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

FINDING OF NO SIGNIFICANT IMPACT

TO ALL INTERESTED AGENCIES AND PUBLIC GROUPS:

As required by the rules of the Texas Water Development Board (TWDB), 31 Texas Administrative Code (TAC) § 371.41, an environmental review consistent with the National Environmental Policy Act (NEPA), 42 United States Code § 4321 *et seq.*, has been performed on the project below. This project is proposed to be funded through the Drinking Water State Revolving Fund (DWSRF) Equivalency Program, which is administered by the TWDB.

Riverbend Water Resources District, Bowie County, Texas
TWDB DWSRF Project No. 62883
Riverbend Regional Water System
Total Financing Amount: $484,275,000
DWSRF Loan Nos. LM201181, LM201182, LM211181, LM211182, LM221181, LM221182, LM231181, LM231182

The Riverbend Water Resources District (District) is proposing to use $258,700,000 in financing from the DWSRF Equivalency Program for the Riverbend Regional Water System project to increase water supply capacity to the District's member entities by constructing a new water treatment plant (WTP), raw water intake structure, raw water transmission pipeline, raw water (booster) pump station, treated water distribution lines, and associated appurtenances.

An environmental review of the project consistent with NEPA has been completed following the guidelines provided in 31 TAC § 371.41. This environmental review is documented by the enclosed Environmental Assessment, which contains mitigative environmental conditions that will be applied to the project to avoid significant adverse environmental impacts on waters of the United States, wetlands, floodplains, cultural and historical resources, threatened and endangered species, and protected migratory bird species. Based on a detailed environmental review of the planning information, the Environmental Information Document, and other documentation, the project is environmentally sound with the following special and standard environmental conditions:

Special Environmental Conditions

- Consistent with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899, the proposed project, including all stream crossings, will be constructed in compliance with the terms and conditions of United States Army

Corps of Engineers (USACE) Nationwide Permit 58 for Utility Line Activities for Water and Other Substances (Project No. SWF-2017-00342).

- Consistent with the Flood Insurance Reform Act of 2004, federal Executive Order 11988 as amended by EO 13690, Texas Water Code Section 16.315, and local floodplain development ordinances, a floodplain development permit will be obtained from the local floodplain administrator prior to construction in, across, or under a Special Flood Hazard Area, and any requirements contained therein will be adhered to.
- In accordance with agreements with the United States Fish and Wildlife Service (USFWS) and the Texas Parks and Wildlife Department (TPWD), nest surveys will be conducted according to the USFWS Eagle Management Program prior to vegetation clearing and/or construction activities. If eagle nests are found, clearing and construction activities will avoid those areas, establishing a minimum buffer zone of 660 feet, in accordance with recommended guidelines.
- Consistent with an agreement between the District and the City of Redwater, the pipeline easement crossing the City of Redwater Community Park and Sports Complex will be re-forested after construction with site-specific native trees, except the 50-foot easement directly above the pipeline. The District will consult with the City on which trees will be preserved along the walking path at the park.
- The proposed project will be designed and constructed in accordance with mitigation agreements made in the issuance of the USACE Finding of No Significant Impact, issued May 21, 2025, and corresponding Environmental Assessment including but not limited to the contents of the Wildlife Habitat Appraisal Procedure (WHAP), the TPWD special conditions below, and the following best management practice for the avoidance of protected species.
    - Two perennial (S-10 and S-14) and one intermittent stream (S-13) along the pipeline route that have been found to be suitable habitat for the alligator snapping turtle (*Macrochelys temminckii*) will be installed using directional drilling or other trenchless methods to avoid potential impacts.
- As per an agreement with the TPWD, Ecological & Environmental Planning Program (TPWD Project No. 51247), to ensure compliance with 31 Texas Administrative Code (TAC) Chapters 52 and 57, Texas Parks and Wildlife Code, Chapters 1, 12, 64, 66, 67, and 68, the Endangered Species Act of 1973 (ESA), as amended, the Migratory Bird Treaty Act, and applicable federal regulations pertaining to protected and invasive species, including but not limited to the alligator snapping turtle, Monarch butterfly (*Danaus plexippus*), American burying beetle (*Nicrophorus americanus*), tricolored bat (*Perimyotis subflavus*), black bear (*Ursus americanus*), eastern spotted skunk (*Spilogale putorius*), Bachman's sparrow (*Peucaea* aestivalis), Franklin's gull (*Leucophaeus pipixcan*), wood stork (*Mycteria americana*), swallow-tailed kite (*Elanoides forficatus*), white-faced ibis (*Plegadis chihi*), bald eagle (*Haliaeetus leucocephalus*), western chicken turtle (*Deirochelys reticularia miaria)*, southeastern myotis bat (*Myotis austroriparius*), eastern box turtle (*terrapene carolina*), pigmy rattlesnake (*Sistrurus miliarius*), timber rattlesnake (*Crotalus horridus*), western creek chubsucker (*Erimyzon claviformis*), blackside darter (*Percina maculata*), chub shiner (*Hiodon alosoides*), and shovelnose sturgeon (*Scaphirhynchus platorynchus*), the following measures will be implemented:

- Vegetation clearing must be excluded during the general bird nesting season and tricolored bat pupping season, March 15 through September 15, to avoid adverse impacts to breeding birds and tricolored bats. If vegetation clearing during this time is unavoidable, the area proposed for disturbance will be surveyed by a qualified biologist to identify occupied nests and pupping habitat, not more than five days prior to clearing activities. If occupied nests or bat roosts or hibernacula are observed during surveys, a vegetation buffer area of no less than 100 feet in diameter will remain around the nest or roost until all young have fledged; however, the size of the buffer zone depends on various factors and can be coordinated with the local or regional USFWS office. State and federal regulations as currently interpreted do not permit incidental take.
- If vegetation clearing cannot be avoided during the nesting season in suitable Bachman's sparrow habitat, vocalization playback survey protocols that are specific to the sparrow will be utilized to detect and avoid nests.
- The District will avoid the removal of trees that have hollows, as they provide suitable habitat for roosting bats such as the tricolored bat. If removal cannot be avoided, large, hollow trees will be inspected for the presence of bats; likewise, culverts will be inspected for bats prior disturbance and if any culverts are installed, they will be designed to maintain low flows to sustain the movement of aquatic species.
- If tricolored bats, alligator snapping turtle, or the Monarch butterfly become federally listed prior to vegetation clearing and/or construction, the District will conduct additional coordination with the United States Fish and Wildlife Service to ensure compliance with the ESA.
- Vegetation within the project area will be restored to preconstruction conditions, with native species reestablished in undeveloped areas.
- Contractors and construction crews will be provided with informational materials identifying potential protected species that may occur in the project area and instructing them on how to avoid impacts to wildlife that are encountered: If wildlife are encountered, the animals will be allowed to leave the area safely. Wildlife in danger from project activities that will not readily leave the site can be translocated to a nearby area with similar habitat. Any translocation of reptiles will occur within 100-200 yards from the initial encounter location. State-listed species will be handled only by persons with authorization obtained through the TPWD.
- If priority habitats are found in the project area, as outlined in the Texas Conservation Action Plan for the Environmental Protection Agency (EPA) Level III South Central Plains ecoregion, the project will be designed to avoid and/or minimize impacts to these priority habitats.
- If construction occurs when water is present in any waterbody and dewatering, fill, or trampling activities are involved, the District will coordinate with the TPWD Kills and Spills Team (KAST) for the appropriate permits prior to construction. Construction within Wright Patman Lake will be coordinated with KAST prior to commencement. Mussel surveys will be conducted as necessary, in coordination with KAST and the USACE.

- If construction equipment is anticipated to come into contact with surface waters, an aquatic invasive species (AIS) transfer prevention plan will be prepared and implemented.
- To avoid impacts to the alligator snapping turtle and other aquatic habitat, design methods will be utilized that allow for the growth of riparian and lakeshore vegetation to the extent practicable. Clearing of mature trees in riparian zones will be minimized. Disturbance to inert microhabitats in waterways such as snags, brush piles, fallen logs, pools, cutbanks, root balls, and gravel stream bottoms will be avoided. If impacts are unavoidable, in-water structures within the waterway will be replaced to the maximum extent feasible. Replaced structures should be situated in a manner consistent with pre-construction conditions (e.g., diameter of logs, distance from the riverbank).
- To avoid impacts to the alligator snapping turtle, during construction, trucks and equipment will use existing bridges to cross creeks, and equipment staging areas will be located in previously disturbed areas outside of riparian corridors.
- Affected wetlands will be side-cast and backfilled using 6 to 12 inches of topsoil excavated from the trench to minimize long-term habitat destruction.
- Safety features such as a mesh intake with an air scour backwash will be utilized to prevent impacts to fish and mussels at the dredge and intake locations.
- To avoid impacts to the alligator snapping turtle, eastern box turtle, pigmy rattlesnake, and timber rattlesnake, the judicious placement of sediment control fence will be used to exclude protected wildlife from the construction area. An exclusion fence will be buried at least six inches and be at least 24 inches high. The exclusion fence will be maintained for the project's life and removed after construction is completed and the disturbed site is revegetated using site-specific native vegetation. For linear project components, such fencing will be installed and maintained for only the active construction area. Construction personnel will be advised to examine the inside of the exclusion area daily to determine if any wildlife species have been trapped inside the area of impact and provide safe egress opportunities prior to initiation of construction activities.
- Permanent structures will be designed to utilize the minimum amount of nighttime light needed for safety and security for lighted structures at the water treatment plant, elevated storage tank site, and pump stations. Lights will be focused downward with cutoff luminaries to avoid light emitting above the horizontal. During construction, lighting will only be illuminated when needed, will only be as bright as needed, will be fully shielded, and will minimize blue light emissions.
- For soil stabilization and revegetation, no-till drilling, hydromulching (avoiding plastic ingredients), and/or hydroseeding will be used rather than erosion control blankets or mats, which pose an entanglement hazard to wildlife. If erosion control blankets or mats cannot be avoided, products that contain no

netting or loosely woven natural fiber netting will be used, avoiding any type of plastic netting.

- The length of trenches left open at any given time during construction will be minimized. Trenching and backfilling activities will be kept close together in time. Trenches and excavation areas will be covered overnight and/or inspected every morning or if left open longer than two daylight hours to ensure no wildlife species have been trapped. If trenches cannot be backfilled the day of initial trenching, then escape ramps will be installed every 300 feet, in the form of short lateral trenches or wooden planks sloping to the surface at an angle of less than 45 degrees, at a ratio of one horizontal foot for every one foot of depth.

Standard Environmental Conditions

- Consistent with the TWDB Supplemental Construction Contract Conditions (TWDB-0550), the Riverbend Water Resources District (District) will abide by the standard emergency condition for the discovery of cultural resources.
- Consistent with the TWDB Supplemental Construction Contract Conditions (TWDB-0550), the District will abide by the standard emergency condition for the discovery of threatened and endangered species.

Therefore, it is recommended that a Finding of No Significant Impact be issued.

Documentation supporting this decision is on file in the office of the Regional Water Project Development, TWDB, and is available for public review upon request. Comments supporting or disagreeing with this preliminary environmental determination may be submitted to the Director, Regional Water Project Development, Texas Water Development Board, P.O. Box 13231, Austin, Texas 78711-3231 or via email at RWPD-Environmental@twdb.texas.gov. After evaluating the comments received, the Executive Administrator will make a final determination. However, no action regarding the provision of federal financial assistance for the project will be taken for at least thirty (30) calendar days after the release of this Finding of No Significant Impact.

Sincerely,

Clay Schultz Digitally signed by Clay Schultz
Date: 2025.09.03 17:10:21
-05'00'

T. Clay Schultz, Ph.D., Director
Regional Water Project Development

Enclosure

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Riverbend Water Resources District, Bowie County, Texas
Drinking Water State Revolving Fund Project No. 62883
Riverbend Regional Water System
Environmental Assessment

REVIEW PROCESS

As described below, Texas Water Development Board (TWDB) staff has performed a review consistent with the 31 Texas Administrative Code (TAC) § 371.41 and the National Environmental Policy Act (NEPA), 42 U.S. Code § 4321 *et seq.* Consistent with 31 TAC § 371.45, the Environmental Information Document (EID) [1] for the Riverbend Regional Water System project proposed by the Riverbend Water Resources District (District) was reviewed by TWDB staff for the development of this Environmental Assessment (EA). This project is financed through the Drinking Water State Revolving Fund (DWSRF) Program which is administered by the TWDB.

PURPOSE AND NEED

The District was established by the Texas Legislature in 2009 to be the water provider for northeast Texas. Member cities and entities include the Red River County, Bowie County, Cass County, Central Bowie County WSC, City of Texarkana, City of Avery, City of Annona, City of De Kalb, City of Hooks, City of Leary, City of Maud, City of Nash, City of New Boston, City of Redwater, City of Wake Village, Oak Grove WSC, and the TexAmericas Center. The District has the responsibility of producing the water, and Texarkana Water Utilities (TWU) distributes it. The existing facilities have the ability for the TWU to provide a sufficient capacity to meet the current average daily flows of 15 to 16 million gallons per day (MGD) of the potable water required for its member entities; however, the Texas Commission of Environmental Quality (TCEQ) Rule 290.42(d)(11)(B)(v) requires the District's system to provide a maximum day flow of 0.6 gallons per minute (GPM) for each connection. Based on this rule, the District's 2020 flows for the member entities must be capable of providing 27.43 MGD.

The TWU system is reaching the end of its useful life, which is affecting the water quality delivered to the member entities. As the demands for commercial, industrial, and residential water continue to increase in the region, the current system also lacks the capacity that will

[1] Riverbend Water Resources District (June 26, 2025). Environmental Information Document (EID; TWDB Form 0801), Prepared by Pape-Dawson Engineers, Inc. Received by TWDB on May 21, 2025, The EID is complete with the supplementary materials submitted to the TWDB on June 26, 2025.

be required in the future. The production limits of the current water system have resulted in many member entities requiring an exception from the TCEQ regarding minimum water supply capacity requirements.

The existing plant produces water that does not reliably meet the disinfection by-product rule. Maintenance of disinfection residuals are a concern in the remote areas of the distribution system. The plant is configured in such a way that makes renovation of the filters and pump stations difficult without long term shutdowns and does not lend the plant to being expanded. The consequence is that water being treated is susceptible to an unpleasant odor and taste due to chemicals resulting from algal bloom episodes.

The purpose of the proposed project is to address these deficiencies.

PROJECT DESCRIPTION

The proposed project will supply potable and raw water to municipal and non-municipal member entities in the District's service area. The improvements will correct current member entities' non-conformance with certain regulatory requirements due to the TWU production limitations. The proposed project will replace the existing New Boston Water Treatment Plant and associated raw water intake and pumping system. The new intake capacity of 37.8 MGD and associated facilities to be constructed under this loan commitment have been established based on the current operational curve for Wright Patman Lake, under the Interim Rule Curve (IRC). However, the footprint of the proposed project will facilitate future capacity requirements based on the outcome of the ongoing studies to implement the Ultimate Rule Curve (URC) at Wright Patman Lake. Impacts resulting from raising the lake to the URC and future infrastructure required to increase the capacity of the system to the URC, including land inundation surrounding the lake, are not assessed in this FONSI, except as indirect or secondary effects related to the proposed project.

The proposed project is located 18 miles south and west of Texarkana, Texas and provides service to Bowie, Red River, and Cass Counties. The project area consists predominantly of wooded tracts and agricultural land. In general, the alignment starts from the northwestern corner of Wright Patman Lake and extends northwards to Farm-to-Market (FM) 991, then traverses eastwards parallel to FM 991 prior to heading northward into the former Lone Star Army Ammunition Plant (LSAAP) property owned by TexAmericas Center, primarily along Bowie Parkway and Titus Road before tying into the main water pipeline at Highway 82. Approximately six miles of the pipeline alignment is planned to be installed within the former LSAAP property and provide service to the Red River Army Depot and 12 member communities.

The proposed project includes the following components:

1) A new raw water intake structure to be constructed on the northwestern shore of Wright Patman Lake. The intake structure will be located fully (clean cut) above the ordinary high water mark (OHWM) which is at 227.5 feet. The conceptual intake

structure will have dimensions of 43.0 feet in height, 19.0 feet in length and 60.0 in width, with wingwalls extending approximately 140.0 feet from each side of the face of the structure into the lake.

2) A dredged channel, 50 feet by 8,200 feet, will extend from the structure into deeper lake water. Two passive wedge-wire drum tee-screens will be mounted on the face of the structure to filter potential debris from entering the pump station and protect aquatic life from impingement.
3) A raw water intake pipeline connecting the intake structure and raw water pump station will be tunneled at depths ranging between approximately 15 feet and 80 feet below the ground surface. The intake pipe system will consist of 1.2 miles (6,231 linear feet (LF)) of 84-inch diameter pipe.
4) A new raw water pump station (RWPS; booster pump station) will be constructed north of the intake structure. The conceptual pump station is expected to house between three and six vertical turbine pumps that would discharge approximately 20 MGD. The location of the raw water pump station is more than two miles from the edge of the lake and its footprint does not contain wetlands.
5) A raw water transmission main system will be constructed between the RWPS and the new water treatment plant. A single 66-inch diameter pipe totaling a length of 7.2 miles (35,000 LF) will be installed with an average backfill depth of between 5 feet and 15 feet.
6) A new water treatment plant with a production capacity of 30 MGD will be constructed on the TexAmericas site located in the southwest quadrant of the Maple Street and Bowie Parkway intersection in Hooks, Texas. The Riverbend WTP will feature advanced conventional treatment with intermediate ozonation process and consists of four treatment trains. The WTP will include conventional treatment, ozone generation facilities, filter facilities, a disinfection basin, a transfer pump station, chemical storage and feed facilities, clearwell storage, powdered activated carbon facilities, a high service pump station (HSPS), a backwash pump station, washwater recovery basins, a recycle pump station, gravity thickeners, a thickened sludge pump station, a sludge dewatering building, a filtrate pump station, an administrative/operations building and a maintenance building.
7) A 42-inch diameter treated water pipeline, 2.8 miles long, will take potable water to the existing distribution pipeline near Highway 82.
8) A new access road for the RWPS adjacent to the pipeline.
9) Expansion of access roads (Cotton Ford and Poor Boy roads) to the intake structure

Lake dredging will use a barge mounted vacuum hydraulic rotary head dredge and include a mesh intake with an air scour backwash to keep out fish and mussels. Dredged material will be pumped to dry land through a flexible pipe placed on a mulched surface along the pipeline alignment. A 20-acre site located adjacent to the proposed pump station on private property and located 2.4 miles from the lake will be used for drying dredge material. Decanted water will be monitored to make sure the suspended sediment concentration is less than 300 parts per thousand. The decanted water will travel by gravity toward the lake. Dredge materials will be reused as compact fill during the construction of the intake structure and potentially placed in a borrow pit.

The project will require 27.6 acres for above-ground structures, including the access road, booster pump station, and water treatment plant. Trenching and boring for the pipeline construction would disturb 209.5 acres. Streams and wetlands would be crossed with directional boring where practicable.

PROJECT FUNDING

To address these issues, the District has applied to the TWDB for $258,700,000 in financing through the DWSRF Program for planning, design, and construction, as well as to acquire land and easements. On August 5, 2020, the TWDB committed $199,700,000 for the project. Closings will be spaced out until at least 2026, as the funds are needed. Some of the planning funds were used to assess the potential environmental impact of the project and prepare an Environmental Information Document (EID). Preparation of the EID involved consultation with state and federal regulatory agencies and additional public participation.

The TWDB may not fund testing, remediation, removal, disposal, or related works for contaminated or potentially contaminated materials. However, the project proponent should ensure that, if found, such materials are tested, removed, and disposed of in accordance with applicable state and federal laws.

EVALUATION OF ALTERNATIVES

The District originally evaluated five alternatives involving differences in the location of the intake site and intake pipeline. The final two, as well as the No-Action Alternative, are included in this EA. Each alternative was evaluated for its potential direct, secondary, and cumulative impacts on the existing environment.

No-Action Alternative

There would be no terrestrial, aquatic, or habitat impacts associated with the No-Action Alternative, and impacts of the No-Action Alternative would be less than those of the alternatives. There would be no effect to waters of the United States (WOTUS), cultural resources, native vegetation, wildlife, protected species, or prime farmland; however, continuing to use the existing infrastructure would result in continued persistence of water quality issues for customers. Currently, water taken from Wright Patman Lake has odor and taste issues because the current water treatment plant is not operating efficiently enough to remove algae bloom-related compounds such as 2-methylisoboreol (MIB) and geosmin and organic matter associated with the current intake location. In addition, the current intake does not comply with current regulations of the TAC for proximity to boat ramps: the TAC requires intake structures to be 1,000 feet from public boat ramps.

Should the project not move forward, the existing system would not be able to meet water quality requirements. Sedimentation is a persistent issue within the current system, requiring frequent maintenance dredging to ensure proper functionality. Over time, sediment buildup reduces the capacity of water channels and reservoirs, hindering water flow and storage. This accumulation not only affects the efficiency of the system but also increases

long-term operational costs. Choosing the No-Action Alternative would cause an inability to meet the project purpose and need for water quantity.

