

APPENDIX 2
THREATENED OR ENDANGERED SPECIES TABLES

Table 1: Federal Listed Threatened, Endangered, or Candidate Species in Travis County

(E = endangered, C = Candidate, EXPN = experimental population, non-essential, PT = Potentially Threatened)

Source: USFWS Southwest Region County-by-County list web site accessed on 4/6/14

Species	Listing	Description of Suitable Habitat	Habitat Present	Effect	Discussion
Amphibians					
Austin blind salamander (<i>Eurycea waterlooensis</i>)	E	Austin Blind Salamander is known only from the outlets of Sunken Gardens (Old Mill) Spring, Eliza Spring, and Parthenia (Main) Spring which forms Barton Springs Pool. The springs are fed by flow from the Edwards Aquifer and they are within the Colorado River Basin. The quantity of water in the springs is dependent upon the recharge of the Edwards Aquifer. Primarily water flows into the aquifer where the Edwards limestone outcrops. Watersheds contribute to aquifer recharge when runoff from them enters rivers and streams that flow over areas where recharge occurs.	No	No effect	The proposed project is not located within the Edwards Aquifer zones.
Barton Springs salamander (<i>Eurycea sosorum</i>)	E	Barton Springs salamander is known only from the outlets of Barton Springs in Travis County. The springs are fed by flow from the Edwards Aquifer and they are within the Colorado River Basin.	No	No effect	The proposed project is not located within the Edwards Aquifer zones.
Jollyville Plateau salamander (<i>Eurycea naufragia</i>)	T	Jollyville Plateau salamander is a small, gilled, sub-aquatic salamander. Jollyville Plateau salamanders are distributed within springs, spring-runs, and water-bearing karst formations in the Jollyville Plateau area of the Edwards Aquifer in Travis and Williamson counties, Texas. The range of the Jollyville Plateau salamander is limited and its sensitivity to underground water quality and quantity qualify it as a candidate for listing as an endangered species.	No	No effect	The proposed project is not located within the Edwards Aquifer zones.

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Species	Listing	Description of Suitable Habitat	Habitat Present	Effect	Discussion
Arachnids					
Bone Cave harvestman (<i>Texella reyesi</i>)	E	Bone Cave harvestman is a small, blind, cave-adapted arachnid endemic to a few caves in Travis and Travis counties. The caves were formed as a result of dissolution of the limestone formations making up the Edwards Aquifer. This subterranean species has adapted to areas with consistent humidity and temperature levels and a continual influx of nutrients from the surface.	No	No effect	The proposed project is not located within the Edwards Aquifer zones..
Bee Creek Cave/Reddell harvestman (<i>Texella reddelli</i>)	E	Bee Creek Cave harvestman is a cave-dwelling arachnid. The known range for the Bee Creek Cave harvestman is limited to a few caves in Travis and Williamson counties but has the potential to occur in Burnet County. This subterranean species has adapted to areas with consistent humidity and temperature levels and a continual influx of nutrients from the surface.	No	No effect	The proposed project is not located within the Edwards Aquifer zones.
Tooth Cave pseudoscorpion (<i>Tartarocreagris texana</i>)	E	Tooth Cave pseudoscorpion is a small, cave-adapted pseudoscorpion known from small limestone caves of the Edwards Plateau. Cavern development in the formations comprising the Edwards Aquifer in northwestern Travis County is the known range for the pseudoscorpion. This subterranean species has adapted to areas with consistent humidity and temperature levels and a continual influx of nutrients from the surface.	No	No effect	The proposed project is not located within the Edwards Aquifer zones.

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Species	Listing	Description of Suitable Habitat	Habitat Present	Effect	Discussion
Tooth Cave spider (<i>Neoleptoneta myopica</i>)	E	Tooth Cave spider is a very small, cave-adapted, sedentary spider. The known range for this spider is limited to a few caves in Travis County. The caves have developed in the formations comprising the Edwards Aquifer. This subterranean species has adapted to areas with consistent humidity and temperature levels and a continual influx of nutrients from the surface.	No	No effect	The proposed project is not located within the Edwards Aquifer zones.
Warton's Cave spider/Warton meshweaver (<i>Cicurina wartoni</i>)	C	Warton's Cave Spider is a very small, cave-adapted spider. The known range for this spider is limited to a few caves in Travis County. The caves have developed in the formations comprising the Edwards Aquifer. This subterranean species has adapted to areas with consistent humidity and temperature levels and a continual influx of nutrients from the surface.	No	No impact	The proposed project is not located within the Edwards Aquifer zones.

