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

MEMORANDUM

TO: T. Clay Schultz, Ph.D., Regional Water Project Development Clay Schultz Digitally signed by Clay Schultz Date: 2026.08.17 16:44:53 -05'00'

THROUGH: Joe Koen, P.E., Regional Water Project Development Joe Koen Digitally signed by Joe Koen Date: 2026.08.10 11:15:53 -05'00'

FROM: Kylie Beard, Environmental Protection Specialist Kylie Beard Digitally signed by Kylie Beard Date: 2026.08.10 11:06:04 -05'00'

SUBJECT: North Texas Municipal Water District, Fannin County, Texas
TWDB SWIFT Project No. 51103
North System Raw Water Pipelines
PN633
Total Commitment Amount: $641,695,000
Loan No. L1002218

As required by the rules of the Texas Water Development Board (TWDB), 31 Texas Administrative Code (TAC) § 363.14, an environmental review has been performed for the North System Raw Water Pipelines project, PN633, proposed by the North Texas Municipal Water District (District) in Fannin County, Texas. The District is proposing to use $641,695,000 in financing from the State Water Implementation Fund for Texas (SWIFT) program for acquisition, design, and construction of an 84-inch 27-mile long pipeline that will convey water from the Lake Texoma Pump Station to the Texoma Balancing Reservoir near Howe, Texas, and to construct an 84-inch 9-mile pipeline that will connect the expanded Leonard Water Treatment Plant (WTP) to the existing Texoma-to-Wylie raw water pipeline (RWPL). Both of these pipelines will allow the District the ability to provide treated water to its members and customer cities from the available water supply from Lake Texoma. The Environmental Determination (ED) completed for the proposed project is based primarily on the Environmental Data Form (EDF)[1] received by the TWDB.

The two pipelines will be constructed in separate phases. This Environmental Determination (ED) assesses the 27-mile pipeline that will convey water from the Lake Texoma Pump Station to the Texoma Balancing Reservoir, which is identified by the District as PN633.

PURPOSE AND NEED

The North Texas region relies heavily on the North Texas Municipal Water District Texoma Pipeline for municipal and industrial water supply, with surface water serving as the primary

[1] North Texas Municipal Water District (July 14, 2026). Environmental Data Form (EDF), North System Raw Water Pipelines Project, PN633. Prepared by VRX, Inc for Black & Veatch Corporation. Received by the TWDB on April 1, 2026. The EDF is complete with the supplementary materials submitted to the TWDB on July 14, 2026.

Our Mission
Leading the state's efforts in ensuring a secure water future for Texas

Board Members
L'Oreal Stepney, P.E., Chairwoman | W. Brady Franks, Board Member | Ashley Morgan, Board Member
Bryan McMath, Executive Administrator

source for potable water. Rapid and unprecedented population growth in the region has created capacity limitations in the existing raw water pipeline system, which conveys water from Lake Texoma to the City of Sherman Water Treatment Facility, Rayburn Electric, and the Texoma Balancing Reservoir near Howe, Texas. These limitations threaten the ability to meet future water demands and maintain uninterrupted service. Additionally, the existing pipeline lacks redundancy, leaving the system vulnerable to service interruptions caused by maintenance needs, accidental contamination, or malicious acts.

The proposed action aims to construct a secondary raw water pipeline to increase water conveyance capacity to meet growing demand in accordance with the District's 2024 Water Conservation Plan; provide system redundancy by designating the new pipeline as the primary supply source and the existing Texoma Pipeline as a backup; enhance water quality protection against inadvertent contamination and intentional malicious acts; improve reliability and resiliency of water delivery to ensure uninterrupted service for the North Texas region.

The project aims to ensure long-term water availability for the District's member cities—including Allen, Frisco, Garland, McKinney, Plano, and others—regional industries, agriculture, neighboring municipalities, and rural customers. It will help meet projected population growth and reduce reliance on existing sources such as Lavon Lake and Bois d'Arc Lake.