Preferred Alternative

The preferred alternative is described above under the Project Description. The purpose of the preferred alternative is to provide a more reliable and sustainable water source for the District, which the No-Action Alternative would not provide.

The Preferred Alternative has a shorter raw water intake pipeline and raw water transmission pipeline than Alternative No. 1. The Preferred Alternative has the most direct path to the WTP and would require the least amount of construction on United States Army Corps of Engineers (USACE) property (including lake perimeter riparian/forested wetlands), while minimizing the conversion of prime or important farmland, and is in an area that would allow for impacts on aquatic resources to be avoided or minimized. In addition, the Preferred Alternative has the greatest possibility of meeting the construction completion goal.

The RWPS site in the Preferred Alternative was chosen over the location of Alternative No. 1 due to the proximity to the intake location to operate the pumps; its location outside of USACE property (per USACE request); the landowner requirements in the sale of the property; to avoid impacts on a WOTUS; and the ability to balance the cut and fill of the site to allow the final site grading required for an RWPS pump operating floor elevation of 280 feet NGVD (National Geodetic Vertical Datum), which is slightly above the lake's top of flood surcharge pool elevation 278.9 feet NGVD, providing a cost-effective means of overall grading.

Alternative Not Selected (Alternative No. 1)

There were a total of five main alternatives considered for the proposed project that all contain the same components; the alternatives were based on intake location. Several alternatives had variation in pipe alignments between the raw water pump station and the WTP. All alignment alternatives were identical north of FM 991.

The final two alternatives for consideration in this EA are the Preferred Alternative and Alternative No. 1. The only differences between the Preferred Alternative and Alternative No. 1 are the intake location on Wright Patman Lake, the location of the dredged channel, location of the raw water pump station, and the raw water main south of FM 991.

The intake for Alternative No. 1 would be located approximately 1000 feet south of the north normal shoreline of the lake in the general vicinity of the mouth of Rochelle Creek. This intake alternative would include a 300 LF dredged channel that would be 100 feet in width, a 9,200 LF intake pipeline of dual 84-inch diameter, and the construction of approximately 7 miles of raw water transmission pipeline.

Alternative No. 1 would adversely impact the Rochelle Flats Recreational Area during construction and with continuing operation and maintenance (O&M) throughout the life of the facilities. Alternative No. 1 would result in a greater loss of USACE property. However, in general, the types of impacts associated with the proposed alternatives would be similar. Permanent impacts would include the filling and dredging of WOTUS, potential disturbance of cultural and archaeological resources, and conversion of prime or important farmland and forested habitat. Permanent impacts to water quality due to the conversion of vegetated land may occur.

Temporary adverse impacts would result from trenching and boring needed to install the pipelines as well as soil laydown areas. Native vegetation would be intentionally cleared or inadvertently destroyed to support these activities. Water quality may be temporarily affected during construction activities, including dredging.

ENVIRONMENTAL REVIEW

Consistent with the requirements of the federally funded DWSRF Program, the District defined the social and environmental contexts of the project and assessed its potential impact. This information was presented in the EID and was made available to the community, regulatory agencies, and other interested parties.

Adverse effects on social and natural resources fall under the authority of various agencies. These regulatory agencies and participating area residents had the opportunity to address potential issues concerning construction practices, possible adverse effects within the project area, and the environmental conditions to be implemented during construction. The staff of the TWDB reviewed the EID, comments and other data and prepared the present EA.

AFFECTED ENVIRONMENT AND IMPACT ASSESSMENT

Existing Conditions

The project is located in the eastern portion of Bowie County, approximately 12 miles west of Texarkana, south of Leary, east of Redwater, and north of Wright Patman Lake.

Current land cover in the project area consists largely of forest, with some agriculture. The project will require 27.6 acres of permanent forest conversion for above-ground structures, including the access road, RWPS, and WTP. Trenching and boring for the pipeline construction would temporarily disturb approximately 210 acres of habitat, with approximately 68 acres of forest, grassland, and farmland would be permanently converted to mowed and maintained right-of-way (ROW). Approximately 11.2 miles of pipeline would be constructed, with a 50-foot ROW along the length of the alignment. The pipeline ROW would be open to grazing or farming after construction is complete. Trees and structures would not be allowed in the ROW post-construction. Approximately 1.2 miles of pipeline would be constructed using trenchless construction methods. Streams and wetlands would be crossed with directional boring where practicable. The project sites were chosen to

minimize impacts to USACE properties and assets, as well as additional environmental and other constraints.

Geology and Soils

The project is located within the Gulf Coast Plains – Blackland Prairie Physiographic Province of Texas, where chalks and marls weather to fertile clay soils, with a gentle, undulating surface.[2] Geologic formations which outcrop at the surface in the project area are the undivided Wilcox Group and the undivided Midway Group. Quaternary Alluvium may exist near low laying drainage areas in notable thickness over the Wilcox and Midway. These consist of light grey to reddish-brown, very fine to coarse sand interbedded with dark-colored clays and silts with a few gravels.

The undivided Wilcox Group of Tertiary age consists of mostly sands, silts, and clays that occur under sloping topography. The Wilcox Group is as much as 700 feet thick where the entire unit occurs, although it is expected to be 100-200 feet thick in the project area.

The Midway Group consists of clay shale that is poorly bedded with thin discontinuous laminations of silt and fine silty sand. The undivided Midway group of Tertiary age is characterized as a thick sequence of fine-grain marine sediments. The Midway Group is principally composed of massive clay, interbedded with minor amounts of silt and sand in varying proportions. The Midway Group is approximately 600 feet thick where the entire unit occurs. The upper section of the formation is yellow brown jointed clay shale that is soft and moist and has iron oxide staining along joint planes. Crystalline gypsum is infrequently found lining joint planes near the base of the weathered zone. Below the weathered zone, the shale is dark gray and generally not jointed. Wills Point and Kincaid formations of the Midway Group are reportedly not distinguishable east of Sulphur Springs.

Quaternary Alluvium is light grey to reddish-brown, very fine to coarse sand interbedded with dark-colored clay and silt with some gravel.

The east-west Luning-Mexia-Talco Fault system is in the vicinity of the project area; however, no displacement is anticipated to occur in the Tertiary or Recent sediments. The project is not located in a karst or pseudo-karst zone. The proposed project would not result in temporary or permanent impacts on geology.

Prime and important farmland occurring within the project footprint include Annona loam, 1 to 3 percent slopes (11% of project area); Blevins silt loam, 1 to 3 percent slopes (6.2%); Eylau very fine sandy loam, 0 to 3 percent slopes (3.4%); Rosalie loamy fine sand, 2 to 5 percent slopes (1.1%); and Sawyer silt loam, 0 to 3 percent slopes (20.2%).

Permanent impacts would result from building permanent structures, such as an access road, the pump station, and the water treatment plant. The areas disturbed by the proposed project are generally not currently being used for agricultural purposes; however, the

[2] Bureau of Economic Geology (1996). “Physiography of Texas.” The University of Texas at Austin.

facilities constructed over prime and important farmlands would technically reduce the area's potential agricultural productivity in the future. The proposed project would permanently convert 4.77 acres of prime farmland, and 9.07 acres of farmland of statewide importance.

The majority of the project entails linear subsurface construction; temporary adverse impacts to prime and important farmland include trenching required to install the raw and treated water mains, and soil stockpile areas. During project construction, these areas would not be able to support agricultural activities; however, upon completion of construction, these areas would regain their ability to support agricultural activities. The proposed project would temporarily convert 72.62 acres of prime farmland and 24.71 acres of farmland of statewide importance.

Some contaminated soils will occur at the TexAmericas site, which would be disposed of according to an Industrial Hazardous Waste Permit and would not be funded by the TWDB. Approximately 55,000 cubic yards of dredged material will be stored and dried at the project site and reused as compacted fill as is appropriate for the RWPS and intake structure. A 20-acre site has been identified for storage of dredged material. Other excavated material generated by open-cut trenching for pipe installation is anticipated to be reinstalled as backfill.

Water Resources

The project is located in the Sulfur River Basin and is underlain by the Carrizo-Wilcox major aquifer and the Nacatoch minor aquifer. The source of the District's water supply is from surface water, Wright Patman Lake, which is an impounded reservoir of the Sulphur River. There are no Environmental Protection Agency (EPA-designated) sole source aquifers in the project area. This project would increase the capacity of the District's water system, with increased withdrawals from the lake.

Permanent adverse impacts to water quality from paved parking lots and the maintenance access road will be minimized by on-site stormwater management systems consisting of drainage swales or curb and gutters. Runoff will be captured and filtered in inlet structures before discharging into local drain ways. All but approximately 29 acres of disturbed ground surface would be returned to pre-construction activity conditions.

Most WTP process residual strains will be recycled within the plant. However, filtrate from the WTP's sludge dewatering process as well as miscellaneous wastewater residual streams will be sent to an on-site sanitary lift station and pumped or hauled to the existing wastewater treatment plant (WWTP). The existing WWTP is located just south of the proposed WTP and currently discharges effluent into the East Fork Elliott Creek before the creek outlets approximately 5.2 miles downstream into the northernmost shore of Wright Patman Lake.

Increased water withdrawals from the Sulphur River would potentially result in a permanent reduction in the water available in its connected aquifer(s) and in surface water levels for upstream and downstream users and aquatic life.

Construction activity is anticipated to result in temporary adverse impacts by disturbing approximately 240 acres of ground surface area by temporarily and permanently removing vegetation cover including trees and dredging the lakebed. Dredged material consisting of 155,000 cubic yards of lake bottom silt will be placed at the RWPS site for dewatering. Dredging of the lake will be accomplished by barge mounted vacuum hydraulic rotary head dredge. Safety features such as a mesh intake will keep out fish and mussels. The mesh will have an air scour backwash. There will be no discharge of dredged material back to the lake. Material dredged from the lake will be pumped through a flexible hose to the dredged material dewatering area. Timber matting will be used under the flexible hose in selected areas to protect adjacent water resources and wetlands.

Three sites near the USACE Lake Property were chosen as the location for the dewatering operation and disposal of excavated or dredged soils. One of these areas will be located adjacent to the pipeline easement and equipped with mobile clarifiers for dewatering. Soil generated from the lake dredging will be recovered from the clarifiers and stored within a 9.38-acre dewatering area and two additional laydown areas for truck transport of any excess dewatered soils (10.27acres and 14.02 acres). These areas avoid aquatic resources or wetlands. The slurry will be pumped into the mobile clarifiers and the clarified water will be monitored to make sure the suspended sediment concentration is less than 300 parts per thousand before discharge. The clarified water will be discharged through a rock berm and allowed to sheet flow back to the lake.

During construction and haul activities, erosion and sediment control devices will be installed and maintained in accordance with the Texas Pollution Discharge Elimination System (TPDES) Construction General Permit (CGP) No. TXR150000. Timber matting, also known as swamp mats, will be employed adjacent to protected water features that may be within or near the raw water intake easement. All disturbed ground surface will be returned to pre-construction activity conditions. Stormwater best management practices (BMPs) including silt fencing, rock berms, concrete wash pits, etc., will be implemented as appropriate to contain surface water runoff, erosion, and sedimentation.

Topography and Floodplains

Elevation across the project area ranges from approximately 206 feet to 392 feet above mean sea level (AMSL). The topography of the project area is gently to moderately sloping. The dominant drainage is to the south from the project area via Elliott Creek or Rochelle Creek towards Wright Patman Lake. Dredging will occur on the lake floor at 206 feet AMSL, and the end of the treated water main occurs approximately 10 miles north at an elevation of 360 feet AMSL. North of the intake structure, elevations range from 225 to 392 feet AMSL, gradually gaining elevation as the alignment travels north.

The project is partially located within the floodplains of Rochelle Creek, Elliot Creek, East Fork Elliot Creek, and the Sulphur River/Wright Patman Lake. Bowie County participates in the National Flood Insurance Program (NFIP).

A Conditional Letter of Map Revision (CLOMR) is required as part of the proposed project because the RWPS, raw water intake structure, and intake piping construction activities would occur within the floodplain of Wright Patman Lake. The proposed pump station location is an 800-foot by 800-foot site with an average natural ground elevation of 260 feet. The pump station structure's finished floor elevation will be 280.0 feet. All stormwater runoff from the site's all-weather parking lot and access road will be conveyed to maintain current drainage patterns. The floodplain elevation at this site is 279.5 feet. The intake structure is to be located approximately 6,150 LF south of the pump station on the shoreline of Wright Patman Lake. Two 84-inch diameter raw water intake pipelines will be extended from the intake structure to the pump station at an average depth ranging between 15 feet and 60 feet and within a 300-foot wide permanent maintenance and construction easement. Although these structures and associated pipelines would be placed in the floodplain, there would be no increase in the base flood elevations from pre-project conditions to post-project conditions. No effects to lives and property associated with floodplain disturbance are anticipated, based on results of the CLOMR modeling. Therefore, no permanent adverse impacts to the Wright Patman Lake's 100-year floodplain would be expected under the proposed action.

A 24-foot-wide all-weather access road of approximately 5,900 LF will be constructed between the RWPS site and West 7th Street. The access road will join with and likely expand County Road 1236 near the crossing with the United Pacific Railroad.

Raw water transmission mains will be extended approximately 58,000 LF from the RWPS to a raw water equalization facility. The raw water mains would be constructed in two phases. The first phase will construct a 48-inch diameter water main within a 100-foot-wide easement with an average depth of six feet. The pipelines will cross the following water bodies and their respective floodplains: Elliott Creek and the East Fork of Elliott Creek at multiple locations. Where practicable, pipeline crossings of water bodies will be tunneled and constructed using trenchless methods to mitigate surface disturbance within those respective floodplains. No permanent, adverse impacts to the Elliott Creek or East Fork of Elliott Creek floodplains would be expected under the proposed action.

A 42-inch potable water transmission main will be extend approximately 16,000 LF from the water treatment plant site to a connection to the member city distribution system on Highway 82 (New Boston Road). The water main would be constructed along an existing roadway ROW and within a 100-foot-wide easement with an average depth of six feet.

A new WTP, including a high service pump station, and a raw water equalization facility will be constructed on a 41-acre site in Hooks, Texas. These facilities would be constructed just west and outside the 500-year floodplain limits of an unnamed tributary to the East Fork of Elliott Creek. No permanent adverse impacts to the 500- and 100-year floodplains of the East Fork of Elliott Creek would be expected under the proposed action.

The temporary impacts to the floodplains mentioned above would be a result of ground disturbance during construction. The ground surface of the project area will be disturbed during excavation of trenches and pits for pipeline construction and temporary clearing and access activities. Additionally, the possibility of sediment runoff or erosion could occur as a result of a storm during the construction period. Erosion has the potential to result in a temporary localized reduction in the water quality of Elliott Creek, the East Fork of Elliott Creek, and tributaries to Wright-Patman Lake. However, these construction activities will abide by the provisions of Section 402 of the Clean Water Act and Chapter 26 of the Texas Water Code and requirements of the TCEQ CGP TXR150000 and most current amendments. As required by CGP TXR150000, a stormwater management plan would be developed and implemented prior to initiating construction of the proposed project and TCEQ staff would oversee project activities. Sediment and erosion controls such as silt fencing, rock socks, rip rap, silt dikes, etc. would prevent disturbance to adjacent areas of the floodplain and would protect subject creeks from the influx of silt containing runoff. Spill control measures would be utilized when necessary and spill control kits would be readily available for use at the project sites where heavy equipment would be utilized. After excavation and installation activities are completed, the remaining affected floodplain areas would be graded, seeded, and restored to their previous conditions.

Wetlands, Streams, and Waters of the United States

The project area is located within the Elliott Creek-Wright Patman Lake United States Geological Survey (USGS) hydrologic unit code (HUC) 12 subwatershed. A wetland delineation report[3] was prepared in order to identify potential waterbodies along the project alignment. The proposed project will withdraw water from and dredge approximately 28 acres of Wright Patman Lake, an impoundment of the Sulphur River. Twenty-five perennial, intermittent, and ephemeral streams and 10 wetlands would intersect the project area. Some wetlands and streams would be avoided by using other-than-open-cut pipeline construction methods such as boring and tunneling. Approximately 11,650 LF of streams would incur temporary construction impacts and approximately 128 LF of streams would be permanently affected. Approximately 0.28 acres of wetlands would be temporarily affected as well as 0.02 acres permanently. A USACE jurisdictional determination was not completed to identify which waterbodies qualified as WOTUS. A detailed discussion of USACE permitting requirements is provided below in the Agency Coordination section.

Biological Elements

The project area is located within the Environmental Protection Agency (EPA) Level III South Central Plains Ecological Region (Pineywoods). Within this ecoregion, priority habitats identified in the Texas Conservation Action Plan for conservation of species of greatest conservation need (SGCN) include native prairies and glades, longleaf pine savanna, pineoak woodlands, riparian and bottomland hardwood forest, beech-magnolia

[3] Riverbend Water Resources District (December 2024). Riverbend Regional Water System Improvements Program, Delineation of Wetlands, Other Special Aquatic Sites and Other Waters, prepared by Pape-Dawson Engineers, Inc.

forest, beech-white oak forest, and freshwater wetlands including oxbows, swamps, baygalls, seeps, springs, bogs, fens, flatwood ponds, floodplain canebrakes, and floodplain wetlands. The project area potentially contains riparian and bottomland hardwood forest, longleaf pine savanna, pineoak woodlands, beech-white oak forest, and floodplain wetlands, and may also contain other priority habitats.

The vegetation communities within and around the project area primarily include pine hardwoods and willow-oak-water oak-blackgum forest.[4] Loblolly pine (*Pinus taeda*) and shortleaf pine (*Pinus echinata*) stands adjacent to the project site are used for timber harvest. The project area partially occurs directly within the Wright Patman Lake Recreational Management Area (RMA) managed by the USACE. The vegetation described by the USACE in 1985 for the RMA was sparsely vegetated parks habitat.[5] Vegetation observed includes pepper vine (*Nekemias arborea*), yaupon holly (*Ilex vomitoria*), balloon vine (*Cardiospermum halicacabum*), willow oak (*Quercus phellos*), overcup oak (*Quercus lyrata*), water hickory (*Carya aquatica*), water elm (*Planera aquatica*), loblolly pine (*Pinus taeda*), woolly croton (*Croton capitatus*), American pokewood (*Phytolacca americana*), sweetgum (*Liquidambar styraciflua*), honey locust (*Gleditsia triacanthos*), and maleberry (*Lyonia ligustrina*). Wildlife within the project area include game species such as white-tailed deer (*Odocoileus virginianus*), eastern wild turkey (*Meleagris gallopavo silvestris*), mourning dove (*Zenaida macroura*), fox squirrel (*Sciurus niger*), feral hogs (*Sus scrofa*), swamp rabbit (*Sylvilagus aquaticus*), eastern cottontail (*Sylvilagus floridanus*), and several waterfowl such as mallard (*Anas platyrhynchos*) and wood duck (*Aix sponsa*). Other wildlife in the project area include raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), armadillo (*Dasypus novemcinctus*), skunk (*Spilogale putorius*), mink (*Neovison vision*), muskrat (*Ondatra zibethicus*), and several other rodent, bat, and bird species.[5]

Wright Patman Lake within the project areas is currently assigned as a Group 5 water, defined as streams or waters where no federal or state listed freshwater mussels occur, but mussels are known to occur; or perennial streams or waters where it is anticipated that live freshwater mussels may occur, but presence or diversity have not been confirmed. The 2020 Fisheries Management Survey/Performance Report for Wright Patman Lake outlines Management Strategies that include annual aquatic plant surveys and low frequency electrofishing.[6] There is little aquatic vegetation in Wright Patman Lake owing to annual water level changes, local turbidity, and bathymetry. Stadig and Bister (2020) state that the lack of vegetation may have a role in low abundance and therefore low catch rates of largemouth bass (*Micropterus salmoides*). Consequently, the Texas Parks and Wildlife Department (TPWD) and the USACE partnered to introduce artificial ‘reef’ habitats in five locations on the outer boundary of the lake, including mossback structures and PVC trees.[6]

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[4] McMahan, C.A., Frye, R.G., and Brown, K.L. (1984). The Vegetation Types of Texas. Wildlife Division, Texas Parks and Wildlife Department. Austin, TX.
[5] U.S. Army Corps of Engineers (USACE; 1985). Final Environmental Impact Statement for the operation and maintenance of Wright Patman Lake (formerly Texarkana Lake). Prepared by USACE Fort Worth District, Fort Worth, TX.
[6] Stadig, M.H., and Bister, T.J. (2020). Lake Wright Patman 2020 Fisheries Management Survey Report. As required by federal aid in sport fish restoration act Texas federal aid project F-221-M-4. Inland Fisheries Division Monitoring and Management Program, Marshall District, TX.

