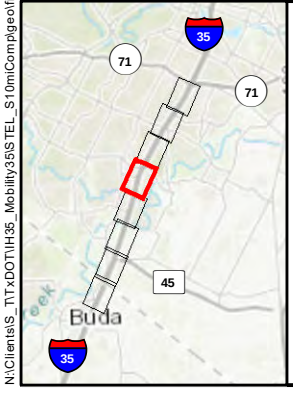
Figure 4

EMST Observed Vegetation Types

Capital Express South
US 290W/SH 71 to SH 45SE

AUSTIN, TRAVIS AND HAYS COUNTIES, TEXAS
CSJs 0015-13-077, 0016-01-113





- Existing ROW
- Construction Easement
- Proposed ROW
- Drainage Easement
- Blackland Prairie: Disturbance or Tame Grassland
- Central Texas: Floodplain Hardwood Forest
- Central Texas: Riparian Herbaceous Vegetation
- Native Invasive: Deciduous Woodland
- Urban High Intensity
- Urban Low Intensity

0 250 500 Feet

Google, TNRIS. Texas Google Imagery Service. 2018. 1:6,000; generated by Atkins; using ArcMap.
< https://tnris.org/texas-google-imagery/> (29 September 2020); TPWD (2013)

Figure 4

EMST Observed Vegetation Types

Capital Express South
US 290W/SH 71 to SH 45SE

AUSTIN, TRAVIS AND HAYS COUNTIES, TEXAS
CSJs 0015-13-077, 0016-01-113

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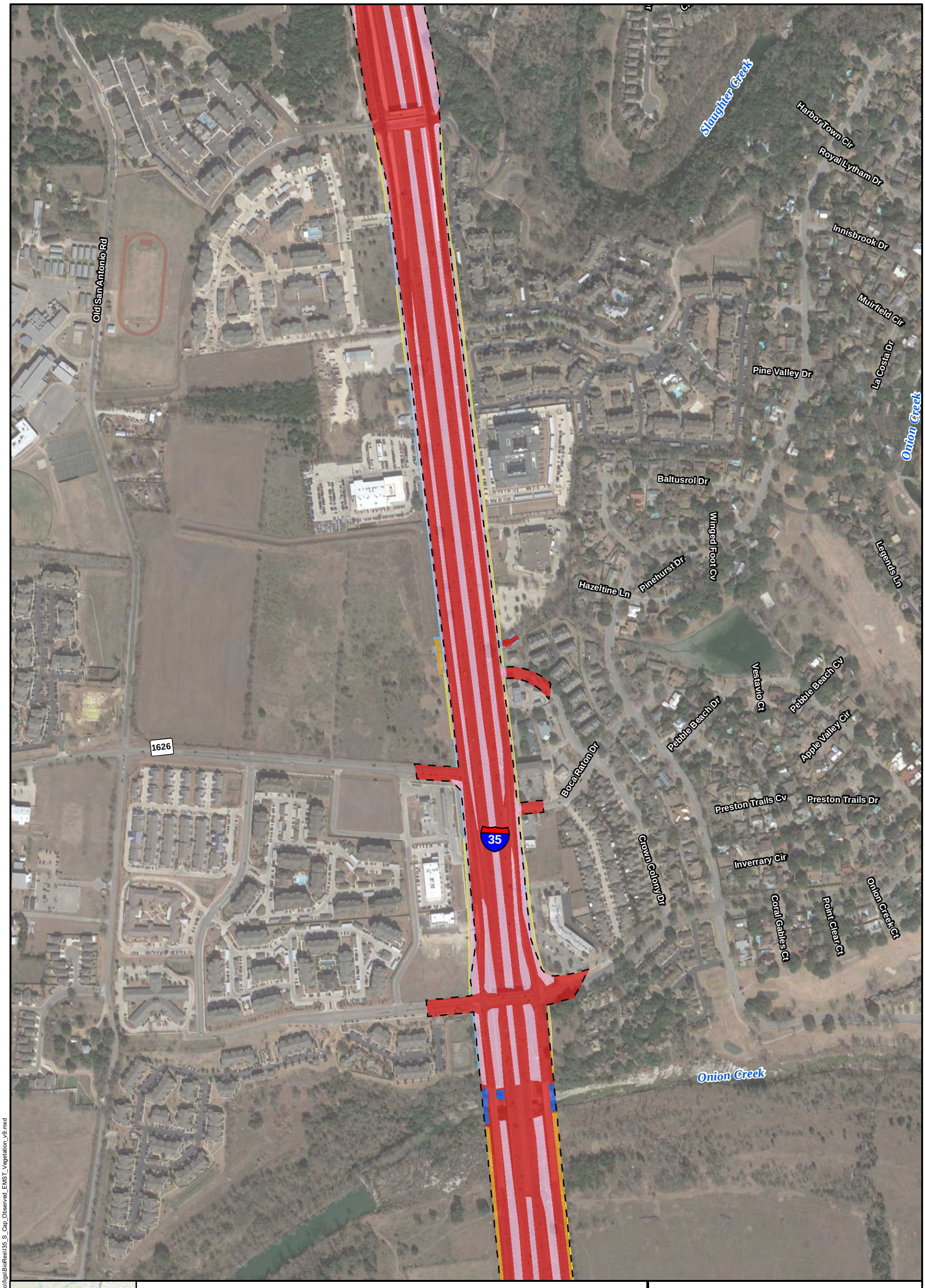

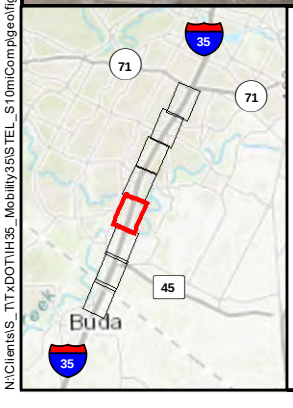

- Existing ROW
- Construction Easement
- Proposed ROW
- Drainage Easement
- Blackland Prairie: Disturbance or Tame Grassland
- Central Texas: Floodplain Hardwood Forest
- Urban High Intensity
- Urban Low Intensity

Google, TNRIS. Texas Google Imagery Service. 2018. 1:6,000; generated by Atkins; using ArcMap. < https://tnris.org/texas-google-imagery/> (29 September 2020); TPWD (2013)

0 250 500 Feet

Figure 4

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AUSTIN, TRAVIS AND HAYS COUNTIES, TEXAS
CSJs 0015-13-077, 0016-01-113

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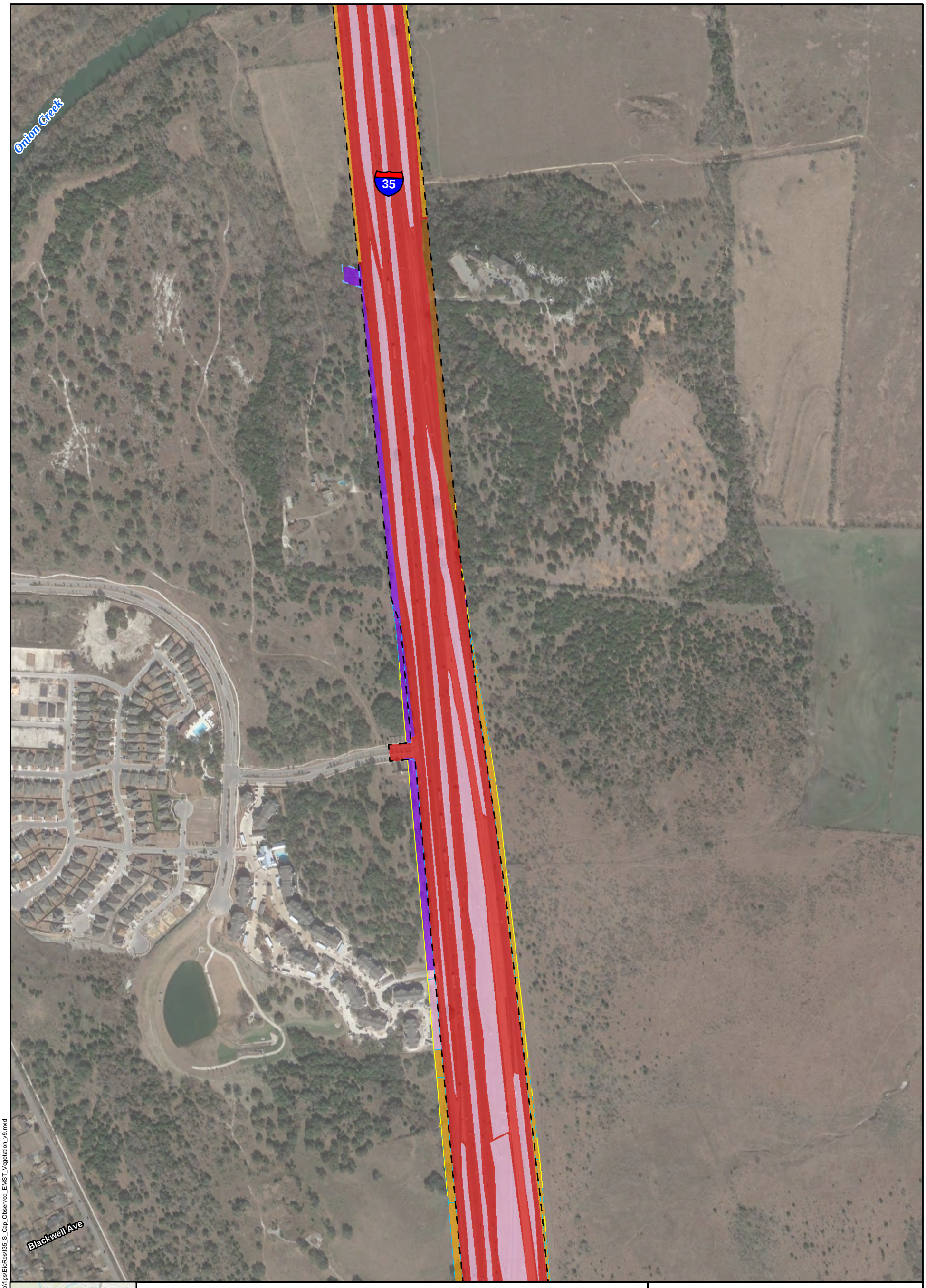

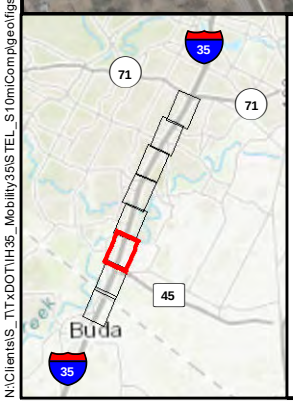

- Existing ROW
- Construction Easement
- Proposed ROW
- Drainage Easement
- Blackland Prairie: Disturbance or Tame Grassland
- Native Invasive: Deciduous Woodland
- Native Invasive: Mesquite Shrubland
- Urban High Intensity
- Urban Low Intensity

0 250 500 Feet

Google, TNRIS. Texas Google Imagery Service. 2018. 1:6,000; generated by Atkins; using ArcMap.
< https://tnris.org/texas-google-imagery/> (29 September 2020); TPWD (2013)

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AUSTIN, TRAVIS AND HAYS COUNTIES, TEXAS
CSJs 0015-13-077, 0016-01-113

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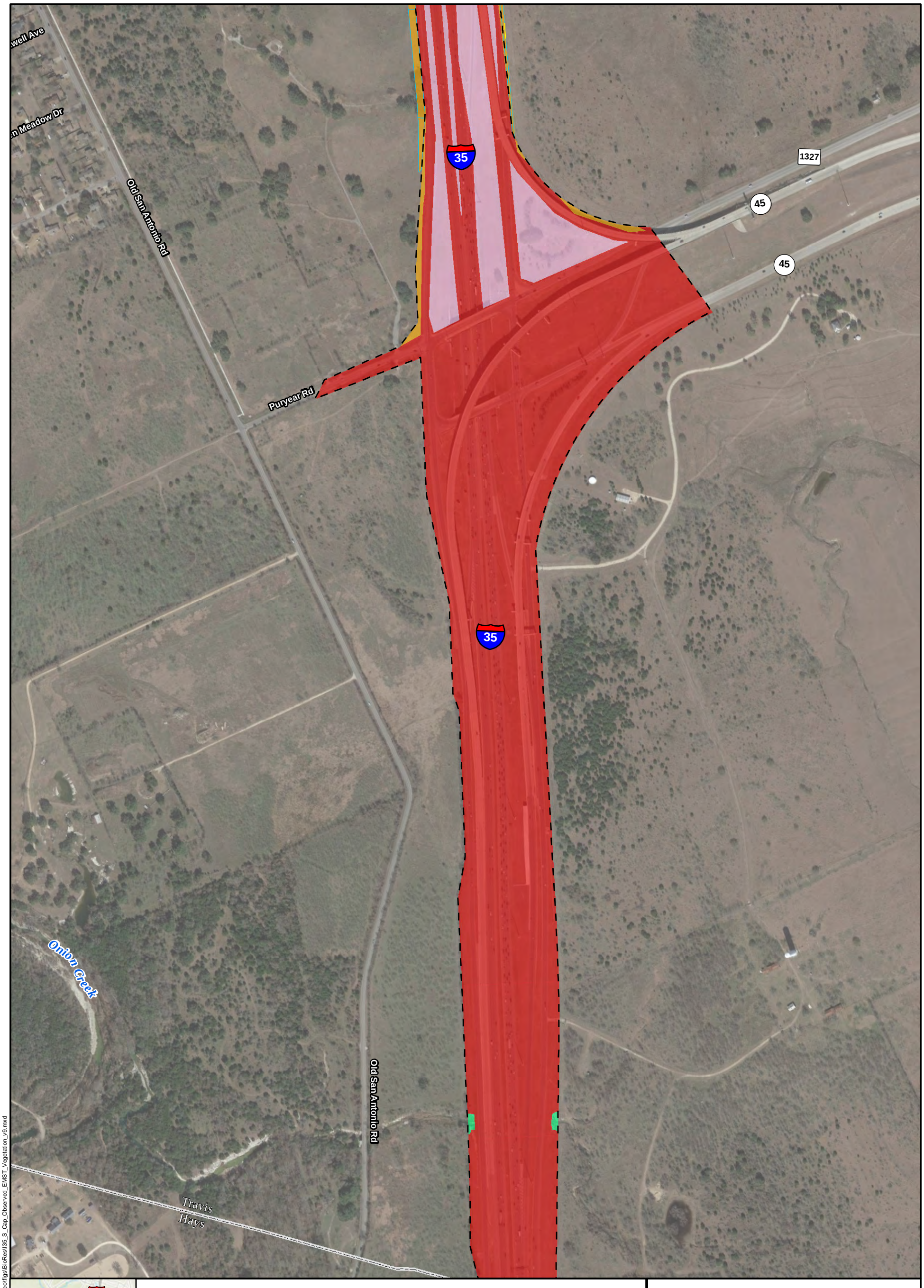

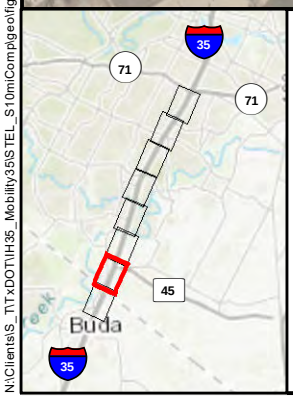

Existing ROW
Construction Easement
Proposed ROW
Drainage Easement
Blackland Prairie: Disturbance or Tame Grassland
Central Texas: Riparian Herbaceous Vegetation
Urban High Intensity
Urban Low Intensity

Google, TNRIS. Texas Google Imagery Service. 2018. 1:6,000; generated by Atkins; using ArcMap.
< https://tnris.org/texas-google-imagery/> (29 September 2020); TPWD (2013)

0 250 500 Feet

Figure 4

EMST Observed Vegetation Types

Capital Express South
US 290W/SH 71 to SH 45SE

AUSTIN, TRAVIS AND HAYS COUNTIES, TEXAS
CSJs 0015-13-077, 0016-01-113

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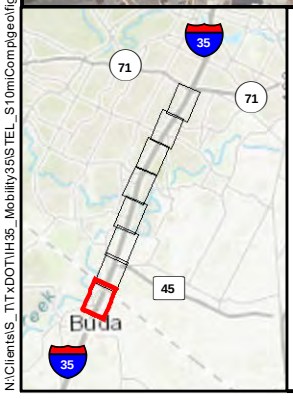
Travis
Hays
Travis
Hays
Old San Antonio Rd
Turnersville Rd
CR 104
CR 118
Onion Creek
35
Old SanAtonio Rd
Old San Antonio Rd
221 Dr
N Loop 4



Existing ROW
Construction Easement
Proposed ROW
Drainage Easement
Urban High Intensity

Google, TNRIS. Texas Google Imagery Service. 2018. 1:6,000; generated by Atkins; using ArcMap.
< https://tnris.org/texas-google-imagery/> (29 September 2020); TPWD (2013)

0 250 500
Feet

Figure 4

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AUSTIN, TRAVIS AND HAYS COUNTIES, TEXAS
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This page has been redacted as it identifies the locations of sensitive resources.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Austin Ecological Services Field Office
10711 Burnet Road, Suite 200
Austin, TX 78758-4460
Phone: (512) 490-0057 Fax: (512) 490-0974
http://www.fws.gov/southwest/es/AustinTexas/
http://www.fws.gov/southwest/es/EndangeredSpecies/lists/

In Reply Refer To: January 22, 2021
Consultation Code: 02ETAU00-2020-SLI-2037
Event Code: 02ETAU00-2021-E-01351
Project Name: Capital Express South

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

To Whom It May Concern:

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

Please note that new information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. 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. Also note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

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

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

While a Federal agency may designate a non-Federal representative to conduct informal consultation or prepare a biological assessment, the Federal Agency must notify the Service in writing of any such designation. The Federal agency shall also independently review and evaluate the scope and content of a biological assessment prepared by their designated non-Federal representative before that document is submitted to the Service.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by a federally funded, permitted or authorized activity, the agency is required to consult with the Service pursuant to 50 CFR 402. The following definitions are provided to assist you in reaching a determination:

- *No effect* - the proposed action will not affect federally 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, if the project changes or additional information on the distribution of listed or proposed species becomes available, the project should be reanalyzed for effects not previously considered.
- *May affect, but is not likely to adversely affect* - the project may affect listed species and/or critical habitat; however, the effects are expected to be discountable, insignificant, or completely beneficial. Certain avoidance and minimization measures may need to be implemented in order to reach this level of effect. The Federal agency or the designated non-Federal representative should consult with the Service to seek written concurrence that adverse effects are not likely. Be sure to include all of the information and documentation used to reach your decision with your request for concurrence. The Service must have this documentation before issuing a concurrence.
- *Is likely to adversely affect* - adverse effects to listed species may occur as a direct or indirect result of the proposed action. For this determination, the effect of the action is neither discountable nor insignificant. If the overall effect of the proposed action is beneficial to the listed species but the action is also likely to cause some adverse effects to individuals of that species, then the proposed action “is likely to adversely affect” the listed species. The analysis should consider all interrelated and interdependent actions. An “is likely to adversely affect” determination requires the Federal action agency to initiate formal section 7 consultation with our office.

Regardless of the determination, the Service recommends that the Federal agency maintain a complete record of the evaluation, including steps leading to the determination of effect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related information. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered

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

Migratory Birds

For projects that may affect migratory birds, the Migratory Bird Treaty Act (MBTA) implements various treaties and conventions for the protection of these species. Under the MBTA, taking, killing, or possessing migratory birds is unlawful. Migratory birds may nest in trees, brushy areas, or other areas of suitable habitat. The Service recommends activities requiring vegetation removal or disturbance avoid the peak nesting period of March through August to avoid destruction of individuals, nests, or eggs. If project activities must be conducted during this time, we recommend surveying for nests prior to conducting work. If a nest is found, and if possible, the Service recommends a buffer of vegetation remain around the nest until the young have fledged or the nest is abandoned.

For additional information concerning the MBTA and recommendations to reduce impacts to migratory birds please contact the U.S. Fish and Wildlife Service Migratory Birds Office, 500 Gold Ave. SW, Albuquerque, NM 87102. A list of migratory birds may be viewed at https://www.fws.gov/birds/management/managed-species/migratory-bird-treaty-act-protected-species.php. Guidance for minimizing impacts to migratory birds for projects including communications towers can be found at: https://www.fws.gov/birds/management/project-assessment-tools-and-guidance/guidance-documents/communication-towers.php. Additionally, wind energy projects should follow the wind energy guidelines

https://www.fws.gov/birds/management/project-assessment-tools-and-guidance/guidance-documents/wind-energy.php) for minimizing impacts to migratory birds and bats.

Finally, 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/birds/management/project-assessment-tools-and-guidance/guidance-documents/eagles.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation 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:

Austin Ecological Services Field Office
10711 Burnet Road, Suite 200
Austin, TX 78758-4460
(512) 490-0057

Project Summary

Consultation Code: 02ETAU00-2020-SLI-2037
Event Code: 02ETAU00-2021-E-01351
Project Name: Capital Express South
Project Type: TRANSPORTATION
Project Description: The Project is located along Interchange 35. The Project is a transportation project.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@30.15195384375398,-97.791894211039,14z

Counties: Hays and Travis counties, Texas

Endangered Species Act Species

There is a total of 24 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 3 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.

Birds

NAME	STATUS
Golden-cheeked Warbler (=wood) *Dendroica chrysoparia*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/33	
Least Tern *Sterna antillarum*	Endangered
Population: interior pop. No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/8505	
Piping Plover *Charadrius melodus*	Threatened
Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. The location of the critical habitat is not available. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/6039	
Red Knot *Calidris canutus rufa*	Threatened
No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/1864	
Whooping Crane *Grus americana*	Endangered
Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/758	

Amphibians

NAME	STATUS
Austin Blind Salamander *Eurycea waterlooensis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5737	Endangered
Barton Springs Salamander *Eurycea sosorum* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1113	Endangered
Jollyville Plateau Salamander *Eurycea tonkawae* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3116	Threatened
San Marcos Salamander *Eurycea nana* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6374	Threatened
Texas Blind Salamander *Typhlomolge rathbuni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5130	Endangered

Fishes

NAME	STATUS
Fountain Darter *Etheostoma fonticola* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5858	Endangered
San Marcos Gambusia *Gambusia georgei* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7519	Endangered

Clams

NAME	STATUS
Texas Fatmucket *Lampsilis bracteata* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9041	Candidate

Insects

NAME	STATUS
Comal Springs Dryopid Beetle *Stygoparnus comalensis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7175	Endangered
Comal Springs Riffle Beetle *Heterelmis comalensis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3403	Endangered
Kretschmarr Cave Mold Beetle *Texamaurops reddelli* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3140	Endangered
Tooth Cave Ground Beetle *Rhadine persephone* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5625	Endangered

Arachnids

NAME	STATUS
Bee Creek Cave Harvestman *Texella reddelli* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2464	Endangered
Bone Cave Harvestman *Texella reyesi* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5306	Endangered
Tooth Cave Pseudoscorpion *Tartarocreagris texana* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6667	Endangered
Tooth Cave Spider *Neoleptoneta myopica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2360	Endangered

Crustaceans

NAME	STATUS
Peck's Cave Amphipod *Stygobromus (=Stygonectes) pecki* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8575	Endangered

Flowering Plants

NAME	STATUS
Bracted Twistflower *Streptanthus bracteatus*	Candidate
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2856	
Texas Wild-rice *Zizania texana*	Endangered
There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/805	

Critical habitats

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

Last Update: 8/25/2020

TRAVIS COUNTY

AMPHIBIANS

Austin blind salamander *Eurycea waterlooensis*

Aquatic and subterranean; streams and caves.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Barton Springs salamander *Eurycea sosorum*

Aquatic; springs, streams and caves with rocky or cobble beds.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Jollyville Plateau salamander *Eurycea tonkawae*

Aquatic; springs, streams and caves with rocky or cobble beds.

Federal Status: LT	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S2

Pedernales River Springs salamander *Eurycea sp. 6*

Aquatic; springs, streams and caves with rocky or cobble beds.

Federal Status:	State Status:	SGCN: N
Endemic: Y	Global Rank: G1	State Rank: S1S2

Strecker's chorus frog *Pseudacris streckeri*

Terrestrial and aquatic: Wooded floodplains and flats, prairies, cultivated fields and marshes. Likes sandy substrates.

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

Woodhouse's toad *Anaxyrus woodhousii*

Terrestrial and aquatic: A wide variety of terrestrial habitats are used by this species, including forests, grasslands, and barrier island sand dunes. Aquatic habitats are equally varied.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: SU

ARACHNIDS

Bandit Cave spider *Cicurina bandida*

Very small, subterrestrial, subterranean obligate

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2Q	State Rank: S1

TRAVIS COUNTY

ARACHNIDS

Bone Cave harvestman *Texella reyesi*

Small, blind, cave-adapted harvestman endemic to several caves in Travis and Williamson counties; weakly differentiated from Texella reddelli

Federal Status: LE	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S2

No accepted common name *Tartarocreagris altimana*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Texella spinoperca*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: GNR	State Rank: SNR

No accepted common name *Tartarocreagris attenuata*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Tartarocreagris domina*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Tartarocreagris proserpina*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Eidmannella reclusa*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Texella grubbsi*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

TRAVIS COUNTY

ARACHNIDS

No accepted common name *Texella mulaiki*
Habitat description is not available at this time.
Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G2G3 State Rank: S2

No accepted common name *Tartarocreagris infernalis*
Habitat description is not available at this time.
Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G2G3 State Rank: S2?

No accepted common name *Tartarocreagris intermedia*
Habitat description is not available at this time.
Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G1G2 State Rank: S1

No accepted common name *Cicurina travisae*
Habitat description is not available at this time.
Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G1G2Q State Rank: S1

Reddell harvestman *Texella reddelli*
Small, blind, cave-adapted harvestman endemic to a few caves in Travis and Williamson counties
Federal Status: LE State Status: SGCN: Y
Endemic: Y Global Rank: G2G3 State Rank: S2

Tooth Cave pseudoscorpion *Tartarocreagris texana*
Small, cave-adapted pseudoscorpion known from small limestone caves of the Edwards Plateau
Federal Status: LE State Status: SGCN: Y
Endemic: Y Global Rank: G1G2 State Rank: S1

Tooth Cave spider *Neoleptoneta myopica*
Very small, cave-adapted, sedentary spider
Federal Status: LE State Status: SGCN: Y
Endemic: Global Rank: G1G2 State Rank: S1

BIRDS

bald eagle *Haliaeetus leucocephalus*

TRAVIS COUNTY

BIRDS

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

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3B,S3N

Black Rail *Laterallus jamaicensis*

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: PT	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S2

black-capped vireo *Vireo atricapilla*

Oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous and broad-leaved shrubs and trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3B

Franklin's gull *Leucophaeus pipixcan*

This species is only a spring and fall migrant throughout Texas. It does not breed in or near Texas. Winter records are unusual consisting of one or a few individuals at a given site (especially along the Gulf coastline). During migration, these gulls fly during daylight hours but often come down to wetlands, lake shore, or islands to roost for the night.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2N

golden-cheeked warbler *Setophaga chrysoparia*

Ashe juniper in mixed stands with various oaks (Quercus spp.). Edges of cedar brakes. Dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S2S3B

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: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G4T3Q	State Rank: S1B

mountain plover *Charadrius montanus*

TRAVIS COUNTY

BIRDS

Breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous

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

piping plover *Charadrius melodus*

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

swallow-tailed kite *Elanoides forficatus*

Lowland forested regions, especially swampy areas, ranging into open woodland; marshes, along rivers, lakes, and ponds; nests high in tall tree in clearing or on forest woodland edge, usually in pine, cypress, or various deciduous trees

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2B

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

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4T4	State Rank: S2

white-faced ibis *Plegadis chihi*

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: Y
Endemic: N	Global Rank: G5	State Rank: S4B

whooping crane *Grus americana*

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: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S1N

TRAVIS COUNTY

BIRDS

wood stork *Mycteria americana*

Prefers to nest in large tracts of baldcypress (Taxodium distichum) or red mangrove (Rhizophora mangle); forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: SHB,S2N

zone-tailed hawk *Buteo albonotatus*

Arid open country, including open deciduous or pine-oak woodland, mesa or mountain county, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3B

CRUSTACEANS

Balcones Cave amphipod *Stygobromus balconis*

Subaquatic, subterranean obligate amphipod

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S2

Ezell's Cave amphipod *Stygobromus flagellatus*

Known only from artesian wells

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S3

No accepted common name *Lirceolus bisetus*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

FISH

american eel *Anguilla rostrata*

Originally found in all river systems from the Red River to the Rio Grande. Aquatic habtiats include large rivers, streams, tributaries, coastal watersheds, estuaries, bays, and oceans. Spawns in Sargasso Sea, larva move to coastal waters, metamorphose, and begin upstream movements. Females tend to move further upstream than males (who are often found in brackish estuaries). American Eel are habitat generalists and may be found in a broad range of habitat conditions including slow- and fast-flowing waters over many substrate types. Extirpation in upstream drainages attributed to reservoirs that impede upstream migration.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S4

TRAVIS COUNTY

FISH

Guadalupe bass *Micropterus treculii*

Endemic to the streams of the northern and eastern Edwards Plateau including portions of the Brazos, Colorado, Guadalupe, and San Antonio basins; species also found outside of the Edwards Plateau streams in decreased abundance, primarily in the lower Colorado River; two introduced populations have been established in the Nueces River system. A pure population was re-established in a portion of the Blanco River in 2014. Species prefers lentic environments but commonly taken in flowing water; numerous smaller fish occur in rapids, many times near eddies; large individuals found mainly in riffle tail races; usually found in spring-fed streams having clear water and relatively consistent temperatures.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

sharpnose shiner *Notropis oxyrhynchus*

Range is now restricted to upper Brazos River upstream of Possum Kingdom Lake. May be native to Red River and Colorado River basins. Typically found in turbid water over mostly silt and shifting sand substrates.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S1S2

silverband shiner *Notropis shumardi*

In Texas, found from Red River to Lavaca River; Main channel with moderate to swift current velocities and moderate to deep depths; associatec with turbid water over silt, sand, and gravel.