PROJECT DESCRIPTION

The District proposes the construction of an 84-inch diameter raw water supply pipeline extending approximately 27 miles from a pump station on the southern portion of Lake Texoma to near Bennett Road and Farm-to-Market (FM) 902 in Howe, Grayson County, Texas. About 20 miles will utilize the District's existing easement, while approximately 7 miles will require new permanent easements. Construction will primarily involve open trench installation, with directional boring under major infrastructure and streams. In addition, temporary construction easements will be secured along the alignment to accommodate staging areas, equipment access, and workspace during installation.

This pipeline will convey raw water from Lake Texoma to the City of Sherman Water Treatment Facility, Rayburn Electric in Sherman, and the Texoma Balancing Reservoir near Howe.

The new pipeline will operate alongside the existing parallel pipeline without impacting current intake facilities or abandoning existing infrastructure. This project does not propose impacts to the existing parallel pipeline or the water intake at Lake Texoma. All facilities are located within Grayson County, Texas.

Approximately 21 miles, or 515 acres, of the pipeline will be constructed within the District's existing permanent easement, and 7 miles, or 70 acres, will be within new proposed permanent easements, with 162 acres of temporary easements proposed to be used as staging areas. The open trench installation of the proposed 84-inch Texoma Raw Water Pipeline will involve excavation of a minimum 10-feet wide trench and a typical 1:1 slope from top-of-pipe to top-of-ground. The total construction footprint includes the District's existing 80-foot easement, the District's new 80-foot easement, and temporary construction easements adjacent to the existing and new proposed 80-foot permanent easements. The total width of the pipeline footprint will be 160 feet along most of the alignment. The temporary easements are not contiguous for the

entire pipeline route due to the lack of available space at many locations. Most of the temporary easement space will be narrow strips of land with widths varying from 35 feet to 75 feet parallel to the permanent easement. The adjacent temporary easement strips will accommodate material storage, especially where the District's existing 72-inch pipeline is in the same easement and space will be limited. For tunnels, temporary easement space of varying widths will be used for tunneling activities and material storage. The new pipe material will be strung along the permanent easement where space allows or within the adjacent temporary easement. Haul routes will be determined by the contractor, but construction traffic will be limited to the District's permanent easements as much as possible with stabilized construction entrances at public right-of-way crossings.

The following bulleted list of features are associated with the installation of the 27 miles of 84-inch pipeline and will be placed within the 80-foot-wide construction easements:

- Associated pipe materials
- Cathodic test station for corrosion protection
- Underground fiber optic vault for pipeline access and maintenance
- Casing pipe for crossings and protection
- Blow-off valves for line drainage
- Isolation valves for segment control
- Water valves for operational flexibility
- Type A manholes for access to underground structures
- Access sites for inspection and maintenance
- Control valves for flow regulation
- Air release valves to prevent air accumulation
- Static mixer for water blending
- Concrete for structural support and encasement
- Launching and receiving shafts
- Demolition of an existing structure within the pipeline alignment

PUBLIC PARTICIPATION

The project does not involve any known, significant socioeconomic or environmental impacts, or historical or cultural resource issues that may affect the evaluation of project alternatives or implementation of the project, such as rate increases, displacement of persons, disproportionate effects on minorities or those living beneath the poverty line, potential impacts to known cultural resources, waters of the U.S., or protected species, or similar public concerns. Therefore, no public meeting was required.

AGENCY COORDINATION

The District's environmental impact assessment included coordination with state and federal regulatory agencies, 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 EDF and reflected in the environmental conditions listed below:

- Texas Historical Commission, in accordance with the Antiquities Code of Texas (Texas Antiquities Permit No. 32694, THC Tracking No. 202605944) State Historic Preservation Officer, in accordance with the National Historic Preservation Act
- United States Army Corps of Engineers (USACE), Regulatory Branch, Tulsa District, in accordance with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899 (Project Number SWT-2025-388, Nationwide Permit 58 for Utility Line Activities for Water and Other Substances)
- Texas Parks and Wildlife Department (TPWD), 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. 56095)
- United States Fish and Wildlife Service (USFWS), Texas Coastal & Central Plains Ecological Services Field Office, in accordance with the Endangered Species Act and statutes affecting other federally protected species (Project Codes 2025-0003647 and 2026-0097760)
- TWDB, National Flood Insurance Program (NFIP) State Coordinator, City of Denison floodplain administrator (FPA), City of Sherman FPA, and Grayson County FPA, pursuant to the Flood Insurance Reform Act of 2004, federal Executive Order 11988, Texas Water Code Section 16.315, and local floodplain development ordinances
- General Land Office for potential impacts to state-owned land, for which it was determined there would be none