Wright Patman Lake is primarily stocked for game and sport-associated fish species, including gizzard shad (*Dorosoma cepedianum*), threadfin shad (*Dorosoma petenense*), blue catfish (*Ictalurus furcatus*), channel catfish (*Ictalurus punctatus*), white bass (*Morone chrysops*), bluegill (*Lepomis marcochirus*), longear sunfish (*Lepomis megalotis*), redear sunfish (*Lepomis microlophus*), white crappie (*Pomoxis annularis*), and black crappie (*Pomoxis migromaculatus*). There are also records of other species, such as longnose gar (*Lepisosteus osseus*), alligator gar (*Atractosteus spatula*), freshwater drum (*Aplodinotus grunniens*), Asian carp (*Cyprinus carpio*), and American paddlefish (*Polyodon spathula*).

Databases of sensitive species maintained by the United States Fish and Wildlife Service (USFWS) and the TPWD were reviewed to verify any state and/or federally listed threatened or endangered species that occur, or have historically occurred, in Bowie County, and potential impacts to them resulting from the proposed project.

The alligator snapping turtle (*Macrochelys temminckii*; federally proposed threatened, state-listed threatened), tricolored bat (*Perimyotis subflavus*; federally proposed endangered), and monarch butterfly (*Danaus plexippus*; federally proposed threatened) may be found in the project area and have the potential to be affected by the proposed project. If these species are listed prior to or during construction, activities will cease, and the USFWS will be consulted to assess for potential impacts. The Texas Natural Diversity Database (TXNDD) identified a known occurrence of the alligator snapping turtle within Elliot Creek less than two miles from the proposed raw water pipeline construction area. The USFWS assessment also identified the bald eagle (*Haliaeetus leucocephalus*) and western chicken turtle (*Deirochelys reticularia miaria)* as species of concern in the project area. The American burying beetle (*Nicrophorus americanus*; federally threatened) may also be temporarily impacted by project activities. Mitigations for avoidance of impacts to these species are incorporated into this EA as special conditions and described below.

Additional state-listed species with the potential to occur in the project area and to be affected by project activities include the black bear (*Ursus americanus*; threatened), Bachman's sparrow (*Peucaea aestivalis;* threatened), swallow-tailed kite (*Elanoides forficatus*; threatened), white-faced ibis (*Plegadis chihi*; threatened), wood stork (*Mycteria americana*; threatened), blackside darter (*Percina maculata*; threatened), chub shiner (*Hiodon alosoides*; threatened), shovelnose sturgeon (*Scaphirhynchus platorynchus*; threatened), and western creek chubsucker (*Erimyzon claviformis*; threatened). 42 SGCN species that are not currently state- or federally listed including the eastern spotted skunk (*Spilogale putorius*), Franklin's gull (*Leucophaeus pipixcan*), southeastern myotis bat (*Myotis austroriparius*), eastern box turtle (*terrapene carolina*), pigmy rattlesnake (*Sistrurus miliarius*), and timber rattlesnake (*Crotalus horridus*) may have potential habitat in the project area and may be affected by project activities. Approximately 68 acres of potential habitat would be permanently converted to mowed and maintained ROW, with temporary impacts from vegetation clearing occurring over approximately 210 acres.

The installation of the water intake structure will temporarily disturb soil within the project area, particularly where the excavation trench is located. Construction vehicles will require the largely temporary removal of trees and other vegetation along the route, with

revegetation efforts following trench construction. Soil disturbance will also occur but will be confined to the trench and vehicle paths. Construction noise may temporarily disturb wildlife. Permanent land conversion of forested habitat will occur at the WTP, RWPS, and raw water intake sites. Once the intake structure is installed, the area will have the infrastructure needed for future residential and agricultural development, which may further impact wildlife due to land clearing.

The installation of the water intake structure will cause increased sedimentation from trench excavation, potentially impacting the benthic invertebrate community and altering fish food availability, with effects limited to the trench area. Temporary noise and water disturbance may also affect nearby fish populations during excavation. Temporary adverse impacts to aquatic biological resources may include increased turbidity and sedimentation across the lake due to dredging activities. However, BMPs will be implemented to minimize these temporary adverse effects on aquatic resources.

Impounded waters like Wright Patman Lake often have very little structure and aquatic vegetation.[6, 7, 8] Therefore, the installation of the water intake structure could redistribute debris and brush to the bottom of the basin which may provide cover for juvenile fish and aquatic invertebrates. The elevation change in the basin and debris/brush piles could also improve angling. Therefore, the installation of the water intake structure and pipe could have a beneficial impact on Wright Patman Lake.

The 1,000-foot dredge channel will not significantly increase or decrease the lakebed terrain to have adverse effects on the wildlife in the lake. While the dredge channel will create a temporary disturbance during construction due to operations, the long-term effects of a dredge channel up to 8,000 feet are minimal for aquatic species considering the size of Wright Patman Lake. Dewatering activities can impact aquatic resources through stranding fish and mussels. Other construction activities can trample, dredge, or fill areas exhibiting stationary aquatic resources such as plants and mussels. BMPs will be used to mitigate these impacts per the requirements of Section 404 of the Clean Water Act and state regulations for the protection of aquatic species. Some of these are incorporated into this EA as special conditions.

The movement of invasive and exotic species such as zebra mussels (*Dreissena polymorpha*) is regulated by the TPWD. Construction equipment coming into contact with surface waters could transport invasive species where mud, plant debris, or water accumulate. Unwashed equipment entering the site could contain contaminated mud, debris or standing water in crevices and are a risk of transporting aquatic invasive species to the site, especially if the equipment is coming from a previous job that involved work in other water bodies. Additionally, equipment leaving the construction site at the end of the job could contain contaminated material if contaminants are unknowingly present at the project

[7] Bassett, C.E. (1994). Use and evaluation of fish habitat structures in lakes of the eastern USDA Forest Service. Bulletin of Marine Science 55(2-3): 1137-1148.
[8] Bolding, B., Bonar, S., and Divens, M. (2004). Use of artificial structures to enhance angler benefits in lakes, ponds, and reservoirs: a literature review. Reviews in Fisheries Science 12: 75-96.

site. The District will acquire the appropriate permitting in coordination with the TPWD prior to construction to mitigate potential impacts of transporting invasive aquatic species.

While construction and dredging activities take place, use of the lake's recreation areas and other areas adjacent to the route will be limited and hunting and ATV activities may be reduced. Boating activities during operation of the barge would be limited only during dredge activities. The project crosses at the transition point between Poor Boy Road and ATV Trail No. 10. This plan involves constructing dredge dewatering areas adjacent to ATV Trail No. 10, laying a pipeline from these areas to the intake location, and establishing an intermediate tunnel shaft laydown area where Poor Boy Road meets ATV Trail No. 10. No temporary or permanent impacts to the ATV Trail No. 10 are anticipated, as vegetation clearing is not required at this location and the pipeline will be bored beneath the existing trail.

Lake level fluctuations due to potential dewatering at the intake site and dredged area are not expected to cause significant impacts on parks, recreational areas, or nature preserves. Projected fluctuations in lake levels are anticipated to be minor and short-lived, ensuring that the availability and natural aesthetics of these areas remain preserved.

The proposed action area transverses the City of Redwater Community Park and Sports Complex. The proposed project includes the installation of buried waterline abutting the baseball field at the park. Temporary impacts include the removal of approximately three acres of forest onsite and noise and visual disruptions during construction. The majority of the alignment at this location will be re-forested after construction with site-specific native trees, per the agreement made in a City of Redwater city council meeting described in the Public Participation section below. However, approximately 0.88 acres of forest at this park would be permanently converted to mowed and maintained ROW. The agreement also specified that the walking path should be replaced, drainage should be corrected at the project site, and specific trees would need to be preserved along the walking path.

No state or national parks, forests, wildlife refuges, wild or scenic rivers, or natural areas or other similar preserves are located within the project area. There was no designated critical habitat within the project area.

Mitigation measures for affected species and habitat include the following: all affected wetlands will be side-cast and backfilled using 6 to 12 inches of topsoil excavated from the trench to minimize long-term habitat destruction; construction contractors will be advised of potential occurrence in the project area; to protect birds during construction, vegetation clearing or disturbance will be conducted outside of the general bird nesting season, tricolored bat pupping season, and bald eagle breeding season, January through September 15; if clearing or disturbing vegetation during the general bird nesting season is unavoidable, nest surveys will be conducted no more than five days prior to construction; vocalization playback survey protocols specific to the Bachman's sparrow will be utilized to detect and avoid nests; should active eagle nests be found, construction will avoid those areas and establish a minimum buffer zone of 660 feet in accordance with recommended guidelines; streams will be bored, when feasible, to avoid impacts; safety features such as a

mesh intake with an air scour backwash will be utilized to prevent impacts to fish and mussels at the dredge and intake locations; vegetation within the project area will be restored to preconstruction conditions, with native species reestablished in undeveloped areas; the intake access road is planned to follow the existing Cotton Ford Road and would utilize the same easement as the existing pipelines where possible to minimize impacts on disturbed areas; prior to any vegetation disturbance, large hollow trees will be inspected for the presence of bats; removal of such trees will be avoided to protect the habitat for this species; if proposed actions will occur below the ordinary high water mark or within the water of Wright Patman Lake and suitable streams, the appropriate mussel survey protocol will be utilized; silt fencing will be installed around the project area; prior to any vegetation disturbance the fenced in area will be walked (surveyed) for the presence of wildlife; three streams will be bored to avoid aquatic habitat.

Cultural Resources

As part of project compliance with Section 106 of the National Historic Preservation Act, the District coordinated with the following Tribal Nations: Alabama-Coushatta Tribe of Texas, Apache Tribe of Oklahoma, Caddo Nation of Oklahoma, Choctaw Nation of Oklahoma, Coushatta Tribe of Louisiana, Muscogee (Creek) Nation, Osage Nation, Tonkawa Tribe of Indians of Oklahoma, and Wichita and Affiliated Tribes (Wichita, Keechi, Waco, and Tawakonie) of Oklahoma. If no Tribal Historic Preservation Officer was identified for a Tribe, a coordination letter was provided to the listed chairperson. Two responses were received. The Alabama-Coushatta Tribe of Texas Tribal Historic Preservation Officer stated that the entity does not have comment or concern but requested to be updated as needed. The Muscogee (Creek) Nation responded that the project is occurring in the Nation's area of interest, requested to review the final cultural resources survey report, and to be contacted if an inadvertent discovery of cultural resources is made. On March 23, 2025, the report was sent to the Muscogee Nation.

A cultural resources survey[9] was performed under Texas Antiquities Permit No. 31813. Results of the initial desktop review for cultural, archaeological, and historical resources indicated that approximately 7.12 miles of the area of potential effect (APE) was previously assessed under Section 106 of the National Historic Preservation Act (NHPA), so the subsequent field investigation was limited to an approximately 5.0-mile alignment, totaling 115.27 acres. Previously recorded archaeological sites within or directly adjacent to the proposed APE were re-visited.

The cultural resources field investigation consisted of a background literature review, targeted metal detection, and a pedestrian survey supplemented with systematic shovel testing. Four sites were revisited. The scope of work was approved by the Texas Historical Commission (THC) and the USACE on June 17, 2024, and amended on December 8, 2024. Initial shovel testing was conducted on July 14 to 18, 2024. Archaeological site revisits were

[9] Basse, K., et. al. (February 2025). Cultural Resources Investigation for the Riverbend Water Resources District (RWRD) Water System Improvements Project, Bowie County, Texas. Prepared by Pape-Dawson Engineers, LLC for Riverbend Water Resources District. Texas Antiquities Permit No. 31813.

conducted from December 3 to 8, 2024. A total of 213 shovel tests, as well as metal detection along a specific path were performed within the APE. No new cultural features or materials were observed during site revisits conducted within the APE. The re-visited sites were not re-identified and therefore, are not anticipated to be impacted by project undertakings within the APE. Therefore, no direct permanent or temporary impacts of the project on cultural resources/historic properties are anticipated. The project is not within the protected area surrounding a historic cemetery, structure, or district.

Hazardous Materials

Pape-Dawson Engineers, Inc. conducted a Phase I Environmental Site Assessment (ESA) for the proposed project to identify recognized environmental conditions (RECs) along the project corridor.[10] This study was conducted in general accordance with American Society of Testing and Materials (ASTM) guidelines. The following is excerpted from the report's summary.

No structures, hazardous materials, or petroleum products were observed within the project corridor during the site reconnaissance. However, a natural gas gathering pipeline was identified along the south portion of the project corridor. The pipeline is currently in service and is operated by Sulphur River Gathering, LLC. The environmental records review and site reconnaissance did not identify evidence of releases associated with the pipeline within the project corridor; therefore, the presence of the pipeline is not considered a REC. For engineering planning purposes, a subsurface utility engineering (SUE) firm should be used for identifying the precise depth and location of the pipeline. Should any visual or olfactory evidence of a release from the pipeline be observed during construction, a qualified environmental professional should be contacted to evaluate the area.

An aboveground storage tank (AST) was observed on a parcel within the project corridor. The AST was empty and appeared to be out of service at the time of the site visit and no soil staining was observed. Two debris piles consisting of household trash and tires were observed, and trash bins and stored PVC pipes were also observed at another parcel.

The project corridor traverses across the southeast corner of the Redwater Wastewater Treatment Plant (WWTP). Although not located within the project corridor, a shed storing equipment, tools, and materials is located adjacent to and west of the alignment. Two ASTs, four 55-gallon drums, open containers of used oil, and minor soil staining was observed on the west side of the shed.

The AST and debris piles should be removed from the project corridor and recycled or disposed of at a permitted facility. If any soil staining is observed following removal, the affected soils should be scraped and properly disposed of followed by sampling conducted

[10] Pape Dawson Engineers, Inc. (June 23, 2025). Riverbend Region Water System Improvements Program (RRWSIP) Phase I Environmental Site Assessment. Prepared for Riverbend Water Resources District.

by an environmental professional. If future modifications to the project corridor cause the boundary to shift towards the shed within the WWTP, this area should be re-evaluated.

This assessment also revealed a railroad crossing. Petroleum hydrocarbon releases associated with fuel leaks and spills as well as lubricants are commonly associated with railroad tracks. Therefore, the presence of the railroad track crossing in the project corridor is considered an REC. Any excavated soils generated during construction from the railroad crossing should be sampled to facilitate re-use or disposal options.

A separate Phase I ESA was performed specifically for the TexAmericas Center property, which was formerly the Lone Star Army Ammunition Plant.[11] The proposed water pipeline alignment traverses across the former Lone Star Army Ammunition Plant (LSAAP) in addition to other neighboring parcels located in Bowie County, Texas.

As a result of historical land use operations, the former LSAAP property is registered as a corrective action site under Industrial Hazardous Waste Permit (IHWP) No. 50292 / Industrial Solid Waste Registration (SWR) No. 30991 pertaining to releases from onsite solid waste units including the High Explosive Detonation Ground (HEDG); High Explosive Burning Grounds (HEBG); G-Ponds Area (closed chromic acid ponds); Old Demolition Area (ODA); Area A Landfill; Western Inactive Landfill (WISL); and Unit 55 Test Area, some of which are still retained by the U.S. Army due to ongoing cleanup efforts. Additionally, due to the nature of former site operations, munitions and explosives of concern (MEC) are still a potential concern for certain areas of the site.

Approximately 8,984 acres of the 15,589- acre former LSAAP complex was transferred from federal ownership (U.S. Army) to the Red River Redevelopment Authority (now operating as the TexAmericas Center) in September 2010. Prior to the transfer of ownership, the U.S. Army had undertaken its own environmental study of the property and concluded that the property was suitable for redevelopment. Upon the transfer of ownership, the TexAmericas Center is obligated to uphold special environmental protection provisions outlined in the referenced deed document to ensure the protection of human health and the environment.

Primary tenants of the environmental provisions include:

- The property shall be used for commercial/industrial land use only;
- The access or use of groundwater shall not occur without prior written approval of the U.S. Army and the TCEQ;
- Groundwater monitor wells may not be destroyed, removed, inactivated, or interfered with;
- Ground disturbance activities in designated MEC areas may not be conducted without the express written consent of the U.S. Army; and
- Ground disturbance of onsite landfills is restricted.

[11] Matrix Environmental Services (March 2022). Phase I Environmental Site Assessment Proposed Non-Potable and Industrial Waterline Corridor Lake Wright Pitman [*sic*] to Water Treatment Plant TexAmericas Center East Campus Business Park, Bowie County, Texas. Prepared for Pape Dawson Engineers, Inc., on behalf of the Regional Water Resources District.

In a preliminary telephone conference with Pape-Dawson personnel and the TCEQ on September 9, 2021, to discuss potential conflicts with the proposed project alignment within the LSAAP site, TCEQ staff indicated that although no groundwater plumes exist in areas that have been released from the IHWP, heavy metals are present in soils along with a very low possibility of unexploded ordinance (UXO). In subsequent email correspondence on September 13, 2021, TCEQ staff confirmed that the TCEQ does not believe that there appears to be a concern about areas within the proposed alignment or the area being studied for the location of the WTP. However, since this property was formerly utilized as a U.S. Army ammunition plant there is a small probability (1%) that during excavation activities munitions debris (MD) and/or MEC may be encountered. It was recommended that prior to excavation, a metal detector or other geophysical equipment be used to clear the alignment. However, in the event that MD and/or MEC is encountered during construction and/or excavation, notification of appropriate TexAmericas Center and U.S. Army personnel is required. Based on the TCEQ's initial feedback, Pape-Dawson anticipates discussing a geophysical survey of the alignment near the HEDG and HEBG areas of concern prior to construction.

The TWDB does not fund the testing, remediation, removal, disposal, or related work for contaminated or potentially contaminated materials though, where found, all hazardous materials should be disposed of according to local, state, and federal laws.

Demographics

A demographic analysis was performed by Pape-Dawson Engineers, Inc. on March 10, 2022, within a 0.5-mile radius of the project area using data originating from the United States Census. Data include the population, percentage of minority residents, percent low income, and per capita income for the project area, for comparison with data for the county and state.

Area	Population	Percent Minority	Percent Below Poverty Level	Per Capita Income
State of Texas	28,995,881	58.8	13.4	$31,277
Bowie County	93,245	36.9	17.4	$27,095
City of Texarkana	36,317	50.6	21.7	$28,375
Project Area (0.5-mile buffer)	1,185	10	-	$25,878

The demographic analysis indicates that the area within 0.5 mile of the project has a portion of the population greater than the city, county and state average who have incomes less than or equal to the state's official poverty level.

The proposed project would require an average monthly service rate increase per connection of approximately 11 to 15 dollars total spread over the next seven years and will not require an increase in taxes to finance the debt. People or businesses will not be

relocated as a result of the project and eminent domain is not anticipated. The residents near the project area will be the recipients of benefits derived from the proposed project. Therefore, the project will not disproportionately, adversely impact minority or low-income populations.

Secondary and Cumulative Impacts

The proposed project is consistent with local community plans. No indirect or cumulative impact on sensitive populations or demographic changes to the community would be expected as a result of the proposed project. Indirect economic benefits of the proposed project include an additional source of water to increase the capacity of the area's potable water system to meet projected demand for the District. Without a new water treatment plant, water quality will decrease as the existing facilities age. Once the intake structure is installed, the area will have the infrastructure needed for future residential and agricultural development, which may cause adverse cumulative impacts to wildlife due to land/habitat clearing. Induced development could also affect waters of the U.S., water quality, and floodplains.

The proposed project will be designed to facilitate future expansion, including adoption of the URC. Effects on natural and cultural resources associated with the URC may be considered secondary effects of the project as proposed. Impacts related to the raising of lake levels associated with the URC are currently being evaluated by the USACE under their NEPA review process and will determine any required mitigations.

Temporary increases in air emissions will occur from construction machinery; however, air quality will not be adversely impacted in the project vicinity after construction is complete. The proposed project will contribute to increasing noise and nighttime lighting in the areas with permanent above-ground infrastructure, which can affect wildlife cycles and migration.

Construction will temporarily affect forested views along the pipeline route and water treatment plant site, though construction will largely occur in areas surrounded by forest and in an industrial area, without many direct residential neighbors. The intake site and booster pump station are located at a recreational lake and may alter views at those locations.

The proposed project includes a new access road off Goodson Road, which will be used for construction traffic and ongoing operation of the pump station of the project. The project also includes the installation of a water pipeline within easements along ROW but is not anticipated to adversely impact traffic or require rerouting of any traffic. The temporary effects on any traffic will be limited to the 18- to 24-month construction period.

AGENCY COORDINATION AND COMPLIANCE

To ensure due consideration of the project's potential impact, the District prepared an EID describing the results of that investigation, held an open meeting to familiarize the community with the project and solicit public comment, and coordinated with all required regulatory agencies and other interested parties to define and avoid, minimize, or mitigate

adverse effects. The District has provided assurance that environmental conditions will be implemented in a manner consistent with the requirements of state and federal regulatory agencies and rules of the TWDB.

"Cross-Cutter" Compliance

The project has been reviewed for potential impacts to the quality of the environment following the procedures provided in 31 Texas Administrative Code § 371.41, to ensure compliance with DWSRF program requirements and federal and state regulations, including the federal cross-cutting environmental authorities from the EPA listed below.