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

smalleye shiner *Notropis buccula*

Endemic to the Brazos River drainage; presumed to have been introduced into the Colorado River. Historically found in lower Brazos River as far south as Hempstead, Texas but appears to now be restricted to upper Brazos River system upstream of Possum Kingdom Lake. Typically found in turbid waters of broad, sandy channels of main stream, over substrate consisting mostly of shifting sand.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S1S2

Texas shiner *Notropis amabilis*

In Texas, it is found primarily in Edwards Plateau streams from the San Gabriel River in the east to the Pecos River in the west. Typical habitat includes rocky or sandy runs, as well as pools.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S4

INSECTS

a caddisfly *Neotrichia juani*

Specimens were collected from perennial and ephemeral rivers, and small spring-fed streams (Harris and Tiemann 1993).

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G1	State Rank: S1

TRAVIS COUNTY

INSECTS

a caddisfly *Xiphocentron messapus*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G1G3 State Rank: S2?

a cave obligate beetle *Rhadine austinica*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G1G2 State Rank: S1S2

American bumblebee *Bombus pensylvanicus*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y
Endemic: Global Rank: G3G4 State Rank: SNR

cave obligate springtail *Oncopodura fenestra*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G2G3 State Rank: S2?

Comanche harvester ant *Pogonomyrmex comanche*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G2G3 State Rank: S2

Kretschmarr Cave mold beetle *Texamaurops reddelli*

Small, cave-adapted beetle found under rocks buried in silt; small, Edwards Limestone caves in of the Jollyville Plateau, a division of the Edwards Plateau

Federal Status: LE State Status: SGCN: Y
Endemic: Y Global Rank: G1G2 State Rank: S1

No accepted common name *Andrena scotoptera*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y
Endemic: Global Rank: GNR State Rank: SNR

No accepted common name *Bombus variabilis*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

TRAVIS COUNTY

INSECTS

Endemic: Global Rank: G1G2 State Rank: SNR

No accepted common name *Lymantes nadineae*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

Endemic: Global Rank: GNR State Rank: SNR

No accepted common name *Macrotera parkeri*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

Endemic: Global Rank: GNR State Rank: SNR

No accepted common name *Rhadine subterranea*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

Endemic: Y Global Rank: G2 State Rank: S2

Tooth Cave ground beetle *Rhadine persephone*

Resident, small, cave-adapted beetle found in small Edwards Limestone caves in Travis and Williamson counties

Federal Status: LE State Status: SGCN: Y

Endemic: Y Global Rank: G1G2 State Rank: S1

MAMMALS

American badger *Taxidea taxus*

Generalist. Prefers areas with soft soils that sustain ground squirrels for food. When inactive, occupies underground burrow. Young are born in underground burrows.

Federal Status: State Status: SGCN: Y

Endemic: N Global Rank: G5 State Rank: S5

Aransas short-tailed shrew *Blarina hylophaga plumbea*

Excavates burrows in sandy soils underlying mottes of live oak trees or in areas with little to no ground cover.

Federal Status: State Status: SGCN: Y

Endemic: Y Global Rank: G5T1Q State Rank: S1

big brown bat *Eptesicus fuscus*

Any wooded areas or woodlands except south Texas. Riparian areas in west Texas.

Federal Status: State Status: SGCN: Y

Endemic: N Global Rank: G5 State Rank: S5

TRAVIS COUNTY

MAMMALS

big free-tailed bat *Nyctinomops macrotis*

Habitat data sparse but records indicate that species prefers to roost in crevices and cracks in high canyon walls, but will use buildings, as well; reproduction data sparse, gives birth to single offspring late June-early July; females gather in nursery colonies; winter habits undetermined, but may hibernate in the Trans-Pecos; opportunistic insectivore

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G5	State Rank: S3

cave myotis bat *Myotis velifer*

Colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (Hirundo pyrrhonota) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S4

eastern red bat *Lasiurus borealis*

Found in a variety of habitats in Texas. Usually associated with wooded areas. Found in towns especially during migration.

Federal Status:	State Status:	SGCN: N
Endemic: N	Global Rank: G3G4	State Rank: S4

eastern spotted skunk *Spilogale putorius*

Generalist; open fields prairies, croplands, fence rows, farmyards, forest edges & woodlands. Prefer wooded, brushy areas & tallgrass prairies. S.p. ssp. interrupta found in wooded areas and tallgrass prairies, preferring rocky canyons and outcrops when such sites are available.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S1S3

hoary bat *Lasiurus cinereus*

Known from montane and riparian woodland in Trans-Pecos, forests and woods in east and central Texas.

Federal Status:	State Status:	SGCN: N
Endemic: N	Global Rank: G3G4	State Rank: S4

long-tailed weasel *Mustela frenata*

Includes brushlands, fence rows, upland woods and bottomland hardwoods, forest edges & rocky desert scrub. Usually live close to water.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

Mexican free-tailed bat *Tadarida brasiliensis*

Roosts in buildings in east Texas. Largest maternity roosts are in limestone caves on the Edwards Plateau. Found in all habitats, forest to desert.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

TRAVIS COUNTY

MAMMALS

Mexican long-tongued bat *Choeronycteris mexicana*

Only Texas record is from riparian forest; in general--neotropical nectivorous species roosting in caves, mines, and large crevices found in deep canyons along the Rio Grande ; also found in buildings and often associated with big-eared bats (Plecotus spp.); single TX record from Santa Ana NWR

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G3G4 State Rank: S1

mink *Neovison vison*

Intimately associated with water; coastal swamps & marshes, wooded riparian zones, edges of lakes. Prefer floodplains.

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

mountain lion *Puma concolor*

Generalist; found in a wide range of habitats statewide. Found most frequently in rugged mountains & riparian zones.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G5 State Rank: S2S3

plains spotted skunk *Spilogale putorius interrupta*

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

Federal Status: State Status: SGCN: N
Endemic: N Global Rank: G4T4 State Rank: S1S3

southern short-tailed shrew *Blarina carolinensis*

Found in East Texas pine forests and agricultural land. May favor areas with abundant leaf litter and fallen logs (Baumgardner et al. 1992). Nest sites are probably under logs, stumps and other debris.

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

swamp rabbit *Sylvilagus aquaticus*

Primarily found in lowland areas near water including: cypress bogs and marshes, floodplains, creeks and rivers.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G5 State Rank: S5

tricolored bat *Perimyotis subflavus*

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

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G2G3 State Rank: S3S4

western hog-nosed skunk *Conepatus leuconotus*

TRAVIS COUNTY

MAMMALS

Habitats include woodlands, grasslands & deserts, to 7200 feet, most common in rugged, rocky canyon country; little is known about the habitat of the ssp. telmalestes

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S4

woodland vole *Microtus pinetorum*

Include grassy marshes, swamp edges, old-field/pine woodland ecotones, tallgrass fields; generally sandy soils.

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

MOLLUSKS

False Spike Mussel *Fusconaia mitchelli*

Occurs in small streams to medium-size rivers in habitats such as riffles and runs with flowing water. Is often found in stable substrates of sand, gravel, and cobble (Howells 2010; Randklev et al. 2012; Sowards et al. 2013; Tsakiris and Randklev 2016). [Mussels of Texas 2019]

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S1

No accepted common name *Phreatodrobia punctata*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S1

No accepted common name *Patera leatherwoodi*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G1	State Rank: S1

No accepted common name *Millerelix gracilis*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G2G3	State Rank: S2?

No accepted common name *Stygopyrgus bartonensis*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

TRAVIS COUNTY

MOLLUSKS

Texas Fatmucket *Lampsilis bracteata*

Reported to occur in slow to moderate current in sand, mud, and gravel substrates among large cobble, boulders, bedrock ledges, horizontal cracks in bedrock slabs, and macrophyte beds. Has also been observed inhabiting the roots of cypress trees and vegetation along steep banks. Past authorities have reported this species intolerant of reservoir conditions but recent surveys suggest it may persist in some impoundment conditions (Howells 2010c; Randklev et al. 2017b). [Mussel of Texas 2019]

Federal Status: C	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Texas Pimpleback *Cyclonaias petrina*

Occurs in medium-size streams to large rivers primarily in riffles and runs. Often found in substrates composed of sand, gravel, and cobble, including mud-silt or gravel-filled cracks in bedrock slabs. Considered intolerant of reservoirs (Howells 2010m; Randklev et al. 2017b). [Mussels of Texas 2019]

Federal Status: C	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

REPTILES

common garter snake *Thamnophis sirtalis*

Terrestrial and aquatic: Habitats used include the grasslands and modified open areas in the vicinity of aquatic features, such as ponds, streams or marshes. Damp soils and debris for cover are thought to be critical.

Federal Status:	State Status:	SGCN: N
Endemic:	Global Rank: G5	State Rank: S2

eastern box turtle *Terrapene carolina*

Terrestrial: Eastern box turtles inhabit forests, fields, forest-brush, and forest-field ecotones. In some areas they move seasonally from fields in spring to forest in summer. They commonly enters pools of shallow water in summer. For shelter, they burrow into loose soil, debris, mud, old stump holes, or under leaf litter. They can successfully hibernate in sites that may experience subfreezing temperatures.

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

plateau spot-tailed earless lizard *Holbrookia lacerata*

Terrestrial: Habitats include moderately open prairie-brushland regions, particularly fairly flat areas free of vegetation or other obstructions (e.g., open meadows, old and new fields, graded roadways, cleared and disturbed areas, prairie savanna, and active agriculture including row crops); also, oak-juniper woodlands and mesquite-prickly pear associations (Axtell 1968, Bartlett and Bartlett 1999).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: GNR	State Rank: S2

slender glass lizard *Ophisaurus attenuatus*

Terrestrial: Habitats include open grassland, prairie, woodland edge, open woodland, oak savannas, longleaf pine flatwoods, scrubby areas, fallow fields, and areas near streams and ponds, often in habitats with sandy soil.

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

TRAVIS COUNTY

REPTILES

Texas garter snake *Thamnophis sirtalis annectens*

Terrestrial and aquatic: Habitats used include the grasslands and modified open areas in the vicinity of aquatic features, such as ponds, streams or marshes. Damp soils and debris for cover are thought to be critical.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G5T4	State Rank: S1

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

Texas map turtle *Graptemys versa*

Aquatic: Primarily a river turtle but can also be found in reservoirs. Can be found in deep and shallow water with sufficient basking sites (emergent rocks and woody debris).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G4	State Rank: SU

western box turtle *Terrapene ornata*

Terrestrial: Ornate or western box trutles inhabit prairie grassland, pasture, fields, sandhills, and open woodland. They are essentially terrestrial but sometimes enter slow, shallow streams and creek pools. For shelter, they burrow into soil (e.g., under plants such as yucca) (Converse et al. 2002) or enter burrows made by other species.

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

PLANTS

arrowleaf milkvine *Matelea sagittifolia*

Most consistently encountered in thornscrub in South Texas; Perennial; Flowering March-July; Fruiting April-July and Dec?

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

basin bellflower *Campanula reverchonii*

Among scattered vegetation on loose gravel, gravelly sand, and rock outcrops on open slopes with exposures of igneous and metamorphic rocks; may also occur on sandbars and other alluvial deposits along major rivers; flowering May-July

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S2

TRAVIS COUNTY

PLANTS

bracted twistflower *Streptanthus bracteatus*

Shallow, well-drained gravelly clays and clay loams over limestone in oak juniper woodlands and associated openings, on steep to moderate slopes and in canyon bottoms; several known soils include Tarrant, Brackett, or Speck over Edwards, Glen Rose, and Walnut geologic formations; populations fluctuate widely from year to year, depending on winter rainfall; flowering mid April-late May, fruit matures and foliage withers by early summer

Federal Status: C | State Status: | SGCN: Y
Endemic: Y | Global Rank: G1 | State Rank: S1

Buckley tridens *Tridens buckleyanus*

Occurs in juniper-oak woodlands on rocky limestone slopes; Perennial; Flowering/Fruiting April-Nov

Federal Status: | State Status: | SGCN: Y
Endemic: Y | Global Rank: G3G4 | State Rank: S3S4

canyon bean *Phaseolus texensis*

Narrowly endemic to rocky canyons in eastern and southern Edwards Plateau occurring on limestone soils in mixed woodlands, on limestone cliffs and outcrops, frequently along creeks.

Federal Status: | State Status: | SGCN: Y
Endemic: Y | Global Rank: G2 | State Rank: S2

canyon mock-orange *Philadelphus texensis var. ernestii*

Usually found growing from honeycomb pits on outcrops of Cretaceous limestone exposed as rimrock along mesic canyons, usually in the shade of mixed evergreen-deciduous canyon woodland; flowering April-June, fruit dehiscing September-October

Federal Status: | State Status: | SGCN: Y
Endemic: N | Global Rank: G3T3 | State Rank: S3

canyon sedge *Carex edwardsiana*

Dry-mesic decidous and deciduous-juniper woodlands in canyons and ravines, usually in clay loams very high in calcium on rocky banks and slopes just above streams and stream beds. Carex edwardsiana usually grows near C. planostachys. Fruiting spring (Ball, Reznicek, and 2003).

Federal Status: | State Status: | SGCN: Y
Endemic: Y | Global Rank: G3G4 | State Rank: S3S4

Correll's false dragon-head *Physostegia correllii*

Wet, silty clay loams on streamsides, in creek beds, irrigation channels and roadside drainage ditches; or seepy, mucky, sometimes gravelly soils along riverbanks or small islands in the Rio Grande; or underlain by Austin Chalk limestone along gently flowing spring-fed creek in central Texas; flowering May-September

Federal Status: | State Status: | SGCN: Y
Endemic: N | Global Rank: G2 | State Rank: S2

TRAVIS COUNTY

PLANTS

Engelmann's bladderpod *Physaria engelmannii*

Grasslands and calcareous rock outcrops in a band along the eastern edge of the Edwards Plateau, ranging as far north as the Red River (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3

glandular gay-feather *Liatris glandulosa*

Occurs in herbaceous vegetation on limestone outcrops (Carr 2015)

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

Glass Mountains coral-root *Hexalectris nitida*

Apparently rare in mixed woodlands in canyons in the mountains of the Brewster County, but encountered with regularity, albeit in small numbers, under Juniperus ashei in woodlands over limestone on the Edwards Plateau, Callahan Divide and Lampasas Cutplain; Perennial; Flowering June-Sept; Fruiting July-Sept

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

gravelbar brickellbush *Brickellia dentata*

Essentially restricted to frequently-scoured gravelly alluvial beds in creek and river bottoms; Perennial; Flowering June-Nov; Fruiting June-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

Greenman's bluet *Houstonia parviflora*

Grass pastures. Feb- Apr. (Correll and Johnston 1970).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Heller's marbleseed *Onosmodium helleri*

Occurs in loamy calcareous soils in oak-juniper woodlands on rocky limestone slopes, often in more mesic portions of canyons; Perennial; Flowering March-May

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

low spurge *Euphorbia peplidion*

Occurs in a variety of vernally-moist situations in a number of natural regions; Annual; Flowering Feb-April; Fruiting March-April

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

TRAVIS COUNTY

PLANTS

narrowleaf brickellbush *Brickellia eupatorioides var. gracillima*

Moist to dry gravelly alluvial soils along riverbanks but also on limestone slopes; Perennial; Flowering/Fruiting April-Nov

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G5T3	State Rank: S3

net-leaf bundleflower *Desmanthus reticulatus*

Mostly on clay prairies of the coastal plain of central and south Texas; Perennial; Flowering April-July; Fruiting April-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Plateau loosestrife *Lythrum ovalifolium*

Banks and gravelly beds of perennial (or strong intermittent) streams on the Edwards Plateau, Llano Uplift and Lampasas Cutplain; Perennial; Flowering/Fruiting April-Nov

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S3S4

plateau milkvine *Matelea edwardsensis*

Occurs in various types of juniper-oak and oak-juniper woodlands; Perennial; Flowering March-Oct; Fruiting May-June

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

rock grape *Vitis rupestris*

Occurs on rocky limestone slopes and in streambeds; Perennial; Flowering March-May; Fruiting May-July

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S1

scarlet leather-flower *Clematis texensis*

Usually in oak-juniper woodlands in mesic rocky limestone canyons or along perennial streams; Perennial; Flowering March-July; Fruiting May-July

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

spreading leastdaisy *Chaetopappa effusa*

Limestone cliffs, ledges, bluffs, steep hillsides, sometimes in seepy areas, oak-juniper, oak, or mixed deciduous woods, 300-500 m elevation; Perennial; Flowering (May) July-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

TRAVIS COUNTY

PLANTS

Stanfield's beebalm *Monarda stanfieldii*

Largely confined to granite sands along the middle course of the Colorado River and its tributaries; Perennial

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

sycamore-leaf snowbell *Styrax platanifolius ssp. platanifolius*

Rare throughout range, usually in oak-juniper woodlands on steep rocky banks and ledges along intermittent or perennial streams, rarely far from some reliable source of moisture; Perennial; Flowering April-May; Fruiting May-Aug.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3T3	State Rank: S3

Texabama croton *Croton alabamensis var. texensis*

In duff-covered loamy clay soils on rocky slopes in forested, mesic limestone canyons; locally abundant on deeper soils on small terraces in canyon bottoms, often forming large colonies and dominating the shrub layer; scattered individuals are occasionally on sunny margins of such forests; also found in contrasting habitat of deep, friable soils of limestone uplands, mostly in the shade of evergreen woodland mottes; flowering late February-March; fruit maturing and dehiscing by early June

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3T2	State Rank: S2

Texas almond *Prunus minutiflora*

Wide-ranging but scarce, in a variety of grassland and shrubland situations, mostly on calcareous soils underlain by limestone but occasionally in sandier neutral soils underlain by granite; Perennial; Flowering Feb-May and Oct; Fruiting Feb-Sept

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

Texas amorpha *Amorpha roemeriana*

Juniper-oak woodlands or shrublands on rocky limestone slopes, sometimes on dry shelves above creeks; Perennial; Flowering May-June; Fruiting June-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

Texas barberry *Berberis swaseyi*

Shallow calcareous stony clay of upland grasslands/shrublands over limestone as well as in loamier soils in openly wooded canyons and on creek terraces; Perennial; Flowering/Fruiting March-June

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

TRAVIS COUNTY

PLANTS

Texas fescue *Festuca versuta*

Occurs in mesic woodlands on limestone-derived soils on stream terraces and canyon slopes; Perennial; Flowering/Fruiting April-June

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

Texas milk vetch *Astragalus reflexus*

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

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Texas seymeria *Seymeria texana*

Found primarily in grassy openings in juniper-oak woodlands on dry rocky slopes but sometimes on rock outcrops in shaded canyons; Annual; Flowering May-Nov; Fruiting July-Nov

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

tree dodder *Cuscuta exaltata*

Parasitic on various Quercus, Juglans, Rhus, Vitis, Ulmus, and Diospyros species as well as Acacia berlandieri and other woody plants; Annual; Flowering May-Oct; Fruiting July-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

turnip-root scurfpea *Pediomelum cyphocalyx*

Grasslands and openings in juniper-oak woodlands on limestone substrates on the Edwards Plateau and in north-central Texas (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S2S3

Warnock's coral-root *Hexalectris warnockii*

In leaf litter and humus in oak-juniper woodlands on shaded slopes and intermittent, rocky creekbeds in canyons; in the Trans Pecos in oak-pinyon-juniper woodlands in higher mesic canyons (to 2000 m [6550 ft]), primarily on igneous substrates; in Terrell County under Quercus fusiformis mottes on terrraces of spring-fed perennial streams, draining an otherwise rather xeric limestone landscape; on the Callahan Divide (Taylor County), the White Rock Escarpment (Dallas County), and the Edwards Plateau in oak-juniper woodlands on limestone slopes; in Gillespie County on igneous substrates of the Llano Uplift; flowering June-September; individual plants do not usually bloom in successive years

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2G3	State Rank: S2

TRAVIS COUNTY

PLANTS

Wright's milkvetch *Astragalus wrightii*

On sandy or gravelly soils; April (Diggs et al. 1999).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Last Update: 8/25/2020

HAYS COUNTY

AMPHIBIANS

Barton Springs salamander *Eurycea sosorum*

Aquatic; springs, streams and caves with rocky or cobble beds.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Blanco blind salamander *Eurycea robusta*

Aquatic and subterranean; streams and caves.

Federal Status:	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Blanco River Springs salamander *Eurycea pterophila*

Aquatic; springs, streams and caves with rocky or cobble beds.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Pedernales River Springs salamander *Eurycea sp. 6*

Aquatic; springs, streams and caves with rocky or cobble beds.

Federal Status:	State Status:	SGCN: N
Endemic: Y	Global Rank: G1	State Rank: S1S2

San Marcos salamander *Eurycea nana*

Aquatic; springs and associated water.

Federal Status: LT	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Strecker's chorus frog *Pseudacris streckeri*

Terrestrial and aquatic: Wooded floodplains and flats, prairies, cultivated fields and marshes. Likes sandy substrates.

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

Texas blind salamander *Eurycea rathbuni*

Aquatic and subterranean; streams and caves.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

HAYS COUNTY

AMPHIBIANS

Texas salamander *Eurycea neotenes*

Aquatic; springs, streams and caves with rocky or cobble beds.

Federal Status:	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1S2

Woodhouse's toad *Anaxyrus woodhousii*

Terrestrial and aquatic: A wide variety of terrestrial habitats are used by this species, including forests, grasslands, and barrier island sand dunes. Aquatic habitats are equally varied.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: SU

ARACHNIDS

No accepted common name *Texella diplospina*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Texella grubbsi*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Texella mulaiki*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S2

No accepted common name *Texella renkesae*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Cicurina ezelli*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

HAYS COUNTY

ARACHNIDS

No accepted common name *Cicurina russelli*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Cicurina ubicki*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Tartarocreagris grubbsi*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

BIRDS

bald eagle *Haliaeetus leucocephalus*

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

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3B,S3N

black-capped vireo *Vireo atricapilla*

Oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous and broad-leaved shrubs and trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3B

Franklin's gull *Leucophaeus pipixcan*

This species is only a spring and fall migrant throughout Texas. It does not breed in or near Texas. Winter records are unusual consisting of one or a few individuals at a given site (especially along the Gulf coastline). During migration, these gulls fly during daylight hours but often come down to wetlands, lake shore, or islands to roost for the night.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2N

HAYS COUNTY

BIRDS

golden-cheeked warbler *Setophaga chrysoparia*

Ashe juniper in mixed stands with various oaks (Quercus spp.). Edges of cedar brakes. Dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S2S3B

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: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G4T3Q	State Rank: S1B

mountain plover *Charadrius montanus*

Breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous

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

piping plover *Charadrius melodus*

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

tropical parula *Setophaga pitiayumi*

Semi-tropical evergreen woodland along rivers and resacas. Texas ebony, anacua and other trees with epiphytic plants hanging from them. Dense or open woods, undergrowth, brush, and trees along edges of rivers and resacas; breeding April to July.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3B

HAYS COUNTY

BIRDS

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

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4T4	State Rank: S2

white-faced ibis *Plegadis chihi*

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: Y
Endemic: N	Global Rank: G5	State Rank: S4B

whooping crane *Grus americana*

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: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S1N

wood stork *Mycteria americana*

Prefers to nest in large tracts of baldcypress (Taxodium distichum) or red mangrove (Rhizophora mangle); forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: SHB,S2N

zone-tailed hawk *Buteo albonotatus*

Arid open country, including open deciduous or pine-oak woodland, mesa or mountain county, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3B

CRUSTACEANS

Balcones Cave amphipod *Stygobromus balconis*

Subaquatic, subterranean obligate amphipod

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S2

HAYS COUNTY

CRUSTACEANS

Ezell's Cave amphipod *Stygobromus flagellatus*

Known only from artesian wells

Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G2G3 State Rank: S3

No accepted common name *Palaemonetes texanus*

Collected in Comal and Hays counties (Middel Guadalupe and San Marcos watersheds).

Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G1G2 State Rank: S1?

No accepted common name *Artesia subterranea*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G1G2 State Rank: S2

No accepted common name *Texiweckelia texensis*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G2G3 State Rank: S2

PUrgatory Cave shrimp *Calathaemon holthuisi*

Last known collection was in San Marcos, Hays Co. (Ezell's Cave) (Reddell 1994).

Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G1G2 State Rank: S1

Texas troglobitic water slater *Lirceolus smithii*

Subaquatic, subterranean obligate, aquifer.

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

FISH

american eel *Anguilla rostrata*

Originally found in all river systems from the Red River to the Rio Grande. Aquatic habtiats include large rivers, streams, tributaries, coastal watersheds, estuaries, bays, and oceans. Spawns in Sargasso Sea, larva move to coastal waters, metamorphose, and begin upstream movements. Females tend to move further upstream than males (who are often found in brackish estuaries). American Eel are habitat generalists and may be found in a broad range of habitat conditions including slow- and fast-flowing waters over many substrate types. Extirpation in upstream drainages attributed to reservoirs that impede upstream migration.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G4 State Rank: S4

HAYS COUNTY

FISH

fountain darter *Etheostoma fonticola*

Known only from the spring-fed San Marcos and Comal rivers in dense beds of aquatic plants growing close to bottom; may be found in slow- and fast-flowing habitats.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Guadalupe bass *Micropterus treculii*

Endemic to the streams of the northern and eastern Edwards Plateau including portions of the Brazos, Colorado, Guadalupe, and San Antonio basins; species also found outside of the Edwards Plateau streams in decreased abundance, primarily in the lower Colorado River; two introduced populations have been established in the Nueces River system. A pure population was re-established in a portion of the Blanco River in 2014. Species prefers lentic environments but commonly taken in flowing water; numerous smaller fish occur in rapids, many times near eddies; large individuals found mainly in riffle tail races; usually found in spring-fed streams having clear water and relatively consistent temperatures.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Guadalupe darter *Percina apristis*

Endemic to the Guadalupe River Basin; Found in riffles; most common under or around 25-30 cm boulders in the main current; seems to prefer moderately turbid water.

Federal Status:	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G4	State Rank: S2

headwater catfish *Ictalurus lupus*

Originally throughout streams of the Edwards Plateau and the Rio Grande basin, currently limited to Rio Grande drainage, including Pecos River basin; springs, and sandy and rocky riffles, runs, and pools of clear creeks and small rivers.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S1S2

ironcolor shiner *Notropis chalybaeus*

Found only in northeastern streams from the Sabine to the Red River with the exception of an isolated population found in the San Marcos River headwaters. Found primarily in acidic, tannin-stained, non-turbid, sluggish Coastal Plain streams and
rivers of low to moderate gradient. Occurs in aggregation, often at the upstream ends of pools, with a moderate to sluggish current and sand, mud, silt or detritus substrates. Usually associated with aquatic vegetation.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3

Texas shiner *Notropis amabilis*

In Texas, it is found primarily in Edwards Plateau streams from the San Gabriel River in the east to the Pecos River in the west. Typical habitat includes rocky or sandy runs, as well as pools.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S4

HAYS COUNTY

INSECTS

a caddisfly *Ochrotrichia capitana*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G3	State Rank: S2?

a caddisfly *Neotrichia juani*

Specimens were collected from perennial and ephemeral rivers, and small spring-fed streams (Harris and Tiemann 1993).

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G1	State Rank: S1

a caddisfly *Xiphocentron messapus*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G3	State Rank: S2?

a cave obligate beetle *Rhadine austinica*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1S2

a mayfly *Procloeon distinctum*

Mayflies distinguished by aquatic larval stage; adult stage generally found in shoreline vegetation

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G3Q	State Rank: S2?

American bumblebee *Bombus pensylvanicus*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G3G4	State Rank: SNR

Comal Springs diving beetle *Comaldessus stygius*

Known only from the outflows at Comal Springs; aquatic; diving beetles generally inhabit the water column

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

HAYS COUNTY

INSECTS

Comal Springs dryopid beetle *Stygoparnus comalensis*

Dryopids usually cling to objects in a stream; dryopids are sometimes found crawling on stream bottoms or along shores; adults may leave the stream and fly about, especially at night; most dryopid larvae are vermiform and live in soil or decaying wood

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

Comal Springs riffle beetle *Heterelmis comalensis*

Comal and San Marcos Springs

Federal Status: LE	State Status: E	SGCN: Y
Endemic:	Global Rank: G1	State Rank: S1

Edwards Aquifer diving beetle *Haideoporus texanus*

Habitat poorly known; known from an artesian well in Hays County

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Oxyelophila callista*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: GNR	State Rank: SNR

No accepted common name *Rhadine insolita*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Batrisodes grubbsi*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Plauditus texanus*

Larvae are associated with small to medium limestone cobble and macrophytes in shallow riffles of clear, cool, alkaline streams (P. McCafferty, personal communication, December 2003).

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2G3	State Rank: S1?

HAYS COUNTY

INSECTS

San Marcos saddle-case caddisfly *Protoptila arca*

Known from an artesian well in Hays County; locally very abundant; swift, well-oxygenated warm water about 1-2 m deep; larvae and pupal cases abundant on rocks

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Texas austrotinodes caddisfly *Austrotinodes texensis*

Appears endemic to the karst springs and spring runs of the Edwards Plateau region; flow in type locality swift but may drop significantly during periods of little drought; substrate coarse and ranges from cobble and gravel to limestone bedrock; many limestone outcroppings also found along the streams

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S2

MAMMALS

American badger *Taxidea taxus*

Generalist. Prefers areas with soft soils that sustain ground squirrels for food. When inactive, occupies underground burrow. Young are born in underground burrows.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

big brown bat *Eptesicus fuscus*

Any wooded areas or woodlands except south Texas. Riparian areas in west Texas.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

big free-tailed bat *Nyctinomops macrotis*

Habitat data sparse but records indicate that species prefers to roost in crevices and cracks in high canyon walls, but will use buildings, as well; reproduction data sparse, gives birth to single offspring late June-early July; females gather in nursery colonies; winter habits undetermined, but may hibernate in the Trans-Pecos; opportunistic insectivore

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G5	State Rank: S3

cave myotis bat *Myotis velifer*

Colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (Hirundo pyrrhonota) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S4

HAYS COUNTY

MAMMALS

eastern red bat *Lasiurus borealis*

Found in a variety of habitats in Texas. Usually associated with wooded areas. Found in towns especially during migration.

Federal Status:	State Status:	SGCN: N
Endemic: N	Global Rank: G3G4	State Rank: S4

eastern spotted skunk *Spilogale putorius*

Generalist; open fields prairies, croplands, fence rows, farmyards, forest edges & woodlands. Prefer wooded, brushy areas & tallgrass prairies. S.p. ssp. interrupta found in wooded areas and tallgrass prairies, preferring rocky canyons and outcrops when such sites are available.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S1S3

hoary bat *Lasiurus cinereus*

Known from montane and riparian woodland in Trans-Pecos, forests and woods in east and central Texas.

