

**HABITAT CONSERVATION PLAN
FOR THE
WEST TRAVIS COUNTY PUBLIC UTILITY AGENCY
RAW WATER TRANSMISSION MAIN**

Travis County, Texas

February 2018

Submitted to:

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Executive Summary

The West Travis County Public Utility Agency (WTCPUA) is requesting an Endangered Species Act Section 10(a)(1)(B) incidental take permit for impacts associated with construction of the WTCPUA Raw Water Transmission Main to a federally listed endangered species, golden-cheeked warbler (*Setophaga chrysoparia*) (GCWA). The Section 10(a)(1)(B) incidental take permit will authorize the construction, operation, and maintenance of a new raw water transmission main within areas established as GCWA preserve and occupied habitat. Additionally, WTCPUA is requesting incidental take authorization for the operation and maintenance of an existing raw water line, along with an existing raw water intake facility, electric powerlines, and access road. This document serves as the Habitat Conservation Plan for the requested authorization.

The proposed project is near the Lake Pointe development in Bee Cave, Texas, and would be constructed from an existing pump station on Lake Austin and extend to the existing Uplands Water Treatment Facility at Ranch-to-Market (RM) 2244, approximately 0.3 mile east of the intersection of Texas State Highway 71 and RM 2244 in Bee Cave, Texas. The proposed project will be partially located within an existing preserve for golden-cheeked warbler that mitigated the effects of the Lake Pointe Development permitted under a prior Section (a)(1)(B) incidental take permit.

The proposed construction of the raw water transmission main (raw water line) is to supplement and provide redundancy to an existing raw water line via parallel capacity to an existing water line that connects the pump station with the water treatment facility. The existing water line is over 30 years old and was constructed and operational prior to the federal listing of the golden-cheeked warbler as endangered.

In early October 2015, the existing line ruptured causing the entire WTCPUA service area to enter emergency Stage 4 water restrictions while the failure was being repaired. During the repair process, approximately 0.1 acre of Ashe juniper vegetation, which was identified as non-habitat for the GCWA in the previous Lake Pointe Section 10(a)(1)(B) incidental take permit, was removed. This clearing activity was conducted outside of the breeding season and in an area that is not GCWA habitat; therefore, it is unlikely this clearing had any effect on the GCWA. U.S. Fish and Wildlife was notified of the line failure and repair. USFWS requested that the clearing and future maintenance of the existing water line be included in the current habitat conservation

plan. The incidental take of GCWA associated with the operation and maintenance of the existing water line, along with the raw water intake facility, electric powerlines, and access road, was previously allowed for under the implementing agreement associated with an Incidental Take Permit for the Lake Pointe Development, which expired in 2009. The WTCPUA will include the future operation and maintenance of the existing line into this habitat conservation plan to extend the duration of incidental take coverage resulting from those activities.

The proposed WTCPUA raw water line will be constructed to provide redundancy and is part of an approved 10-year Capital Improvement Program that will allow the WTCPUA to realize the current design capacity of the Uplands Water Treatment Plant and raw water intake as well as provide for projected demands within the service area, but will not add any capacity to the service area. The WTCPUA reconfigured the Capital Improvements Program as envisioned by the prior system owner to scale back the service area and abandon plans for a second raw water intake, raw water transmission main, and water treatment plant complex located on Lake Travis. Additionally, the WTCPUA expanded the application of provisions of the Memorandum of Understanding between the U.S. Fish and Wildlife Service and Lower Colorado River Authority to the entire service area. The existing service area will remain unchanged and the proposed WTCPUA raw water line will not affect or expand the current or projected demands within the service area.

Four potential build alternatives and a no-build alternative are presented in this Habitat Conservation Plan for the raw water line. Each of the build alternatives has the potential to affect occupied golden-cheeked warbler habitat and two alignments have the potential to affect waters of the U.S. within the preserve.

The four build alternatives chosen were designed to both minimize and avoid the amount of occupied habitat removal within the preserve system and minimize impacts within the Lake Pointe development. The Lake Pointe development is a fully developed subdivision and strong consideration was given to structural foundation, street and drainage facility damage cost, disruption to daily and routine activities within the subdivision, and the health, safety, and wellness of residents.

Some of the construction would occur in areas previously deeded as preserve land. For the preferred alternative, approximately 0.11 acre of permanent impacts will occur to

GCWA habitat, approximately 5.30 acres of temporary impacts will occur to GCWA habitat, and approximately 3.16 acres of indirect effects will occur. These impacts to GCWA habitat will occur along the border of an existing 25-foot-wide access road, which currently exists as a corridor through the GCWA habitat within the preserve. Clearing activities for the proposed WTCPUA raw water line within the preserve would be completed outside of the GCWA breeding season. Construction activities within the preserve may continue into the breeding season as long as the construction activities begin concurrent with, or directly following, the clearing activities; however, best efforts will be made to complete as much of the construction activities as practicable outside of the breeding season. Following clearing activities, any construction activities are unlikely to adversely affect the GCWA.

These impacts to GCWA habitat will result in the direct removal of approximately 5.41 acres of GCWA habitat along an existing clearing within the preserve due to the proposed minimization and avoidance measures outlined within the Habitat Conservation Plan. Additionally, approximately 3.16 acres of GCWA habitat will be indirectly affected by the proposed clearing activities. USFWS considers the removal of these 5.41 acres direct impacts and 3.16 acres of indirect impacts to habitat as a new effect to the species that must be mitigated to offset any potential take of the GCWA resulting from the removal of this habitat. To offset the 5.41 acres of direct impacts and the 3.16 acres of indirect impacts to GCWA habitat, a mitigation ratio of five mitigation credits for each acre of direct impacts (5:1) and a one half mitigation credit for each acre of indirect impacts (0.5:1) ratio was applied to determine the total mitigation credits. To mitigate these potential effects to the species, WTCPUA will purchase 28 mitigation credits from the Hickory Pass Conservation Bank.

Habitat Conservation Plan for the West Travis County Public Utility Agency Raw Water Transmission Main in Travis County, Texas

1.0 INTRODUCTION

This document is the Habitat Conservation Plan (HCP) for the requested authorization of an Endangered Species Act (ESA) Section 10(a)(1)(B) incidental take permit (ITP) for the proposed West Travis County Public Utility Agency (WTCPUA) Raw Water Transmission Main project. The proposed raw water transmission main (raw water line) would provide redundancy and parallel capacity to an aging, existing raw water line, and would be partly located in a mitigation preserve area and occupied habitat for the federally listed golden-cheeked warbler (*Setophaga chrysoparia*) (GCWA).

The existing water line was constructed prior to the federal-listing of the GCWA as an endangered species in 1990. The construction of the proposed WTCPUA raw water line may result in additional impacts to occupied GCWA habitat within the preserve area; however, these impacts would result in the minor expansion of a previously cleared corridor associated with an access road. The mitigation preserve area was previously described as GCWA habitat in the Lake Pointe Environmental Assessment (EA) and HCP. Surveys conducted within the preserve area indicate GCWA occur within the mitigation preserve area (SWCA 1993).

The proposed WTCPUA raw water line would occur in the mitigation preserve owned by West Travis County Municipal Utility District #5 (WTCMUD #5), existing developed areas, and public right of way (ROW) (Figure 1). A portion of the proposed activities would be located within the ROW along RM 2244. The proposed activities would be constructed and financed by the WTCPUA, the primary supplier of retail and wholesale potable water service in the area.

Section 9 of the Endangered Species Act (ESA) prohibits certain activities that may result in the “take” of species listed as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS). “Take” is defined in the ESA as “harass, harm, pursue, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” “Harm” has been defined to include activities that modify or degrade habitat in a way that significantly impairs essential behavior patterns and results in death or injury. Alteration of the quality and/or quantity of endangered species habitat may “harm” the

listed species that inhabit those areas. The USFWS and National Marine Fisheries Service (NMFS) are the agencies within the U.S. Department of the Interior and U.S. Department of Commerce, respectively that evaluate threats to species. A number of potential impacts, directly or indirectly related to human activities, are of concern to USFWS and may be regulated by that agency to prevent “take” or “harm” of these listed species.

Section 10 of the ESA provides for exceptions to the ESA that allows for the authorization of take. Section 10(a)(1)(B) of the ESA specifically allows for the authorization of take that is incidental to a lawful activity (i.e., an ITP) with Section 10(a)(2)(A) of the ESA stating that a HCP is required for any permits issued under Section 10(a)(1)(B). This HCP has been prepared pursuant to the ESA for the proposed project.

2.0 PROPOSED PROJECT, PLAN AREA, PERMIT AREA, AND COVERED ACTIVITIES

2.1 Proposed Project

The WTCPUA is proposing to construct a raw water line that connects an existing pump station located on the shores of Lake Austin with the existing Uplands Water Treatment Plant facility located along RM 2244 in Bee Cave, Texas. The WTCPUA raw water line would provide redundancy and parallel capacity to the existing raw water line that connects the pump station with the water treatment facility. The proposed project will include the operation and maintenance of the WTCPUA raw water line. Additionally, the proposed project will include the operation and maintenance of an existing raw water line, along with an existing raw water intake facility, electric powerlines, and access road. A figure depicting the two preserve areas, Lake Pointe development, existing pump station, Uplands Water Treatment Facility, existing access roads, and existing raw water line is included as Figure 1.

The existing water line is approximately 32 years old and was constructed and operational prior to the federal-listing of the GCWA as endangered. In early October 2015, the existing line ruptured causing the entire WTCPUA service area to enter emergency Stage 4 water restrictions while the failure was being repaired. The proposed WTCPUA raw water line will be constructed to provide redundancy and is part of an approved 10-year Capital Improvement Program that will allow the

WTCPUA to realize the current design capacity of the Uplands Water Treatment Plant and raw water intake as well as provide for projected demands within the service area, but will not add any capacity to the service area. The WTCPUA reconfigured the Capital Improvements Program as envisioned by the prior system owner to scale back the service area and abandon plans for a second raw water intake, raw water transmission main, and water treatment plant complex located on Lake Travis. Additionally, the WTCPUA expanded the application of provisions of the Memorandum of Understanding between the U.S. Fish and Wildlife Service and Lower Colorado River Authority to the entire service area. The existing service area will remain unchanged and the proposed WTCPUA raw water line will not affect or expand the current or projected demands within the service area.

Two existing GCWA preserves fall under the scope of this HCP. A 161-acre mitigation preserve (161-acre 1993 Lake Pointe Preserve) was dedicated as a condition of the Expired Lake Pointe ITP in 1993 (PRT-782816, Appendix A). Since then, the 98-acre Lake Pointe IV Preserve was authorized under the Lake Pointe IV ITP in 1996 (PRT-817371, Appendix B). Both preserve areas have been dedicated to WTCMUD #5, which brings the total acreage of preserve land managed by WTCMUD #5 to approximately 259 acres (Figure 1).