Texas Historical Commission

A cultural resources survey[2] was performed under Texas Antiquities Permit No. 32694. The survey report was reviewed by the THC staff in accordance with the Antiquities Code of Texas (THC Tracking No. 202605944). No archeological sites were encountered during the survey, nor any evidence of unmarked graves in the portion of the survey area within 100 feet of the Hatfield Cemetery and the Friendship Church Cemetery. One historic-age house was documented in Denison, Texas; due to advanced physical deterioration and alterations, the report recommended a finding that this resource is not eligible for listing in the National Register of Historic Places (NRHP).

In a letter dated March 16, 2026, the THC staff concurred that the historic farmhouse to be demolished in the footprint of the pipeline alignment in Denison, Texas, is not eligible for listing in the NRHP and that no historic properties are present or would be affected by the proposed project. However, due to the potential for unmarked graves near the two cemeteries, the THC requested that monitoring be conducted at both the Friendship Cemetery and Hatfield Cemetery during construction. This condition was included as part of the special conditions for the USACE Nationwide Permit as discussed below and is incorporated as a special condition in this ED.

[2] Kalina, A., Krause, R.E., Fontenot, M., (February 5, 2026). Archeological Survey Report, Texoma Pipeline 2 Project, Grayson County, Texas, prepared by Cypress Environmental Consulting, LLC, for the North Texas Municipal Water District. Texas Antiquities Permit No. 32694/THC No. 202605944.

United States Army Corps of Engineers

The USACE, Tulsa District Office, Regulatory Branch staff were given the opportunity to review the project (USACE Project Number SWT-2025-388) and Water Features Delineation Report[3] dated January 2026, in accordance with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. 76 water features were delineated by desktop analysis and site investigations within the project footprint, according to the report, and all but 4 water features will be affected.

USACE staff issued a Nationwide Permit 58 for Utility Line Activities for Water and Other Substances was issued on April 30, 2026. Two Activity Specific Conditions were incorporated into the permit to ensure the activity does not have more than minimal individual or cumulative adverse effects on the environment, involving archeological monitoring and monitoring for the whooping crane. These conditions are incorporated into the special conditions within this ED and are discussed in the THC section above and the USFWS section below, respectively.

Six water features, Post Oak Creek (water feature (WF)-33), Sand Creek (WF-40), an unnamed pond of Sand Creek (WF-44), an unnamed tributary to Sand Creek (WF-46), Choctaw Creek (WF-60), and an unnamed tributary to Choctaw Creek (WF-61), will be installed using trenchless methods to avoid impacts to aquatic habitat while the rest of the waterbodies will be crossed using open cut methods. Temporary crossings within the ordinary high water mark of two streams, an unnamed tributary to Choctaw Creek (WF-61) and an unnamed tributary to Sand Creek (WF-46) will be constructed, causing temporary impacts to these streams.

The top 12 inches of wetland topsoil from 10 wetlands will be removed to install the pipeline using open cut methods across these waterbodies. The topsoil and pre-construction contours will be returned upon project completion at these sites. The work within WF-56 will result in the conversion of 0.041 acres of forest wetland to emergent wetland. Permanent fill will be placed in two wetlands, resulting in the permanent loss of 0.042 acres of wetland.

Below are the total proposed cumulative temporary and permanent impacts to each aquatic feature type:

- Total Cumulative Stream Impacts
  - Temporary impacts: 0.297 acre
  - Permanent impacts: 0.048 acre
- Total Cumulative Wetland Impacts
  - Temporary impacts: 1.127 acres
  - Permanent impacts: 0.084 acre
- Total Cumulative Pond/Impoundment Impacts
  - Temporary impacts: 1.592 acres
  - Permanent impacts: 0.061 acre

[3] VRX, Inc. (January 2026). Water Features Delineation Report. prepared for Black & Veatch on behalf of the North Texas Municipal Water District, US Army Corps of Engineers Project No. SWT-2025-388

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 August 4, 2025 (TPWD Project No. 56095). The TPWD made recommendations to prevent impacts to protected aquatic and terrestrial plant and animal species and to prevent the introduction or transference of invasive species.