Federal Status:	State Status:	SGCN: N
Endemic: N	Global Rank: G3G4	State Rank: S4

long-tailed weasel *Mustela frenata*

Includes brushlands, fence rows, upland woods and bottomland hardwoods, forest edges & rocky desert scrub. Usually live close to water.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

Mexican free-tailed bat *Tadarida brasiliensis*

Roosts in buildings in east Texas. Largest maternity roosts are in limestone caves on the Edwards Plateau. Found in all habitats, forest to desert.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

Mexican long-tongued bat *Choeronycteris mexicana*

Only Texas record is from riparian forest; in general--neotropical nectivorous species roosting in caves, mines, and large crevices found in deep canyons along the Rio Grande ; also found in buildings and often associated with big-eared bats (Plecotus spp.); single TX record from Santa Ana NWR

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S1

mink *Neovison vison*

Intimately associated with water; coastal swamps & marshes, wooded riparian zones, edges of lakes. Prefer floodplains.

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

HAYS COUNTY

MAMMALS

mountain lion *Puma concolor*

Generalist; found in a wide range of habitats statewide. Found most frequently in rugged mountains & riparian zones.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2S3

plains spotted skunk *Spilogale putorius interrupta*

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

Federal Status:	State Status:	SGCN: N
Endemic: N	Global Rank: G4T4	State Rank: S1S3

swamp rabbit *Sylvilagus aquaticus*

Primarily found in lowland areas near water including: cypress bogs and marshes, floodplains, creeks and rivers.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

tricolored bat *Perimyotis subflavus*

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

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2G3	State Rank: S3S4

western hog-nosed skunk *Conepatus leuconotus*

Habitats include woodlands, grasslands & deserts, to 7200 feet, most common in rugged, rocky canyon country; little is known about the habitat of the ssp. telmalestes

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S4

western spotted skunk *Spilogale gracilis*

Brushy canyons, rocky outcrops (rimrock) on hillsides and walls of canyons. In semi-arid brushlands in U.S., in wet tropical forests in Mexico. When inactive or bearing young, occupies den in rocks, burrow, hollow log, brush pile, or under building.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

woodland vole *Microtus pinetorum*

Include grassy marshes, swamp edges, old-field/pine woodland ecotones, tallgrass fields; generally sandy soils.

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

MOLLUSKS

False Spike Mussel *Fusconaia mitchelli*

HAYS COUNTY

MOLLUSKS

Occurs in small streams to medium-size rivers in habitats such as riffles and runs with flowing water. Is often found in stable substrates of sand, gravel, and cobble (Howells 2010; Randklev et al. 2012; Sowards et al. 2013; Tsakiris and Randklev 2016). [Mussels of Texas 2019]

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S1

glossy wolfsnail *Euglandina texasiana*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G1G2	State Rank: S1S2

Guadalupe Fatmucket *Lampsilis bergmanni*

Reported to occur in slow to moderate current in sand, mud, and gravel substrates among large cobble, boulders, bedrock ledges, horizontal cracks in bedrock slabs, and macrophyte beds. Has also been observed inhabiting the roots of cypress trees and vegetation along steep banks. Reported in lakes at Kerrville, Texas, which suggests it may occasionally persist in some impoundment conditions (Robert G. Howells, personal communication). (Mussels of Texas, 2020)

Federal Status:	State Status: T	SGCN: N
Endemic: Y	Global Rank: G1	State Rank: SNR

Guadalupe Orb *Cyclonaias necki*

Species' distribution is limited to the Guadalupe River basin. Occurs in both mainstem and tributary habitats. Often found in substrates composed of sand, gravel, and cobble, including mud-silt or gravel-filled cracks in bedrock slabs. Considered intolerant of reservoirs, but are known to occur in them (Howells 2010m; Randklev et al. 2017b). [Mussels of Texas 2019]

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

No accepted common name *Holospira goldfussi*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G2G3	State Rank: S2?

No accepted common name *Millerelix gracilis*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G2G3	State Rank: S2?

No accepted common name *Elimia comalensis*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S2?

No accepted common name *Phreatodrobia conica*

HAYS COUNTY

MOLLUSKS

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S2

No accepted common name *Phreatodrobia micra*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S2

No accepted common name *Phreatodrobia plana*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S2

No accepted common name *Phreatodrobia punctata*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S1

No accepted common name *Phreatodrobia rotunda*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S2

Texas Fatmucket *Lampsilis bracteata*

Reported to occur in slow to moderate current in sand, mud, and gravel substrates among large cobble, boulders, bedrock ledges, horizontal cracks in bedrock slabs, and macrophyte beds. Has also been observed inhabiting the roots of cypress trees and vegetation along steep banks. Past authorities have reported this species intolerant of reservoir conditions but recent surveys suggest it may persist in some impoundment conditions (Howells 2010c; Randklev et al. 2017b). [Mussel of Texas 2019]

Federal Status: C	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Texas Pimpleback *Cyclonaias petrina*

Occurs in medium-size streams to large rivers primarily in riffles and runs. Often found in substrates composed of sand, gravel, and cobble, including mud-silt or gravel-filled cracks in bedrock slabs. Considered intolerant of reservoirs (Howells 2010m; Randklev et al. 2017b). [Mussels of Texas 2019]

Federal Status: C	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

HAYS COUNTY

REPTILES

Cagle's map turtle *Graptemys caglei*

Aquatic: shallow water with swift to moderate flow and gravel or cobble bottom, connected by deeper pools with a slower flow rate and a silt or mud bottom; gravel bar riffles and transition areas between riffles and pools especially important in providing insect prey items; nests on gently sloping sand banks within ca. 30 feet of waters edge.

Federal Status:	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S1

common garter snake *Thamnophis sirtalis*

Terrestrial and aquatic: Habitats used include the grasslands and modified open areas in the vicinity of aquatic features, such as ponds, streams or marshes. Damp soils and debris for cover are thought to be critical.

Federal Status:	State Status:	SGCN: N
Endemic:	Global Rank: G5	State Rank: S2

eastern box turtle *Terrapene carolina*

Terrestrial: Eastern box turtles inhabit forests, fields, forest-brush, and forest-field ecotones. In some areas they move seasonally from fields in spring to forest in summer. They commonly enters pools of shallow water in summer. For shelter, they burrow into loose soil, debris, mud, old stump holes, or under leaf litter. They can successfully hibernate in sites that may experience subfreezing temperatures.

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

keeled earless lizard *Holbrookia propinqua*

Terrestrial: Habitats include coastal dunes, barrier islands, and other sandy areas (Axtell 1983). Although it occurs well inland, this species is most abundant on coastal dunes, were it seeks shelter in the burrows of small mammals or crabs (Bartlett and Bartlett 1999).

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3

plateau spot-tailed earless lizard *Holbrookia lacerata*

Terrestrial: Habitats include moderately open prairie-brushland regions, particularly fairly flat areas free of vegetation or other obstructions (e.g., open meadows, old and new fields, graded roadways, cleared and disturbed areas, prairie savanna, and active agriculture including row crops); also, oak-juniper woodlands and mesquite-prickly pear associations (Axtell 1968, Bartlett and Bartlett 1999).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: GNR	State Rank: S2

slender glass lizard *Ophisaurus attenuatus*

Terrestrial: Habitats include open grassland, prairie, woodland edge, open woodland, oak savannas, longleaf pine flatwoods, scrubby areas, fallow fields, and areas near streams and ponds, often in habitats with sandy soil.

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

HAYS COUNTY

REPTILES

Texas garter snake *Thamnophis sirtalis annectens*

Terrestrial and aquatic: Habitats used include the grasslands and modified open areas in the vicinity of aquatic features, such as ponds, streams or marshes. Damp soils and debris for cover are thought to be critical.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G5T4	State Rank: S1

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

Texas map turtle *Graptemys versa*

Aquatic: Primarily a river turtle but can also be found in reservoirs. Can be found in deep and shallow water with sufficient basking sites (emergent rocks and woody debris).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G4	State Rank: SU

western box turtle *Terrapene ornata*

Terrestrial: Ornate or western box trutles inhabit prairie grassland, pasture, fields, sandhills, and open woodland. They are essentially terrestrial but sometimes enter slow, shallow streams and creek pools. For shelter, they burrow into soil (e.g., under plants such as yucca) (Converse et al. 2002) or enter burrows made by other species.

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

western hognose snake *Heterodon nasicus*

Terrestrial: Shortgrass or mixed grass prairie, with gravel or sandy soils. Often found associated with draws, floodplains, and more mesic habitats within the arid landscape. Frequently occurs in shrub encroached grasslands.

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

PLANTS

bigflower cornsalad *Valerianella stenocarpa*

Usually along creekbeds or in vernally moist grassy open areas (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

HAYS COUNTY

PLANTS

bracted twistflower *Streptanthus bracteatus*

Shallow, well-drained gravelly clays and clay loams over limestone in oak juniper woodlands and associated openings, on steep to moderate slopes and in canyon bottoms; several known soils include Tarrant, Brackett, or Speck over Edwards, Glen Rose, and Walnut geologic formations; populations fluctuate widely from year to year, depending on winter rainfall; flowering mid April-late May, fruit matures and foliage withers by early summer

Federal Status: C | State Status: | SGCN: Y
Endemic: Y | Global Rank: G1 | State Rank: S1

Buckley tridens *Tridens buckleyanus*

Occurs in juniper-oak woodlands on rocky limestone slopes; Perennial; Flowering/Fruiting April-Nov

Federal Status: | State Status: | SGCN: Y
Endemic: Y | Global Rank: G3G4 | State Rank: S3S4

canyon mock-orange *Philadelphus texensis var. ernestii*

Usually found growing from honeycomb pits on outcrops of Cretaceous limestone exposed as rimrock along mesic canyons, usually in the shade of mixed evergreen-deciduous canyon woodland; flowering April-June, fruit dehiscing September-October

Federal Status: | State Status: | SGCN: Y
Endemic: N | Global Rank: G3T3 | State Rank: S3

Engelmann's bladderpod *Physaria engelmannii*

Grasslands and calcareous rock outcrops in a band along the eastern edge of the Edwards Plateau, ranging as far north as the Red River (Carr 2015).

Federal Status: | State Status: | SGCN: Y
Endemic: N | Global Rank: G4 | State Rank: S3

Glass Mountains coral-root *Hexalectris nitida*

Apparently rare in mixed woodlands in canyons in the mountains of the Brewster County, but encountered with regularity, albeit in small numbers, under Juniperus ashei in woodlands over limestone on the Edwards Plateau, Callahan Divide and Lampasas Cutplain; Perennial; Flowering June-Sept; Fruiting July-Sept

Federal Status: | State Status: | SGCN: Y
Endemic: N | Global Rank: G3 | State Rank: S3

gravelbar brickellbush *Brickellia dentata*

Essentially restricted to frequently-scoured gravelly alluvial beds in creek and river bottoms; Perennial; Flowering June-Nov; Fruiting June-Oct

Federal Status: | State Status: | SGCN: Y
Endemic: Y | Global Rank: G3G4 | State Rank: S3S4

Hall's prairie clover *Dalea hallii*

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

Federal Status: | State Status: | SGCN: Y
Endemic: Y | Global Rank: G3 | State Rank: S2

HAYS COUNTY

PLANTS

Heller's marbleseed *Onosmodium helleri*

Occurs in loamy calcareous soils in oak-juniper woodlands on rocky limestone slopes, often in more mesic portions of canyons; Perennial; Flowering March-May

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Hill Country wild-mercury *Argythamnia aphoroides*

Mostly in bluestem-grama grasslands associated with plateau live oak woodlands on shallow to moderately deep clays and clay loams over limestone on rolling uplands, also in partial shade of oak-juniper woodlands in gravelly soils on rocky limestone slopes; Perennial; Flowering April-May with fruit persisting until midsummer

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S3

narrowleaf brickellbush *Brickellia eupatorioides var. gracillima*

Moist to dry gravelly alluvial soils along riverbanks but also on limestone slopes; Perennial; Flowering/Fruiting April-Nov

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G5T3	State Rank: S3

net-leaf bundleflower *Desmanthus reticulatus*

Mostly on clay prairies of the coastal plain of central and south Texas; Perennial; Flowering April-July; Fruiting April-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Osage Plains false foxglove *Agalinis densiflora*

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

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

Plateau loosestrife *Lythrum ovalifolium*

Banks and gravelly beds of perennial (or strong intermittent) streams on the Edwards Plateau, Llano Uplift and Lampasas Cutplain; Perennial; Flowering/Fruiting April-Nov

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S3S4

plateau milkvine *Matelea edwardsensis*

Occurs in various types of juniper-oak and oak-juniper woodlands; Perennial; Flowering March-Oct; Fruiting May-June

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

HAYS COUNTY

PLANTS

scarlet leather-flower *Clematis texensis*

Usually in oak-juniper woodlands in mesic rocky limestone canyons or along perennial streams; Perennial; Flowering March-July; Fruiting May-July

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

spreading leastdaisy *Chaetopappa effusa*

Limestone cliffs, ledges, bluffs, steep hillsides, sometimes in seepy areas, oak-juniper, oak, or mixed deciduous woods, 300-500 m elevation; Perennial; Flowering (May) July-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

sycamore-leaf snowbell *Styrax platanifolius ssp. platanifolius*

Rare throughout range, usually in oak-juniper woodlands on steep rocky banks and ledges along intermittent or perennial streams, rarely far from some reliable source of moisture; Perennial; Flowering April-May; Fruiting May-Aug.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3T3	State Rank: S3

Texas amorpha *Amorpha roemeriana*

Juniper-oak woodlands or shrublands on rocky limestone slopes, sometimes on dry shelves above creeks; Perennial; Flowering May-June; Fruiting June-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

Texas barberry *Berberis swaseyi*

Shallow calcareous stony clay of upland grasslands/shrublands over limestone as well as in loamier soils in openly wooded canyons and on creek terraces; Perennial; Flowering/Fruiting March-June

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Texas claret-cup cactus *Echinocereus coccineus var. paucispinus*

Mountains, hills, and mesas, igneous and limestone, oak-juniper-pinyon woodland or juniper woodland on limestone mesas, mostly rocky habitats but also in alluvial basins, grasslands, or among mesquite or other shrubs. Flowering March - April (Powell and Weedin 2004).

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5T3	State Rank: S3

Texas fescue *Festuca versuta*

Occurs in mesic woodlands on limestone-derived soils on stream terraces and canyon slopes; Perennial; Flowering/Fruiting April-June

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

HAYS COUNTY

PLANTS

Texas seymeria *Seymeria texana*

Found primarily in grassy openings in juniper-oak woodlands on dry rocky slopes but sometimes on rock outcrops in shaded canyons; Annual; Flowering May-Nov; Fruiting July-Nov

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Texas wild-rice *Zizania texana*

Spring-fed river, in clear, cool, swift water mostly less than 1 m deep, with coarse sandy soils rather than finer clays; flowering year-round, peaking March-June

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

threeflower penstemon *Penstemon triflorus ssp. triflorus*

Occurs sparingly on rock outcrops and in grasslands associated with juniper-oak woodlands (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3T3	State Rank: S3

tree dodder *Cuscuta exaltata*

Parasitic on various Quercus, Juglans, Rhus, Vitis, Ulmus, and Diospyros species as well as Acacia berlandieri and other woody plants; Annual; Flowering May-Oct; Fruiting July-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

turnip-root scurfpea *Pediomelum cyphocalyx*

Grasslands and openings in juniper-oak woodlands on limestone substrates on the Edwards Plateau and in north-central Texas (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S2S3

Warnock's coral-root *Hexalectris warnockii*

In leaf litter and humus in oak-juniper woodlands on shaded slopes and intermittent, rocky creekbeds in canyons; in the Trans Pecos in oak-pinyon-juniper woodlands in higher mesic canyons (to 2000 m [6550 ft]), primarily on igneous substrates; in Terrell County under Quercus fusiformis mottes on terrraces of spring-fed perennial streams, draining an otherwise rather xeric limestone landscape; on the Callahan Divide (Taylor County), the White Rock Escarpment (Dallas County), and the Edwards Plateau in oak-juniper woodlands on limestone slopes; in Gillespie County on igneous substrates of the Llano Uplift; flowering June-September; individual plants do not usually bloom in successive years

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2G3	State Rank: S2

EMST Data -Capital Express South, Travis and Hays County - CSJ: 0016-01-113 and 0015-13-077								
Common Name	**EMST ID Number**	**MOU Vegetation Type**	**EMST Mapped Acreage**	**MOU Acreage**	**Field Verified Acreage**	**Coordination Threshold (Acreage)**	**Impact Acreage**	**Threshold Met?**
Barren	9000	Agriculture	0.3	0.4	0.0	10.0	0.0	No
Row crops	9307		0.1		0.0			
Edwards Plateau: Ashe Juniper Motte and Woodland	1101	Edwards Plateau, Savannah, Woodland, and Shrubland	0.5	4.8	0.0	3.0	0.0	No
Edwards Plateau:Oak / Hardwood Motte and Woodland	1104		0.5		0.0			
Edwards Plateau: Deciduous Oak / Evergreen Motte and Woodland	1103		1.5		0.0			
Edwards Plateau: Live Oak Motte and Woodland	1102		0.0		0.0			
Edwards Plateau: Oak / Ashe Juniper Slope Forest	903		0.2		0.0			
Edwards Plateau: Oak / Hardwood Slope Forest	904		0.2		0.0			
Edwards Plateau: Savanna Grassland	1107		1.9		0.0			
Blackland Prairie: Disturbance or Tame Grassland	207	Tallgrass Prairie, Grassland	17.0	17.0	8.0	0.1	8.0	Yes
Central Texas: Floodplain Hardwood Forest	1804	Riparian	0.5	2.1	0.8	0.1	1.5	Yes
Central Texas: Floodplain Deciduous Shrubland	1806		0.6		0.0			
Central Texas: Floodplain Herbaceous Vegetation	1807		0.6		0.6			
Central Texas: Riparian Hardwood Forest	1904		0.1		0.2			
Central Texas: Riparian Deciduous Shrubland	1901		0.2		0.0			
Edwards Plateau: Floodplain Live Oak Forest	1002		0.2		0.0			
Native Invasive: Mesquite Shrubland	9106	Disturbed Prairie	16.5	20.1	3.4	2.0	11.9	Yes
Native Invasive: Deciduous Woodland	9101		3.5		8.4			
Native Invasive: Juniper Woodland	9104		0.0		0.0			
Urban: High Intensity	9410	Urban	202.3	489.3	392.0	N/A	N/A	N/A
Urban: Low Intensity	9411		286.9		120.3			
		Total	533.6	533.6	533.6			

Form
Species Analysis

Project Name: **Capital Express South**

CSJ(s): **0015-13-077, 0016-01-113**

County(ies): **Travis**

Date Analysis Completed: **01/22/2021**

Prepared by: **Anastasia Mogilevski**

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 9, 2019, and executed by FHWA and TxDOT.

I. Endangered Species Act

Select the appropriate statement below based on the determinations recorded in the completed project-specific species analysis spreadsheet:

☒ This project does not require consultation with or authorization from the USFWS under the Endangered Species Act.

☐ This project requires consultation with or authorization from the USFWS under the Endangered Species Act.

For a project that requires federal authorization or approval, if the completed project-specific species analysis spreadsheet indicates, “May affect,” for any species, then consultation with the USFWS is required under section 7 of the Endangered Species Act and the second checkbox above must be checked.

For more information regarding the Endangered Species Act, see **ENV’s Endangered Species Act Handbook**.

II. TPWD Coordination

Select the appropriate statement below:

☐ This project consists solely of maintenance activities that are of a type or type(s) covered by the Maintenance Program Environmental Assessment, and therefore no coordination with TPWD is required. Do not fill out a separate Tier I Site Assessment Form.

☒ This project does not consist solely of maintenance activities that are of a type or type(s) covered by the Maintenance Program Environmental Assessment, and therefore a Tier I Site Assessment is required.

III. Bald and Golden Eagle Protection Act (BGEPA)

Select the appropriate statement below:

☒ This project is not within 660 feet of an active or inactive Bald or Golden Eagle nest. Therefore, no coordination with USFWS is required.

☐ This project is within 660 feet of an active or inactive Bald or Golden Eagle nest; however, construction activities within 660 feet will not occur during the nesting season, and the project will adhere to the National Bald Eagle Management Guidelines of 2007. Therefore, no coordination with USFWS is required.

☐ This project is within 660 feet of an active or inactive Bald or Golden Eagle nest, and construction within 660 feet will occur during the nesting season or the project will not adhere to the National Bald Eagle Management Guidelines of 2007. Therefore, coordination with USFWS to obtain a Non-Purposeful Take Permit is required.

For more information regarding BGEPA, see Section 7.0 of **ENV's Ecological Resources Handbook**.

IV. Migratory Bird Protections

This project will comply with applicable provisions of the Migratory Bird Treaty Act (MBTA) and Texas Parks and Wildlife Code Title 5, Subtitle B, Chapter 64, Birds. It is the department's policy to avoid removal and destruction of active bird nests except through federal or state approved options. In addition it is the department's policy to, where appropriate and practicable:

- use measures to prevent or discourage birds from building nests on man-made structures within portions of the project area planned for construction, and
- schedule construction activities outside the typical nesting season.

For more information regarding migratory bird protections, see **ENV's Guidance: Avoiding Migratory Birds and Handling Potential Violations** and Section 3.0 of **ENV's Ecological Resources Handbook**.

V. Resources Consulted

Indicate which resources were consulted/actions were taken to make the species analysis determinations recorded in this form (DO NOT ATTACH TO THIS FORM OR UPLOAD TO ECOS ANY RESOURCES CONSULTED – JUST CHECK THE APPROPRIATE BOX(ES)):

☒ Aerial Photography ☒ Topographic Map ☒ Natural Diversity Database (NDD)
☒ Karst Zone Maps ☒ Ecological Mapping System of Texas (EMST)
☒ Site Visit ☐ Species Expert Consulted ☒ Species Habitat or Presence/absence Survey

☐ Other:_____

SPECIES ANALYSIS SPREADSHEET: Project Information Sheet	
Project Name:	Capital Express South
CSJ(s):	0015-13-077, 0016-01-113
TxDOT District: (Click dropdown arrow to select a District from List)	Austin
County(ies): (Click dropdown arrow to select each county)	Travis, Hays
Prepared by: (Full Name)	Anastasia Mogilevski
Date Completed: (m/d/yyyy)	1/22/2021
TxDOT ENV Spreadsheet Template date: October 8, 2020.	

SPECIES ANALYSIS SUMMARY
Project Name: Capital Express South
CSJ(s): 0015-13-077, 0016-01-113

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Federal Status	Effect/Take Determination for Federally Listed Species	State Status	Impact Determination for State-Listed Species	Explanation for Effect/Take and/or Impact Determination	Presence/ Absence survey conducted?
Travis	Amphibians	Austin Blind Salamander	*Eurycea waterlooensis*	The species is only known to occur at Barton Springs in Austin, Texas, and subterranean habitats of the Edwards Aquifer below the surface of Barton Springs. Its range is limited to south of the Colorado River, and it co-occurs with the Barton Springs salamander (*Eurycea sosorum*).		Only known from the outlets of Barton Springs, which is located outside of the Project Area.	E	No effect	E	No Impact	No suitable habitat is present within the Project Area.	
Travis	Amphibians	Barton Springs Salamander	*Eurycea sosorum*	The species is only known to occur at Barton Springs in Austin, Texas, and subterranean habitats in the Barton Springs Segment of the Edwards Aquifer. “Surface” habitat for the Barton Springs salamander refers to the spring pools and spring runs where the Barton Springs salamander is observed as opposed to its subsurface aquifer habitat. The Barton Springs salamander inhabits relatively stable aquatic environmental conditions. These conditions consist of perennially flowing spring water that is generally clear, clean, mostly neutral (pH about 7), and stenothermal (narrow temperature range) with an annual average temperature of about 70° to 72°F. Flows of clean spring water with a relatively constant, cool temperature are essential to maintaining the well-oxygenated water necessary for salamander respiration and survival. Dissolved oxygen concentrations average about 6 mg/l.		Only known from the outlets of Barton Springs, which is located outside of the Project Area.	E	No effect	E	No Impact	No suitable habitat is present within the Project Area.	
Hays	Amphibians	Blanco Blind Salamander	*Eurycea robusta*	The species is known from only one specimen collected in a subterranean karst feature within the Edwards Aquifer below the Blanco River.	N	The Project Area lacks karst features and caves.	—	N/A	T	No Impact	No suitable habitat is present within the Project Area.	
Travis	Amphibians	Jollyville Plateau Salamander	*Eurycea tonkawae*	Surface populations occur in springs of the Jollyville Plateau and springs of nearby Brushy Creek. Optimal habitat includes springs, spring-fed streams, and caves with flowing water.	N	The Project Area does not contain springs or caves. Additionally, the Project Area is south of the Colorado River, and this species is known only north of the Colorado River.	T	No effect	T	No Impact	No suitable habitat is present within the Project Area.	
Hays	Amphibians	San Marcos Salamander	*Eurycea nana*	The species occurs only in Spring Lake and the upper San Marcos River in San Marcos, Texas. Optimal habitat includes clear waters associated with springs in areas of sand, gravel, large rock, and vegetative cover at depth of 3.3 to 6.6 feet. The aquatic habitat is slightly alkaline (pH 7.2), has a constant temperature of 69.8° to 71.6°F, has an oxygen saturation of 40-50 percent, and little variation in bicarbonate alkalinity (220-232 mg/l).	N	Spring Lake and the upper San Marcos River do not occur in the Project Area. The Project Area does not contain springs with clear waters.	T	No effect	T	No Impact	No suitable habitat is present within the Project Area.	

SPECIES ANALYSIS SUMMARY
Project Name: Capital Express South
CSJ(s): 0015-13-077, 0016-01-113

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Hays	Amphibians	Texas Blind Salamander	*Eurycea rathbuni*	The species occurs only in the subterranean karst features within the San Marcos Pool of the Edwards Aquifer.	N	The Project Area lacks karst features and caves, and does not occur in the San Marcos Pool.	E	No effect	E	No Impact	No suitable habitat is present within the Project Area.	
Hays	Amphibians	Texas Salamander	*Eurycea neotenes*	This aquatic species is found in subterranean streams, springs, creek headwaters, and caves with rocky or cobble beds. It generally remains under rocks and among the rock cobbles at the bottom of stream beds.	N	The Project Area lacks karst features and caves. The streambeds in the Project Area lacked cobble beds.	—	N/A	T	No Impact	No suitable habitat is present within the Project Area.	
Travis	Arachnids	Bee Creek Cave Harvestman	*Texella reddelli*	This subterranean obligate species inhabits karstic features within the Edwards Limestone Formation. It is known from Tooth, Bee Creek, McDonald, Weldon, and Bone Caves, and possibly Root Cave, in Travis and Williamson Counties.	N	The Project Area lacks karst features and caves.	E	No effect	—	N/A	No suitable habitat is present within the Project Area.	
Travis	Arachnids	Bone Cave Harvestman	*Texella reyesi*	A subterranean obligate, the species occurs in small isolated karstic features within the Edwards Limestone Formation. Sensitive to low humidity and temperature, it is found under large rocks in dark cool parts of caves. It is known from 203 different caves and six karst fauna regions in Travis and Williamson Counties.	N	The Project Area lacks karst features and caves.	E	No effect	—	N/A	No suitable habitat is present within the Project Area.	
Travis	Arachnids	Tooth Cave Pseudoscorpion	*Tartarocreagris texana*	This subterranean obligate species inhabits karstic features within the Edwards Limestone Formation. It is known from five caves in the Jollyville Plateau karst fauna Region in Travis County, including Tooth and Amber Caves.	N	The Project Area lacks karst features and caves.	E	No effect	—	N/A	No suitable habitat is present within the Project Area.	
Travis	Arachnids	Tooth Cave Spider	*Neoleptoneta myopica*	This subterranean obligate species inhabits karstic features within the Edwards Limestone Formation. It is known only from 13 caves in the Jollyville Plateau and McNeil/Round Rock karst fauna regions in Travis and Williamson counties.	N	The Project Area lacks karst features and caves.	E	No effect	—	N/A	No suitable habitat is present within the Project Area.	N

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Travis	Birds	Black Rail	*Laterallus jamaicensis*	Black rails are year-round residents of the central and upper coast and migrants in the eastern part of the state. The species nests in salt, brackish, and freshwater marshes, pond borders, wet meadows, and wetlands with hydrophytic grass species. Water depth is an important and key habitat component, as the species typically is found where water is less than two to four centimeters deep. Other significant habitat factors may include vegetation density, distance to open water, and water regime stability. Nesting typically occurs in the highest sections of the marsh, which have mesic to hydric soils and are flooded by only the highest tides. Nests are built in areas with saturated or shallowly flooded soils and dense vegetation on damp ground, on mat of previous year's dead grasses, or over shallow water. In salt or brackish marshes, typical habitat includes dense stands of cordgrasses (*Spartina* sp.), spikegrasses (*Distichlis* sp.), and needlerush (*Juncus* sp.), or, in more upland saltbush communities along marsh edges. Typical freshwater habitat includes species such as cattail (*Typha*) and bulrush (*Scirpus* sp.). Non-breeding habitat is thought to be similar to breeding habitat.	N	No salt, brackish, or freshwater marshes were found in the Project Area. It also lacks grassy swamps.	T	No effect	T	No Impact	No suitable habitat is present within the Project Area.	N
Travis	Birds	Golden-cheeked Warbler	*Setophaga (=Dendroica) chrysoparia*	This migratory species breeds in central Texas along the Balcones Escarpment on the eastern edge of the Edwards Plateau and ranges from southwest of Fort Worth to northeast of Del Rio. Breeding habitat consists of juniper-oak woodlands dominated by Ashe juniper (*Juniperus ashei*) and various oak (*Quercus* sp.) species and deciduous trees found in areas with steep slopes, canyon heads, draws, and adjacent ridgetops. The species is dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are generally placed in upright forks of mature Ashe junipers or various deciduous species. Occupied sites usually contain junipers at least 40 years old.	N	No ashe juniper-oak woodlands occur within the Project Area.	E	No effect	E	No Impact	No suitable habitat is present within the Project Area.	N