The 161-acre 1993 Lake Pointe Preserve and 98-acre Lake Pointe IV preserve are both operated and maintained by WTCMUD #5. All preserve lands operated and maintained by WTCMUD #5 are consistent with the operational and management guidance procedures identified in the Balcones Canyonlands Preserve (BCP). The preserve lands managed by WTCMUD #5 are located in the South Lake Austin Macrosite of the BCP (Macrosite) (Figure 2); as such, the WTCPUA may not seek incidental take coverage under the Balcones Canyonlands Conservation Plan (BCCP). Several additional tracts within the delineated Macrosite have been acquired by the BCP since the original 161-acre 1993 Lake Pointe Preserve and 98-acre Lake Pointe IV Preserve were dedicated as mitigation for the Expired Lake Pointe ITP and Lake Pointe IV ITP, respectively. Acquisition of the proposed 4,491-acre Macrosite is currently 90% complete (Appendix C). Note, acreage calculations were calculated using Travis County Appraisal District parcel boundaries and may vary from the stated acreages in associated documents.

The proposed WTCPUA raw water line was designed to both minimize and avoid the amount of occupied habitat removal within the preserve system and minimize impacts

within the Lake Pointe development. The Lake Pointe development is a fully developed subdivision and strong consideration was given to structural foundation, street, and drainage facility damage cost, disruption to daily and routine activities within the subdivision, and the health, safety, and wellness of residents.

Since the proposed WTCPUA raw water line would impact a small portion of GCWA habitat not covered under the previous ITPs, an additional Section 10(a)(1)(B) ITP is requested.

2.2 Plan Area

The plan area is approximately 643 acres and consists of the 98-acre Lake Pointe IV Preserve described within the Lake Pointe IV EA/HCP (Appendix D, USFWS 1996), the 161-acre 1993 Lake Pointe Preserve included within the Lake Pointe EA/HCP (Appendix E, SWCA 1993), the development described in both the Lake Pointe IV and Lake Pointe EA/HCPs, existing access roads, and the area along the existing raw water line that extends to the Uplands Water Treatment Facility in Travis County, Texas (Figure 1). Four build alternatives were considered and are within the 643-acre plan area (Figure 3). The plan area is bordered by undeveloped land and residential properties along various portions of the alignment. The proposed WTCPUA raw water line (Alternative 1) would begin at the existing pump station located along the Colorado River and extend to the Uplands Water Treatment Facility located along RM 2244. Portions of Alternatives 1, 3, and 4 would occur within the 161-acre 1993 Lake Pointe Preserve previously described in the Lake Pointe EA and HCP, which has since been incorporated into the South Lake Austin Macrosite of the BCP.

The total area of preserve land managed by WTCMUD #5, which includes the 161-acre 1993 Lake Pointe Preserve and 98-acre Lake Pointe IV Preserve, is approximately 259 acres. The two preserves are currently owned and privately managed by WTCMUD #5 and are mapped as occurring within the 4,030-acre South Lake Austin Macrosite of the BCP (Figure 2).

2.3 Permit Area

The permit area is the area of direct clearing and construction of the proposed WTCPUA raw water line along with a 300-foot buffer around the clearing areas to address indirect effects to the GCWA, which is limited to the preserve area. Additionally, the existing water line within the preserve is included within the permit

area. Overall, the proposed WTCPUA raw water line will be approximately 2.1 miles in length with clearing occurring in an approximately 25-foot wide permanent ROW and a temporary ROW extending approximately 31.25 feet on either side of the permanent ROW for a total clearing width of 87.5 feet. The permanent ROW will be used for the construction, operation, and maintenance of the proposed WTCPUA raw water line and the temporary ROW will allow for the construction of the raw water line, but will be revegetated following construction of the project. The permanent and temporary ROWs will occur on a total of approximately 22.55 acres. This acreage includes the portions of the proposed WTCPUA raw water line that will extend within and outside of the GCWA preserve.

The proposed WTCPUA raw water line begins at the existing pump station along the Colorado River, approximately 0.3 mile north of the intersection of Pleasant Panorama View and Sea Eagle View (Figure 4) within a the GCWA preserve. From the pump station, the WTCPUA raw water line meanders south through the GCWA preserve approximately 1.1 mile where it exits the preserve. From here the WTCPUA raw water line will extend approximately 0.2 mile south before extending west along RM 2244 approximately 0.8 mile before crossing south below RM 2244 and connecting with the Uplands Water Treatment Facility located at the intersection of Bee Cave Parkway and RM 2244. (Figure 4).

The WTCPUA raw water line will extend approximately 1.1 mile feet through the 161-acre Lake Pointe Preserve and have an 87.5-foot cleared ROW for a total area of approximately 11.32 acres within the GCWA preserve (Note: the area was calculated using Geographic Information Systems (GIS) software and differs from a direct length multiplied by width calculation). Of this 11.32 acres, the majority of the construction within the GCWA Preserve would include the existing footprint of an approximately 25-foot-wide access road that occupies approximately 133,049 square feet, or 3.05 acres, of the proposed alignment. However, the entire 11.32-acre impact area within the GCWA preserve is not classified as GCWA habitat. There is previous disturbance within the GCWA preserve, such as an access road and overhead line the proposed WTCPUA raw water line is routed along, and other non-disturbed areas that lack the structural and compositional elements necessary for the breeding, feeding, and sheltering of GCWA.

GCWA habitat was delineated within the plan area during the drafting process of the Lake Pointe EA/HCP (SWCA 1993). According to the Lake Pointe EA/HCP (SWCA 1993), habitat was delineated based on known GCWA sightings. Habitat was delineated where warblers were found in areas with a mixture of large deciduous trees and junipers. The boundary between habitat and non-habitat was based on the change between areas with warbler sightings within forested areas with large deciduous trees and junipers to areas that were unoccupied by GCWAs that consisted primarily of smaller junipers and live oaks. Texas oak was the primary deciduous species utilized by GCWAs. The habitat boundary is displayed on Figure 5. Based on the habitat area mapped in the Lake Pointe HCP (SWCA habitat), approximately 5.41 acres of GCWA habitat will be cleared. Additionally, aci consulting conducted a habitat assessment within the proposed WTCPUA raw water line permanent and temporary ROW on December 29, 2014, and March 10, and March 25, 2015 (Figure 6). Based on the aci consulting habitat assessment (aci habitat), approximately 4.55 acres of GCWA habitat will be cleared. To provide a more conservative estimate of impacts to GCWA habitat, all impacts to GCWA calculated within this HCP will be based on the SWCA habitat classification. Direct impacts to GCWA habitat based on the SWCA habitat classification are depicted in Figure 7.

To summarize the direct effects to GCWA, approximately 1.1 miles of the proposed WTCPUA raw water line will occur within the 161-acre Lake Pointe Preserve and have an approximately 87.5-foot cleared ROW for a total area of approximately 11.32 acres within the GCWA preserve. Of this 11.32 acres, the majority of the construction within the GCWA Preserve would include the existing footprint of an approximately 25-foot-wide access road that occupies approximately 133,049 square feet, or 3.05 acres, of the proposed alignment. Additionally, not including the existing road footprint, approximately 5.41 acres of previously mapped GCWA habitat occurs within the permanent and temporary ROWs (0.11 acre within the permanent ROW and 5.30 within the temporary ROW). The remaining portion of the ROWs within the GCWA preserve occur on approximately 2.86 acres of area that was not mapped as GCWA habitat during authorization of the Lake Pointe EA/HCP (SWCA 1993). See Table 1 for a summary of impact areas within the GCWA preserve.

Table 1: Impact types within the GCWA preserve

Road	Non-habitat	Direct Impacts (5.41 ac Total)	Total Area within GCWA Preserve	Indirect Impacts
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		Permanent Impacts	Temporary Impacts		
3.05 ac	2.86 ac	0.11 ac	5.30 ac	11.32 ac	3.16 ac

Outside of the GCWA preserve, the 87.5-foot permanent and temporary ROWs will occur on approximately 11.38 acres of developed land.

The routing of the proposed WTCPUA raw water line along an existing, disturbed corridor within the preserve, the access road, was designed to avoid impacts to GCWA, minimize impacts to occupied GCWA habitat where they could not be avoided, avoid indirect impacts to GCWA habitat by constructing the raw water line along a previous impact corridor, and minimize and avoid impacts to the Lake Pointe development and its residents.

The USFWS considers indirect impacts to GCWA to occur within habitat within 300 feet of direct impacts to GCWA habitat. The proposed routing of the WTCPUA raw water line will be constructed along an existing road and overhead electrical line, which have already caused indirect effects to the GCWA within 300 feet of their impact areas. These existing indirect impacts are caused by fragmentation of the existing habitat and by creating a vector for increased competition, predation, and parasitism of the GCWA. The proposed WTCPUA raw water line will expand the cleared areas along these existing cleared areas, which will result in approximately 3.16 acres of indirect impacts (Figure 8). Additionally, noise during the construction of the proposed raw water line generally has the potential to result in indirect effects to the GCWA. However, best efforts will be made to complete as much of the construction activities as practicable outside of the breeding season. Additionally, these construction activities will at most last one breeding season and therefore be temporary in nature, therefore not resulting in a permanent or long-lasting effect to the species. As such, noise associated with the construction of the project is not considered an indirect effect. The new indirect effects that will occur due to the clearing, construction, or maintenance of the proposed WTCPUA raw water line have been minimized to the maximum extent practicable.

2.4 Description of Covered Activities

The covered activities of this HCP will include the clearing of vegetation and earth moving activities within the GCWA preserve associated with the WTCPUA raw water

line, construction of the WTCPUA raw water line in the GCWA preserve, and operation and maintenance of the WTCPUA raw water line within the GCWA preserve.

The operation and maintenance activities will include mowing and trimming trees along the permanent ROW to maintain access for maintenance, inspections, other operation activities generally associated with raw water pipelines, and repair activities of the proposed WTCPUA raw water line and existing raw water line. Any mowing or trimming activities following project completion will be conducted outside of the GCWA breeding season. All normal operation and maintenance activities that require additional clearing or mechanized excavation will be limited to outside of the GCWA breeding season. All other normal operation and maintenance activities that do not require clearing or mechanized excavation will be allowed throughout the year. Additionally, this HCP will include the operation and maintenance of the existing raw water line, along with the existing raw water intake facility, electric powerlines, and access road.

All temporary impacted areas would be re-vegetated. Clearing activities for the proposed WTCPUA raw water line within the preserve would be completed outside of the GCWA breeding season. Construction activities within the preserve may continue into the breeding season as long as the construction activities begin concurrent with, or directly following, the clearing activities; however, best efforts will be made to complete as much of the construction activities as practicable outside of the breeding season. Following clearing activities, any construction activities are unlikely to adversely affect the GCWA. Staging areas would also be necessary for project completion; any staging areas will be located outside of the previously mapped GCWA habitat.

Construction would occur in areas previously deeded as preserve land, but the integrity of the preserve will remain fully intact. The WTCPUA and WTCMUD #5 are currently working towards establishing an easement within the WTCMUD #5-owned property. Clearing or construction will not occur within WTCMUD #5-owned property until both parties have executed an agreement and established the easement regarding the WTCPUA raw water line construction. Total impacts associated with the preferred alternative would be less than 4.4% of the combined 161-acre 1993 Lake Pointe Preserve and 98-acre Lake Pointe IV Preserve, both of which are owned and managed by WTCMUD #5. These impacts would also be approximately 0.3% of the currently held 4,030 acres within the South Lake Austin Macrosite. These impacts will result in the

removal of approximately 5.41 acres of GCWA habitat along an existing clearing within the preserve due to the proposed minimization and avoidance measures outlined within the Habitat Conservation Plan and indirect effects to 3.16 acres. USFWS considers these impacts as a new effect to the species that must be mitigated to offset any potential take of the GCWA resulting from the removal of this habitat. To mitigate these potential effects to the species, prior to clearing WTCPUA will purchase mitigation credits from the Hickory Pass Conservation Bank to offset the 5.41 acres of removed GCWA habitat and 3.16 acres of indirect effects. In total, 28 mitigation credits will be purchased. Potential impacts associated with the proposed project are depicted in Table 2.