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Species	Listing	Description of Suitable Habitat	Habitat Present	Effect	Discussion
Birds					
Black-capped Vireo (<i>Vireo atricapilla</i>)	E	Black-capped vireo is a migratory songbird present in Texas during the breeding season of late March through September. The breeding habitat normally has a distinctive patchy, two-layered aspect that includes a deciduous, broad-leaved shrub and tree layer with open, grassy spaces. Foliage reaching to ground level is used for nesting cover and the birds return to the same territory, or one nearby, year after year. The species composition of the vegetation is less important than the presence of adequate broad-leaved shrubs, foliage to ground level, and the required structure. Upper canopy within vireo habitat is relatively open.	No	No effect	There are no broad-leaved shrub and trees preferred by the vireo. The project is not in the known breeding range of the vireo.
Golden-cheeked Warbler (<i>Dendroica chrysoparia</i>)	E	The golden-cheeked warbler is a migratory songbird present in Texas during the breeding season of early March through early August. The songbirds prefer an oak-juniper wood that possesses a high percentage of tree canopy. In the study <i>The Interactions Between Avian Predators and Golden-cheeked Warblers in Travis County, Texas</i> by K. A. Arnold et al, 1996, it was determined that the warblers normally inhabit areas with a dense tree canopy contiguous within blocks of 56 acres or more. Ashe juniper within the oak-juniper woods normally occupied by the warbler is not predominately second growth or multi-trunked. The warbler collects the strips of bark shedding from Ashe juniper to construct their nests.	No	No effect	There is no Ashe juniper within oak-juniper woods. The project is not in the known breeding range of the warbler.

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Species	Listing	Description of Suitable Habitat	Habitat Present	Effect	Discussion
Whooping Crane (<i>Grus americana</i>)	E,EXPN	Whooping crane breeds in Canada and winters on the Texas coast. During migration the crane typically stops to rest and feed in open bottomlands of large rivers, marshes, and in agricultural areas.	No	No effect	There are no open bottomlands of large rivers.
Insects					
Kretschmarr Cave mold beetle (<i>Texamaurops reddelli</i>)	E	Kretschmarr Cave mold beetle is a small, cave-adapted beetle found under rocks buried in silt. Cavern development in the formations comprising the Edwards Aquifer of the Jollyville Plateau, a division of the Edwards Plateau is the known range for the beetle. This subterranean species has adapted to areas with consistent humidity and temperature levels with a continual influx of nutrients from the surface.	No	No effect	The proposed project is not located within the Edwards Aquifer zones.
Tooth Cave ground beetle (<i>Rhadine persephone</i>)	E	Tooth Cave ground beetle is a resident, small, cave-adapted beetle found in Edwards Limestone caves in Travis and Travis counties. The caves were formed as a result of dissolution of the limestone formations making up the Edwards Aquifer. This subterranean species has adapted to areas with consistent humidity and temperature levels and a continual influx of nutrients from the surface.	No	No effect	The proposed project is not located within the Edwards Aquifer zones.
Mollusks					
smooth pimpleback (<i>Quadrula houstonensis</i>)	C	See Table 2	No	see Table 2	See Table 2
Texas fatmucket (<i>Lampsilis bracteata</i>)	C	See Table 2	No	see Table 2	See Table 2
Texas fawnsfoot (<i>Truncilla macrodon</i>)	C	See Table 2	No	see Table 2	See Table 2
Texas pimpleback (<i>Quadrula petrina</i>)	C	See Table 2	No	see Table 2	See Table 2

Table 2. State Listed Threatened or Endangered Species in Travis County

(E = endangered and T = threatened)

Source: TPWD "Annotated County List of Rare Species" for Travis County dated 3/31/14

Species	Listing	Description of Suitable Habitat	Habitat Present	Impact	Justification of Impact
Amphibians					
Barton Springs salamander (<i>Eurycea sosorum</i>)	E	see text in Table 1	No	see Table 1	see text in Table 1
Birds					
American Peregrine Falcon (<i>Falco peregrinus anatum</i>)	T	American peregrine falcon is considered to be a potential migrant within the limits of the project. In Texas, this sub-species is known to nest in the Trans Pecos region including Big Bend National Park and the Chisos, Davis, and Guadalupe mountains. There is the potential for the falcons to migrate through central Texas in the spring and fall en route from breeding grounds to wintering grounds in South America. Peregrine falcons prefer open areas and often occur near water or wherever smaller birds concentrate.	Yes	No impact	No stopovers normally used during migration.
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	T	Found primarily near rivers and large lakes. Nests in tall trees or on cliffs near water. Communally roosts especially in winter.	Yes	No impact	There are no nests or roosts within the proposed project limits.
Black-capped Vireo (<i>Vireo atricapilla</i>)	E	see text in Table 1	No	see Table 1	see text in Table 1
Golden-cheeked Warbler (<i>Dendroica chrysoparia</i>)	E	see text in Table 1	No	see Table 1	see text in Table 1
Interior Least Tern (<i>Sterna antillarum athalassos</i>)	E	Interior least tern is a shorebird that breeds in Texas along portions of the Rio Grande River, Canadian River, and Prairie Dog Town Fork of the Red River. Nesting habitat includes large areas of bare or sparsely vegetated sand, shell, and gravel beaches, sandbars, islands, and salt flats near large rivers and reservoirs. This species winters along the coasts of Central and South America and feeds in shallow water where there is an abundance of fish.	No	No impact	No stopovers normally used during migration.