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Travis	Birds	Least Tern - Migratory	*Sternula (=Sterna) antillarum*	The interior population (subspecies *athalassos*) of the Least Tern nests on bare or sparsely vegetated sand, shell, and gravel beaches, sandbars, islands, and salt flats associated with inland rivers and reservoirs. It occasionally nests on man-made structures such as sand and gravel pits or gravel rooftops. Preferred habitat includes sand and gravel bars within a wide unobstructed river channel, or open flats along shorelines of lakes and reservoirs. Colony sites can move annually, depending on landscape disturbance and vegetation growth at established colonies. It is known to nest at three reservoirs along the Rio Grande River, on the Canadian River in the northern Panhandle, and along the Red River.	N/A	The list of federally threatened and endangered species indicates that based on the project location within the migratory route, effects to Least Tern only need be considered for wind energy projects. The project area is outside the breeding and wintering range of this species. Although suitable stopover habitat may be present, Least Tern is not expected to regularly occur and any use of this habitat would be incidental.	E	No effect	E	No impact	The project is not a wind energy project within the migratory route and does not contain suitable breeding and wintering habitat for the Least Tern.	N
Travis	Birds	Piping Plover - Migratory	*Charadrius melodus*	This migratory species overwinters in Texas, where it occurs on beaches, ephemeral sand flats, barrier islands, sand, mud, algal flats, washover passes, salt marshes, lagoons, and dunes along the Gulf Coast and adjacent offshore islands, including spoil islands in the Intracoastal Waterway. Algal flats appear to be the highest quality habitat because of 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 or 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.	N/A	The list of federally threatened and endangered species indicates that based on the project location within the migratory route, effects to Piping Plover only need be considered for wind energy projects. The project area is outside the breeding and wintering range of this species. Although suitable stopover habitat may be present, Piping Plover is not expected to regularly occur and any use of this habitat would be incidental.	T	No effect	T	No impact	The project is not a wind energy project within the migratory route and does not contain suitable breeding and wintering habitat for the Piping Plover.	N

SPECIES ANALYSIS SUMMARY
Project Name: Capital Express South
CSJ(s): 0015-13-077, 0016-01-113

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Travis	Birds	Red Knot - Migratory	*Calidris canutus rufa*	The species is a winter resident and migrant in Texas. It is primarily found in marine habitats such as sandy beaches, salt marshes, lagoons, mudflats of estuaries and bays, and mangrove swamps during winter months. It primarily occurs along the Gulf coast on tidal flats and beaches and less frequently in marshes and flooded fields. It has occasionally been observed along shorelines of large lakes and freshwater marshes.	N/A	The list of federally threatened and endangered species indicates that based on the project location within the migratory route, effects to Red Knot only need be considered for wind energy projects. The project area is outside the breeding and wintering range of this species. Although suitable stopover habitat may be present, Red Knot is not expected to regularly occur and any use of this habitat would be incidental.	T	No effect	T	No impact	The project is not a wind energy project within the migratory route and does not contain suitable breeding and wintering habitat for the Red Knot.	N
Travis	Birds	Swallow-tailed Kite	*Elanoides forficatus*	This migratory species breeds in the South Central Plains of east Texas and throughout the southeastern U.S. In Texas, breeding habitat occurs between sea level and 230 meters in elevation in bottomland forests, cypress swamps, pine glades, and freshwater marshes skirting large lakes. It nests near the tops of trees that are higher than the surrounding stand, often near a clearing or the edge of a forest or woodland. It prefers to nest in pines, but occasionally uses species such as bald cypress (*Taxodium distichum*), water oak (*Quercus nigra*), or cottonwood (*Populus deltoides*).	N	The Project Area lacks bottomland forests, cypress swamps, or freshwater marshes, and is not within the breeding range of the species. The species would only be present in the Project Area as a seasonal migrant passing through. No individuals were observed in the field.	—	N/A	T	No Impact	No suitable habitat is present within the Project Area.	N

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Project Name: Capital Express South
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Hays	Birds	Tropical Parula	*Setophaga pitiayumi*	The species is a summer resident of south Texas and northern Tamaulipas between mid-march and September, breeding from mid-April to mid-July. It is found in thick woods near edges of lagoons or resacas. Nesting habitat occurs in mixed deciduous riparian woodlands in closed or partially closed-canopy dominated by cedar elm, sugar hackberry, Texas ebony (*Ebenopsis ebano*), anaqua (*Ehretia anacua*), and Mexican ash (*Fraxinus berlandieri*). Nests are built on trees 2 to 13 meters from ground level on the pendant mass of epiphytic growth. Forests with abundant Spanish moss (*Tillandsia usneoides*), or other epiphytic species are required for breeding habitat.	N	The Project area lacks thick woods near edges of lagoons.	—	N/A	T	No Impact	No suitable habitat is present within the Project Area.	N
Travis	Birds	White-faced Ibis	*Plegadis chihi*	The species is found in the Western Gulf Coastal Plains ecoregion of Texas. Preferred habitat includes freshwater wetlands, marshes, ponds, rivers, irrigated land, and sloughs, but it occasionally forages in brackish or saltwater marshes. It nests in marshes in low trees, on the ground in bulrushes (Scirpus sp.) or reeds, or on floating mats.	N	No marshes, irrigated rice fields, sloughs, and coastal rookeries occur in the Project Area.	—	N/A	T	No Impact	No suitable habitat is present within the Project Area.	N
Travis	Birds	Whooping Crane	*Grus americana*	The species breeds in Canada and winters on the Texas coast at Aransas National Wildlife Refuge. During migration it typically stops to rest and feed in open bottomlands of large rivers and marshes but, like other waterbirds, it may also utilize flooded croplands, playas, large wetlands associated with lakes, small ponds, and various other aquatic features. Typical migration habitat includes sites with good horizontal visibility, water depth of 30 centimeters or less, and minimum wetland size of 0.04 hectare for roosting.	N	No marshes, flooded grain fields, and ponds occur within the Project Area.	E	No effect	E	No Impact	No suitable habitat is present within the Project Area.	N
Travis	Birds	Wood Stork	*Mycteria americana*	The species breeds in Mexico, and nesting sites have not been recorded in Texas since 1960. However, post-breeding migrants disperse into Texas in the summer. Foraging habitat includes freshwater prairie ponds, flooded pastures or fields, ditches, and other shallow standing water with an open canopy, occasionally including brackish wetlands. The species typically roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries).	N	No large tracts of trees in association with prairie ponds or flooded pastures occur within the Project Area.	—	N/A	T	No Impact	No suitable habitat is present within the Project Area.	N
Travis	Birds	Zone-tailed Hawk	*Buteo albonotatus*	The species occurs in arid open country, especially open deciduous or pine-oak woodland, mesa and mountain country, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains. It nests in a variety of sites including small trees in lower desert, giant cottonwoods in riparian areas, and mature conifers in high mountain regions. Nests are typically constructed in large trees like cottonwoods (*Populus deltoides*), usually along streams near cliffs or steep hillsides.	N	No open arid country, deserts, pine woodlands, or mountains are present in the Project Area.	—	N/A	T	No Impact	No suitable habitat is present within the Project Area.	N

SPECIES ANALYSIS SUMMARY
Project Name: Capital Express South
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Hays	Crustaceans	Peck's Cave Amphipod	*Stygobromus pecki*	A subterranean obligate amphipod that inhabits inundated karst features associated with the Edwards Aquifer. It has only been collected at Comal and Hueco Springs in Comal County.	N	The Project Area lacks karst features and caves.	E	No effect	E	No Impact	No suitable habitat is present within the Project Area.	N
Hays	Crustaceans	Texas Troglobitic Water Slater	*Lirceolus smithii*	Little is known about this aquifer dwelling isopod, and it has only been observed from groundwaters coming from an artesian well in San Marcos, Texas. It is a subaquatic and subterranean obligate.	N	The Project Area occurs outside of the artesian well in San Marcos, Texas. The Projcet Area also lacks karst features and caves.	—	N/A	T	No Impact	No suitable habitat is present within the Project Area.	N
Hays	Fishes	Fountain Darter	*Etheostoma fonticola*	The species is endemic to the San Marcos and Comal rivers. Its historic range in the San Marcos River extended from Spring Lake downstream to just below its confluence with the Blanco River, and in the Comal River from the headwaters downstream to its confluence with the Guadalupe River. Currently the species can be found in the upper portions of the Comal River including Landa Lake and in the San Marcos River system from Spring Lake downstream to the outfall of the San Marcos City wastewater treatment plant. Habitat requirements include clear, clean, flowing, and thermally constant waters, adequate food supply, undisturbed sand and gravel substrates, rock outcrops, and areas of submergent vegetation (algae, moss, vascular plants) for cover. Juveniles are found in heavily vegetated areas with low flows, while adults can be found in all suitable habitats.	N	The Project Area occurs outside of the San Marcos and Comal rivers.	E	No effect	E	No Impact	No suitable habitat is present within the Project Area.	N
Hays	Fishes	Guadalupe Darter	*Percina apristis*	This species is endemic to the Guadalupe River Basin and can be found in medium size reivers including the San Marcos, Comal, and Guadalupe rivers. It is found in riffles around rocky gravel or boulders near brush and in the main current where the water is moderately turbid.	N	The Project Area occurs outside of the Guadalupe River Basin, and does not contain the San Marcos, Comal, or Guadalupe rivers.	—	N/A	T	No Impact	No suitable habitat is present within the Project Area.	N
Hays	Fishes	Headwater Catfish	*Ictalurus lupus*	Currently found in the Pecos River and Rio Grande drainages, this species is thought to be extirpated from its range in central Texas. This fish preferes spring-fed rivers and creeks within sandy and rocky riffles, runs, and pools.	N	The Project Area occurs outside of the known range of the species in the Pecos River and Rio Grande drainages.	—	N/A	T	No Impact	No suitable habitat is present within the Project Area.	N
Hays	Fishes	San Marcos Gambusia	*Gambusia georgei*	The species is restricted to the San Marcos River, occurs in shallow, quiet, mud-bottomed, shoreline areas with little to no vegetation.	N	The Project Area occurs outside of the San Marcos River where the species is restricted.	E	No effect	—	N/A	No suitable habitat is present within the Project Area.	N

SPECIES ANALYSIS SUMMARY
Project Name: Capital Express South
CSJ(s): 0015-13-077, 0016-01-113

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Federal Status	Effect/Take Determination for Federally Listed Species	State Status	Impact Determination for State-Listed Species	Explanation for Effect/Take and/or Impact Determination	Presence/ Absence survey conducted?
Travis	Fishes	Smalleye Shiner	*Notropis buccula*	The species is likely extirpated from the lower and middle portions of the Brazos River, currently known only from the upper Brazos River above Possum Kingdom Reservoir. The species is common in river channels and side channels with water of moderate depth and current. It is typically found in broad channels with high turbidity and constant shifting sand substrate, or occasionally silt substrate. It is most frequently found using the center of the channel, avoiding the shallow depth and slow velocity of the stream edges.	N	The Project Area is not located in the Rio Grande basin or near the lower Pecos River, where the species is restricted.	E	No effect	E	No Impact	No suitable habitat is present within the Project Area.	N
Hays	Insects	Comal Springs Dryopid Beetle	*Stygoparnus comalensis*	This subterranean species occurs in the uncontaminated aquatic habitat of several outlets of Comal Springs which forms the headwaters of the Comal River. It is unknown whether the center of the population resides further underground in the aquifer, or just below the surface.	N	The Project Area lacks karst features and caves, and occurs outside of Comal Springs.	E	No effect	E	No Impact	No suitable habitat is present within the Project Area.	N
Hays	Insects	Comal Springs Riffle Beetle	*Heterelmis comalensis*	The species occurs in gravel substrates and shallow riffles in headwater spring runs in the Comal Springs system. It may be able to retreat back into spring openings or burrow down to wet areas below the surface of the streambed to find cover and shelter.	N	The Project Area occurs outside of the Comal Springs System.	E	No effect	E	No Impact	No suitable habitat is present within the Project Area.	N
Travis	Insects	Kretschmarr Cave Mold Beetle	*Texamaurops reddelli*	This subterranean obligate species inhabits karstic features within the Edwards Limestone Formation. It is known from nine caves in the Jollyville Plateau karst fauna Region in Travis and Williamson Counties, including Kretschmarr, Amber, Tooth and Coffin Caves.	N	The Project Area lacks karst features and caves.	E	No effect	—	N/A	No suitable habitat is present within the Project Area.	N
Travis	Insects	Tooth Cave Ground Beetle	*Rhadine persephone*	This subterranean obligate species inhabits karstic features within the Edwards Limestone Formation. It is known from 61 caves in the Cedar Park and Jollyville Plateau karst fauna Regions in Travis County, including Tooth and Kretschmarr Caves.	N	The Project Area lacks karst features and caves.	E	No effect	—	N/A	No suitable habitat is present within the Project Area.	N

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Project Name: Capital Express South
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Travis	Mollusks	False Spike	*Fusconaia (=Quadrula) mitchelli*	Freshwater mussel currently found in the Rio Grande, Pecos, Middle Colorado, and Guadalupe River basins. The species occurs in medium to large rivers with various substrates including mud and mixtures of sand, gravel, and cobble. It is found in riffle and pool habitats, and host species include the red (*Cyprinella lutrensis*) and blacktail shiner (*C. venusta*).	N	With exception to Onion Creek, the streams in the Project Area are highly degraded urban streams with a heavily scoured bedrock bottom that would not provide suitable habitat. A mussel survey performed by the City of Austin was performed in Onion Creek in the summer of 2018, no mussel species were identified within the Project Area.	—	N/A	T	No Impact	No suitable habitat is present within the Project Area.	N
Hays	Mollusks	Guadalupe Fatmucket	*Lampsilis bergmanni*	This species of freshwater mussel was recently discovered to be an independent species. It is only known to occur in the upstream portion of the Guadalupe River Basin.	N	The Project Area occurs outside of the Guadalupe River Basin.	—	N/A	T	No Impact	No suitable habitat is present within the Project Area.	N
Hays	Mollusks	Guadalupe Orb	*Cyclonaias necki*	This distribution of this species is limited to the Guadalupe River basin. It occurs in both mainstem and tributary habitats. It is often found in substrates composed of sand, gravel, and cobble, including mud-silt or gravel-filled cracks in bedrock slabs. Flowing water is important and it is considered intolerant of reservoirs, but is known to occur in them. The host fish for this species is unknown.	N	The Project Area occurs outside of the Guadalupe River basin.	—	N/A	T	No Impact	No suitable habitat is present within the Project Area.	N
Travis	Mollusks	Texas Fatmucket	*Lampsilis bracteata*	A freshwater mussel endemic to streams and small rivers of the Texas Hill Country, the species occurs in moderately flowing waters generally less than 1 meter in depth. It can occur in sand or gravel substrates, but typically occurs in soft silt deposits in bank or pool habitats or cracks in bedrock. It inhabits microhabitats among large cobble, boulders, bedrock ledges, horizontal cracks in bedrock slabs, and macrophyte beds. It has been reported inhabiting roots of cypress trees and other vegetation along steep banks. It is intolerant to impoundment and absent from backwater, mid-channel, and riffle habitats.	Y	Suitable habitat occurs in the Project Area in the form of bedrock and gravel beds in Onion Creek.	C	May affect	T	May impact	Suitable habitat is present in the Project Area.	N

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Travis	Mollusks	Texas Fawnsfoot	*Truncilla macrodon*	A freshwater mussel that is currently limited to the Brazos and Colorado River basins in Texas. The species occupies large streams to medium rivers and is intolerant to impoundment. Little is known about the species due to lack of representative specimens, however it is thought that the species prefers sand, gravel, and sandy-mud substrate in water with a moderate current. It is also found in perennial irrigation canals for rice.	N	With exception to Onion Creek, the streams in the Project Area are highly degraded urban streams with a heavily scoured bedrock bottom that would not provide suitable habitat. A mussel survey performed by the City of Austin was performed in Onion Creek in the summer of 2018, no mussel species were identified within the Project Area.	C	No effect	T	No Impact	No suitable habitat is present within the Project Area.	N
Travis	Mollusks	Texas Pimpleback	*Cyclonaias (Quadrula) petrina*	A freshwater mussel endemic to the middle and lower portions of the Colorado River basin in Texas. The species inhabits medium to large rivers with shallow water and slow to moderate currents. It occurs in gravel-filled cracks in bedrock and microhabitats and on mud, sand, gravel, and cobble substrates. It is intolerant to extremely soft substrates, shifting sands, scoured bottoms, and impoundments.	N	With exception to Onion Creek, the streams in the Project Area are highly degraded urban streams with a heavily scoured bedrock bottom that would not provide suitable habitat. A mussel survey performed by the City of Austin was performed in Onion Creek in the summer of 2018, no mussel species were identified within the Project Area.	C	No effect	T	No Impact	No suitable habitat is present within the Project Area.	N
Travis	Plants	Bracted Twistflower	*Streptanthus bracteatus*	The species is found in south-central Texas. It is an annual; endemic to the Edwards Plateau where it is occurs on shallow, well-drained gravelly clays and clay loams over limestone, within oak-juniper woodland and associated openings, on steep to moderate slopes, and in canyon bottoms. Often found amid dense shrub growth where there is some protection from browsing.	N	No oak-juniper woodlands, steep to moderate slopes, ro canyon bottoms occur within the Project Area. No individuals were observed during site visits on July 25-26, 2019, which is outside the species' flowering period.	C	No effect	—	N/A	No suitable habitat is present within the Project Area.	N

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Hays	Plants	Texas Wild-rice	Zizania texana	This perennial aquatic species is endemic to the upper San Marcos River in Hays County. It is a submergent grass found in clear, cool, swift spring-water mostly less than 1 m (3.2 feet) deep, with coarse sandy sediments.	N	The Project Area lacks submergent grass in clear, cool, swift spring-water with coarse sandy sediments, and occurs outside of the San Marcos River.	E	No effect	E	No Impact	No suitable habitat is present within the Project Area.	N
Hays	Reptiles	Cagle's Map Turtle	*Graptemys caglei*	The species occurs throughout the Guadalupe River system but is primarily associated with stretches of river with shallow water with swift to moderate flow connected by riffles and deeper pools with slower flow rates.	N	The Project Area occurs outside of the Guadalupe River system and lacks river stretches with shallow water with swift to moderate flow.	—	N/A	T	No Impact	No suitable habitat is present within the Project Area.	N
Travis	Reptiles	Texas Horned Lizard	*Phrynosoma cornutum*	The species is found in semi-arid open areas with scattered vegetation comprised of bunchgrass, cacti, yucca, mesquite, acacia, juniper, or other woody shrubs and small trees commonly found in loose sandy or loamy soils.	N	The Project Area lacks arid/semiarid habitats with scattered vegetation, and sandy soils.	—	N/A	T	No Impact	No suitable habitat is present within the Project Area.	N

Common Name	Scientific Name	Notes
Ashy Dogweed	*Thymophylla tephroleuca*	Note: This species is listed by TPWD but not by IPaC in the following county: Jim Hogg.
Attwater's Greater Prairie-chicken	*Tympanuchus cupido attwateri*	Note: This species is listed by TPWD but not by IPaC in the following counties: Fort Bend, Wharton.
Barton Springs Salamander	*Eurycea sosorum*	Note: This species is listed by TPWD but not by IPaC in the following county: Williamson.
Bee Creek Cave Harvestman	*Texella reddelli*	Note: This species is listed by TPWD but not by IPaC in the following county: Williamson.
Big Bend Gambusia	*Gambusia gaigei*	
Black Bear	*Ursus americanus*	
Black Lace Cactus	*Echinocereus reichenbachii var. albertii*	Note: This species is listed by TPWD but not by IPaC in the following counties: Duval, Nueces.
Black Rail	*Laterallus jamaicensis*	Note: This species is listed by TPWD but not by IPaC in the following counties: Anderson, Aransas, Archer, Austin, Bastrop, Baylor, Bee, Bell, Borden, Bosque, Brazoria, Brazos, Briscoe, Brown, Burleson, Caldwell, Calhoun, Callahan, Cameron, Chambers, Childress, Clay, Coke, Coleman, Collin, Colorado, Comanche, Cooke, Coryell, Cottle, Crosby, Dallas, Delta, Denton, DeWitt, Dickens, Eastland, Ellis, Erath, Falls, Fannin, Fayette, Fisher, Floyd, Foard, Fort Bend, Franklin, Freestone, Galveston, Garza, Goliad, Gonzales, Grayson, Grimes, Guadalupe, Hale, Hall, Hamilton, Hardeman, Harris, Haskell, Henderson, Hill, Hood, Hopkins, Houston, Howard, Hunt, Hutchinson, Jack, Jackson, Jefferson, Johnson, Jones, Karnes, Kaufman, Kenedy, Kent, King, Kleberg, Knox, Lamar, Lampasas, Lavaca, Lee, Leon, Liberty, Limestone, Lubbock, Lynn, Madison, Matagorda, McLennan, Milam, Mills, Mitchell, Montague, Montgomery, Motley, Navarro, Nolan, Nueces, Palo Pinto, Parker, Rains, Red River, Refugio, Robertson, Rockwall, Runnels, San Jacinto, San Patricio, Scurry, Shackelford, Somervell, Stephens, Stonewall, Swisher, Tarrant, Taylor, Throckmorton, Travis, Van Zandt, Victoria, Walker, Waller, Washington, Wharton, Wichita, Wilbarger, Williamson, Wilson, Wise, Wood, Young.
Brazos Heelsplitter	*Potamilus streckersoni*	Note: Not currently mapped by RTEST. See habitat description. Possible counties based on liturature include: Young, Palo Pinto, Hood, Somervell, Bosque, Hill, Johnson
Carolinae Tryonia	*Tryonia oasiensis*	Note: Not currently mapped by RTEST. See habitat description. County location based on liturature: Terrell
Comanche Springs Pupfish	*Cyprinodon elegans*	Note: This species is listed by TPWD but not by IPaC in the following county: Pecos.
Eskimo Curlew	*Numenius borealis*	Note: This species is listed by TPWD but not by IPaC in the following counties: Cameron, Cooke, Galveston, Kendall, San Patricio, Washington.
False Spike	*Fusconaia (=Quadrula) mitchelli*	Note: This species is listed by TPWD but not by IPaC in the following counties: Bastrop, Blanco, Burnet, Caldwell, Comal, Concho, Dewitt,
Fountain Darter	*Etheostoma fonticola*	Note: This species is listed by TPWD but not by IPaC in the following counties: Caldwell, Gonzales, Guadalupe.

Photo 1: Typical view of Onion Creek within the southern portion of the Project area beneath Interstate 35 (I-35). Note the marginal riparian vegetation (30.13559°, -97.78602°).

Photo 2: Typical view of herbaceous wetland vegetation within the central portion of the Project area, facing west (30.16563°, -97.78602°).

Photo 3: Typical view of Slaughter Creek within the central portion of the Project area beneath I-35, facing southwest. Note the poor water quality condition (30.15289°, - 97.79228°).

Photo 4: Typical Urban Low Intensity roadside vegetation community, facing south (30.11364°, -97.80726°).

Photo 5: Typical combination of Urban Low Intensity vegetation and riparian vegetation within the Project area, facing south (30.16575°, -97.78524°).

Photo 6: Typical combination of Urban Low Intensity vegetation and riparian vegetation within the Project area, facing east (30.15291°, -97.79088°).

Common Name	Scientific Name	Notes
Geocarpon Minimum	*Geocarpon minimum*	Note: This species is listed by TPWD but not by IPaC in the following county: Gregg, Palo Pinto
Golden-cheeked Warbler	*Setophaga chrysoparia (formerly Dendroica chrysoparia)*	Note: This species is listed by TPWD but not by IPaC in the following county: Parker.
Gonzales Tryonia	*Tryonia circumstriata*	Note: This species is listed by TPWD but not by IPaC in the following county: Terrell.
Great Hammerhead	*Sphyrna mokarran*	Note: Not currently mapped by RTEST. See habitat description.
Jollyville Plateau Salamander	*Eurycea tonkawae*	
Killer Whale	*Orcinus orca*	
Largetooth Sawfish	*Pristis pristis*	
Louisiana Pigtoe	*Pleurobema riddellii*	
Mexican Spotted Owl	*Strix occidentalis lucida*	
North Atlantic Right Whale	*Eubalaena glacialis*	
Oceanic Whitetip Shark	*Carcharhinus longimanus*	
Opossum Pipefish	*Microphis brachyurus*	
Phantom Springsnail	*Cochliopa (=Pyrgulopsis) texana*	
Pillar Coral	*Dendrogyra cylindrus*	
Rafinesque's Big-eared Bat	*Corynorhinus rafinesquii*	
Ocelot	*Leopardus (=Felis) pardalis*	Note: This species is listed by TPWD but not by IPaC in the following counties: Kinney, Uvalde.
Ouachita Rock Pocketbook	*Arcidens (=Arkansia) wheeleri*	Note: This species is listed by TPWD but not by IPaC in the following counties: Lamar, Red River.
Rio Grande Chub	*Gila pandora*	
Rio Grande Silvery Minnow	*Hybognathus amarus*	
San Marcos Gambusia	*Gambusia georgei*	
Sei Whale	*Balaenoptera borealis*	
Slender Rush-pea	Hoffmannseggia tenella	
Rio Grande Darter	*Etheostoma grahami*	Note: This species is listed by TPWD but not by IPaC in the following counties: Crockett, Kinney, Maverick, Terrell, Val Verde, Webb.
Spotfin Gambusia	*Gambusia krumholzi*	
San Marcos Salamander	*Eurycea nana*	Note: This species is listed by TPWD but not by IPaC in the following county: Caldwell.
Sharpnose Shiner	*Notropis oxyrhynchus*	Note: This species is listed by TPWD but not by IPaC in the following counties: Austin, Bosque, Brazos, Burleson, Coke, Falls, Foard, Fort Bend, Garza, Hill, Limestone, McLennan, Milam, Mills, Robertson, San Saba, Travis, Waller, Washington, Wilbarger.
Texas Ayenia	*Ayenia limitaris*	

Common Name	Scientific Name	Notes
Texas Fatmucket	*Lampsilis bracteata*	Note: This species is listed by TPWD but not by IPaC in the following county: Llano.
Spotted Bat	*Euderma maculatum*	Note: This species is listed by TPWD but not by IPaC in the following county: Brewster.
Texas Horned Lizard	*Phrynosoma cornutum*	
Texas Pigtoe	*Fusconaia askewi*	
Texas Blind Salamander	*Eurycea rathbuni*	Note: This species is listed by TPWD but not by IPaC in the following counties: Blanco, Caldwell, Guadalupe.
Texas Fawnsfoot	*Truncilla macrodon*	Note: This species is listed by TPWD but not by IPaC in the following counties: Brazoria, Haskell, Jones, McLennan, Parker.

Updates since the April 2021 Public Hearing.