Table 2: Impacts within Preserve, Macrosite and GCWA Occupied Habitat

Covered Activity	Area within Preserve	Macrosite Impacted	Direct Impacts to GCWA Habitat within the Preserve			Indirect Impacts to GCWA Habitat within the Preserve	Proposed Mitigation
			Permanent Impacts	Temporary Impacts	Total Direct GCWA Impacts		
Proposed Project	11.32 ac*	0.3%	0.11 ac	5.30 ac	5.41 ac	3.16 ac	28 Credits

Note: does not include staging areas

*Includes areas of existing disturbance

3.0 SPECIES ADDRESSED BY THE HABITAT CONSERVATION PLAN

According to the USFWS Environmental Conservation Online System (ECOS), Information, Planning, and Conservation System (IPaC), 18 federally listed threatened, endangered, or candidate species in Travis County have the potential to be impacted by the proposed project (USFWS 2015a). Of the 18 species, 11 are federally listed as endangered, one is federally listed as threatened, and six are candidates for federal listing.

The species that are federally listed as endangered within Travis County, Texas, includes two amphibians: Austin blind salamander and Barton Springs salamander; three birds: black-capped vireo (BCVI), GCWA, and whooping crane; and six endangered karst invertebrates (EKI): Bee Creek Cave harvestman, Bone Cave harvestman, Tooth Cave spider, Tooth Cave pseudoscorpion, Kretschmarr Cave mold beetle, and Tooth Cave ground beetle. One species, Jollyville Plateau salamander, is

federally listed as threatened. Six species identified as candidates for federal-listing include five mussels, the golden orb, smooth pimpleback, Texas fatmucket, Texas fawnsfoot, and Texas pimpleback; and one plant, the bracted twistflower (USFWS 2015a).

Three other species: least tern (*Sterna antillarum*), piping plover (*Charadrius melodus*), and red knot (*Calidris canutus*) are federally listed as endangered, threatened, and proposed threatened, respectively, in Travis County; however, the USFWS ECOS IPaC database (USFWS 2015a) states that these species should only be considered in an effects analysis if the project is a wind energy project. Since the proposed activities are not related to a wind energy project, potential impacts associated with the proposed project to the least tern, piping plover, and red knot will not be assessed as part of this Section 10(a)(1)(B) EA/HCP.

Species that are currently federally listed as endangered, threatened, or candidates for listing that were not previously federally listed and described in the Lake Pointe EA/HCP (SWCA 1993) include the endangered Austin blind salamander, threatened Jollyville Plateau Salamander, endangered Bone Cave harvestman, and the five mussel species that are currently candidates for listing. For Austin blind salamander and Barton Springs salamander, the proposed project will conform to all applicable federal and state laws and municipal regulations including all applicable water quality and stormwater regulations. Best Management Practices (BMPs) will be implemented during all construction activities to minimize any discharge of sediments from the construction area and will be implemented with a Stormwater Prevention and Pollution Plan (SWP3) in accordance with the Texas Pollution Discharge Elimination System (TPDES) general permit TXR150000. Following all construction activities, the construction area will be sufficiently stabilized. No hazardous materials will be placed in the fill during the floodplain modification area. Furthermore, Jollyville Plateau salamander does not occupy any known sites south of the Colorado River. The Bone Cave harvestman had previously been misidentified as the Bee Creek Cave harvestman and was therefore described within the Bee Creek Cave harvestman description of the Lake Pointe EA/HCP (SWCA 1993). Since the original Lake Pointe EA/HCP (SWCA 1993), the black-capped vireo has been proposed for delisting. The Service is anticipated to make a final determination by December 2017. The bird remains protected under the ESA; however, if the bird is delisted, the Service would continue to work with partners to monitor its status for a minimum of five years.

Table 3 lists each federally listed threatened, endangered, and candidate species that may occur in Travis County and be affected by construction associated with the proposed project.

Table 3: Candidate, Threatened, and Endangered Species of Potential Occurrence in Travis County

Species	Latin Name	Federal Status
Amphibians		
Austin Blind Salamander	<i>Eurycea waterlooensis</i>	LE
Barton Springs Salamander	<i>Eurycea sosorum</i>	LE
Jollyville Plateau salamander	<i>Eurycea tonkawae</i>	LT
Birds		
Black-capped Vireo	<i>Vireo atricapilla</i>	LE
Golden-cheeked Warbler	<i>Setophaga chrysoparia</i>	LE
Whooping Crane	<i>Grus americana</i>	LE, EXPN
Least Tern*	<i>Sterna antillarum</i>	LE
Piping Plover*	<i>Charadrius melodus</i>	LT
Red Knot*	<i>Calidris canutus</i>	PT
Karst Invertebrates		
Bee Creek Cave Harvestman	<i>Texella reddelli</i>	LE
Bone Cave Harvestman	<i>Texella reyesi</i>	LE
Tooth Cave Spider	<i>Leptoneta myopica</i>	LE
Tooth Cave Pseudoscorpion	<i>Tartarocreagris texana</i>	LE
Kretschmarr Cave Mold Beetle	<i>Texamaurops reddelli</i>	LE
Tooth Cave Ground Beetle	<i>Rhadine persephone</i>	LE
Mussels		
Golden Orb	<i>Quadrula aurea</i>	C
Smooth Pimpleback	<i>Quadrula houstonensis</i>	C
Texas Fatmucket	<i>Lampsilis bracteata</i>	C
Texas Fawnsfoot	<i>Truncilla macrodon</i>	C
Texas Pimpleback	<i>Quadrula petrina</i>	C
Plants		
Bracted Twistflower	<i>Streptanthus bracteatus</i>	C
* Not considered in the effects analysis LE = Listed endangered; LT = Listed threatened; EXPN = Experimental population, non-essential; C = Candidate; PT = Proposed Threatened Source: (USFWS 2015a)		

Impacts associated with the construction of the proposed WTCPUA raw water line would permanently impact approximately 0.11 acre of occupied GCWA habitat and would temporarily impact approximately 5.30 acres of occupied habitat resulting in overall impacts of approximately 5.41 acres of occupied GCWA habitat within the preserve. No other occupied habitat for any federally listed species is present within the proposed WTCPUA raw water line area.

3.1 Covered Species - Golden-cheeked Warbler

GCWA was emergency listed as endangered on May 4, 1990, and the Final Rule was issued on December 27, 1990 (USFWS 1990a & USFWS 1990b). GCWA is a small, migratory, insectivorous bird known to breed only in Central Texas. The species winters in Central America, arrives in Central Texas in mid-March, and returns to its wintering grounds between late June and mid-August. GCWA requires unique structural and compositional vegetative elements within the landscape for habitat. A recovery plan for GCWA was published in 1992 to provide for the long-term maintenance and recovery strategies for the species (USFWS 1992). No critical habitat has been designated for the species. Mathewson et al. (2012) recently estimated the range-wide GCWA male population at 263,339 (95 percent confidence interval: 223,927 – 302,620), and Morrison et al. (2012) concluded that the species exists as a single population across its breeding range.

The GCWA is small wood warbler that weighs approximately 9 grams that is a summer resident in Texas and generally ranges from the area around Austin, southwest across the Edwards Plateau to the West Nueces River drainage in Kinney County, then northeast to Junction, east to Llano County, and northward near the Possum Kingdom area in Palo Pinto and Stephens County. Within this range, they occupy “cedar breaks,” which are areas of “almost impenetrable mature stands of cedar that broke the horizon or terrain of grass and other vegetation” (Pulich 1976). These areas were historically constrained to the sheltered slopes and cliffs of the limestone canyons of the area as a result of burning the landscape by Native Americans or natural fire sources, according to Pulich. Recent land management practices that resulted in fire suppression and overgrazing has allowed the cedar breaks to expand into areas that were previously comprised of grassland (Pulich 1976).

The recovery plan (USFWS 1992) describes the general habitat structure for GCWA as requiring a moderate to high density of trees and dense foliage. Wahl et al. (1990) notes this density is usually at the upper levels. Pulich (1976) states that the general habitat structure for GCWA consists of climax stands of Ashe juniper averaging 20 feet in height with some deciduous cover that are frequently adjacent to riparian or solid-oak species for foraging. Tree species composition is dominated by Ashe juniper and a variety of other, mostly deciduous species. Ashe juniper trees with shredding bark, aged 20 to 40 years, are required for nesting materials. Tree height average ranges from 4.5 to 9.8 meters (14.76 to 32.14 feet), with an average tree height of 6.5 meters (21.32

feet) (Wahl et al. 1990). Wahl et al. (1990) notes that there is variation of GCWA occupation frequency at various heights based on the age, maturity, and density of the tree stand. Canopy cover in known GCWA habitat was estimated to be 67% at 3 meters (9.84 feet), 73% at 5 meters (16.14 feet), and 68% above 5.5 meters (18.04 feet) (Wahl et al. 1990).

The GCWA recovery plan cites Pulich (1976) for its thresholds of the acreage amount that one pair of GCWA would regularly utilize in varying degrees of habitat quality. Pulich's density estimates are 8 ha/pair (19.7 ac/pair) in "good" habitat, 20 ha/pair (49.4 ac/pair) in "average" habitat, and 33 ha/pair (81.5 ac/pair) in "marginal" habitat (Pulich 1976).

Campbell (2003) notes that GCWA habitat typically consists of mature Ashe juniper woodlands interspersed with deciduous species. The areas most likely to be utilized by GCWA consist of nearly continuous cover of trees with 50 to 100 percent closed canopy. Deciduous species common in GCWA habitat include escarpment black cherry, Texas black walnut, ash (*Fraxinus* sp.), Texas oak, and cedar elm.

According to a recent study published by Texas A&M University, Mathewson et al. (2012) estimated the range-wide GCWA male population at 263,339 (95 percent confidence interval: 223,927 – 302,620). Morrison et al. (2012) concluded that the species exists as a single population across its breeding range.

According to the TPWD TNDD, the majority of the plan area is encompassed by EO ID# 5510 (TPWD 2014).

Probability of Occurrence

GCWAs are known to occur within and adjacent to the plan area. The Lake Pointe EA/HCP (SWCA 1993) classified approximately 200 acres of the current plan area as GCWA habitat (Figure 4), which occurred primarily in the wooded draws. Since the Lake Pointe EA/HCP was approved in 1993, the preserve area has been incorporated into the 4,030-acre South Lake Austin Macrosite of the BCP.