The project area consists of mowed and maintained areas, agricultural fields, woodlands and forested riparian areas interspersed throughout. Tree species encountered were cedar elm (*Ulmus crassifolia*), post oak (*Quercus stellata*), sugar hackberry (*Celtis laevigata*), eastern red cedar (*Juniperus virginiana*), and black willow (*Salix nigra*). The typical plant community within the project area includes Bermuda grass (*Cynodon dactylon*), Indiangrass (*Sorghastrum nutans*), Johnson grass (*Sorghum halepense*), silver blue stem (*Bothriochloa laguroides*), bent spike-rush (*Eleocharis geniculate*), western ragweed (*Ambrosia psilostachya*), and rough cocklebur (*Xanthium strumarium*). Stream banks in the study area are surrounded by a combination of mowed and maintained areas, agricultural fields, woodlands and forested riparian areas.

The project occurs within the Red River Basin and crosses 53 ephemeral, intermittent, and perennial streams. Five Group 5 streams occur in the project area, Iron Ore Creek (WF-18), Post Oak Creek (WF-33), Sand Creek (WF-40), a pond on Sand Creek (WF-44), Choctaw Creek (WF-60), and an unnamed tributary to Choctaw Creek (WF-61). Group 5 streams are those where no federally- or state-listed freshwater mussels are known to occur, but mussels are known to occur; or perennial streams where it is anticipated that live freshwater mussels may occur, but presence or diversity have not been confirmed, according to the TPWD Texas Freshwater Mussel Survey Protocol.

Project materials included a species analysis summary and indicate that the project may impact 32 species of greatest conservation need (SGCN) due to the presence of suitable habitat including ponds, streams, wetlands, pastures, grasslands, prairies, fence rows, forest, wooded floodplain, riparian areas, and cultivated fields habitat. Texas Natural Diversity Databased (NDD) records indicate the presence of the southern crawfish frog (*Lithobates areolatus areolatus*) and Mollisol Blackland Prairie which may contain a number of SGCN plant species. A portion of the proposed pipeline avoids the Mollisol Blackland Prairie due to its location on the east side of Preston Road. Post Oak Creek (WF-33), the Impoundment of Sand Creek (WF-44), Choctaw Creek (WF-60), and the unnamed Tributary to Choctaw Creek (WF-61) were identified as having suitable habitat for the state-listed and federally proposed threatened alligator snapping turtle (*Macrochelys temminckii*). Post Oak Creek (WF-33), Sand Creek (WF-40), the pond on Sand Creek (WF-44), Choctaw Creek (WF-60), and an unnamed tributary to Choctaw Creek (WF-61) will be installed using trenchless methods to avoid impacts to aquatic habitat.

In correspondence dated March 18, 2026, VRX, Inc., on behalf of the District, responded regarding their commitment to the recommendations. In order to mitigate or avoid potential impacts, TPWD recommendations are summarized as environmental special conditions in this ED.

United States Fish and Wildlife Service

The USFWS Texas Coastal & Central Plains 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 Codes 2025-0003647 and 2026-0097760). The USFWS consistency letters dated December 11, 2025, and May 11, 2026, found that the proposed project *May Affect but is not Likely to Adversely Affect* the whooping crane (*Grus americana*) due to the temporary disturbance of potential habitat. There was no designated critical habitat within the project area. The District agreed to implement specific mitigation measures to avoid impacts to the whooping crane, which are incorporated into this ED as special conditions.

Local Floodplain Administrator

To ensure compliance with FEMA requirements, the District notified the local floodplain administrators for the City of Sherman, the City of Denison, and Grayson County.

The project appears to cross multiple 100-year floodplains, as designated by the Federal Emergency Management Agency (FEMA). Projects involving construction in the 100-year floodplain, including replacement or borings, require a floodplain development permit from the local floodplain administrator prior to construction in the 100-year floodplain.

