



CITY OF TEXARKANA

CITY COUNCIL

AGENDA • MARCH 23, 2020

Council Chambers

Regular Meeting

6:00 PM

220 TEXAS BLVD.
TEXARKANA, TX 75501

AS A PRECAUTIONARY MEASURE RELATED TO COVID 19 (Coronavirus), audience seating in the Council Chambers will be spread out per CDC-recommended distances. The public is encouraged to livestream this meeting from the City's website, <https://www.ci.texarkana.tx.us>

Mayor

Bob Bruggeman

Ward 1

Jean H. Matlock

Ward 3

Betty Williams

Ward 5

Bill Harp

Ward 2

Mary Hart

Ward 4

Christie Alcorn

Ward 6

Jay Davis



The City Council reserves the right to convene into closed session on any agenda item or issue should the need arise and if applicable pursuant to authorization by the Texas Open Meetings Act (Title 5, Chapter 551 of the Texas Government Code).

If the City Council convenes into closed session, they will reconvene in one hour or less to take any final action, decision, or vote on a matter deliberated in closed session.

- I. CALL TO ORDER, ROLL CALL, ESTABLISHMENT OF QUORUM**
- II. INVOCATION AND PLEDGE LED BY MAYOR BOB BRUGGEMAN**
- III. MAYOR'S REMARKS AND ITEMS OF COMMUNITY INTEREST**

Upcoming City Council Meetings:

Monday, April 27, 2020 at 6:00 p.m.
Monday, May 11, 2020 at 6:00 p.m.
Tuesday, May 26, 2020 at 6:00 p.m.

Parks & Recreation Events:

There are no events scheduled.

Other information for Parks & Recreation can be found on the city's website at <http://www.ci.texarkana.tx.us> or call (903) 798-3978 for more information.

IV. OPEN FORUM: COMMENTS FROM THE PUBLIC

Per Council rules, comment time is limited to five minutes, or ten minutes if using a translator. Before comments are made, a speaker must complete an information sheet and give to the City Secretary. If your comment pertains to an agenda item with a scheduled public hearing or public comment, the Council requires that you make your comment at that time; you do not need to complete an information sheet.

- V. APPOINTMENTS TO BOARDS, COMMISSIONS AND COMMITTEES**
- VI. ITEMS FOR CONSIDERATION**

Consent Items

1. Consider approval of the minutes of the Regular Meeting of the City Council held on March 9, 2020 at 6:00 PM.

Action Items

2. Ordinance No. 2020-030 discussing and considering all matters incident and related to the issuance and sale of “City of Texarkana, Texas, General Obligation Refunding Bonds, Series 2020A”, including the adoption of an ordinance authorizing the issuance of such bonds and providing for the redemption of the obligations being refunded.

Public Hearing:

Council Vote: March 23, 2020

3. Ordinance No. 2020-031 discussing and considering all matters incident and related to the issuance and sale of “City of Texarkana, Texas, General Obligation Refunding Bonds, Taxable Series 2020B”, including the adoption of an ordinance authorizing the issuance of such bonds and providing for the redemption of the obligations being refunded.

Public Hearing:

Council Vote: March 23, 2020

4. Resolution No. 2020-034 amending Resolution No. 2019-110 and the 2020 City Council regular meeting schedule.

Public Hearing:

Council Vote: March 23, 2020

5. Ordinance No. 2020-035 continuing the declaration of local disaster proclaimed for the City of Texarkana, Texas, by Mayor Bob Bruggeman on March 18, 2020.

Public Hearing:

Council Vote: March 23, 2020

VII. FIRST BRIEFINGS**VIII. PUBLIC HEARINGS****IX. ITEMS FOR DISCUSSION**

Staff Updates by David Orr

1. Renew Texarkana Comprehensive Plan

2. Natural Resources Damage Assessment (NRDA) Funding Award

(Standard Agreement between Owner and Engineer for Professional Services.pdf)

(Environmental Design & Engineering Services.pdf)

(Restoration Plan PowerPoint.pdf)

(Restoration Plan/Environmental Assessment.pdf)

X. ADMINISTRATIVE COMMENTS

1. City Council

2. City Staff

XI. ADJOURNMENT



Jennifer Evans
City Secretary

This open meeting of a governmental entity is subject to the Texas Open Meetings Act (Chapter 551, Government Code). The “Council Chambers” is the room or property where the City Council will hold this meeting.

Pursuant to Section 46.035(c), Penal Code (unlawful carrying of handgun by license holder), a license holder commits an offense if the license holder intentionally, knowingly, or recklessly carries a handgun under the authority of Subchapter H, Chapter 411, Government Code, regardless of whether the handgun is concealed or carried in a shoulder or belt holster, in the room or rooms where a meeting of a governmental entity is held and if the meeting is an open meeting subject to Chapter 551, Government Code, and the entity provided notice as required by that chapter.

Pursuant to Section 30.06, Penal Code (trespass by license holder with a concealed handgun), a person licensed under Subchapter H, Chapter 411, Government Code (handgun licensing law), may not enter this property with a concealed handgun.

Pursuant to Section 30.07, Penal Code (trespass by license holder with an openly carried handgun), a person licensed under Subchapter H, Chapter 411, Government Code (handgun licensing law), may not enter this property with a handgun that is carried openly.

This meeting is being conducted in accordance with the Americans with Disabilities Act [42 USC 12101 (1991)]. The facility is wheelchair accessible and handicap parking is available.

Requests for sign interpretive services are available upon requests received at least 48 hours prior to the meeting. To make arrangements for these services, please call 903.798.3917, Personnel or (TDD) 1.800.RELAY.TX (1.800.735.2989).



CITY OF TEXARKANA
CITY COUNCIL
MINUTES • MARCH 9, 2020

Council Chambers**Regular Meeting****6:00 PM**

220 TEXAS BLVD.
TEXARKANA, TX 75501

I. CALL TO ORDER, ROLL CALL, ESTABLISHMENT OF QUORUM

Member Name	Title	Status	Arrived
Aggeman	Mayor	Present	
Matlock	Ward 1	Present	
Hart	Ward 2	Present	
Williams	Ward 3	Present	
Alcorn	Ward 4	Absent	
Spencer	Ward 5	Present	
Smith	Ward 6	Present	

II. INVOCATION AND PLEDGE LED BY COUNCIL MEMBER MARY HART

III. CITY FAREWELL TO JOSH DAVIS



Council and staff presented former Ward 6 Council Member Josh Davis with a starred plaque and framed photo of City Hall, fondly referred to as his "second home" for 10 years. He

Minutes Acceptance: Minutes of Mar 9, 2020 6:00 PM (Consent Items)

resigned his city seat to run for Bowie County Tax Assessor-Collector. He was a pleasure to serve with and will be greatly missed.

Mr. Davis said, with sadness in his voice, that he was truly touched and thanked all from the bottom of his heart. Also attending the meeting was his wife Mandy, daughter Laura, and mother Ruth Penney Bell along with husband Buddy.

IV. MAYOR'S REMARKS AND ITEMS OF COMMUNITY INTEREST

Upcoming City Council Meetings:

Monday, March 23, 2020 at 6:00 p.m.

Monday, April 13, 2020 at 6:00 p.m.

Monday, April 27, 2020 at 6:00 p.m.

Parks & Recreation Events:

March 12 th - 14 th	Huggins Baseball Tournament	Spring Lake Park
March 14 th	Softball Tournament	Karrh Park
March 21 st - 22 nd	USSSA Baseball Tournament	Spring Lake Park

Additional Parks & Recreation events can be found on the city's website at <http://www.ci.texarkana.tx.us> or call (903) 798-3978 for more information.

The Mayor warmly welcomed to the meeting Bowie County Precinct 2 Commissioner Tom Whitten, former Texarkana, Arkansas Mayor Ruth Penney Bell and, First Baptist Church Pastor Jeff Schreve.