3.2 Other Federally Listed Species in Travis County

In addition to GCWA, the following species are federally listed as endangered within Travis County, Texas: two amphibians, Austin blind salamander (*Eurycea waterlooensis*)

and Barton Springs salamander (*Eurycea sosorum*); two birds, black-capped vireo (*Vireo atricapilla*,) and whooping crane (*Grus americana*); and six endangered karst invertebrates (EKI), Bee Creek Cave harvestman (*Texella reddelli*), Bone Cave harvestman (*Texella reyesi*), Tooth Cave spider (*Leptoneta myopica*), Tooth Cave pseudoscorpion (*Tartarocreagis texana*), Kretschmarr Cave mold beetle (*Texamauropis reddelli*), and Tooth Cave ground beetle (*Rhadine Persephone*). One species, Jollyville Plateau salamander (*Eurycea tonkawae*), is federally listed as threatened. Six species identified as candidates for federal-listing include five mussels, the golden orb (*Quadrula aurea*), smooth pimpleback (*Quadrula houstonensis*), Texas fatmucket (*Lamsilis bracteata*), Texas fawnsfoot (*Truncilla macrodon*), and Texas pimpleback (*Quadrula petrina*); and one plant, the bracted twistflower (*Streptanthus bracteatus*) (USFWS 2015a).

3.2.1 *Whooping Crane*

The whooping crane was federally listed as endangered June 2, 1970 (USFWS 1970), under the Endangered Species Conservation Act of 1969. The whooping crane is a migrant species whose flyway crosses the extreme eastern portions of Travis County. The whooping crane typically breeds among rushes and sedges in marshes and meadows in Canada and winters on the estuarine marshes, shallow bays, and tidal salt flats of the Texas coast. During migration, the crane typically stops to rest and feed in open bottomlands of large rivers, marshes, and in agricultural areas. Whooping cranes are omnivorous feeders. Some of the more common food items taken are crabs, clams, shrimp, snails, frogs, snakes, grasshoppers, larval and nymph forms of flies, beetles, water bugs, birds, and small mammals (Campbell 2003). In Texas, critical habitat for the whooping crane is the coastal area, land, and airspace of Aransas National Wildlife Refuge and vicinity (USFWS 1978).

According to the TPWD Texas Natural Diversity Database (TNDD), the nearest Elemental Occurrence (EO) (EO ID# 4506) is 148 miles southeast of the project alignment between Keller and Matagorda Bay in Calhoun County (TPWD 2013a). The nearest known occurrence of whooping cranes to the proposed WTCPUA raw water line is Granger Lake in Williamson County, Texas, approximately 40 miles northeast of the proposed project (TPWD 2012).

Probability of Occurrence

As the proposed WTCPUA raw water line and adjacent areas do not contain typical stopover habitat or wintering grounds for the whooping crane, the occurrence of the species within the proposed WTCPUA raw water line is considered highly unlikely.

No impacts to or take of whooping cranes is anticipated as a result of the proposed WTCPUA raw water line.

3.2.2 *Black-capped Vireo*

BCVI was federally listed as an endangered species on October 6, 1987 (USFWS 1987). BCVI primarily nest on the Edwards Plateau and the Lampasas Cut-Plains regions of central Texas. The range is considered to be discontinuous across the Llano Uplift region. The eastern and southern edges of the range follow the Balcones Escarpment closely from Waco, Texas (McLennan County) to Brackettville, Texas (Kinney County) (USFWS 1987). At the time of listing, it was approximated that the entire population of BCVI had decreased to 350 adult birds, including approximately 191 breeding pairs; as of 2006, the estimated population was 6,010 (Wilkins et al. 2006). As of December 15, 2016, the BCVI was proposed for delisting. The Service listed the black-capped vireo as endangered in 1987, noting only 164 mating pairs. After decades of conservation efforts, experts now estimate a population of about 14,000. The Service took public comment until February 13, 2017, and are anticipated to make a final determination by December 2017. The bird remains protected under the Endangered Species Act; however, if the bird is delisted, the Service would continue to work with partners to monitor its status for a minimum of five years (USFWS 2016b).

USFWS habitat assessment reporting requirements for BCVI (USFWS 2011) recognize BCVI habitat in accordance with the BCVI habitat description in TPWD's "Endangered and Threatened Animals of Texas" (Campbell 2003). The following is a summary of that description:

BCVI require broadleaf shrub vegetation reaching to ground level for nesting cover. They typically nest in shrublands and open woodlands with a distinctive patchy structure. Habitat generally consists of shrub vegetation that extends from the ground to approximately 6 feet, covering 30 to 60 percent or greater of the total area. In the Edwards Plateau and Cross Timbers Regions, BCVI habitat occurs where soils, topography, and land use produce scattered hardwoods with abundant low cover. Typical BCVI habitat in the Edwards Plateau Region consists of Texas (Spanish) oak,

Lacey oak (*Quercus glaucooides*), shin oak (*Quercus sinuata* var. *breviloba*), Texas mountain laurel (*Sophora secundiflora*), evergreen sumac (*Rhus sempervirens*), skunk-bush sumac (*Rhus aromatica* var. *flabelliformis*), flameleaf sumac (*Rhus copallinum*), redbud (*Cercis canadensis* var. *texensis*), Texas persimmon (*Diospyros texana*), mesquite (*Prosopis glandulosa*), and agarita. Although Ashe juniper is often part of the plant composition in BCVI habitat, preferred areas usually have both low density and low cover of juniper (Campbell 2003).

According to TPWD TNDD, the nearest EO of the species is located approximately 2.3 miles north (EO ID# 3543) and 2.3 miles south (EO ID# 5625) of the project alignment (TPWD 2013a). The northern EO was last observed in 1991 and is located along the Colorado River just off of Flat Top Ranch Road. The southern EO was last observed in 1994 and is located at Vireo Hill within the Barton Creek Habitat Preserve off of Southwest Parkway (TPWD 2013a).

Probability of Occurrence

In 1992, SWCA, Inc. biologists familiar with BCVI vocalizations conducted presence/absence surveys for BCVI within the Lake Pointe Property. A total of 116 person hours were spent conducting surveys and all surveys were conducted in accordance with current USFWS protocols. According to their survey results, one BCVI was sighted on the Lake Pointe development area; however the bird did not appear to use the area as habitat and flew off-property shortly after being sighted. SWCA (1993) determined that the Lake Pointe development area and surrounding areas do not appear to contain suitable habitat for BCVI and the probability of occurrence within the area is considered unlikely.

No impacts to or take of BCVI is anticipated as a result of the proposed WTCPUA raw water line.

3.2.3 Karst Invertebrates

According to USFWS, six endangered karst invertebrates (EKI) are federally listed in Travis County: Bee Creek cave harvestman, Bone Cave harvestman, Tooth Cave spider, Tooth Cave pseudoscorpion, Kretschmarr Cave mold beetle, and Tooth Cave ground beetle. No critical habitat has been designated for any of these EKI (USFWS 2015b). Only the Bee Creek Cave harvestman has been located south of the Colorado River (USFWS 1988).

These EKI are troglobitic and complete their entire life cycle underground within cave environments. As such, these species have adapted to the dark and more constant thermal and humidity regimes found within caves. The Veni and Associates (revised 2007) four karst zones, as previously described in Section 2.5, identify geologic zones with the potential for subsurface EKI. The proposed WTCPUA raw water line is located in Zone 4: Areas, both cavernous and non-cavernous, that do not contain endangered karst invertebrate species (Figure 9).

Bee Creek Cave Harvestman

The Bee Creek Cave harvestman was federally listed as endangered on September 16, 1988 (USFWS 1988). It is characterized as a long-legged, eyeless, yellowish-brown harvestman with a small, two millimeter (mm) or less body. The species lives in Tooth, Bee Creek, McDonald, Weldon, and Bone Caves in Travis and Williamson counties, Texas. Within the cave environment, the species is often found under rocks in complete darkness or dim light and preys on collembolans (Campbell 2003).

According to TPWD TNDD, the nearest EO of the species is located approximately 6.5 miles southeast (EO ID# 67) of the project alignment in a cave on a plateau between Barton Creek and Loop 360, and northwest of Barton Creek Square Mall (TPWD 2013a).

Tooth Cave Spider

The Tooth Cave spider was federally listed as endangered on September 16, 1988 (USFWS 1988). It is characterized as a pale, long-legged spider that measures approximately 1.6 mm. Although it is a troglobite, reduced eyes are present. The species is found exclusively in Tooth Cave in Travis County. The species is sedentary and preys on microarthropods that are captured in its web (Campbell 2003).

According to TPWD TNDD, the nearest EO of the species is located approximately north of the Colorado River, approximately 5.8 miles northeast (EO ID# 3800) of the project alignment in the New Comanche Trail Cave, 400 feet north-northwest of RM 620, on the east side of New Comanche Trail (TPWD 2013a).

Tooth Cave Pseudoscorpion

The Tooth Cave pseudoscorpion was federally listed as endangered on September 16, 1988 (USFWS 1988). It is characterized as an eyeless, troglobitic pseudoscorpion that

reaches approximately four mm. The species resembles a small, tailless scorpion that lacks a stinger, and is harmless to humans. The species uses pincers to capture small insects and other arthropods. It is found exclusively in Tooth and Amber Caves in Travis County, Texas. While the species is usually found under rocks, little else is known about its habits (Campbell 2003).

According to TPWD TNDD, the nearest EO of the species is located north of the Colorado River, approximately 6.9 miles northeast (EO ID# 6824) of the project alignment in Tooth Cave near the intersection of RM 620 and Four Points Drive (TPWD 2013a).

Kretschmarr Cave Mold Beetle

The Kretschmarr Cave mold beetle was federally listed as endangered on September 16, 1988 (USFWS 1988). It is characterized as a very small (less than three mm) dark-colored, eyeless, troglobitic beetle with long legs, and short wings. Available habitat for this species is limited and is restricted to Kretschmarr, Amber, Tooth, and Coffin Caves in Travis and Williamson Counties, Texas. Within the cave environment, this mold beetle is found in complete darkness under rocks amongst organic debris and buried in silt (Campbell 2003).

According to the TPWD TNDD, the nearest EO of the species is located north of the Colorado River, approximately 6.9 miles northeast (EO ID# 2094) of the project alignment in Tooth Cave near the intersection of RM 620 and Four Points Drive (TPWD 2013a).

Tooth Cave Ground Beetle

The Tooth Cave ground beetle was federally listed as endangered September 16, 1988 (USFWS 1988). It is characterized as a small (eight mm), reddish-brown, troglobitic ground beetle. This is the largest, most visible, and most active of the karst species. It is usually found under rocks, but it has been seen walking on damp rocks and silt when conditions are favorable. This species appears to be restricted to areas of deep, uncompacted silt that is favored by cave crickets (*Ceuthophilus secretus*), where it digs holes to feed on cricket eggs. No critical habitat has been designated for this species (USFWS 1988).

According to the TPWD TNDD, the nearest EO of the species is located north of the Colorado River, approximately 6.9 miles northeast (EO ID# 5045) of the project alignment in Tooth Cave near the intersection of RM 620 and Four Points Drive (TPWD 2013a).

Bone Cave Harvestman

The Bone Cave harvestman was federally listed through a technical correction as endangered on August 18, 1993 (USFWS 1993), as an independent species from the Bee Creek Cave harvestman. It is characterized as a long-legged, blind, pale orange harvestman. The species is often found under large rocks, but can occasionally be seen walking on moist floors. In the summer the species can only be found in the coolest, dampest spots of caves (Campbell 2003). In response to a recent petition (Yearwood et al. 2014) to delist the Bone Cave Harvestman, USFWS reiterated the merit of the Bone Cave Harvestman remaining listed as endangered (USFWS 2015c).

