ADOPTED

MINOR AMENDMENT NO. 1 OF THE 2021 SOUTH CENTRAL TEXAS (REGION L) REGIONAL WATER PLAN

Lower Basin Storage Project, Guadalupe-Blanco River Authority

B&V PROJECT NO. 418064

PREPARED FOR

South Central Texas (Region L) Regional Water Planning Group

16 MAY 2024



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ATTACHMENTS

Attachment A	Transmittal Letter to TWDB of Proposed Amendment and Request for Minor Amendment Determination
Attachment B	TWDB Response Letter with Minor Amendment Determination
Attachment C	Updated State Water Planning Database (DB22) Reports
Attachment D	Notice of Public Comment and Public Meeting for Region L to Consider and Adopt Minor Amendment

INTRODUCTION

The South Central Texas (Region L) Regional Water Planning Group (SCTRWPG) is responsible for preparing the Region L Regional Water Plan. At the Regional Water Planning Group (RWPG) meeting on February 14, 2024, the SCTRWPG received a presentation from the Guadalupe-Blanco River Authority (GBRA), requesting authorization to pursue an amendment of the 2021 Region L Regional Water Plan (RWP) to modify the GBRA Lower Basin Storage Project, which was included as a recommended water management strategy (WMS) in the 2021 RWP. The SCTRWPG considered the request and took action to approve submittal of a minor amendment determination request to the TWDB and approve pursuit of an amendment to the 2021 RWP to modify GBRA's Lower Basin Storage Project.

The amendment was requested by GBRA due to changed conditions. Specifically, the project approach and schedule have changed since adoption of the 2021 RWP. The Lower Basin Storage Project, as described in the 2021 RWP, includes an intake structure and off-channel reservoir (OCR) to firm up the existing surface water rights in the lower Guadalupe-San Antonio River Basin. The 2021 RWP included a 1-mile raw water transmission pipeline; however, GBRA now plans to include an 89-mile pipeline from Calhoun County to Gonzales County. Additionally, the project schedule has been accelerated to meet water supply needs in the region because of significant population and water demand growth. As such, GBRA intends to apply for State Water Implementation Fund for Texas (SWIFT) funding from the Texas Water Development Board (TWDB) to initiate planning, land acquisition, and design of the water supply project. In order to be eligible for SWIFT funding, the 89-mile raw water transmission pipeline would need to be integrated into the 2021 RWP as an infrastructure component of the GBRA Lower Basin Storage Project WMS.

The addition of the 89-mile raw water transmission pipeline would connect the GBRA Lower Basin Storage Project to the GBRA Mid-Basin (Phase 2) Project, which is also included as a recommended WMS in the 2021 RWP. No modifications are proposed for the GBRA Mid-Basin (Phase 2) Project for the 2021 RWP amendment.

The purpose of this amendment is to identify and document plan sections that are changed as a result of adding the raw water transmission pipeline to the GBRA Lower Basin Storage Project. These changes are limited to environmental considerations, cultural considerations, engineering and costing, and implementation considerations. There are no proposed revisions to the project's firm yield, water availability modeling, allocation of supplies to customers, or OCR size, capacity, or location. Furthermore, the amendment:

- A. does not result in over-allocation of an existing or planned source of water;
- B. does not relate to a new reservoir;
- C. does not increase unmet needs or produce new unmet needs in the adopted RWP;
- D. does not have a significant effect on instream flows, environmental flows or freshwater flows to bays and estuaries;
- E. does not have a significant substantive impact on water planning or previously adopted management strategies; and
- F. does not delete or change any legal requirements of the plan.

MODIFICATIONS AND ADDITIONS TO THE 2021 SOUTH CENTRAL TEXAS REGIONAL WATER PLAN

The following are changes proposed to the various chapters of the 2021 SCTRWP in order to revise the GBRA Lower Basin Storage Project as a Water Management Strategy, sponsored by the Guadalupe-Blanco River Authority. **Insertions** are shown as <u>underlined text</u>, **deletions** in strikethrough text.

EXECUTIVE SUMMARY

A.ES.1 MODIFICATION TO SECTION ES.7, PAGE ES-12

Surface Water

 GBRA Lower Basin Storage Project – Projected to supply 59,780 acft/yr in 2070 with an annual unit cost of \$49 <u>763</u>/acft

A.ES.2 MODIFICATION TO TABLE ES-3, PAGE ES-13

 Table ES-3
 Water Management Strategy Supplies by Decade (acft/yr)

NO.	WMS	2020	2030	2040	2050	2060	2070	ANNUAL UNIT COST (\$/ACFT)
1.	Advanced Water Conservation	29,382	64,038	96,760	120,884	143,799	167,148	Varies ¹
2.	Drought Management ²	14,176	31,476	45,677	49,377	53,109	56,588	94
3.	Edwards Transfers	5,328	5,814	5,622	5,795	5,770	5,906	1,242
4.	Local Groundwater	11,084	15,226	19,913	22,653	26,388	28,240	Varies
5.	Local Groundwater Conversions ³							
6.	Surface Water Rights							
7.	Balancing Storage							
8.	Facilities Expansion	7,914	96,288	99,217	98,454	95,834	95,675	Varies
9.	Recycled Water Strategies	3,316	10,443	11,003	26,268	36,828	52,388	Varies
10.	SAWS Expanded Local Carrizo Project	-	-	21,000	21,000	21,000	21,000	120
11.	SAWS Expanded Brackish Groundwater Project	-	-	20,160	20,160	70,160	70,160	1,269

NO.	WMS	2020	2030	2040	2050	2060	2070	ANNUAL UNIT COST (\$/ACFT)
12.	ARWA/GBRA Project (Phase 1)	30,000	30,000	30,000	30,000	30,000	30,000	1,076
13.	ARWA Project (Phase 2)	-	-	20,999	20,999	20,999	20,999	635
14.	ARWA Project (Phase 3)	-	-	-	-	5,494	5,494	2,001
15.	GBRA Mid-Basin Project (Phase 2)	-	27,000	27,000	27,000	27,000	27,000	1,492
16.	GBRA Lower Basin Storage Project	59,780	59,780	59,780	59,780	59,780	59,780	110 <u>763</u>
17.	GBRA Lower Basin New Appropriation	40,500	40,500	40,500	40,500	40,500	40,500	658
18.	GBRA Victoria County Steam- Electric Project	23,925	23,925	23,925	23,925	23,925	23,925	552
19.	CRWA Wells Ranch Phase 3 Project	3,500	7,000	7,000	7,000	7,000	7,000	1,330
20.	CRWA Siesta Project	-	-	-	-	5,042	5,042	2,470
21.	CRWA Brackish Carrizo- Wilcox Project	-	14,700	14,700	14,700	14,700	14,700	1,595
22.	CVLGC Carrizo Project	-	10,000	10,000	10,000	10,000	10,000	1,230
23.	SSLGC Expanded Carrizo Project	6,000	6,000	6,000	6,000	6,000	6,000	1,207
24.	SSLGC Expanded Brackish Wilcox Project	-		5,000	5,000	5,000	5,000	663
25.	NBU ASR Project	10,818	10,818	10,818	10,818	10,818	10,818	462
26.	NBU Trinity Well Field Expansion	-	3,360	3,360	3,360	3,360	3,360	685
27.	City of Victoria ASR Project	7,900	7,900	7,900	7,900	7,900	7,900	385
28.	City of Victoria Groundwater- Surface Water Exchange	8,544	8,544	8,544	8,544	8,544	8,544	N/A
29.	SS WSC Brackish Wilcox Groundwater Project	-		-	-	1,120	1,120	2,911
30.	Martindale WSC New Alluvial Well	-	240	240	240	240	240	463

NO.	WMS	2020	2030	2040	2050	2060	2070	ANNUAL UNIT COST (\$/ACFT)
31.	Maxwell WSC Trinity Well	-	-	230	230	230	230	4,261
32.	County Line SUD Trinity	-	-	-	500	740	740	2,888
33.	County Line SUD Brackish Edwards	-	-	-	500	1,000	1,500	3,610

¹ Annual unit costs varied by WUG service area description: Urban - \$600/acft; Suburban - \$681/acft; and \$770/acft ² Supplies in decades 2030 through 2070 only relate to SAWS ³ Sumplementation of the service area description: WMAS

³ Supply volume is accounted for in Local Groundwater WMS

CHAPTER 5

A.5.1 MODIFICATION TO SECTION 5.1.16, PAGE 5.1-12

5.1.16 GBRA Lower Basin Storage Project

The GBRA and Dow Chemical Company (Dow), individually and collectively, own surface water rights in the lower Guadalupe-San Antonio River Basin (the GBRA/Dow Water Rights) authorizing diversions from the run-of-river flow of the Guadalupe River totaling 172,501 acft/yr. To firm up the run-of-river supplies of water available under the GBRA/Dow Water Rights, a 12,763 acft off-channel reservoir is considered for implementation beginning in the 2020 decade. The estimated project firm yield is 59,780 acft/yr. The annual cost is estimated to be $\frac{6,603,000}{45,634,000}$, and the annual unit cost is estimated to be $\frac{110}{763}$ per acft.

Subsection 5.2.16 includes a detailed discussion of this recommended WMS.

A.5.2 MODIFICATION TO SECTION 5.2.16, PAGE 5.2.16-1

To firm up the run-of-river supplies of water available under the GBRA/Dow Water Rights, an OCR near the GBRA Main Canal and Dow Seadrift Operations facilities is considered for implementation in the 2020 decade. Although a final site has yet to be selected, the approximate area of the OCR is shown on Figure 5.2.16-1, approximately 3 miles east of Green Lake. The OCR is assumed to be a ring dike structure with an approximate water depth of 25 feet, capable of impounding approximately 12,763 acft of water. A pressure pipeline would transport water diverted from the GBRA Main Canal to the OCR site, and a gravity outlet<u>transmission</u> pipeline would <u>convey return</u>-stored water to <u>the a facility adjacent to the</u> <u>intake structure that will be built as part of the GBRA Mid-Basin Project (Phase 2) (See Section 5.2.15 for a detailed discussion of the recommended WMS), that would allow for integration of the two WMSs. GBRA Main Canal. GBRA has obtained water rights permits for this project.</u>

A.5.3 MODIFICATION TO FIGURE 5.2.16-1, PAGE 5.2.16-2



Figure 5.2.16-1 GBRA Lower Basin Storage Site Location

A.5.4 MODIFICATION TO SECTION 5.2.16.3, PAGE 5.2.16-3

Environmental Considerations

Vegetation and Land Use

The project area approximate OCR area is located in the Western Gulf Coastal Plain ecoregion and lies within a variety of vegetation types, predominantly croplands, pastures, shrublands, and wetlands. A large chemical plant and associated water basins and railway lie within the project area. In addition, the transmission pipeline to the GBRA Mid-Basin Project (Phase 2) traverses the East Texas Central Plains ecoregion and the Texas Blackland Prairies ecoregion. As mapped by TPWD, ¹ dominant vegetation types in the project area are coastal prairie, row crops, open water, and invasive evergreen shrubland. As it

¹ TPWD. 2019. Ecological Mapping Systems of Texas. https://tpwd.texas.gov/landwater/land/programs/landscape-ecology/ems/.

<u>crosses into the East Texas Central Plains and Blackland Prairies, the transmission pipeline alignment also</u> <u>crosses post oak savannah grassland and blackland prairie disturbance or tame grassland.</u> The project contains riparian vegetation zones, mapped by TPWD as riparian grassland, riparian evergreen and deciduous shrublands, riparian hardwood forest, riparian live oak forest, and riparian live oak/hardwood forest; with the transmission pipeline alignment also crossing significant areas of central Texas floodplain hardwood forest and floodplain herbaceous vegetation communities.

Based on TPWD vegetation mapping, the project may have the potential to impact 11,901 acres of agricultural resources mapped as row crops. The <u>approximate OCR project</u> area also contains 8,003 acres mapped as coastal prairie <u>that</u> may include pasture areas used for grazing or hay production. <u>The</u> <u>transmission pipeline alignment includes an additional 157 acres of area mapped as row crops. The</u> <u>alignment also includes 279 acres mapped as coastal prairie and 95 acres mapped as blackland prairie</u> <u>disturbance or tame grassland which may be used for grazing or hay production.</u>

Construction of the project reservoir would result in permanent conversion of terrestrial vegetation, including agricultural lands, to reservoir use. The project pipeline easements would require the removal of woody vegetation and long-term maintenance (mowing, woody vegetation clearing) to maintain easement access. Herbaceous vegetation would be expected to quickly re-establish within pipeline easements once construction has been completed. Revegetation of easements and other disturbed areas provides the opportunity to plant native species that are beneficial to native wildlife. Revegetation plans are typically completed during preliminary studies and design phases of projects. It is up to the sponsors of each water management strategy to determine the best course of action regarding revegetation.

Aquatic Resources

The project is located between San Antonio Bay and Matagorda Bay, with the transmission pipeline extending generally to the northwest to Gonzales. A network of irrigation ditches and East and West Coloma creeks traverse the <u>approximate OCR project</u> area. These two creeks appear to be channelized and eventually flow into Matagorda Bay. <u>The project pipeline alignment crosses numerous mapped</u> <u>streams and their associated floodplains, including the Guadalupe River.</u> Operational water basins associated with a chemical plant occur on the western side of the project region. NWI mapping shows 1,257 acres of emergent and forested/shrub wetlands and ponds, lakes, and riverine wetlands in the <u>approximate OCR project</u> area. <u>The transmission pipeline alignment includes an additional 19.5 mapped</u> <u>acres of these wetland types. During planning and design of the project, GBRA intends to seek</u> <u>alternatives to avoid impacts to wetland resources wherever possible.</u>

The project pipeline crosses four stream segments that have been designated as impaired in the Texas Integrated Report of 303(d) listed water bodies. ² This list identifies the water bodies or segments in Texas that do not meet assigned water quality standards. The impaired water bodies in the pipeline alignment are Big Brushy Creek (stream segment 1602A, from the confluence with Clarks Creek in Lavaca County upstream to the confluence with an unnamed tributary just downstream of the Loop 51 [US B77] bridge crossing), Guadalupe River below the San Marcos River (stream segment 1803, from immediately upstream of the confluence of the San Antonio River to upstream of the confluence of the San Marcos

² Texas Commission on Environmental Quality. 2018. 2016 Texas Integrated Report of Surface Water Quality for the Clean Water Act Section 305(b) and 303(d). https://www.tceq.texas.gov/assets/public/waterquality/swqm/assess/16txir/2016_303d.pdf.

River in Gonzales County), Arenosa Creek (stream segment 2453C, from Garcitas Creek confluence upstream to J-2 Ranch Road), and Garcitas Creek above tidal (stream segment 2453E, from the confluence with Marcado Creek upstream to the headwaters near the intersection of DeWitt CR 114 and CR 110). During planning and design of the project, GBRA intends to seek alternatives to avoid impacts to aquatic resources wherever possible.

The project pipeline crosses three water bodies that have been designated as ecologically significant stream segments by TPWD. No streams designated as impaired stream segments in the Texas Integrated Report of 303(d)-listed water bodies occur in the project area.³ This list identifies the water bodies or segments in Texas that do not meet assigned water quality standards. No ecologically significant stream segments designated by TPWD occur in the project area. Garcitas Creek, from its confluence with Lavaca Bay in Victoria/Jackson/ Calhoun County upstream to FM 1315 in Victoria County, was designated because of the presence of estuarine wetlands, high water quality/high aesthetic value, and occurrence of rare Texas palmetto palm (Sabal mexicana) and diamondback terrapin (Malaclemys terrapin). The Guadalupe River, from US 183 in Gonzales County upstream to Lake Gonzales Dam in Gonzales County (stream segments 1803 and 1804), was designated due to known populations of the Guadalupe orb freshwater mussel (Cyclonaias necki). Another segment of the Guadalupe River, from its confluence with Guadalupe Bay in Calhoun/Refugio County upstream to FM 447 in northwest Victoria County (stream segment 1801 and part of 1803), was designated due to the presence of extensive freshwater and estuarine wetland habitat, including the 7,410-acre Guadalupe Delta Wildlife Management Area. This river segment also contains extensive marshland that provides habitat for the federally endangered whooping crane (Grus americana).⁴

The project will require an on-site delineation of streams, ponds, and wetlands. Stream crossings for pipeline construction would result in temporary stream impacts that <u>would-may</u> require USACE permitting. Pipeline stream crossings are typically covered by USACE Nationwide Permit 12, Utility Line Activities. A preconstruction notification to the USACE is required under certain conditions, including if there would be permanent impacts to over 0.1 acre of waters of the United States. The USACE permit requires that there will be no change in pre-construction contours of waters of the United States. Utility crossings under streams (e.g., through horizontal directional drilling) would not require a USACE permit. Although the proposed project is an off-channel reservoir, streams/wetlands affected by reservoir development, if applicable, would require appropriate USACE permitting depending on impacts. During planning and design of the project, GBRA intends to seek alternatives to avoid impacts to aquatic resources wherever possible.

Threatened, Endangered, and Species of Concern

Table 5.2.16-2 provides a summary of threatened, endangered, and candidate species and species of

³-Texas Commission on Environmental Quality. 2018. 2016 Texas Integrated Report of Surface Water Quality for the Clean Water Act Section 305(b) and 303(d). <u>https://www.tceq.texas.gov/assets/public/waterquality/swqm/assess/16txir/2016_303d.pdf</u>. ⁴ TPWD. 2024. Ecologically Significant Stream Segments – Water Planning Data for Region L (South Central Texas). <u>https://tpwd.texas.gov/landwater/water/conservation/water_resources/water_quantity/sigsegs/regionl.phtml.</u>

concern that may occur in Calhoun County ⁵ ⁶. Suitable foraging habitat for the federally endangered whooping crane (*Grus americana*) may occur in or fly over the project area. The only natural flock of whooping cranes winters mainly in and adjacent to Aransas National Wildlife Refuge (ANWR) along the central Texas coast in Aransas, Calhoun, and Refugio Counties.⁷ The project area occurs approximately 12 miles north of the ANWR. Furthermore, the project area occurs approximately 8.5 miles north of federally designated critical habitat for the whooping crane. Habitat for the black rail (*Laterallus jamaicensis*), a species proposed to be listed as federally threatened, may occur within wetlands in the project area. This species is not currently listed as federally threatened but may be listed in the future. Habitat for other federally threatened or endangered species does not occur in the project region.