Citizens were reminded that April 1st is 2020 Census Day. Every 10 years, the census is a count of every person who lives in the United States and its territories. The census allows the city to know its population, become eligible for available federal funding for future roads and schools, and gives citizens the opportunity to fulfill a civic duty because it is mandated by the U.S. Constitution. Beginning March 12th, households will be mailed an invitation to respond to the census online. In addition to responding online, every household will also have the option to respond by phone or by mail.

Jeff Schreve, pastor of First Baptist Church on Moores Lane, gave his personal thanks to the city and its fire fighters who came out to the church on Sunday, March 8th and battled the flames inside the TV control room. Church members appreciated the dedicated city staff and surrounding fire departments that also assisted. Community support was duly noted and church services will temporarily continue in the church gym.

Council Member Matlock introduced her Delta Sigma Theta Sorority sisters. The sorority was founded in 1913 and, as a public service organization, continues to mentor young girls. Carolyn Moore, president of the local chapter, said this group also teaches others to seize civic opportunities and help out in the local community.

Council Member Harp thanked the sorority group for helping young girls in the community and for setting an example for other groups to do the same.

V. OPEN FORUM: COMMENTS FROM THE PUBLIC

Per Council rules, comment time is limited to five minutes, or ten minutes if using a translator. Before comments are made, a speaker must complete an information sheet and give to the City Secretary. If your comment pertains to an agenda item with a scheduled public hearing or public comment, the Council requires that you make your comment at that time; you do not need to complete an information sheet.

There were no public comments made at Open Forum.

VI. APPOINTMENTS TO BOARDS, COMMISSIONS AND COMMITTEES

Council Member Hart recommended the appointment of Zachary Pianalto to the Building & Standards Commission. Mr. Pianalto will replace Dan Boyles who retired. She also recommended the reappointment of Charles Tyous. Mr. Tyous agreed to continue his service on this commission.

Council Member Williams recommended the appointment of Matthew Hackworth to the Building & Standards Commission. Mr. Hackworth will replace Steven McCowan whose term has expired.

1. Motion to make appointments/reappointments to the Building & Standards Commission.

(6:30 p.m.)

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Bill Harp, Ward 5
SECONDER:	Betty Williams, Ward 3
AYES:	Bruggeman, Matlock, Hart, Williams, Harp, Davis
ABSENT:	Alcorn

VII. ITEMS FOR CONSIDERATION

Consent Items

(6:31 p.m.)

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Bill Harp, Ward 5
SECONDER:	Mary Hart, Ward 2
AYES:	Bruggeman, Matlock, Hart, Williams, Harp, Davis
ABSENT:	Alcorn

1. Consider approval of the minutes of the Regular Meeting of the City Council held on February 24, 2020 at 6:00 PM.

2. Resolution No. 2020-015 acknowledging receipt of the 2019 Police Department Racial Profiling Report as statutorily required.

Public Hearing:

Council Vote: March 9, 2020

3. Resolution No. 2020-025 authorizing the City Manager to execute Addendum #1 to the Qualified Environmental Professional Revolving Loan Fund Consulting Contract with Stanley Consultants increasing the total contract amount to \$125,000 funded by an EPA Brownfields Revolving Loan Fund Grant.

Public Hearing:

Council Vote: March 9, 2020

Action Items

4. Resolution No. 2020-022 planning for demolition of substandard structures based on priority of council members or city staff.

Public Hearing:

Council Vote: March 9, 2020

Mashell Daniel briefed this agenda item.

(6:34 p.m.)

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Mary Hart, Ward 2
SECONDER:	Betty Williams, Ward 3
AYES:	Bruggeman, Matlock, Hart, Williams, Harp, Davis
ABSENT:	Alcorn

5. Resolution No. 2020-027 authorizing the City Manager to enter into a contract with East Texas Bridge, Inc. of Longview, Texas, for an amount not to exceed \$6,496,693.91, for the Gibson Lane Extension Construction Project, and to reimburse CenterPoint Energy for an amount not to exceed \$137,000, for utility relocation work with funds budgeted in the TIRZ #1 Operating Funds and the 2019 TIRZ Bond Fund.

Public Hearing:

Council Vote: March 9, 2020

Dusty Henslee briefed this agenda item.

(6:37 p.m.)

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Bill Harp, Ward 5
SECONDER:	Jean H. Matlock, Ward 1
AYES:	Bruggeman, Matlock, Hart, Williams, Harp, Davis
ABSENT:	Alcorn

VIII. FIRST BRIEFINGS - NONE

IX. PUBLIC HEARINGS

1. Ordinance No. 2020-011 approving certain technical amendments to Chapter 6 "Alarms" of the Code of Ordinances.

Public Hearing: March 9, 2020
Council Vote: March 9, 2020

There were no public comments made at this hearing.
(6:39 p.m.)

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Betty Williams, Ward 3
SECONDER:	Mary Hart, Ward 2
AYES:	Bruggeman, Matlock, Hart, Williams, Harp, Davis
ABSENT:	Alcorn

2. Ordinance No. 2020-018 amending PD-18-2(C) for revision to the site plan to allow new signage for a collision center on Lot 1, Block 2, Classic Auto Park East Subdivision, located at 924 Kenwood Road. Gregg Orr, applicant. MTG Engineers & Surveyors, agent.

Public Hearing: March 9, 2020
Council Vote: March 9, 2020

There were no public comments made at this hearing.
(6:40 p.m.)

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Jay Davis, Ward 6
SECONDER:	Jean H. Matlock, Ward 1
AYES:	Bruggeman, Matlock, Hart, Williams, Harp, Davis
ABSENT:	Alcorn

3. Ordinance No. 2020-019 granting a Specific Use Permit to allow a tattoo studio in a tenant space located at 3216 Texas Boulevard (Lots 7 & 8, Block 29, Ghio-Fish Boulevard Addition). Bryan Callaway, applicant. Joaquin Hernandez, agent.

Public Hearing: March 9, 2020
 Council Vote: March 9, 2020

There were no public comments made at this hearing.
 (6:42 p.m.)

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Bill Harp, Ward 5
SECONDER:	Mary Hart, Ward 2
AYES:	Bruggeman, Matlock, Hart, Williams, Harp, Davis
ABSENT:	Alcorn

4. Ordinance No. 2020-020 rezoning the south 1/2 of Lot 1, Flower Acres Second Addition, located at 2720 Phillips Lane. Single Family-2 to Single Family-3. Terry Davis, applicant.

Public Hearing: March 9, 2020
 Council Vote: March 9, 2020

There were no public comments made at this hearing.
 (6:43 p.m.)

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Mary Hart, Ward 2
SECONDER:	Jean H. Matlock, Ward 1
AYES:	Bruggeman, Matlock, Hart, Williams, Harp, Davis
ABSENT:	Alcorn

5. Ordinance No. 2020-021 granting a Specific Use Permit to allow a double wide HUD code manufactured home on the south 1/2 of Lot 1, Flower Acres Second Addition, located at 2720 Phillips Lane. Terry Davis, applicant.

Public Hearing: March 9, 2020
 Council Vote: March 9, 2020

There were no public comments made at this hearing.
 (6:44 p.m.)

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Betty Williams, Ward 3
SECONDER:	Bill Harp, Ward 5
AYES:	Bruggeman, Matlock, Hart, Williams, Harp, Davis
ABSENT:	Alcorn

6. Ordinance No. 2020-023 amending the Code of Ordinances/Electrical Code sections 105-163 [electrical inspector appointment and vacancy], 105-231 [administrative review of electrical inspector decision], and 105-235 [compliance inspections], adding section 105-194 [penalty for violation of article], and repealing sections 105-229, 105-230, 105-232, 105-233, and 105-234.

Public Hearing: March 9, 2020
 Council Vote: March 9, 2020

There were no public comments made at this hearing.
 (6:47 p.m.)