According to the TPWD TNDD, the nearest EO of the species is located north of the Colorado River, approximately 5.8 miles northeast (EO ID# 2447) of the project alignment in the New Comanche Trail Cave, 400 feet north-northwest of RM 620, on the east side of New Comanche Trail (TPWD 2013a).

Probability of Occurrence

The probability of occurrence of EKI within the development area is considered highly unlikely. There is low potential for karst feature development within the Glen Rose Formation, and no caves are known to occur within the plan area. According to EH&A (1989), the geology of the area is unlikely to support caves or cave development. Each alternative is located in the Veni and Associates karst Zone 4: Areas, both cavernous and non-cavernous, that do not contain endangered karst invertebrate species.

No impacts to or take of EKI is anticipated as a result of the proposed WTCPUA raw water line.

3.2.4 *Barton Springs Salamander*

The Barton Springs salamander was federally listed as endangered by USFWS on April 30, 1997 (USFWS 1997). The species is an entirely aquatic and neotenic salamander known to occur in three of the four outlets of Barton Springs in the City of Austin's Zilker Park, Austin, Texas. The salamander grows to a length of 2.5 inches, has reduced

eyes, and has permanent external gills, and is slender with slightly elongated limbs. The salamander's coloring is described as pale purplish-brown or gray to yellowish-cream (USFWS 1997). The Barton Springs salamander is described as a primarily subsurface dwelling species that spends most of its time living in the Edwards aquifer near spring openings where it has access to both surface and subsurface habitats (USFWS 1997).

USFWS states the primary threat to the species as habitat modification in the form of reduced flows and degradation of water quality of spring habitats as a result of urbanization within the watersheds and recharge and contributing zones of the Edwards aquifer (USFWS 1997).

The proposed project is not located near any of the known locations of the species. According to TPWD TNDD, the two nearest EOs of the species are located approximately 8.5 miles southeast of the project along Deer Lane and Brodie Lane within the Blowing Sink Research Management Area (EO ID# 8968) and approximately 9.1 miles southeast within Barton Springs (EO ID# 4046) (TPWD 2013a).

Probability of Occurrence

The majority of the subject area is not located within the recharge or contributing zones of the Edwards aquifer (TCEQ 2001); however, approximately 1,040 feet of the project would occur within the northern extent of the contributing zone. The raw water line will be constructed within the existing FM 2244 ROW within this area. Therefore any impacts to Barton Springs salamander associated with construction of the proposed project is considered highly unlikely.

No impacts to or take of Barton Springs salamander is anticipated as a result of the proposed WTCPUA raw water line.

3.2.5 Jollyville Plateau Salamander

On December 13, 2007, USFWS issued a 12-month finding on a petition to list the Jollyville Plateau salamander as endangered with critical habitat (USFWS 2007b). On August 22, 2012, USFWS released a proposed rule for the Jollyville Plateau salamander to be listed as endangered, with critical habitat (USFWS 2012). Jollyville Plateau salamander was federally listed as threatened (USFWS 2013b) with critical habitat designated by USFWS on August 20, 2013 (USFWS 2013c). This species occurs in the Jollyville Plateau and Brushy Creek areas of the Edwards Plateau in Travis and

Williamson Counties, and does not occur south of the Colorado River. Jollyville Plateau salamander is known from Brushy Creek and, within the Jollyville Plateau, from Bull Creek, Cypress Creek, Long Hollow Creek, Shoal Creek, and Walnut Creek drainages. Jollyville Plateau salamander has also been documented within the Lake Creek drainage. Cave-dwelling Jollyville Plateau salamander are known from one cave in the Cypress Creek drainage and 12 caves in the Buttercup Creek Cave system in the Brushy Creek drainage (USFWS 2013b).

The Jollyville Plateau salamander's spring-fed tributary habitat is typically characterized by a depth of less than one foot (0.3 meter) of cool, well oxygenated water supplied by the underlying Edwards aquifer (USFWS 2013b). Jollyville Plateau salamander are typically found near springs or seep outflows and are thought to require constant temperatures. Salamander densities are higher in pools and riffles and in areas with rubble, cobble, or boulder substrates rather than on solid bedrock. Surface-dwelling Jollyville Plateau salamander also occur in subsurface habitat within the underground aquifer (USFWS 2013b).

The project alignment is not located near any of the known locations of the species. According to TPWD TNDD, the nearest EO of the species (EO ID# 9380) is located approximately 7.3 miles northeast of the subject area along Bull Creek within the BCP (TPWD 2013a). The nearest critical habitat unit, CHU# 17, is approximately 6.9 miles northeast of the project alignment also along Bull Creek within the BCP (USFWS 2013c).

Probability of Occurrence

The majority of the subject area is not located within the recharge or contributing zones of the Edwards aquifer (TCEQ 2001); however, approximately 1,040 feet of the project would occur within the northern extent of the contributing zone. The raw water line will be constructed within the existing FM 2244 ROW within this area. Therefore any impacts to Jollyville Plateau salamander associated with construction of the proposed project is considered highly unlikely.

No impacts to or take of Jollyville Plateau salamander is anticipated as a result of the proposed WTCPUA raw water line.

3.2.6 *Austin Blind Salamander*

The Austin blind salamander was federally listed as endangered (USFWS 2013b) with critical habitat designated by USFWS on August 20, 2013 (USFWS 2013c). The species is an entirely aquatic and neotenic salamander known to occur in three of the four spring outlets of Barton Springs in the City of Austin’s Zilker Park, Austin, Texas. This salamander has not been observed at the fourth Barton Springs outlet known as Upper Barton Springs. The salamander grows to a length of approximately 2.5 inches, lacks external eyes, and has permanent external gills, a narrow head and an extended snout. The salamander’s coloring is described as faintly reflective and pearly white in color with a lavender hue (USFWS 2012). The Austin blind salamander is described as a primarily subsurface dwelling species that spends most of its time living in the Edwards aquifer (USFWS 2013b).

USFWS states the primary stated threat to this species as habitat modification in the form of reduced flows and degradation of water quality of spring habitats as a result of urbanization within the watersheds and recharge and contributing zones of the Edwards aquifer (USFWS 2013b).

The project alignment is not located near any of the known locations of the species. According to TPWD TNDD, the nearest EO (EO ID# 4046) (TPWD 2013a) and CHU, CHU# 1, is approximately nine miles southeast of the subject area within Barton Springs (USFWS 2013c).

Probability of Occurrence

The majority of the subject area is not located within the recharge or contributing zones of the Edwards aquifer (TCEQ 2001); however, approximately 1,040 feet of the project would occur within the northern extent of the contributing zone. The raw water line will be constructed within the existing RM 2244 ROW within this area. Therefore any impacts to Austin blind salamander associated with construction of the proposed project is considered highly unlikely.

No impacts to or take of Austin blind salamander is anticipated as a result of the proposed WTCPUA raw water line.

3.2.7 *Candidate Species*

The bracted twistflower and five mussel species are currently candidates for federal listing.

Bracted Twistflower

The bracted twistflower was classified as a candidate species for federal listing on September 27, 1985 (USFWS 1985). The bracted twistflower is a member of the Brassicaceae family and is an herbaceous annual plant (USFWS 2013d). The bracted twistflower germinates in the fall and winter after rainfall and forms a basal rosette that develops a culm with lavender to purple flowers in the spring; the average height of the erect stem is 18 to 24 inches but they can grow as tall as 54 inches. The upper leaves are very short triangular bracts while the lower leaves are progressively longer and have an elongated heart shape. The seeds mature in summer siliques and may grow to 4.7 inches long and 0.15 inch wide. The Texas counties of occurrence for this species include Bexar, Hays, Medina, Travis, and Uvalde. Since 1989, there have been 32 documented sites for the bracted twistflower. All of the known populations of bracted twistflower are within one kilometer of the Balcones Fault Zone (USFWS 2011). This species appears to prefer areas with a woody canopy cover of less than 50 percent but may exist in dense thickets. Historically, the species occurred in areas where sparse tree density existed in stony, loose soils. Bracted twistflower is usually found growing where thin layers of clay overlay limestone or dolomite formations (USFWS 2013d).

Probability of Occurrence

The BCCP identified potential habitat for the bracted twistflower within the Lake Pointe development area; however, the ecological survey conducted by EH&A (1989) did not identify any bracted twistflower on the property (SWCA 1993).

No impacts to or take of bracted twistflower is anticipated as a result of the proposed WTCPUA raw water line.

Mussels

Five freshwater mussels were federally listed as candidate species on October 6, 2011, following a petition from environmental groups; however, their listing has been precluded by higher priorities (USFWS 2011). The mussel species that are currently candidates for listing are scheduled to go through the listing process by 2023 (USFWS 2016a).

Golden Orb

The golden orb has been known to occur within the Brazos, Colorado, San Marcos, Guadalupe, San Antonio, Frio, and Nueces River systems (TPWD 2013b). The species is subrectangular to broadly elliptical in shape and is approximately 77 mm in shell length (Howells et al. 1996). Habitat for this species typically consists of stable sand, gravel, and firm mud in flowing waters to depths of two to three meters (TPWD 2013a).

According to TPWD TNDD, the nearest EO (EO ID# 9904) of the golden orb is located approximately 45.9 miles southeast of the project alignment along the southeastern border of Caldwell and Guadalupe Counties, Texas (TPWD 2013a).

Probability of Occurrence

No golden orb habitat is present within the project alignment; therefore, the occurrence of this species within the subject area is considered highly unlikely.

No impacts to or take of golden orb is anticipated as a result of the proposed WTCPUA raw water line.

Smooth Pimpleback

The smooth pimpleback is known to occur in the Brazos, Little Brazos, Navasota, and Colorado River systems (TPWD 2013b). The species is rounded and blunt in shape and is approximately 66 mm in shell length and 59 mm in shell height (Howells et al. 1996). Habitat for this species typically consists of mixed mud, sand, and fine gravel substrates in slow to moderate flowing streams and rivers (Howells et al. 1996).

According to TPWD TNDD, the nearest EO (EO ID# 9843) of the smooth pimpleback is located approximately 25.8 miles northwest of the subject area in Burnet County (TPWD 2013a).

Probability of Occurrence

No smooth pimpleback habitat is present within the project alignment; therefore, the occurrence of this species within the subject area is considered highly unlikely.

No impacts to or take of smooth pimpleback is anticipated as a result of the proposed WTCPUA raw water line.

Texas Fatmucket

The Texas fatmucket is known to occur in the Colorado, Concho, San Saba, Llano, Pedernales, San Marcos, Guadalupe, and San Antonio River systems (TPWD 2013b). The species is rhomboidal to slightly elongate in shape, is at least 90 mm in shell length and 53 mm in shell height (Howells et al. 1996). Habitat for this species typically consists of sand, mud and gravel in streams, and rivers with moderately flowing waters (Howells et al. 1996). In Colorado River tributaries, the species has been found between bedrock slabs (Howells et al. 1996).

According to TPWD TNDD, the nearest EO (EO ID# 9769) of the Texas fatmucket is located approximately 19.2 miles southeast of the subject area within Onion Creek near the intersection of State Highway (SH) 71 and SH 130 (TPWD 2013a).