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Hays, Travis	Amphibians	Austin Blind Salamander	*Eurycea waterlooensis*	The species is only known to occur at Barton Springs in Austin, Texas, and subterranean habitats of the Edwards Aquifer below the surface of Barton Springs. Its range is limited to south of the Colorado River, and it co-occurs with the Barton Springs salamander (*Eurycea sosorum*).	N	Only known from the outlets of Barton Springs, which is located outside of the Project Area.	E	No effect	E	No impact	No suitable habitat is present within the Project Area.	N
Hays, Travis	Amphibians	Barton Springs Salamander	*Eurycea sosorum*	The species is only known to occur at Barton Springs in Austin, Texas, and subterranean habitats in the Barton Springs Segment of the Edwards Aquifer. “Surface” habitat for the Barton Springs salamander refers to the spring pools and spring runs where the Barton Springs salamander is observed as opposed to its subsurface aquifer habitat. The Barton Springs salamander inhabits relatively stable aquatic environmental conditions. These conditions consist of perennially flowing spring water that is generally clear, clean, mostly neutral (pH about 7), and stenothermal (narrow temperature range) with an annual average temperature of about 70° to 72°F. Flows of clean spring water with a relatively constant, cool temperature are essential to maintaining the well-oxygenated water necessary for salamander respiration and survival. Dissolved oxygen concentrations average about 6 mg/l.	N	Only known from the outlets of Barton Springs, which is located outside of the Project Area.	E	No effect	E	No impact	No suitable habitat is present within the Project Area.	N
Hays	Amphibians	Blanco Blind Salamander	*Eurycea robusta*	The species is known from only one specimen collected in a subterranean karst feature within the Edwards Aquifer below the Blanco River.	N	The Project Area lacks karst features and caves.	—	N/A	T	No impact	No suitable habitat is present within the Project Area.	N
Travis	Amphibians	Jollyville Plateau Salamander	*Eurycea tonkawae*	Surface populations occur in springs of the Jollyville Plateau and springs of nearby Brushy Creek. Optimal habitat includes springs, spring-fed streams, and caves with flowing water.	N	The Project Area does not contain springs or caves. Additionally, the Project Area is south of the Colorado River, and this species is known only north of the Colorado River.	T	No effect	T	No impact	No suitable habitat is present within the Project Area.	N
Hays	Amphibians	San Marcos Salamander	*Eurycea nana*	The species occurs only in Spring Lake and the upper San Marcos River in San Marcos, Texas. Optimal habitat includes clear waters associated with springs in areas of sand, gravel, large rock, and vegetative cover at depth of 3.3 to 6.6 feet. The aquatic habitat is slightly alkaline (pH 7.2), has a constant temperature of 69.8° to 71.6°F, has an oxygen saturation of 40-50 percent, and little variation in bicarbonate alkalinity (220-232 mg/l).	N	Spring Lake and the upper San Marcos River do not occur in the Project Area. The Project Area does not contain springs with clear waters.	T	No effect	T	No impact	No suitable habitat is present within the Project Area.	N
Hays	Amphibians	Texas Blind Salamander	*Eurycea rathbuni*	The species occurs only in the subterranean karst features within the San Marcos Pool of the Edwards Aquifer.	N	The Project Area lacks karst features and caves, and does not occur in the San Marcos Pool.	E	No take	E	No impact	No suitable habitat is present within the Project Area.	N

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Hays	Amphibians	Texas Salamander	*Eurycea neotenes*	This aquatic species is found in subterranean streams, springs, creek headwaters, and caves with rocky or cobble beds. It generally remains under rocks and among the rock cobbles at the bottom of stream beds.	N	The Project Area lacks karst features and caves. The streambeds in the Project Area lacked cobble beds.	—	N/A	T	No impact	No suitable habitat is present within the Project Area.	N
Travis	Arachnids	Bee Creek Cave Harvestman	*Texella reddelli*	This subterranean obligate species inhabits karstic features within the Edwards Limestone Formation. It is known from Tooth, Bee Creek, McDonald, Weldon, and Bone Caves, and possibly Root Cave, in Travis and Williamson Counties.	N	The Project Area lacks karst features and caves.	E	No effect	—	N/A	No suitable habitat is present within the Project Area.	N
Travis	Arachnids	Bone Cave Harvestman	*Texella reyesi*	A subterranean obligate, the species occurs in small isolated karstic features within the Edwards Limestone Formation. Sensitive to low humidity and temperature, it is found under large rocks in dark cool parts of caves. It is known from 203 different caves and six karst fauna regions in Travis and Williamson Counties.	N	The Project Area lacks karst features and caves.	E	No effect	—	N/A	No suitable habitat is present within the Project Area.	N
Travis	Arachnids	Tooth Cave Pseudoscorpion	*Tartarocreagris texana*	This subterranean obligate species inhabits karstic features within the Edwards Limestone Formation. It is known from five caves in the Jollyville Plateau karst fauna Region in Travis County, including Tooth and Amber Caves.	N	The Project Area lacks karst features and caves.	E	No effect	—	N/A	No suitable habitat is present within the Project Area.	N
Travis	Arachnids	Tooth Cave Spider	*Neoleptoneta myopica*	This subterranean obligate species inhabits karstic features within the Edwards Limestone Formation. It is known only from 13 caves in the Jollyville Plateau and McNeil/Round Rock karst fauna regions in Travis and Williamson counties.	N	The Project Area lacks karst features and caves.	E	No effect	—	N/A	No suitable habitat is present within the Project Area.	N
Travis	Birds	Black Rail	*Laterallus jamaicensis*	Black rails are year-round residents of the central and upper coast and migrants in the eastern part of the state. The species nests in salt, brackish, and freshwater marshes, pond borders, wet meadows, and wetlands with hydrophytic grass species. Water depth is an important and key habitat component, as the species typically is found where water is less than two to four centimeters deep. Other significant habitat factors may include vegetation density, distance to open water, and water regime stability. Nesting typically occurs in the highest sections of the marsh, which have mesic to hydric soils and are flooded by only the highest tides. Nests are built in areas with saturated or shallowly flooded soils and dense vegetation on damp ground, on mat of previous year's dead grasses, or over shallow water. In salt or brackish marshes, typical habitat includes dense stands of cordgrasses (*Spartina* sp.), spikegrasses (*Distichlis* sp.), and needlerush (*Juncus* sp.), or, in more upland saltbush communities along marsh edges. Typical freshwater habitat includes species such as cattail (*Typha*) and bulrush (*Scirpus* sp.). Non-breeding habitat is thought to be similar to breeding habitat.	N	No salt, brackish, or freshwater marshes were found in the Project Area. It also lacks grassy swamps.	T	No effect	T	No impact	No suitable habitat is present within the Project Area.	N

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Hays, Travis	Birds	Golden-cheeked Warbler	*Setophaga (=Dendroica) chrysoparia*	This migratory species breeds in central Texas along the Balcones Escarpment on the eastern edge of the Edwards Plateau and ranges from southwest of Fort Worth to northeast of Del Rio. Breeding habitat consists of juniper-oak woodlands dominated by Ashe juniper (*Juniperus ashei*) and various oak (*Quercus* sp.) species and deciduous trees found in areas with steep slopes, canyon heads, draws, and adjacent ridgetops. The species is dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are generally placed in upright forks of mature Ashe junipers or various deciduous species. Occupied sites usually contain junipers at least 40 years old.		No ashe juniper-oak woodlands occur within the Project Area.	E	No effect	E	No impact	No suitable habitat is present within the Project Area.	
Hays, Travis	Birds	Least Tern - Migratory	*Sternula (=Sterna) antillarum*	The interior population (subspecies *athalassos*) of the Least Tern nests on bare or sparsely vegetated sand, shell, and gravel beaches, sandbars, islands, and salt flats associated with inland rivers and reservoirs. It occasionally nests on man-made structures such as sand and gravel pits or gravel rooftops. Preferred habitat includes sand and gravel bars within a wide unobstructed river channel, or open flats along shorelines of lakes and reservoirs. Colony sites can move annually, depending on landscape disturbance and vegetation growth at established colonies. It is known to nest at three reservoirs along the Rio Grande River, on the Canadian River in the northern Panhandle, and along the Red River.	N/A	The project area is outside the breeding and wintering range of this species. Although suitable stopover habitat may be present, Least Tern is not expected to regularly occur and any use of this habitat would be incidental.	—	N/A	E	No impact	The project area does not contain suitable breeding or wintering habitat for the Least Tern.	N
Hays, Travis	Birds	Piping Plover - Migratory	*Charadrius melodus*	This migratory species overwinters in Texas, where it occurs on beaches, ephemeral sand flats, barrier islands, sand, mud, algal flats, washover passes, salt marshes, lagoons, and dunes along the Gulf Coast and adjacent offshore islands, including spoil islands in the Intracoastal Waterway. Algal flats appear to be the highest quality habitat because of 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 or 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.	N/A	The list of federally threatened and endangered species indicates that based on the project location within the migratory route, effects to Piping Plover only need be considered for wind energy projects. The project area is outside the breeding and wintering range of this species. Although suitable stopover habitat may be present, Piping Plover is not expected to regularly occur and any use of this habitat would be incidental.	T	No effect or Take	T	No impact	The project is not a wind energy project within the migratory route and does not contain suitable breeding and wintering habitat for the Piping Plover.	N

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County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Federal Status	Effect/Take Determination for Federally Listed Species	State Status	Impact Determination for State-Listed Species	Explanation for Effect/Take and/or Impact Determination	Presence/ Absence survey conducted?
Hays, Travis	Birds	Red Knot - Migratory	*Calidris canutus rufa*	The species is a winter resident and migrant in Texas. It is primarily found in marine habitats such as sandy beaches, salt marshes, lagoons, mudflats of estuaries and bays, and mangrove swamps during winter months. It primarily occurs along the Gulf coast on tidal flats and beaches and less frequently in marshes and flooded fields. It has occasionally been observed along shorelines of large lakes and freshwater marshes.	N/A	The list of federally threatened and endangered species indicates that based on the project location within the migratory route, effects to Red Knot only need be considered for wind energy projects. The project area is outside the breeding and wintering range of this species. Although suitable stopover habitat may be present, Red Knot is not expected to regularly occur and any use of this habitat would be incidental.	T	No effect or Take	T	No impact	The project is not a wind energy project within the migratory route and does not contain suitable breeding and wintering habitat for the Red Knot.	N
Travis	Birds	Swallow-tailed Kite	*Elanoides forficatus*	This migratory species breeds in the South Central Plains of east Texas and throughout the southeastern U.S. In Texas, breeding habitat occurs between sea level and 230 meters in elevation in bottomland forests, cypress swamps, pine glades, and freshwater marshes skirting large lakes. It nests near the tops of trees that are higher than the surrounding stand, often near a clearing or the edge of a forest or woodland. It prefers to nest in pines, but occasionally uses species such as bald cypress (*Taxodium distichum*), water oak (*Quercus nigra*), or cottonwood (*Populus deltoides*).	N	The Project Area lacks bottomland forests, cypress swamps, or freshwater marshes, and is not within the breeding range of the species. The species would only be present in the Project Area as a seasonal migrant passing through. No individuals were observed in the field.	–	N/A	T	No impact	No suitable habitat is present within the Project Area.	N
Hays	Birds	Tropical Parula	*Setophaga pitiayumi*	The species is a summer resident of south Texas and northern Tamaulipas between mid-march and September, breeding from mid-April to mid-July. It is found in thick woods near edges of lagoons or resacas. Nesting habitat occurs in mixed deciduous riparian woodlands in closed or partially closed-canopy dominated by cedar elm, sugar hackberry, Texas ebony (*Ebenopsis ebano*), anaqua (*Ehretia anacua*), and Mexican ash (*Fraxinus berlandieri*). Nests are built on trees 2 to 13 meters from ground level on the pendant mass of epiphytic growth. Forests with abundant Spanish moss (*Tillandsia usneoides*), or other epiphytic species are required for breeding habitat.	N	The Project area lacks thick woods near edges of lagoons.	–	N/A	T	No impact	No suitable habitat is present within the Project Area.	N

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Hays, Travis	Birds	White-faced Ibis	*Plegadis chihi*	The species is found in the Western Gulf Coastal Plains ecoregion of Texas. Preferred habitat includes freshwater wetlands, marshes, ponds, rivers, irrigated land, and sloughs, but it occasionally forages in brackish or saltwater marshes. It nests in marshes in low trees, on the ground in bulrushes (Scirpus sp.) or reeds, or on floating mats.	N	No marshes, irrigated rice fields, sloughs, and coastal rookeries occur in the Project Area.	—	N/A	T	No impact	No suitable habitat is present within the Project Area.	N
Hays, Travis	Birds	Whooping Crane	*Grus americana*	The species breeds in Canada and winters on the Texas coast at Aransas National Wildlife Refuge. During migration it typically stops to rest and feed in open bottomlands of large rivers and marshes but, like other waterbirds, it may also utilize flooded croplands, playas, large wetlands associated with lakes, small ponds, and various other aquatic features. Typical migration habitat includes sites with good horizontal visibility, water depth of 30 centimeters or less, and minimum wetland size of 0.04 hectare for roosting.	N	No marshes, flooded grain fields, and ponds occur within the Project Area.	E	No effect	E	No impact	No suitable habitat is present within the Project Area.	N
Hays, Travis	Birds	Wood Stork	*Mycteria americana*	The species breeds in Mexico, and nesting sites have not been recorded in Texas since 1960. However, post-breeding migrants disperse into Texas in the summer. Foraging habitat includes freshwater prairie ponds, flooded pastures or fields, ditches, and other shallow standing water with an open canopy, occasionally including brackish wetlands. The species typically roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries).	N	No large tracts of trees in association with prairie ponds or flooded pastures occur within the Project Area.	—	N/A	T	No impact	No suitable habitat is present within the Project Area.	N
Hays, Travis	Birds	Zone-tailed Hawk	*Buteo albonotatus*	The species occurs in arid open country, especially open deciduous or pine-oak woodland, mesa and mountain country, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains. It nests in a variety of sites including small trees in lower desert, giant cottonwoods in riparian areas, and mature conifers in high mountain regions. Nests are typically constructed in large trees like cottonwoods (*Populus deltoides*), usually along streams near cliffs or steep hillsides.	N	No open arid country, deserts, pine woodlands, or mountains are present in the Project Area.	—	N/A	T	No impact	No suitable habitat is present within the Project Area.	N

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Hays	Crustaceans	Peck's Cave Amphipod	*Stygobromus pecki*	A subterranean obligate amphipod that inhabits inundated karst features associated with the Edwards Aquifer. It has only been collected at Comal and Hueco Springs in Comal County.	N	The proposed project occurs outside the known range of *Stygobromus pecki* , which is only known from Comal and Hueco Springs in Comal County. The range on the USFWS IPaC list was recently updated to include the entirety of the southern segment of the Edwards Aquifer for this species to account for major impacts to water quantity and/or quality that might impact habitat for this species. The proposed project does not occur in Comal County.	E	No effect or take	E	No impact	The proposed project is not anticipated to impact water quantity or quality within Comal or Hueco Springs as the project will comply with the TCEQ TPDES Construction General Permit, which requires temporary controls for stormwater during construction and permanent stabilization of all disturbed areas. Further the project is not anticipated to impact groundwater. For these reasons, the proposed project would have no effect on *Stygobromus pecki* .	N
Hays	Crustaceans	Texas Troglobitic Water Slater	*Lirceolus smithii*	Little is known about this aquifer dwelling isopod, and it has only been observed from groundwaters coming from an artesian well in San Marcos, Texas. It is a subaquatic and subterranean obligate.	N	The Project Area occurs outside of the artesian well in San Marcos, Texas. The Projcet Area also lacks karst features and caves.	—	N/A	T	No impact	No suitable habitat is present within the Project Area.	N
Hays	Fishes	Fountain Darter	*Etheostoma fonticola* (Occupied Range)	The species is endemic to the San Marcos and Comal rivers. Its historic range in the San Marcos River extended from Spring Lake downstream to just below its confluence with the Blanco River, and in the Comal River from the headwaters downstream to its confluence with the Guadalupe River. Currently the species can be found in the upper portions of the Comal River including Landa Lake and in the San Marcos River system from Spring Lake downstream to the outfall of the San Marcos City wastewater treatment plant. Habitat requirements include clear, clean, flowing, and thermally constant waters, adequate food supply, undisturbed sand and gravel substrates, rock outcrops, and areas of submergent vegetation (algae, moss, vascular plants) for cover. Juveniles are found in heavily vegetated areas with low flows, while adults can be found in all suitable habitats.	N	The Project Area occurs outside of the San Marcos and Comal rivers.	E	No effect	E	No impact	No suitable habitat is present within the Project Area.	N

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Hays	Fishes	Guadalupe Darter	*Percina apristis*	This species is endemic to the Guadalupe River Basin and can be found in medium size reivers including the San Marcos, Comal, and Guadalupe rivers. It is found in riffles around rocky gravel or boulders near brush and in the main current where the water is moderately turbid.	N	The Project Area occurs outside of the Guadalupe River Basin, and does not contain the San Marcos, Comal, or Guadalupe rivers.	—	N/A	T	No impact	No suitable habitat is present within the Project Area.	N
Hays	Fishes	Headwater Catfish	*Ictalurus lupus*	Currently found in the Pecos River and Rio Grande drainages, this species is thought to be extirpated from its range in central Texas. This fish preferes spring-fed rivers and creeks within sandy and rocky riffles, runs, and pools.	N	The Project Area occurs outside of the known range of the species in the Pecos River and Rio Grande drainages.	—	N/A	T	No impact	No suitable habitat is present within the Project Area.	N
Hays	Fishes	San Marcos Gambusia	*Gambusia georgei*	The species is restricted to the San Marcos River, occurs in shallow, quiet, mud-bottomed, shoreline areas with little to no vegetation.	N	The Project Area occurs outside of the San Marcos River where the species is restricted.	E	No effect	—	N/A	No suitable habitat is present within the Project Area.	N
Travis	Fishes	Smalleye Shiner	*Notropis buccula*	The species is likely extirpated from the lower and middle portions of the Brazos River, currently known only from the upper Brazos River above Possum Kingdom Reservoir. The species is common in river channels and side channels with water of moderate depth and current. It is typically found in broad channels with high turbidity and constant shifting sand substrate, or occasionally silt substrate. It is most frequently found using the center of the channel, avoiding the shallow depth and slow velocity of the stream edges.	N	The Project Area is not located in the Rio Grande basin or near the lower Pecos River, where the species is restricted.	E	No effect	E	No impact	No suitable habitat is present within the Project Area.	N

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Hays, Travis	Insects	Monarch Butterfly	*Danaus plexippus*	Found statewide. Adults 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. Although adults may be present year round, they are primarily encountered between March and November, and are most commonly observed in the summer and fall during breeding and migration. Caterpillars are found on various species of the family Asclepiadaceae (occasionally treated as a subfamily of Apocynaceae). Common host plants in Texas include milkweeds (Asclepias spp.) milkweed vines (Matelea spp.), climbing milkweed (Funastrum spp.), swallowworts (Cynanchum spp.) and Anglepod (Gonolobus suberosus). Caterpillars are most frequently observed between April and September."	Y	The project would not involve any ground disturbing or vegetation clearing activities, and would not pose a threat to any life cycle stage	C	No take	—	N/A	The monarch butterfly is a candidate species, and no consultation with USFWS is required at this time. TxDOT is a partner in the Nationwide Candidate Conservation Agreement with Assurances/Candidate Conservation Agreement for Monarch Butterfly on Energy and Transportation Lands (Agreement). The Agreement authorizes incidental take for all activities included in the proposed project should the monarch butterfly be listed as endangered or threatened. If the monarch butterfly is proposed for listing during the life of this project, the impacts	N
Hays	Insects	Comal Springs Dryopid Beetle	*Stygoparnus comalensis* (Occupied Range)	This subterranean species occurs in the uncontaminated aquatic habitat of several outlets of Comal Springs which forms the headwaters of the Comal River. It is unknown whether the center of the population resides further underground in the aquifer, or just below the surface.	N	The Project Area lacks karst features and caves, and occurs outside of Comal Springs.	E	No effect	E	No impact	No suitable habitat is present within the Project Area.	N
Hays	Insects	Comal Springs Riffle Beetle	*Heterelmis comalensis* (Occupied Range)	The species occurs in gravel substrates and shallow riffles in headwater spring runs in the Comal Springs system. It may be able to retreat back into spring openings or burrow down to wet areas below the surface of the streambed to find cover and shelter.	N	The Project Area occurs outside of the Comal Springs System.	E	No effect	E	No impact	No suitable habitat is present within the Project Area.	N
Travis	Insects	Kretschmarr Cave Mold Beetle	*Texamaurops reddelli*	This subterranean obligate species inhabits karstic features within the Edwards Limestone Formation. It is known from nine caves in the Jollyville Plateau karst fauna Region in Travis and Williamson Counties, including Kretschmarr, Amber, Tooth and Coffin Caves.	N	The Project Area lacks karst features and caves.	E	No effect	—	N/A	No suitable habitat is present within the Project Area.	N
Travis	Insects	Tooth Cave Ground Beetle	*Rhadine persephone*	This subterranean obligate species inhabits karstic features within the Edwards Limestone Formation. It is known from 61 caves in the Cedar Park and Jollyville Plateau karst fauna Regions in Travis County, including Tooth and Kretschmarr Caves.	N	The Project Area lacks karst features and caves.	E	No effect	—	N/A	No suitable habitat is present within the Project Area.	N

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Hays, Travis	Mollusks	False Spike	*Fusconaia (=Quadrula) mitchelli*	Freshwater mussel currently known from the Colorado and Brazos River basins. The species occurs in small to medium-sized streams and rivers with various substrates including mud and mixtures of sand, gravel, and cobble. It is often found in riffle and pool habitats, and host species include the red (*Cyprinella lutrensis*) and blacktail shiner (*C. venusta*).	N	With exception to Onion Creek, the streams in the Project Area are highly degraded urban streams with a heavily scoured bedrock bottom that would not provide suitable habitat. A mussel survey performed by the City of Austin was performed in Onion Creek in the summer of 2018, no mussel species were identified within the Project Area.	—	N/A	T	No impact	No suitable habitat is present within the Project Area.	N
Hays	Mollusks	Guadalupe Fatmucket	*Lampsilis bergmanni*	This species of freshwater mussel was recently discovered to be an independent species. It is only known to occur in the upstream portion of the Guadalupe River Basin.	N	The Project Area occurs outside of the Guadalupe River basin.	—	N/A	T	No impact	No suitable habitat is present within the Project Area.	N
Hays	Mollusks	Guadalupe Orb	*Cyclonaias necki*	This distribution of this species is limited to the Guadalupe River basin. It occurs in both mainstem and tributary habitats. It is often found in substrates composed of sand, gravel, and cobble, including mud-silt or gravel-filled cracks in bedrock slabs. Flowing water is important and it is considered intolerant of reservoirs, but is known to occur in them. The host fish for this species is unknown.	N	The Project Area occurs outside of the Guadalupe River basin.	—	N/A	T	No impact	No suitable habitat is present within the Project Area.	N
Hays, Travis	Mollusks	Texas Fatmucket	*Lampsilis bracteata*	A freshwater mussel endemic to streams and small rivers of the Texas Hill Country, the species occurs in moderately flowing waters generally less than 1 meter in depth. It can occur in sand or gravel substrates, but typically occurs in soft silt deposits in bank or pool habitats or cracks in bedrock. It inhabits microhabitats among large cobble, boulders, bedrock ledges, horizontal cracks in bedrock slabs, and macrophyte beds. It has been reported inhabiting roots of cypress trees and other vegetation along steep banks. It is intolerant to impoundment and absent from backwater, mid-channel, and riffle habitats.	Y	Suitable habitat occurs in the Project Area at Onion Creek. A mussle survey was conducted in the Summer of 2021, one Texas fatmucket female was found during the investigation upstream of the project area in a riffle-type habitat of large cobble substrate. TxDOT will conference with the USFWS to address potential impacts to this species.	C	May affect	T	May impact	Suitable habitat is present wihtin the Project Area.	Y

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Travis	Mollusks	Texas Fawnsfoot	*Truncilla macrodon*	A freshwater mussel that is currently limited to the Brazos, Colorado, and Trinity River basins in Texas. The species occupies large streams to medium rivers and is intolerant of impoundment. Little is known about the species due to lack of representative specimens, however it is thought that the species prefers protected areas near shore in water with a moderate current over mud, sandy mud, and gravel substrates. It is also found in perennial irrigation canals for rice.	N	With exception to Onion Creek, the streams in the Project Area are highly degraded urban streams with a heavily scoured bedrock bottom that would not provide suitable habitat. A mussel survey performed by the City of Austin was performed in Onion Creek in the summer of 2018, no mussel species were identified within the Project Area.	C	No effect	T	No impact	No suitable habitat is present within the Project Area.	N
Hays, Travis	Mollusks	Texas Pimpleback	*Cyclonaias (Quadrula) petrina*	A freshwater mussel endemic to the middle and lower portions of the Colorado River basin in Texas. The species inhabits medium to large rivers with shallow water and slow to moderate currents. It occurs in gravel-filled cracks in bedrock and microhabitats and on mud, sand, gravel, and cobble substrates. It is intolerant to extremely soft substrates, shifting sands, scoured bottoms, and impoundments.	N	With exception to Onion Creek, the streams in the Project Area are highly degraded urban streams with a heavily scoured bedrock bottom that would not provide suitable habitat. A mussel survey performed by the City of Austin was performed in Onion Creek in the summer of 2018, no mussel species were identified within the Project Area.	C	No effect	T	No impact	No suitable habitat is present within the Project Area.	N
Hays, Travis	Plants	Bracted Twistflower	*Streptanthus bracteatus*	The species is found in south-central Texas. It is an annual; endemic to the Edwards Plateau where it is occurs on shallow, well-drained gravelly clays and clay loams over limestone, within oak-juniper woodland and associated openings, on steep to moderate slopes, and in canyon bottoms. Often found amid dense shrub growth where there is some protection from browsing.	N	No oak-juniper woodlands, steep to moderate slopes, ro canyon bottoms occur within the Project Area. No individuals were observed during site visits on July 25-26, 2019, which is outside the species' flowering period.	C	No effect	—	N/A	No suitable habitat is present within the Project Area.	N

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Hays	Plants	Texas Wild-rice	*Zizania texana* (Occupied Range)	This perennial aquatic species is endemic to the upper San Marcos River in Hays County. It is a submergent grass found in clear, cool, swift spring-water mostly less than 1 m (3.2 feet) deep, with coarse sandy sediments.	N	The Project Area lacks submergent grass in clear, cool, swift spring-water with coarse sandy sediments, and occurs outside of the San Marcos River.	E	No effect	E	No impact	No suitable habitat is present within the Project Area.	N
Hays	Reptiles	Cagle's Map Turtle	*Graptemys caglei*	The species occurs throughout the Guadalupe River system but is primarily associated with stretches of river with shallow water with swift to moderate flow connected by riffles and deeper pools with slower flow rates.	N	The Project Area occurs outside of the Guadalupe River system and lacks river stretches with shallow water with swift to moderate flow.	—	N/A	T	No impact	No suitable habitat is present within the Project Area.	N
Hays, Travis	Reptiles	Texas Horned Lizard	*Phrynosoma cornutum*	The species is found in semi-arid open areas with scattered vegetation comprised of bunchgrass, cacti, yucca, mesquite, acacia, juniper, or other woody shrubs and small trees commonly found in loose sandy or loamy soils.	N	The Project Area lacks arid/semiarid habitats with scattered vegetation, and sandy soils.	—	N/A	T	No impact	No suitable habitat is present within the Project Area.	N

SPECIES ANALYSIS SUMMARY (SGCN)
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County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Hays	Amphibians	Blanco River Springs salamander	*Eurycea pterophila*	Aquatic; springs, streams and caves with rocky or cobble beds.	N	The portion of the Project Area that extends into Hays County does not have any streams that would accommodate the species.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Amphibians	Strecker's chorus frog	*Pseudacris streckeri*	Terrestrial and aquatic: A wide variety of terrestrial habitats are used by this species, including forests, grasslands, and barrier island sand dunes. Aquatic habitats are equally varied.	N	The Project Area contains a few small areas of forests and grasslands. However, potential habitat observed within the Project Area is considered marginal due to size, condition, and proximity to urbanized ROW.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Amphibians	Woodhouse's toad	*Anaxyrus woodhousii*	Terrestrial and aquatic: Wooded floodplains and flats, prairies, cultivated fields and marshes. Likes sandy substrates.	N	The Project Area contains urbanized TxDOT ROW, and the species does not do well in association with traffic.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis	Arachnids	Bandit Cave spider	*Cicurina bandida*	Very small, subterrestrial, subterranean obligate.	N	The Project Area lacks karst features and caves.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Birds	Bald Eagle	*Haliaeetus leucocephalus*	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.	N	No suitable habitat is present within the Project Area. Bald Eagles overwinter in and occasionally nest in central Texas, though no evidence of Bald Eagle nesting was observed in the vicinity of the project.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Birds	Black-capped Vireo	*Vireo atricapilla*	Oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous and broad-leaved shrubs and trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer.	N	The Project Area lacks oak-juniper woodlands with distinctive patchy, two-layered aspect.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Birds	Franklin's Gull	*Leucophaeus pipixcan*	This species is only a spring and fall migrant throughout Texas. It does not breed in or near Texas. Winter records are unusual consisting of one or a few individuals at a given site (especially along the Gulf coastline). During migration, these gulls fly during daylight hours but often come down to wetlands, lake shore, or islands to roost for the night.	N	The Project Area lacks islands and lake shores. The wetland in the Project Area is of marginal size, quality, and is in proximity of urbanized ROW.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Birds	Mountain Plover	*Charadrius montanus*	Breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous.	N	The Project Area lacks high plains, shortgrass prairie, or plowed fields.	No impact	No suitable habitat is present and no individuals were observed in the field.	N

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Travis, Hays	Birds	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.	N	The Project Area lacks open grasslands and prairies.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Crustaceans	Balcones Cave amphipod	*Stygobromus balconis*	Subaquatic, subterranean obligate amphipod.	N	The Project Area lacks karst features and caves.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Crustaceans	Ezell's Cave amphipod	*Stygobromus flagellatus*	Known only from artesian wells.	N	The Project Area lacks karst features and caves.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Hays	Crustaceans	No accepted common name	*Palaemonetes texanus*	Collected in Comal and Hays counties (Middle Guadalupe and San Marcos watersheds).	N	The Project Area is outside of the San Marcos watershed. The portion of the Project Area that extends into Hays County does not have any streams.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Hays	Crustaceans	Purgatory Cave shrimp	*Calathaemon holthuisi*	Last known collection was in San Marcos, Hays Co. (Ezell's Cave) (Reddell 1994).	N	The Project Area lacks karst features and caves. Additionally, San Marcos is located outside of the Project Area.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Fish	American eel	*Anguilla rostrata*	Originally found in all river systems from the Red River to the Rio Grande. Aquatic habitats include large rivers, streams, tributaries, coastal watersheds, estuaries, bays, and oceans. Spawns in Sargasso Sea, larva move to coastal waters, metamorphose, and begin upstream movements. Females tend to move further upstream than males (who are often found in brackish estuaries). American Eel are habitat generalists and may be found in a broad range of habitat conditions including slow- and fast-flowing waters over many substrate types. Extirpation in upstream drainages attributed to reservoirs that impede upstream migration.	N	The Project Area lacks streams with continuous flow in association with muddy substrates.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Fish	Gaudalupe bass	*Micropterus treculii*	Endemic to the streams of the northern and eastern Edwards Plateau including portions of the Brazos, Colorado, Guadalupe, and San Antonio basins; species also found outside of the Edwards Plateau streams in decreased abundance, primarily in the lower Colorado River; two introduced populations have been established in the Nueces River system. A pure population was re-established in a portion of the Blanco River in 2014. Species prefers lentic environments but commonly taken in flowing water; numerous smaller fish occur in rapids, many times near eddies; large individuals found mainly in riffle tail races; usually found in spring-fed streams having clear water and relatively consistent temperatures.	Y	The Project Area contains suitable habitat at Onion Creek, where the species is known to occur, and work activity for the project is planned.	May impact	Suitable habitat is present in the Project Area.	N

SPECIES ANALYSIS SUMMARY (SGCN)
Project Name: Capital Express South
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County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Hays	Fish	Ironcolor shiner	Notropis chalybaeus	Found only in northeastern streams from the Sabine to the Red River with the exception of an isolated population found in the San Marcos River headwaters. Found primarily in acidic, tannin-stained, non-turbid, sluggish Coastal Plain streams and rivers of low to moderate gradient. Occurs in aggregation, often at the upstream ends of pools, with a moderate to sluggish current and sand, mud, silt or detritus substrates. Usually associated with aquatic vegetation.	N	The Project Area is outside of the San Marcos watershed. The portion of the Project Area that extends into Hays County does not have any streams.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis	Fish	Silverband shiner	*Notropis shumardi*	In Texas, this species is found from the Red River to Lavaca River. It occupies the main channel with moderate to swift current velocities and moderate to deep depths. It is associated with turbid water over silt, sand, and gravel.	N	The Project Area does not intersect main channels with moderate to swift current velocities, and moderate to deep depths.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Fish	Texas shiner	*Notropis amabilis*	In Texas, this species is found primarily in the Edwards Plateau streams from the San Gabriel River in the east to the Pecos River in the west. Typical habitat of this species includes rocky or sandy runs, as well as pools. This species inhabits Colorado River drainages.	Y	The Project Area contains a few small areas of suitable habitat, but potential habitat is considered marginal due to size and stream conditions. Onion Creek is an intermittent tributary of the Colorado River, where the species is known to occur. Minimal impacts to the stream will occur due to bridges being spanned.	May impact	Marginal suitable habitat is present in The Project Area.	N
Travis, Hays	Insects	A caddisfly	*Neotrichia juani*	This species is primarily recorded from locations in Edwards Plateau, few records reported from Central Texas and West Gulf Coastal Plain physiographic sections. It can be found in perennial and ephemeral rivers, and spring fed streams (Harris and Tiemann 1993, Perry 2018).	N	The Project Area is outside of the Edwards Plateau region where the species is primarily recorded.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Hays	Insects	A mayfly	*Procloeon distinctum*	Mayflies distinguished by aquatic larval stage; adult stage generally found in shoreline vegetation.	N	The portion of the Project Area that extends into Hays County does not have any streams.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Hays	Insects	Comal Springs diving beetle	*Comaldessus stygius*	Known only from the outflows at Comal Springs; aquatic; diving beetles generally inhabit the water column.	N	The Project Area occurs outside of Comal Springs. The portion of the Project Area that extends into Hays County does not have any streams.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Hays	Insects	Edwards Aquifer diving beetle	*Haideoporus texanus*	Habitat poorly known; known from an artesian well in Hays County.	N	The portion of the Project Area that extends into Hays County does not have any artesian wells.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Hays	Insects	No accepted common name	*Plauditus texanus*	Larvae are associated with small to medium limestone cobble and macrophytes in shallow riffles of clear, cool, alkaline streams (P. McCafferty, personal communication, December 2003).	N	The portion of the Project Area that extends into Hays County lacks streams.	No impact	No suitable habitat is present and no individuals were observed in the field.	N