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Jean H. Matlock, Ward 1
SECONDER:	Betty Williams, Ward 3
AYES:	Bruggeman, Matlock, Hart, Williams, Harp, Davis
ABSENT:	Alcorn

X. ITEMS FOR DISCUSSION

Staff Updates

City Manager Jaster said the council was provided a packet of updated information related to demolition by homeowners and their responsibilities for progressive action.

XI. ADMINISTRATIVE COMMENTS

1. City Council

Council Member Harp thanked all first responders who assisted city staff with the First Baptist Church fire **and** those who took other calls that needed attention during the same time.

Mayor Bruggeman added his thanks to hospital staff at both Wadley Regional Medical Center and Christus St. Michael for their response and accommodating city officials who were checking in on affected fire fighters.

2. City Staff

Eric Schlotter said he was very proud of his fire fighters and their timely response to the fire at First Baptist Church. Even though they do this job daily, it cannot be overstated that the fire fighters were most expedient and diligent in performing their duties.

City Manager Jaster stated that Sunday's fire was such a great example of everyone coming together and working together. Many neighboring fire department personnel also assisted with the fire fighting efforts. Their support was very much appreciated.

XII. CLOSED SESSION

The City Council convened into closed session pursuant to Texas Government Code Section 551.071 - Consultation with the City Attorney.

XIII. RECONVENED INTO OPEN SESSION

XIV. ADJOURNMENT

A motion was made to adjourn the meeting.
(7:50 p.m.)

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Bill Harp, Ward 5
SECONDER:	Jay Davis, Ward 6
AYES:	Bruggeman, Matlock, Hart, Williams, Harp, Davis
ABSENT:	Alcorn

City of Texarkana, Texas

Briefing Sheet

Version:

Update Date: 3/18/2020 8:52 AM

Lead Department: Finance Department **Action Officer:** Kristin Peeples,
Ordinance No. 2020-030 discussing and considering all matters incident and
related to the issuance and sale of “City of Texarkana, Texas, General
Obligation Refunding Bonds, Series 2020A”, including the adoption of an
Subject: ordinance authorizing the issuance of such bonds and providing for the
redemption of the obligations being refunded.

Briefing: 3/23/2020 **Public Hearing:** **Council Vote:** 3/23/2020

Item Schedule

Updates/History of Briefing:

Not Applicable

Executive Summary and Background Information:

Jason Hughes, Managing Director of Hilltop Securities, presented information related to a proposed refunding of the Series 2004 Water and Sewer Revenue Bonds, Series 2008 Certificates of Obligation, and the Series 2009 Certificates of Obligation at the February 24, 2020 council meeting. Based on the current market interest rates, the City can refund these outstanding bonds for debt service savings. The City will solicit bids from local, regional and even national banks and the best bid with the lowest interest rate will win. The results will be considered by the City Council at the March 23, 2020 meeting.

Potential Options:

- Approve
- Deny

Fiscal Implications:

Approval of this item would allow for debt service savings.

Staff Recommendation:

Staff recommends approval.

Advisory Board/Committee Review:

None

Board/Committee Recommendation:

None

Advisory Board/Committee Meeting Date and Minutes:

Not Applicable

City of Texarkana, Texas

Attachments

- a. 2020-030 ORD TEXARKANA GO REF 2020A - Ordinance - private placement - one term (DOCX)
- b. 2020-030 Goals & Perspectives (DOCX)

Staff Coordination

Finance Department	Kristin Peebles	Department Head Review	Completed	
	03/11/2020 12:27 PM			
Finance Department	Kristin Peebles	Finance Review	Completed	03/11/2020
	12:27 PM			
City Manager	Shirley Jaster	City Manager Review	Completed	03/19/2020
	10:36 AM			
City Council	Vicky Coopwood	Meeting	Pending	03/23/2020
	6:00 PM			

Meeting History

ORDINANCE NO. 2020-030

AN ORDINANCE authorizing the issuance of "CITY OF TEXARKANA, TEXAS, GENERAL OBLIGATION REFUNDING BONDS, SERIES 2020A," specifying the terms and features of said bonds; levying a continuing direct annual ad valorem tax for the payment of said bonds; and resolving other matters incident and related to the issuance, sale, payment and delivery of said bonds, including the approval and execution of a Paying Agent/Registrar Agreement and a Purchase Letter, and providing an effective date.

WHEREAS, the City Council (the "Council") of the City of Texarkana, Texas (the "City"), has heretofore issued, sold and delivered, and there are currently outstanding obligations of the following issues, to wit (collectively, the "Refunded Obligations"):

- (a) "City of Texarkana, Texas, Waterworks and Sanitary Sewer System Revenue Bonds, Series 2004", dated January 15, 2004, scheduled to mature on February 1, 2023 and aggregating in the principal amount of \$545,000 (the "Series 2004 Refunded Bonds");
- (b) "City of Texarkana, Texas, Combination Tax and Revenue Certificates of Obligation, Series 2008", dated February 1, 2008, scheduled to mature on February 1, 2023 and aggregating in the principal amount of \$595,000 (the "Series 2008 Refunded Certificates");
- (c) "City of Texarkana, Texas, Combination Tax and Revenue Certificates of Obligation, Series 2009", dated December 1, 2009, scheduled to mature on February 1 in each of the years 2021 through 2030, inclusive, and aggregating in the principal amount of \$2,440,000 (the "Series 2009 Refunded Certificates");

WHEREAS, pursuant to the provisions of Texas Government Code, Chapter 1207, as amended, the Council is authorized to issue refunding bonds and deposit the proceeds of the sale thereof directly with the place of payment for the Refunded Obligations, and such deposit, when made in accordance with said statute, shall constitute the making of firm banking and financial arrangements for the discharge and final payment of the Refunded Obligations; and

WHEREAS, the Council hereby finds and determines that the Refunded Obligations should be refunded at this time in order to achieve a savings of \$108,933.12 in debt service payments on such indebtedness, and the refunding will further provide a net present value savings to the City of \$104,116.56; and

WHEREAS, the Council hereby finds and determines that the Refunded Obligations are scheduled to mature, or are subject to being redeemed, not more than twenty (20) years from the date of the refunding bonds herein authorized; now therefor

BE ORDAINED BY THE CITY COUNCIL OF THE CITY OF TEXARKANA, TEXAS:

SECTION 1. Authorization - Designation - Principal Amount - Purpose. General obligation bonds of the City shall be and are hereby authorized to be issued in the aggregate principal amount of \$3,620,000 to be designated and bear the title "CITY OF TEXARKANA,

TEXAS, GENERAL OBLIGATION REFUNDING BONDS, SERIES 2020A” (the “Bonds”), for the purpose of providing funds (1) for the discharge and final payment of certain outstanding obligations of the City (identified in the preamble hereof and referred to as the “Refunded Obligations”) and (2) to pay for professional services rendered in relation thereto, all in accordance with the authority conferred by and in conformity with the Constitution and laws of the State of Texas, including Chapter 1207 of the Texas Government Code, as amended.

SECTION 2. Fully Registered Obligations - Bond Date - Authorized Denominations - Stated Maturity - Interest Rate. The Bonds shall be issued as fully registered obligations only, shall be dated April 1, 2020 (the “Bond Date”), shall be in denominations of \$100,000 or any integral multiple of \$1,000 in excess thereof and shall become due and payable on February 1, 2023 (the “Stated Maturity”).

The Bonds shall bear interest on the unpaid principal amounts from the date of delivery to the initial purchasers at the rate of 1.20% per annum (calculated on the basis of a 360-day year consisting of twelve 30-day months). Interest on the Bonds shall be payable on February 1 and August 1 in each year until maturity or prior redemption, commencing August 1, 2020.

Upon the occurrence of a payment default longer than 90 days, the interest rate of the Bonds will adjust to a rate of 5.20% which adjusted rate will apply to all outstanding principal on the Bonds until the payment default has been cured, at which time the interest rate will revert back to 1.20%.