Probability of Occurrence

The Lake Pointe development area is adjacent to the Colorado River. Habitat for this species is not likely to be present within this portion of the Colorado River due to changes in the hydrologic regime resulting from upstream and downstream dams. Therefore, no habitat of Texas fatmucket is likely present within the project alignment. The occurrence of the species within the subject area is considered highly unlikely.

No impacts to or take of Texas fatmucket is anticipated as a result of the proposed WTCPUA raw water line.

Texas Fawnsfoot

The Texas fawnsfoot has been known to occur in the Colorado, Trinity and Brazos River systems (TPWD 2013b). The species is ovate, long, slightly compressed in shape, approximately 45 mm in length and 27 mm in shell length (Howells et al. 1996). Habitat for this species is currently unreported (Howells et al. 1996). According to NatureServe (2014), very little information about the species biology has been documented.

According to TPWD TNDD, the nearest EO (EO ID# 9647) of the Texas fawnsfoot is located approximately 74.7 miles northwest of the subject area near the eastern border of San Saba County (TPWD 2013a).

Probability of Occurrence

No Texas fawnsfoot habitat is present within the project alignment; therefore, the occurrence of this species within the subject area is considered highly unlikely.

No impacts to or take of Texas fawnsfoot is anticipated as a result of the proposed WTCPUA raw water line.

Texas Pimpleback

The Texas pimpleback is known to occur in the Colorado, Concho, San Saba, Llano, Pedernales, San Marcos, Guadalupe, and San Antonio River systems (TPWD 2013b). The species is subelliptical, subrhomboidal, or subquadrangle in shape, is typically 87 mm in shell length and 75 mm in shell height (Howells et al. 1996). Habitat for this species typically consists of mud, sand, and gravel substrates in shallow waters (Howells et al. 1996).

According to TPWD TNDD, the nearest EO (EO ID# 9685) of the Texas pimpleback is located approximately 30.4 miles south of the project alignment in Hays County (TPWD 2013a).

Probability of Occurrence

No Texas pimpleback habitat is present within the project alignment; therefore, the occurrence of this species within the subject area is considered highly unlikely.

No impacts to or take of Texas pimpleback is anticipated as a result of the proposed WTCPUA raw water line.

4.0 TAKE ASSESSMENT

4.1 Take Rationale

Species listed as endangered or threatened by USFWS are protected by the ESA, which prohibits “take.” “Take” is defined in the ESA as “to harass, harm, pursue, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” “Harm” in the definition of “take” in the ESA means “an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.” Alteration of the quality and/or

quantity of occupied habitat may “harm” the listed species that inhabit those areas of habitat if it result in the actual death or injury of individuals.

The covered activities will have direct and indirect impacts on the GCWA potentially occurring from the direct removal of 5.41 acres of GCWA habitat and the indirect impacts to 3.16 acres of GCWA habitat. These covered activities may rise to the level of take as defined by the ESA.

4.2 Effects on Covered Species

Direct impacts to occupied GCWA habitat for the proposed WTCPUA raw water line is approximately 4,899 square feet, or 0.11 acre, of permanent impacts and 230,673 square feet, or 5.30 acres, of temporary impacts (Figure 7). Additionally, approximately 3.16 acres will be indirectly impacted due to the direct impacts. Butcher et al. (2010) estimated the minimum patch size for reproductive success for GCWA to be between 37 and 50 acres. The proposed project will result in the minor widening of existing corridors, which have already resulted in fragmentation of habitat within the preserve. The widening of these existing corridors may result in minor additional fragmentation of the preserve system greater than its current extent. The habitat patch will continue to exist as a continuous patch greater than 50 acres within the preserve. Furthermore, the proposed WTCPUA raw water line would result in impacts to approximately 0.3 percent of the overall area of the South Lake Austin Macrosite of the BCP.

The USFWS considers indirect impacts to GCWA to occur within habitat within 300 feet of direct impacts to GCWA habitat. The proposed routing of the WTCPUA raw water line will be constructed along an existing road and overhead electrical line, which have already caused indirect effects to the GCWA within 300 feet of their impact areas. These existing indirect impacts are caused by fragmentation of the existing habitat and by creating a vector for increased competition, predation, and parasitism of the GCWA. The proposed WTCPUA raw water line will expand the cleared areas along these existing cleared areas, which will result in approximately 3.16 acres of indirect impacts (Figure 8). Therefore, the new indirect effects that will occur due to the clearing, construction, or maintenance of the proposed WTCPUA raw water line have been minimized to the maximum extent practicable.

These impacts will result in the removal of approximately 5.41 acres of GCWA habitat along an existing clearing within the preserve due to the proposed minimization and

avoidance measures outlined within the Habitat Conservation Plan. USFWS considers the removal of these 5.41 acres of habitat as a new effect to the species that must be mitigated to offset any potential take of the GCWA resulting from the removal of this habitat. Approximately 3.16 acres of GCWA will be indirectly affected due to the expanding of previously indirectly affected areas. Additionally, operation and maintenance activities could potentially reduce the foraging area of the GCWA due to maintenance of the ROW. To mitigate these potential effects to the species, WTCPUA will purchase 28 mitigation credits from the Hickory Pass Conservation Bank.

5.0 CONSERVATION PROGRAM

The conservation strategy of an HCP defines the biological goals and objectives; monitoring program; avoidance, minimization, and mitigation measures; and adaptive management through changed circumstances. According to the *Habitat Conservation Planning and Incidental Take Processing Handbook*, “the goal of every HCP should be to fully offset impacts of take, and every HCP must minimize and mitigate the impacts of take to the maximum extent practicable” (USFWS and NMFS 2016).

5.1 Biological Goals and Objectives

The biological goals of this HCP are to: 1) avoid directly taking GCWA by conducting construction activities during the periods of the year when GCWA are not expected to be present; 2) avoid and minimize the direct impacts to GCWA habitat by following existing areas of disturbance and minimize the impacts of temporary impacts to GCWA by revegetating all temporary disturbance; 3) avoid and minimize all indirect effects to GCWA by constructing the project along existing areas of disturbance that creates indirect edge effect on the adjacent GCWA habitat along the disturbance corridor; and 4) purchase mitigation credits prior to clearing activities from the Hickory Pass Conservation Bank to offset the removal of approximately 5.41 acres of occupied GCWA habitat.

The objectives to meet these goals are as follows: 1) conduct clearing activities for the proposed WTCPUA raw water line within the preserve would be completed outside of the GCWA breeding season and construction activities within the preserve would continue into the breeding season as long as the construction activities begin concurrently with, or directly following, the clearing activities; however, best efforts will be made to complete as much of the construction activities as possible outside of

the breeding season; 2) construct the raw water line along the currently proposed alignment; and 3) purchase 28 mitigation credits from the Hickory Pass Conservation Bank.

5.2 Minimization, Avoidance, and Mitigation Measures

The *Habitat Conservation Planning and Incidental Take Processing Handbook* states that “Conservation measures can be any of the avoidance, minimization, or mitigation actions taken to meet the goals and the objectives of the HCP.” The primary avoidance measure would be that clearing activities for the proposed WTCPUA raw water line within the preserve would be completed outside of the GCWA breeding season. Construction activities within the preserve may continue into the breeding season as long as the construction activities begin concurrent with, or directly following, the clearing activities; however, best efforts will be made to complete as much of the construction activities as practicable outside of the breeding season. Following clearing activities, any construction activities are unlikely to adversely affect the GCWA. This will effectively remove any chance for direct take of GCWA.

The proposed WTCPUA raw water line will minimize and avoid the potential for impacts to GCWA habitat by siting the proposed project along an existing access road that currently exists as a corridor through the preserve and GCWA habitat. By constructing the proposed WTCPUA raw water line along an area of existing impacts, the overall project will result in permanent direct impacts to GCWA habitat of approximately 4,899 square feet, or 0.11 acre, and temporary direct impacts of 230,673 square feet, or 5.30 acres, for total impacts to GCWA habitat of 235,572 square feet, or 5.41 acres. All temporary impacts will be revegetated following project construction.

Additionally, by constructing the proposed project along the existing access road, new indirect impacts will be avoided due to the existing corridor bisecting the preserve and GCWA habitat and already providing a conduit for species that may have an undesirable impact through competition, parasitism, or predation on GCWA.

The proposed project would result in approximately 0.11 acre of permanent impacts to GCWA habitat and 5.30 acres of indirect impacts to GCWA habitat. USFWS considers the removal of these 5.41 acres of habitat as a new effect to the species that must be mitigated to offset any potential take of the GCWA resulting from the removal of this habitat. WTCPUA will provide mitigation to offset the approximately 5.41 acres of

direct impacts to GCWA habitat. The proposed mitigation ratio is based on a previous mitigation ratio approved by USFWS for a similar project within the BCP. This previous project, the SW Parkway 20-inch Transmission Main, received concurrence from USFWS that a ratio of five mitigation credits to each acre of removed habitat (5:1) is appropriate for projects within BCCP preserves (Appendix G). As such, to offset the 5.41 acres of direct impacts and the 3.16 acres of indirect impacts to GCWA habitat, a mitigation ratio of five mitigation credits for each acre of direct impacts (5:1) and a one half mitigation credit for each acre of indirect impacts (0.5:1) ratio was applied to determine the total mitigation credits. To mitigate these potential effects to the species, WTCPUA will purchase 28 mitigation credits from the Hickory Pass Conservation Bank to promote the continued conservation of habitat for the species. Additionally, the entire area within the preserve with temporary impacts to GCWA habitat will be revegetated with native vegetation.

All other undeveloped areas would be maintained in their natural conditions. Human use would continue to be restricted to maintenance and passive recreation such as hiking within the preserve area. Fences have been installed to delineate habitat preserve boundaries and would remain in place.

5.3 Changed Circumstances and Unforeseen Circumstances

Federal No Surprises Assurances (50 CFR 17.3, 17.22(b)(5), 17.32(b)(5), and 50 CFR 222.307(g)) requires USFWS to provide assurances to Section 10 permit holders that, as long as the permittee is properly implementing the HCP and ITP, no additional commitment of land, water, or financial compensation will be required with respect to covered species, GCWA for this HCP, and no restrictions on the use of land, water, or other natural resources will be imposed beyond those specified in the HCP without the consent of the permittee. The No Surprises Rule requires the permittee to address changed circumstances and unforeseen circumstances. If additional conservation and mitigation measures are deemed necessary to respond to changed circumstances, and such measures were provided for in the HCP, the permittee will be required to implement such measures. If additional conservation and mitigation measures are deemed necessary to respond to changed circumstances, and such measures were not provided for in the HCP, USFWS cannot require any additional measures beyond those provided for in the HCP without the consent of the permittee, provided the HCP is being properly implemented.

5.3.1 *Changed Circumstances*

The No Surprises Rule describes “changed circumstances as changes in circumstances affecting a species or geographic area covered by [an HCP] that can reasonably be anticipated by [plan] developers and the Services and that can be planned for.” The proposed conservation of the GCWA within this HCP would be achieved primarily through avoidance and minimization measures. These avoidance and minimization measures are unlikely to be change prior to any clearing or construction activities associated with this HCP. Additional conservation of the GCWA will be provided for through the purchase of 28 mitigation credits from the Hickory Pass Conservation Bank. The Hickory Pass Conservation Bank currently has numerous credits available in excess of the 28 needed to mitigate for the impacts to GCWA habitat associated with the proposed project; however, should the credits be exhausted prior to WTCPUA purchasing the credits, the WTCPUA will notify USFWS in writing and request additional coordination to identify other means of mitigating for the proposed impacts to GCWA habitat.