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Hays	Insects	San Marcos saddle-case caddisfly	*Protoptila arca*	Known from an artesian well in Hays County; locally very abundant; swift, well-oxygenated warm water about 1-2 m deep; larvae and pupal cases abundant on rocks.	N	The portion of the Project Area that extends into Hays County lacks artesian wells or streams with well-oxygenated water.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Hays	Insects	Texas austrotinodes caddisfly	*Austrotinodes texensis*	Known from an artesian well in Hays County; locally very abundant; swift, well-oxygenated warm water about 1-2 m deep; larvae and pupal cases abundant on rocks.	N	The portion of the Project Area that extends into Hays County lacks artesian wells or streams with well-oxygenated water.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Mammals	American badger	*Taxidea taxus*	This species is generally associated with parklands, prairies, treeless regions, deserts. It shows a preference for honey mesquite, savanna-acacia shrublands. The burrowing sites of this species are dominated by honey mesquite-bufflegrass (Collins et al. 2012).	N	The Project Area lacks parklands, prairies, and deserts. Honey mesquite-bufflegrass does not occur in the Project Area.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis	Mammals	Aransas short-tailed shrew	*Blarina hylophaga plumbea*	This species excavates burrows in sandy soils underlying mottes of live oak trees or in areas with little to no ground cover.	N	No suitable habitat is present within the Project Area, due to the lack of sandy soils and scarcity of oak trees observed.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Mammals	Big brown bat	*Eptesicus fuscus*	Any wooded areas or woodlands except south Texas. Riparian areas in west Texas.	N	The Project Area lacks woodlands that would support the species and there is no documented occurrence of the species in Austin.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Mammals	Big free-tailed bat	*Nyctinomops macrotis*	Habitat data sparse but records indicate that species prefers to roost in crevices and cracks in high canyon walls, but will use buildings, as well; reproduction data sparse, gives birth to single offspring late June-early July; females gather in nursery colonies; winter habits undetermined, but may hibernate in the Trans-Pecos; opportunistic insectivore.	N	The Project Area lacks high canyon walls and there is no documented occurrence of the species in Austin.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Mammals	Cave myotis	*Myotis velifer*	This species is colonial and cave-dwelling. It also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (*Hirundo pyrrhonota*) nests. Some populations are migratory. They occupy the High Plains, Rolling Plans, Trans-Pecos, Edwards Plateau, and South Texas Plains during the summer. During the winter, the species is found in the central and north central portions of the state.	Y	The Project Area contains marginal habitat consisting of crevices under highway overpasses above Williamson Creek, Slaughter Creek, and Onion Creek. Bat droppings, bat calls, and Cliff Swallow (*Hirundo pyrrhonota*) nests were observed under bridgeways during field observations. Field reconnaissance occurred during the summer on July 25-26, 2019, which is within the migratory timing of the species.	May impact	Marginal suitable habitat is present in The Project Area.	N

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Travis, Hays	Mammals	Eastern spotted skunk	*Spilogale putorius*	Generalist; open fields, prairies, croplands, fence rows, farmyards, forest edges & woodlands. Prefer wooded, brushy areas & tallgrass prairies. S.p. *interrupta* found in wooded areas and tallgrass prairies, preferring rocky canyons and outcrops when such sites are available.	N	The Project Area lacks open fields, prairies, croplands, fence rows, and woodlands.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Mammals	Long-tailed weasel	*Mustela frenata*	This species' habitat includes brushlands, fence rows, upland woods and bottomland hardwoods, forest edges and rocky desert scrub. They usually live close to water.	N	The Project Area lacks brushlands, fence rows, upland woods and bottomland hardwoods, and rocky desert scrub.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Mammals	Mexican free-tailed bat	*Tadarida brasiliensis*	This species roosts in buildings in east Texas. The largest maternity roosts occur in limestone caves on the Edwards Plateau. It can be found in all habitats, forest to desert. This species can be found statewide in the summer (The Mammals of Texas 1997).	Y	The Project Area contains marginal habitat consisting of crevices under highway underpasses. Bat droppings and bat calls were observed under highway overpasses above Williamson, Slaughter, and Onion Creek. Field reconnaissance occurred on July 25-26, 2019, which is within the migratory timing of the species in Texas.	May impact	Marginal suitable habitat is present in The Project Area.	N
Travis, Hays	Mammals	Mexican long-tongued bat	*Choeronycteris mexicana*	Only Texas record is from riparian forest; in general--neotropical nectivorous species roosting in caves, mines, and large crevices found in deep canyons along the Rio Grande; also found in buildings and often associated with big-eared bats (Plecotus spp.); single TX record from Santa Ana NWR.	N	The Project Area lacks riparian forests and caves.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Mammals	Mink	*Neovison vison*	Intimately associated with water; coastal swamps & marshes, wooded riparian zones, edges of lakes. Prefer floodplains.	N	The Project Area lacks coastal swamps, marshes, and edges of lakes.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Mammals	Mountain lion	*Puma concolor*	Generalist; found in a wide range of habitats statewide. Found most frequently in rugged mountains & riparian zones.	N	The Project Area does not contain mountains to support this species. Additionally, the Project Area is in close proximity to urbanized ROW.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis	Mammals	Southern short-tailed shrew	*Blarina carolinensis*	This species lives in diverse terrestrial habitats like natural and managed pine forests (all seral stages) that cover most of the range. They are less common in newly regenerated pine than older pine. They use a variety of disturbed sites (e.g. strip-mined areas, abandoned agricultural fields, roadsides). They inhabit brushy areas, cane bottoms, bottomland and upland hardwood forests, mixed pine-hardwood forests, and hardwood swamp habitats (McCay 2001).	N	The Project Area lacks pine forests, brushy areas, cane bottoms, or hardwood forests.	No impact	No suitable habitat is present and no individuals were observed in the field.	N

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Travis, Hays	Mammals	Swamp rabbit	*Sylvilagus aquaticus*	This species inhabits wet forested environments like bottomland hardwood forests. They occur in areas of frequent flooding (Zollner 2000).	N	The Project Area lacks wet forested environments.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Mammals	Tricolored bat	*Perimyotis subflavus*	Forest, woodland and riparian areas are important. Caves are very important to this species.	N	The Project Area lacks forests, woodlands, and caves.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Mammals	Western hog-nosed skunk	*Conepatus leuconotus*	This species inhabits woodlands, grasslands and deserts, up to 7200 feet in elevation. It is most common in rugged, rocky canyon country. Little is known about the habitat of the ssp. telmalestes.	N	The Project Area contains small areas of suitable habitat consisting of wooded areas. However, potential habitat is considered marginal due to size, condition, and proximity to urbanized ROW. The Project Area is also not located in rocky canyon country. In addition, the species is highly mobile, and is not likely to be impacted by activities occurring in the Project Area.	No impact	Suitable habitat is present in the Project Area.	N
Hays	Mammals	Western spotted skunk	*Spilogale gracilis*	Brushy canyons, rocky outcrops (rimrock) on hillsides and walls of canyons. In semi-arid brushlands in U.S., in wet tropical forests in Mexico. When inactive or bearing young, occupies den in rocks, burrow, hollow log, brush pile, or under building.	N	The portion of the Project Area that extends into Hays County lacks brushy canyons and rocky outcrops.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Mammals	Woodland vole	*Microtus pinetorum*	Include grassy marshes, swamp edges, old-field/pine woodland ecotones, tallgrass fields; generally sandy soils.	N	The Project Area lacks grassy marshes, swamp edges, and old-field/pine woodland ecotones. No sandy soils occur in the Project Area.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis	Plants	Arrowleaf milkvine	*Matelea sagittifolia*	This species is most consistently encountered in thornscrub in South Texas. The species is perennial. It flowers March to July and fruits April to July and December.	N	The Project Area lacks thornscrub. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred during the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N

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Travis	Plants	Basin bellflower	*Campanula reverchonii*	This species can be found amongst scattered vegetation on loose gravel, gravelly sand, and rock outcrops on open slopes with exposures of igneous and metamorphic rocks. It may also occur on sandbars and other alluvial deposits along major rivers; flowering May to July.	N	The Project Area lacks gravel, gravelly sand, and rock outcrops on open slopes with igneous and metamorphic rocks. There are also no major rivers in the Project Area. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred during the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Hays	Plants	bigflower cornsalad	*Valerianella stenocarpa*	Usually along creek beds or in vernally moist grassy open areas (Carr 2015).	N	The portion of the Project Area that extends into Hays County lacks creek beds and vernally moist areas.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Plants	Buckley tridens	*Tridens buckleyanus*	This species occurs in juniper-oak woodlands on rocky limestone slopes. It is perennial, and flowers and fruits April to November.	N	Although the Project Area had limestone slopes, they were not associated with oak trees and did not contain juniper. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred during the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis	Plants	Canyon bean	*Phaseolus texensis*	This species is narrowly endemic to rocky canyons in eastern and southern Edwards Plateau occurring on limestone soils in mixed woodlands, on limestone cliffs and outcrops, and frequently along creeks. It flowers and fruits September through November (Delgado-Salinas and Carr 2007).	N	The Project Area lacks rocky canyons and limestone clips and outcrops. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred outside of the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Plants	Canyon mock-orange	*Philadelphus texensis var. ernestii*	This species is usually found growing from honeycomb pits on outcrops of Cretaceous limestone exposed as rimrock along mesic canyons. It usually is found in the shade of mixed evergreen-deciduous canyon woodland. It flowers April to June, and the fruit dehisces September to October.	N	The Project Area lacks outcrops of Cretaceous limestone exposed as rimrock along mesic canyons or canyon woodlands. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred outside of the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N

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Travis	Plants	Canyon sedge	*Carex edwardsiana*	Most of this species inhabits sheltered, dry-mesic canyons/ravines where they grow in clayey soils on rocky banks and slopes. This species occurs just above or dry stream beds in light shade (Naczi and Bryson 1990). It blooms in the spring (March to May) (Lady Bird Johnson Wildflower Center 2019).	N	The Project Area lacks dry mesic canyons and ravines. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred outside of the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis	Plants	Correll's false dragon-head	*Physostegia correllii*	This species occurs on wet, silty clay loams on streamsides, in creek beds, irrigation channels and roadside drainage ditches. It also occurs on seepy, mucky, sometimes gravelly soils along riverbanks or small islands in the Rio Grande. It usually occurs on soils underlain by Austin Chalk limestone along gently flowing spring-fed creek in central Texas. It flowers May to September.	Y	The Project Area contains wet, silty clay loams on streamsides, and roadside drainage ditches. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred during the flowering period.	May impact	Marginal suitable habitat is present in The Project Area.	N
Travis, Hays	Plants	Engelmann's bladderpod	*Physaria engelmannii*	This species occupies grasslands and calcareous rock outcrops in a band along the eastern edge of the Edwards Plateau, ranging as far north as the Red River. It blooms March through June (Lady Bird Johnson Wildflower Center 2019b).	N	The Project Area lacks calcareous rock outcrops. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred outside the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis	Plants	Glandular gay-feather	*Liatris glandulosa*	This species occurs in herbaceous vegetation on limestone outcrops (TPWD 2020). It flowers mostly mid-July through early September (Nesom and O'Kennon 2001).	N	The Project Area lacks limestone outcrops. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred during the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Plants	Glass mountains coral-root	*Hexalectris nitida*	This species is apparently rare in mixed woodlands in canyons in the mountains of the Brewster County. However, it is encountered with regularity, albeit in small numbers, under Juniperus ashei in woodlands over limestone on the Edwards Plateau, Callahan Divide and Lampasas Cutplain. It is perennial, flowers June to September, and fruits July to September.	N	The Project Area lacks oak-juniper woodlands and canyons. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred during the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N

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Travis, Hays	Plants	Gravelbar brickelbush	*Brickellia dentata*	This species is essentially restricted to frequently-scoured gravelly alluvial beds in creek and river bottoms. It is perennial, flowers June to November, and fruits June to October.	N	All the streams apart from Onion Creek do not have frequent high flows capable of scour. However, Onion Creek has a bedrock substrate, and not a gravel bed. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred during the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis	Plants	Greenman's bluet	*Houstonia parviflora*	This species occupies grass pastures. It blooms February to April (Correll and Johnston 1970).	Y	The Project Area contains marginal areas of grass pastures. No individuals were observed during the site visits on July 25-26, 2019. The site visit occurred outside of the flowering period.	May impact	Marginal suitable habitat is present in The Project Area.	N
Hays	Plants	Hall's prairie clover	*Dalea hallii*	In grasslands on eroded limestone or chalk and in oak scrub on rocky hillsides; Perennial; Flowering May-Sept; Fruiting June-Sept.	N	The portion of the Project Area that extends into Hays County lacks eroded limestone or chalk in oak scrub on rocky hillsides. No individuals were observed during the site visits on July 25-26, 2019. The site visit occurred during the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Plants	Heller's marbleseed	*Onosmodium helleri*	This species occurs in loamy calcareous soils in oak-juniper woodlands on rocky limestone slopes, often in more mesic portions of canyons. It is perennial, and flowers March to May.	N	The Project Area lacks oak-juniper woodlands, rocky limestone slopes and canyons although loamy soils are present. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred outside the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N

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Hays	Plants	Hill Country wild-mercury	*Argythamnia aphoroides*	Mostly in bluestem-grama grasslands associated with plateau live oak woodlands on shallow to moderately deep clays and clay loams over limestone on rolling uplands, also in partial shade of oak-juniper woodlands in gravelly soils on rocky limestone slopes; Perennial; Flowering April-May with fruit persisting until midsummer.	N	The portion of the Project Area that extends into Hays County lacks blue-stem grama grasslands associated with plateau live oak woodlands. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred outside the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis	Plants	Low spurge	*Euphorbia peplidion*	This species occurs in a variety of vernally-moist situations in several natural regions. It is annual, flowers February to April, and fruits March to April.	N	The Project Area lacks sandy soils. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred outside the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Plants	Narrowleaf brickelbush	*Brickellia eupatorioides var. gracillima*	This species occurs on moist to dry gravelly alluvial soils along riverbanks but also on limestone slopes. It is perennial, and flowers/fruits from April to November.	Y	The Project Area contains marginal areas of dry gravelly alluvial soils. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred during the flowering period.	May impact	Marginal suitable habitat is present in The Project Area.	N
Travis, Hays	Plants	Net-leaf bundleflower	*Desmanthus reticulatus*	This species occurs mostly on clay prairies of the coastal plain of central and south Texas. It is perennial, flowers April to July, and fruits April to October.	Y	The existing and proposed ROW contains marginal areas of prairies with clay soil. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred during the flowering period.	May impact	Marginal suitable habitat is present in The Project Area.	N
Hays	Plants	Osage Plains false foxglove	*Agalinis densiflora*	Most records are from grasslands on shallow, gravelly, well drained, calcareous soils; Prairies, dry limestone soils; Annual; Flowering Aug-Oct.	N	The portion of the Project Area that extends into Hays County lacks grasslands on shallow, gravelly, well drained, calcareous soils. No individuals were observed during site visits on July 25-26, 2019. The site visit occurred outside of the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N

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Travis, Hays	Plants	Plateau loosestrife	*Lythrum ovalifolium*	This species occupies banks and gravelly beds of perennial (or strong intermittent) streams on the Edwards Plateau, Llano Uplift and Lampasas Cutplain. It is perennial, and flowers/fruits April to November.	N	The Project Area lacks gravelly beds on perennial streams. The site visit on July 25-26 occurred during the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Plants	Plateau milkvine	*Matelea edwardsensis*	This species occurs in various types of juniper-oak and oak-juniper woodlands. It is perennial, flowers March to October; and fruits May to June.	N	The Project Area lacks oak-juniper/juniper-oak woodlands. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred during the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis	Plants	Rock grape	*Vitis rupestris*	This species occurs on rocky limestone slopes and in streambeds. It is perennial, it flowers March to May and fruits May to July.	N	The Project Area lacks rocky limestone slopes and no individuals of this species were observed in streambeds on July 25-26, 2019. The site visit occurred outside the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Plants	Scarlet leather-flower	*Clematis texensis*	This species is usually in oak-juniper woodlands in mesic rocky limestone canyons or along perennial streams. It is perennial, it flowers March to July, and fruits May to July.	N	The Project Area lacks oak-juniper woodlands and canyons on July 25-26, 2019. The site visit occurred during the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Plants	Spreading leastdaisy	*Chaetopappa effusa*	This species occupies limestone cliffs, ledges, bluffs, steep hillsides, sometimes in seepy areas, oak-juniper, oak, or mixed deciduous woods, up to 300-500 m elevation. It is perennial and flowers in May, and July to October.	N	The Project Area lacks oak-juniper woodlands and canyons on July 25-26, 2019. The site visit occurred during the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis	Plants	Stanfield's beebalm	*Monarda stanfieldii*	This species is largely confined to granite sands along the middle course of the Colorado River and its tributaries. It is perennial (TPWD 2020).	N	The Project Area does not contain granite sands. No individuals of this species were observed during site visits on July 25-26, 2019.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Plants	Sycamore-leaf snowbell	*Styrax platanifolius ssp. platanifolius*	This species is rare throughout range, usually in oak-juniper woodlands on steep rocky banks and ledges along intermittent or perennial streams and is rarely far from some reliable source of moisture. It is perennial, flowers April to May, and fruits May to August.	N	The Project Area lacks oak-juniper woodlands, and the presence of oak is scarce on July 25-26, 2019. The site visit occurred during the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Travis	Plants	Texabama croton	*Croton alabamensis var. texensis*	This species occurs in duff-covered loamy clay soils on rocky slopes in forested, mesic limestone canyons. It is locally abundant on deeper soils on small terraces in canyon bottoms, often forming large colonies and dominating the shrub layer; scattered individuals are occasionally on sunny margins of such forests. It is also found in contrasting habitat of deep, friable soils of limestone uplands, mostly in the shade of evergreen woodland mottes. It flowers late February to March, and the fruit matures and dehisces by early June.	N	The Project Area does loamy clay soils on rocky slopes in mesic limestone canyons. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred outside of the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis	Plants	Texas almond	*Prunus minutiflora*	This species is wide-ranging but scarce, in a variety of grassland and shrubland situations. It occurs mostly on calcareous soils underlain by limestone but occasionally in sandier neutral soils underlain by granite. It is perennial, flowers February to May and October. This species fruits February to September.	N	The Project Area lacks grassland and shrubland situations on calcareous soils. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred outside of the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Plants	Texas amorpha	*Amorpha roemeriana*	This species occurs on juniper-oak woodlands or shrublands on rocky limestone slopes. Sometimes this species occurs on dry shelves above creeks. It is perennial, flowers May to June, and fruits June to October.	N	The Project Area lacks rocky slopes, mesic limestone canyons, and canyon bottoms although loamy clay soils are present on July 25-26, 2019. The site visit occurred outside the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Plants	Texas barberry	*Berberis swaseyi*	This species occupies shallow calcareous stony clay of upland grasslands/shrublands over limestone as well as in loamier soils in openly wooded canyons and on creek terraces. It is perennial, and it flowers/fruits March to June.	N	The Project Area lacks grasslands and shrublands. Construction will occur in the existing ROW. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred outside the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Hays	Plants	Texas claret-cup cactus	*Echinocereus coccineus var. paucispinus*	Mountains, hills, and mesas, igneous and limestone, oak-juniper-pinyon woodland or juniper woodland on limestone mesas, mostly rocky habitats but also in alluvial basins, grasslands, or among mesquite or other shrubs. Flowering March - April (Powell and Weedin 2004).	N	The Project Area lacks mountains, hills, mesas, and juniper woodlands. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred outside the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N

SPECIES ANALYSIS SUMMARY (SGCN)
Project Name: Capital Express South
CSJ(s): 0015-13-077, 0016-01-113

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Travis, Hays	Plants	Texas fescue	*Festuca versuta*	This species occurs in mesic woodlands on limestone-derived soils on stream terraces and canyon slopes. It is perennial, and flowers/fruits from April to June (TPWD 2020).	N	No suitable habitat occurs in the Project Area. The Project Area lacks juniper-oak woodlands on July 25-26, 2019. The site visit occurred outside the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis	Plants	Texas milk vetch	*Astragalus reflexus*	This species inhabits grasslands, prairies, and roadsides on calcareous and clay substrates. It is annual, it flowers February to June, and fruits April to June.	Y	The existing and proposed ROW contains calcareous and clay substrates, grasslands, and roadsides. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred outside the flowering period.	May impact	Marginal suitable habitat is present in The Project Area.	N
Travis, Hays	Plants	Texas seymeria	*Seymeria texana*	Found primarily in grassy openings in juniper-oak woodlands on dry rocky slopes but sometimes on rock outcrops in shaded canyons; Annual; Flowering May-Nov; Fruiting July-Nov.	N	The Project Area lacks grassy openings in juniper-oak woodlands on dry rocky slopes. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred during the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Hays	Plants	threeflower penstemon	*Penstemon triflorus ssp. triflorus*	Occurs sparingly on rock outcrops and in grasslands associated with juniper-oak woodlands (Carr 2015).	N	The Project Area lacks rock outcrops and juniper-oak woodlands. No individuals of this species were observed during site visits on July 25-26, 2019.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Plants	Tree dodder	*Cuscuta exaltata*	This species is parasitic on various *Quercus* , *Juglans* , *Rhus* , *Vitis* , *Ulmus* , and *Diospyros* species as well as *Acacia berlandieri* and other woody plants. It is annual, flowers May through October, and fruits July through October.	Y	The species may occur on various host tree species in The Project Area. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred during the flowering period.	May impact	Marginal suitable habitat is present in The Project Area.	N

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Travis, Hays	Plants	Turnip-root scurfea	*Pediomelum cyphocalyx*	This species occupies grasslands and openings in juniper-oak woodlands on limestone substrates on the Edwards Plateau and in north-central Texas (Carr 2015). It flowers in the spring (Eason 2018).	N	No suitable habitat occurs in the Project Area. The Project Area lacks juniper-oak woodlands. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred during the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Plants	Warnock's coral-root	*Hexalectris warnockii*	This species occupies leaf litter and humus in oak-juniper woodlands on shaded slopes and intermittent, rocky creek beds in canyons. It is located in the Trans Pecos in oak-pinyon-juniper woodlands in higher mesic canyons (to 2000 m [6550 ft]), primarily on igneous substrates. It is also located in Terrell County under Quercus fusiformis mottes on terraces of spring-fed perennial streams, draining an otherwise rather xeric limestone landscape. It is found on the Callahan Divide (Taylor County), the White Rock Escarpment (Dallas County), and the Edwards Plateau in oak-juniper woodlands on limestone slopes. It is also found in Gillespie County on igneous substrates of the Llano Uplift. It flowers June to September, and individual plants do not usually bloom in successive years.	N	The species may occur on various host tree species in the Project Area. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred during the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis	Plants	Wright's milkvetch	*Astragalus wrightii*	This species is locally common in gravelly clay in beds of seldom-used narrow road through live oak-juniper woodland on Edwards Limestone. It is an annual species (Carr 2010).	N	The Project Area lacks juniper-oak woodlands on limestone substrates. No individuals of this species were observed during site visits on July 25-26, 2019. The site visit occurred outside the flowering period.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Reptiles	Eastern box turtle	*Terrapene carolina*	Eastern box turtles inhabit forests, fields, forest-brush, and forest-field ecotones. In some areas they move seasonally from fields in spring to forest in summer. They commonly enter pools of shallow water in summer. For shelter, they burrow into loose soil, debris, mud, old stump holes, or under leaf litter. They are also attracted to farms, old fields and cut-over woodlands, as well as creek bottoms and dense woodlands.	N	The Project Area lacks forests, fields, forest-brush, and forest-field ecotones.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Hays	Reptiles	Keeled earless lizard	*Holbrookia lacerata*	Terrestrial: Habitats include coastal dunes, barrier islands, and other sandy areas (Axtell 1983). Although it occurs well inland, this species is most abundant on coastal dunes, where it seeks shelter in the burrows of small mammals or crabs (Bartlett and Bartlett 1999).	N	The Project Area lacks coastal dunes, barrier islands, and other sandy areas.	No impact	No suitable habitat is present and no individuals were observed in the field.	N

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Travis, Hays	Reptiles	plateau spot-tailed earless lizard	*Holbrookia lacerata*	Terrestrial: Habitats include moderately open prairie-brushland regions, particularly fairly flat areas free of vegetation or other obstructions (e.g., open meadows, old and new fields, graded roadways, cleared and disturbed areas, prairie savanna, and active agriculture including row crops); also, oak-juniper woodlands and mesquite-prickly pear associations (Axtell 1968, Bartlett and Bartlett 1999).	N	The Project Area is disturbed and contains obstructions and vegetation.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Reptiles	Slender glass lizard	*Ophisaurus attenuatus*	This species prefers relatively dry microhabitats, usually associated with grassy areas. It inhabits open grassland, prairie, woodland edge, open woodland, oak savannas, longleaf pine flatwoods, scrubby areas, fallow fields, and areas near streams and ponds, often in habitats with sandy soil. This species often appears on roads in spring. During inactivity, it occurs in underground burrows. In Kansas, slender glass lizards were scarce in heavily grazed pastures, increased as grass increased with removal of grazing, and declined as brush and trees replaced grass (Fitch 1989). They lay eggs underground, under cover, or under grass clumps (Ashton and Ashton 1985), in cavities beneath flat rocks, or in abandoned tunnels of small mammals (*Scalopus, Microtus*) (Fitch 1989 and TPWD 2020).	N	The Project Area lacks dry microhabitats, prairie, open woodland, oak savannas, pine flatwoods, and fallow fields.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Reptiles	Texas garter snake	*Thamnophis sirtalis annectens*	This species is terrestrial and aquatic. Habitats used include the grasslands and modified open areas in the vicinity of aquatic features, such as ponds, streams or marshes. Damp soils and debris for cover are thought to be critical.	Y	The Project Area may have modified open areas in the vicinity of aquatic features.	May impact	Marginal suitable habitat is present in The Project Area.	N
Travis, Hays	Reptiles	Texas map turtle	*Graptemys versa*	This species occupies rivers with moderate current, abundant aquatic vegetation, and basking logs. It is also associated oxbows and lakes.	N	No suitable habitat is present within the Project Area. The Project Area lacks rivers with moderate current, oxbows, and lakes.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Travis, Hays	Reptiles	Western box turtle	*Terrapene ornata*	Ornate or western box turtles inhabit prairie grassland, pasture, fields, sandhills, and open woodland. They are essentially terrestrial but sometimes enter slow, shallow streams and creek pools. For shelter, they burrow into soil (e.g., under plants such as yucca) (Converse et al. 2002) or enter burrows made by other species. It is partial to sandy soil.	N	The Project Area lacks grassland, pasture, sandhills, and open woodlands. No sandy soil occurs in the Project Area.	No impact	No suitable habitat is present and no individuals were observed in the field.	N
Hays	Reptiles	Western hog-nosed snake	*Heterodon nasicus*	Terrestrial: Shortgrass or mixed grass prairie, with gravel or sandy soils. Often found associated with draws, floodplains, and more mesic habitats within the arid landscape. Frequently occurs in shrub encroached grasslands.	N	The Project Area lacks shortgrass or mixed grass prairie, with gravel or sandy soils.	No impact	No suitable habitat is present and no individuals were observed in the field.	N

Form

Documentation of Texas Parks and Wildlife Department Best Management Practices

Project Name: **I-35 Capital Express South**

CSJ(s): **0015-13-077 & 0016-01-113**

County(ies): **Travis and Hays**

Date Form Completed: **November 2, 2021**

Prepared by: **Angela McMurray**

Information on state-listed species, SGCN, water resources, and other natural resources can be found in the ECOS documents tab under the filenames specified in the e-mail sent to WHAB_TXDOT@tpwd.texas.gov.

1. Does the project impact any state parks, wildlife management areas, wildlife refuges, or other designated protected areas?

   ☒ No

   ☐ Yes

   N/A

2. Does TxDOT need TPWD assistance in identifying and locating Section 404 mitigation opportunities for this project?

   ☒ No / N/A / Not yet determined

   ☐ Yes

   N/A

3. Is there a species or resource challenge that TPWD can assist with additional guidance? If so, describe below:

   No assistance requested

4. Select all the best management practices (BMPs) that will be applied to the project:

   ☐ Amphibian BMPs

   ☐ Aquatic Reptile BMPs

   ☒ Bat BMPs

   ☒ Bird BMPs

☒ Fish BMPs

☐ Fossorial Mammal BMPs

☒ Mussel BMPs

☒ Terrestrial Reptile BMPs

☒ Vegetation BMPs

☒ Water Quality BMPs

☒ Other

Contractors will be advised of the occurrence of potential SGCN species and to avoid harming them whenever possible.