SECTION 3. Terms of Payment - Paying Agent/Registrar. The principal of, premium, if any, and the interest on the Bonds, due and payable by reason of maturity or otherwise, shall be payable only to the registered owners or holders of the Bonds (the “Holders”) appearing on the registration and transfer books maintained by the Paying Agent/Registrar and the payment thereof shall be in any coin or currency of the United States of America which at the time of payment is legal tender for the payment of public and private debts, and shall be without exchange or collection charges to the Holders.

The selection and appointment of U.S. Bank National Association, Dallas, Texas, to serve as Paying Agent/Registrar for the Bonds is hereby approved and confirmed. Books and records relating to the registration, payment, exchange, and transfer of the Bonds (the “Register”) shall at all times be kept and maintained on behalf of the City by the Paying Agent/Registrar, all as provided herein, in accordance with the terms and provisions of a “Paying Agent Registrar Agreement,” substantially in the form attached hereto as **Exhibit A**, and such reasonable rules and regulations as the Paying Agent/Registrar and the City may prescribe. The Mayor or Mayor Pro Tem and City Secretary are authorized to execute and deliver such Paying Agent/Registrar Agreement in connection with the delivery of the Bonds. The City covenants to maintain and provide a Paying Agent/Registrar at all times until the Bonds are paid and discharged; and, any successor Paying Agent/Registrar shall be a commercial bank, trust company, financial institution or other entity qualified and authorized to serve in such capacity and perform the duties and services of Paying Agent/Registrar. Upon any change in the Paying Agent/Registrar for the Bonds, the City agrees to promptly cause a written notice of the change to be sent to each Holder by United States mail, first class postage prepaid; and, such notice shall also give the address of the new Paying Agent/Registrar.

Principal of and premium, if any, on the Bonds, shall be payable at the Stated Maturity only upon presentation and surrender of the Bonds to the Paying Agent/Registrar at its designated offices, initially in St. Paul, Minnesota, or, with respect to a successor Paying Agent/Registrar, at

the designated offices of such successor (the "Designated Payment/Transfer Office") provided; however, with respect to principal payments prior to the Stated Maturity, and so long as Key Government Finance, Inc. owns 100% of the Outstanding Bonds, the Bonds need not be surrendered to the Paying Agent/Registrar, who will merely document such payment on an internal ledger maintained by the Paying Agent/Registrar. The Paying Agent/Registrar shall pay interest on the Bonds only to the Holder whose name appears in the Register at the close of business on the fifteenth day of the month next preceding each interest payment date (the "Record Date") and shall pay either by: (1) check sent by United States Mail, first class postage prepaid, to the address of the registered owner recorded in the Register or (2) by such other method, acceptable to the Paying Agent/Registrar, requested by the Holder at the Holder's risk and expense. If the date for the payment of the principal of or interest on the Bonds shall be a Saturday, Sunday, a legal holiday, or a day when banking institutions in the city where the Designated Payment/Transfer Office of the Paying Agent/Registrar is located are authorized by law or executive order to be closed; then, the date for such payment shall be the next succeeding day which is not such a Saturday, Sunday, legal holiday, or day when banking institutions are authorized to be closed and payment on such date shall have the same force and effect as if made on the original date payment was due.

In the event of a nonpayment of interest on a scheduled payment date, and for thirty (30) days thereafter, a new record date for such interest payment (a "Special Record Date") will be established by the Paying Agent/Registrar if and when funds for the payment of such interest have been received from the City. Notice of the Special Record Date and of the scheduled payment date of the past due interest (which shall be fifteen (15) days after the Special Record Date) shall be sent at least five (5) business days prior to the Special Record Date by United States mail, first class postage prepaid, to the address of each Holder appearing on the Register at the close of business on the last business day next preceding the date of mailing of such notice.

SECTION 4. Redemption.

(a) Optional Redemption. The Bonds shall be subject to redemption prior to maturity, at the option of the City on any date, in whole but not in part, in principal amounts of \$1,000 or any integral multiple thereof and by lot by the Paying Agent/Registrar at the redemption price of par, together with interest accrued to the redemption date.

At least forty-five (45) days prior to an optional redemption date for the Bonds (unless a shorter notification period shall be satisfactory to the Paying Agent/Registrar), the City shall notify the Paying Agent/Registrar of the decision to redeem the Bonds and the date of redemption therefor. The decision of the City to exercise the right to redeem Bonds shall be entered in the minutes of the governing body of the City.

(b) Mandatory Redemption. The Bonds shall be subject to mandatory redemption prior to maturity at the price of par plus accrued interest to the mandatory redemption date on the respective dates and in principal amounts as follows:

<u>Redemption Date</u>	<u>Principal Amount (\$)</u>
February 1, 2021	1,275,000
February 1, 2022	1,295,000
February 1, 2023*	1,050,000

*maturity

Approximately forty-five (45) days prior to each mandatory redemption date for the Bonds, the Paying Agent/Registrar shall select by lot the numbers of the Bonds to be redeemed on the next following March 1 from moneys set aside for that purpose in the Interest and Sinking Fund (as hereinafter defined). Any Bond not selected for prior redemption shall be paid on the date of the Stated Maturity.

The principal amount of the Bonds required to be redeemed on a mandatory redemption date may be reduced, at the option of the City, by the principal amount of Bonds which, at least 50 days prior to the mandatory redemption date, shall have been acquired by the City at a price not exceeding the principal amount of such Bonds plus accrued interest to the date of purchase thereof, and delivered to the Paying Agent/Registrar for cancellation and not theretofore credited against a mandatory redemption requirement.

(c) Notice of Redemption. Not less than thirty (30) days prior to an optional redemption date for the Bonds, a notice of redemption shall be sent by United States Mail, first class postage prepaid, in the name of the City and at the City's expense, or by such other method as the Paying Agent/Registrar shall deem appropriate and effective, to each Holder of the Bonds to be redeemed in whole at the address of the Holder appearing on the Register at the close of business on the business day next preceding the date of mailing such notice, and any notice of redemption so mailed shall be conclusively presumed to have been duly given irrespective of whether received by the Holder.

All notices of redemption shall (i) specify the date of redemption for the Bonds, (ii) identify the Bonds to be redeemed, (iii) state the redemption price, (iv) state that the Bonds shall become due and payable on the redemption date specified, and the interest thereon shall cease to accrue from and after the redemption date, and (v) solely with respect to the final payment of principal, specify that payment of the redemption price for the Bonds shall be made at the Designated Payment/Transfer Office of the Paying Agent/Registrar only upon presentation and surrender of the Bonds. If a Bond is subject by its terms to prior redemption and has been called for redemption and notice of redemption has been duly given as hereinabove provided, such Bond shall become due and payable and interest thereon shall cease to accrue from and after the redemption date therefor; provided moneys sufficient for the payment of such Bond at the then applicable redemption price are held for the purpose of such payment by the Paying Agent/Registrar.

(d) Conditional Notice of Redemption. With respect to any optional redemption of the Bonds, unless certain prerequisites to such redemption required by this Ordinance have been met and moneys sufficient to pay the principal of and premium, if any, and interest on the Bonds to be redeemed shall have been received by the Paying Agent/Registrar prior to the giving of such notice of redemption, such notice may state that said redemption is conditional upon the satisfaction of such prerequisites and receipt of such moneys by the Paying Agent/Registrar on or prior to the date fixed for such redemption. If a conditional notice of redemption is given and such prerequisites to the redemption are not satisfied or sufficient moneys are not received, such notice shall be of no force and effect, the City shall not redeem such Bonds and the Paying Agent/Registrar shall give notice, in the manner in which the notice of redemption was given, to the effect that the Bonds have not been redeemed.