Should the GCWA habitat within the proposed WTCPUA raw water line impact area be destroyed through natural means, such as drought, fire, or parasitism after the WTCPUA has purchased the mitigation credits, the WTCPUA may seek to return the credits to the conservation bank or use the credits for future mitigation unrelated to the currently proposed project. Furthermore, emergency maintenance requiring additional clearing or mechanized excavation may be necessary during the breeding season to protect the health, safety, and welfare of the surrounding community. Should emergency maintenance be required during the breeding season, USFWS will be notified and coordinated with within two weeks of the start of these activities. During this coordination, WTCPUA and USFWS will determine whether a presence/absence survey for GCWA within 300 feet of the emergency maintenance area is recommended and additional avoidance, minimization, and mitigation measures that may be necessary to protect the species based on the additional impacts to GCWA habitat outside of the currently proposed permanent and temporary ROW. Additionally, minor changes to the project design may occur prior to the construction phase of the project. Should the proposed alignment deviate from the currently proposed alignment, WTCPUA may coordinate with USFWS to identify and address any changes to the proposed impacts to GCWA.

5.3.2 Unforeseen Circumstances

The USFWS HCP Handbook (2016) defines unforeseen circumstances as “changes in circumstances affecting a species or geographic area covered by a conservation plan that could not reasonably have been anticipated by plan developers and the Services at the time of the negotiation and development of the plan and that result in a substantial and adverse change in the status of the covered species.” It is the USFWS’ burden of demonstrating unforeseen circumstances exist and must use the best available scientific and commercial data. The USFWS must notify the WTCPUA in writing should the USFWS believe any unforeseen circumstances exist and WTCPUA and USFWS will work together to address these unforeseen circumstances.

The USFWS will not require the commitment of additional land, water or financial compensation or additional restrictions on the use of land, water or other natural resources beyond the level otherwise agreed upon for the species covered by the HCP without the consent of the permittee. If additional conservation or mitigation measures are deemed necessary to respond to unforeseen circumstances, USFWS may require additional measures of the permittee where the HCP is being properly implemented only if such measures are limited to modifications within conserved habitat areas, if any, or to the HCP’s operating conservation program for the affected species, and maintain the original terms of the plan to the maximum extent possible. If unforeseen circumstances are found, the permittee is not required to come up with additional resources or funds to remedy unforeseen circumstances, but the USFWS and the permittee may work together to determine an appropriate response within the original resource commitments in the HCP.

5.4 Adaptive Management

Adaptive management is a tool to address uncertainty in the conservation of a species covered by an HCP. There is little uncertainty regarding impacts to GCWA habitat or the species caused by the proposed project. However, during the permit duration, additional impacts to GCWA could possibly occur due to the need to clear additional habitat during emergency maintenance of the proposed WTCPUA raw water line outside of the currently proposed ROW. Should this clearing occur outside of the currently proposed impact area, USFWS will be notified and appropriate conservations measures will be agreed to at that time.

The proposed impacts to GCWA will be mitigated through the purchase of conservation credits from the Hickory Pass Conservation Bank. Following the purchase of credits from the Hickory Pass Conservation Bank, the conservation of the mitigated habitat will be the responsibility of the Hickory Pass Conservation Bank.

5.5 Additional Conservation Measures

In May 2000, the prior owner of the WTCPUA Regional Water System (the Lower Colorado River Authority, LCRA) entered into a Memorandum of Understanding (2000 MOU, Appendix H) with the USFWS regarding environmental and endangered species assessment and protection measures that would be implemented as a part of service to existing and new customers which were to be served by a proposed transmission main (US290 Transmission Main) to what is now the southern portion of the WTCPUA service area (the US290 System). In December 2000, environmental groups sued the U.S. Army Corps of Engineers and the LCRA challenging compliance with the Environmental Protection Agency (EPA) and NEPA requirements. In July 2002, the lawsuit was settled with agreements by the LCRA to implement certain limitations on development and stipulations for allowable development. In May 2005, the USFWS sent a letter to LCRA confirming that the *Optional Enhanced Measures for Protection of Water Quality in the Edwards Aquifer* adopted by TCEQ would serve as a regional plan under the terms of the 2000 MOU.

All of these actions and agreements applied only to service from the US290 Transmission Main. The LCRA, as a matter of policy, expanded the general applicability of these agreements to the Hamilton Pool Road Transmission Main when it was subsequently constructed. The Board of Directors of the WTCPUA voluntarily expanded the applicability of the provisions of the 2000 MOU to all portions of its service area, thereby requiring enhanced protection of endangered species and water quality throughout its approximately 200-square-mile Impact Fee Planning Area. The 2000 MOU would apply to the proposed project.

5.6 Reporting

GCWA populations would be monitored through presence absence surveys within the preserve within 300 feet of the proposed WTCPUA raw water line and existing raw water line every three years starting during the first breeding season following project completion and extending seven years for a total of three surveys (year 1, year 4, and

year 7). During the duration of the permit, an annual report describing the clearing, construction, progress of re-vegetation, operation, and maintenance activities of the proposed WTCPUA raw water line and existing raw water line of the previous year will be submitted to USFWS. Additionally, the results of the three presence absence surveys will be submitted to USFWS in the years they are completed. All annual reports will be submitted to USFWS by March 1 of the following year.

The USFWS will be notified prior to the initiation of project construction activities and after project completion. Additionally, WTCPUA will request verification of the purchase of bank credits prior to beginning construction and will provide the executed sales agreement stipulating the number of credits purchased.

6.0 PERMIT DURATION

The term proposed for the requested Section 10(a)(1)(B) ITP is for a period of 30 years from the initial effective authorization date.

7.0 FUNDING PLAN

Funding for all HCP activities will be provided by the WTCPUA. The WTCPUA has an annual operating budget of approximately \$20,000,000, with additional reserves held in specific funds for specific purposes. The Impact Fee Fund, for which the proposed project qualifies for funding as a part of the approved Capital Improvements Program (CIP), has a current balance in excess of \$23,000,000. Additionally, the WTCPUA maintains a Capital Projects Fund with a current balance of approximately \$25,000,000. The WTCPUA also has authority to issue revenue bonds and has done so on three occasions since acquiring operational control of the system in 2012. Operation and maintenance of the existing water line has been accounted for in previous budgets.

The WTCPUA will purchase 28 conservation credits from the Hickory Pass Conservation Bank at a cost of \$7,500 per credit, or \$210,000 total. These credits will be purchased by the WTCPUA prior to any clearing or construction activities within the GCWA preserve. If the credits are not purchased, the project will not proceed.

8.0 ALTERNATIVES ANALYSIS

There were four build alternatives, including the proposed project (Alternative 1): the WTCPUA raw water line, and one no-build alternative considered for the WTCPUA raw water line. Each of the four build alternatives must cross portions of occupied GCWA habitat set aside as mitigation in the expired ITP for the Lake Pointe development in (Appendix A). One alternative would cross portions of occupied GCWA habitat set aside as mitigation for the Lake Pointe IV ITP (Appendix B) in 1996. Both the 98-acre mitigation preserve land identified in the Lake Pointe IV ITP and the 161-acre mitigation preserve land identified in the Expired Lake Pointe ITP are currently owned and maintained by WTCMUD #5.

All potential impacts to GCWA habitat would occur within the 161-acre 1993 Lake Pointe Preserve or 98-acre Lake Pointe IV Preserve that have been incorporated into the 4,030-acre South Lake Austin Macrosite of the BCP. According to the BCP Land Management Plan (Appendix C), these two preserves are labeled as a 147-acre tract, which correlates with the 161-acre 1993 Lake Pointe Preserve, and a 93-acre tract, which correlates with the 98-acre Lake Pointe IV Preserve.

Potential impacts include removal of occupied habitat resulting from the construction of the WTCPUA raw water line. These direct impacts would result from permanent impacts associated with the permanent raw water line construction and maintenance, and from temporary impacts necessary to facilitate the construction of the proposed project. All temporary disturbance would be revegetated. Permanent and temporary disturbance acreages are depicted in Table 4.

Table 4: Acreage within Preserve, Macrosite and GCWA Occupied Habitat by Alternative

Alternative	Area within Preserve	Macrosite Impacted	GCWA Occupied Habitat		
			Permanent Impacts	Temporary Impacts	Total GCWA Impacts
1 (Preferred)	11.32 ac*	0.3%	0.11 ac	5.30 ac	5.41
2	9.42 ac	0.2%	1.77 ac	4.32 ac	6.09
3	3.28 ac	0.1%	0.03 ac	0.18 ac	0.21
4	3.28 ac	0.1%	0.03 ac	0.18 ac	0.21

Note: does not include staging areas *Includes areas of existing disturbance

Each of the proposed alternatives, other than the proposed project (Alternative 1): the WTCPUA raw water line, are described in the following sections, and potential impacts to GCWA were analyzed. Each of the build alternatives would result in a 25-foot-wide permanent easement and 62.5-foot-wide temporary easement for a total impact width of 87.5 feet. Permanent impacts are considered all activities associated with construction of the proposed WTCPUA raw water line that result from trenching, excavation, and maintenance of the permanent easement. Temporary impacts would result from vegetation removal to facilitate construction within the permanent impact area. All temporary impacts would be revegetated, and all construction activities, both temporary and permanent, would commence prior to the GCWA nesting season, March 1 through August 31.

8.1 Proposed Project (Alternative 1) Effects

See Section 2.0 and Section 4.0 for potential effects to GCWA associated with the proposed project.

8.2 Alternative 2 Effects

Alternative 2 is approximately 1.6 miles long and begins at the existing pump station along the Colorado River, approximately 1,775 feet north of the intersection of Pleasant Panorama View and Sea Eagle View (Figure 10). Alternative 2 extends south for approximately 122 feet, then southwest for approximately 1,730 feet, then south for approximately 2,035 feet, then parallels the western border of the Lake Pointe development along Carlsbad Drive and Napa Drive for approximately 2,278 feet before extending south for approximately 675 feet along Santee Drive to RM 2244. Alternative 2 then parallels RM 2244 heading southwest for approximately 1,760 feet before crossing RM 2244 to the south and terminating at the existing Uplands Water Treatment Facility.

The northern portion of Alternative 2 would occur within the 161-acre 1993 Lake Pointe Preserve. The central portion of Alternative 2 would occur within 98-acre Lake Pointe IV Preserve, and the southern portion travels from north to south through the Lake Pointe development, 161-acre 1993 Lake Pointe preserve, back through the Lake Pointe development, and finally along the ROW associated with RM 2244.

Alternative 2 would be constructed on approximately 9.42 acres of land currently within the 161-acre 1993 Lake Pointe Preserve and 98-acre Lake Pointe IV Preserve, and 7.88 acres of developed land. This alternative would result in permanent impacts to 1.77 acres of GCWA habitat and temporary impacts to 4.32 acres of GCWA habitat resulting in total impacts to GCWA habitat of 6.09 acres. Following construction, the temporary impacts would be revegetated.