This environmental finding is conditioned to require a floodplain development permit prior to clearing or construction activities within any 100-year floodplain or floodway in order to comply with requirements of the Federal Emergency Management Agency regarding implementation of the National Flood Insurance Act, Flood Disaster Protection Act, National Flood Insurance Reform Act, Federal Executive Orders 11988 and 11990, and to comply with related state statutes.

CONDITIONS AND RECOMMENDATIONS

An environmental review of the project has been completed consistent with the guidelines provided in 31 TAC § 363.14. The results of this environmental review are documented in this Memorandum, which includes environmental conditions that will be applied to the project to avoid significant adverse impact on floodplains, cultural or historical resources, threatened or endangered species, and protected migratory bird species.

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 and local ordinances.

The project must comply with the following special and standard environmental conditions:

Special Environmental Conditions

- 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, floodplain development permits will be obtained from the City of Sherman, City of Denison, Grayson County, and any other applicable local floodplain administrators prior to construction in, across, or under a Special Flood Hazard Area and TWDB approval of plans and specifications, and any requirements contained therein will be adhered to.

- To avoid impacts to potential waters of the U.S., including wetlands, and aquatic habitat, pipeline crossings of large, perennial waterbodies, specifically Post Oak Creek, Sand Creek, an Impoundment of Sand Creek (WF-44, as identified in the January 2026 Water Features Delineation Report), an Unnamed Tributary to Sand Creek (WF-46), Choctaw Creek, and a Tributary to Choctaw Creek (WF-61), will be performed by a trenchless method, with bore pits located outside riparian and/or aquatic habitat (USACE No. SWT-2025-388, TPWD Project No. 56095).
    - WF-46 and WF-61 will be constructed using a trenchless method; however, temporary crossings will be constructed at these two locations. Following construction of the pipeline all temporary impacts associated with the crossings at WF-46 and WF-61 must be restored to pre-construction contours and conditions.

- Consistent with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899, the proposed project will comply with the terms and conditions of the United States Army Corps of Engineers (USACE) Nationwide Permit 58 for Utility Line Activities for Water and Other Substances (Identification No. SWT-2025-388).

- As per an agreement with the USACE (Identification No. SWT-2025-388) and the Texas Historical Commission (Tracking No. 202605944), a professional archeologist must monitor all ground-disturbing activities during project activities conducted in the vicinity of the Friendship Cemetery and the Hatfield Cemetery. If any cultural materials are discovered, all work shall cease within a 50-foot radius of the discovery to allow for examination by the archeologist. The USACE district engineer and the THC will be immediately notified of what was found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The USACE district engineer will initiate the federal, tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

- To ensure compliance with the Endangered Species Act of 1973, as amended, per an agreement with the United States Fish and Wildlife Service (USFWS Project Codes 2025-0003647 and 2026-0097760) and the USACE (Identification No. SWT-2025-388), construction or vegetation clearing activities within 1,000 feet of potential whooping crane (*Grus americana*) habitat will be performed outside of the whooping crane migration season, March 19 through April 30 and October 20 through November 24. If these activities cannot be avoided during spring and fall migration, the following mitigation measures will be implemented:
    - Construction site staff will be provided with educational materials on the appearance and status of the whooping crane in order to identify individuals.
    - A qualified person who is familiar with the whooping crane will monitor for the whooping crane near suitable habitat and halt construction if an individual is detected within 1,000 feet of a work site. Work will cease until the crane has moved outside of the 1,000-foot buffer zone.
    - If a whooping crane is observed for any length of time within 1,000 feet of the work site, the USFWS Texas Coastal & Central Plains Ecological Services Field Office will be immediately notified.