SECTION 5. Registration - Transfer - Exchange of Bonds - Predecessor Bonds. A Register relating to the registration, payment, and transfer or exchange of the Bonds shall at all times be kept and maintained by the City at the Designated Payment/Transfer Office of the Paying Agent/Registrar and at a place within the State of Texas, as provided herein and in accordance with the provisions of an agreement with the Paying Agent/Registrar and such rules and

regulations as the Paying Agent/Registrar and the City may prescribe. The Paying Agent/Registrar shall obtain, record, and maintain in the Register the name and address of each registered owner of the Bonds issued under and pursuant to the provisions of this Ordinance. Any Bond may, in accordance with its terms and the terms hereof, be transferred or exchanged for Bonds of like kind, of other authorized denominations upon the Register by the Holder, in person or by his duly authorized agent, upon surrender of such Bond to the Paying Agent/Registrar for cancellation, accompanied by a written instrument of transfer or request for exchange duly executed by the Holder or by his duly authorized agent, in form satisfactory to the Paying Agent/Registrar.

Upon surrender for transfer of any Bond (other than the Initial Bond authorized in Section 7 hereof) at the Designated Payment/Transfer Office of the Paying Agent/Registrar, the Paying Agent/Registrar shall register and deliver, in the name of the designated transferee or transferees, one or more new Bonds, executed on behalf of, and furnished by, the City of authorized denominations and of like Stated Maturity and of a like aggregate principal amount as the Bond or Bonds surrendered for transfer.

At the option of the Holder, Bonds (other than the Initial Bond authorized in Section 7 hereof) may be exchanged for other Bonds of authorized denominations and of like aggregate principal amount as the Bonds surrendered for exchange, upon surrender of the Bonds to be exchanged at the Designated Payment/Transfer Office of the Paying Agent/Registrar. Whenever any Bonds are surrendered for exchange, the Paying Agent/Registrar shall register and deliver new Bonds, executed on behalf of, and furnished by, the City, to the Holder requesting the exchange.

All Bonds issued in any transfer or exchange of Bonds shall be delivered to the Holders at the Designated Payment/Transfer Office of the Paying Agent/Registrar or sent by United States mail, first class postage prepaid, to the Holders, and, upon the registration and delivery thereof, the same shall be the valid obligations of the City, evidencing the same obligation to pay, and entitled to the same benefits under this Ordinance, as the Bonds surrendered in such transfer or exchange.

All transfers or exchanges of Bonds pursuant to this Section shall be made without expense or service charge to the Holder, except as otherwise herein provided, and except that the Paying Agent/Registrar shall require payment by the Holder requesting such transfer or exchange of any tax or other governmental charges required to be paid with respect to such transfer or exchange.

Bonds cancelled by reason of an exchange or transfer pursuant to the provisions of this Section are hereby defined to be "Predecessor Bonds," evidencing all or a portion, as the case may be, of the same obligation to pay evidenced by the new Bond or Bonds registered and delivered in the exchange or transfer. Additionally, the term "Predecessor Bonds" shall include any mutilated, lost, destroyed, or stolen Bond for which a replacement Bond has been issued, registered, and delivered in lieu thereof pursuant to the provisions of Section 10 hereof and such new replacement Bond shall be deemed to evidence the same obligation as the mutilated, lost, destroyed, or stolen Bond.

SECTION 6. Execution - Registration. The Bonds shall be executed on behalf of the City by the Mayor or Mayor Pro Tem under its seal reproduced or impressed thereon and countersigned by the City Secretary. The signature of said officers and the seal of the City on the Bonds may be manual or facsimile. Bonds bearing the manual or facsimile signatures of

individuals who are or were the proper officers of the City on the Bond Date shall be deemed to be duly executed on behalf of the City, notwithstanding that such individuals or either of them shall cease to hold such offices at the time of delivery of the Bonds to the initial purchaser(s) and with respect to Bonds delivered in subsequent exchanges and transfers, all as authorized and provided in Texas Government Code, Chapter 1201, as amended.

No Bond shall be entitled to any right or benefit under this Ordinance, or be valid or obligatory for any purpose, unless there appears on such Bond either a certificate of registration substantially in the form provided in Section 8C, manually executed by the Comptroller of Public Accounts of the State of Texas or his duly authorized agent, or a certificate of registration substantially in the form provided in Section 8D, manually executed by an authorized officer, employee or representative of the Paying Agent/Registrar, and either such certificate upon any Bond duly signed shall be conclusive evidence, and the only evidence, that such Bond has been duly certified, registered and delivered.

SECTION 7. Initial Bond. The Bonds herein authorized shall be initially issued as a single fully registered bond in the aggregate principal amount shown in Section 1 hereof and numbered T-1. The initial bond (the "Initial Bond") shall be registered in the name of the initial purchaser(s), or the designee thereof. The Initial Bond shall be the Bond submitted to the Office of the Attorney General of the State of Texas for approval, certified and registered by the Office of the Comptroller of Public Accounts of the State of Texas, and delivered to the initial purchaser(s). Any time after the delivery of the Initial Bond, the Paying Agent/Registrar, pursuant to written instructions from the initial purchaser(s), or the designee thereof, shall cancel the Initial Bond and exchange it for definitive Bonds of authorized denominations and principal amounts for transfer and delivery to the named Holders at the addresses identified for such purpose; all pursuant to and in accordance with such written instructions from the initial purchaser(s), or the designee thereof, and such other information and documentation as the Paying Agent/Registrar may reasonably require.

SECTION 8. Forms.

A. Forms Generally. The Bonds, the Registration Certificate of the Comptroller of Public Accounts of the State of Texas, the Registration Certificate of Paying Agent/Registrar, and the form of Assignment to be printed on each of the Bonds, shall be substantially in the forms set forth in this Section with such appropriate insertions, omissions, substitutions, and other variations as are permitted or required by this Ordinance and may have such letters, numbers, or other marks of identification (including identifying numbers and letters of the Committee on Uniform Securities Identification Procedures of the American Bankers Association) and such legends and endorsements (including insurance legends in the event the Bonds, or any maturities thereof, are purchased with insurance and any reproduction of an opinion of counsel) thereon as may, consistently herewith, be established by the City or determined by the officers executing such Bonds as evidenced by their execution. Any portion of the text of any Bonds may be set forth on the reverse thereof, with an appropriate reference thereto on the face of the Bond.

The definitive Bonds and the Initial Bond shall be printed, lithographed, engraved, typewritten, photocopied or otherwise reproduced in any other similar manner, all as determined by the officers executing such Bonds as evidenced by their execution thereof.

B. Form of Bonds.REGISTERED
NO. [T-1][R-_____]REGISTERED
\$ _____UNITED STATES OF AMERICA
STATE OF TEXAS
CITY OF TEXARKANA, TEXAS
GENERAL OBLIGATION REFUNDING BOND
SERIES 2020ABond Date:
April 1, 2020Interest Rate:
1.20%Stated Maturity:
February 1, 2023