Suitable habitat may occur for state-listed threatened species including wood stork (*Mycteria americana*), bald eagle (*Haliaeetus leucocephalus*), and Texas horned lizard (*Phrynosoma cornutum*). The wood stork and bald eagle would only be expected to forage within the project area. Potentially suitable habitat may occur for numerous wildlife, plant, and insect species designated by TPWD as SGCN. These species do not have formal protected status but are being monitored by TPWD. Migratory birds may occur in the project area, particularly in riparian zones and wetland areas.

The transmission pipeline crosses portions of Gonzales, DeWitt, Lavaca, and Victoria Counties in addition to Calhoun County. Federally threatened or endangered species that could occur along the pipeline alignment in these counties include Attwater's greater prairie-chicken (*Tympanuchus cupido attwateri*), Houston toad (*Bufo houstonensis*), and two native freshwater mussels that are proposed for federal listing as endangered species: false spike (*Fusconia mitchelli*) and Guadalupe orb (*Cyclonaias necki*). Proposed critical habitat for the two mussel species occurs within the Guadalupe River at the pipeline alignment.

In addition to the species discussed above, suitable habitat may occur for state-listed threatened species along the pipeline alignment, including Texas tortoise (*Gopherus berlandieri*) and Cagle's map turtle (*Graptemys caglei*). Potentially suitable habitat may occur for numerous wildlife, plant, and insect species designated by TPWD as SGCN.

A site-specific assessment of the potential for <u>the</u> whooping crane, <u>Houston toad</u>, <u>and Attwater's greater</u> <u>prairie-chicken</u> to utilize the project area would be required. <u>Surveys for protected aquatic species may</u> <u>be required if water bodies would be impacted by project construction</u>. Additionally, site-specific field surveys would be required to determine the quality of habitat for state-listed species. Coordination with TPWD may be required to mitigate species impacts. If TWDB funding/financing will be used for the project, formal coordination with TPWD will likely be required to obtain recommendations on minimizing impacts to protected species and sensitive habitats. If suitable habitat occurs, TPWD may request preconstruction surveys to search for and relocate any protected species that occur in the project area.

⁵ Texas Parks and Wildlife Department. 2019. Annotated County Lists of Rare Species – Calhoun County. Last Update: July 17, 2019. <u>https://tpwd.texas.gov/gis/rtest/</u>.⁵

⁶ U.S. Fish and Wildlife Service. 2019. Information for Planning and Consultation Resource List – Calhoun County. <u>https://ecos.fws.gov/ipac/location/4AS27B7475G4TDN27NPEFF2FYY/resources</u>.

⁷ Canadian Wildlife Service and U.S. Fish and Wildlife Service 2007. International Recovery Plan for the Whooping Crane. Ottawa: Recovery of Nationally Endangered Wildlife, and USFWS, Albuquerque, New Mexico.

The federal MBTA protects birds, nests, and eggs from impacts unless permitted by USFWS. TPWD recommendations for project due diligence typically include a recommendation to conduct preconstruction nest surveys or avoid vegetation clearing during the general bird nesting season of March 15 to September 15. Preconstruction surveys for active bird nests are recommended.

Table 5.2.16-2Summary of Potential Habitat and Anticipated Impacts to Threatened, Endangered,
and Rare Species for GBRA Lower Basin Project, Calhoun County, Texas

SPECIES COMMON NAME	SPECIES SCIENTIFIC NAME	FEDERAL STATUS	STATE STATUS	SUITABLE HABITAT	POTENTIAL IMPACTS
Amphibians					
Black-spotted newt	Notophthalmus meridionalis	N/A	Τ	May be found in resacas and bodies of water with firm bottoms and little or no vegetation. Wet or sometimes wet areas, such as arroyos, canals, ditches, or even shallow depressions; the absence of predatory fish is probably important. Aestivates in the ground during dry periods; Gulf Coastal Plain south of the San Antonio River.	Suitable habitat may occur within the project area.
<u>Houston toad</u>	<u>Bufo</u> <u>houstonensis</u>	E	E	Primary terrestrial habitat is forests with deep sandy soils. Juveniles and adults may move through areas of less suitable soils using riparian corridors. Aquatic habitats can include any size water body.	<u>Suitable habitat may</u> occur in project area in Lavaca County.
Sheep frog	Hypopachus variolosus	N/A	Т	Predominantly grassland and savannah; largely fossorial in areas with moist microclimates.	Suitable habitat may occur within the project area.
Southern crawfish frog	Lithobates areolatus	N/A	SGCN	Found in abandoned crawfish holes and small mammal burrows, shallow water, herbaceous wetland, riparian, temporary pools, cropland/hedgerow, grassland/herbaceous, suburban/orchard, woodland – conifer.	Suitable habitat may occur within the project area.
Strecker's chorus frog	Pseudacris streckeri	N/A	SGCN	Wooded floodplains and flats, prairies, cultivated fields, and marshes. Likes sandy substrates.	Suitable habitat may occur within the project area.
Woodhouse's toad	Anaxyrus woodhousii	N/A	SGCN	May use a variety of habitat types up to 5,000 feet elevation.	Suitable habitat may occur within the project area.

SPECIES COMMON NAME	SPECIES SCIENTIFIC NAME	FEDERAL STATUS	STATE STATUS	SUITABLE HABITAT	POTENTIAL IMPACTS
Birds					
<u>Attwater's</u> greater prairie- chicken	<u>Tympanuchus</u> <u>cupido attwateri</u>	Ē	Ē	Open prairies of mostly thick grass one to three feet tall; sandhill country with bunch grass, sage, and shinnery oak. From near sea level to 200- foot elevation along coastal plain on upper two-thirds of Texas coast; breeding February-July.	Suitable habitat may occur in native prairie within project area.
Bald eagle	Haliaeetus Ieucocephalus	N/A	Т	Found primarily near rivers and large lakes; nests in tall trees or on cliffs near water.	Suitable nesting habitat does not occur in project area; may fly over and forage within the project area during migration and in the winter.
<u>Black skimmer</u>	<u>Rynchops niger</u>	<u>N/A</u>	<u>SGCN</u>	Nest in open sandy areas, gravel or shell bars with sparse vegetation, or broad mats of dead vegetation in saltmarsh. Forage in tidal waters of bays, estuaries, lagoons, creeks, rivers, ditches, and saltmarsh pools.	Suitable habitat may occur in project area near coast.
Black rail	Laterallus jamaicensis	РТ	SGCN	Salt, brackish, and freshwater marshes, pond borders, wet meadows, and grassy swamps; nests in or along edge of marsh.	Suitable habitat may occur within the project area.
<u>Chestnut-</u> <u>collared</u> <u>longspur</u>	<u>Calcarius</u> <u>ornatus</u>	<u>N/A</u>	<u>SGCN</u>	Open shortgrass settings, especially in patches with some bare ground. Also grain sorghum fields and agricultural reserve lands.	Suitable habitat may occur in project area.
Franklin's gull	Leucophaeus pipixcan	N/A	SGCN	Nests around lakes and marshes; may use fields and beaches during migration.	Suitable habitat does not occur in project area; may fly over during migration.
<u>Mountain</u> plover	<u>Charadrius</u> <u>montanus</u>	<u>N/A</u>	<u>SGCN</u>	<u>Nests on high plains or</u> <u>shortgrass prairie. Forages on</u> <u>shortgrass plains and bare,</u> <u>plowed fields.</u>	Suitable habitat may occur in project area.
Northern aplomado falcon	Falco femoralis septentrionalis	Ε	E	Open country, especially savannah and open woodland, and sometimes in very barren areas; grassy plains and valleys with scattered mesquite, yucca, and cactus; nests in old stick nests of other bird species.	Suitable habitat does not occur in project area; may fly over during migration.

SPECIES COMMON NAME	SPECIES SCIENTIFIC NAME	FEDERAL STATUS	STATE STATUS	SUITABLE HABITAT	POTENTIAL IMPACTS
Piping plover	Charadrius melodus	т	т	Winters along the Texas coast where it can be found on barrier islands and beaches or mudflats.	Suitable habitat does not occur in project area; may fly over during migration.
Reddish egret	Egretta rufescens	N/A	Т	Brackish marshes, shallow salt ponds, and tidal flats along Texas Gulf Coast; nests on dry coastal islands.	Suitable habitat does not occur in project area; may fly over during migration.
Red knot	Calidris canutus rufa	т	SGCN	Breeds in drier tundra areas, such as sparsely vegetated hillsides. Outside of breeding season, it is found primarily in intertidal, marine habitats, especially near coastal inlets, estuaries, and bays.	Suitable habitat does not occur in project area; may fly over during migration.
<u>Sprague's pipit</u>	<u>Anthus spraqueii</u>	<u>N/A</u>	<u>SGCN</u>	Pastures and weedy fields, including grasslands with dense herbaceous vegetation or grassy agricultural fields.	<u>Suitable habitat may</u> occur in project area.
Swallow-tailed kite	Elanoides forficatus	N/A	Т	Lowland forested regions, especially swampy areas, ranging into open woodland; marshes, along rivers, lakes, and ponds; nests high in tall trees in clearing or on forest woodland edge.	Suitable habitat does not occur in project area; may fly over during migration.
Tropical kingbird	Tyrannus melancholicus	N/A	SGCN	Open to semi-open habitat from savannahs to agricultural fields, also parks and neighborhoods.	Suitable habitat may occur in project area.
Tropical parula	Setophaga pitiayumi	N/A	Т	Semi-tropical evergreen woodland along rivers and resacas.	Suitable habitat does not occur in project area; may fly over during migration.
Western burrowing owl	Athene cunicularia hypugaea	N/A	SGCN	Open grasslands and savannahs; may use open areas such as vacant lots, nests and roosts in abandoned burrows.	Suitable habitat may occur in project area; may occur in the project area in the winter.
White-faced ibis	Plegadis chihi	N/A	Т	Irrigated rice fields, sloughs, and freshwater marshes; will attend brackish and saltwater habitats; confined to near- coastal rockeries.	Suitable habitat may occur in project area.

SPECIES COMMON NAME	SPECIES SCIENTIFIC NAME	FEDERAL STATUS	STATE STATUS	SUITABLE HABITAT	POTENTIAL IMPACTS
White-tailed hawk	Buteo albicaudatus	N/A	Т	Near coast on prairies, cordgrass flats, and scrub live oak; further inland on prairies, mesquite and oak savannahs, and mixed savannah- chaparral.	Suitable habitat may occur in project area.
Whooping crane	Grus americana	Ε	Ε	Potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties. Roost predominantly in palustrine or riverine wetland systems (during migration).	Suitable foraging habitat may occur in the project area; may fly over during migration.
Wood stork	Mycteria americana	N/A	Т	Forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water. No breeding records in Texas since 1960.	Suitable foraging habitat may occur in project area.
Fishes			-		
Alligator gar	Atractosteus spatula	N/A	SGCN	Found in rivers, streams, lakes, swamps, bayous, bays, and estuaries typically in pools and backwater habitats. Floodplains inundated with flood waters provide spawning and nursery habitats.	Suitable habitat does not occur in project area.
<u>American eel</u>	<u>Anquilla rostrata</u>	<u>N/A</u>	<u>SGCN</u>	Broad range of habitat conditions including slow- and fast-flowing waters over many substrate types.	Suitable habitat may occur in project area.
<u>Burrhead chub</u>	<u>Macrhybopsis</u> <u>marconis</u>	<u>N/A</u>	<u>SGCN</u>	Guadalupe River: flowing water over coarse sand and fine gravel substrates in medium to large streams; found to be most abundant in riffles over large gravel and cobble.	Suitable habitat may occur in Guadalupe River and tributaries within project area.
<u>Fountain darter</u>	<u>Etheostoma</u> fonticola	E	<u>E</u>	Known only from the spring- fed San Marcos and Comal rivers in dense beds of aquatic plants growing close to bottom.	<u>Project is outside</u> <u>species' range.</u>

SPECIES COMMON NAME	SPECIES SCIENTIFIC NAME	FEDERAL STATUS	STATE STATUS	SUITABLE HABITAT	POTENTIAL IMPACTS
Guadalupe bass	<u>Micropterus</u> <u>treculii</u>	<u>N/A</u>	<u>SGCN</u>	<u>Guadalupe River Basin.</u> Typically lentic environments but commonly observed in flowing water; usually found in spring-fed streams with clear water and relatively consistent temperatures.	Suitable habitat may occur in Guadalupe River and tributaries within project area.
<u>Guadalupe</u> <u>darter</u>	<u>Percina apristis</u>	<u>N/A</u>	I	<u>Guadalupe River Basin. Riffles;</u> most common under or around 25-30 cm boulders in the main current; seems to prefer moderately turbid water.	Suitable habitat may occur in Guadalupe River and tributaries within project area.
<u>Medina</u> roundnose minnow	<u>Dionda</u> <u>nigrotaeniata</u>	<u>N/A</u>	I	Upper Medina River system. Primarily restricted to clear spring-fed waters that have slight temperature variations.	<u>Project is outside</u> <u>species' range.</u>
Oceanic whitetip shark	<u>Carcharhinus</u> Iongimanus	<u>N/A</u>	I	Marine habitats.	Suitable habitat does not occur in project area.
Opossum pipefish	Microphis brachyurus	N/A	Т	Brooding adults found in fresh or low salinity waters and young move or are carried into more saline waters after birth; southern coastal areas.	Suitable habitat does not occur in project area.
Saltmarsh topminnow	Fundulus jenkinsi	N/A	SGCN	Salt marsh, tidal meanders.	Suitable habitat does not occur in project area.
<u>Shortfin mako</u> <u>shark</u>	<u>lsurus</u> oxyrinchus	<u>N/A</u>	I	Marine habitats.	Suitable habitat does not occur in project area.
Southern flounder	Paralichthys lethostigma	N/A	SGCN	Brackish bays, estuaries and coastal waters to about 40 meter depth; move to deeper waters in winter.	Suitable habitat does not occur in project area.
Insects					
American bumblebee	Bombus pensylvanicus	N/A	SGCN	Meadows, parks, gardens, forests, and open fields.	Suitable habitat may occur in project area.
Bumblebee (no accepted common name)	<u>Bombus</u> variabilis	<u>N/A</u>	<u>SGCN</u>	<u>Nest parasite – occurs where</u> other bumblebee species occur.	Suitable habitat may occur in project area.
No accepted common name	Trimerotropis schaefferi	N/A	SGCN	Gulf dune grasshopper – grassland.	Suitable habitat may occur in project area.
Mammals					
American badger	Taxidea taxus	N/A	SGCN	Prefer grasslands and open areas.	Suitable habitat may occur in project area.

SPECIES COMMON NAME	SPECIES SCIENTIFIC NAME	FEDERAL STATUS	STATE STATUS	SUITABLE HABITAT	POTENTIAL IMPACTS
<u>Big brown bat</u>	<u>Eptesicus fuscus</u>	<u>N/A</u>	<u>SGCN</u>	<u>Any wooded areas or</u> woodlands except south <u>Texas. Riparian areas in west</u> <u>Texas.</u>	Suitable habitat may occur in project area.
Big free-tailed bat	Nyctinomops macrotis	N/A	SGCN	Roost in high canyon walls; will use buildings.	Suitable habitat does not occur in project area.
Blue whale	<u>Balaenoptera</u> <u>musculus</u>	E	E	Ocean-dwelling.	Suitable habitat does not occur in project area.
<u>Cave myotis</u>	<u>Myotis velifer</u>	<u>N/A</u>	<u>SGCN</u>	Colonial and cave-dwelling; also roosts in rock crevices, human-built structures, under bridges, and abandoned cliff swallow nests.	Suitable habitat may occur in project area.
Eastern red bat	Lasiurus borealis	N/A	SGCN	Often associated with wooded areas; found in urban areas during migration.	Suitable habitat does not occur in project area.
Eastern spotted skunk	Spilogale putorius	N/A	SGCN	Open fields prairies, croplands, fence rows, farmyards, and forest edges.	Suitable habitat may occur in project area.
Gulf of Mexico Bryde's whale	<u>Balaenoptera</u> <u>ricei</u>	E	E	Ocean-dwelling.	Suitable habitat does not occur in project area.
Hoary bat	Lasiurus cinereus	N/A	SGCN	Forests and woods in east and central Texas.	Project area is outside the expected range of this species.
Humpback whale	Megaptera novaeangliae	Ε	Ε	Open ocean and coastal waters, sometimes including inshore areas such as bays; summer distribution is in temperate and subpolar waters; in winter, most are in tropical/subtropical waters near islands or coasts.	Suitable habitat does not occur in project area.
Long-tailed weasel	Mustela frenata	N/A	SGCN	Usually close to water; rocky desert shrub, forest edges, brushlands, upland woods, fence rows, and bottomland hardwoods.	Suitable habitat may occur in project area.
Mexican free- tailed bat	Tadarida brasiliensis	N/A	SGCN	Roosts in buildings or limestone caves on the Edwards Plateau; found in all habitats.	Suitable habitat may occur in project area.
Mink	Neovison vison	N/A	SGCN	Close association with water; edges of lakes, wooded riparian zones, coastal swamps, and marshes.	Suitable habitat may occur in project area.

SPECIES COMMON NAME	SPECIES SCIENTIFIC NAME	FEDERAL STATUS	STATE STATUS	SUITABLE HABITAT	POTENTIAL IMPACTS
Mountain lion	Puma concolor	N/A	SGCN	Wide range of habitats, especially rocky areas, canyons, riparian zones, and dense brush.	Suitable habitat does not occur in project area.
North Atlantic right whale	<u>Eubalaena</u> glacialis	E	E	Ocean-dwelling.	Suitable habitat does not occur in project area.
<u>Northern</u> yellow bat	<u>Lasiurus</u> intermedius	<u>N/A</u>	<u>SGCN</u>	Prefers roosting in Spanish moss and in the hanging fronds of palm trees. Found near water and forages over grassy, open areas.	Suitable habitat may occur in project area.
Padre Island kangaroo rat	Dipodomys compactus	N/A	SGCN	Coastal barren sparse vegetation.	Suitable habitat does not occur in project area.
Plains spotted skunk	Spilogale putorius interrupta	N/A	SGCN	Open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie.	Suitable habitat may occur in project area.
<u>Sei whale</u>	<u>Balaenoptera</u> <u>borealis</u>	E	E	Ocean-dwelling.	Suitable habitat does not occur in project area.
Southern short- tailed shrew	Blarina carolinensis	N/A	SGCN	Various upland and wetland habitats, including moist deciduous woods, brushy areas, pine woodland and forest, mixed oak-pine-juniper woods, grassy situations, and densely wooded floodplains. Nest sites are probably under logs, stumps, and other debris.	Suitable habitat may occur in project area.
Sperm whale	<u>Physeter</u> <u>macrocephalus</u>	E	E	Ocean-dwelling.	Suitable habitat does not occur in project area.
Swamp rabbit	Sylvilagus aquaticus	N/A	SGCN	Found near water in fallen trees, thickets, and stumps.	Suitable habitat may occur in project area.
Thirteen-lined ground squirrel	lctidomys tridecemlineatus	N/A	SGCN	Restricted to dry and sandy soils of open areas, such as grasslands, cultivated fields, meadows, roadsides, airfields, shrublands, and suburb lawns.	Low potential for habitat to occur in project area.
Tricolored bat	Perimyotis subflavus	N/A	SGCN	Caves; riparian areas, woodland, and forest.	Suitable habitat does not occur in project area.
Western hog- nosed skunk	Conepatus Ieuconotus	N/A	SGCN	Deserts, woodlands, and grasslands; common in rocky canyon country.	Suitable habitat does not occur in project area.
White-nosed coati	Nasua narica	N/A	Т	Canyons, riparian corridors, and woodlands.	Suitable habitat does not occur in project area.