(1) National Environmental Policy Act of 1969, Public Law (PL) 91-190
(2) Archeological and Historic Preservation Act of 1974, PL 93-291
(3) Clean Air Act, 42 USC 7506(c)
(4) Coastal Barrier Resources Act, 16 USC 3501 *et seq*.
(5) Coastal Zone Management Act of 1972, PL 92-583, as amended
(6) Endangered Species Act, 16 USC 1531, *et seq.*
(7) Executive Order 11593, Protection and Enhancement of the Cultural Environment
(8) Executive Order 11988, Floodplain Management, as amended by Executive Order 12148
(9) Executive Order 11990, Protection of Wetlands
(10) Farmland Protection Policy Act, 7 USC 4201, *et seq.*
(11) Fish and Wildlife Coordination Act, PL 85-624, as amended
(12) National Historic Preservation Act of 1966, PL 89-665, as amended
(13) Safe Drinking Water Act, § 1424(e), PL 92-523, as amended
(14) Wild and Scenic Rivers Act, PL 90-542, as amended
(15) The Wilderness Act, 16 USC 1131, *et seq*.
(17) Flood Insurance Reform Act of 2004, PL 108-264
(18) National Flood Insurance Reform Act of 1994, PL 103-325
(19) Flood Disaster Protection Act of 1973, as amended, PL 93-234
(20) Clean Water Act, PL 92-500, as amended

Agency Coordination

This environmental review included coordination with various state and federal regulatory agencies, Native American groups, local authorities, and other stakeholders and interested parties regarding the project's potential impact. The District submitted notifications to and requests for input from all required parties. Some entities did not require a response. The respondents are listed below, and the results of coordination are summarized in the EID and reflected in the environmental conditions.

- United States Army Corps of Engineers, Regulatory Branch, Fort Worth District, in accordance with Section 404 of the Clean Water Act; and Section 10 of the Rivers and Harbors Act of 1899 (USACE Project Nos. SWF-2017-00342)
- Texas Historical Commission, State Historic Preservation Officer, Austin in accordance with Section 106 of the National Historic Preservation Act; Antiquities Code of Texas; and other applicable regulations (Texas Antiquities Permit No.

31813, THC Tracking Nos. 202312304, 202400874, and 202505168, and 202507595)
- Texas Parks and Wildlife Department, Wildlife Division, Ecological & Environmental Planning Program, Austin, in accordance with the Endangered Species Act of 1973, as amended; Migratory Bird Treaty Act; Texas Parks and Wildlife Code; and other applicable regulations (TPWD Project No. 51247)
- United States Fish and Wildlife Service, Arlington Ecological Services Field Office, in accordance with the Endangered Species Act and statutes affecting other federally protected species (USFWS Project Code No. 2024-0130720)
- United States Department of Agriculture, Natural Resources Conservation Service pursuant to the Farmland Protection Policy Act
- Texas Commission on Environmental Quality in accordance with 40 CFR Part 93 and National Ambient Air Quality Standards (TCEQ NEPA Request No. 2020-062)

No response was received or required from the following entities:

- Bureau of Reclamation, Oklahoma-Texas Area Office
- Bureau of Land Management
- Local Floodplain Administrator pursuant to the National Flood Insurance Program (NFIP)
- Local government (City Mayors and County Commissioners)

United States Army Corps of Engineers

The proposed project will be constructed partially within the RMA controlled by the USACE. Therefore, separate USACE reviews were conducted for the proposed project: one for those components occurring on USACE property, and another for impacts to aquatic resources under USACE jurisdiction outside of USACE property.

On December 28, 2023, the USACE, Fort Worth District Office, Regulatory Branch staff issued a No Permit Required Letter for the following activities occurring on USACE property (Project No. SWF-2017-00342).

- Use of suction dredging methods to construct an 8,200 LF canal/channel in Lake Wright Patman
- Construction of the intake structure in uplands [above the ordinary high water mark]
- Access roads in uplands
- Staging areas in uplands
- Dredge disposal area in uplands

In a letter dated April 9, 2025, the USACE verified that the pipeline construction across the project length appeared to be authorized under Nationwide Permit 58 for Utility Line Activities for Water and Other Substances (Project No. SWF-2017-00342).

A USACE FONSI, containing the Pape-Dawson Environmental Assessment (EA), was issued on May 21, 2025, for the portion of the project within the RMA. The finding concurred with the above permits and determined that the preferred alternative identified was the Least Damaging Practicable Alternative and avoids and minimizes impacts to aquatic resources to the maximum extent practicable.

Archaeological investigations of the area of potential effect (APE) were conducted to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966 (as amended) and its implementing regulation 36 CFR Part 800. USACE's determination of "no historic properties identified" was coordinated with the THC on February 24, 2025; THC responded on March 20, 2025 in agreement. USACE consulted with Tribal Nations on February 24, 2025, and did not receive comment.

Pursuant to Section 7 of the Endangered Species Act of 1973, the USACE determined that the proposed project would not affect federally listed species or their designated critical habitat.

As part of the USACE finding, the District agreed to mitigate potential environmental impacts of the proposed project by implementing best management practices (BMPs) and precautionary measures. These include erosion control, waste disposal during construction, and careful management of water resources to minimize adverse effects on the local environment and wildlife. The project will utilize existing roads where practicable and will improve dirt roads to permanent facilities. Vegetation impacts will be mitigated according to the Wildlife Habitat Appraisal Procedure (WHAP).

Texas Historical Commission

The cultural resources survey report was reviewed by the THC staff in accordance with Section 106 of the NHPA and the Antiquities Code of Texas for both the entire length of the project and for the USACE cultural resources assessment. The THC staff concurred with District in correspondence dated February 14, 2025, and March 6, 2025, that no direct impacts to cultural resources/historic properties are anticipated as a result of the proposed project (Texas Antiquities Permit No. 31813, THC Tracking Nos. 202312304, 202400874, and 202505168, and 202507595). The THC recommended that if buried cultural materials are uncovered during construction, work should immediately cease in that area and the Archeology Division of the THC should be notified.

Texas Parks and Wildlife Department

The TPWD Wildlife Division, Ecological & Environmental Planning Program staff reviewed the project in accordance with the Texas Parks and Wildlife Code, and provided a response dated September 7, 2023 (TPWD Project No. 51247). The TPWD staff made recommendations and in correspondence dated January 8, 2024, Pape-Dawson, on behalf of the District, responded regarding their commitment to the recommendations. Recommendations related to mitigations of potential impacts to migratory birds, the tricolored bat (federally proposed endangered), alligator snapping turtle (federally proposed

threatened, state listed threatened), bald eagle, Bachman's sparrow (state listed threatened), western creek chubsucker (state listed threatened), species of greatest conservation need (SGCN), and other aquatic organisms including fish and mussels, are reflected in the environmental conditions of this environmental finding. Recommendations were also made for the prevention of the spread of invasive species such as zebra mussels. Due to potential sensitive or priority habitat within the EPA Level III South Central Plains (Pineywoods) ecoregion, the TPWD recommended conserving priority habitats of the ecoregion if found within the project area and noted that fragmentation and loss of these habitats was discouraged.

United States Fish and Wildlife Service

The USFWS Arlington Ecological Services Field Office, in accordance with the Endangered Species Act and statutes affecting other federally protected species, was given the opportunity to review the project through the Information for Planning and Consultation (IPaC) system (Project Code No. 2024-0130720). The USFWS technical assistance letter dated June 13, 2025, issued a *No Effect* determination for the listed species in the project area and a formal Section 7 consultation was not required. The letter notes that the project intersects the western chicken turtle range. As part of the bald eagle assessment, the District responded that project activities would not occur within 660 feet of a bald eagle nest, which would require nest surveys to determine, prior to construction. In further correspondence on August 14, 2023, the USFWS concurred that based on the project information and IPaC consultation, impacts to federally listed species would be highly unlikely.

Texas Commission on Environmental Quality

In a response dated April 27, 2020, the TCEQ stated that a review of the proposed project for general conformity impact, in accordance with 40 CFR Part 93 and Title 30, TAC § 101.30, indicates that Bowie County is currently unclassified or in attainment for the National Ambient Air Quality Standards for all six criteria air pollutants (TCEQ NEPA Request No. 2020-062). Therefore, general conformity rules do not apply. The proposed project is in compliance with the State Implementation Plan and the Clean Air Act. The TCEQ further noted that no long-term environmental impacts are anticipated as long as construction and waste disposal activities are completed in accordance with applicable local, state, and federal permits, statutes, and regulations.

United States Department of Agriculture – Natural Resource Conservation Service

As required by the Farmland Protection Policy Act (FPPA), the United States Department of Agriculture - Natural Resources Conservation Service (USDA-NRCS) reviewed the proposed project. In a response dated March 3, 2022, the USDA-NRCS determined that the project was exempt from the provisions of the FPPA due to the installation of pipelines and appurtenances not being considered a permanent conversion of farmland.

PUBLIC PARTICIPATION

The project is consistent with local, regional, and statewide planning. Coordination with the appropriate governmental agencies has been made and no unmitigable adverse comments have been received.

Public participation conducted during project planning included multiple public meetings. The most recent public meetings where the EID was available for review were held at 6:30 p.m. on January 7, 2025, in Texarkana, Texas, and at 6:30 p.m. on January 8, 2025, in Atlanta, Texas. Notice of the meetings were advertised in the *Texarkana Gazette,* and the *Cass County Citizen's Journal-Sun,* respectively, newspapers of general circulation in the service area. The notices were published five times in the month leading to the meetings, and contained information regarding the availability of planning documents, including the EID, for public review in centrally accessible locations. A notice was also published on *TXK Today, a*n online news media outlet with a Facebook page, and flyers were posted at strategic locations in Texarkana. Key stakeholders in the region were contacted individually.

28 people attended the meeting at the Texarkana City Hall, 18 of whom were members of the public and not part of the project team. Representatives of the District and Pape-Dawson Engineers presented the purpose and description of the proposed project and its alternatives and discussed the EID. Seven questions were asked during the meeting, and all were answered by project representatives until no questions remained. Attendees asked questions about the capacity of the project and water levels at Wright Patman Lake.

Public comments on the EID and about the project were solicited during the meetings and their advertisement. One comment inquired where the funding for the project had been spent. Pape-Dawson responded that there is oversight on federal financing; the finances are audited and can be requested from the TWDB, and that the majority of the TWDB funds are for construction which has not yet begun. Another commenter provided input on which alternative they believed was appropriate (the preferred alternative).

There were 18 people in attendance at the Atlanta City Hall, eight of whom were members of the public and not part of the project team. Representatives of the District and Pape-Dawson Engineers presented the purpose and description of the proposed project and its alternatives and discussed the EID. No questions or comments were received.

To satisfy Texas Parks and Wildlife Code (PWC) Chapter 26, Protection of Public Parks and Recreational Lands, requirements, the District presented the proposed project at a City of Redwater city council meeting on May 20, 2024, due to the pipeline crossing at the City of Redwater Community Park and Sports Complex. Representatives of the District and Pape-Dawson Engineers discussed the proposed project and its alternatives and presented a request for an easement on the public parkland. The meeting notice was published three times in the *Texarkana Gazette* starting one month prior to the meeting. On May 29, 2024, the Mayor Pro Tem of the City of Redwater issued a letter stating that there was no feasible and prudent alternative to the use or taking of the parkland and that the project included all reasonable planning to minimize harm to the land resulting from its use or taking. The letter

noted that the walking path should be replaced, drainage should be corrected at the project site, and specific trees would need to be preserved along the walking path.

ENVIRONMENTAL CONDITIONS

An environmental review of the project consistent with NEPA has been completed following the guidelines provided in 31 TAC § 371.45. Mitigation measures were defined through the agency coordination process and public participation and are listed below as applicable environmental conditions. These conditions will pertain to the project throughout construction and beyond as warranted. Based on information provided by the District, the proposed Riverbend Regional Water System is considered environmentally sound with the following special and standard environmental conditions:

Special Environmental Conditions

- Consistent with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899, the proposed project, including all stream crossings, will be constructed in compliance with the terms and conditions of United States Army Corps of Engineers (USACE) Nationwide Permit 58 for Utility Line Activities for Water and Other Substances (Project No. SWF-2017-00342).
- Consistent with the Flood Insurance Reform Act of 2004, federal Executive Order 11988 as amended by EO 13690, Texas Water Code Section 16.315, and local floodplain development ordinances, a floodplain development permit will be obtained from the local floodplain administrator prior to construction in, across, or under a Special Flood Hazard Area, and any requirements contained therein will be adhered to.
- In accordance with agreements with the United States Fish and Wildlife Service (USFWS) and the Texas Parks and Wildlife Department (TPWD), nest surveys will be conducted according to the USFWS Eagle Management Program prior to vegetation clearing and/or construction activities. If eagle nests are found, clearing and construction activities will avoid those areas, establishing a minimum buffer zone of 660 feet, in accordance with recommended guidelines.
- Consistent with an agreement between the District and the City of Redwater, the pipeline easement crossing the City of Redwater Community Park and Sports Complex will be re-forested after construction with site-specific native trees, except the 50-foot easement directly above the pipeline. The District will consult with the City on which trees will be preserved along the walking path at the park.
- The proposed project will be designed and constructed in accordance with mitigation agreements made in the issuance of the USACE Finding of No Significant Impact, issued May 21, 2025, and corresponding Environmental Assessment including but not limited to the contents of the Wildlife Habitat Appraisal Procedure (WHAP), the TPWD special conditions below, and the following best management practice for the avoidance of protected species.
    - Two perennial (S-10 and S-14) and one intermittent stream (S-13) along the pipeline route that have been found to be suitable habitat for the alligator

snapping turtle (*Macrochelys temminckii*) will be installed using directional drilling or other trenchless methods to avoid potential impacts.

- As per an agreement with the TPWD, Ecological & Environmental Planning Program (TPWD Project No. 51247), to ensure compliance with 31 Texas Administrative Code (TAC) Chapters 52 and 57, Texas Parks and Wildlife Code, Chapters 1, 12, 64, 66, 67, and 68, the Endangered Species Act of 1973 (ESA), as amended, the Migratory Bird Treaty Act, and applicable federal regulations pertaining to protected and invasive species, including but not limited to the alligator snapping turtle, Monarch butterfly (*Danaus plexippus*), American burying beetle (*Nicrophorus americanus*), tricolored bat (*Perimyotis subflavus*), black bear (*Ursus americanus*), eastern spotted skunk (*Spilogale putorius*), Bachman's sparrow (*Peucaea* aestivalis), Franklin's gull (*Leucophaeus pipixcan*), wood stork (*Mycteria americana*), swallow-tailed kite (*Elanoides forficatus*), white-faced ibis (*Plegadis chihi*), bald eagle (*Haliaeetus leucocephalus*), western chicken turtle (*Deirochelys reticularia miaria)*, southeastern myotis bat (*Myotis austroriparius*), eastern box turtle (*terrapene carolina*), pigmy rattlesnake (*Sistrurus miliarius*), timber rattlesnake (*Crotalus horridus*), western creek chubsucker (*Erimyzon claviformis*), blackside darter (*Percina maculata*), chub shiner (*Hiodon alosoides*), and shovelnose sturgeon (*Scaphirhynchus platorynchus*), the following measures will be implemented:
    - Vegetation clearing must be excluded during the general bird nesting season and tricolored bat pupping season, March 15 through September 15, to avoid adverse impacts to breeding birds and tricolored bats. If vegetation clearing during this time is unavoidable, the area proposed for disturbance will be surveyed by a qualified biologist to identify occupied nests and pupping habitat, not more than five days prior to clearing activities. If occupied nests or bat roosts or hibernacula are observed during surveys, a vegetation buffer area of no less than 100 feet in diameter will remain around the nest or roost until all young have fledged; however, the size of the buffer zone depends on various factors and can be coordinated with the local or regional USFWS office. State and federal regulations as currently interpreted do not permit incidental take.
    - If vegetation clearing cannot be avoided during the nesting season in suitable Bachman's sparrow habitat, vocalization playback survey protocols that are specific to the sparrow will be utilized to detect and avoid nests.
    - The District will avoid the removal of trees that have hollows, as they provide suitable habitat for roosting bats such as the tricolored bat. If removal cannot be avoided, large, hollow trees will be inspected for the presence of bats; likewise, culverts will be inspected for bats prior disturbance and if any culverts are installed, they will be designed to maintain low flows to sustain the movement of aquatic species.
    - If tricolored bats, alligator snapping turtle, or the Monarch butterfly become federally listed prior to vegetation clearing and/or construction, the District will conduct additional coordination with the United States Fish and Wildlife Service to ensure compliance with the ESA.
    - Vegetation within the project area will be restored to preconstruction conditions, with native species reestablished in undeveloped areas.

- Contractors and construction crews will be provided with informational materials identifying potential protected species that may occur in the project area and instructing them on how to avoid impacts to wildlife that are encountered: If wildlife are encountered, the animals will be allowed to leave the area safely. Wildlife in danger from project activities that will not readily leave the site can be translocated to a nearby area with similar habitat. Any translocation of reptiles will occur within 100-200 yards from the initial encounter location. State-listed species will be handled only by persons with authorization obtained through the TPWD.
- If priority habitats are found in the project area, as outlined in the Texas Conservation Action Plan for the Environmental Protection Agency (EPA) Level III South Central Plains ecoregion, the project will be designed to avoid and/or minimize impacts to these priority habitats.
- If construction occurs when water is present in any waterbody and dewatering, fill, or trampling activities are involved, the District will coordinate with the TPWD Kills and Spills Team (KAST) for the appropriate permits prior to construction. Construction within Wright Patman Lake will be coordinated with KAST prior to commencement. Mussel surveys will be conducted as necessary, in coordination with KAST and the USACE.
- If construction equipment is anticipated to come into contact with surface waters, an aquatic invasive species (AIS) transfer prevention plan will be prepared and implemented.
- To avoid impacts to the alligator snapping turtle and other aquatic habitat, design methods will be utilized that allow for the growth of riparian and lakeshore vegetation to the extent practicable. Clearing of mature trees in riparian zones will be minimized. Disturbance to inert microhabitats in waterways such as snags, brush piles, fallen logs, pools, cutbanks, root balls, and gravel stream bottoms will be avoided. If impacts are unavoidable, in-water structures within the waterway will be replaced to the maximum extent feasible. Replaced structures should be situated in a manner consistent with pre-construction conditions (e.g., diameter of logs, distance from the riverbank).
- To avoid impacts to the alligator snapping turtle, during construction, trucks and equipment will use existing bridges to cross creeks, and equipment staging areas will be located in previously disturbed areas outside of riparian corridors.
- Affected wetlands will be side-cast and backfilled using 6 to 12 inches of topsoil excavated from the trench to minimize long-term habitat destruction.
- Safety features such as a mesh intake with an air scour backwash will be utilized to prevent impacts to fish and mussels at the dredge and intake locations.
- To avoid impacts to the alligator snapping turtle, eastern box turtle, pigmy rattlesnake, and timber rattlesnake, the judicious placement of sediment control fence will be used to exclude protected wildlife from the construction area. An exclusion fence will be buried at least six inches and be at least 24 inches high. The exclusion fence will be maintained for the project's life and

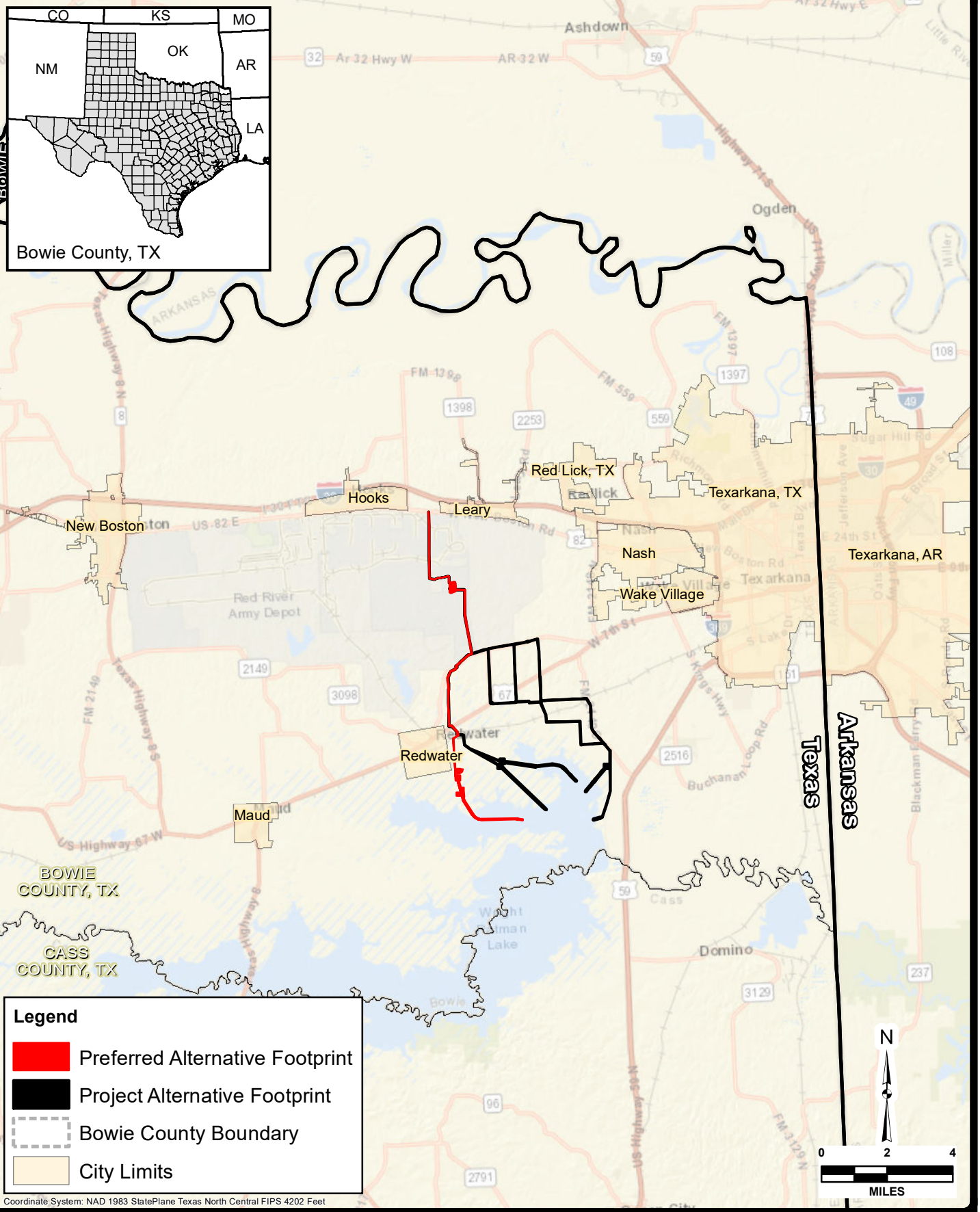
removed after construction is completed and the disturbed site is revegetated using site-specific native vegetation. For linear project components, such fencing will be installed and maintained for only the active construction area. Construction personnel will be advised to examine the inside of the exclusion area daily to determine if any wildlife species have been trapped inside the area of impact and provide safe egress opportunities prior to initiation of construction activities.