Registered Owner: _____

Principal Amount: _____ DOLLARS

The City of Texarkana (the "City"), a body corporate and municipal corporation in the County of Bowie, State of Texas, for value received, acknowledges itself indebted to and hereby promises to pay to the registered owner named above, or the registered assigns thereof, on the Stated Maturity date specified above the Principal Amount hereinabove stated (or so much thereof as shall not have been paid upon prior redemption) and to pay interest on the unpaid principal amount hereof from the interest payment date next preceding the "Registration Date" of this Bond appearing below (unless this Bond bears a "Registration Date" as of an interest payment date, in which case it shall bear interest from such date, or unless the "Registration Date" of this Bond is prior to the initial interest payment date in which case it shall bear interest from the date of delivery to the initial purchasers) at the per annum rate of interest specified above computed on the basis of a 360-day year consisting of twelve 30-day months; such interest being payable on February 1 and August 1 in each year, commencing August 1, 2020, until maturity or prior redemption. Principal of this Bond shall be payable at its Stated Maturity to the Registered Owner hereof upon presentation and surrender to U.S. Bank National Association, Dallas, Texas (the "Paying Agent/Registrar"), upon its presentation and surrender at its designated offices, initially in St. Paul, Minnesota, or, with respect to a successor paying agent/registrar, at the designated offices of such successor (the "Designated Payment/Transfer Office"); provided; however, with respect to principal payments prior to the Stated Maturity, and so long as Key Government Finance, Inc. owns 100% of the Outstanding Bonds, the Bonds need not be surrendered to the Paying Agent/Registrar, who will merely document such payment on an internal ledger maintained by the Paying Agent/Registrar. Interest is payable to the registered owner of this Bond (or one or more Predecessor Bonds, as defined in the Ordinance hereinafter referenced) whose name appears on the "Register" maintained by the Paying Agent/Registrar at the close of business on the "Record Date," which is the fifteenth day of the month next preceding each interest payment date, and interest shall be paid by the Paying Agent/Registrar by check sent United States mail, first class postage prepaid, to the address of the registered owner recorded in the Register or by such other method, acceptable to the Paying Agent/Registrar, requested by, and at the risk and expense of, the registered owner. If the date for the payment of the principal of or interest on the Bonds shall be a Saturday, Sunday, a legal holiday, or a day when banking institutions in the city where the Designated Payment/Transfer Office of the Paying Agent/Registrar is located are authorized by law or executive order to be closed, then the date for such payment shall be the next succeeding day which is not such a Saturday, Sunday, legal holiday, or day when banking institutions are authorized to be closed; and payment on such date shall have the same force and effect as if made on the original date payment was due. All payments of principal of, premium, if

any, and interest on this Bond shall be without exchange or collection charges to the owner hereof and in any coin or currency of the United States of America which at the time of payment is legal tender for the payment of public and private debts.

This Bond is one of the series specified in its title issued in the aggregate principal amount of \$3,620,000 to be designated and bear the title "CITY OF TEXARKANA, TEXAS, GENERAL OBLIGATION REFUNDING BONDS, SERIES 2020A" (the "Bonds"), for the purpose of providing funds (1) for the discharge and final payment of certain outstanding obligations of the City (identified in the preamble of the Ordinance (defined below) and referred to as the "Refunded Obligations") and (2) to pay for professional services rendered in relation thereto, all in accordance with the authority conferred by and in conformity with the Constitution and laws of the State of Texas, including Texas Government Code, Chapter 1207, as amended, and pursuant to an Ordinance adopted by the City Council of the City (herein referred to as the "Ordinance").

The Bonds shall be subject to redemption prior to maturity, at the option of the City on any date, in whole but not in part, in principal amounts of \$1,000 or any integral multiple thereof and by lot by the Paying Agent/Registrar at the redemption price of par, together with interest accrued to the redemption date.

At least forty-five (45) days prior to a redemption date for the Bonds (unless a shorter notification period shall be satisfactory to the Paying Agent/Registrar), the City shall notify the Paying Agent/Registrar of the decision to redeem the Bonds and the date of redemption therefor.

The Bonds are subject to mandatory redemption prior to maturity with funds on deposit in the Interest and Sinking Fund established and maintained for the payment thereof in the Ordinance, and shall be redeemed in part prior to maturity at the price of par and accrued interest thereon to the date of redemption, and without premium, on the dates and in the principal amounts as follows:

<u>Redemption Date</u>	<u>Principal Amount (\$)</u>
February 1, 2021	1,275,000
February 1, 2022	1,295,000
February 1, 2023*	1,050,000

*maturity

The particular Bonds to be redeemed on each redemption date shall be chosen by lot by the Paying Agent/Registrar; provided, however, that the principal amount of Bonds required to be redeemed on a mandatory redemption date may be reduced, at the option of the City, by the principal amount of Bonds which, at least 50 days prior to the mandatory redemption date, shall have been acquired by the City at a price not exceeding the principal amount of such Bonds plus accrued interest to the date of purchase thereof, and delivered to the Paying Agent/Registrar for cancellation.

At least thirty (30) days prior to an optional redemption of Bonds, the City shall cause a written notice of such redemption to be sent by United States mail, first class postage prepaid, to the registered owners of each Bond to be redeemed at the address shown on the Register and subject to the terms and provisions relating thereto contained in the Ordinance. If a Bond (or any portion of its principal sum) shall have been duly called for redemption and notice of such redemption duly given, then upon such redemption date such Bond (or the portion of its principal sum to be redeemed) shall become due and payable, and, if moneys for the payment of the

redemption price and the interest accrued on the principal amount to be redeemed to the date of redemption are held for the purpose of such payment by the Paying Agent/Registrar, interest shall cease to accrue and be payable from and after the redemption date on the principal amount hereof redeemed.

With respect to any optional redemption of the Bonds, unless certain prerequisites to such redemption required by the Ordinance have been met and moneys sufficient to pay the principal of and premium, if any, and interest on the Bonds to be redeemed shall have been received by the Paying Agent/Registrar prior to the giving of such notice of redemption, such notice may state that said redemption is conditional upon the satisfaction of such prerequisites and receipt of such moneys by the Paying Agent/Registrar on or prior to the date fixed for such redemption. If a conditional notice of redemption is given and such prerequisites to the redemption are not satisfied or sufficient moneys are not received, such notice shall be of no force and effect, the City shall not redeem such Bonds and the Paying Agent/Registrar shall give notice, in the manner in which the notice of redemption was given, to the effect that the Bonds have not been redeemed.

The Bonds are payable from the proceeds of an ad valorem tax levied, within the limitations prescribed by law, upon all taxable property in the City. Reference is hereby made to the Ordinance, a copy of which is on file in the Designated Payment/Transfer Office of the Paying Agent/Registrar, and to all of the provisions of which the registered owner of this Bond by the acceptance hereof hereby assents, for definitions of terms; the description of and the nature and extent of the tax levied for the payment of the Bonds; the terms and conditions relating to the transfer or exchange of this Bond; the conditions upon which the Ordinance may be amended or supplemented with or without the consent of the registered owners; the rights, duties, and obligations of the City and the Paying Agent/Registrar; the terms and provisions upon which this Bond may be discharged at or prior to its maturity, and deemed to be no longer Outstanding; and for other terms and provisions contained therein. Capitalized terms used herein have the meanings assigned in the Ordinance.

This Bond, subject to certain limitations contained in the Ordinance, may be transferred on the Register only upon its presentation and surrender at the Designated Payment/Transfer Office of the Paying Agent/Registrar, with the Assignment hereon duly endorsed by, or accompanied by a written instrument of transfer in form satisfactory to the Paying Agent/Registrar duly executed by, the registered owner hereof, or his duly authorized agent. When a transfer on the Register occurs, one or more new fully registered Bonds of the same Stated Maturity, of authorized denominations, bearing the same rate of interest, and of the same aggregate principal amount will be issued by the Paying Agent/Registrar to the designated transferee or transferees.

The City and the Paying Agent/Registrar, and any agent of either, shall treat the registered owner whose name appears on the Register (i) on the Record Date, as the owner entitled to payment of interest hereon, (ii) on the date of surrender of this Bond, as the owner entitled to payment of principal hereof at its Stated Maturity and (iii) on any other date, as the owner for all other purposes, and neither the City nor the Paying Agent/Registrar, or any agent of either, shall be affected by notice to the contrary. In the event of nonpayment of interest on a scheduled payment date and for thirty (30) days thereafter, a new record date for such interest payment (a "Special Record Date") will be established by the Paying Agent/Registrar, if and when funds for the payment of such interest have been received from the City. Notice of the Special Record Date and of the scheduled payment date of the past due interest (which shall be fifteen (15) days after the Special Record Date) shall be sent at least five (5) business days prior to the Special Record Date by United States mail, first class postage prepaid, to the address of each registered

owner appearing on the Register at the close of business on the last business day next preceding the date of mailing of such notice.