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Mollusks					
<u>Guadalupe orb</u>	<u>Quadrula aurea</u>	<u>C</u>	I	Sand and gravel in some locations and mud at others; found in lentic and lotic; Guadalupe River basin.	Suitable habitat may occur in Guadalupe River and tributaries within project area.
<u>False spike</u>	<u>Quadrula</u> <u>mitchelli</u>	<u>N/A</u>	I	Possibly extirpated from Texas; probably medium to large rivers; substrates varying from mud through mixtures of sand, gravel and cobble; Rio Grande, Brazos, Colorado, and Guadalupe (historic) river basins.	Suitable habitat may occur in Guadalupe River and tributaries within project area.
No accepted common name	Nesovitrea suzannae	N/A	SGCN	Land snail – coastal southern Texas woodland.	Suitable habitat does not occur in project area.
Plants					
Awnless bluestem	Bothriochloa exaristata	N/A	SGCN	Coastal prairies on black clay.	Suitable habitat may occur in project area.
<u>Awnless</u> <u>leastdaisy</u>	<u>Chaetopappa</u> imberbis	<u>N/A</u>	<u>SGCN</u>	In woodlands on lomas of Carrizo sand. Flowering and fruiting March - May.	<u>Suitable habitat may</u> occur in project area.
Bristle nailwort	<u>Paronychia</u> <u>setacea</u>	<u>N/A</u>	<u>SGCN</u>	<u>Flowering vascular plant</u> <u>endemic to eastern</u> <u>southcentral Texas, in sandy</u> <u>soils.</u>	<u>Suitable habitat may</u> occur in project area.
Coastal gay- feather	Liatris bracteate	N/A	SGCN	Coastal prairie grasslands of various types, from salty prairie on low-lying somewhat saline clay loams to upland prairie on nonsaline clayey to sandy loams.	Suitable habitat may occur in project area.
Drummond's rushpea	<u>Hoffmannseggia</u> <u>drummondii</u>	<u>N/A</u>	<u>SGCN</u>	Perennial; open areas on sandy clay.	Suitable habitat may occur in project area.
<u>Elmendorf's</u> onion	<u>Allium</u> <u>elmendorfii</u>	<u>N/A</u>	<u>SGCN</u>	<u>Perennial. Grassland openings</u> <u>in oak woodlands on deep,</u> <u>loose, well-drained sands.</u> Flowering March- May.	<u>Suitable habitat may</u> occur in project area.
<u>Heartleaf</u> <u>evening-</u> primrose	<u>Oenothera</u> <u>cordata</u>	<u>N/A</u>	<u>SGCN</u>	Occurs in post oak woodlands on sandy soils on the coastal plain.	Suitable habitat may occur in project area.

SPECIES COMMON NAME	SPECIES SCIENTIFIC NAME	FEDERAL STATUS	STATE STATUS	SUITABLE HABITAT	POTENTIAL IMPACTS
<u>Hill country</u> <u>wild-mercury</u>	<u>Arqythamnia</u> <u>aphoroides</u>	<u>N/A</u>	<u>SGCN</u>	Mostly in bluestem-grama grasslands associated with plateau live oak woodlands on clays and clay loams over limestone on rolling uplands: also in partial shade of oak- juniper woodlands in gravelly soils on rocky limestone slopes.	Low likelihood of suitable habitat in project area.
Indianola beakrush	Rhynchospora indianolensis	N/A	SGCN	Locally abundant in cattle pastures in some areas (at least during wet years), possibly becoming a management problem in such sites.	Suitable habitat may occur in project area.
Jone's rainlilly	<u>Cooperia jonesii</u>	<u>N/A</u>	<u>SGCN</u>	Hardpan swales and other seasonally moist low areas.	Suitable habitat may occur in project area.
Low spurge	<u>Euphorbia</u> peplidion	<u>N/A</u>	<u>SGCN</u>	Annual. Occurs in a variety of vernally-moist situations in a number of natural regions.	Suitable habitat may occur in project area.
Marsh-elder dodder	Cuscuta attenuate	N/A	SGCN	Parasitizes a particular sumpweed (<i>Iva annua</i>) almost exclusively as well as ragweed and heath aster. Host plants typically found in open, disturbed habitats like fallow fields and creek bottomlands.	Suitable habitat may occur in project area.
<u>Net-leaf</u> <u>bundleflower</u>	<u>Desmanthus</u> <u>reticulatus</u>	<u>N/A</u>	<u>SGCN</u>	Perennial. Mostly on clay prairies of the coastal plain of central and south Texas. Flowering April-July.	Suitable habitat may occur in project area.
Sand Brazos mint	Brazoria arenaria	N/A	SGCN	Sandy areas in South Texas.	Suitable habitat may occur in project area.
<u>Sandhill</u> woolywhite	<u>Hymenopappus</u> <u>carrizoanus</u>	<u>N/A</u>	<u>SGCN</u>	Disturbed or open areas in grasslands and post oak woodlands on deep sands derived from the Carrizo Sand and similar Eocene formations.	Suitable habitat may occur in project area.
Sayersville blue eyes	<u>Nemophila</u> <u>sayersensis</u>	<u>N/A</u>	<u>SGCN</u>	Open fields and woodland margins on deep loose nutrient-poor sand.	Suitable habitat may occur in project area.
<u>Seaside</u> <u>beebalm</u>	<u>Monarda</u> <u>maritima</u>	<u>N/A</u>	<u>SGCN</u>	Grasslands and pastures on sandy soil near the coast.	Suitable habitat may occur in project area.

SPECIES COMMON NAME	SPECIES SCIENTIFIC NAME	FEDERAL STATUS	STATE STATUS	SUITABLE HABITAT	POTENTIAL IMPACTS
<u>Sutherland</u> <u>hawthorn</u>	<u>Crataegus viridis</u> <u>var. glabriuscula</u>	<u>N/A</u>	<u>SGCN</u>	In mesic soils of woods or on edge of woods, treeline, fence line, or thicket. Above/ near creeks and drainages, and in river bottoms. Flowering March-Apr.	<u>Suitable habitat may</u> occur in project area.
<u>Texas beebalm</u>	<u>Monarda</u> <u>viridissima</u>	<u>N/A</u>	<u>SGCN</u>	Endemic perennial herb of the Carrizo Sands; deep, well- drained sandy soils in openings of post oak woodlands; flowers white.	Suitable habitat may occur in project area.
<u>Texas milk</u> <u>vetch</u>	<u>Astragalus</u> <u>reflexus</u>	<u>N/A</u>	<u>SGCN</u>	Annual. Grasslands, prairies, and roadsides on calcareous and clay substrates. Flowering February-June.	Suitable habitat may occur in project area.
Texas peachbush	Prunus texana	N/A	SGCN	Occurs at scattered sites in various well drained sandy situations; deep sand, plains and sand hills, grasslands, oak woods, 0-200 meter elevation.	Suitable habitat may occur in project area.
<u>Texas pinkroot</u>	<u>Spigelia texana</u>	<u>N/A</u>	<u>SGCN</u>	Perennial. Woodlands on loamy soils. Flowering March- November.	<u>Suitable habitat may</u> occur in project area.
Texas sandmint	<u>Rhododon</u> <u>ciliatus</u>	<u>N/A</u>	<u>SGCN</u>	Annual. Open sandy areas in post oak woodlands. Flowering April-August.	Suitable habitat may occur in project area.
<u>Texas tauschia</u>	<u>Tauschia texana</u>	<u>N/A</u>	<u>SGCN</u>	Perennial. Loamy soils in deciduous forests or woodlands on river and stream terraces. Flowering/fruiting February- April.	Suitable habitat may occur in project area.
Texas willkommia	Willkommia texana var. texana	N/A	SGCN	Mostly in sparsely vegetated shortgrass patches within taller prairies on alkaline or saline soils on the Coastal Plain.	Suitable habitat may occur in project area.
Tharp's dropseed	Sporobolus tharpii	N/A	SGCN	Occurs on barrier islands, shores of lagoons and bays protected by the barrier islands, and on shores of a few near-coastal ponds. Plants occur at the bases of dunes, in interdune swales and sandflats, and on upper beaches. The substrate is of Holocene age.	Suitable dune habitat does not occur in project area.

SPECIES COMMON NAME	SPECIES SCIENTIFIC NAME	FEDERAL STATUS	STATE STATUS	SUITABLE HABITAT	POTENTIAL IMPACTS
Threeflower broomweed	Thurovia trifloral	N/A	SGCN	Near coast in sparse, low vegetation on a veneer of light-colored silt or fine sand over saline clay along drier upper margins of ecotone between salty prairies and tidal flats; further inland associated with vegetated slick spots on prairie mima mounds.	Suitable habitat does not occur in project area.
Topeka purple- coneflower	<u>Echinacea</u> atrorubens	<u>N/A</u>	<u>SGCN</u>	Perennial. Tallgrass prairie of the southern Great Plains, in blackland prairies and in a variety of other sites such as limestone hillsides. Flowering April-June.	Suitable habitat may occur in project area.
<u>Two-flower</u> stick-pea	<u>Calliandra</u> <u>biflora</u>	<u>N/A</u>	<u>SGCN</u>	Perennial. Open areas on caliche outcrops or in shallow sandy soils over caliche. Flowering/fruiting May- August.	<u>Suitable habitat may</u> occur in project area.
<u>Welder</u> <u>machaeranther</u> <u>a</u>	<u>Psilactis</u> <u>heterocarpa</u>	<u>N/A</u>	<u>SGCN</u>	Midgrass to coastal prairie grasslands and open mesquite-huisache woodlands on nearly level, grey to dark grey clayey to silty soils. Flowering September- November.	Suitable habitat may occur in project area.
Velvet spurge	Euphorbia innocua	N/A	SGCN	Open or brushy areas on coastal sands and the South Texas Sand Sheet.	Suitable habitat does not occur in project area.
<u>Wright's</u> <u>trichocoronis</u>	<u>Trichocoronis</u> <u>wrightii var.</u> <u>wrightii</u>	<u>N/A</u>	<u>SGCN</u>	Annual. Wetland habitats. Flowering February-October.	Suitable habitat may occur in project area.
Reptiles					
Atlantic hawksbill sea turtle	Eretmochelys imbricate	Ε	Ε	Gulf and bay system, warm shallow waters especially in rocky marine environments, such as coral reefs and jetties, juveniles found in floating mats of sea plants; feed on sponges, jellyfish, sea urchins, mollusks, and crustaceans.	Suitable aquatic habitat does not occur in project area.

SPECIES COMMON NAME	SPECIES SCIENTIFIC NAME	FEDERAL STATUS	STATE STATUS	SUITABLE HABITAT	POTENTIAL IMPACTS
<u>Cagle's map</u> <u>turtle</u>	<u>Graptemys</u> <u>caqlei</u>	<u>N/A</u>	Ι	Shallow perennial streams with swift to moderate flow and gravel or cobble bottom, connected by deeper pools with a slower flow rate and a silt or mud bottom; forage for insects in gravel bar riffles and transition areas between riffles and pools; nests on gently sloping sand banks.	Suitable habitat may occur in Guadalupe River and tributaries within project area.
Common garter snake	Thamnophis sirtalis	N/A	SGCN	Irrigation canals and riparian- corridor farmlands in west; marshy, flooded pastureland, grassy or brushy borders of permanent bodies of water; coastal salt marshes.	Suitable habitat may occur in project area.
Eastern box turtle	Terrapene carolina	N/A	SGCN	Found in fields, forests, forest- brush, and forest-field.	Low likelihood of suitable habitat in project area.
Green sea turtle	Chelonia mydas	Т	Т	Gulf and bay system; shallow water seagrass beds, open water between feeding and nesting areas, barrier island beaches; adults are herbivorous feeding on sea grass and seaweed; juveniles are omnivorous feeding initially on marine invertebrates, then increasingly on sea grasses and seaweeds.	Suitable aquatic habitat does not occur in project area.
Keeled earless lizard	Holbrookia propinqua	N/A	SGCN	Barrier islands, coastal dunes, and other sandy areas.	Suitable dune habitat does not occur in project area.
Kemp's Ridley sea turtle	Lepidochelys kempii	Ε	Ε	Gulf and bay system, adults stay within the shallow waters of the Gulf of Mexico; feed primarily on crabs, but also snails, clams, other crustaceans, and plants; juveniles feed on sargassum and its associated fauna.	Suitable aquatic habitat does not occur in project area.
Loggerhead sea turtle	Caretta caretta	т	т	Gulf and bay system primarily for juveniles, adults are most pelagic of the sea turtles; omnivorous, shows a preference for mollusks, crustaceans, and coral.	Suitable aquatic habitat does not occur in project area.

SPECIES COMMON NAME	SPECIES SCIENTIFIC NAME	FEDERAL STATUS	STATE STATUS	SUITABLE HABITAT	POTENTIAL IMPACTS
Massasauga	Sistrurus tergeminus	N/A	SGCN	Quite common in gently rolling prairie occasionally broken by creek valley or rocky hillside.	Low likelihood of suitable habitat in project area.
<u>Prairie skink</u>	<u>Plestiodon</u> <u>septentrionalis</u>	<u>N/A</u>	<u>SGCN</u>	Native grassland habitat across the Rolling Plains, Blackland Prairie, Post Oak Savanna and Pineywoods ecoregions.	Suitable habitat may occur in project area.
<u>Pygmy</u> <u>rattlesnake</u>	<u>Sistrurus</u> <u>miliarius</u>	<u>N/A</u>	<u>SGCN</u>	Variety of wooded habitats from bottomland coastal hardwood forests to upland savannas. Frequently found in association with standing water.	Suitable habitat may occur in project area.
<u>Salt marsh</u> <u>snake</u>	<u>Nerodia clarkii</u>	<u>N/A</u>	<u>SGCN</u>	Generally restricted to brackish marshes and islands of the mid and upper coastline. May be found further inland in shallow freshwater marshes.	<u>Suitable habitat may</u> occur in project area near coast.
Slender glass lizard	Ophisaurus attenuatus	N/A	SGCN	Wooded areas, dry grasslands, sand prairies, oak savannas, pine barrens, and oil fields.	Low likelihood of suitable habitat in project area.
Texas diamondback terrapin	Malaclemys terrapin littoralis	N/A	SGCN	Coastal marshes, tidal flats, coves, estuaries, and lagoons behind barrier beaches; brackish and salt water; burrows into mud when inactive; may venture into lowlands at high tide.	Suitable aquatic habitat does not occur in project area.
Texas horned lizard	Phrynosoma cornutum	N/A	Т	Open, arid, and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush, or scrubby trees.	Suitable habitat may occur in project area.
Texas scarlet snake	Cemophora coccinea lineri	Т	SGCN	Along Gulf Coast, known from mixed hardwood scrub on sandy soils. Mixed hardwood scrub on sandy soils; feeds on reptile eggs; semifossorial.	Low likelihood of suitable habitat in project area.
<u>Texas tortoise</u>	<u>Gopherus</u> <u>berlandieri</u>	<u>N/A</u>	I	Open scrub woods, arid brush, lomas, grass-cactus vegetation; often in areas with sandy well-drained soils. When inactive occupies shallow depressions dug at base of bush or cactus, sometimes in underground burrow or under object.	<u>Suitable habitat may</u> occur in project area.

SPECIES COMMON NAME	SPECIES SCIENTIFIC NAME	FEDERAL STATUS	STATE STATUS	SUITABLE HABITAT	POTENTIAL IMPACTS
<u>Timber</u> (canebrake) rattlesnake	<u>Crotalus</u> <u>horridus</u>	<u>N/A</u>	<u>SGCN</u>	Densely vegetated areas in swamps, floodplains, upland pine and deciduous woodland, riparian zones, abandoned farmland. Limestone bluffs, sandy soil or black clay.	Suitable habitat may occur in project area.
Western box turtle	Terrapene ornata	N/A	SGCN	Prairie grassland, pasture, fields, sandhills, and open woodland, prefer sandy soils. Sometimes enter slow, shallow streams and creek pools. Burrows into soil or may use burrows made by other species.	Suitable habitat may occur in project area.
<u>Western</u> <u>chicken turtle</u>	<u>Deirochelys</u> <u>reticularia</u> <u>miaria</u>	<u>N/A</u>	<u>SGCN</u>	Uses aquatic habitats in the late winter, spring and early summer and terrestrial habitats the remainder of the year. Preferred aquatic habitats seem to be highly vegetated shallow wetlands with gentle slopes.	<u>Suitable habitat may</u> occur in project area.
PT = Proposed Th T = Threatened E = Endangered C = Candidate DL = Delisted N/A = Not applica SGCN = Species o	ireatened able f Greatest Conservat	ion Need (des	ignated by TP	WD, but not formally listed as T or	- E)

Cultural Considerations

Projects in Texas can come under the purview of the NHPA and the ACT. Both are administered by the THC and the SHPO in Austin, Texas. If an undertaking is federally permitted, licensed, or partially funded, the project must comply with Section 106 of the NHPA. The ACT requires projects on land owned or operated by a political subdivision of the State of Texas⁸ to assess whether the project will impact cultural resources that meet the requirements for listing as a State Antiquities Landmark.

The background literature review identified 12 cultural resources that intersect with the 89-mile pipeline alignment and four cultural resources that are located immediately adjacent (within 300 feet) of the pipeline alignment (Table 5.2.16-3). The 12 identified cultural resources include seven archaeological sites, two historic trails, one archeological historic district, and two cemeteries (i.e., Ebenezer Cemetery and Mt. Pleasant/Garcitas Cemetery). The Ebenezer Cemetery is also listed as an archaeological site (i.e.,

⁸ Political subdivision entities include any county, municipality, special district, river authority or compact, Title 4 Water Code District, soil and water conservation district, county or municipal improvement district, regional planning commission, council of government, or utility that is public-owned. Refer to TX Code § <u>2254.021</u>.