- Permanent structures will be designed to utilize the minimum amount of nighttime light needed for safety and security for lighted structures at the water treatment plant, elevated storage tank site, and pump stations. Lights will be focused downward with cutoff luminaries to avoid light emitting above the horizontal. During construction, lighting will only be illuminated when needed, will only be as bright as needed, will be fully shielded, and will minimize blue light emissions.
- For soil stabilization and revegetation, no-till drilling, hydromulching (avoiding plastic ingredients), and/or hydroseeding will be used rather than erosion control blankets or mats, which pose an entanglement hazard to wildlife. If erosion control blankets or mats cannot be avoided, products that contain no netting or loosely woven natural fiber netting will be used, avoiding any type of plastic netting.
- The length of trenches left open at any given time during construction will be minimized. Trenching and backfilling activities will be kept close together in time. Trenches and excavation areas will be covered overnight and/or inspected every morning or if left open longer than two daylight hours to ensure no wildlife species have been trapped. If trenches cannot be backfilled the day of initial trenching, then escape ramps will be installed every 300 feet, in the form of short lateral trenches or wooden planks sloping to the surface at an angle of less than 45 degrees, at a ratio of one horizontal foot for every one foot of depth.

Standard Environmental Conditions

- Consistent with the TWDB Supplemental Construction Contract Conditions (TWDB-0550), the Riverbend Water Resources District (District) will abide by the standard emergency condition for the discovery of cultural resources.
- Consistent with the TWDB Supplemental Construction Contract Conditions (TWDB-0550), the District will abide by the standard emergency condition for the discovery of threatened and endangered species.

Therefore, it is recommended that a Finding of No Significant Impact be issued.



Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet

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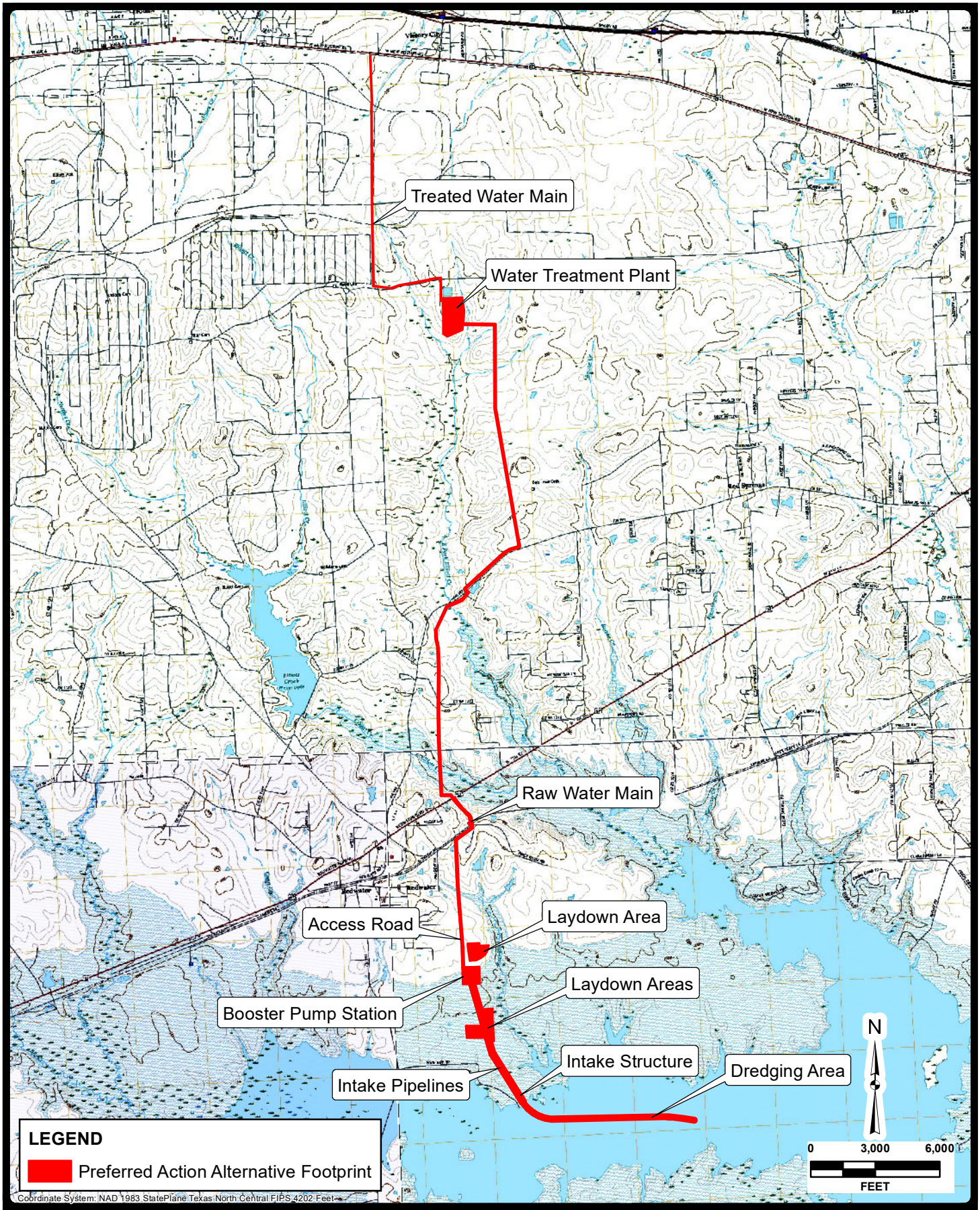
JOB NO.	70176-00
DATE	Jan 2024
DESIGNER	KT
CHECKED	HW
DRAWN	RT
SHEET	APPENDIX A-1

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document
REGIONAL LOCATION MAP

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



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JOB NO.	70176-00
DATE	Jan 2024
DESIGNER	KT
CHECKED	HW
DRAWN	RT
SHEET	APPENDIX A-2

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

USGS TOPOGRAPHIC MAP

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

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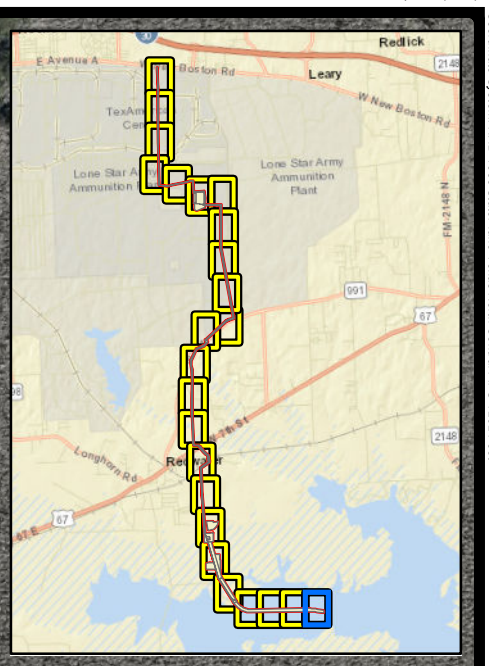

LEGEND

Preferred Action Alternative Project

Project Component

Dredging

N

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FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
SHEET	APPENDIX A-3

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

PROJECT FOOTPRINT MAP, SHEET: 1 of 24

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

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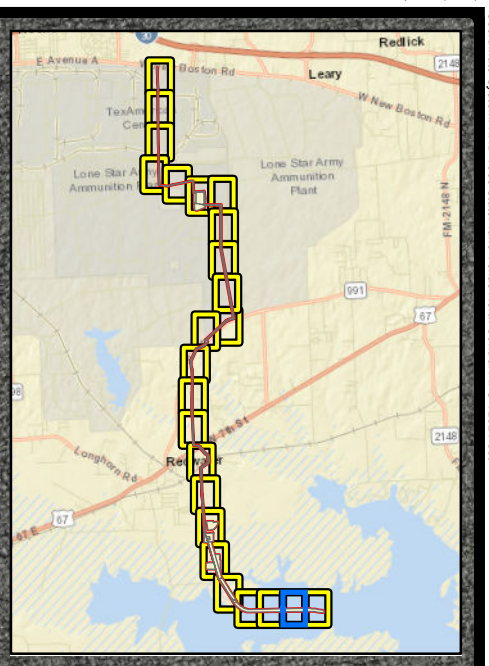

LEGEND

Preferred Action Alternative Project

Project Component

Dredging

N

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FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
SHEET	APPENDIX A-3

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

PROJECT FOOTPRINT MAP, SHEET: 2 of 24

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

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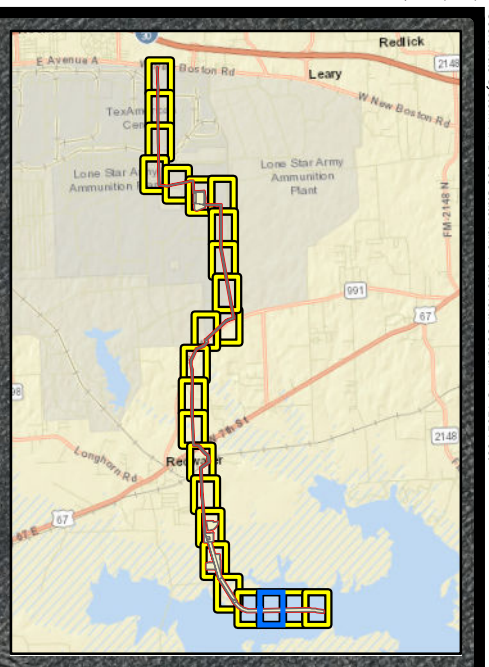


LEGEND

Preferred Action Alternative Project

Project Component

Dredging

N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
SHEET	APPENDIX A-3

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

PROJECT FOOTPRINT MAP, SHEET: 3 of 24

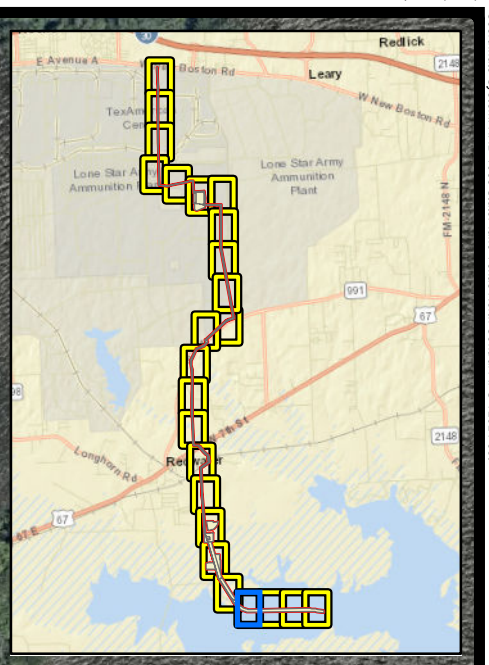
PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Jan 05, 2024 5:04:45 PM User: rwolinsky
File: W:\projects\701\76\00\GIS\ENV\EID\70176-00_EID_Footprint_Mapbook_.mxd

Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet



LEGEND

Preferred Action Alternative Project

Project Component

Dredging

N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
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RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

PROJECT FOOTPRINT MAP, SHEET: 4 of 24

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Jan 05, 2024 5:04:47 PM User: rwolinsky
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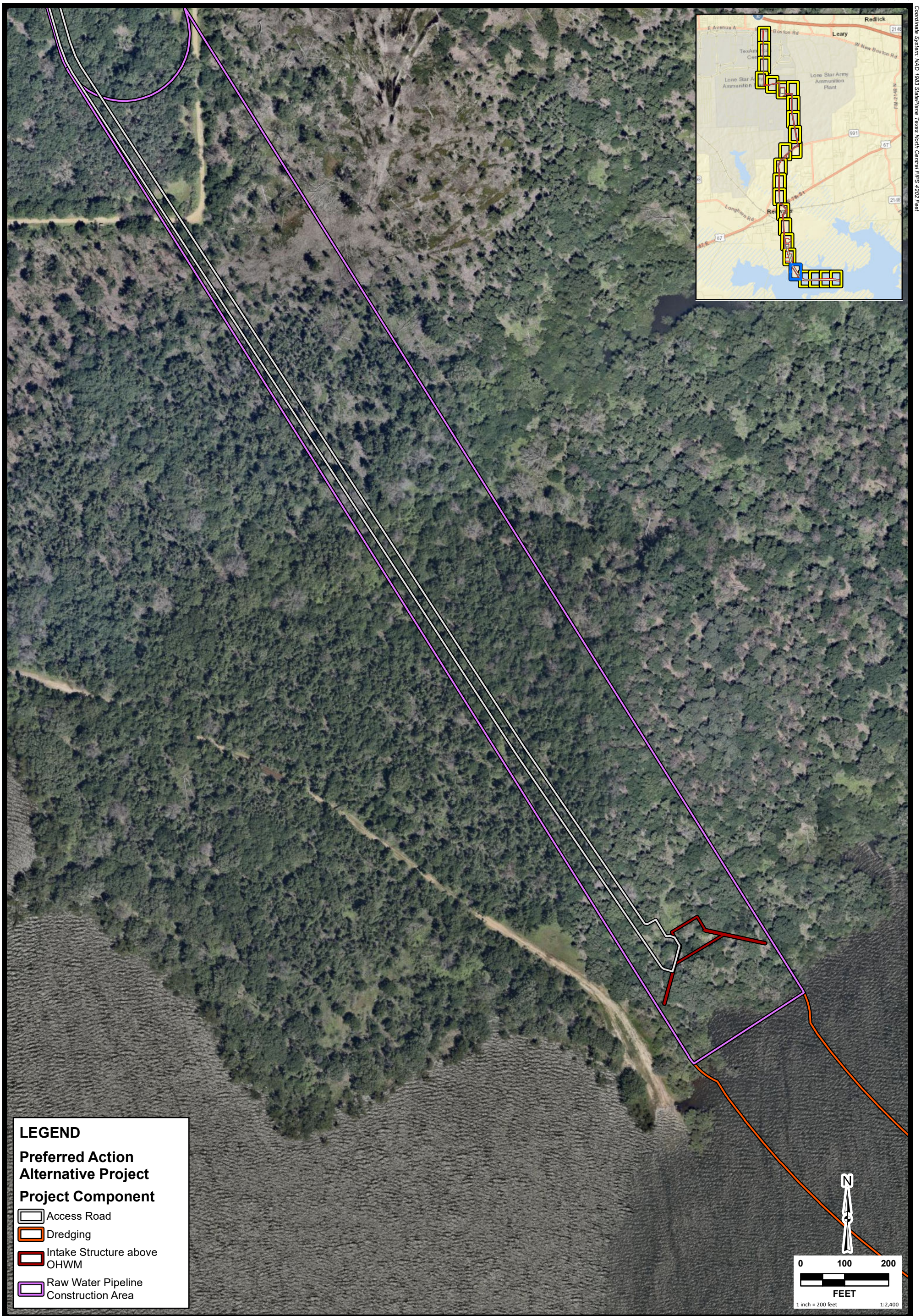
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet



JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
SHEET	APPENDIX A-3

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

PROJECT FOOTPRINT MAP, SHEET: 5 of 24

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Jan 05, 2024 5:04:50 PM User: rwolinsky
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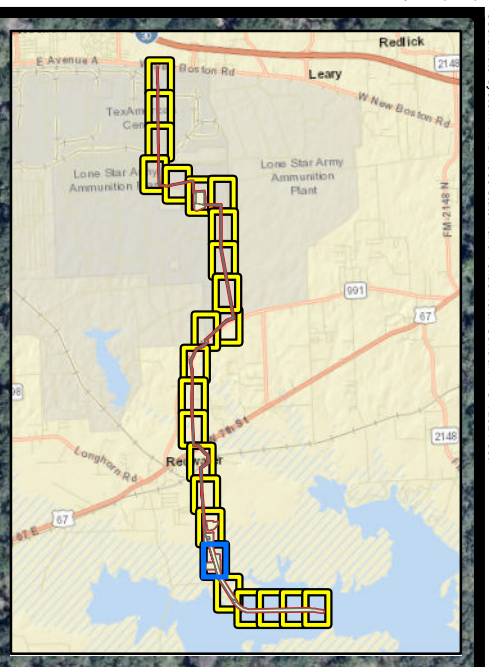
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet



LEGEND

Preferred Action Alternative Project

Project Component

- Access Road
- Dredge Dewatering and Laydown Area
- Raw Water Pipeline Construction Area

N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
SHEET	APPENDIX A-3

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

PROJECT FOOTPRINT MAP, SHEET: 6 of 24

PAPE-DAWSON ENGINEERS

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2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Jan 05, 2024 5:04:52 PM User: rwolinsky
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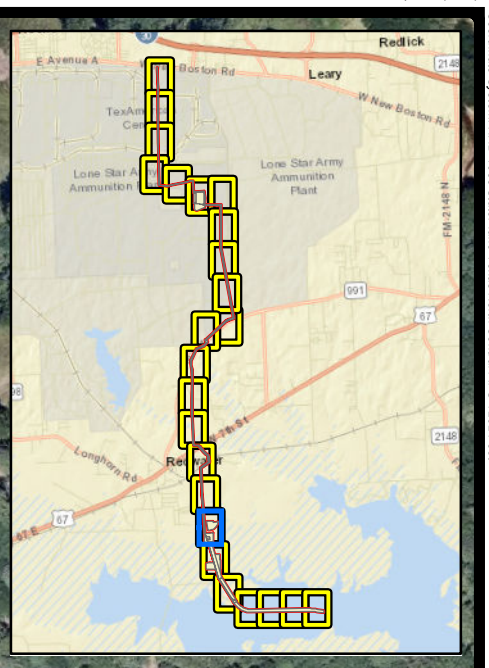
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet



LEGEND

Preferred Action Alternative Project

Project Component

- Access Road
- Booster Pump Station
- Booster Pump Station Easement
- Dredge Dewatering and Laydown Area
- Raw Water Pipeline Construction Area

N

0 100 200
FEET
1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
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RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