The 9.42-acre area within the 161-acre 1993 Lake Pointe Preserve and 98-acre Lake Pointe IV Preserve represents approximately 3.7 percent of the combined 161-acre 1993 Lake Pointe Preserve and 98-acre Lake Pointe IV Preserve, and approximately 0.2 percent of the entire macrosite area.

Construction of Alternative 2 would occur in areas previously deeded as preserve land. However, the integrity of the 161-acre 1993 Lake Pointe Preserve, 98-acre Lake Pointe IV Preserve, and South Lake Austin Macrosite will remain fully intact.

Constructing Alternative 2 would result in the greatest amount of impacts to GCWA habitat. Therefore, Alternative 2 was not chosen as a viable alternative.

8.3 Alternative 3 Effects

Alternative 3 is approximately 2.1 miles long and begins at the existing pump station along the Colorado River, approximately 1,775 feet north of the intersection of Pleasant Panorama View and Sea Eagle View (Figure 11). Alternative 3 extends south for approximately 122 linear feet, then southwest for approximately 90 linear feet, then south toward the intersection of Pleasant Panorama View and Sea Eagle View for approximately 1,792 linear feet before paralleling Sea Eagle View for approximately 1,228 linear feet. Alternative 3 then spurs southeast for approximately 435 linear feet and extends south along Resaca Boulevard for approximately 3,473 linear feet. The WTCPUA raw water line continues southwest along RM 2244 for approximately 4,204 feet before crossing RM 2244 to the south and terminating at the existing Uplands Water Treatment Facility.

The northern portion of Alternative 3 would occur within the 161-acre 1993 Lake Pointe Preserve, the central portion would occur within the Lake Pointe development, and the southern portion would occur within the Lake Pointe development and ROW associated with RM 2244.

Alternative 3 will be constructed on approximately 3.28 acres of land currently within the 161-acre 1993 Lake Pointe Preserve and 19.12 acres of developed land. This alternative would result in permanent impacts to 0.03 acre of GCWA habitat and temporary impacts to 0.18 acre of GCWA habitat.

The 3.28-acre area within the 161-acre 1993 Lake Pointe Preserve represents approximately 1.3 percent of the combined 161-acre 1993 Lake Pointe Preserve and 98-acre Lake Pointe IV Preserve, and approximately 0.1 percent of the entire macrosite area.

Alternative 3 would result in permanent impacts to 0.03 acre of GCWA habitat and 0.18 acre of temporary impacts resulting in total impacts to GCWA habitat of 0.21 acre. Following construction, the temporary impacts would be revegetated.

Construction of Alternative 3 would occur in areas previously deeded as preserve land. However, the integrity of the 161-acre 1993 Lake Pointe Preserve and South Lake Austin Macrosite will remain fully intact.

Construction for Alternative 3 would likely result in extended road closures of Resaca Boulevard, Sea Eagle View, Sonoma Drive where Sonoma Drive intersect with Resaca Boulevard, and the possible closure of RM 2244. Furthermore, impacts to the foundation of houses may result from excavation, hoe ramming, and tunneling associated with construction activities. Furthermore, the construction would likely result in increased noise that could reach nuisance levels within the area during active construction and excavation.

Constructing the proposed project through the Lake Pointe development would be cost prohibitive and would have a large impact on the welfare of the population living along the proposed alignment route.

8.4 Alternative 4 Effects

Alternative 4 is approximately 2.3 miles long and begins at the existing pump station along the Colorado River, approximately 1,775 feet north of the intersection of Pleasant Panorama View and Sea Eagle View (Figure 12). Alternative 4 extends south for approximately 122 linear feet, then southwest for approximately 90 linear feet, then

south toward the intersection of Pleasant Panorama View and Sea Eagle View for approximately 1,792 linear feet. Alternative 4 then parallels Pleasant Panorama View heading east for approximately 1,660 linear feet, then parallels Resaca Boulevard for approximately 4,446 linear feet. The WTCPUA raw water line continues southwest along RM 2244 for approximately 4,204 feet before crossing RM 2244 to the south and terminating at the existing Uplands Water Treatment Facility.

The northern portion of Alternative 4 would occur within the 161-acre 1993 Lake Pointe Preserve, the central portion would occur within the Lake Pointe development, and the southern portion would occur within the Lake Pointe development and ROW associated with RM 2244.

Alternative 4 will be constructed on approximately 3.28 acres of land currently within the 161-acre 1993 Lake Pointe Preserve and 21.07 acres of developed land. This alternative would result in permanent impacts to 0.03 acre of GCWA habitat and temporary impacts to 0.18 acre of GCWA habitat resulting in total impacts to GCWA habitat of 0.21 acre.

The 3.28-acre area within the 161-acre 1993 Lake Pointe Preserve represents approximately 1.3 percent of the combined 161-acre 1993 Lake Pointe Preserve and 98-acre Lake Pointe IV Preserve, and approximately 0.1 percent of the entire macrosite area.

Construction of Alternative 4 would occur in areas previously deeded as preserve land. However, the integrity of the 161-acre 1993 Lake Pointe Preserve and South Lake Austin Macrosite will remain fully intact.

Impacts associated with the portion of the alignment that parallels RM 2244 would intersect 11 driveways that provide access to commercial buildings, and intersect the 88-foot wide RM 2244. Additional impacts would result from Alternative 4 being constructed within the footprint of Resaca Boulevard for a length of approximately 3,300 feet and Pleasant Panorama View for approximately 1,720 feet. The remaining portion of the alignment would intersect the 88-foot wide RM 2244 and the 59 foot-wide Sonoma Drive, a residential road. Additionally, the construction would include the use of heavy machinery for construction and hoe ramming of the underlying geologic

formation if heavy machinery excavation is not feasible. These construction activities may result in negative impacts to the foundations of houses within the nearby area.

Constructing the proposed project through the Lake Pointe development would be cost prohibitive and would have a large impact on the welfare of the population living along the proposed alignment route.

8.5 No-Build Alternative

The no-build alternative assumes that the proposed WTCPUA raw water line is not constructed and that no further action is needed. Choosing this alternative would not result in the direct take of GCWA, nor would any development occur.

The no-build alternative would abandon the proposed WTCPUA raw water line and would maintain the current existing environment relying on the single, 30-year-old existing pipeline to provide raw water for treatment and delivery to a population of 40,000 and growing. The development of a raw water transmission main is needed to provide critical redundancy to the water supply to serve the WTCPUA service area, such that if the aging, existing facility were to experience another break similar to or worse than that which already occurred in early October 2015, the water supply could be maintained without the implementation of emergency water restrictions or potential risk public health in the case of depressurization of the potable water distribution system.

Furthermore, the proposed WTCPUA raw water line would provide additional capacity to the existing infrastructure. Without the additional capacity provided by the proposed WTCPUA raw water line, service and delivery of drinking water to the surrounding residential areas would be limited. Should development within the WTCPUA service area occur, which is anticipated, risk of interruption in the potable water supply increases as the existing facility is pushed beyond design capacity. Modification of an existing pipeline to increase capacity is not possible. Expansion of the existing water line by construction of a parallel facility, which is what is proposed, is necessary to ensure that enough water will be available to meet demand.

The no-build alternative would not serve the purpose and need of the project.

9.0 CONCLUSION

The WTCPUA is requesting incidental take authorization through Section 10(a)(1)(B) of the ESA for the construction and operation and maintenance of the WTCPUA raw water line. The WTCPUA raw water line will be constructed partially within an area previously established as endangered species preserve that contains occupied habitat of the endangered golden-cheeked warbler. Additionally, WTCPUA is requesting incidental take authorization for the operation and maintenance of the existing raw water line, along with the existing raw water intake facility, electric powerlines, and access road.

The proposed construction of the WTCPUA raw water transmission main will supplement and provide redundancy to an existing raw water line via parallel capacity to an existing water line that connects the pump station with the current water treatment facility. The existing water line is approximately 32 years old and was constructed and operational prior to the federal listing of the golden-cheeked warbler as endangered. In early October 2015, the existing line ruptured causing the entire WTCPUA service area to enter emergency Stage 4 water restrictions while the failure was repaired. The proposed WTCPUA raw water line is necessary to provide a delivery facility redundant to the existing water line and to provide additional water capacity to the WTCPUA service area.

The proposed WTCPUA raw water transmission main would be constructed through the 161-acre 1993 Lake Pointe Preserve. The majority of the construction within the 161-acre 1993 Lake Pointe Preserve would be constructed along the existing footprint of an approximately 25-foot-wide access road. As such, the permanent direct impacts have been minimized to 0.11 acre of GCWA habitat and temporary direct impacts have been minimized to approximately 5.30 acres of GCWA habitat. Furthermore, approximately 3.16 acres of GCWA habitat will be indirectly impacted by the proposed project.

USFWS considers the removal of the direct impacts to 5.41 acres of habitat as a new effect to the species that must be mitigated to offset any potential take of the GCWA. Additionally, 3.16 acres of GCWA habitat will be indirectly impacted. To mitigate these potential effects to the species, WTCPUA will purchase 28 mitigation credits from the Hickory Pass Conservation Bank to offset the 5.41 acres of removed GCWA habitat at a ratio of five mitigation credits to each acre of removed habitat (5:1).

Overall, the integrity of the preserve will remain fully intact. Total impacts would be less than 4.4% of the combined 161-acre 1993 Lake Pointe Preserve and 98-acre Lake Pointe IV Preserve, both of which are owned and managed by WTCMUD #5. These impacts would also be less than 0.3% of the currently held 4,030 acres within the South Lake Austin Macrosite.

For any of the alternatives, direct impacts to GCWA habitat would be minimal. Clearing activities would be completed outside of the GCWA breeding season, and construction activities within the preserve would continue into the breeding season as long as the construction activities begin concurrent with, or directly following, the clearing activities; however, best efforts will be made to complete as much of the construction activities as practicable outside of the breeding season. Following clearing activities, any construction activities are unlikely to adversely affect the GCWA. All other undeveloped areas would be maintained in a natural condition. Human use would continue to be restricted to maintenance and passive recreation. Temporary impacts resulting from the construction of the raw water line would be re-vegetated. GCWA populations would be monitored through presence/absence protocol surveys within 300 feet of the proposed WTCPUA raw water line. Surveys would be conducted every three years starting during the first breeding season following project completion and extending seven years for a total of three surveys. Annual reports will be provided to USFWS for the duration of the permit by March 1 of the following year. Management of the preserve areas would continue to be conducted by WTCMUD #5.

10.0 REFERENCES

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Figures

Appendix A:
Lake Pointe Incidental Take Permit No: PRT-782186 issued February 15, 1994

Appendix B:
Lake Pointe IV Incidental Take Permit No: PRT-817371 issued December 18, 1996

Appendix C:
Balcones Canyonlands Preserve, Land Management Plan, Tier II-C, South Lake Austin
Macrosite

Appendix D:
Lake Pointe Environmental Assessment

Appendix E:
Lake Pointe Habitat Conservation Plan

Appendix F:
aci consulting Habitat Assessment

Appendix G:
USFWS SW Parkway 20-inch Transmission Main Correspondence

Appendix H:
Memorandum of Understanding Between U.S. Department of the Interior, U.S. Fish and
Wildlife Service, and The Lower Colorado River Authority for The Purpose of
Providing Surface Water for Residents in Western Travis and Northern Hays Counties