<u>41GZ6) as well as a historical marker (Marker No. 1375)⁹. The Mt. Pleasant Cemetery (also known as the Garcitas Cemetery) is listed as a regular cemetery as well as a vicinity cemetery¹⁰.</u>

Vicinity cemeteries are very general areas where a cemetery location was reported at one time, but the exact location is unknown. Research for these vicinity circles was conducted in 2000–2005 by historians contracted by the THC. These historians researched maps and county anthologies and worked with county historical commissions and local informants. If, at that time, an exact location could not be confirmed, a circle was hand-drawn on a USGS map and linked to a Word document. In most cases, the locational information was never historically mapped on USGS maps, county highway maps, or other local history maps. All human burials in Texas are protected by law and should be avoided. If project impacts are to occur near the vicinity cemetery locations, further work (e.g., pedestrian survey and/or metal detecting) or construction monitoring might be needed to ensure human burials are not present in the project area.

No previously recorded archaeological sites intersect or are located immediately adjacent (within 300 feet) to the project area (THC 2019). The background literature review identified one historic linear feature intersecting the project area (Table 5.2.16-3). No cemeteries, historical markers, or National Register of Historic Places listed properties are known to be near the project.

The background literature review also identified six potential historic-age structures and three linear potential historic-age structures (i.e., levees) that immediately intersect with the pipeline alignment¹¹. An additional 59 potential historic-age structures and two levees are located immediately adjacent to (within 300 feet) of the pipeline alignment. Two of the 59 potential historic-age structures also overlap with the larger project area in Calhoun County.

The model used assessed the overall archaeological site potential to include low to high potential zones. The results of the model indicated 13% of the pipeline alignment as having a high likelihood to contain significant unidentified archaeological resources, 25% of the pipeline alignment as moderate, and 62% of the pipeline alignment as low. The areas with greatest archaeological probability are located near previously known archaeological sites, historic features, and landforms adjacent to existing drainages.

The model used assessed the overall archaeological site potential to include low to high potential zones, ranging from 2 percent to 65 percent likelihood for the project area to contain significant unidentified archaeological resources. The areas with greatest archaeological probability are located near the historic feature and landforms adjacent to existing drainages.

Projects under control of political subdivisions of the State of Texas, such as water agencies, counties, and city-owned entities, must comply with the ACT. As previously discussed, the project may also have to comply with the NHPA. The overall calculated cultural resources assessment score is 19.0 (higher scores

- ⁹ Find a Grave. 2024. *Ebenezer Cemetery*. Available at: https://www.findagrave.com/cemetery/3354/memorialsearch?cemeteryName=Ebenezer%20Cemetery&orderby=d-. Accessed February 2024.
- ¹⁰ Texas Historical Commission (THC). 2024. Texas Archeological and Historical Sites Atlas Garcitas Cemetery restricted
- database, Texas Historical Commission. Atlas Number 7469004105. Available at: https://atlas.thc.texas.gov/. Accessed February 2024.

¹¹ U.S. Geological Survey (USGS). 2024. TopoView: historical topographic map collection. Published by the U.S. Geological Survey (USGS). Available at: http://ngmdb.usgs.gov/maps/TopoView. Accessed February 2024.

indicate a higher probability of cultural resources; further information regarding methodology for developing the assessment score is provided in Section 5.2). On the basis of the results of the background review, SWCA recommends that a structured cultural resources survey of the final design plan be performed to accurately assess the presence and significance of identified and unrecorded cultural resources within project boundaries.

RESOURCE NAME	RESOURCE TYPE	PREHISTORIC/HIST ORIC	NRHP ELIGIBILITY	LOCATIO N
Levee	Linear Feature	Historic	Unknown	Intersect
Archaeological Site	Quarry/Camp Site and Farmstead	Prehistoric and <u>Historic</u>	<u>Undetermined</u>	Intersect
Archaeological Site	Lithic Scatter	Prehistoric	<u>Undetermined</u>	Intersect
Archaeological Site	Lithic Scatter	Prehistoric	<u>Undetermined</u>	<u>Adjacent</u>
Archaeological Site	Quarry/Camp Site	Prehistoric	<u>Undetermined</u>	Intersect
Archaeological Site	Quarry/Camp Site	Prehistoric	<u>Undetermined</u>	Intersect
Archaeological Site	Camp	Prehistoric	<u>Undetermined</u>	Intersect
Archaeological Site	Quarry/Camp Site	Prehistoric	<u>Undetermined</u>	<u>Adjacent</u>
Archaeological Site	Lithic Scatter and Farmstead	Prehistoric and <u>Historic</u>	<u>Undetermined</u>	<u>Adjacent</u>
Archaeological Site	Lithic Scatter and Farmstead	Prehistoric and <u>Historic</u>	<u>Undetermined</u>	<u>Adjacent</u>
Archaeological Site	Campsite and Historic Scatter	Prehistoric and <u>Historic</u>	<u>Undetermined</u>	Intersect
Archaeological Site	Campsite and Historic Scatter	<u>Prehistoric</u>	<u>Undetermined</u>	Intersect
41GZ6 / Ebenezer Cemetery	Archaeological Site / Cemetery / Historical Marker	<u>Historic</u>	<u>Unknown</u>	Intersect
Levee	Linear Feature	Historic	<u>Unknown</u>	Intersect
<u>Chisholm</u>	Historic Trail	Historic	Listed (segments)	Intersect
Cuero I Archeological	Historic District	Historic	Listed	Intersect
<u>El Camino Real De Los</u> <u>Tejas</u>	Historic Trail	<u>Historic</u>	<u>Listed (segments)</u>	Intersect
Garcitas / Mt. Pleasant	<u>Cemetery / Vicinity Cemetery</u>	Historic	<u>Unknown</u>	Intersect
	ASSES	SMENT SCORE TOTAL:		19.0 383.0

Table 5.2.16-3 Cultural Resources Results

A.5.5 MODIFICATION TO SECTION 5.2.16.4, PAGE 5.2.16-15

Preliminary engineering and costing analyses have been performed using the 2021 Regional Water Planning methods. Black & Veatch utilized the Uniform Costing Tool, which includes standard costing procedures and methods for calculating unit costs. Relying in part on an available feasibility study and integrating current TWDB guidance for regional water planning, a cost estimate summary for the GBRA Lower Basin Storage project was prepared and is provided in Table 5.2.16-4. The engineering and costing analysis for the GBRA Lower Basin Storage Project includes the embankment and appurtenant facilities for the OCR, a 100 cfs raw water intake and pump station, and a 66-inch transmission pipeline, estimated to be $\frac{1}{89}$ miles long. Depending on the location(s) and type(s) of use for water supplies associated with the strategy, additional facilities and costs could include transmission and treatment facilities for service to project participants and customers.

Cost estimates were calculated for capital costs, annual debt service, operation and maintenance, power, land acquisition, and environmental mitigation for season and peak day demands. The overall project costs are estimated to be $\frac{65,470,000}{507,642,000}$. The annual cost is estimated to be $\frac{6,603,000}{545,634,000}$, and the annual unit cost of additional firm supply is estimated to be $\frac{110}{763}$ per acft. Per section 8.2.4 of the UCM User Guide, dated November 2018, for all project components except pipelines, the UCM assumes the Environmental/Mitigation Costs are 100 percent of land costs. The recommended value for environmental studies and mitigation costs for pipelines is 25,000/mile of pipeline. This cost estimate is representative of 600 acres for the Reservoir foot-print and conservation pool, $\frac{12.1}{574}$ acres for the pipeline facilities, and 5 acres for a pump station. Some participants or customers may incur additional costs for purchase of water, transmission facilities, treatment, and/or integration.

Table 5.2.16-4	Project Cost Estimate Summar
----------------	------------------------------

ITEM	ESTIMATED COSTS
Off-Channel Storage/Ring Dike (Conservation Pool 12,763 acft, 600 acres)	\$25,992,000
Primary Pump Station (68 MGD)	\$15,791,000 <u>\$47,772,000</u>
Transmission Pipeline (66 in dia., ± 89 miles)	\$2,206,000 <u>\$294,572,000</u>
TOTAL COST OF FACILITIES	\$43,989,000 <u>\$368,336,000</u>
Engineering and Feasibility Studies, Legal Assistance, Financing, Bond Counsel, and Contingencies (30% for pipes & 35% for all other facilities)	\$ 15,286,000 \$114,189,000
Environmental & Archaeology Studies and Mitigation	\$2,193,000 <u>\$5,279,000</u>
Land Acquisition and Surveying (617-1,179 acres @ \$3,584/acre)	\$2,248,000 <u>\$6,251,000</u>

ITEM	ESTIMATED COSTS
Interest During Construction (3% for 1 years with a 0.5% return on investment)	\$ 1,754,000 \$13,587,000
TOTAL COST OF PROJECT	\$ 65,470,000 \$507,642,000
ANNUAL COST	
Debt Service (3.5 percent, 20 years)	\$1,757,000 <u>\$32,743,000</u>
Reservoir Debt Service (3.5 percent, 40 years)	\$1,897,000 \$1,980,000
Operation and Maintenance	
Pipeline, Wells, and Storage Tanks (1% of Cost of Facilities)	\$ 22,000 \$2,946,000
Intakes and Pump Stations (2.5% of Cost of Facilities)	\$ 395,000 \$1,194,000
Dam and Reservoir (1.5% of Cost of Facilities)	\$ 390,000 \$390,000
Pumping Energy Costs (4 ,865,404<u>57,852,831</u> kW-hr @ 0.08 \$/kW-hr)	\$389,000 <u>\$4,628,000</u>
Purchase of Water (59,780 acft/yr @ 29.33 \$/acft)	\$1,753,000
TOTAL ANNUAL COST	\$6,603,000 <u>\$45,634,000</u>
Available Project Yield (acft/yr)	59,780
Annual Cost of Water (\$ per acft)	\$110 <u>\$763</u>
Annual Cost of Water After 20-year Debt Service (\$ per acft)	\$81 <u>\$216</u>
Annual Cost of Water After 40-year Debt Service (\$ per acft)	\$49 <u>\$183</u>
Annual Cost of Water (\$ per 1,000 gallons)	\$0.34 <u>\$2.34</u>
Annual Cost of Water After Debt Service (\$ per 1,000 gallons)	\$0.15 <u>\$0.56</u>
Based on a peaking factor of 1.0.	

A.5.6 MODIFICATION TO SECTION 5.2.16.5, PAGE 5.2.16-17

Information presented in this WMS was provided by GBRA and represents the current plan, which is based on the sponsor's current understanding of the system. GBRA has obtained the necessary water rights permits for this project from the TCEQ. Implementation of the GBRA Lower Basin Storage WMS includes the following considerations:

- An institutional arrangement may be needed to implement this project, including financing on a regional basis.
- It may be necessary to obtain the following permits or authorizations:
 - TCEQ interbasin transfer, depending upon location(s) of use;
 - USACE Sections 10 and 404 dredge and fill permits for the reservoir and pipelines;
 - GLO sand and gravel removal permits;
 - GLO easement for use of state-owned land; and
 - TPWD sand, gravel, and marl permit.
- Permitting, at a minimum, will require the following additional studies:
 - Habitat mitigation plan;
 - Environmental studies; and
 - Cultural resources survey.
- Land will need to be acquired through either negotiations or condemnation.

Reliability

The reliability of the water supplies is projected to be high (reliability score = 5).

CHAPTER 6

A.6.1 MODIFICATION TO SECTION 6.1.2, PAGE 6-30

6.1.2 Agricultural Resources

6.1.2.1 Impacts on Agricultural Resources

To evaluate potential impacts on agricultural resources, construction impacts for each of the WMSs were estimated based on the acreage of agricultural land impacted according to TPWD mapping. These impacts are summarized for WMSs 10 through 33, which are the WMSs for which conceptual geographic location information was available. Impacts are described for each of these WMSs in Section 5.2. Overall, construction activities for the combined WMS have the potential to affect <u>19,163</u> <u>39,067</u> acres of agricultural land, including <u>14,885</u> <u>26,786</u> acres of land mapped by TPWD as row crops, and <u>4,278</u> <u>12,281</u> acres of land mapped as tame/disturbance grassland, which may include areas used for grazing and hay production.

A.6.2 MODIFICATION TO TABLE 6-7, PAGE 6-44

Table 6-7 Recommended WMS Involving Voluntary Redistribution of Water

2021 WATER MANAGEMENT STRATEGY	FINAL DECADE FIRM YIELD (ACFT/YR)
SAWS Expanded Brackish Project	70,160
GBRA Lower Basin Storage Project	<u>59,780</u>
SS WSC Brackish Wilcox Groundwater Project	1,120
CRWA Brackish Carrizo-Wilcox Project	14,700
CVLGC Carrizo Project	10,000
Karnes City Local Groundwater	444
Total	96,242 <u>156,204</u>

A.6.3 MODIFICATION TO TABLE 6-10, PAGE 6-31

Endangered and Threatened Species

Table 6-10Summary of Potential Impacts to Endangered, Threatened, and Species of Greatest
Conservation Need from Water Management Strategies

NO.	WATER MANAGEMENT STRATEGY	FINAL DECADE FIRM YIELD (ACFT/YR)	POTENTIAL SPECIES IMPACT SCORE		
1	Advanced Water Conservation	167,148	0		
2	Drought Management	56,588	0		
3	Edwards Transfers	5,906	0		
4	Local Groundwater	28,240	16		
5	Local Groundwater Conversions	0	0		
6	Surface Water Rights	0	0		
7	Balancing Storage	0	0		
8	Facilities Expansion	95,675	48		
9	Recycled Water Strategies	52,388	120		
10	SAWS Expanded Local Carrizo Project	21,000	4		
11	SAWS Expanded Brackish Groundwater Project	70,160	7		
12	ARWA/GBRA Project (Phase I)	30,000	24		

NO.	WATER MANAGEMENT STRATEGY	FINAL DECADE FIRM YIELD (ACFT/YR)	POTENTIAL SPECIES IMPACT SCORE
13	ARWA Project (Phase 2)	20,999	16
14	ARWA Project (Phase 3)	5,494	16
15	GBRA Mid-Basin (Phase 2)	27,000	22
16	GBRA Lower Basin Storage	59,780	18 <u>36</u>
17	GBRA Lower Basin New Appropriation	40,500	18
18	GBRA Victoria Steam-Electric Project	23,925*	14
19	CRWA Wells Ranch (Phase 3)	7,000	10
20	CRWA Siesta Project	5,042	14
21	CRWA Brackish Carrizo-Wilcox Project	14,700	8
22	CVLGC Carrizo Project	10,000	14
23	SSLGC Expanded Carrizo Project	6,000	14
24	SSLGC Expanded Brackish Wilcox Project	5,000	6
25	NBU ASR	10,818	2
26	NBU Trinity Well Field Expansion	3,360	4
27	City of Victoria ASR	7,900	1
28	City of Victoria Groundwater-Surface Water Exchange	8,544	2
29	SS WSC Brackish Carrizo-Wilcox Project	1,120	4
30	Martindale Alluvial Well	240	18
31	Maxwell WSC Trinity Well	230	8
32	County Line SUD Trinity Well Field	740	12
33	County Line SUD Brackish Edwards Well Field	1,500	12

* The 23,925 acft yield for the GBRA Victoria Steam-Electric Project is purchased from the 40,500 acft yield for GBRA Lower Basin New Appropriation.

A.6.4 MODIFICATION TO TABLE 6-11, PAGE 6-46

Vegetation and Land Use

Table 6-11 Summary of Potential Impacts to Vegetation and Land Use

NO.	WATER MANAGEMENT STRATEGY	FINAL DECADE FIRM YIELD (ACFT/YR)	POTENTIAL HABITAT IMPACT SCORE
1	Advanced Water Conservation	167,148	0
2	Drought Management	56,588	0
3	Edwards Transfers	5,906	0
4	Local Groundwater	28,240	32
5	Local Groundwater Conversions	0	0
6	Surface Water Rights	0	0
7	Balancing Storage	0	0
8	Facilities Expansion	95,675	120
9	Recycled Water Strategies	52,388	400
10	SAWS Expanded Local Carrizo Project	21,000	428
11	SAWS Expanded Brackish Groundwater Project	70,160	409
12	ARWA/GBRA Project (Phase I)	30,000	25,661
13	ARWA Project (Phase 2)	20,999	3224
14	ARWA Project (Phase 3)	5,494	289
15	GBRA Mid-Basin (Phase 2)	27,000	5278
16	GBRA Lower Basin Storage	59,780	44,055 <u>45,221</u>
17	GBRA Lower Basin New Appropriation	40,500	44,962
18	GBRA Victoria Steam-Electric Project	23,925*	651
19	CRWA Wells Ranch (Phase 3)	7,000	136
20	CRWA Siesta Project	5,042	217
21	CRWA Brackish Carrizo-Wilcox Project	14,700	1,466
22	CVLGC Carrizo Project	10,000	4,147
23	SSLGC Expanded Carrizo Project	6,000	438
24	SSLGC Expanded Brackish Wilcox Project	5,000	510

NO.	WATER MANAGEMENT STRATEGY	FINAL DECADE FIRM YIELD (ACFT/YR)	POTENTIAL HABITAT IMPACT SCORE
25	NBU ASR	10,818	0
26	NBU Trinity Well Field Expansion	3,360	0
27	City of Victoria ASR	7,900	0
28	City of Victoria Groundwater-Surface Water Exchange	8,544	0
29	SS WSC Brackish Carrizo-Wilcox Project	1,120	21
30	Martindale Alluvial Well	240	15
31	Maxwell WSC Trinity Well	230	278
32	County Line SUD Trinity Well Field	740	1,602
33	County Line SUD Brackish Edwards Well Field	1,500	1,602

* The 23,925 acft yield for the GBRA Victoria Steam-Electric Project is purchased from the 40,500 acft yield for GBRA Lower Basin New Appropriation.