PROJECT FOOTPRINT MAP, SHEET: 7 of 24

PAPE-DAWSON ENGINEERS
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2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Jan 05, 2024 5:04:54 PM User: rwolinsky
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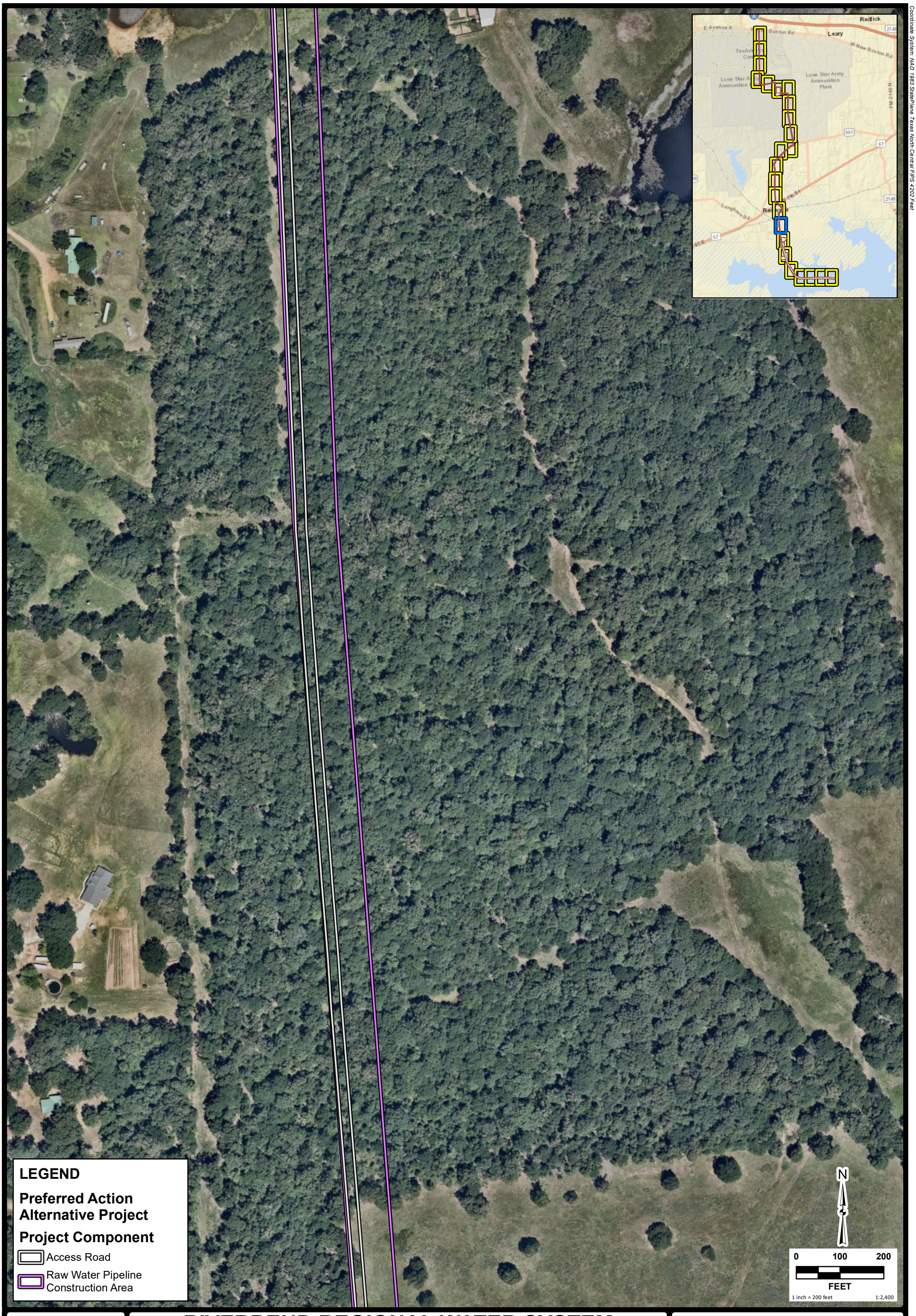
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet



JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
SHEET	APPENDIX A-3

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

PROJECT FOOTPRINT MAP, SHEET: 8 of 24

PAPE-DAWSON ENGINEERS
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2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

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Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet

JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
SHEET	APPENDIX A-3

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

PROJECT FOOTPRINT MAP, SHEET: 9 of 24

PAPE-DAWSON ENGINEERS
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2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Jan 05, 2024 5:11:32 PM User: rwolinsky
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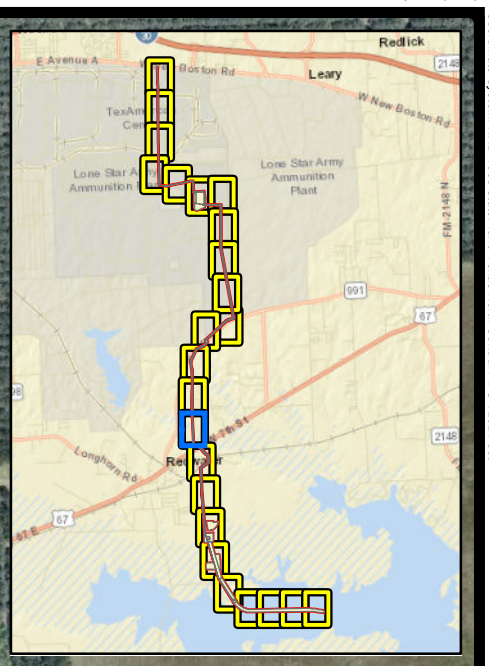
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet



LEGEND

Preferred Action Alternative Project

Project Component

- Raw Water Pipeline Construction Area
- Sports Complex - Recreational Uses
- Non-Recreational Uses

N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
SHEET	APPENDIX A-3

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

PROJECT FOOTPRINT MAP, SHEET: 10 of 24

PAPE-DAWSON ENGINEERS

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2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Jan 05, 2024 5:05:01 PM User: rwolinsky
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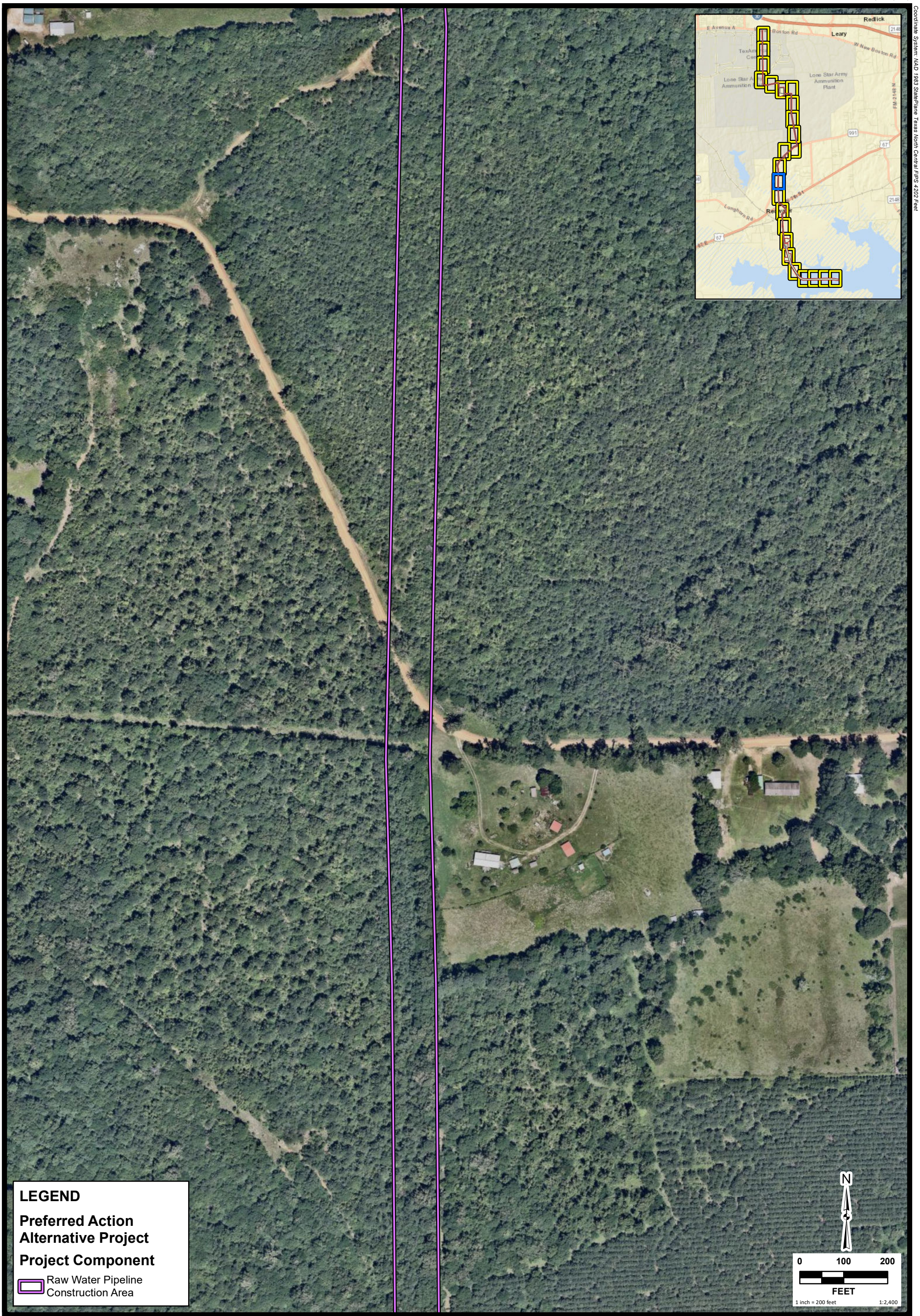

JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
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RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

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PROJECT FOOTPRINT MAP, SHEET: 11 of 24

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Jan 05, 2024 5:05:03 PM User: rwolinsky
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Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet

JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
SHEET	APPENDIX A-3

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

PROJECT FOOTPRINT MAP, SHEET: 12 of 24

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Jan 05, 2024 5:05:06 PM User: rwolinsky
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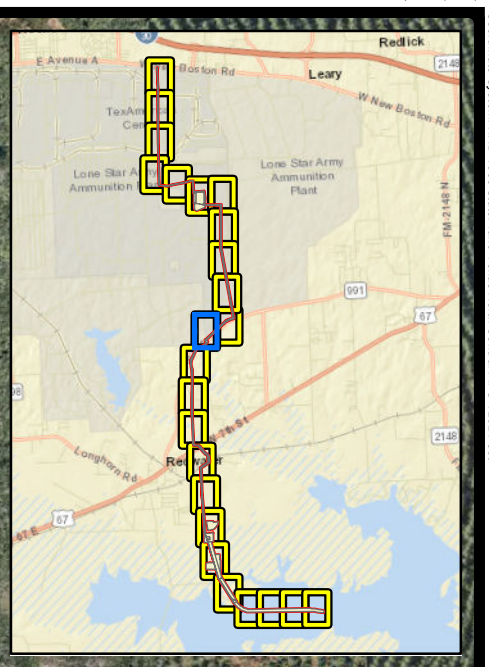
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet



LEGEND

Preferred Action Alternative Project

Project Component

Raw Water Pipeline Construction Area

N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
SHEET	APPENDIX A-3

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

PROJECT FOOTPRINT MAP, SHEET: 13 of 24

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Jan 05, 2024 5:05:08 PM User: rwolinsky
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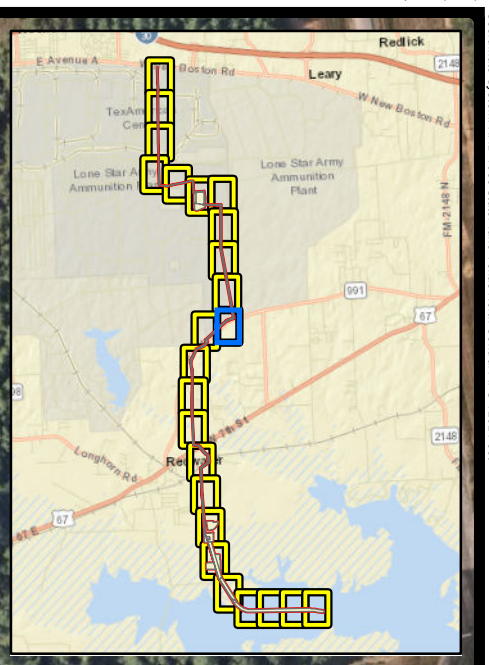
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet



LEGEND

Preferred Action Alternative Project

Project Component

Raw Water Pipeline Construction Area

N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
SHEET	APPENDIX A-3

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

PROJECT FOOTPRINT MAP, SHEET: 14 of 24

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Jan 05, 2024 5:05:11 PM User: rwolinsky
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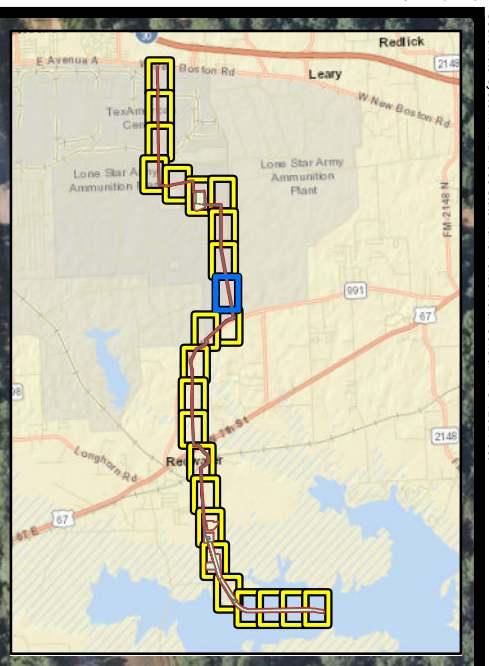
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet



LEGEND

Preferred Action Alternative Project

Project Component

Raw Water Pipeline Construction Area

N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
SHEET	APPENDIX A-3

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

PROJECT FOOTPRINT MAP, SHEET: 15 of 24

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Jan 05, 2024 5:05:13 PM User: rwolinsky
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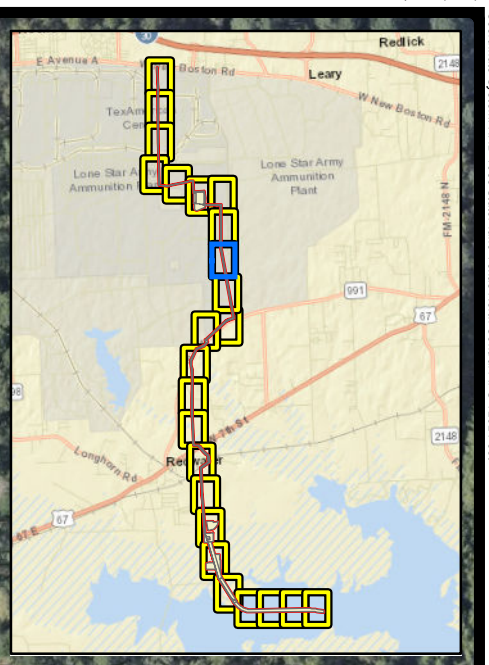
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet



LEGEND

Preferred Action Alternative Project

Project Component

Raw Water Pipeline Construction Area

N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
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RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

PROJECT FOOTPRINT MAP, SHEET: 16 of 24

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Jan 05, 2024 5:05:15 PM User: rwolinsky
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Source: nearmap.com (2022)

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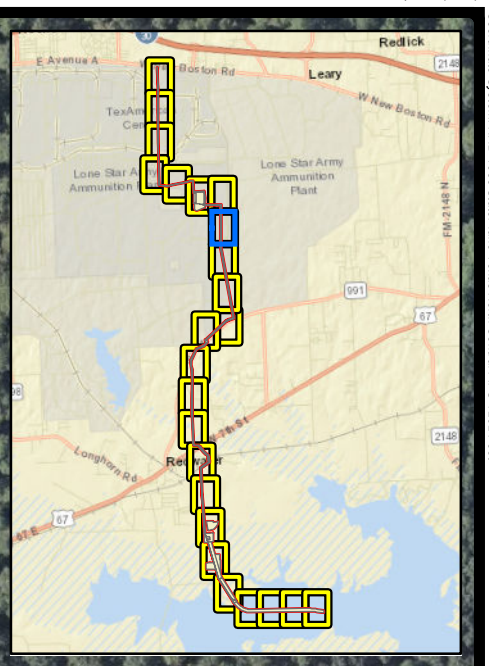

LEGEND

Preferred Action Alternative Project

Project Component

Raw Water Pipeline Construction Area

N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
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RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

PROJECT FOOTPRINT MAP, SHEET: 17 of 24

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Jan 05, 2024 5:05:17 PM User: rwolinsky
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Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet

JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
SHEET	APPENDIX A-3

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

PROJECT FOOTPRINT MAP, SHEET: 18 of 24

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Jan 05, 2024 5:05:19 PM User: rwolinsky
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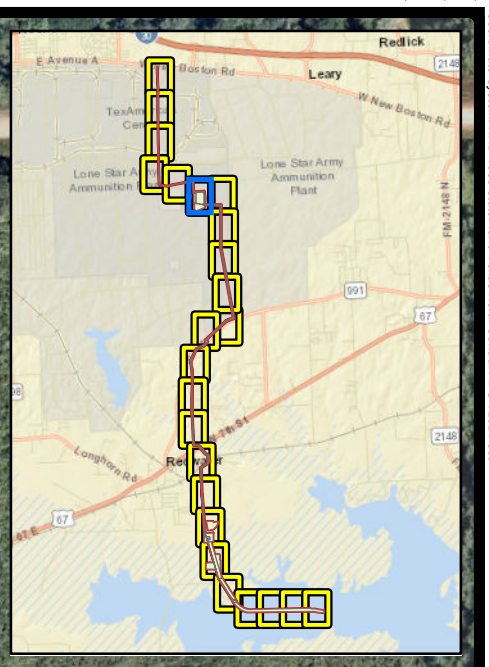
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet



LEGEND

Preferred Action Alternative Project

Project Component

- Raw Water Pipeline Construction Area
- Treated Water Pipeline Construction Area
- Water Treatment Plant
- Water Treatment Plant Easement

N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
SHEET	APPENDIX A-3

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

PROJECT FOOTPRINT MAP, SHEET: 19 of 24

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Jan 05, 2024 5:05:22 PM User: rwolinsky
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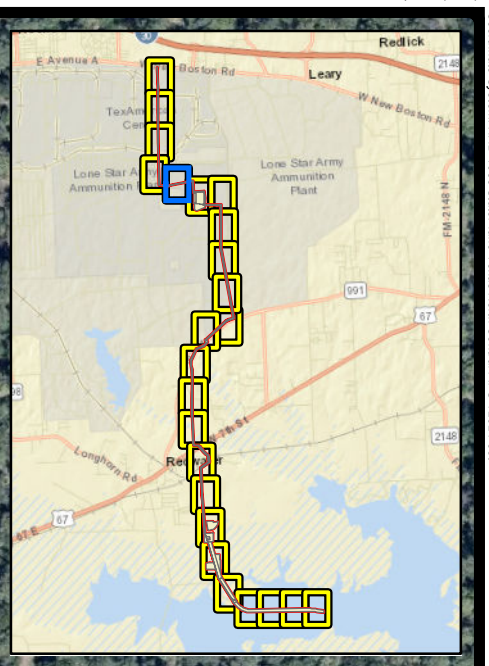
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet



LEGEND

Preferred Action Alternative Project

Project Component

Treated Water Pipeline Construction Area

N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
SHEET	APPENDIX A-3

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

PROJECT FOOTPRINT MAP, SHEET: 20 of 24

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Jan 05, 2024 5:05:24 PM User: rwolinsky
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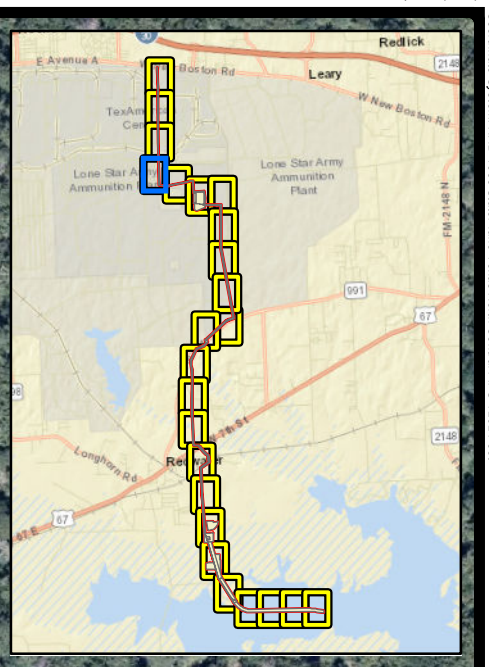
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet



LEGEND

Preferred Action Alternative Project

Project Component

Treated Water Pipeline Construction Area

N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
SHEET	APPENDIX A-3

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

PROJECT FOOTPRINT MAP, SHEET: 21 of 24

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Jan 05, 2024 5:05:26 PM User: rwolinsky
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Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet

JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
SHEET	APPENDIX A-3

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

PROJECT FOOTPRINT MAP, SHEET: 22 of 24

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Jan 05, 2024 5:05:28 PM User: rwolinsky
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Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet

LEGEND

Preferred Action Alternative Project

Project Component

Treated Water Pipeline Construction Area

JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
SHEET	APPENDIX A-3

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

PROJECT FOOTPRINT MAP, SHEET: 23 of 24

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Jan 05, 2024 5:05:31 PM User: rwolinsky
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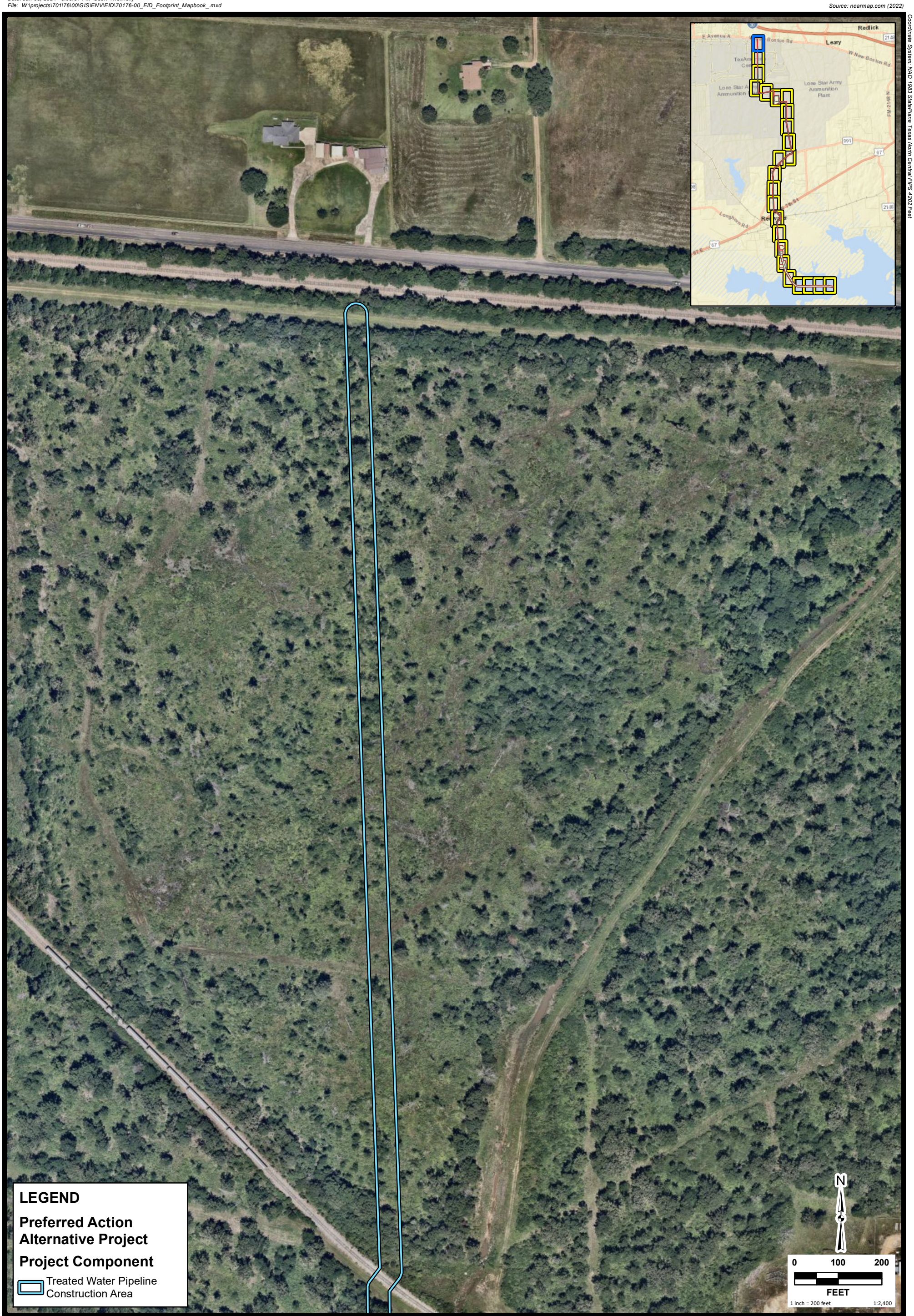
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet



JOB NO.	70176-00
DATE	Jan 2024
DRAWN	WL
CHECKED	HW
SHEET	APPENDIX A-3

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

PROJECT FOOTPRINT MAP, SHEET: 24 of 24

PAPE-DAWSON ENGINEERS
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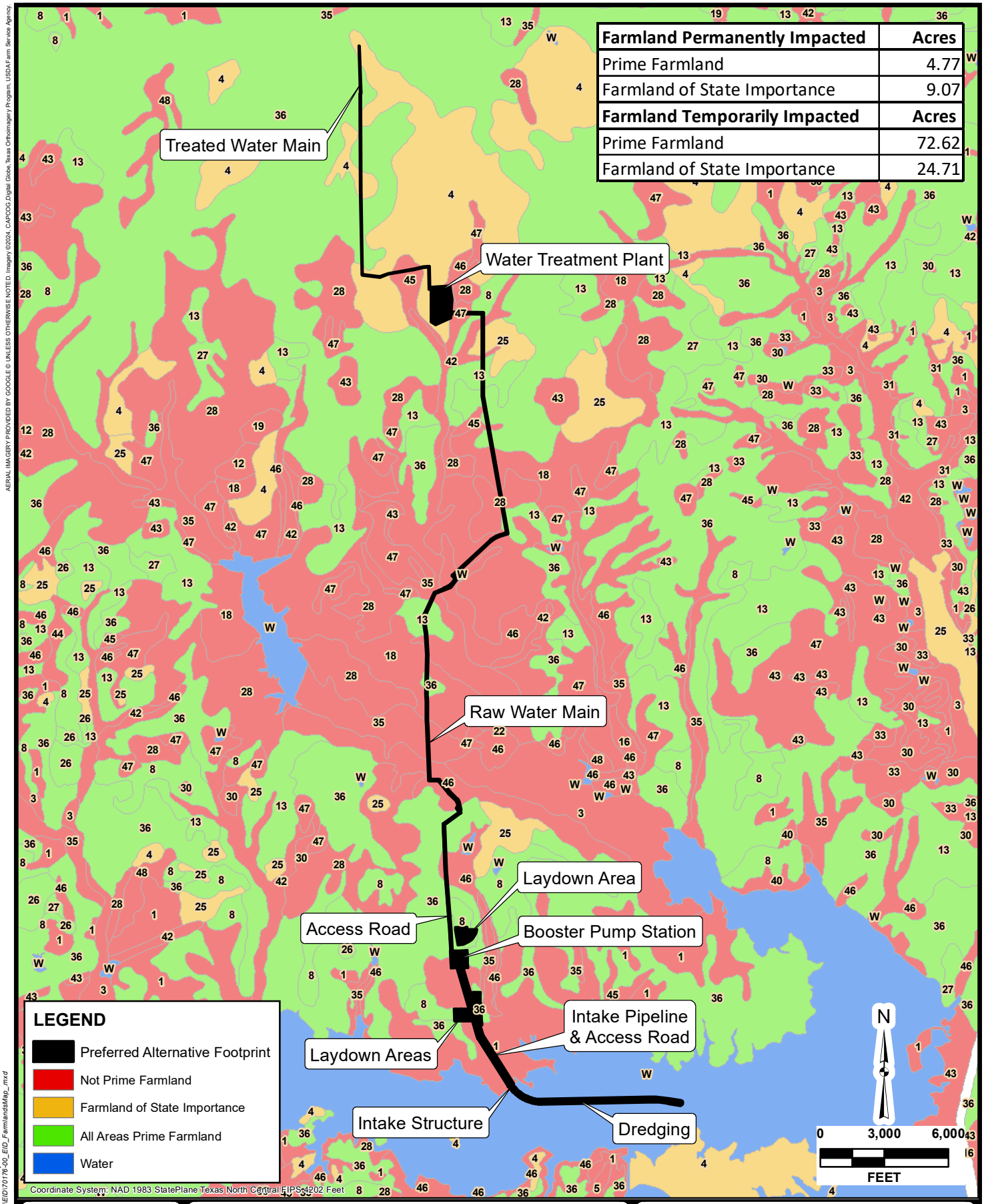
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



Farmland Permanently Impacted	Acres
Prime Farmland	4.77
Farmland of State Importance	9.07
Farmland Temporarily Impacted	**Acres**
Prime Farmland	72.62
Farmland of State Importance	24.71

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Date: Jan 04, 2024 6:02:31 PM User: rwolinsky
File: W:\projects\70176\00\GIS\ENV\EID\70176-00_EID_FarmlandsMap_.mxd

JOB NO. 70176-00
DATE Jan 2024
DESIGNER KT
CHECKED HW DRAWN RT
SHEET APPENDIX B1c

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document
PRIME & IMPORTANT FARMLANDS MAP

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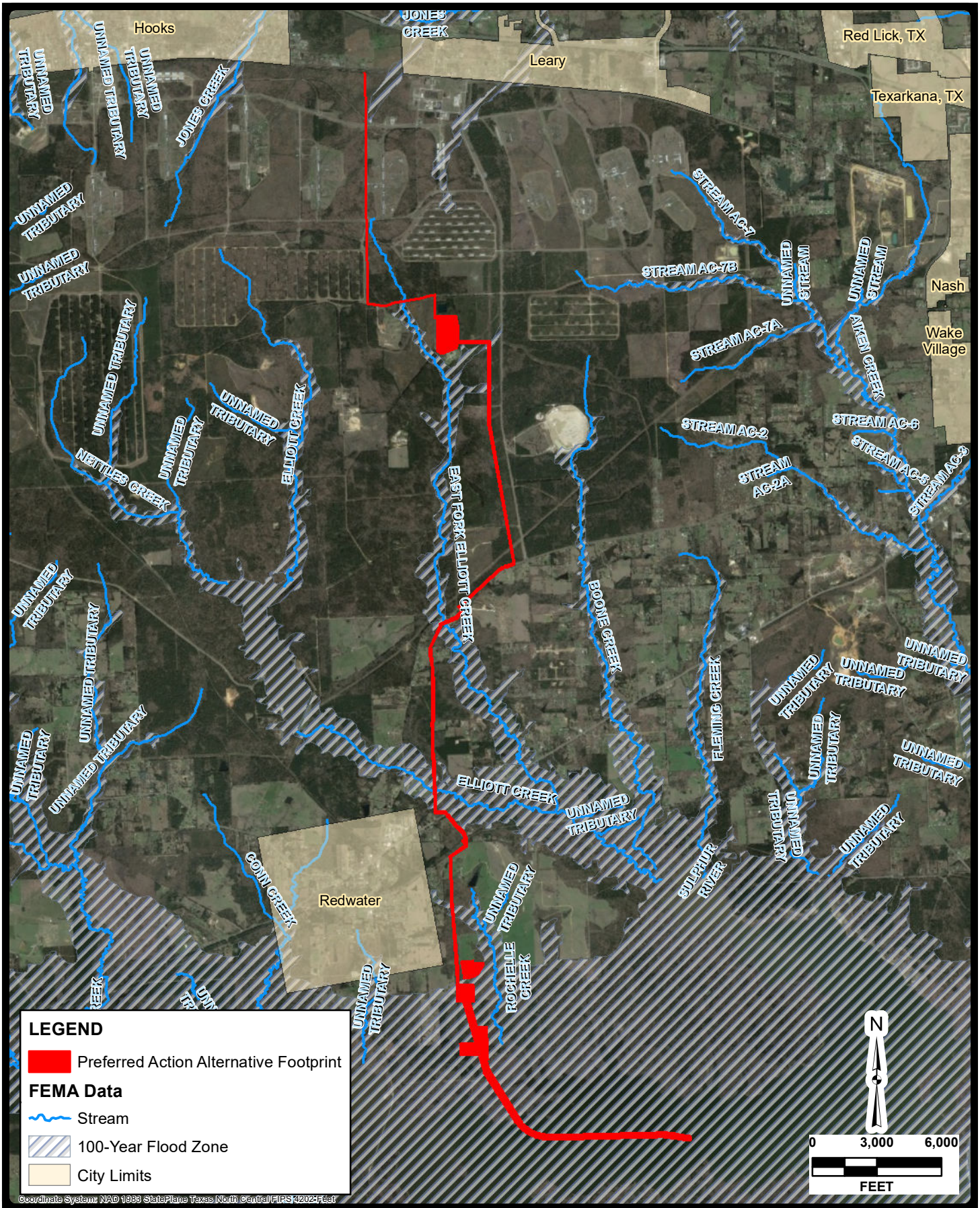
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



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Date: Jan 04, 2024 2:54:27 PM User: rwolinsky
File: W:\projects\70176\00\GIS\ENV\EID\70176-00_EID_2017_FloodMap_.mxd

JOB NO.	70176-00
DATE	Jan 2024
DESIGNER	KT
CHECKED	HW
DRAWN	RT
SHEET	APPENDIX A-5a

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

FEMA FLOODPLAIN MAP

PAPE-DAWSON ENGINEERS

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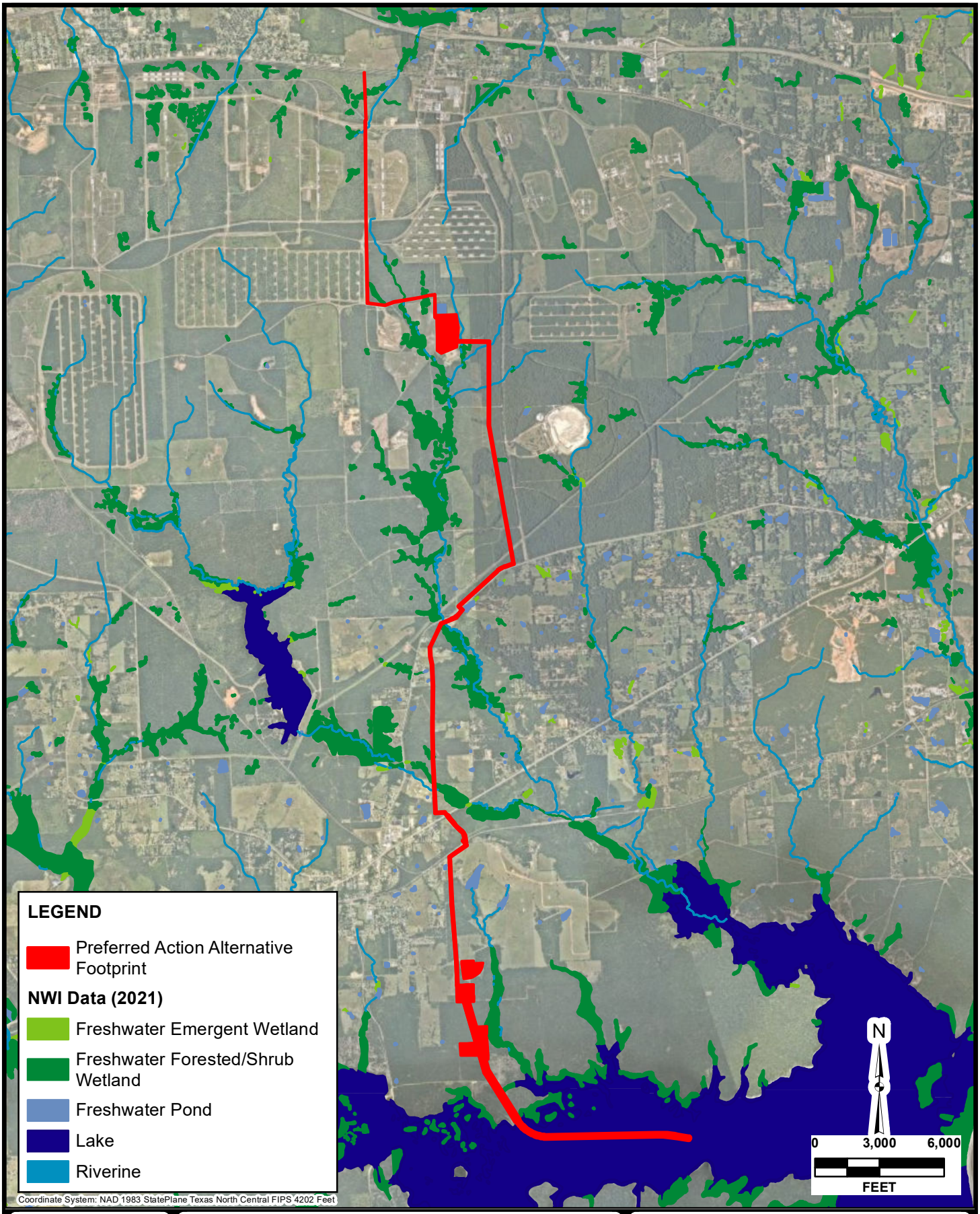
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800



Date: Jan 04, 2024 9:56:28 AM User: rwolinsky
File: W:\projects\70176\00\GIS\ENV\EID\70176-00_EID_2021_NWI_.mxd

JOB NO.	70176-00
DATE	Jan 2024
DESIGNER	KT
CHECKED	HW
DRAWN	RT
SHEET	APPENDIX A-6a

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM (RRWSIP)

Environmental Information Document

NATIONAL WETLAND INVENTORY MAP

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TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Apr 17, 2024 5:05:45 PM User: rwolinsky
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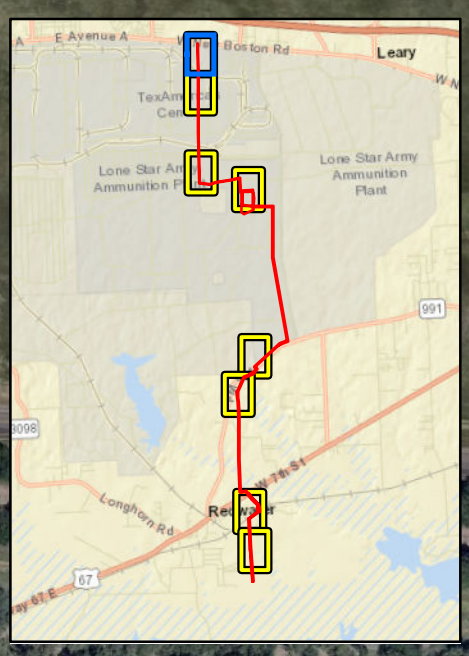
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet



USAGE OF NWP 58 - Temporary Impact Only: Temporary side cast and backfill with 6 to 12 in. of topsoil from trench

CW-01

CS-25

CS-26

USAGE OF NWP 58

CS-26

LEGEND

Project Site Component

Project Boundary (Temporary Impacts)

Wetland

Stream Classification (Cardno)

Intermittent

N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Apr 2024
DRAWN	WL
CHECKED	VC
SHEET	APPENDIX B-2a

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM

WETLAND AND STREAMS IMPACTS MAP, SHEET: 1 of 15

PAPE-DAWSON ENGINEERS

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TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Apr 18, 2024 8:34:13 AM User: wlazo
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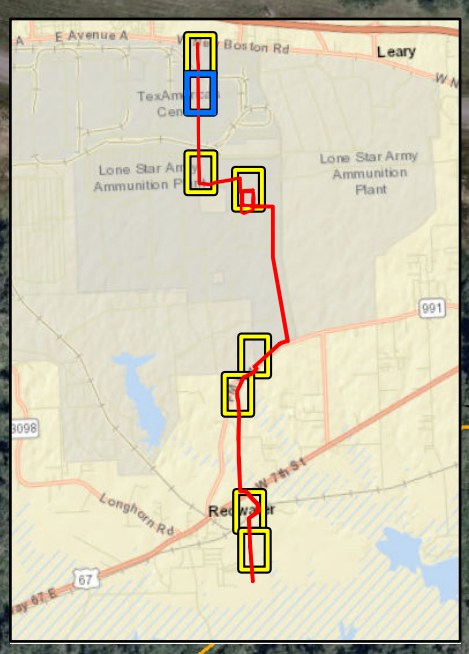
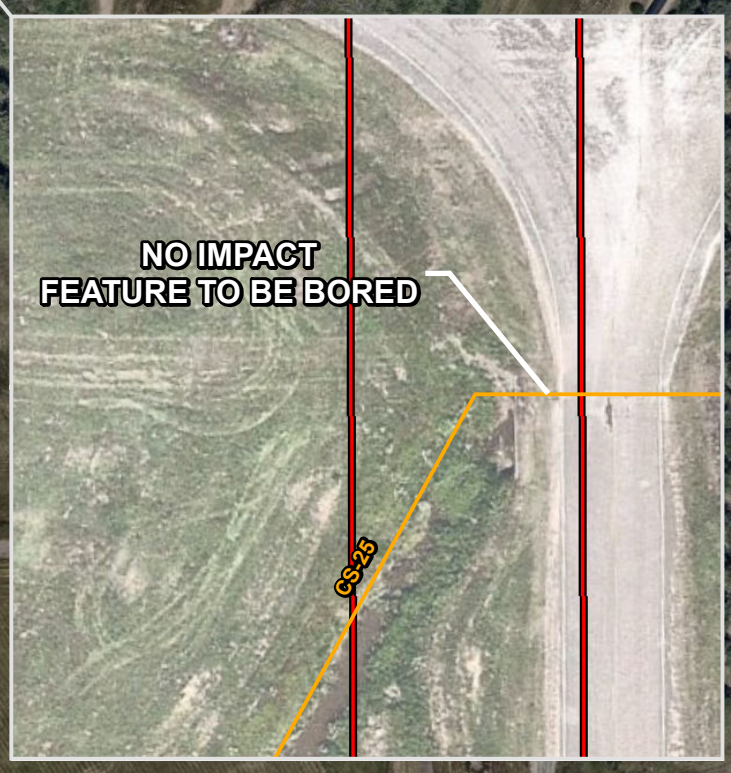
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet





LEGEND

Project Site Component

Project Boundary (Temporary Impacts)

Stream Classification (Cardno)