5. Select any species protection specifications that will be applied to the project.

☐ Amphibian and Reptile Exclusion Fence

☒ Bat Houses

☒ Bat Exclusion System

☐ Other

N/A

6. Select and/or explain where the above-listed BMPs will be documented and communicated to the contractor (e.g., plan sheets, general notes, EPIC sheet, etc.):

☒ Environmental Document (EA or EIS) – Required

☐ ECOS Non-ESA Commitments Activity – Required for surveys and other pre-construction actions

☒ Plan Sheets/ EPIC Sheet

☒ General notes

☐ Other

N/A

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Austin Ecological Services Field Office
10711 Burnet Road, Suite 200
Austin, TX 78758-4460
Phone: (512) 490-0057 Fax: (512) 490-0974
http://www.fws.gov/southwest/es/AustinTexas/
http://www.fws.gov/southwest/es/EndangeredSpecies/lists/

In Reply Refer To: November 02, 2021
Consultation Code: 02ETAU00-2021-SLI-2174
Event Code: 02ETAU00-2022-E-00548
Project Name: Capital Express S Design Refinements

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

To Whom It May Concern:

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

Please note that new information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. 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. Also note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

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

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

While a Federal agency may designate a non-Federal representative to conduct informal consultation or prepare a biological assessment, the Federal Agency must notify the Service in writing of any such designation. The Federal agency shall also independently review and evaluate the scope and content of a biological assessment prepared by their designated non-Federal representative before that document is submitted to the Service.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by a federally funded, permitted or authorized activity, the agency is required to consult with the Service pursuant to 50 CFR 402. The following definitions are provided to assist you in reaching a determination:

- *No effect* - the proposed action will not affect federally 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, if the project changes or additional information on the distribution of listed or proposed species becomes available, the project should be reanalyzed for effects not previously considered.
- *May affect, but is not likely to adversely affect* - the project may affect listed species and/or critical habitat; however, the effects are expected to be discountable, insignificant, or completely beneficial. Certain avoidance and minimization measures may need to be implemented in order to reach this level of effect. The Federal agency or the designated non-Federal representative should consult with the Service to seek written concurrence that adverse effects are not likely. Be sure to include all of the information and documentation used to reach your decision with your request for concurrence. The Service must have this documentation before issuing a concurrence.
- *Is likely to adversely affect* - adverse effects to listed species may occur as a direct or indirect result of the proposed action. For this determination, the effect of the action is neither discountable nor insignificant. If the overall effect of the proposed action is beneficial to the listed species but the action is also likely to cause some adverse effects to individuals of that species, then the proposed action “is likely to adversely affect” the listed species. The analysis should consider all interrelated and interdependent actions. An “is likely to adversely affect” determination requires the Federal action agency to initiate formal section 7 consultation with our office.

Regardless of the determination, the Service recommends that the Federal agency maintain a complete record of the evaluation, including steps leading to the determination of effect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related information. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered

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

Migratory Birds

For projects that may affect migratory birds, the Migratory Bird Treaty Act (MBTA) implements various treaties and conventions for the protection of these species. Under the MBTA, taking, killing, or possessing migratory birds is unlawful. Migratory birds may nest in trees, brushy areas, or other areas of suitable habitat. The Service recommends activities requiring vegetation removal or disturbance avoid the peak nesting period of March through August to avoid destruction of individuals, nests, or eggs. If project activities must be conducted during this time, we recommend surveying for nests prior to conducting work. If a nest is found, and if possible, the Service recommends a buffer of vegetation remain around the nest until the young have fledged or the nest is abandoned.

For additional information concerning the MBTA and recommendations to reduce impacts to migratory birds please contact the U.S. Fish and Wildlife Service Migratory Birds Office, 500 Gold Ave. SW, Albuquerque, NM 87102. A list of migratory birds may be viewed at https://www.fws.gov/birds/management/managed-species/migratory-bird-treaty-act-protected-species.php. Guidance for minimizing impacts to migratory birds for projects including communications towers can be found at: https://www.fws.gov/birds/management/project-assessment-tools-and-guidance/guidance-documents/communication-towers.php. Additionally, wind energy projects should follow the wind energy guidelines

https://www.fws.gov/birds/management/project-assessment-tools-and-guidance/guidance-documents/wind-energy.php) for minimizing impacts to migratory birds and bats.

Finally, 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/birds/management/project-assessment-tools-and-guidance/guidance-documents/eagles.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation 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:

Austin Ecological Services Field Office
10711 Burnet Road, Suite 200
Austin, TX 78758-4460
(512) 490-0057

Project Summary

Consultation Code: 02ETAU00-2021-SLI-2174
Event Code: Some(02ETAU00-2022-E-00548)
Project Name: Capital Express S Design Refinements
Project Type: TRANSPORTATION
Project Description: Design Refinements for the Capital Express South (I-35) projects located in Austin, Travis County, TX

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@30.21146385,-97.7551255775826,14z

Counties: Travis County, Texas

Endangered Species Act Species

There is a total of 14 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.

Birds

NAME	STATUS
Golden-cheeked Warbler (=wood) *Dendroica chrysoparia* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/33	Endangered
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. The location of the critical habitat is not available. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. 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. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/758	Endangered

Amphibians

NAME	STATUS
Austin Blind Salamander *Eurycea waterlooensis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5737	Endangered
Barton Springs Salamander *Eurycea sosorum* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1113	Endangered
Jollyville Plateau Salamander *Eurycea tonkawae* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3116	Threatened

Clams

NAME	STATUS
Texas Fatmucket *Lampsilis bracteata* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/9041	Proposed Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate
Tooth Cave Ground Beetle *Rhadine persephone* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5625	Endangered

Arachnids

NAME	STATUS
Bee Creek Cave Harvestman *Texella reddelli* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2464	Endangered
Bone Cave Harvestman *Texella reyesi* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5306	Endangered
Tooth Cave Spider *Neoleptoneta myopica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2360	Endangered

Flowering Plants

NAME	STATUS
Bracted Twistflower *Streptanthus bracteatus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/2856

Critical habitats

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

Last Update: 6/22/2021

TRAVIS COUNTY

AMPHIBIANS

Austin blind salamander *Eurycea waterlooensis*

Aquatic and subterranean; streams and caves.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Barton Springs salamander *Eurycea sosorum*

Aquatic; springs, streams and caves with rocky or cobble beds.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Jollyville Plateau salamander *Eurycea tonkawae*

Aquatic; springs, streams and caves with rocky or cobble beds.

Federal Status: LT	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S2

Pedernales River Springs salamander *Eurycea sp. 6*

Aquatic; springs, streams and caves with rocky or cobble beds.

Federal Status:	State Status:	SGCN: N
Endemic: Y	Global Rank: G1	State Rank: S1S2

Strecker's chorus frog *Pseudacris streckeri*

Terrestrial and aquatic: Wooded floodplains and flats, prairies, cultivated fields and marshes. Likes sandy substrates.

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

Woodhouse's toad *Anaxyrus woodhousii*

Terrestrial and aquatic: A wide variety of terrestrial habitats are used by this species, including forests, grasslands, and barrier island sand dunes. Aquatic habitats are equally varied.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: SU

ARACHNIDS

Bandit Cave spider *Cicurina bandida*

Very small, subterrestrial, subterranean obligate

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2Q	State Rank: S1

TRAVIS COUNTY

ARACHNIDS

Bone Cave harvestman *Texella reyesi*

Small, blind, cave-adapted harvestman endemic to several caves in Travis and Williamson counties; weakly differentiated from Texella reddelli

Federal Status: LE	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S2

No accepted common name *Texella grubbsi*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Texella mulaiki*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S2

No accepted common name *Texella spinoperca*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: GNR	State Rank: SNR

No accepted common name *Tartarocreagris infernalis*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S2?

No accepted common name *Tartarocreagris intermedia*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Tartarocreagris altimana*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Tartarocreagris attenuata*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

TRAVIS COUNTY

ARACHNIDS

No accepted common name *Tartarocreagris domina*
Habitat description is not available at this time.
Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G1G2 State Rank: S1

No accepted common name *Tartarocreagris proserpina*
Habitat description is not available at this time.
Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G1G2 State Rank: S1

No accepted common name *Cicurina travisae*
Habitat description is not available at this time.
Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G1G2Q State Rank: S1

No accepted common name *Eidmannella reclusa*
Habitat description is not available at this time.
Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G1G2 State Rank: S1

Reddell harvestman *Texella reddelli*
Small, blind, cave-adapted harvestman endemic to a few caves in Travis and Williamson counties
Federal Status: LE State Status: SGCN: Y
Endemic: Y Global Rank: G2G3 State Rank: S2

Tooth Cave pseudoscorpion *Tartarocreagris texana*
Small, cave-adapted pseudoscorpion known from small limestone caves of the Edwards Plateau
Federal Status: LE State Status: SGCN: Y
Endemic: Y Global Rank: G1G2 State Rank: S1

Tooth Cave spider *Neoleptoneta myopica*
Very small, cave-adapted, sedentary spider
Federal Status: LE State Status: SGCN: Y
Endemic: Global Rank: G1G2 State Rank: S1

BIRDS

bald eagle *Haliaeetus leucocephalus*

TRAVIS COUNTY

BIRDS

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

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3B,S3N

black rail *Laterallus jamaicensis*

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

black-capped vireo *Vireo atricapilla*

Oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous and broad-leaved shrubs and trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3B

chestnut-collared longspur *Calcarius ornatus*

According to Partners in Flight's Landbird Conservation Plan (2016), this species has a continental decline of 85%. Occurs in open shortgrass settings especially in patches with some bare ground. Also occurs in grain sorghum fields and Conservation Reserve Program lands

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

Franklin's gull *Leucophaeus pipixcan*

This species is only a spring and fall migrant throughout Texas. It does not breed in or near Texas. Winter records are unusual consisting of one or a few individuals at a given site (especially along the Gulf coastline). During migration, these gulls fly during daylight hours but often come down to wetlands, lake shore, or islands to roost for the night.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2N

golden-cheeked warbler *Setophaga chrysoparia*

Ashe juniper in mixed stands with various oaks (Quercus spp.). Edges of cedar brakes. Dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S2S3B

interior least tern *Sternula antillarum athalassos*

TRAVIS COUNTY

BIRDS

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: DL: Delisted	State Status: E	SGCN: N
Endemic: N	Global Rank: G4T3Q	State Rank: S1B

lark bunting *Calamospiza melanocorys*

According to Partners in Flight's Landbird Conservation Plan (2016), this species has a continental decline of 86%. Overall, it's a generalist in most short grassland settings including ones with some brushy component plus certain agricultural lands that include grain sorghum. Short grasses include sideoats and blue gramas, sand dropseed, prairie junegrass (Koeleria), buffalograss also with patches of bluestem and other mid-grass species. This bunting will frequent smaller patches of grasses or disturbed patches of grasses including rural yards. It also uses weedy fields surrounding playas. This species avoids urban areas and cotton fields.

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

mountain plover *Charadrius montanus*

Breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous

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

piping plover *Charadrius melodus*

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

swallow-tailed kite *Elanoides forficatus*

Lowland forested regions, especially swampy areas, ranging into open woodland; marshes, along rivers, lakes, and ponds; nests high in tall tree in clearing or on forest woodland edge, usually in pine, cypress, or various deciduous trees

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2B

TRAVIS COUNTY

BIRDS

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

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4T4	State Rank: S2

white-faced ibis *Plegadis chihi*

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: Y
Endemic: N	Global Rank: G5	State Rank: S4B

whooping crane *Grus americana*

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: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S1N

wood stork *Mycteria americana*

Prefers to nest in large tracts of baldcypress (Taxodium distichum) or red mangrove (Rhizophora mangle); forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: SHB,S2N

zone-tailed hawk *Buteo albonotatus*

Arid open country, including open deciduous or pine-oak woodland, mesa or mountain county, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3B

CRUSTACEANS

Balcones Cave amphipod *Stygobromus balconis*

Subaquatic, subterranean obligate amphipod

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S2

TRAVIS COUNTY

CRUSTACEANS

Ezell's Cave amphipod *Stygobromus flagellatus*

Known only from artesian wells

Federal Status: State Status: SGCN: Y

Endemic: Y Global Rank: G2G3 State Rank: S3

No accepted common name *Lirceolus bisetus*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

Endemic: Y Global Rank: G1G2 State Rank: S1

FISH

american eel *Anguilla rostrata*

Originally found in all river systems from the Red River to the Rio Grande. Aquatic habtiats include large rivers, streams, tributaries, coastal watersheds, estuaries, bays, and oceans. Spawns in Sargasso Sea, larva move to coastal waters, metamorphose, and begin upstream movements. Females tend to move further upstream than males (who are often found in brackish estuaries). American Eel are habitat generalists and may be found in a broad range of habitat conditions including slow- and fast-flowing waters over many substrate types. Extirpation in upstream drainages attributed to reservoirs that impede upstream migration.

Federal Status: State Status: SGCN: Y

Endemic: N Global Rank: G4 State Rank: S4

Guadalupe bass *Micropterus treculii*

Endemic to the streams of the northern and eastern Edwards Plateau including portions of the Brazos, Colorado, Guadalupe, and San Antonio basins; species also found outside of the Edwards Plateau streams in decreased abundance, primarily in the lower Colorado River; two introduced populations have been established in the Nueces River system. A pure population was re-established in a portion of the Blanco River in 2014. Species prefers lentic environments but commonly taken in flowing water; numerous smaller fish occur in rapids, many times near eddies; large individuals found mainly in riffle tail races; usually found in spring-fed streams having clear water and relatively consistent temperatures.

Federal Status: State Status: SGCN: Y

Endemic: Y Global Rank: G3 State Rank: S3

sharpnose shiner *Notropis oxyrhynchus*

Range is now restricted to upper Brazos River upstream of Possum Kingdom Lake. May be native to Red River and Colorado River basins. Typically found in turbid water over mostly silt and shifting sand substrates.

Federal Status: LE State Status: E SGCN: Y

Endemic: Y Global Rank: G3 State Rank: S1S2

silverband shiner *Notropis shumardi*

In Texas, found from Red River to Lavaca River; Main channel with moderate to swift current velocities and moderate to deep depths; associatec with turbid water over silt, sand, and gravel.

Federal Status: State Status: SGCN: Y

Endemic: N Global Rank: G5 State Rank: S4

TRAVIS COUNTY

FISH

smalleye shiner *Notropis buccula*

Endemic to the Brazos River drainage; presumed to have been introduced into the Colorado River. Historically found in lower Brazos River as far south as Hempstead, Texas but appears to now be restricted to upper Brazos River system upstream of Possum Kingdom Lake. Typically found in turbid waters of broad, sandy channels of main stream, over substrate consisting mostly of shifting sand.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S1S2

Texas shiner *Notropis amabilis*

In Texas, it is found primarily in Edwards Plateau streams from the San Gabriel River in the east to the Pecos River in the west. Typical habitat includes rocky or sandy runs, as well as pools.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S4

INSECTS

a caddisfly *Neotrichia juani*

Specimens were collected from perennial and ephemeral rivers, and small spring-fed streams (Harris and Tiemann 1993).

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G1	State Rank: S1

a caddisfly *Xiphocentron messapus*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G3	State Rank: S2?

a cave obligate beetle *Rhadine austinica*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1S2

American bumblebee *Bombus pensylvanicus*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G3G4	State Rank: SNR

cave obligate springtail *Oncopodura fenestra*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S2?

TRAVIS COUNTY

INSECTS

Comanche harvester ant *Pogonomyrmex comanche*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S2

Kretschmarr Cave mold beetle *Texamaurops reddelli*

Small, cave-adapted beetle found under rocks buried in silt; small, Edwards Limestone caves in of the Jollyville Plateau, a division of the Edwards Plateau

Federal Status: LE	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Lymantes nadineae*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: GNR	State Rank: SNR

No accepted common name *Bombus variabilis*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G1G2	State Rank: SNR

No accepted common name *Andrena scotoptera*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: GNR	State Rank: SNR

No accepted common name *Macrotera parkeri*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: GNR	State Rank: SNR

No accepted common name *Rhadine subterranea*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S2

TRAVIS COUNTY

INSECTS

Tooth Cave ground beetle *Rhadine persephone*

Resident, small, cave-adapted beetle found in small Edwards Limestone caves in Travis and Williamson counties

Federal Status: LE | State Status: | SGCN: Y
Endemic: Y | Global Rank: G1G2 | State Rank: S1

MAMMALS

Aransas short-tailed shrew *Blarina hylophaga plumbea*

Excavates burrows in sandy soils underlying mottes of live oak trees or in areas with little to no ground cover.

Federal Status: | State Status: | SGCN: Y
Endemic: Y | Global Rank: G5T1Q | State Rank: S1

big brown bat *Eptesicus fuscus*

Any wooded areas or woodlands except south Texas. Riparian areas in west Texas.

Federal Status: | State Status: | SGCN: Y
Endemic: N | Global Rank: G5 | State Rank: S5

big free-tailed bat *Nyctinomops macrotis*

Habitat data sparse but records indicate that species prefers to roost in crevices and cracks in high canyon walls, but will use buildings, as well; reproduction data sparse, gives birth to single offspring late June-early July; females gather in nursery colonies; winter habits undetermined, but may hibernate in the Trans-Pecos; opportunistic insectivore

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

cave myotis bat *Myotis velifer*

Colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (Hirundo pyrrhonota) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore.

Federal Status: | State Status: | SGCN: Y
Endemic: N | Global Rank: G4G5 | State Rank: S2S3

eastern red bat *Lasiurus borealis*

Red bats are migratory bats that are common across Texas. They are most common in the eastern and central parts of the state, due to their requirement of forests for foliage roosting. West Texas specimens are associated with forested areas (cottonwoods). Also common along the coastline. These bats are highly mobile, seasonally migratory, and practice a type of "wandering migration". Associations with specific habitat is difficult unless specific migratory stopover sites or wintering grounds are found. Likely associated with any forested area in East, Central, and North Texas but can occur statewide.

Federal Status: | State Status: | SGCN: Y
Endemic: N | Global Rank: G3G4 | State Rank: S4

TRAVIS COUNTY

MAMMALS

eastern spotted skunk *Spilogale putorius*

Generalist; open fields prairies, croplands, fence rows, farmyards, forest edges & woodlands. Prefer wooded, brushy areas & tallgrass prairies. S.p. ssp. interrupta found in wooded areas and tallgrass prairies, preferring rocky canyons and outcrops when such sites are available.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G4 State Rank: S1S3

hoary bat *Lasiurus cinereus*

Hoary bats are highly migratory, high-flying bats that have been noted throughout the state. Females are known to migrate to Mexico in the winter, males tend to remain further north and may stay in Texas year-round. Commonly associated with forests (foliage roosting species) but are found in unforested parts of the state and lowland deserts. Tend to be captured over water and large, open flyways.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G3G4 State Rank: S4

long-tailed weasel *Mustela frenata*

Includes brushlands, fence rows, upland woods and bottomland hardwoods, forest edges & rocky desert scrub. Usually live close to water.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G5 State Rank: S5

mountain lion *Puma concolor*

Generalist; found in a wide range of habitats statewide. Found most frequently in rugged mountains & riparian zones.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G5 State Rank: S2S3

northern yellow bat *Lasiurus intermedius*

Occurs mainly along the Gulf Coast but inland specimens are not uncommon. Prefers roosting in spanish moss and in the hanging fronds of palm trees. Common where this vegtation occurs. Found near water and forages over grassy, open areas. Males usually roost solitarily, whereas females roost in groups of several individuals.

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

swamp rabbit *Sylvilagus aquaticus*

Primarily found in lowland areas near water including: cypress bogs and marshes, floodplains, creeks and rivers.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G5 State Rank: S5

tricolored bat *Perimyotis subflavus*

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

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G2G3 State Rank: S3S4

TRAVIS COUNTY

MAMMALS

western hog-nosed skunk *Conepatus leuconotus*

Habitats include woodlands, grasslands & deserts, to 7200 feet, most common in rugged, rocky canyon country; little is known about the habitat of the ssp. telmalestes

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S4

MOLLUSKS

Balcones Spike *Fusconaia iheringi*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: N
Endemic: Y	Global Rank: GNR	State Rank: SNR

No accepted common name *Stygopyrgus bartonensis*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

No accepted common name *Patera leatherwoodi*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G1	State Rank: S1

No accepted common name *Millerelix gracilis*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G2G3	State Rank: S2?

No accepted common name *Phreatodrobia punctata*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S1

Texas Fatmucket *Lampsilis bracteata*

Reported to occur in slow to moderate current in sand, mud, and gravel substrates among large cobble, boulders, bedrock ledges, horizontal cracks in bedrock slabs, and macrophyte beds. Has also been observed inhabiting the roots of cypress trees and vegetation along steep banks. Past authorities have reported this species intolerant of reservoir conditions but recent surveys suggest it may persist in some impoundment conditions (Howells 2010c; Randklev et al. 2017b). [Mussel of Texas 2019]

Federal Status: C	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

TRAVIS COUNTY

MOLLUSKS

Texas Pimpleback *Cyclonaias petrina*

Occurs in medium-size streams to large rivers primarily in riffles and runs. Often found in substrates composed of sand, gravel, and cobble, including mud-silt or gravel-filled cracks in bedrock slabs. Considered intolerant of reservoirs (Howells 2010m; Randklev et al. 2017b). [Mussels of Texas 2019]

Federal Status: C | State Status: T | SGCN: Y
Endemic: Y | Global Rank: G1 | State Rank: S1

REPTILES

common garter snake *Thamnophis sirtalis*

Terrestrial and aquatic: Habitats used include the grasslands and modified open areas in the vicinity of aquatic features, such as ponds, streams or marshes. Damp soils and debris for cover are thought to be critical.

Federal Status: | State Status: | SGCN: N
Endemic: | Global Rank: G5 | State Rank: S2

eastern box turtle *Terrapene carolina*

Terrestrial: Eastern box turtles inhabit forests, fields, forest-brush, and forest-field ecotones. In some areas they move seasonally from fields in spring to forest in summer. They commonly enters pools of shallow water in summer. For shelter, they burrow into loose soil, debris, mud, old stump holes, or under leaf litter. They can successfully hibernate in sites that may experience subfreezing temperatures.

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

plateau spot-tailed earless lizard *Holbrookia lacerata*

Terrestrial: Habitats include moderately open prairie-brushland regions, particularly fairly flat areas free of vegetation or other obstructions (e.g., open meadows, old and new fields, graded roadways, cleared and disturbed areas, prairie savanna, and active agriculture including row crops); also, oak-juniper woodlands and mesquite-prickly pear associations (Axtell 1968, Bartlett and Bartlett 1999).

Federal Status: | State Status: | SGCN: Y
Endemic: Y | Global Rank: GNR | State Rank: S2

slender glass lizard *Ophisaurus attenuatus*

Terrestrial: Habitats include open grassland, prairie, woodland edge, open woodland, oak savannas, longleaf pine flatwoods, scrubby areas, fallow fields, and areas near streams and ponds, often in habitats with sandy soil.

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

Texas garter snake *Thamnophis sirtalis annectens*

Terrestrial and aquatic: Habitats used include the grasslands and modified open areas in the vicinity of aquatic features, such as ponds, streams or marshes. Damp soils and debris for cover are thought to be critical.

Federal Status: | State Status: | SGCN: Y
Endemic: Y | Global Rank: G5T4 | State Rank: S1

TRAVIS COUNTY

REPTILES

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

Texas map turtle *Graptemys versa*

Aquatic: Primarily a river turtle but can also be found in reservoirs. Can be found in deep and shallow water with sufficient basking sites (emergent rocks and woody debris).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G4	State Rank: SU

western box turtle *Terrapene ornata*

Terrestrial: Ornate or western box trutles inhabit prairie grassland, pasture, fields, sandhills, and open woodland. They are essentially terrestrial but sometimes enter slow, shallow streams and creek pools. For shelter, they burrow into soil (e.g., under plants such as yucca) (Converse et al. 2002) or enter burrows made by other species.

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

PLANTS

arrowleaf milkvine *Matelea sagittifolia*

Most consistently encountered in thornscrub in South Texas; Perennial; Flowering March-July; Fruiting April-July and Dec?

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

basin bellflower *Campanula reverchonii*

Among scattered vegetation on loose gravel, gravelly sand, and rock outcrops on open slopes with exposures of igneous and metamorphic rocks; may also occur on sandbars and other alluvial deposits along major rivers; flowering May-July

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S2

bracted twistflower *Streptanthus bracteatus*

Shallow, well-drained gravelly clays and clay loams over limestone in oak juniper woodlands and associated openings, on steep to moderate slopes and in canyon bottoms; several known soils include Tarrant, Brackett, or Speck over Edwards, Glen Rose, and Walnut geologic formations; populations fluctuate widely from year to year, depending on winter rainfall; flowering mid April-late May, fruit matures and foliage withers by early summer

Federal Status: C	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

TRAVIS COUNTY

PLANTS

Buckley tridens *Tridens buckleyanus*

Occurs in juniper-oak woodlands on rocky limestone slopes; Perennial; Flowering/Fruiting April-Nov

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

canyon bean *Phaseolus texensis*

Narrowly endemic to rocky canyons in eastern and southern Edwards Plateau occurring on limestone soils in mixed woodlands, on limestone cliffs and outcrops, frequently along creeks.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S2

canyon mock-orange *Philadelphus texensis var. ernestii*

Usually found growing from honeycomb pits on outcrops of Cretaceous limestone exposed as rimrock along mesic canyons, usually in the shade of mixed evergreen-deciduous canyon woodland; flowering April-June, fruit dehiscing September-October

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3T3	State Rank: S3

canyon sedge *Carex edwardsiana*

Dry-mesic decidous and deciduous-juniper woodlands in canyons and ravines, usually in clay loams very high in calcium on rocky banks and slopes just above streams and stream beds. Carex edwardsiana usually grows near C. planostachys. Fruiting spring (Ball, Reznicek, and 2003).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

Correll's false dragon-head *Physostegia correllii*

Wet, silty clay loams on streamsides, in creek beds, irrigation channels and roadside drainage ditches; or seepy, mucky, sometimes gravelly soils along riverbanks or small islands in the Rio Grande; or underlain by Austin Chalk limestone along gently flowing spring-fed creek in central Texas; flowering May-September

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S2

Engelmann's bladderpod *Physaria engelmannii*

Grasslands and calcareous rock outcrops in a band along the eastern edge of the Edwards Plateau, ranging as far north as the Red River (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3

glandular gay-feather *Liatris glandulosa*

Occurs in herbaceous vegetation on limestone outcrops (Carr 2015)

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

TRAVIS COUNTY

PLANTS

Glass Mountains coral-root *Hexalectris nitida*

Apparently rare in mixed woodlands in canyons in the mountains of the Brewster County, but encountered with regularity, albeit in small numbers, under Juniperus ashei in woodlands over limestone on the Edwards Plateau, Callahan Divide and Lampasas Cutplain; Perennial; Flowering June-Sept; Fruiting July-Sept

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

gravelbar brickellbush *Brickellia dentata*

Essentially restricted to frequently-scoured gravelly alluvial beds in creek and river bottoms; Perennial; Flowering June-Nov; Fruiting June-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

Greenman's bluet *Houstonia parviflora*

Grass pastures. Feb- Apr. (Correll and Johnston 1970).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Heller's marbleseed *Onosmodium helleri*

Occurs in loamy calcareous soils in oak-juniper woodlands on rocky limestone slopes, often in more mesic portions of canyons; Perennial; Flowering March-May

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

low spurge *Euphorbia peplidion*

Occurs in a variety of vernally-moist situations in a number of natural regions; Annual; Flowering Feb-April; Fruiting March-April

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

narrowleaf brickellbush *Brickellia eupatorioides var. gracillima*

Moist to dry gravelly alluvial soils along riverbanks but also on limestone slopes; Perennial; Flowering/Fruiting April-Nov

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G5T3	State Rank: S3

net-leaf bundleflower *Desmanthus reticulatus*

Mostly on clay prairies of the coastal plain of central and south Texas; Perennial; Flowering April-July; Fruiting April-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

TRAVIS COUNTY

PLANTS

Plateau loosestrife *Lythrum ovalifolium*

Banks and gravelly beds of perennial (or strong intermittent) streams on the Edwards Plateau, Llano Uplift and Lampasas Cutplain; Perennial; Flowering/Fruiting April-Nov

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S3S4

plateau milkvine *Matelea edwardsensis*

Occurs in various types of juniper-oak and oak-juniper woodlands; Perennial; Flowering March-Oct; Fruiting May-June

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

rock grape *Vitis rupestris*

Occurs on rocky limestone slopes and in streambeds; Perennial; Flowering March-May; Fruiting May-July

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S1

scarlet leather-flower *Clematis texensis*

Usually in oak-juniper woodlands in mesic rocky limestone canyons or along perennial streams; Perennial; Flowering March-July; Fruiting May-July

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

spreading leastdaisy *Chaetopappa effusa*

Limestone cliffs, ledges, bluffs, steep hillsides, sometimes in seepy areas, oak-juniper, oak, or mixed deciduous woods, 300-500 m elevation; Perennial; Flowering (May) July-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

Stanfield's beebalm *Monarda stanfieldii*

Largely confined to granite sands along the middle course of the Colorado River and its tributaries; Perennial

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

sycamore-leaf snowbell *Styrax platanifolius ssp. platanifolius*

Rare throughout range, usually in oak-juniper woodlands on steep rocky banks and ledges along intermittent or perennial streams, rarely far from some reliable source of moisture; Perennial; Flowering April-May; Fruiting May-Aug.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3T3	State Rank: S3

Texabama croton *Croton alabamensis var. texensis*

TRAVIS COUNTY

PLANTS

In duff-covered loamy clay soils on rocky slopes in forested, mesic limestone canyons; locally abundant on deeper soils on small terraces in canyon bottoms, often forming large colonies and dominating the shrub layer; scattered individuals are occasionally on sunny margins of such forests; also found in contrasting habitat of deep, friable soils of limestone uplands, mostly in the shade of evergreen woodland mottes; flowering late February-March; fruit maturing and dehiscing by early June

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3T2	State Rank: S2

Texas almond *Prunus minutiflora*

Wide-ranging but scarce, in a variety of grassland and shrubland situations, mostly on calcareous soils underlain by limestone but occasionally in sandier neutral soils underlain by granite; Perennial; Flowering Feb-May and Oct; Fruiting Feb-Sept

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

Texas amorpha *Amorpha roemeriana*

Juniper-oak woodlands or shrublands on rocky limestone slopes, sometimes on dry shelves above creeks; Perennial; Flowering May-June; Fruiting June-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

Texas barberry *Berberis swaseyi*

Shallow calcareous stony clay of upland grasslands/shrublands over limestone as well as in loamier soils in openly wooded canyons and on creek terraces; Perennial; Flowering/Fruiting March-June

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Texas fescue *Festuca versuta*

Occurs in mesic woodlands on limestone-derived soils on stream terraces and canyon slopes; Perennial; Flowering/Fruiting April-June

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

Texas milk vetch *Astragalus reflexus*

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

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Texas seymeria *Seymeria texana*

Found primarily in grassy openings in juniper-oak woodlands on dry rocky slopes but sometimes on rock outcrops in shaded canyons; Annual; Flowering May-Nov; Fruiting July-Nov

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

TRAVIS COUNTY

PLANTS

tree dodder *Cuscuta exaltata*

Parasitic on various Quercus, Juglans, Rhus, Vitis, Ulmus, and Diospyros species as well as Acacia berlandieri and other woody plants; Annual; Flowering May-Oct; Fruiting July-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

turnip-root scurfpea *Pediomelum cyphocalyx*

Grasslands and openings in juniper-oak woodlands on limestone substrates on the Edwards Plateau and in north-central Texas (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S2S3

Warnock's coral-root *Hexalectris warnockii*

In leaf litter and humus in oak-juniper woodlands on shaded slopes and intermittent, rocky creekbeds in canyons; in the Trans Pecos in oak-pinyon-juniper woodlands in higher mesic canyons (to 2000 m [6550 ft]), primarily on igneous substrates; in Terrell County under Quercus fusiformis mottes on terrraces of spring-fed perennial streams, draining an otherwise rather xeric limestone landscape; on the Callahan Divide (Taylor County), the White Rock Escarpment (Dallas County), and the Edwards Plateau in oak-juniper woodlands on limestone slopes; in Gillespie County on igneous substrates of the Llano Uplift; flowering June-September; individual plants do not usually bloom in successive years

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2G3	State Rank: S2

Wright's milkvetch *Astragalus wrightii*

On sandy or gravelly soils; April (Diggs et al. 1999).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Last Update: 10/1/2021

HAYS COUNTY

AMPHIBIANS

Barton Springs salamander *Eurycea sosorum*

Aquatic; springs, streams and caves with rocky or cobble beds.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Blanco blind salamander *Eurycea robusta*

Aquatic and subterranean; streams and caves.