A.6.5 MODIFICATION TO TABLE 6-13, PAGE 6-50

Water Quality and Aquatic Habitats

Table 6-13 Summary of Potential Stream Flow/Water Quality Impacts

NO.	WATER MANAGEMENT STRATEGY	FINAL DECADE FIRM YIELD (ACFT/YR)	POTENTIAL STREAM FLOW/ WATER QUALITY IMPACT SCORE
1	Advanced Water Conservation	167,148	1
2	Drought Management	56,588	1
3	Edwards Transfers	5,906	0
4	Local Groundwater	28,240	0
5	Local Groundwater Conversions	0	0
6	Surface Water Rights	0	6
7	Balancing Storage	0	0
8	Facilities Expansion	95,675	2
9	Recycled Water Strategies	52,388	0
10	SAWS Expanded Local Carrizo Project	21,000	1
11	SAWS Expanded Brackish Groundwater Project	70,160	1
12	ARWA/GBRA Project (Phase I)	30,000	2
13	ARWA Project (Phase 2)	20,999	2
14	ARWA Project (Phase 3)	5,494	1
15	GBRA Mid-Basin (Phase 2)	27,000	6
16	GBRA Lower Basin Storage	59,780	6 <u>14</u>
17	GBRA Lower Basin New Appropriation	40,500	6
18	GBRA Victoria Steam-Electric Project	23,925*	3
19	CRWA Wells Ranch (Phase 3)	7,000	1
20	CRWA Siesta Project	5,042	4
21	CRWA Brackish Carrizo-Wilcox Project	14,700	2
22	CVLGC Carrizo Project	10,000	2
23	SSLGC Expanded Carrizo Project	6,000	2
24	SSLGC Expanded Brackish Wilcox Project	5,000	1

NO.	WATER MANAGEMENT STRATEGY	FINAL DECADE FIRM YIELD (ACFT/YR)	POTENTIAL STREAM FLOW/ WATER QUALITY IMPACT SCORE
25	NBU ASR	10,818	1
26	NBU Trinity Well Field Expansion	3,360	1
27	City of Victoria ASR	7,900	1
28	City of Victoria Groundwater-Surface Water Exchange	8,544	2
29	SS WSC Brackish Carrizo-Wilcox Project	1,120	1
30	Martindale Alluvial Well	240	2
31	Maxwell WSC Trinity Well	230	1
32	County Line SUD Trinity Well Field	740	1
33	County Line SUD Brackish Edwards Well Field	1,500	1

*The 23,925 acft yield for the GBRA Victoria Steam-Electric Project is purchased from the 40,500 acft/yr yield for GBRA Lower Basin New Appropriation.

A.6.6 MODIFICATION TO TABLE 6-14, PAGE 6-52

Cultural Resources

Table 6-14Summary of Potential Impacts to Cultural Resources from Water Management
Strategies

NO.	WATER MANAGEMENT STRATEGY	FINAL DECADE FIRM YIELD (ACFT/YR)	POTENTIAL CULTURAL RESOURCES IMPACT SCORE
1	Advanced Water Conservation	167,148	0
2	Drought Management	56,588	0
3	Edwards Transfers	5,906	0
4	Local Groundwater	28,240	16
5	Local Groundwater Conversions	0	0
6	Surface Water Rights	0	0
7	Balancing Storage	0	0
8	Facilities Expansion	95,675	24
9	Recycled Water Strategies	52,388	20

NO.	WATER MANAGEMENT STRATEGY	FINAL DECADE FIRM YIELD (ACFT/YR)	POTENTIAL CULTURAL RESOURCES IMPACT SCORE
10	SAWS Expanded Local Carrizo Project	21,000	13.5
11	SAWS Expanded Brackish Groundwater Project	70,160	32
12	ARWA/GBRA Project (Phase I)	30,000	187
13	ARWA Project (Phase 2)	20,999	54.5
14	ARWA Project (Phase 3)	5,494	187
15	GBRA Mid-Basin (Phase 2)	27,000	109.5
16	GBRA Lower Basin Storage	59,780	19 <u>383.0</u>
17	GBRA Lower Basin New Appropriation	40,500	174
18	GBRA Victoria Steam-Electric Project	23,925*	46
19	CRWA Wells Ranch (Phase 3)	7,000	15
20	CRWA Siesta Project	5,042	91.5
21	CRWA Brackish Carrizo-Wilcox Project	14,700	109.5
22	CVLGC Carrizo Project	10,000	97
23	SSLGC Expanded Carrizo Project	6,000	103
24	SSLGC Expanded Brackish Wilcox Project	5,000	137.5
25	NBU ASR	10,818	50
26	NBU Trinity Well Field Expansion	3,360	67.5
27	City of Victoria ASR	7,900	2
28	City of Victoria Groundwater-Surface Water Exchange	8,544	2
29	SS WSC Brackish Carrizo-Wilcox Project	1,120	11
30	Martindale Alluvial Well	240	85
31	Maxwell WSC Trinity Well	230	73
32	County Line SUD Trinity Well Field	740	237
33	County Line SUD Brackish Edwards Well Field	1,500	237
*The 2	23,925 acft yield for the GBRA Victoria Steam-Electr	ic Project is purchased fror	n the 40,500 acft/yr yield

for GBRA Lower Basin New Appropriation.

CHAPTER 10

A.10.1 ADDITION OF SECTION 10.10, PAGE 10-5

10.10 AMENDMENT TO THE 2021 SOUTH CENTRAL TEXAS REGIONAL WATER PLAN

An Amendment to the 2021 SCTRWP was requested by GBRA in order to modify the Lower Basin Storage Project in the 2021 SCTRWP. A public meeting was held on February 14, 2024, in which the SCTRWPG approved GBRA to pursue an amendment to update the GBRA Lower Basin Storage Project and approved submittal of a Minor Amendment Determination Request to the TWDB. On March 11, 2024, the Proposed Amendment was submitted to the TWDB for review and consideration to determine whether it would be considered a major or minor amendment; a copy of the transmittal letter is provided in Attachment A. On April 17, 2024, the TWDB provided a response letter to the SCTRWPG with the determination that the Proposed Amendment is considered a minor amendment. A copy of the response letter from TWDB is provided in Attachment B. The TWDB's correspondence also included a copy of the updated state water planning database (DB22) reports relevant to the amendment (See Attachment C).

In accordance with 31 TAC §357.21(g)(2), the SCTRWPG posted public notice, accepted written comment, and held a public meeting regarding the Proposed Minor Amendment. A public notice was posted on April 18, 2024, which was 14 days prior to the public meeting. The post notified the public of a public meeting scheduled on May 2, 2024, and included a statement that written comments would be accepted for 14 days and meeting materials would be made available on the SCTRWPG website (www.RegionLTexas.org) seven days prior to and 14 days following the public meeting. A copy of the public notice is included as Attachment D.

On May 2, 2024, the SCTRWPG held a public meeting to accept public comments and to review and consider comments received from the public, TWDB, and other state or federal agencies. As of May 2, 2024, no public or agency comments were received regarding the proposed amendment. During the May 2nd public meeting, the SCTRWPG adopted the Minor Amendment No. 1 of the 2021 SCTRWP to modify the GBRA Lower Basin Storage Project.

ATTACHMENT A

Transmittal Letter to TWDB of Proposed Amendment and Request for Minor Amendment Determination



March 11, 2024

B&V Project 418064

Mr. Bryan McMath Interim Executive Administrator Texas Water Development Board P.O. Box 13231 1700 North Congress Avenue Austin, Texas 78711-3231

Transmitted via Email

RE: Transmittal of Proposed Amendment to the 2021 South Central Texas (Region L) Regional Water Plan to modify the Guadalupe-Blanco River Authority Lower Basin Storage Project

Dear Mr. McMath,

On behalf of the South Central Texas Regional Water Planning Group (SCTRWPG), Black & Veatch submits this letter transmitting a Proposed Amendment to the 2021 South Central Texas (Region L) Regional Water Plan (RWP) to modify the Guadalupe-Blanco River Authority (GBRA) Lower Basin Storage Project, which was included as a recommended water management strategy (WMS) in the 2021 RWP. This letter also serves as a request to the Texas Water Development Board (TWDB) to provide a "minor amendment determination" for the Proposed Amendment to the 2021 RWP.

RWPG Actions. At the regular meeting of the SCTRWPG on February 14, 2024, GBRA provided a presentation requesting authorization to pursue an amendment of the 2021 RWP to modify the GBRA Lower Basin Storage Project by adding an 89-mile raw water transmission pipeline that would connect the GBRA Lower Basin Storage Project to the GBRA Mid-Basin (Phase 2) Project, which is also included as a recommended WMS in the 2021 RWP. The SCTRWPG considered the request and took action to approve submittal of a minor amendment determination request to the TWDB and approve pursuit of an amendment to the 2021 RWP to modify GBRA's Lower Basin Storage Project.

Need for Amendment. The Proposed Amendment is needed by GBRA due to changed conditions. Specifically, the project approach and schedule have changed since adoption of the 2021 RWP, necessitating that GBRA initiate planning, land acquisition, and design of the water supply project sooner than previously anticipated. The GBRA Lower Basin Storage Project, as described in the 2021 RWP, includes an intake structure and off-channel reservoir (OCR) to firm up the existing surface water rights in the lower Guadalupe-San Antonio River Basin. The 2021 RWP included a 1-mile raw water transmission pipeline; however, GBRA now plans to include an 89-mile pipeline from Calhoun County to Gonzales County. Additionally, the project schedule has been accelerated to meet water supply needs in the region because of significant population and water demand growth. As such, GBRA intends to apply for State Water Implementation Fund for Texas (SWIFT) funding from the Texas Water Development Board (TWDB) to initiate planning, land acquisition, and design of the water supply project. In order to be eligible for SWIFT funding, the 89-mile raw water transmission pipeline would need to be integrated into the 2021 RWP as an infrastructure component of the GBRA Lower Basin Storage Project WMS. **Documentation of Plan Changes.** The enclosed Proposed Amendment documents the plan sections for which the amendment applies and identifies where changes would occur based on the amendment. The GBRA Lower Basin Storage Project WMS was evaluated in accordance with statutes, rules, and regional water planning technical guidelines. It should be noted that the modifications in the Proposed Amendment do not affect water availability modeling; therefore, revised modeling files are not necessary nor included in this transmittal.

Minor Amendment Criteria. In accordance with Title 31 of the Texas Administrative Code Chapter 357.51(c)(2), the Proposed Amendment meets all criteria associated with a minor amendment. The following table demonstrates how the Proposed Amendment meets the minor amendment criteria:

Criteria in 31 TAC 357.51(c)(2)	Proposed Amendment's Compliance with Criteria
An amendment is minor if it meets	The Proposed Amendment does not modify the project's firm
the following criteria:	yield nor the project's sales/transfers to customers, as described
	in the 2021 RWP. Furthermore, The GBRA and Dow Chemical
(A) does not result in over-	Company (Dow), individually and collectively, own surface water
allocation of an existing or	rights in the lower Guadalupe-San Antonio River Basin,
planned source of water;	authorizing diversions from the run-of-river flow of the Guadalupe
	River totaling 172,501 acft/yr. In accordance with the existing
	GBRA/Dow Water Rights, the project is expected to have a firm
	yield of 59,780 acft/yr), which does not result in over-allocation of
	the Guadalupe River run-of river now or in the future.
(B) does not relate to a new	The Proposed Amendment does not relate to any modifications
reservoir;	of the project's OCR, as described in the 2021 RWP. The OCR
	footprint, size, and capacity are unchanged from the adopted
	2021 RWP.
(C) does not increase unmet	The Proposed Amendment does not modify the project's firm
needs or produce new unmet	yield nor the project's sales/transfers to customers, as described
needs in the adopted RWP;	In the 2021 RWP. I herefore, the Proposed Amendment does not
	modify nor increase unmet needs, nor produce new unmet needs
(D) doog not hove a significant	The Drepended Amendment does not modify the preject's firm
(D) does not have a significant	viold per the OCP size capacity or footprint. Therefore the
environmental flows or	Proposed Amendment has no effects on instream flows
freebwater flows to have and	environmental flows, or freshwater flows to have and estuaries
estuaries.	environmental nows, or meanwater nows to bays and estuaries.
(F) does not have a significant	The Proposed Amendment would add an 89-mile raw water
substantive impact on water	transmission pipeline that connects the GBRA Lower Basin
planning or previously	Storage Project to the GBRA Mid-Basin (Phase 2) Project, which
adopted management	is also included as a recommended WMS in the 2021 RWP. No
strategies: and	modifications or changes to the GBRA Mid-Basin (Phase 2)
	Project are proposed. Therefore, the Proposed Amendment does
	not have an impact on water planning or previously adopted
	management strategies.
(F) does not delete or change any	The Proposed Amendment does not have any proposed
legal requirements of the	modifications that would delete or change any legal requirements
plan.	of the plan.

The South Central Texas Regional Water Planning Group appreciates your review and consideration of the enclosed Proposed Amendment. Please let me know if you need additional information or if you have any questions. Thank you.

Sincerely,

Jam E. Durily

Lauren E. Gonzalez BLACK & VEATCH

- Enclosure: Proposed Amendment of the 2021 Region L Regional Water Plan to modify the GBRA Lower Basin Storage Project
- cc: Tim Andruss, Chair, Region L Regional Water Planning Group Jonathan Stinson, Guadalupe-Blanco River Authority Brian Perkins, Guadalupe-Blanco River Authority Cayethania Castillo, San Antonio River Authority Sarah Lee, Texas Water Development Board Michele Foss, Texas Water Development Board

ATTACHMENT B

TWDB Response Letter with Minor Amendment Determination



P.O. Box 13231, 1700 N. Congress Ave. Austin, TX 78711-3231, www.twdb.texas.gov Phone (512) 463-7847, Fax (512) 475-2053

April 12, 2024

Mr. Tim Andruss Chair South Central Texas (Region L) Regional Water Planning Group c/o San Antonio River Authority 100 East Guenther Street San Antonio, Texas 78283

Dear Chairman Andruss:

I have reviewed Region L's request for a minor amendment determination. Based on the request and supporting materials, I have determined that amending the Region L 2021 Regional Water Plan (RWP) to modify the Guadalupe-Blanco River Authority (GBRA) Lower Basin Storage Project constitutes a minor amendment under 31 Texas Administrative Code (TAC) §357.51(c).

If the Region L Regional Water Planning Group adopts the proposed minor amendment, the planning group will need to submit the following items to the Texas Water Development Board (TWDB):

- 1. Documentation of the planning group action adopting this minor amendment in the form of a cover letter.
- 2. A final version of the 2021 Region L RWP amendment.

Please note that the final amendment to the 2021 Region L RWP must include the following:

- 1. A copy of the updated state water planning database (DB22) reports relevant to the amendment (provided by the TWDB).
- 2. A summary of any public comments received on the proposed amendment and the region's response to the public comments.

Our Mission Board Members

Leading the state's efforts in ensuring a secure water future for Texas Mr. Tim Andruss, Chair April 12, 2024 Page 2

After receipt of all required information, the TWDB Board will consider approving the Region L amendment at a regularly scheduled meeting, and then may amend the 2022 State Water Plan, as appropriate.

If Region L makes any substantive changes during the minor amendment process, the TWDB will need to review the modified proposed amendment to ensure that any other changes still meet all of the criteria under 31 TAC §357.51(c).

If you have any questions concerning this determination, please contact Michele Foss of our Regional Water Planning staff at 512-463-9225 or <u>michele.foss@twdb.texas.gov</u>.

Sincerely,

Bryan McMath Interim Executive Administrator

c: Jonathan Stinson, Guadalupe-Blanco River Authority Brian Perkins, Guadalupe-Blanco River Authority Cayethania Castillo, San Antonio River Authority Lauren Gonzalez, Black & Veatch Jaime Burke, Black & Veatch Sarah Lee, Water Supply Planning Michele Foss, Water Supply Planning

ATTACHMENT C

Updated State Water Planning Database (DB22) Reports

						WATER MANAGEMENT STRATEGY SUPPLY (ACRE-FEET PER YEAR)					,
WUG ENTITY NAME	WMS SPONSOR REGION	WMS NAME	SOURCE NAME	UNIT COST 2020	UNIT COST 2070	2020	2030	2040	2050	2060	2070
Air Force Village II Inc	L	DROUGHT MANAGEMENT - AIR FORCE VILLAGE II	DEMAND REDUCTION	\$127	N/A	3	0	0	0	0	0
Air Force Village II Inc	L	ENTITY PURCHASE TO MEET SHORTAGES - SAWS	L Carrizo-Wilcox Aquifer Bexar COUNTY	\$701	\$4163	107	114	114	97	81	74
Air Force Village II Inc	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	9	27	46	62	78	85
Alamo Heights	L	DROUGHT MANAGEMENT - ALAMO HEIGHTS	DEMAND REDUCTION	\$88	N/A	50	0	0	0	0	0
Alamo Heights	L	EDWARDS TRANSFERS	L Edwards-BFZ Aquifer Bexar COUNTY	\$1242	\$1242	464	388	307	181	105	32
Alamo Heights	L	EDWARDS TRANSFERS	L Edwards-BFZ Aquifer Medina COUNTY	\$1242	\$1242	340	341	233	188	108	41
Alamo Heights	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$681	\$681	103	279	440	600	752	892
Aqua WSC*	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$770	0	0	0	1	1	1
Asherton	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	7	24	47	57	65	72
Atascosa Rural WSC	L	DROUGHT MANAGEMENT - ATASCOSA RURAL WSC	DEMAND REDUCTION	\$89	N/A	59	0	0	0	0	0
Atascosa Rural WSC	L	FE - ATASCOSA RURAL WSC	L Edwards-BFZ Aquifer Medina COUNTY	\$8838	\$2161	31	31	31	31	31	31
Atascosa Rural WSC	L	LOCAL GROUNDWATER DEVELOPMENT	L Carrizo-Wilcox Aquifer Atascosa COUNTY	\$468	\$250	1,049	2,098	2,098	2,098	2,098	2,098
Atascosa Rural WSC	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$770	0	0	0	0	0	50
Batesville WSC	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	5	13	16	22	29	37
Benton City WSC	L	LOCAL GROUNDWATER DEVELOPMENT	L Carrizo-Wilcox Aquifer Atascosa COUNTY	N/A	\$0	0	0	0	0	153	345
Benton City WSC	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$770	0	0	0	0	0	60
Bexar County WCID 10	L	DROUGHT MANAGEMENT - BEXAR COUNTY WCID 10	DEMAND REDUCTION	\$89	N/A	33	0	0	0	0	0
Bexar County WCID 10	L	ENTITY PURCHASE TO MEET SHORTAGES - SAWS	L Carrizo-Wilcox Aquifer Bexar COUNTY	\$701	\$1463	348	312	243	197	199	198
Bexar County WCID 10	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	51	141	234	310	340	372
Big Wells	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	3	2	2	4	7	11
Boerne	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$681	\$681	139	496	1,009	1,551	1,936	2,352
Boerne	L	REUSE - BOERNE NON- POTABLE REUSE	L Direct Non-Potable Reuse	\$1783	\$442	750	1,500	1,500	1,500	1,500	1,500
Buda*	L	ARWA - PHASE 3	L Direct Non-Potable Reuse	N/A	\$1995	0	0	0	0	21	21
Buda*	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$681	\$681	2	6	9	13	17	23
Canyon Lake Water Service*	L	GBRA - MBWSP	L Carrizo-Wilcox Aquifer ASR Fresh/Brackish Gonzales COUNTY	N/A	\$442	0	0	0	0	0	174
Canyon Lake Water Service*	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$681	0	0	0	89	380	759
Carrizo Hill WSC	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	2	10	11	14	17	20
Carrizo Springs	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	77	210	346	498	645	784