It is hereby certified, recited, represented and declared that the City is a body corporate and political subdivision duly organized and legally existing under and by virtue of the Constitution and laws of the State of Texas; that the issuance of the Bonds is duly authorized by law; that all acts, conditions and things required to exist and be done precedent to and in the issuance of the Bonds to render the same lawful and valid obligations of the City have been properly done, have happened and have been performed in regular and due time, form and manner as required by the Constitution and laws of the State of Texas, and the Ordinance; that the Bonds do not exceed any Constitutional or statutory limitation; and that due provision has been made for the payment of the principal of and interest on the Bonds by the levy of a tax as stated above. In case any provision in this Bond shall be invalid, illegal, or unenforceable, the validity, legality, and enforceability of the remaining provisions shall not in any way be affected or impaired thereby. The terms and provisions of this Bond and the Ordinance shall be construed in accordance with and shall be governed by the laws of the State of Texas.

IN WITNESS WHEREOF, the City Council of the City has caused this Bond to be duly executed under the official seal of the City as of the Bond Date.

CITY OF TEXARKANA, TEXAS

[Mayor][Mayor Pro Tem]

COUNTERSIGNED:

City Secretary

(City Seal)

C. Form of Registration Certificate of Comptroller of Public Accounts to appear on Initial Bond only.

REGISTRATION CERTIFICATE OF
COMPTROLLER OF PUBLIC ACCOUNTS

OFFICE OF THE COMPTROLLER

OF PUBLIC ACCOUNTS

(
(
(
(

REGISTER NO. _____

THE STATE OF TEXAS

(

I HEREBY CERTIFY that this Bond has been examined, certified as to validity and approved by the Attorney General of the State of Texas, and duly registered by the Comptroller of Public Accounts of the State of Texas.

WITNESS my signature and seal of office this _____.

Comptroller of Public Accounts
of the State of Texas

(SEAL)

D. Form of Certificate of Paying Agent/Registrar to appear on Definitive Bonds only.

REGISTRATION CERTIFICATE OF PAYING AGENT/REGISTRAR

This Bond has been duly issued and registered under the provisions of the within mentioned Ordinance; the bond or bonds of the above entitled and designated series originally delivered having been approved by the Attorney General of the State of Texas and registered by the Comptroller of Public Accounts, as shown by the records of the Paying Agent/Registrar.

The designated office of the Paying Agent/Registrar in St. Paul, Minnesota is the Designated Payment/Transfer Office for this Bond.

U.S. BANK NATIONAL ASSOCIATION,
Dallas, Texas, as Paying Agent/Registrar

Registered this date:

_____ By: _____
Authorized Signature

E. Form of Assignment.

ASSIGNMENT

FOR VALUE RECEIVED the undersigned hereby sells, assigns, and transfers unto (Print or typewrite name, address, and zip code of transferee:) _____

(Social Security or other identifying number: _____)

)
the within Bond and all rights thereunder, and hereby irrevocably constitutes and appoints

attorney to transfer the within Bond on the books kept for registration thereof, with full power of substitution in the premises.

DATED: _____

Signature guaranteed:

NOTICE: The signature on this assignment must correspond with the name of the registered owner as it appears on the face of the within Bond in every particular.

SECTION 9. Levy of Taxes. To provide for the payment of the "Debt Service Requirements" of the Bonds, being (i) the interest on the Bonds and (ii) a sinking fund for their payment at maturity or a sinking fund of 2% (whichever amount is the greater), there is hereby levied, and there shall be annually assessed and collected in due time, form, and manner, a tax on all taxable property in the City, within the limitations prescribed by law, and such tax hereby levied on each one hundred dollars' valuation of taxable property in the City for the Debt Service Requirements of the Bonds shall be at a rate from year to year as will be ample and sufficient to provide funds each year to pay the principal of and interest on said Bonds while Outstanding; full allowance being made for delinquencies and costs of collection; separate books and records relating to the receipt and disbursement of taxes levied, assessed and collected for and on account of the Bonds shall be kept and maintained by the City at all times while the Bonds are Outstanding, and the taxes collected for the payment of the Debt Service Requirements on the Bonds shall be deposited to the credit of a "Special 2020A Bond Account" (the "Interest and Sinking Fund") maintained on the records of the City and deposited in a special fund maintained at an official depository of the City's funds; and such tax hereby levied, and to be assessed and collected annually, is hereby pledged to the payment of the Bonds.

The Mayor, Mayor Pro Tem, City Manager, Chief Financial Officer and City Secretary, any one or more of said officials of the City, are hereby authorized and directed to cause to be transferred to the Paying Agent/Registrar for the Bonds, from funds on deposit in the Interest and Sinking Fund, amounts sufficient to fully pay and discharge promptly each installment of interest and principal of the Bonds as the same accrues or matures; such transfers of funds to be made in such manner as will cause collected funds to be deposited with the Paying Agent/Registrar on or before each principal and interest payment date for the Bonds.

The City has sufficient current funds available and such funds are hereby appropriated to make the payments to become due on the Bonds on August 1, 2020, and the Mayor, Mayor Pro Tem, City Manager, Chief Financial Officer and City Secretary of the City, individually or jointly, are hereby authorized and directed to transfer and deposit in the Interest and Sinking Fund such amount of current funds which will be sufficient to pay the amounts to become due on the Bonds on August 1, 2020.

SECTION 10. Mutilated - Destroyed - Lost and Stolen Bonds. In case any Bond shall be mutilated, or destroyed, lost or stolen, the Paying Agent/Registrar may execute and deliver a replacement Bond of like form and tenor, and in the same denomination and bearing a number not contemporaneously outstanding, in exchange and substitution for such mutilated Bond, or in lieu of and in substitution for such destroyed, lost or stolen Bond, only upon the approval of the City and after (a) the filing by the Holder thereof with the Paying Agent/Registrar of evidence satisfactory to the Paying Agent/Registrar of the destruction, loss or theft of such Bond, and of the authenticity of the ownership thereof and (b) the furnishing to the Paying Agent/Registrar of indemnification in an amount satisfactory to hold the City and the Paying Agent/Registrar harmless. All expenses and charges associated with such indemnity and with the preparation,

execution and delivery of a replacement Bond shall be borne by the Holder of the Bond mutilated, or destroyed, lost or stolen.

Every replacement Bond issued pursuant to this Section shall be a valid and binding obligation of the City, and shall be entitled to all the benefits of this Ordinance equally and ratably with all other Outstanding Bonds; notwithstanding the enforceability of payment by anyone of the destroyed, lost, or stolen Bonds.

The provisions of this Section are exclusive and shall preclude (to the extent lawful) all other rights and remedies with respect to the replacement and payment of mutilated, destroyed, lost or stolen Bonds.

SECTION 11. Satisfaction of Obligation of City. If the City shall pay or cause to be paid, or there shall otherwise be paid to the Holders, the principal of, premium, if any, and interest on the Bonds, at the times and in the manner stipulated in this Ordinance, then the pledge of taxes levied under this Ordinance and all covenants, agreements, and other obligations of the City to the Holders shall thereupon cease, terminate, and be discharged and satisfied.

Bonds or any principal amount(s) thereof shall be deemed to have been paid within the meaning and with the effect expressed above in this Section when (i) money sufficient to pay in full such Bonds or the principal amount(s) thereof at maturity, together with all interest due thereon, shall have been irrevocably deposited with and held in trust by the Paying Agent/Registrar, or an authorized escrow agent, or (ii) Government Securities shall have been irrevocably deposited in trust with the Paying Agent/Registrar, or an authorized escrow agent, which Government Securities have been certified by an independent accounting or consulting firm to mature as to principal and interest in such amounts and at such times as will insure the availability, without reinvestment, of sufficient money, together with any moneys deposited therewith, if any, to pay when due the principal of and interest on such Bonds, or the principal amount(s) thereof, on and prior to the Stated Maturity thereof. The City covenants that no deposit of moneys or Government Securities will be made under this Section and no use made of any such deposit which would cause the Bonds to be treated as "arbitrage bonds" within the meaning of Section 148 of the Internal Revenue Code of 1986, as amended (the "Code"), or regulations adopted pursuant thereto.