Intermittent

N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Apr 2024
DRAWN	WL
CHECKED	VC
SHEET	APPENDIX B-2a

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM

WETLAND AND STREAMS IMPACTS MAP, SHEET: 2 of 15

PAPE-DAWSON ENGINEERS

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TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Apr 09, 2024 1:56:28 PM User: wlazo
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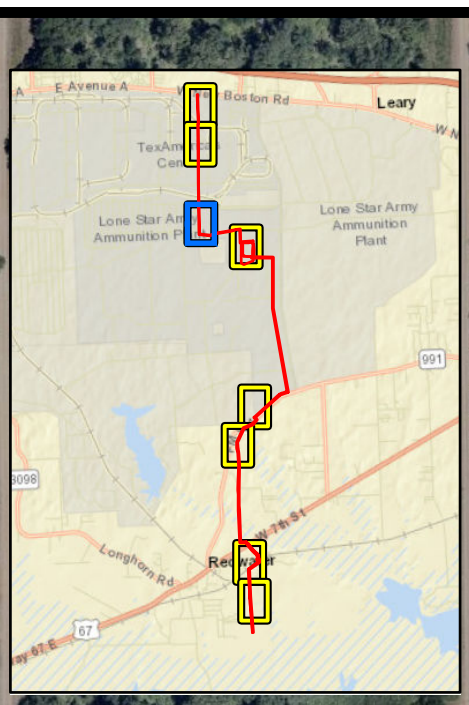
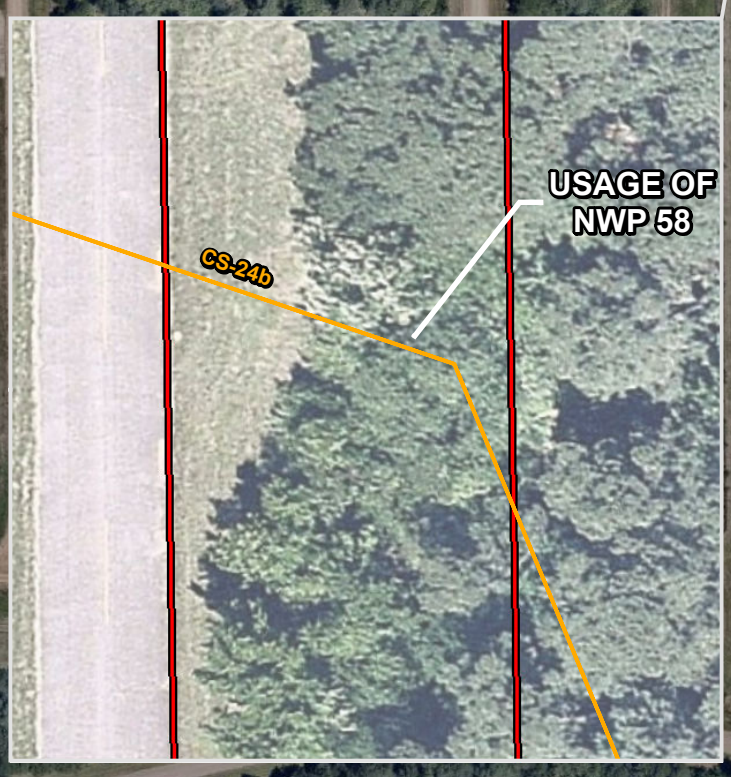
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet





CS-24b

CS-24a

LEGEND

Project Site Component

Project Boundary (Temporary Impacts)

Stream Classification (Cardno)

Intermittent

N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Apr 2024
DRAWN	WL
CHECKED	VC
SHEET	APPENDIX B-2a

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM

WETLAND AND STREAMS IMPACTS MAP, SHEET: 3 of 15

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Apr 09, 2024 1:56:06 PM User: wlazo
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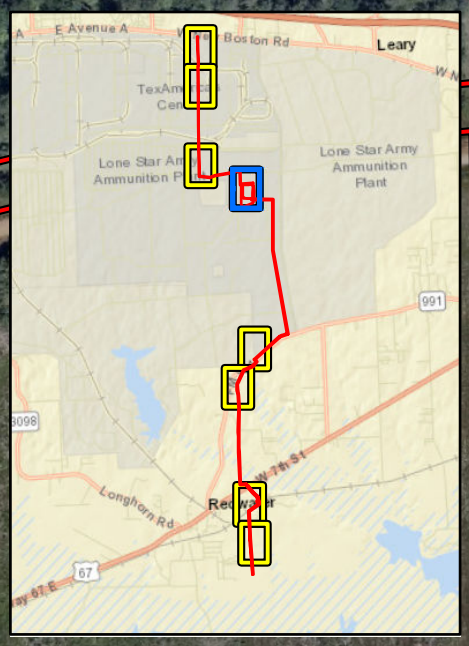
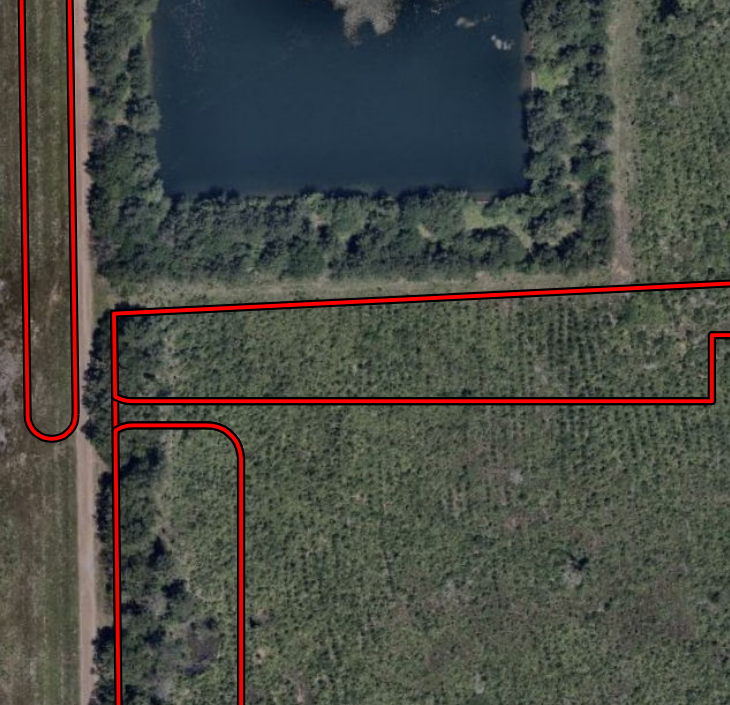
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet





CS-20

LEGEND

Project Site

Component

Project Boundary (Temporary Impacts)

Stream Classification (Cardno)

Intermittent

N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Apr 2024
DRAWN	WL
CHECKED	VC
SHEET	APPENDIX B-2a

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM

WETLAND AND STREAMS IMPACTS MAP, SHEET: 4 of 15

PAPE-DAWSON ENGINEERS

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2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Apr 09, 2024 1:55:45 PM User: wlazo
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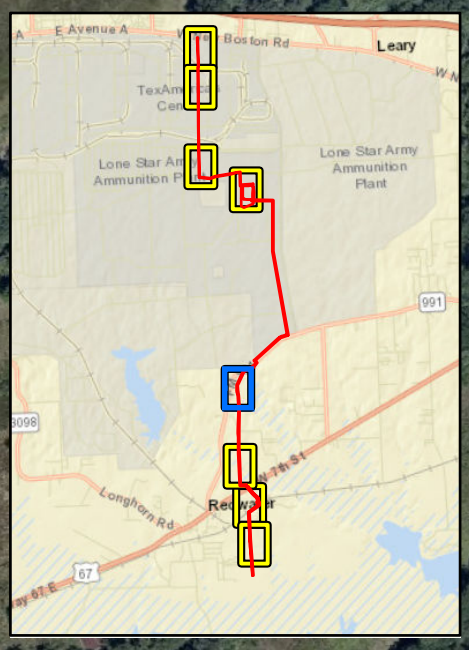
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet



S-14

NO IMPACT
FEATURE TO BE BORED

S-13

NO IMPACT
FEATURE TO BE BORED

S-12

USAGE OF
NWP 58

S-13

S-12

LEGEND

Project Site Component

Project Boundary (Temporary Impacts)

Stream Classificaiton (PD)

Intermittent

Perennial

N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Apr 2024
DRAWN	WL
CHECKED	VC
SHEET	APPENDIX B-2a

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM

WETLAND AND STREAMS IMPACTS MAP, SHEET: 5 of 15

PAPE-DAWSON ENGINEERS

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2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Apr 09, 2024 1:55:30 PM User: wlazo
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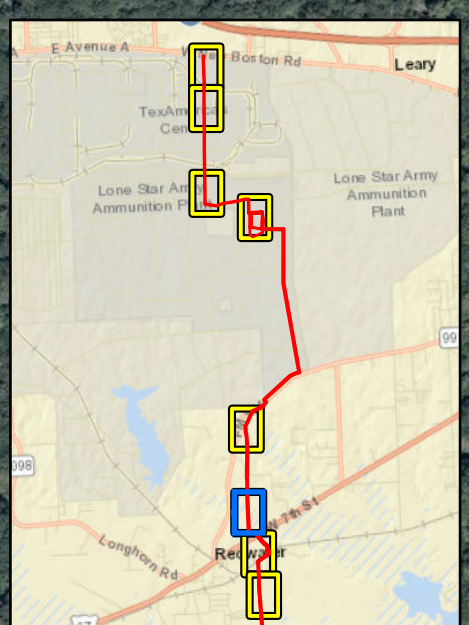
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet



S-10

NO IMPACT
FEATURE TO BE BORED

LEGEND

Project Site Component

Project Boundary (Temporary Impacts)

Stream Classificaiton (PD)

Perennial

N

0 100 200
FEET
1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Apr 2024
DRAWN	WL
CHECKED	VC
SHEET	APPENDIX B-2a

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM

WETLAND AND STREAMS IMPACTS MAP, SHEET: 6 of 15

PAPE-DAWSON ENGINEERS
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TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Apr 09, 2024 1:55:00 PM User: wlazo
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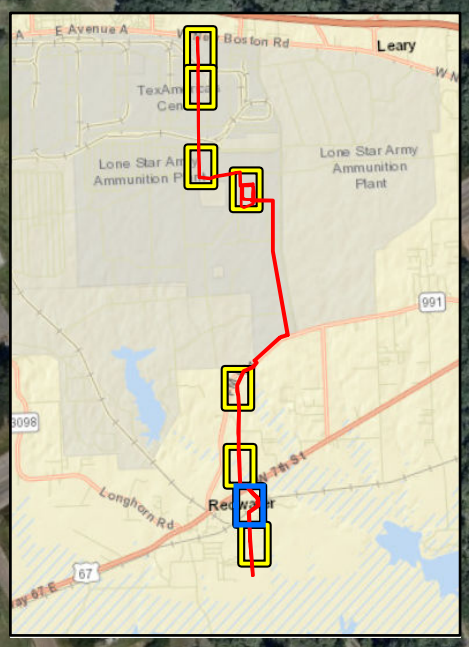
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet



S-09

LEGEND

Project Site Component

- Access Road (Permanent Impacts)
- Project Boundary (Temporary Impacts)

Stream Classificaiton (PD)

- Intermittent

N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Apr 2024
DRAWN	WL
CHECKED	VC
SHEET	APPENDIX B-2a

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM

WETLAND AND STREAMS IMPACTS MAP, SHEET: 7 of 15

PAPE-DAWSON ENGINEERS

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Date: Apr 09, 2024 1:54:07 PM User: wlazo
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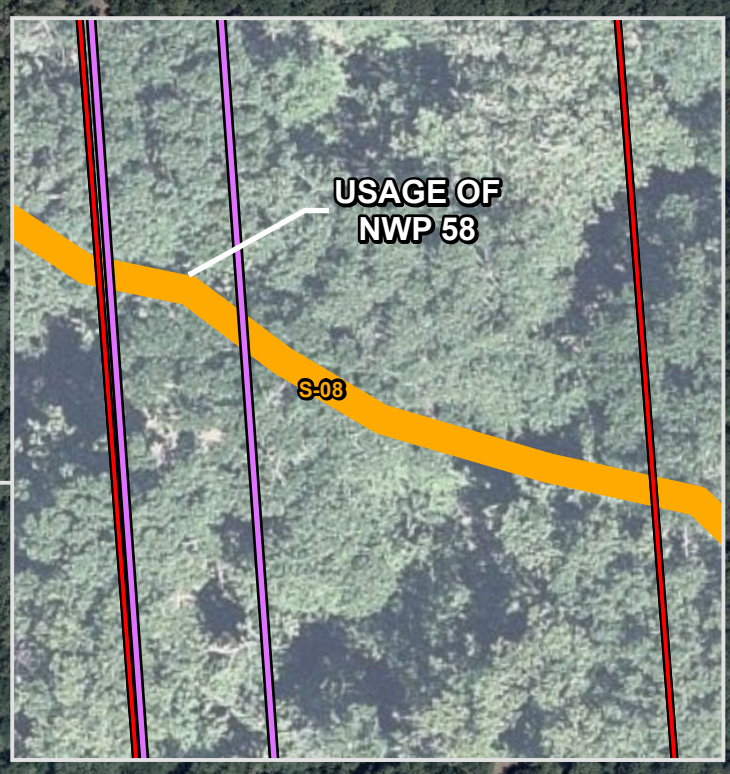
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet



S-08

LEGEND

Project Site Component

Access Road (Permanent Impacts)

Project Boundary (Temporary Impacts)

Stream Classificaiton (PD)

Intermittent

N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Apr 2024
DRAWN	WL
CHECKED	VC
SHEET	APPENDIX B-2a

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM

WETLAND AND STREAMS IMPACTS MAP, SHEET: 8 of 15

PAPE-DAWSON ENGINEERS

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TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Dec 19, 2023 1:16:23 PM User: rwolinsky
File: \\pape-dawson.com\dal-pd\projects\701\76\00\ENV\USACE No Permit Required\GIS\Map2_a.mxd

Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet

LEGEND

- Silt Fence
- 50' Riparian Buffer
- Raw Water Intake Easement
- Decanted Material Storage and Laydown Area
- Access Road
- Stream (Delineated by Pape-Dawson)

Extent of No Permit Required Request

Area = 14.02 ac.

Feature to be Avoided

Feature to be Avoided

50' Riparian Buffer

Feature to be Avoided

N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Dec 2023
DRAWN	RW
CHECKED	HW
SHEET	APPENDIX B-2a

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM

WETLAND AND STREAMS IMPACT MAP, SHEET: 9 of 15

PAPE-DAWSON ENGINEERS

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TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Dec 19, 2023 1:16:18 PM User: rwolinsky
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Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet

LEGEND

- Rock Berm
- Buffer to adjacent property
- Temporary Slurry Hose
- 50' Riparian Buffer
- Raw Water Intake Easement
- Dredge Dewatering and Dredged Material Storage Area
- Access Road
- Wetland (Delineated by Pape-Dawson)

Feature to be Avoided

Area = 9.38 ac.

Feature to be Avoided

Dredge material from mobile clarifier to be placed within the Dredge Dewatering and Dredged Material Storage Areas

Slurry from dredge area to be pumped to mobile clarifiers.

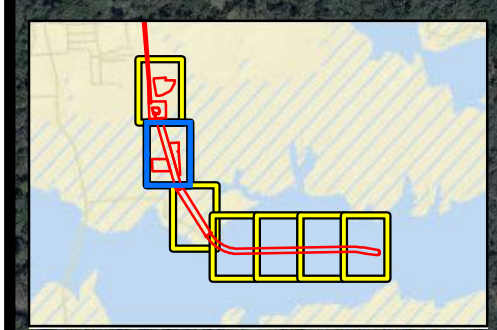
Mobile clarifiers to be located within the Dredge Dewatering and Dredged Material Storage Areas.

Area = 10.27 ac.

Rock Berm
Clarified dredge water to be discharged at less than 3 fps through rock berm to lake drainage area.

Features to be Avoided

Flexible Hose



N

0 100 200
FEET
1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Dec 2023
DRAWN	RW
CHECKED	HW
SHEET	APPENDIX B-2a

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM

WETLAND AND STREAMS IMPACTS MAP, SHEET: 10 of 15

PAPE-DAWSON ENGINEERS
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Date: Dec 19, 2023 1:16:13 PM User: rwolinsky
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Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet

LEGEND

- Ordinary High Water Mark (OHWM) - El. 227.5'
- Temporary Coffer Dam
- Silt Fence
- Temporary Slurry Hose
- Timber Matting
- Raw Water Intake Easement
- Intake Structure above OHWM
- Dredging Area
- Access Road
- Stream (Delineated by Pape-Dawson)
- Wetland (Delineated by Pape-Dawson)

Feature to be Avoided

Feature to be Avoided

Silt fence

Temporary Sheet Pile Coffer Dam

Timber Matting

N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Dec 2023
DRAWN	RW
CHECKED	HW
SHEET	APPENDIX B-2a

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM

WETLAND AND STREAMS IMPACTS MAP, SHEET: 11 of 15

PAPE-DAWSON ENGINEERS

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2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Dec 19, 2023 1:16:08 PM User: rwolinsky
File: \\pape-dawson.com\dal-pd\projects\701\76\00\ENV\USACE No Permit Required\GIS\Map2_a.mxd

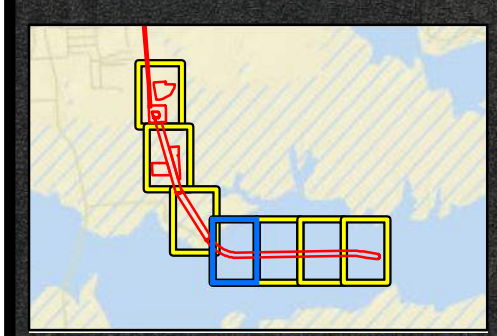
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet

LEGEND

- Temporary Slurry Hose
- Dredging Area

Flexible Hose for Dredge Slurry



N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Dec 2023
DRAWN	RW
CHECKED	HW
SHEET	APPENDIX B-2a

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM

WETLAND AND STREAMS IMPACTS MAP, SHEET: 12 of 15

PAPE-DAWSON ENGINEERS

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2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Dec 19, 2023 1:16:03 PM User: rwolinsky
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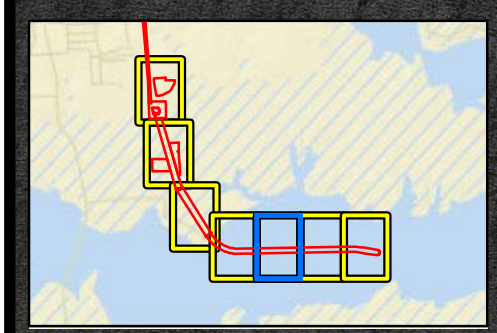
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet

LEGEND

Dredging Area



N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Dec 2023
DRAWN	RW
CHECKED	HW
SHEET	APPENDIX B-2a

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM

WETLAND AND STREAMS IMPACTS MAP, SHEET: 13 of 15

PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

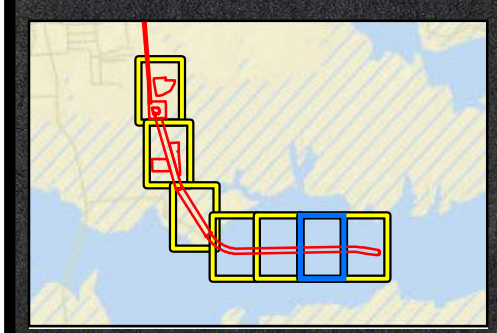
Date: Dec 19, 2023 1:15:59 PM User: rwolinsky
File: \\pape-dawson.com\dal-pd\projects\701\76\00\ENV\USACE No Permit Required\GIS\Map2_a.mxd

Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet

LEGEND

Dredging Area



N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Dec 2023
DRAWN	RW
CHECKED	HW
SHEET	APPENDIX B-2a

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM

WETLAND AND STREAMS IMPACTS MAP, SHEET: 14 of 15

PAPE-DAWSON ENGINEERS

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TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

Date: Dec 19, 2023 1:15:54 PM User: rwolinsky
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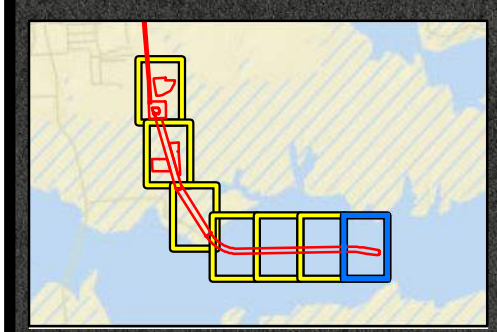
Source: nearmap.com (2022)

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet

LEGEND

Dredging Area



N

0 100 200

FEET

1 inch = 200 feet 1:2,400

JOB NO.	70176-00
DATE	Dec 2023
DRAWN	RW
CHECKED	HW
SHEET	APPENDIX B-2a

RIVERBEND REGIONAL WATER SYSTEM IMPROVEMENTS PROGRAM

WETLAND AND STREAMS IMPACTS MAP, SHEET: 15 of 15

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