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

						WATER MANAGEMENT STRATEGY SUPPLY (ACRE-FEET PER YEAR)				,	
WUG ENTITY NAME	WMS SPONSOR REGION	WMS NAME	SOURCE NAME	UNIT COST 2020	UNIT COST 2070	2020	2030	2040	2050	2060	2070
Castroville	L	DROUGHT MANAGEMENT - CASTROVILLE	DEMAND REDUCTION	\$108	N/A	17	0	0	0	0	0
Castroville	L	EDWARDS TRANSFERS	L Edwards-BFZ Aquifer Medina COUNTY	\$1242	N/A	300	200	150	100	0	0
Castroville	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	46	109	167	225	283	336
Charlotte	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	8	27	33	43	57	73
Cibolo	L	CIBOLO VALLEY LGC CARRIZO GROUNDWATER PROJECT	L Carrizo-Wilcox Aquifer Fresh/Brackish Gonzales COUNTY	N/A	\$314	0	2,000	2,000	2,000	2,000	2,000
Cibolo	L	CIBOLO VALLEY LGC CARRIZO GROUNDWATER PROJECT	L Carrizo-Wilcox Aquifer Fresh/Brackish Wilson COUNTY	N/A	\$314	0	3,000	3,000	3,000	3,000	3,000
Cibolo	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$681	0	0	43	267	545	875
Clear Water Estates Water System	L	DROUGHT MANAGEMENT - CLEAR WATER ESTATES WATER SYSTEM	DEMAND REDUCTION	\$102	N/A	4	0	0	0	0	0
Clear Water Estates Water System	L	LOCAL GROUNDWATER DEVELOPMENT	L Trinity Aquifer Comal COUNTY	\$0	\$0	627	806	987	1,171	1,352	1,528
Clear Water Estates Water System	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$681	\$681	54	142	253	386	534	695
Converse	L	CRWA - WELLS RANCH (PHASE 3)	L Carrizo-Wilcox Aquifer Guadalupe COUNTY	\$1330	\$849	264	575	762	736	730	720
Converse	L	DROUGHT MANAGEMENT - CONVERSE	DEMAND REDUCTION	\$90	N/A	101	0	0	0	0	0
Converse	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$681	0	0	0	0	0	8
Cotulla	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	67	180	303	443	589	737
County Line SUD	L	ARWA - PHASE 2	L Carrizo-Wilcox Aquifer Caldwell COUNTY	N/A	\$199	0	0	669	669	669	669
County Line SUD	L	ARWA - PHASE 3	L Direct Non-Potable Reuse	N/A	\$2001	0	0	0	0	178	178
County Line SUD	L	ARWA/GBRA PROJECT (PHASE 1)	L Carrizo-Wilcox Aquifer Caldwell COUNTY	\$1430	\$358	478	478	478	478	478	478
County Line SUD	L	COUNTY LINE SUD - BRACKISH EDWARDS WELLFIELD	L Edwards-BFZ Aquifer Saline Hays COUNTY	N/A	\$2301	0	0	0	500	1,000	1,500
County Line SUD	L	COUNTY LINE SUD - TRINITY WELLFIELD	L Trinity Aquifer Hays COUNTY	N/A	\$1078	0	0	0	500	740	740
County Line SUD	L	REUSE - COUNTY LINE SUD	L Direct Non-Potable Reuse	\$993	\$401	560	1,120	1,680	2,240	2,800	3,360
County-Other, Bexar	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$681	0	0	0	0	0	16
County-Other, Calhoun	L	LOCAL GROUNDWATER DEVELOPMENT	L Gulf Coast Aquifer System Calhoun COUNTY	N/A	\$711	0	0	0	0	412	412
County-Other, Comal	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	117	264	296	388	520	671
County-Other, Dimmit	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$770	0	0	0	0	0	2
County-Other, Frio	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$770	0	0	0	0	0	1
County-Other, Guadalupe	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$681	0	0	0	0	5	13

						WATER MANAGEMENT STRATEGY SUPPLY (ACRE-FEET PER YEAR)					
WUG ENTITY NAME	WMS SPONSOR REGION	WMS NAME	SOURCE NAME	UNIT COST 2020	UNIT COST 2070	2020	2030	2040	2050	2060	2070
County-Other, Hays*	L	GBRA - MBWSP	L Carrizo-Wilcox Aquifer ASR Fresh/Brackish Gonzales COUNTY	N/A	\$442	0	0	0	0	2,029	7,220
County-Other, Hays*	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$681	0	0	0	0	0	232
County-Other, Karnes	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$770	0	0	0	1	11	21
County-Other, Kendall	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$770	0	0	0	0	0	6
County-Other, La Salle	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$770	0	0	0	0	0	5
County-Other, Medina	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$770	0	0	0	0	0	27
County-Other, Uvalde	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$770	0	0	0	0	0	1
County-Other, Victoria	L	GBRA LOWER BASIN STORAGE PROJECT	L GBRA Lower Basin Off- Channel Lake/Reservoir	\$763	\$183	846	906	951	1,015	1,095	1,166
County-Other, Wilson	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$770	0	0	0	0	0	4
County-Other, Zavala	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	4	9	15	24	32	42
Crystal City	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	60	196	353	496	573	654
Crystal Clear WSC	L	ARWA - PHASE 2	L Carrizo-Wilcox Aquifer Caldwell COUNTY	N/A	\$199	0	0	3,585	3,585	3,585	3,585
Crystal Clear WSC	L	ARWA - PHASE 3	L Direct Non-Potable Reuse	N/A	\$2001	0	0	0	0	953	953
Crystal Clear WSC	L	ARWA/GBRA PROJECT (PHASE 1)	L Carrizo-Wilcox Aquifer Caldwell COUNTY	\$1430	\$358	2,560	2,560	2,560	2,560	2,560	2,560
Crystal Clear WSC	L	DROUGHT MANAGEMENT - CRYSTAL CLEAR WSC	DEMAND REDUCTION	\$89	N/A	92	0	0	0	0	0
Crystal Clear WSC	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$770	0	0	0	0	0	77
Cuero	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	91	233	367	503	637	744
Devine	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$770	0	0	0	0	0	4
Dilley	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	50	145	248	362	453	501
East Medina County SUD	L	DROUGHT MANAGEMENT - EAST MEDINA COUNTY SUD	DEMAND REDUCTION	\$90	N/A	43	0	0	0	0	0
East Medina County SUD	L	EDWARDS TRANSFERS	L Edwards-BFZ Aquifer Medina COUNTY	\$1242	\$1242	150	250	300	400	450	500
El Oso WSC*	L	DROUGHT MANAGEMENT - EL OSO WSC	DEMAND REDUCTION	\$88	N/A	14	0	0	0	0	0
El Oso WSC*	L	LOCAL GROUNDWATER DEVELOPMENT	N Gulf Coast Aquifer System Bee COUNTY	\$1317	\$842	12	13	18	20	45	47
El Oso WSC*	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	29	84	138	161	176	194
Elmendorf	L	DROUGHT MANAGEMENT – ELMENDORF	DEMAND REDUCTION	\$234	N/A	8	0	0	0	0	0
Elmendorf	L	ENTITY PURCHASE TO MEET SHORTAGES - SAWS	L Carrizo-Wilcox Aquifer Bexar COUNTY	\$701	\$1463	46	133	214	292	350	399
Elmendorf	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$681	0	0	0	1	17	35
Encinal WSC	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	8	25	44	58	68	77

				WATER MANAGEMENT STRATEGY SUPPLY (ACRE-FEET PER YEAR)							
WUG ENTITY NAME	WMS SPONSOR REGION	WMS NAME	SOURCE NAME	UNIT COST 2020	UNIT COST 2070	2020	2030	2040	2050	2060	2070
Fair Oaks Ranch	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$681	\$681	117	334	587	831	1,141	1,423
Fair Oaks Ranch	L	REUSE - FAIR OAKS RANCH NON-POTABLE REUSE	L Direct Non-Potable Reuse	N/A	\$93	0	672	672	672	672	672
Falls City	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	6	17	26	36	39	42
Floresville	L	LOCAL GROUNDWATER DEVELOPMENT	L Carrizo-Wilcox Aquifer Wilson COUNTY	N/A	\$402	0	0	828	828	1,654	1,656
Floresville	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	79	270	523	819	1,118	1,283
Fort Sam Houston	L	DROUGHT MANAGEMENT - FORT SAM HOUSTON	DEMAND REDUCTION	\$106	N/A	5	0	0	0	0	0
Fort Sam Houston	L	ENTITY PURCHASE TO MEET SHORTAGES - SAWS	L Carrizo-Wilcox Aquifer Bexar COUNTY	\$701	N/A	1,716	1,315	927	557	207	0
Fort Sam Houston	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$600	\$600	213	436	639	824	993	1,144
Garden Ridge	L	DROUGHT MANAGEMENT - GARDEN RIDGE	DEMAND REDUCTION	\$64	N/A	47	0	0	0	0	0
Garden Ridge	L	LOCAL GROUNDWATER DEVELOPMENT	L Trinity Aquifer Comal COUNTY	\$0	\$0	918	1,241	1,638	1,788	2,184	2,565
Garden Ridge	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$681	\$681	108	300	553	781	1,102	1,449
Goforth SUD*	L	ARWA/GBRA PROJECT (PHASE 1)	L Carrizo-Wilcox Aquifer Caldwell COUNTY	\$721	\$283	1,869	1,883	1,887	1,854	1,780	1,703
Goforth SUD*	L	ARWA/GBRA PROJECT (PHASE 1)	L Carrizo-Wilcox Aquifer Fresh/Brackish Gonzales COUNTY	\$721	\$283	1,898	1,913	1,917	1,915	1,912	1,906
Goforth SUD*	L	DROUGHT MANAGEMENT – GOFORTH SUD	DEMAND REDUCTION	\$89	N/A	103	0	0	0	0	0
Goforth SUD*	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$681	0	0	0	0	0	50
Goliad	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	15	51	93	111	123	135
Gonzales	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	96	271	465	690	941	1,081
Gonzales County WSC	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	109	289	490	717	966	1,233
Green Valley SUD	L	ARWA - PHASE 2	L Carrizo-Wilcox Aquifer Caldwell COUNTY	N/A	\$199	0	0	2,232	2,232	2,232	2,232
Green Valley SUD	L	ARWA - PHASE 3	L Direct Non-Potable Reuse	N/A	\$2001	0	0	0	0	594	594
Green Valley SUD	L	ARWA/GBRA PROJECT (PHASE 1)	L Carrizo-Wilcox Aquifer Caldwell COUNTY	\$1430	\$358	1,595	1,595	1,595	1,595	1,595	1,595
Guadalupe-Blanco River Authority	L	FE - GBRA WESTERN CANYON EXPANSION	L Canyon Lake/Reservoir	N/A	\$510	0	0	0	0	1,725	1,566
Guadalupe-Blanco River Authority	L	FE - HAYS COUNTY PIPELINE PROJECT	L Canyon Lake/Reservoir	N/A	N/A	0	2,179	5,108	4,345	0	0
Guadalupe-Blanco River Authority	L	GBRA - MBWSP	L Carrizo-Wilcox Aquifer ASR Fresh/Brackish Gonzales COUNTY	N/A	\$442	0	18,553	18,063	17,449	14,726	8,567
Guadalupe-Blanco River Authority	L	GBRA LOWER BASIN STORAGE PROJECT	L GBRA Lower Basin Off- Channel Lake/Reservoir	\$763	\$183	58,934	58,874	58,829	58,765	58,685	58,614
Hondo	L	DROUGHT MANAGEMENT - HONDO	DEMAND REDUCTION	\$89	N/A	51	0	0	0	0	0
Hondo	L	EDWARDS TRANSFERS	L Edwards-BFZ Aquifer Medina COUNTY	\$1242	\$1242	500	500	450	425	500	500
Hondo	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	87	260	450	599	675	754

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

						WATER MANAGEMENT STRATEGY SUPPLY (ACRE-FEET PER YEAR)						
WUG ENTITY NAME	WMS SPONSOR REGION	WMS NAME	SOURCE NAME	UNIT COST 2020	UNIT COST 2070	2020	2030	2040	2050	2060	2070	
Jourdanton	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	38	125	232	326	382	442	
Karnes City	L	DROUGHT MANAGEMENT - KARNES CITY	DEMAND REDUCTION	\$112	N/A	23	0	0	0	0	0	
Karnes City	L	LOCAL GROUNDWATER DEVELOPMENT	L Carrizo-Wilcox Aquifer Karnes COUNTY	\$1131	\$611	134	134	134	134	134	134	
Karnes City	L	LOCAL GROUNDWATER DEVELOPMENT	L Yegua-Jackson Aquifer Karnes COUNTY	\$1131	\$611	310	310	310	310	310	310	
Karnes City	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	21	63	84	91	102	114	
Kendall County WCID 1	L	REUSE - KENDALL COUNTY WCID NON-POTABLE	L Direct Non-Potable Reuse	\$0	\$0	180	180	180	180	180	180	
Kendall West Utility	L	LOCAL GROUNDWATER DEVELOPMENT	L Trinity Aquifer Kendall COUNTY	N/A	\$0	0	282	561	902	1,365	1,596	
Kendall West Utility	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$770	0	0	0	0	0	9	
Kenedy	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	86	200	304	409	505	593	
Kirby	L	DROUGHT MANAGEMENT - KIRBY	DEMAND REDUCTION	\$62	N/A	32	0	0	0	0	0	
Kirby	L	ENTITY PURCHASE TO MEET SHORTAGES - SAWS	L Carrizo-Wilcox Aquifer Bexar COUNTY	\$701	\$1463	174	275	249	240	238	237	
Knippa WSC	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	6	18	31	42	47	54	
KT Water Development	L	DROUGHT MANAGEMENT - KT WATER DEVELOPMENT	DEMAND REDUCTION	\$123	N/A	7	0	0	0	0	0	
KT Water Development	L	LOCAL GROUNDWATER DEVELOPMENT	L Trinity Aquifer Comal COUNTY	\$806	\$511	161	161	322	483	483	644	
KT Water Development	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$681	\$681	28	78	146	228	321	421	
Kyle	L	ARWA - PHASE 2	L Carrizo-Wilcox Aquifer Caldwell COUNTY	N/A	\$199	0	0	5,916	5,916	5,916	5,916	
Kyle	L	ARWA - PHASE 3	L Direct Non-Potable Reuse	N/A	\$2001	0	0	0	0	1,573	1,573	
Kyle	L	ARWA/GBRA PROJECT (PHASE 1)	L Carrizo-Wilcox Aquifer Caldwell COUNTY	\$1430	\$358	4,225	4,225	4,225	4,225	4,225	4,225	
Kyle	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$681	0	0	0	52	266	480	
La Coste	L	DROUGHT MANAGEMENT - LA COSTE	DEMAND REDUCTION	\$72	N/A	8	0	0	0	0	0	
La Coste	L	EDWARDS TRANSFERS	L Edwards-BFZ Aquifer Medina COUNTY	\$1242	\$1242	100	100	100	100	100	100	
La Vernia	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	15	55	109	157	188	219	
Lackland Air Force Base	L	DROUGHT MANAGEMENT - LACKLAND AIR FORCE BASE	DEMAND REDUCTION	\$89	N/A	67	0	0	0	0	0	
Leon Valley	L	DROUGHT MANAGEMENT - LEON VALLEY	DEMAND REDUCTION	\$111	N/A	65	0	0	0	0	0	
Leon Valley	L	EDWARDS TRANSFERS	L Edwards-BFZ Aquifer Bexar COUNTY	\$1242	\$1242	92	115	150	299	328	356	
Leon Valley	L	EDWARDS TRANSFERS	L Edwards-BFZ Aquifer Medina COUNTY	\$1242	\$1242	79	113	122	300	304	302	
Leon Valley	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$600	\$600	42	102	112	165	212	265	
Live Oak	L	DROUGHT MANAGEMENT - LIVE OAK	DEMAND REDUCTION	\$57	N/A	48	0	0	0	0	0	