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Peregrine Falcon (<i>Falco peregrinus</i>)	T	both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F.p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only at the species level. Year-round resident and local breeder in west Texas. Nests in tall cliff eyries. Habitats during migration include urban areas, coast and barrier islands. Stopovers at leading landscape edges such as like shores, coastlines, and barrier islands.	No	No impact	No stopovers normally used during migration.
Whooping Crane (<i>Grus americana</i>)	E	see text in Table 1	No	see Table 1	see text in Table 1
Mammals					
red wolf (<i>Canus rufus</i>)	E	extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies	No	No impact	Extirpated

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Mollusks					
false spike mussel (<i>Quincuncina mitchelli</i>)	T	Presently, the only known population for this species is in the Guadalupe River near Gonzales, Texas. Recently, a single fresh-dead individual was observed in the San Saba River near San Saba, TX, indicating that this species may still persist in the upper Colorado River basin. There are 11 records for this species, most of which are from tributaries in the upper Colorado and Brazos River basins (Randklev et al. in press). There are no contemporary accounts for this species from the San Antonio and Rio Grande River basins..	No	No impact	Project was surveyed by qualified scientists using recognized methods; No habitat for or individual false spike mussel were found. (Johnson & Groce 2011).
smooth pimpleback (<i>Quadrula houstonensis</i>)	T	The smooth pimpleback has been found in mud, sand, and fine gravel in medium to large rivers and some reservoirs. Recently found in the Colorado River only from LBJ and Inks Lakes, and two mainstream locations in Colorado and Wharton counties. The species has recently been documented in the San Saba River in San Saba County. (Fed. reg. Vol. 76, No. 194, 62166-62212)	No	No impact	Project was surveyed by qualified scientists using recognized methods; no habitat for or live or recent dead individual smooth pimpleback were found. (Johnson & Groce 2011). One long-dead shell fragment was found.

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Species	Listing	Description of Suitable Habitat	Habitat Present	Impact	Justification of Impact
Texas fatmucket (<i>Lampsilis bracteata</i>)	T	The Texas fatmucket occurs in moderately sized rivers in mud, sand, or gravel or mixtures of these substrates and sometimes in narrow crevices between bedrock slabs. Live individuals have been found in relatively shallow water, rarely more than 1.5 meters deep, and usually less. Remaining populations typically occur at sites where one or both banks are relatively low, allowing floodwaters to spread out over land and thereby reducing damage from scouring. The species does not occur in ponds, lakes, or reservoirs, suggesting that it is intolerant of deep, low-velocity water created by artificial impoundments. . (Fed. reg. Vol. 76, No. 194, 62166-62212)	No	No impact	Project was surveyed by qualified scientists using recognized methods; No habitat for or individual Texas fatmucket were found. (Johnson & Groce 2011)..
Texas fawnsfoot (<i>Truncilla macrodon</i>)	T	Shell material and recently dead individuals indicate that the Texas fawnsfoot occurs in flowing water, as it was never found in ponds, lakes, or reservoirs, suggesting that it is intolerant of deep, low-velocity waters created by artificial impoundments. Recently discovered live population in the Brazos River indicates that the species occurs in rivers with soft, sandy sediment with moderate water flow. The Texas fawnsfoot has been eliminated from all of the Colorado River system with the exceptions of Colorado County and the San Saba River in San Saba County. The species is known to occur in the Brazos River system; however, it has been extirpated from the San Gabriel River and Yegua Creek which are the only parts of the Brazos River system in the Austin District. . (Fed. reg. Vol. 76, No. 194, 62166-62212)	No	No impact	Project was surveyed by qualified scientists using recognized methods; No habitat for or individual Texas fawnsfoot were found. (Johnson & Groce 2011).

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Texas pimpleback (<i>Quadrula petrina</i>)	T	The Texas pimpleback typically occurs in moderately sized rivers, usually in mud, sand, gravel, and cobble, and occasionally in gravel-filled cracks in bedrock slab bottoms. The species has not been found in water depths over 2 meters. Texas pimpleback have not been found in reservoirs, which indicates that this species is intolerant of deep, low-velocity waters created by artificial impoundments. Texas pimpleback appear to tolerate faster water more than many other mussel species. . (Fed. reg. Vol. 76, No. 194, 62166-62212)	No	No impact	Project was surveyed by qualified scientists using recognized methods; No habitat for or individual Texas pimpleback were found. (Johnson & Groce 2011).
Reptiles					
Texas horned lizard (<i>Phrynosoma cornutum</i>)	T	Texas horned lizard habitat is that of open, arid and semi-arid regions with sparse ground cover including bunchgrass and cactus growing on sandy/rocky soil types. Although the historic range of the horned lizard includes almost the entire State, over past years its presence has declined in central Texas. Harvester ants make up a significant portion of the Texas horned lizard diet.	No	No impact	The ground cover is not sparse and the soils are not sandy/rocky types.