- As per agreements with the Texas Parks and Wildlife Department (TPWD), Ecological & Environmental Planning Program (TPWD Project No. 56095) and United States Fish and Wildlife Service (USFWS Project Codes 2025-0003647 and 2026-0097760), to ensure compliance with Chapters 1, 12, 57 , 64, 66, 67, and 68 of the Texas Parks and Wildlife Code, 31 Texas Administrative Code (TAC) Chapter 57, and 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 (*Macrochelys temminckii*), southern crawfish frog (*Lithobates areolatus areolatus*), bald eagle (*Haliaeetus leucocephalus*), and monarch butterfly (*Danaus plexxipus*), the following measures will be implemented:
    - Vegetation clearing must be excluded during the general bird nesting season March 15 through September 15, to avoid adverse impacts to breeding birds. If vegetation clearing during this time is unavoidable, the area proposed for disturbance will be surveyed by a qualified biologist to identify occupied nests, not more than five days prior to clearing activities. If occupied nests are observed during surveys, a vegetation buffer area of no less than 100 feet in diameter will remain around the nest 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.
    - The North Texas Municipal Water District (District) will design the project to avoid impacts to riparian zones to the extent feasible. During construction, trucks and equipment will use existing bridges to cross creeks while avoiding unnecessary access roads across creeks. Culverts will not be placed in areas containing native mussels.
    - Contractors and construction crews will avoid and will be provided with educational materials on how to avoid disturbance to inert microhabitats in waterways such as snags, brush piles, fallen logs, creek banks, pools, and gravel stream bottoms.

- If construction will occur in streams during times when water is present, the District will coordinate with the TPWD Kills and Spills Team (KAST) for the appropriate permits prior to construction, and documentation of this coordination and permitting will be submitted to the TWDB prior to the TWDB's approval of plans and specifications.
- The District will develop and implement an aquatic invasive species (AIS) transfer prevention plan that incorporates best management practices from the TPWD Aquatic Resource Relocation Plan Guidance Document and the TPWD Clean/Drain/Dry Procedures and Zebra Mussel Decontamination Procedures for Contractors Working in Inland Public Waters and submit the AIS transfer prevention plan to the TWDB prior to the TWDB's approval of plans and specifications.
- Contractors and construction crews will be provided with educational materials regarding the following as well as adhere to the actions contained below.
    - The basic life history and identification of the alligator snapping turtle (AST)
    - Soil compaction and disturbance within 200 feet of Group 5 and perennial waterbodies, the use of machinery in perennial and intermittent waters, and placement of temporary or permanent crossings within perennial water or inundated intermittent streams will be avoided or minimized. If tunnel access shafts are located within 200 feet of a perennial waterbody, AST exclusion fencing will be installed.
    - Construction and vegetation removal will be avoided within 200 feet of a waterbody with suitable AST habitat during the breeding and nesting season of the AST, May 1 through June 30. If construction or vegetation removal within 200 feet of a waterbody with suitable AST habitat will begin during breeding and nesting season of the AST, a qualified biologist will survey the area for nests no more than 5 days prior to commencement and submit the report to the TWDB.
    - If an AST is observed in the construction area, work will immediately cease and the AST will be allowed to safely leave the site on its own prior to the recommencement of work. The AST will be handled only by persons with authorization obtained through the Texas Parks and Wildlife Department.
    - Clearing of mature trees in the riparian zone will be minimized to maintain shade for the AST.
    - Impacts to logs, cutbanks, rootballs, or other similar structures will be minimized as the AST uses these for shelter. If these structures are removed, the same or similar structures will be returned to the waterbody and riverbank to the extent feasible.
- Permanent nighttime lighting will not be installed as part of the proposed pipeline installation. If temporary nighttime lighting is needed during construction, lights will be focused downward with cutoff luminaries to avoid light emitting above the horizontal, and lighting will only be used when needed.
- When restoring the right-of-way, the District will plant a diverse mix of native species that provide floral resources or allow vegetation to naturally reestablish, unless otherwise requested by landowners.

- Contractors and construction crews will be provided with informational materials identifying 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 translocations 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.
- 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.
- 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.
- Proposed project activities will not occur within 660 feet of a bald eagle nest. If a bald eagle nest is identified within 660 feet of the project area, construction will cease until further coordination with the USFWS occurs.
- If tricolored bats (*Perimyotis subflavus*), 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 USFWS to ensure compliance with the ESA.

<u>Standard Environmental Conditions</u>

- Consistent with the TWDB Supplemental Construction Contract Conditions (TWDB-0552), the District will abide by the standard emergency condition for the discovery of cultural resources.

- Consistent with the TWDB Supplemental Construction Contract Conditions (TWDB-0552), the District will abide by the standard emergency condition for the discovery of threatened and endangered species.

Therefore, it is recommended that an Environmental Determination be issued.