						WATER MANAGEMENT STRATEGY SUPPLY (ACRE-FEET PER YEAR)						
WUG ENTITY NAME	WMS SPONSOR REGION	WMS NAME	SOURCE NAME	UNIT COST 2020	UNIT COST 2070	2020	2030	2040	2050	2060	2070	
Live Oak	L	ENTITY PURCHASE TO MEET SHORTAGES - SAWS	L Carrizo-Wilcox Aquifer Bexar COUNTY	\$701	\$1463	392	333	297	261	226	192	
Live Oak	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$681	\$681	57	171	183	205	237	271	
Lockhart	L	ARWA/GBRA PROJECT (PHASE 1)	L Carrizo-Wilcox Aquifer Caldwell COUNTY	\$721	\$283	1,489	1,489	1,489	1,489	1,489	1,489	
Lockhart	L	ARWA/GBRA PROJECT (PHASE 1)	L Carrizo-Wilcox Aquifer Fresh/Brackish Gonzales COUNTY	\$721	\$283	1,511	1,511	1,511	1,511	1,511	1,511	
Lockhart	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$681	0	0	0	0	0	71	
Loma Alta Chula Vista Water System	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	12	34	57	84	112	140	
Luling	L	LOCAL GROUNDWATER DEVELOPMENT	L Carrizo-Wilcox Aquifer Caldwell COUNTY	N/A	\$453	0	353	353	706	706	1,059	
Luling	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$770	0	0	0	0	0	2	
Lytle	L	DROUGHT MANAGEMENT - LYTLE	DEMAND REDUCTION	\$45	N/A	18	0	0	0	0	0	
Lytle	L	EDWARDS TRANSFERS	L Edwards-BFZ Aquifer Medina COUNTY	\$1242	\$1242	350	400	450	500	600	650	
Lytle	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$681	\$681	25	94	166	199	242	286	
Manufacturing, Comal	L	ARWA/GBRA PROJECT (PHASE 1)	L Carrizo-Wilcox Aquifer Caldwell COUNTY	\$1430	N/A	2,786	0	0	0	0	0	
Manufacturing, Comal	L	GBRA - MBWSP	L Carrizo-Wilcox Aquifer ASR Fresh/Brackish Gonzales COUNTY	N/A	\$442	0	3,783	3,783	3,783	3,783	3,783	
Manufacturing, DeWitt	L	LOCAL GROUNDWATER DEVELOPMENT	L Gulf Coast Aquifer System DeWitt COUNTY	N/A	\$56	0	242	242	242	242	242	
Manufacturing, Guadalupe	L	GBRA - MBWSP	L Carrizo-Wilcox Aquifer ASR Fresh/Brackish Gonzales COUNTY	N/A	\$442	0	402	402	402	402	402	
Manufacturing, Karnes	L	LOCAL GROUNDWATER DEVELOPMENT	L Yegua-Jackson Aquifer Karnes COUNTY	N/A	\$8	0	0	232	231	242	242	
Manufacturing, Victoria	L	GBRA LOWER BASIN NEW APPROPRIATION	L GBRA Lower Basin New Appropriation Off- Channel Reservoir	N/A	\$112	0	16,575	16,575	16,575	16,575	16,575	
Marion	L	CRWA - WELLS RANCH (PHASE 3)	L Carrizo-Wilcox Aquifer Guadalupe COUNTY	N/A	\$849	0	0	18	59	103	146	
Martindale WSC	L	CRWA - WELLS RANCH (PHASE 3)	L Carrizo-Wilcox Aquifer Guadalupe COUNTY	N/A	\$849	0	65	140	250	530	854	
Martindale WSC	L	DROUGHT MANAGEMENT - MARTINDALE	DEMAND REDUCTION	\$113	N/A	21	0	0	0	0	0	
Martindale WSC	L	FE - CRWA HAYS CALDWELL WTP EXPANSION	L Guadalupe Run-of- River	\$1566	\$698	255	255	255	255	255	255	
Martindale WSC	L	MARTINDALE WSC - ALLUVIAL WELL	L San Marcos River Alluvium Aquifer Caldwell COUNTY	N/A	\$96	0	240	240	240	240	240	
Maxwell WSC	L	MAXWELL WSC - TRINITY WELL FIELD	L Trinity Aquifer Hays COUNTY	N/A	\$1822	0	0	230	230	230	230	
Medina County WCID 2	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	6	18	31	36	42	48	
Mining, Comal	L	LOCAL GROUNDWATER DEVELOPMENT	L Trinity Aquifer Comal COUNTY	\$70	\$31	4,116	5,566	7,018	8,228	9,206	9,185	
Mining, DeWitt	L	LOCAL GROUNDWATER DEVELOPMENT	L Gulf Coast Aquifer System DeWitt COUNTY	\$7	\$7	1,937	1,937	1,937	1,937	1,937	1,937	

					WATER MANAGEMENT STRATEGY SUPPLY (ACRE-FEET PER YEAR)							
WUG ENTITY NAME	WMS SPONSOR REGION	WMS NAME	SOURCE NAME	UNIT COST 2020	UNIT COST 2070	2020	2030	2040	2050	2060	2070	
Mining, Uvalde	L	LOCAL GROUNDWATER DEVELOPMENT	L Leona Gravel Aquifer Uvalde COUNTY	\$54	\$54	242	242	242	242	242	242	
Moore WSC	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	5	14	24	27	31	36	
Natalia	L	DROUGHT MANAGEMENT - NATALIA	DEMAND REDUCTION	\$115	N/A	6	0	0	0	0	0	
Natalia	L	EDWARDS TRANSFERS	L Edwards-BFZ Aquifer Medina COUNTY	\$1242	\$1242	125	150	150	200	200	200	
Natalia	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	7	23	26	33	44	55	
New Braunfels	L	ARWA/GBRA PROJECT (PHASE 1)	L Carrizo-Wilcox Aquifer Caldwell COUNTY	\$721	\$283	3,969	3,969	3,969	3,969	3,969	3,969	
New Braunfels	L	ARWA/GBRA PROJECT (PHASE 1)	L Carrizo-Wilcox Aquifer Fresh/Brackish Gonzales COUNTY	\$721	\$283	4,031	4,031	4,031	4,031	4,031	4,031	
New Braunfels	L	FE - NBU SEGUIN INTERCONNECT	L Carrizo-Wilcox Aquifer Fresh/Brackish Gonzales COUNTY	\$212	\$143	2,500	2,500	2,500	2,500	2,500	2,500	
New Braunfels	L	FE - NBU SOUTH WTP EXPANSION	L Guadalupe Run-of- River	N/A	\$14380 00	0	1	1	1	1	1	
New Braunfels	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$600	\$600	663	2,240	4,381	5,814	7,168	8,631	
New Braunfels	L	NBU - ASR	L Trinity and/or Brackish Edwards Aquifer ASR Fresh/Brackish Comal COUNTY	\$462	\$207	10,818	10,818	10,818	10,818	10,818	10,818	
New Braunfels	L	NBU - TRINITY DEVELOPMENT	L Trinity Aquifer Comal COUNTY	N/A	\$284	0	3,360	3,360	3,360	3,360	3,360	
Nixon	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	1	1	3	11	23	38	
Oak Hills WSC	L	DROUGHT MANAGEMENT - OAK HILLS WSC	DEMAND REDUCTION	\$88	N/A	28	0	0	0	0	0	
Oak Hills WSC	L	LOCAL GROUNDWATER DEVELOPMENT	L Carrizo-Wilcox Aquifer Fresh/Brackish Wilson COUNTY	\$0	\$0	475	675	875	1,050	1,200	1,350	
Oak Hills WSC	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$681	\$681	30	72	101	142	192	248	
Pearsall	L	DROUGHT MANAGEMENT - PEARSALL	DEMAND REDUCTION	\$68	N/A	26	0	0	0	0	0	
Pearsall	L	LOCAL GROUNDWATER DEVELOPMENT	L Carrizo-Wilcox Aquifer Frio COUNTY	\$564	\$296	807	807	1,614	1,614	1,614	1,614	
Pearsall	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	81	247	434	496	573	655	
Picosa WSC	L	LOCAL GROUNDWATER DEVELOPMENT	L Carrizo-Wilcox Aquifer Fresh/Brackish Wilson COUNTY	N/A	\$0	0	0	19	58	99	137	
Pleasanton	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	95	307	565	846	985	1,130	
Polonia WSC*	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$681	0	0	0	0	0	4	
Poth	L	LOCAL GROUNDWATER DEVELOPMENT	L Carrizo-Wilcox Aquifer Fresh/Brackish Wilson COUNTY	N/A	\$0	0	0	0	0	35	97	
Poth	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	7	9	14	25	43	64	
Refugio	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	19	59	85	96	108	119	
Runge	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	10	28	46	55	59	64	

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			WATER MANAGEMENT STRATEGY SUPPLY (ACRE-FEET PER YEAR)								,
WUG ENTITY NAME	WMS SPONSOR REGION	WMS NAME	SOURCE NAME	UNIT COST 2020	UNIT COST 2070	2020	2030	2040	2050	2060	2070
s s wsc	L	CRWA - WELLS RANCH (PHASE 3)	L Carrizo-Wilcox Aquifer Guadalupe COUNTY	\$1330	\$849	345	1,123	1,882	2,655	2,479	2,869
s s wsc	L	DROUGHT MANAGEMENT - S S WSC	DEMAND REDUCTION	\$88	N/A	95	0	0	0	0	0
s s wsc	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$770	0	0	0	0	16	159
s s wsc	L	SS WSC BRACKISH CARRIZO WILCOX PROJECT	L Carrizo-Wilcox Aquifer Fresh/Brackish Wilson COUNTY	N/A	\$2578	0	0	0	0	1,120	1,120
Sabinal	L	DROUGHT MANAGEMENT - SABINAL	DEMAND REDUCTION	\$47	N/A	14	0	0	0	0	0
Sabinal	L	EDWARDS TRANSFERS	L Edwards-BFZ Aquifer Uvalde COUNTY	\$1242	\$1242	150	150	150	125	125	125
Sabinal	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	20	57	96	141	182	203
San Antonio Water System	L	DROUGHT MANAGEMENT - SAWS	DEMAND REDUCTION	\$99	\$358	11,951	31,476	45,677	49,377	53,109	56,588
San Antonio Water System	L	FE - SAWS ASR TREATMENT PLANT EXPANSION	L Carrizo-Aquifer ASR Fresh/Brackish Bexar COUNTY	N/A	\$115	0	33,600	33,600	33,600	33,600	33,600
San Antonio Water System	L	FE - SAWS WESTERN INTEGRATION PIPELINE	L Canyon Lake/Reservoir	\$2281	\$293	500	3,094	3,094	3,094	3,094	3,094
San Antonio Water System	L	FE - SAWS WESTERN INTEGRATION PIPELINE	L Carrizo-Wilcox Aquifer Fresh/Brackish Gonzales COUNTY	\$2281	\$293	390	390	390	390	390	390
San Antonio Water System	L	FE - SAWS WESTERN INTEGRATION PIPELINE	L Guadalupe Run-of- River	\$2281	\$293	516	516	516	516	516	516
San Antonio Water System	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$600	\$600	24,367	50,667	74,313	89,629	102,682	115,929
San Antonio Water System	L	REUSE - SAWS - REUSE WATER PROGRAMS	L Direct Non-Potable Reuse	N/A	\$1194	0	5,000	5,000	15,000	25,000	40,000
San Antonio Water System	L	SAWS - EXPANDED LOCAL CARRIZO	L Carrizo-Wilcox Aquifer Fresh/Brackish Bexar COUNTY	N/A	\$42	0	0	21,000	21,000	21,000	21,000
San Antonio Water System	L	SAWS ADVANCED METER INFRASTRUCTURE	DEMAND REDUCTION	\$52554	N/A	426	606	510	0	0	0
San Antonio Water System	L	SAWS EXPANDED BRACKISH GROUNDWATER PROJECT	L Carrizo-Wilcox Aquifer Wilson COUNTY	N/A	\$1269	0	0	0	0	23,482	23,482
San Antonio Water System	L	SAWS EXPANDED BRACKISH GROUNDWATER PROJECT	L Carrizo-Wilcox Aquifer Fresh/Brackish Wilson COUNTY	N/A	\$1269	0	0	20,160	20,160	46,678	46,678
San Marcos	L	ARWA - PHASE 2	L Carrizo-Wilcox Aquifer Caldwell COUNTY	N/A	\$199	0	0	7,530	7,530	7,530	7,530
San Marcos	L	ARWA - PHASE 3	L Direct Non-Potable Reuse	N/A	\$2001	0	0	0	0	2,002	2,002
San Marcos	L	ARWA/GBRA PROJECT (PHASE 1)	L Carrizo-Wilcox Aquifer Caldwell COUNTY	\$1430	\$358	2,594	5,380	5,380	5,380	5,380	5,380
San Marcos	L	FE - CRWA HAYS CALDWELL WTP EXPANSION	L Direct Non-Potable Reuse	\$1566	\$698	1,288	1,288	1,288	1,288	1,288	1,288
San Marcos	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$600	0	0	54	395	949	1,706
San Marcos	L	REUSE - SAN MARCOS	L Direct Non-Potable Reuse	\$1435	\$1435	1,826	1,971	1,971	1,971	1,971	1,971
San Marcos	L	REUSE - SAN MARCOS	L Direct Potable Reuse	N/A	\$1980	0	0	0	3,808	3,808	3,808
Schertz	L	CIBOLO VALLEY LGC CARRIZO GROUNDWATER PROJECT	L Carrizo-Wilcox Aquifer Fresh/Brackish Gonzales COUNTY	N/A	\$314	0	2,000	2,000	2,000	2,000	2,000

						WATER MANAGEMENT STRATEGY SUPPLY (ACRE-FEET PER YEAR)					
WUG ENTITY NAME	WMS SPONSOR REGION	WMS NAME	SOURCE NAME	UNIT COST 2020	UNIT COST 2070	2020	2030	2040	2050	2060	2070
Schertz	L	CIBOLO VALLEY LGC CARRIZO GROUNDWATER PROJECT	L Carrizo-Wilcox Aquifer Fresh/Brackish Wilson COUNTY	N/A	\$314	0	3,000	3,000	3,000	3,000	3,000
Schertz	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$681	\$681	242	375	622	971	1,428	1,967
Schertz	L	SSLGC EXPANDED BRACKISH WILCOX GROUNDWATER	L Carrizo-Wilcox Aquifer Fresh/Brackish Gonzales COUNTY	N/A	\$214	0	0	2,500	2,500	2,500	2,500
Schertz	L	SSLGC EXPANDED CARRIZO PROJECT	L Carrizo-Wilcox Aquifer Guadalupe COUNTY	\$1207	\$321	3,000	3,000	3,000	3,000	3,000	3,000
Seadrift	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	6	13	15	21	31	41
Seguin	L	DROUGHT MANAGEMENT - SEGUIN	DEMAND REDUCTION	\$87	N/A	228	0	0	0	0	0
Seguin	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$681	0	0	0	59	232	448
Seguin	L	SSLGC EXPANDED BRACKISH WILCOX GROUNDWATER	L Carrizo-Wilcox Aquifer Fresh/Brackish Gonzales COUNTY	N/A	\$214	0	0	2,500	2,500	2,500	2,500
Seguin	L	SSLGC EXPANDED CARRIZO PROJECT	L Carrizo-Wilcox Aquifer Guadalupe COUNTY	\$1207	\$321	3,000	3,000	3,000	3,000	3,000	3,000
Selma	L	EDWARDS TRANSFERS	L Edwards-BFZ Aquifer Bexar COUNTY	N/A	\$1242	0	31	88	123	172	223
Selma	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$681	\$681	62	109	154	202	253	309
Shavano Park	L	DROUGHT MANAGEMENT - SHAVANO PARK	DEMAND REDUCTION	\$77	N/A	47	0	0	0	0	0
Shavano Park	L	EDWARDS TRANSFERS	L Edwards-BFZ Aquifer Bexar COUNTY	\$1242	\$1242	103	129	139	117	113	104
Shavano Park	L	EDWARDS TRANSFERS	L Edwards-BFZ Aquifer Medina COUNTY	\$1242	\$1242	87	123	113	127	114	99
Shavano Park	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$681	\$681	42	109	185	269	356	444
Smiley	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	5	15	26	31	36	42
South Buda WCID 1	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$681	\$681	4	6	12	21	38	60
Springs Hill WSC	L	FE - SHWSC LAKE PLACID WTP EXPANSION	L Canyon Lake/Reservoir	\$1207	\$551	1,394	1,394	1,394	1,394	1,394	1,394
Steam-Electric Power, Bexar	L	ENTITY PURCHASE TO MEET SHORTAGES - SAWS	L Carrizo-Wilcox Aquifer Bexar COUNTY	\$701	\$1463	2,797	2,797	2,797	2,797	2,797	2,797
Steam-Electric Power, Bexar	L	FE - CPS DIRECT RECYCLE PIPELINE	L Direct Non-Potable Reuse	N/A	\$20	0	50,000	50,000	50,000	50,000	50,000
Steam-Electric Power, Victoria	L	GBRA LOWER BASIN NEW APPROPRIATION	L GBRA Lower Basin New Appropriation Off- Channel Reservoir	N/A	\$207	0	23,925	23,925	23,925	23,925	23,925
Stockdale	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	13	49	98	143	171	201
Sunko WSC	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	17	32	47	71	106	145
Texas State University	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$681	\$681	33	101	153	167	185	201
The Oaks WSC	L	DROUGHT MANAGEMENT - THE OAKS WSC	DEMAND REDUCTION	\$112	N/A	9	0	0	0	0	0
The Oaks WSC	L	ENTITY PURCHASE TO MEET SHORTAGES - SAWS	L Carrizo-Wilcox Aquifer Bexar COUNTY	\$701	\$1463	132	170	208	242	271	294
The Oaks WSC	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	12	34	44	57	72	89

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WUG ENTITY NAME	WMS SPONSOR REGION	WMS NAME	SOURCE NAME	UNIT COST 2020	UNIT COST 2070	2020	2030	2040	2050	2060	2070	
Tri Community WSC	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$681	0	0	0	0	0	2	
Universal City	L	DROUGHT MANAGEMENT - UNIVERSAL CITY	DEMAND REDUCTION	\$66	N/A	192	0	0	0	0	0	
Universal City	L	EDWARDS TRANSFERS	L Edwards-BFZ Aquifer Bexar COUNTY	\$1242	\$1242	175	171	150	114	115	119	
Universal City	L	EDWARDS TRANSFERS	L Edwards-BFZ Aquifer Medina COUNTY	N/A	N/A	0	158	121	124	50	0	
Universal City	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$681	0	0	0	0	67	140	
Uvalde	L	DROUGHT MANAGEMENT - UVALDE	DEMAND REDUCTION	\$44	N/A	103	0	0	0	0	0	
Uvalde	L	EDWARDS TRANSFERS	L Edwards-BFZ Aquifer Uvalde COUNTY	\$1242	\$1242	2,138	2,195	2,074	1,947	1,911	2,030	
Uvalde	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	193	552	945	1,384	1,744	1,942	
Victoria	L	DROUGHT MANAGEMENT - VICTORIA	DEMAND REDUCTION	\$61	N/A	490	0	0	0	0	0	
Victoria	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$600	\$600	809	2,199	3,642	5,158	6,705	7,516	
Victoria	L	VICTORIA - ASR	L Gulf Coast Aquifer ASR Victoria COUNTY	\$385	\$47	7,900	7,900	7,900	7,900	7,900	7,900	
Victoria	L	VICTORIA - GROUNDWATER-SURFACE WATER EXCHANGE	L Gulf Coast Aquifer System Victoria COUNTY	\$0	\$0	8,544	8,544	8,544	8,544	8,544	8,544	
Waelder	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	7	18	21	27	35	44	
Water Services	L	LOCAL GROUNDWATER DEVELOPMENT	L Trinity Aquifer Bexar COUNTY	N/A	\$611	0	252	252	315	379	504	
Water Services	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$600	\$600	24	26	31	59	99	144	
West Medina WSC	L	DROUGHT MANAGEMENT - WEST MEDINA WSC	DEMAND REDUCTION	\$121	N/A	7	0	0	0	0	0	
West Medina WSC	L	EDWARDS TRANSFERS	L Edwards-BFZ Aquifer Medina COUNTY	\$1242	\$1242	75	75	75	75	75	75	
West Medina WSC	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	9	30	54	70	79	90	
Wimberley WSC	L	GBRA - MBWSP	L Carrizo-Wilcox Aquifer ASR Fresh/Brackish Gonzales COUNTY	N/A	\$442	0	262	752	1,366	2,060	2,851	
Windmill WSC	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	15	43	75	111	125	141	
Wingert Water Systems	L	DROUGHT MANAGEMENT - WINGERT WATER SYSTEMS	DEMAND REDUCTION	\$115	N/A	10	0	0	0	0	0	
Wingert Water Systems	L	LOCAL GROUNDWATER DEVELOPMENT	L Trinity Aquifer Comal COUNTY	\$872	\$524	296	296	296	296	296	296	
Wingert Water Systems	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$681	\$681	5	40	86	102	111	119	
Woodsboro	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	6	9	8	14	20	27	
Yancey WSC	L	DROUGHT MANAGEMENT - YANCEY WSC	DEMAND REDUCTION	\$89	N/A	40	0	0	0	0	0	
Yancey WSC	L	EDWARDS TRANSFERS	L Edwards-BFZ Aquifer Medina COUNTY	\$1242	\$1242	100	225	300	350	400	450	
Yancey WSC	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	N/A	\$770	0	0	0	0	0	11	
Yoakum*	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	13	40	40	45	53	63	