Federal Status:	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Pedernales River Springs salamander *Eurycea sp. 6*

Aquatic; springs, streams and caves with rocky or cobble beds.

Federal Status:	State Status:	SGCN: N
Endemic: Y	Global Rank: G1	State Rank: S1S2

San Marcos salamander *Eurycea nana*

Aquatic; springs and associated water.

Federal Status: LT	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Strecker's chorus frog *Pseudacris streckeri*

Terrestrial and aquatic: Wooded floodplains and flats, prairies, cultivated fields and marshes. Likes sandy substrates.

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

Texas blind salamander *Eurycea rathbuni*

Aquatic and subterranean; streams and caves.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Texas salamander *Eurycea neotenes*

Aquatic; springs, streams and caves with rocky or cobble beds.

Federal Status:	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1S2

HAYS COUNTY

AMPHIBIANS

Woodhouse's toad *Anaxyrus woodhousii*

Terrestrial and aquatic: A wide variety of terrestrial habitats are used by this species, including forests, grasslands, and barrier island sand dunes. Aquatic habitats are equally varied.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: SU

ARACHNIDS

No accepted common name *Texella diplospina*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Texella grubbsi*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Texella mulaiki*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S2

No accepted common name *Texella renkesae*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Tartarocreagris grubbsi*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Cicurina ezelli*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

HAYS COUNTY

ARACHNIDS

No accepted common name *Cicurina russelli*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Cicurina ubicki*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

BIRDS

bald eagle *Haliaeetus leucocephalus*

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

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3B,S3N

black-capped vireo *Vireo atricapilla*

Oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous and broad-leaved shrubs and trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3B

Chestnut-collared Longspur *Calcarius ornatus*

Occurs in open shortgrass settings especially in patches with some bare ground. Also occurs in grain sorghum fields and Conservation Reserve Program lands

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

Franklin's gull *Leucophaeus pipixcan*

This species is only a spring and fall migrant throughout Texas. It does not breed in or near Texas. Winter records are unusual consisting of one or a few individuals at a given site (especially along the Gulf coastline). During migration, these gulls fly during daylight hours but often come down to wetlands, lake shore, or islands to roost for the night.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2N

HAYS COUNTY

BIRDS

golden-cheeked warbler *Setophaga chrysoparia*

Ashe juniper in mixed stands with various oaks (Quercus spp.). Edges of cedar brakes. Dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S2S3B

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:	SGCN: N
Endemic: N	Global Rank: G4T3Q	State Rank: S1B

Lark Bunting *Calamospiza melanocorys*

Overall, it's a generalist in most short grassland settings including ones with some brushy component plus certain agricultural lands that include grain sorghum. Short grasses include sideoats and blue gramas, sand dropseed, prairie junegrass (Koeleria), buffalograss also with patches of bluestem and other mid-grass species. This bunting will frequent smaller patches of grasses or disturbed patches of grasses including rural yards. It also uses weedy fields surrounding playas. This species avoids urban areas and cotton fields.

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

mountain plover *Charadrius montanus*

Breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous

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

piping plover *Charadrius melodus*

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

tropical parula *Setophaga pitiayumi*

HAYS COUNTY

BIRDS

Semi-tropical evergreen woodland along rivers and resacas. Texas ebony, anacua and other trees with epiphytic plants hanging from them. Dense or open woods, undergrowth, brush, and trees along edges of rivers and resacas; breeding April to July.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3B

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

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4T4	State Rank: S2

white-faced ibis *Plegadis chihi*

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: Y
Endemic: N	Global Rank: G5	State Rank: S4B

whooping crane *Grus americana*

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

wood stork *Mycteria americana*

Prefers to nest in large tracts of baldcypress (Taxodium distichum) or red mangrove (Rhizophora mangle); forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: SHB,S2N

zone-tailed hawk *Buteo albonotatus*

Arid open country, including open deciduous or pine-oak woodland, mesa or mountain county, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3B

HAYS COUNTY

CRUSTACEANS

Balcones Cave amphipod *Stygobromus balconis*
Subaquatic, subterranean obligate amphipod
Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G2G3 State Rank: S2

Ezell's Cave amphipod *Stygobromus flagellatus*
Known only from artesian wells
Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G2G3 State Rank: S3

No accepted common name *Palaemonetes texanus*
Collected in Comal and Hays counties (Middel Guadalupe and San Marcos watersheds).
Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G1G2 State Rank: S1?

No accepted common name *Artesia subterranea*
Habitat description is not available at this time.
Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G1G2 State Rank: S2

No accepted common name *Texiweckelia texensis*
Habitat description is not available at this time.
Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G2G3 State Rank: S2

PUrgatory Cave shrimp *Calathaemon holthuisi*
Last known collection was in San Marcos, Hays Co. (Ezell's Cave) (Reddell 1994).
Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G1G2 State Rank: S1

Texas troglobitic water slater *Lirceolus smithii*
Subaquatic, subterranean obligate, aquifer.
Federal Status: State Status: T SGCN: Y
Endemic: Y Global Rank: G1G2 State Rank: S1

FISH

american eel *Anguilla rostrata*

HAYS COUNTY

FISH

Originally found in all river systems from the Red River to the Rio Grande. Aquatic habtiats include large rivers, streams, tributaries, coastal watersheds, estuaries, bays, and oceans. Spawns in Sargasso Sea, larva move to coastal waters, metamorphose, and begin upstream movements. Females tend to move further upstream than males (who are often found in brackish estuaries). American Eel are habitat generalists and may be found in a broad range of habitat conditions including slow- and fast-flowing waters over many substrate types. Extirpation in upstream drainages attributed to reservoirs that impede upstream migration.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S4

fountain darter *Etheostoma fonticola*

Known only from the spring-fed San Marcos and Comal rivers in dense beds of aquatic plants growing close to bottom; may be found in slow- and fast-flowing habitats.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Guadalupe bass *Micropterus treculii*

Endemic to the streams of the northern and eastern Edwards Plateau including portions of the Brazos, Colorado, Guadalupe, and San Antonio basins; species also found outside of the Edwards Plateau streams in decreased abundance, primarily in the lower Colorado River; two introduced populations have been established in the Nueces River system. A pure population was re-established in a portion of the Blanco River in 2014. Species prefers lentic environments but commonly taken in flowing water; numerous smaller fish occur in rapids, many times near eddies; large individuals found mainly in riffle tail races; usually found in spring-fed streams having clear water and relatively consistent temperatures.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Guadalupe darter *Percina apristis*

Endemic to the Guadalupe River Basin; Found in riffles; most common under or around 25-30 cm boulders in the main current; seems to prefer moderately turbid water.

Federal Status:	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G4	State Rank: S2

Guadalupe Roundnose Minnow *Dionda flavipinnis*

Endemic to Guadalupe and southern Colorado drainages; primarily restricted to clear spring-fed waters that have slight temperature variations.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: GNR	State Rank: SNR

headwater catfish *Ictalurus lupus*

Originally throughout streams of the Edwards Plateau and the Rio Grande basin, currently limited to Rio Grande drainage, including Pecos River basin; springs, and sandy and rocky riffles, runs, and pools of clear creeks and small rivers.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S1S2

ironcolor shiner *Notropis chalybaeus*

HAYS COUNTY

FISH

Found only in northeastern streams from the Sabine to the Red River with the exception of an isolated population found in the San Marcos River headwaters. Found primarily in acidic, tannin-stained, non-turbid, sluggish Coastal Plain streams and
rivers of low to moderate gradient. Occurs in aggregation, often at the upstream ends of pools, with a moderate to sluggish current and sand, mud, silt or detritus substrates. Usually associated with aquatic vegetation.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3

Nueces Roundnose Minnow *Dionda texensis*

Endemic to the headwaters of the Nueces River; habitat unknown but likely similar to Devils River Minnow (Often found in association with spring outflows over gravel-cobble substrate and adjacent to aquatic macrophytes; may inhabit a microhabitat associated with the interface between spring runs and the river).

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: GNR	State Rank: SNR

Texas shiner *Notropis amabilis*

In Texas, it is found primarily in Edwards Plateau streams from the San Gabriel River in the east to the Pecos River in the west. Typical habitat includes rocky or sandy runs, as well as pools.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S4

INSECTS

a caddisfly *Ochrotrichia capitana*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G3	State Rank: S2?

a caddisfly *Neotrichia juani*

Specimens were collected from perennial and ephemeral rivers, and small spring-fed streams (Harris and Tiemann 1993).

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G1	State Rank: S1

a caddisfly *Xiphocentron messapus*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G3	State Rank: S2?

a cave obligate beetle *Rhadine austinica*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1S2

HAYS COUNTY

INSECTS

a mayfly *Procloeon distinctum*

Mayflies distinguished by aquatic larval stage; adult stage generally found in shoreline vegetation

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G3Q	State Rank: S2?

American bumblebee *Bombus pensylvanicus*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G3G4	State Rank: SNR

Comal Springs diving beetle *Comaldessus stygius*

Known only from the outflows at Comal Springs; aquatic; diving beetles generally inhabit the water column

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Comal Springs dryopid beetle *Stygoparnus comalensis*

Dryopids usually cling to objects in a stream; dryopids are sometimes found crawling on stream bottoms or along shores; adults may leave the stream and fly about, especially at night; most dryopid larvae are vermiform and live in soil or decaying wood

Federal Status: LE	State Status: E	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

Comal Springs riffle beetle *Heterelmis comalensis*

Comal and San Marcos Springs

Federal Status: LE	State Status: E	SGCN: Y
Endemic:	Global Rank: G1	State Rank: S1

Edwards Aquifer diving beetle *Haideoporus texanus*

Habitat poorly known; known from an artesian well in Hays County

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Rhadine insolita*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

HAYS COUNTY

INSECTS

No accepted common name *Batrisodes grubbsi*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Oxyelophila callista*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: GNR	State Rank: SNR

No accepted common name *Plauditus texanus*

Larvae are associated with small to medium limestone cobble and macrophytes in shallow riffles of clear, cool, alkaline streams (P. McCafferty, personal communication, December 2003).

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2G3	State Rank: S1?

San Marcos saddle-case caddisfly *Protoptila arca*

Known from an artesian well in Hays County; locally very abundant; swift, well-oxygenated warm water about 1-2 m deep; larvae and pupal cases abundant on rocks

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Texas austrotinodes caddisfly *Austrotinodes texensis*

Appears endemic to the karst springs and spring runs of the Edwards Plateau region; flow in type locality swift but may drop significantly during periods of little drought; substrate coarse and ranges from cobble and gravel to limestone bedrock; many limestone outcroppings also found along the streams

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S2

MAMMALS

big brown bat *Eptesicus fuscus*

Any wooded areas or woodlands except south Texas. Riparian areas in west Texas.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

HAYS COUNTY

MAMMALS

big free-tailed bat *Nyctinomops macrotis*

Habitat data sparse but records indicate that species prefers to roost in crevices and cracks in high canyon walls, but will use buildings, as well; reproduction data sparse, gives birth to single offspring late June-early July; females gather in nursery colonies; winter habits undetermined, but may hibernate in the Trans-Pecos; opportunistic insectivore

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

cave myotis bat *Myotis velifer*

Colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (Hirundo pyrrhonota) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S2S3

eastern red bat *Lasiurus borealis*

Red bats are migratory bats that are common across Texas. They are most common in the eastern and central parts of the state, due to their requirement of forests for foliage roosting. West Texas specimens are associated with forested areas (cottonwoods). Also common along the coastline. These bats are highly mobile, seasonally migratory, and practice a type of "wandering migration". Associations with specific habitat is difficult unless specific migratory stopover sites or wintering grounds are found. Likely associated with any forested area in East, Central, and North Texas but can occur statewide.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S4

eastern spotted skunk *Spilogale putorius*

Generalist; open fields prairies, croplands, fence rows, farmyards, forest edges & woodlands. Prefer wooded, brushy areas & tallgrass prairies. S.p. ssp. interrupta found in wooded areas and tallgrass prairies, preferring rocky canyons and outcrops when such sites are available.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S1S3

hoary bat *Lasiurus cinereus*

Hoary bats are highly migratory, high-flying bats that have been noted throughout the state. Females are known to migrate to Mexico in the winter, males tend to remain further north and may stay in Texas year-round. Commonly associated with forests (foliage roosting species) but are found in unforested parts of the state and lowland deserts. Tend to be captured over water and large, open flyways.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S4

long-tailed weasel *Mustela frenata*

Includes brushlands, fence rows, upland woods and bottomland hardwoods, forest edges & rocky desert scrub. Usually live close to water.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

mountain lion *Puma concolor*

HAYS COUNTY

MAMMALS

Generalist; found in a wide range of habitats statewide. Found most frequently in rugged mountains & riparian zones.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2S3

Northern yellow bat *Lasiurus intermedius*

Occurs mainly along the Gulf Coast but inland specimens are not uncommon. Prefers roosting in spanish moss and in the hanging fronds of palm trees. Common where this vegtation occurs. Found near water and forages over grassy, open areas. Males usually roost solitarily, whereas females roost in groups of several individuals.

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

swamp rabbit *Sylvilagus aquaticus*

Primarily found in lowland areas near water including: cypress bogs and marshes, floodplains, creeks and rivers.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

tricolored bat *Perimyotis subflavus*

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

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2G3	State Rank: S2

western hog-nosed skunk *Conepatus leuconotus*

Habitats include woodlands, grasslands & deserts, to 7200 feet, most common in rugged, rocky canyon country; little is known about the habitat of the ssp. telmalestes

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S4

western spotted skunk *Spilogale gracilis*

Brushy canyons, rocky outcrops (rimrock) on hillsides and walls of canyons. In semi-arid brushlands in U.S., in wet tropical forests in Mexico. When inactive or bearing young, occupies den in rocks, burrow, hollow log, brush pile, or under building.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

MOLLUSKS

Balcones Spike *Fusconaia iheringi*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: N
Endemic: Y	Global Rank: GNR	State Rank: SNR

HAYS COUNTY

MOLLUSKS

Guadalupe Fatmucket *Lampsilis bergmanni*

Reported to occur in slow to moderate current in sand, mud, and gravel substrates among large cobble, boulders, bedrock ledges, horizontal cracks in bedrock slabs, and macrophyte beds. Has also been observed inhabiting the roots of cypress trees and vegetation along steep banks. Reported in lakes at Kerrville, Texas, which suggests it may occasionally persist in some impoundment conditions (Robert G. Howells, personal communication). (Mussels of Texas, 2020)

Federal Status: PE | State Status: T | SGCN: Y
Endemic: Y | Global Rank: G1 | State Rank: SNR

Guadalupe Orb *Cyclonaias necki*

Species' distribution is limited to the Guadalupe River basin. Occurs in both mainstem and tributary habitats. Often found in substrates composed of sand, gravel, and cobble, including mud-silt or gravel-filled cracks in bedrock slabs. Considered intolerant of reservoirs, but are known to occur in them (Howells 2010m; Randklev et al. 2017b). [Mussels of Texas 2020]

Federal Status: PE | State Status: T | SGCN: Y
Endemic: Y | Global Rank: GNR | State Rank: S2

No accepted common name *Millerelix gracilis*

Habitat description is not available at this time.

Federal Status: | State Status: | SGCN: Y
Endemic: | Global Rank: G2G3 | State Rank: S2?

No accepted common name *Elimia comalensis*

Habitat description is not available at this time.

Federal Status: | State Status: | SGCN: Y
Endemic: Y | Global Rank: G2 | State Rank: S2?

No accepted common name *Phreatodrobia conica*

Habitat description is not available at this time.

Federal Status: | State Status: | SGCN: Y
Endemic: Y | Global Rank: G1 | State Rank: S2

No accepted common name *Phreatodrobia micra*

Habitat description is not available at this time.

Federal Status: | State Status: | SGCN: Y
Endemic: Y | Global Rank: G2G3 | State Rank: S2

No accepted common name *Phreatodrobia plana*

Habitat description is not available at this time.

Federal Status: | State Status: | SGCN: Y
Endemic: Y | Global Rank: G2 | State Rank: S2

HAYS COUNTY

MOLLUSKS

No accepted common name *Phreatodrobia punctata*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S1

No accepted common name *Phreatodrobia rotunda*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S2

Texas Fatmucket *Lampsilis bracteata*

Reported to occur in slow to moderate current in sand, mud, and gravel substrates among large cobble, boulders, bedrock ledges, horizontal cracks in bedrock slabs, and macrophyte beds. Has also been observed inhabiting the roots of cypress trees and vegetation along steep banks. Past authorities have reported this species intolerant of reservoir conditions but recent surveys suggest it may persist in some impoundment conditions (Howells 2010c; Randklev et al. 2017b). [Mussel of Texas 2019]

Federal Status: PE	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Texas Fawnsfoot *Truncilla macrodon*

Occurs in large rivers but may also be found in medium-sized streams. Is found in protected near shore areas such as banks and backwaters but also riffles and point bar habitats with low to moderate water velocities. Typically occurs in substrates of mud, sandy mud, gravel and cobble. Considered intolerant of reservoirs (Randklev et al. 2010; Howells 2010o; Randklev et al. 2014b,c; Randklev et al. 2017a,b). [Mussels of Texas 2019]

Federal Status: PT	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S2

Texas Pimpleback *Cyclonaias petrina*

Occurs in medium-size streams to large rivers primarily in riffles and runs. Often found in substrates composed of sand, gravel, and cobble, including mud-silt or gravel-filled cracks in bedrock slabs. Considered intolerant of reservoirs (Howells 2010m; Randklev et al. 2017b). [Mussels of Texas 2019]

Federal Status: PE	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

REPTILES

Cagle's map turtle *Graptemys caglei*

Aquatic: shallow water with swift to moderate flow and gravel or cobble bottom, connected by deeper pools with a slower flow rate and a silt or mud bottom; gravel bar riffles and transition areas between riffles and pools especially important in providing insect prey items; nests on gently sloping sand banks within ca. 30 feet of waters edge.

Federal Status:	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S1

HAYS COUNTY

REPTILES

common garter snake *Thamnophis sirtalis*

Terrestrial and aquatic: Habitats used include the grasslands and modified open areas in the vicinity of aquatic features, such as ponds, streams or marshes. Damp soils and debris for cover are thought to be critical.

Federal Status:	State Status:	SGCN: N
Endemic:	Global Rank: G5	State Rank: S2

eastern box turtle *Terrapene carolina*

Terrestrial: Eastern box turtles inhabit forests, fields, forest-brush, and forest-field ecotones. In some areas they move seasonally from fields in spring to forest in summer. They commonly enters pools of shallow water in summer. For shelter, they burrow into loose soil, debris, mud, old stump holes, or under leaf litter. They can successfully hibernate in sites that may experience subfreezing temperatures.

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

plateau spot-tailed earless lizard *Holbrookia lacerata*

Terrestrial: Habitats include moderately open prairie-brushland regions, particularly fairly flat areas free of vegetation or other obstructions (e.g., open meadows, old and new fields, graded roadways, cleared and disturbed areas, prairie savanna, and active agriculture including row crops); also, oak-juniper woodlands and mesquite-prickly pear associations (Axtell 1968, Bartlett and Bartlett 1999).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: GNR	State Rank: S2

slender glass lizard *Ophisaurus attenuatus*

Terrestrial: Habitats include open grassland, prairie, woodland edge, open woodland, oak savannas, longleaf pine flatwoods, scrubby areas, fallow fields, and areas near streams and ponds, often in habitats with sandy soil.

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

Texas garter snake *Thamnophis sirtalis annectens*

Terrestrial and aquatic: Habitats used include the grasslands and modified open areas in the vicinity of aquatic features, such as ponds, streams or marshes. Damp soils and debris for cover are thought to be critical.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G5T4	State Rank: S1

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

Texas map turtle *Graptemys versa*

Aquatic: Primarily a river turtle but can also be found in reservoirs. Can be found in deep and shallow water with sufficient basking sites (emergent rocks and woody debris).

HAYS COUNTY

REPTILES

Federal Status: | State Status: | SGCN: Y
Endemic: Y | Global Rank: G4 | State Rank: SU

western box turtle *Terrapene ornata*

Terrestrial: Ornate or western box trutles inhabit prairie grassland, pasture, fields, sandhills, and open woodland. They are essentially terrestrial but sometimes enter slow, shallow streams and creek pools. For shelter, they burrow into soil (e.g., under plants such as yucca) (Converse et al. 2002) or enter burrows made by other species.

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

western hognose snake *Heterodon nasicus*

Terrestrial: Shortgrass or mixed grass prairie, with gravel or sandy soils. Often found associated with draws, floodplains, and more mesic habitats within the arid landscape. Frequently occurs in shrub encroached grasslands.

Federal Status: | State Status: | SGCN: Y
Endemic: N | Global Rank: G5 | State Rank: S4

PLANTS

bigflower cornsalad *Valerianella stenocarpa*

Usually along creekbeds or in vernally moist grassy open areas (Carr 2015).

Federal Status: | State Status: | SGCN: Y
Endemic: Y | Global Rank: G3 | State Rank: S3

bracted twistflower *Streptanthus bracteatus*

Shallow, well-drained gravelly clays and clay loams over limestone in oak juniper woodlands and associated openings, on steep to moderate slopes and in canyon bottoms; several known soils include Tarrant, Brackett, or Speck over Edwards, Glen Rose, and Walnut geologic formations; populations fluctuate widely from year to year, depending on winter rainfall; flowering mid April-late May, fruit matures and foliage withers by early summer

Federal Status: C | State Status: | SGCN: Y
Endemic: Y | Global Rank: G1 | State Rank: S1

Buckley tridens *Tridens buckleyanus*

Occurs in juniper-oak woodlands on rocky limestone slopes; Perennial; Flowering/Fruiting April-Nov

Federal Status: | State Status: | SGCN: Y
Endemic: Y | Global Rank: G3G4 | State Rank: S3S4

canyon mock-orange *Philadelphus texensis var. ernestii*

Usually found growing from honeycomb pits on outcrops of Cretaceous limestone exposed as rimrock along mesic canyons, usually in the shade of mixed evergreen-deciduous canyon woodland; flowering April-June, fruit dehiscing September-October

Federal Status: | State Status: | SGCN: Y
Endemic: N | Global Rank: G3T3 | State Rank: S3

HAYS COUNTY

PLANTS

Engelmann's bladderpod *Physaria engelmannii*

Grasslands and calcareous rock outcrops in a band along the eastern edge of the Edwards Plateau, ranging as far north as the Red River (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3

Glass Mountains coral-root *Hexalectris nitida*

Apparently rare in mixed woodlands in canyons in the mountains of the Brewster County, but encountered with regularity, albeit in small numbers, under Juniperus ashei in woodlands over limestone on the Edwards Plateau, Callahan Divide and Lampasas Cutplain; Perennial; Flowering June-Sept; Fruiting July-Sept

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

gravelbar brickellbush *Brickellia dentata*

Essentially restricted to frequently-scoured gravelly alluvial beds in creek and river bottoms; Perennial; Flowering June-Nov; Fruiting June-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

Hall's prairie clover *Dalea hallii*

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

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

Heller's marbleseed *Onosmodium helleri*

Occurs in loamy calcareous soils in oak-juniper woodlands on rocky limestone slopes, often in more mesic portions of canyons; Perennial; Flowering March-May

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Hill Country wild-mercury *Argythamnia aphoroides*

Mostly in bluestem-grama grasslands associated with plateau live oak woodlands on shallow to moderately deep clays and clay loams over limestone on rolling uplands, also in partial shade of oak-juniper woodlands in gravelly soils on rocky limestone slopes; Perennial; Flowering April-May with fruit persisting until midsummer

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S3

narrowleaf brickellbush *Brickellia eupatorioides var. gracillima*

Moist to dry gravelly alluvial soils along riverbanks but also on limestone slopes; Perennial; Flowering/Fruiting April-Nov

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G5T3	State Rank: S3

HAYS COUNTY

PLANTS

net-leaf bundleflower *Desmanthus reticulatus*

Mostly on clay prairies of the coastal plain of central and south Texas; Perennial; Flowering April-July; Fruiting April-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Osage Plains false foxglove *Agalinis densiflora*

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

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

Plateau loosestrife *Lythrum ovalifolium*

Banks and gravelly beds of perennial (or strong intermittent) streams on the Edwards Plateau, Llano Uplift and Lampasas Cutplain; Perennial; Flowering/Fruiting April-Nov

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S3S4

plateau milkvine *Matelea edwardsensis*

Occurs in various types of juniper-oak and oak-juniper woodlands; Perennial; Flowering March-Oct; Fruiting May-June

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

scarlet leather-flower *Clematis texensis*

Usually in oak-juniper woodlands in mesic rocky limestone canyons or along perennial streams; Perennial; Flowering March-July; Fruiting May-July

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

spreading leastdaisy *Chaetopappa effusa*

Limestone cliffs, ledges, bluffs, steep hillsides, sometimes in seepy areas, oak-juniper, oak, or mixed deciduous woods, 300-500 m elevation; Perennial; Flowering (May) July-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

sycamore-leaf snowbell *Styrax platanifolius ssp. platanifolius*

Rare throughout range, usually in oak-juniper woodlands on steep rocky banks and ledges along intermittent or perennial streams, rarely far from some reliable source of moisture; Perennial; Flowering April-May; Fruiting May-Aug.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3T3	State Rank: S3

Texas amorpha *Amorpha roemeriana*

HAYS COUNTY

PLANTS

Juniper-oak woodlands or shrublands on rocky limestone slopes, sometimes on dry shelves above creeks; Perennial; Flowering May-June; Fruiting June-Oct

Federal Status: | State Status: | SGCN: Y
Endemic: N | Global Rank: G3 | State Rank: S3

Texas barberry *Berberis swaseyi*

Shallow calcareous stony clay of upland grasslands/shrublands over limestone as well as in loamier soils in openly wooded canyons and on creek terraces; Perennial; Flowering/Fruiting March-June

Federal Status: | State Status: | SGCN: Y
Endemic: Y | Global Rank: G3 | State Rank: S3

Texas claret-cup cactus *Echinocereus coccineus var. paucispinus*

Mountains, hills, and mesas, igneous and limestone, oak-juniper-pinyon woodland or juniper woodland on limestone mesas, mostly rocky habitats but also in alluvial basins, grasslands, or among mesquite or other shrubs. Flowering March - April (Powell and Weedin 2004).

Federal Status: | State Status: | SGCN: Y
Endemic: N | Global Rank: G5T3 | State Rank: S3

Texas fescue *Festuca versuta*

Occurs in mesic woodlands on limestone-derived soils on stream terraces and canyon slopes; Perennial; Flowering/Fruiting April-June

Federal Status: | State Status: | SGCN: Y
Endemic: N | Global Rank: G3 | State Rank: S3

Texas seymeria *Seymeria texana*

Found primarily in grassy openings in juniper-oak woodlands on dry rocky slopes but sometimes on rock outcrops in shaded canyons; Annual; Flowering May-Nov; Fruiting July-Nov

Federal Status: | State Status: | SGCN: Y
Endemic: Y | Global Rank: G3 | State Rank: S3

Texas wild-rice *Zizania texana*

Spring-fed river, in clear, cool, swift water mostly less than 1 m deep, with coarse sandy soils rather than finer clays; flowering year-round, peaking March-June

Federal Status: LE | State Status: E | SGCN: Y
Endemic: Y | Global Rank: G1 | State Rank: S1

threeflower penstemon *Penstemon triflorus ssp. triflorus*

Occurs sparingly on rock outcrops and in grasslands associated with juniper-oak woodlands (Carr 2015).

Federal Status: | State Status: | SGCN: Y
Endemic: Y | Global Rank: G3T3 | State Rank: S3

tree dodder *Cuscuta exaltata*

HAYS COUNTY

PLANTS

Parasitic on various Quercus, Juglans, Rhus, Vitis, Ulmus, and Diospyros species as well as Acacia berlandieri and other woody plants; Annual; Flowering May-Oct; Fruiting July-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

turnip-root scurfpea *Pediomelum cyphocalyx*

Grasslands and openings in juniper-oak woodlands on limestone substrates on the Edwards Plateau and in north-central Texas (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S2S3

Warnock's coral-root *Hexalectris warnockii*

In leaf litter and humus in oak-juniper woodlands on shaded slopes and intermittent, rocky creekbeds in canyons; in the Trans Pecos in oak-pinyon-juniper woodlands in higher mesic canyons (to 2000 m [6550 ft]), primarily on igneous substrates; in Terrell County under Quercus fusiformis mottes on terrraces of spring-fed perennial streams, draining an otherwise rather xeric limestone landscape; on the Callahan Divide (Taylor County), the White Rock Escarpment (Dallas County), and the Edwards Plateau in oak-juniper woodlands on limestone slopes; in Gillespie County on igneous substrates of the Llano Uplift; flowering June-September; individual plants do not usually bloom in successive years

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2G3	State Rank: S2