*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

						WATER MANAGEMENT STRATEGY SUPPLY (ACRE-FEET PER YEAR)						
WUG ENTITY NAME	WMS SPONSOR REGION	WMS NAME	SOURCE NAME	UNIT COST 2020	UNIT COST 2070	2020	2030	2040	2050	2060	2070	
Yorktown	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	12	35	36	43	52	60	
Zavala County WCID 1	L	MUNICIPAL WATER CONSERVATION	DEMAND REDUCTION	\$770	\$770	24	65	113	168	225	283	

REGION L RECOMMENDED WMS SUPPLY TOTAL	198,517	428,822	550,572	596,348	691,577	736,777
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Region L Recommended Projects Associated with Water Management Strategies

SPONSOR NAME	SPONSOR IS WWP?	ONLINE DECADE	PROJECT NAME	PROJECT DESCRIPTION	CAPITAL COST
Alliance Regional Water Authority	YES	2040	ARWA PHASE 2	MULTIPLE WELLS/WELL FIELD; NEW WATER TREATMENT PLANT; STORAGE TANK	\$130,526,000
Alliance Regional Water Authority	YES	2060	ARWA PHASE 3	CONVEYANCE/TRANSMISSION PIPELINE; NEW WATER TREATMENT PLANT; PUMP STATION; STORAGE TANK	\$73,558,000
Alliance Regional Water Authority	YES	2020	ARWA/GBRA SHARED FACILITIES PROJECT	CONVEYANCE/TRANSMISSION PIPELINE; INJECTION WELL; MULTIPLE WELLS/WELL FIELD; NEW SURFACE WATER INTAKE; NEW WATER RIGHT/PERMIT NO IBT; PUMP STATION; STORAGE TANK	\$228,365,000
Atascosa Rural WSC	NO	2020	FE - ATASCOSA RURAL WSC INTERCONNECT	CONVEYANCE/TRANSMISSION PIPELINE	\$3,623,000
Atascosa Rural WSC	NO	2020	LOCAL GROUNDWATER - ATASCOSA RURAL WSC	MULTIPLE WELLS/WELL FIELD	\$6,490,000
Boerne	NO	2020	BOERNE NON-POTABLE REUSE PROJECT	NEW WATER TREATMENT PLANT	\$9,575,000
Canyon Regional Water Authority	YES	2030	CRWA - BRACKISH WILCOX GROUNDWATER	CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; NEW WATER TREATMENT PLANT; PUMP STATION; STORAGE TANK	\$177,944,000
Canyon Regional Water Authority	YES	2060	CRWA SIESTA PROJECT	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; NEW WATER TREATMENT PLANT; PUMP STATION; STORAGE TANK	\$107,161,000
Canyon Regional Water Authority	YES	2020	CRWA WELLS RANCH (PHASE 3)	CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; WATER TREATMENT PLANT EXPANSION	\$47,832,000
Canyon Regional Water Authority	YES	2020	FE - CRWA EXPANDED LAKE DUNLAP WTP	WATER TREATMENT PLANT EXPANSION	\$19,040,000
Canyon Regional Water Authority	YES	2020	FE - CRWA HAYS CALDWELL WTP EXPANSION	WATER TREATMENT PLANT EXPANSION	\$19,040,000
Cibolo Valley Local Government Corporation	YES	2030	CIBOLO VALLEY LCG CARRIZO PROJECT	CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; NEW WATER TREATMENT PLANT; PUMP STATION; STORAGE TANK	\$130,277,000
County Line SUD	YES	2050	COUNTY LINE SUD BRACKISH EDWARDS PROJECT	CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; STORAGE TANK	\$13,602,000
County Line SUD	YES	2050	COUNTY LINE TRINITY WELLFIELD	CONVEYANCE/TRANSMISSION PIPELINE; INJECTION WELL; NEW WATER TREATMENT PLANT; PUMP STATION; MULTIPLE WELLS/WELL FIELD	\$11,761,000
County Line SUD	YES	2020	REUSE - COUNTY LINE SUD	NEW SURFACE WATER INTAKE; NEW WATER TREATMENT PLANT; PUMP STATION; STORAGE TANK	\$28,256,000
County-Other, Calhoun	NO	2060	LOCAL GROUNDWATER - CALHOUN COUNTY-OTHER	MULTIPLE WELLS/WELL FIELD	\$1,502,000
El Oso WSC	NO	2020	EL OSO REGION L GROUNDWATER DEVELOPMENT	MULTIPLE WELLS/WELL FIELD; CONVEYANCE/TRANSMISSION PIPELINE; WATER TREATMENT PLANT EXPANSION	\$809,000
Fair Oaks Ranch	NO	2030	FAIR OAKS RANCH NON-POTABLE REUSE PROJECT	CONVEYANCE/TRANSMISSION PIPELINE; NEW WATER TREATMENT PLANT; PUMP STATION	\$3,159,000
Floresville	NO	2040	LOCAL CARRIZO AQUIFER - FLORESVILLE	MULTIPLE WELLS/WELL FIELD; CONVEYANCE/TRANSMISSION PIPELINE; NEW WATER RIGHT/PERMIT NO IBT	\$5,477,000
Guadalupe-Blanco River Authority	YES	2020	ARWA/GBRA SHARED FACILITIES PROJECT	CONVEYANCE/TRANSMISSION PIPELINE; INJECTION WELL; MULTIPLE WELLS/WELL FIELD; NEW SURFACE WATER INTAKE; NEW WATER RIGHT/PERMIT NO IBT; PUMP STATION; STORAGE TANK	\$124,512,000
Guadalupe-Blanco River Authority	YES	2030	FE - GBRA WESTERN CANYON WTP EXPANSION	WATER TREATMENT PLANT EXPANSION; PUMP STATION	\$23,953,000
Guadalupe-Blanco River Authority	YES	2030	FE - HAYS COUNTY PIPELINE	CONVEYANCE/TRANSMISSION PIPELINE	\$25,486,000
Guadalupe-Blanco River Authority	YES	2020	GBRA LOWER BASIN STORAGE	NEW SURFACE WATER INTAKE; NEW WATER RIGHT/PERMIT NO IBT; RESERVOIR CONSTRUCTION; CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION	\$507,642,000
Guadalupe-Blanco River Authority	YES	2030	GBRA MBWSP	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; NEW WATER TREATMENT PLANT; PUMP STATION; STORAGE TANK; INJECTION WELL	\$403,046,000
Guadalupe-Blanco River Authority	YES	2030	GBRA NEW APPROPRIATION (LOWER BASIN)	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; PUMP STATION; RESERVOIR CONSTRUCTION	\$381,960,000

Region L Recommended Projects Associated with Water Management Strategies

SPONSOR NAME	SPONSOR IS WWP?	ONLINE DECADE	PROJECT NAME	PROJECT NAME PROJECT DESCRIPTION		
Guadalupe-Blanco River Authority	YES	2030	GBRA VICTORIA COUNTY STEAM-ELECTRIC PROJECT	CONVEYANCE/TRANSMISSION PIPELINE; NEW SURFACE WATER INTAKE; NEW WATER TREATMENT PLANT; PUMP STATION; STORAGE TANK	\$117,260,000	
Karnes City	NO	2020	KARNES CITY - LOCAL GROUNDWATER DEVELOPMENT	MULTIPLE WELLS/WELL FIELD; CONVEYANCE/TRANSMISSION PIPELINE; NEW WATER RIGHT/PERMIT NO IBT	\$4,080,000	
KT Water Development	NO	2020	LOCAL GROUNDWATER - KT WATER DEVELOPMENT	MULTIPLE WELLS/WELL FIELD	\$3,596,000	
Luling	NO	2030	LOCAL GROUNDWATER - LULING	MULTIPLE WELLS/WELL FIELD	\$4,038,000	
Manufacturing, DeWitt	NO	2030	LOCAL GROUNDWATER - MANUFACTURING, DEWITT	MULTIPLE WELLS/WELL FIELD	\$167,000	
Manufacturing, Karnes	NO	2040	LOCAL GROUNDWATER - MANUFACTURING, KARNES	MULTIPLE WELLS/WELL FIELD	\$188,000	
Martindale WSC	NO	2030	MARTINDALE WSC - ALLUVIAL WELL	CONVEYANCE/TRANSMISSION PIPELINE; SINGLE WELL	\$1,253,000	
Maxwell WSC	NO	2040	MAXWELL WSC - TRINITY WELLFIELD	CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; NEW WATER TREATMENT PLANT; STORAGE TANK; INJECTION WELL	\$7,971,000	
Mining, Comal	NO	2020	LOCAL GROUNDWATER - MINING, COMAL	MULTIPLE WELLS/WELL FIELD	\$10,202,000	
Mining, DeWitt	NO	2020	LOCAL GULF COAST AQUIFER - DEWITT MINING	MULTIPLE WELLS/WELL FIELD	\$1,333,000	
Mining, Uvalde	NO	2020	LOCAL GROUNDWATER - MINING, UVALDE	MULTIPLE WELLS/WELL FIELD	\$153,000	
New Braunfels	NO	2020	FE - NBU SEGUIN INTERCONNECT	CONVEYANCE/TRANSMISSION PIPELINE	\$2,428,000	
New Braunfels	NO	2030	FE - NBU SOUTH WTP EXPANSION	WATER TREATMENT PLANT EXPANSION	\$27,701,000	
New Braunfels	NO	2030	NBU - TRINITY DEVELOPMENT	CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; PUMP STATION; STORAGE TANK	\$19,155,000	
New Braunfels	NO	2020	NEW BRAUNFELS UTILITIES ASR	CONVEYANCE/TRANSMISSION PIPELINE; INJECTION WELL; MULTIPLE WELLS/WELL FIELD; PUMP STATION; STORAGE TANK	\$39,198,000	
Pearsall	NO	2020	LOCAL CARRIZO AQUIFER - PEARSALL	MULTIPLE WELLS/WELL FIELD; CONVEYANCE/TRANSMISSION PIPELINE; NEW WATER RIGHT/PERMIT NO IBT	\$6,140,000	
s s wsc	NO	2060	BRACKISH WILCOX GROUNDWATER FOR SS WSC	CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; NEW WATER TREATMENT PLANT; PUMP STATION; STORAGE TANK	\$20,384,000	
San Antonio Water System	YES	2030	FE - CPS DIRECT RECYCLE PIPELINE	CONVEYANCE/TRANSMISSION PIPELINE	\$35,589,000	
San Antonio Water System	YES	2030	FE - SAWS EXPANDED ASR TREATMENT PLANT	WATER TREATMENT PLANT EXPANSION	\$39,508,000	
San Antonio Water System	YES	2020	FE - SAWS WESTERN INTEGRATED PIPELINE (PHASE 2)	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; STORAGE TANK	\$113,039,000	
San Antonio Water System	YES	2030	RECYCLED WATER PROGRAM - SAWS	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; STORAGE TANK	\$196,963,028	
San Antonio Water System	YES	2040	SAWS - EXPANDED BRACKISH WILCOX PROJECT	CONVEYANCE/TRANSMISSION PIPELINE; INJECTION WELL; MULTIPLE WELLS/WELL FIELD; NEW WATER TREATMENT PLANT; PUMP STATION; STORAGE TANK	\$819,805,000	
San Antonio Water System	YES	2040	SAWS - EXPANDED LOCAL CARRIZO	CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; WATER TREATMENT PLANT EXPANSION	\$23,489,000	
San Antonio Water System	YES	2020	SAWS ADVANCED METER INFRASTRUCTURE	DATA GATHERING/MONITORING TECHNOLOGY	\$208,060,000	
San Marcos	NO	2020	SAN MARCOS - NON-POTABLE REUSE	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; STORAGE TANK	\$106,770,000	
San Marcos	NO	2050	SAN MARCOS - POTABLE REUSE	CONVEYANCE/TRANSMISSION PIPELINE; PUMP STATION; WATER TREATMENT PLANT EXPANSION	\$106,770,000	
Schertz-Seguin Local Government Corporation	YES	2040	BRACKISH WILCOX GROUNDWATER FOR SSLGC	CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; NEW WATER TREATMENT PLANT; PUMP STATION; STORAGE TANK	\$31,941,000	
Schertz-Seguin Local Government Corporation	YES	2020	SSLGC EXPANDED CARRIZO PROJECT	CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; NEW WATER TREATMENT PLANT; PUMP STATION; STORAGE TANK	\$75,542,000	
Springs Hill WSC	NO	2030	FE - SPRINGS HILL 16 INCH BORED PIPELINE UNDER THE GUADALUPE RIVER	CONVEYANCE/TRANSMISSION PIPELINE	\$490,000	

Region L Recommended Projects Associated with Water Management Strategies

SPONSOR NAME	SPONSOR IS WWP?	ONLINE DECADE	PROJECT NAME	PROJECT DESCRIPTION	CAPITAL COST
Springs Hill WSC	NO	2020	FE - SPRINGS HILL LAKE PLACID WTP EXPANSION	WATER TREATMENT PLANT EXPANSION; PUMP STATION	\$12,995,000
Victoria	NO	2020	VICTORIA - ASR	CONVEYANCE/TRANSMISSION PIPELINE; MULTIPLE WELLS/WELL FIELD; PUMP STATION; INJECTION WELL	\$37,982,000
Water Services	NO	2030	LOCAL GROUNDWATER - WATER SERVICES	MULTIPLE WELLS/WELL FIELD	\$4,378,000
Wingert Water Systems	NO	2020	LOCAL GROUNDWATER - WINGERT WATER SYSTEMS	MULTIPLE WELLS/WELL FIELD	\$1,463,000

REGION L RECOMMENDED CAPITAL COST TOTAL \$4,564,627,028

ATTACHMENT D

Notice of Public Comment and Public Meeting for Region L to Consider and Adopt Minor Amendment

NOTICE OF OPEN MEETING OF THE SOUTH CENTRAL TEXAS REGIONAL WATER PLANNING GROUP

TAKE NOTICE that a meeting of the South-Central Texas Regional Water Planning Group (SCTRWPG) as established by the Texas Water Development Board will be held on Thursday, May 2, 2024 at 9:30 AM both in person and virtually. The in-person meeting will be held at the San Antonio Water System's Customer Service Building, Room CR-145, 2800 US Hwy 281 North, San Antonio, TX 78212. You can attend virtually on WebEx at https://saws.webex.com/saws/j.php?MTID=m3b2a7303c8e91ea193231fd4b81f860f. The planning group members will consider and may take action regarding:

- 1. (9:30 AM) Roll-Call
- 2. Public Comment (Limited to 3 minutes)
- 3. Approval of the Minutes from the Previous Meeting of the South-Central Texas Regional Water Planning Group (SCTRWPG)
- 4. Discussion and Appropriate Action Regarding Filling Existing Vacancies and Vacancies to Result from Future Term Expirations or Resignations
- 5. Election of Officers for the 2024 SCTRWPG Executive Committee
- 6. Status Reports and Communications by TWDB
- 7. Status Reports and Communications Related to Regional Water Planning including reports by the Chair, Regional Liaisons, Groundwater Management Area Representatives, and Members of the Planning Group
- 8. Consideration and Appropriate Action Regarding Briefings on Workgroup Activities
- 9. Presentation by Technical Consultant Regarding Schedule and Progress Update
- 10. Consideration and Appropriate Action for the Technical Consultant to Evaluate the Medina County Regional ASR Project as a New Water Management Strategy
- 11. Consideration and Appropriate Action Regarding the Proposed Minor Amendment No. 1 to the 2021 South Central Texas (Region L) Regional Water Plan to Update the Guadalupe-Blanco River Authority Lower Basin Storage Project
 - a. Public Comment Regarding the Proposed Minor Amendment No. 1
 - b. Review and Consideration of Comments Received from the Public, TWDB, and Other State or Federal Agencies
 - c. Consideration and Appropriate Action to Adopt the Proposed Minor Amendment No. 1
 - d. Consideration and Appropriate Action to Authorize the Technical Consultant to Submit Proof of Adoption and any Comments to TWDB and to Address Any Requests from TWDB Associated with the Proposed Minor Amendment No. 1 on Behalf of the SCTRWPG
- 12. Discussion and Appropriate Action Regarding the Establishment of Additional Subcommittees
- 13. Schedule and Potential Agenda Items for the Next Meeting of the SCTRWPG
- 14. Public Comment (Limited to 3 minutes)
- 15. Adjourn

As per agenda item 11, 31 TAC §357.21(g)(2) states at a minimum, notice must be provided at least 14 days prior to the meeting, written comment must be accepted for 14 days prior to the meeting and considered by the RWPG members prior to taking the associated action, and meeting materials must be made available on the RWPG website for a minimum of seven days prior to and 14 days following the meeting.

Comments and submissions may be submitted through email to ccastillo@sariverauthority.org and include "Region L South Central Texas Water Planning Group Meeting Public Comment" in the subject line of the email. Any written documentation can be sent to Tim Andruss, Chair, South Central Texas Regional Water Planning Group, c/o San Antonio River Authority, Attn: Caye Castillo, 100 E. Guenther Street, San Antonio, TX 78204. Please direct any questions to Caye Castillo at (210) 302-4258, ccastillo@sariverauthority.org.