Any moneys so deposited with the Paying Agent/Registrar, or an authorized escrow agent, and all income from Government Securities held in trust by the Paying Agent/Registrar, or an authorized escrow agent, pursuant to this Section which is not required for the payment of the Bonds, or any principal amount(s) thereof, or interest thereon with respect to which such moneys have been so deposited shall be remitted to the City or deposited as directed by the City. Furthermore, any money held by the Paying Agent/Registrar for the payment of the principal of and interest on the Bonds and remaining unclaimed for a period of three (3) years after the Stated Maturity of the Bonds such moneys were deposited and are held in trust to pay shall upon the request of the City be remitted to the City against a written receipt therefor. The provisions of this paragraph are subject to the applicable unclaimed property law of the State of Texas.

The term "Government Securities," as used herein, means (i) direct noncallable obligations of the United States of America, including obligations the principal of and interest on which are unconditionally guaranteed by the United States of America, (ii) noncallable obligations of an agency or instrumentality of the United States, including obligations unconditionally guaranteed or insured by the agency or instrumentality and, on the date of their acquisition or purchase by the City, are rated as to investment quality by a nationally recognized investment

rating firm not less than AAA or its equivalent, (iii) noncallable obligations of a state or an agency or a county, municipality, or other political subdivision of a state that have been refunded and that, on the date of their acquisition or purchase by the City, are rated as to investment quality by a nationally recognized investment rating firm not less than AAA or its equivalent and (iv) any other then authorized securities or obligations that may be used to defease obligations such as the Bonds under the then applicable laws of the State of Texas.

SECTION 12. Ordinance a Contract - Amendments - Outstanding Bonds. This Ordinance shall constitute a contract with the Holders from time to time, be binding on the City, and shall not be amended or repealed by the City so long as any Bond remains Outstanding except as permitted in this Section. The City may, without the consent of or notice to any Holders, from time to time and at any time, amend this Ordinance in any manner not detrimental to the interests of the Holders, including the curing of any ambiguity, inconsistency, or formal defect or omission in this Ordinance. Additionally, with the consent of Holders holding a majority in aggregate principal amount of the Bonds then Outstanding, the City may amend, add to, or rescind any of the provisions of this Ordinance; provided that, without the consent of all the Holders of Outstanding Bonds no amendment, addition, or rescission shall: (1) extend the time or times of payment of the principal of, premium, if any, and interest on the Bonds, reduce the principal amount thereof or the rate of interest thereon, or in any other way modify the terms of payment of the principal of, premium, if any, or interest on the Bonds, (2) give any preference to any Bond over any other Bond, or (3) reduce the aggregate principal amount of Bonds required to be held by Holders for consent to any such amendment, addition, or rescission.

The term "Outstanding" when used in this Ordinance with respect to Bonds means, as of the date of determination, all Bonds theretofore issued and delivered under this Ordinance, except:

- (1) those Bonds canceled by the Paying Agent/Registrar or delivered to the Paying Agent/Registrar for cancellation;
- (2) those Bonds deemed to be duly paid by the City in accordance with the provisions of Section 11 hereof; and
- (3) those mutilated, destroyed, lost, or stolen Bonds which have been replaced with Bonds registered and delivered in lieu thereof as provided in Section 10 hereof.

SECTION 13. Covenants to Maintain Tax-Exempt Status.

(a) Definitions. When used in this Section, the following terms shall have the following meanings:

"*Closing Date*" means the date on which the Bonds are first authenticated and delivered to the initial purchasers against payment therefor.

"*Code*" means the Internal Revenue Code of 1986, as amended by all legislation, if any, effective on or before the Closing Date.

"*Computation Date*" has the meaning set forth in Section 1.148-1(b) of the Regulations.

"Gross Proceeds" means any proceeds as defined in Section 1.148-1(b) of the Regulations, and any replacement proceeds as defined in Section 1.148-1(c) of the Regulations, of the Bonds.

"Investment" has the meaning set forth in Section 1.148-1(b) of the Regulations.

"Nonpurpose Investment" means any investment property, as defined in Section 148(b) of the Code, in which Gross Proceeds of the Bonds are invested and which is not acquired to carry out the governmental purposes of the Bonds.

"Rebate Amount" has the meaning set forth in Section 1.148-1(b) of the Regulations.

"Regulations" means any proposed, temporary, or final Income Tax Regulations issued pursuant to Sections 103 and 141 through 150 of the Code, and 103 of the Internal Revenue Code of 1954, which are applicable to the Bonds. Any reference to any specific Regulation shall also mean, as appropriate, any proposed, temporary or final Income Tax Regulation designed to supplement, amend or replace the specific Regulation referenced.

"Yield" of (1) any Investment has the meaning set forth in Section 1.148-5 of the Regulations; and (2) the Bonds has the meaning set forth in Section 1.148-4 of the Regulations.

(b) Not to Cause Interest to Become Taxable. The City shall not use, permit the use of, or omit to use Gross Proceeds or any other amounts (or any property the acquisition, construction or improvement of which is to be financed directly or indirectly with Gross Proceeds) in a manner which if made or omitted would cause the interest on any Bond to become includable in the gross income, as defined in Section 61 of the Code, of the owner thereof for federal income tax purposes. Without limiting the generality of the foregoing, unless and until the City receives a written opinion of counsel nationally recognized in the field of municipal bond law to the effect that failure to comply with such covenant will not adversely affect the exemption from federal income tax of the interest on any Bond, the City shall comply with each of the specific covenants in this Section.

(c) No Private Use or Private Payments. Except as permitted by Section 141 of the Code and the Regulations and rulings thereunder, the City shall at all times prior to the last Stated Maturity of Bonds:

(1) exclusively own, operate and possess all property the acquisition, construction or improvement of which is to be financed or refinanced directly or indirectly with Gross Proceeds of the Bonds (including property financed with Gross Proceeds of the Refunded Obligations), and not use or permit the use of such Gross Proceeds (including all contractual arrangements with terms different than those applicable to the general public) or any property acquired, constructed or improved with such Gross Proceeds in any activity carried on by any person or entity (including the United States or any agency, department and instrumentality thereof) other than a state or local government, unless such use is solely as a member of the general public; and

(2) not directly or indirectly impose or accept any charge or other payment by any person or entity who is treated as using Gross Proceeds of the Bonds or any property the acquisition, construction or improvement of which is to be financed or refinanced directly or indirectly with such Gross Proceeds (including property financed with Gross Proceeds of the Refunded Obligations), other than taxes of general application within the City or interest earned on investments acquired with such Gross Proceeds pending application for their intended purposes.

(d) No Private Loan. Except to the extent permitted by Section 141 of the Code and the Regulations and rulings thereunder, the City shall not use Gross Proceeds of the Bonds to make or finance loans to any person or entity other than a state or local government. For purposes of the foregoing covenant, such Gross Proceeds are considered to be "loaned" to a person or entity if: (1) property acquired, constructed or improved with such Gross Proceeds is sold or leased to such person or entity in a transaction which creates a debt for federal income tax purposes; (2) capacity in or service from such property is committed to such person or entity under a take or pay, output or similar contract or arrangement; or (3) indirect benefits, or burdens and benefits of ownership, of such Gross Proceeds or any property acquired, constructed or improved with such Gross Proceeds are otherwise transferred in a transaction which is the economic equivalent of a loan.

(e) Not to Invest at Higher Yield. Except to the extent permitted by Section 148 of the Code and the Regulations and rulings thereunder, the City shall not at any time prior to the final Stated Maturity of the Bonds directly or indirectly invest Gross Proceeds in any Investment (or use Gross Proceeds to replace money so invested), if as a result of such investment the Yield from the Closing Date of all Investments acquired with Gross Proceeds (or with money replaced thereby), whether then held or previously disposed of, exceeds the Yield of the Bonds.

(f) Not Federally Guaranteed. Except to the extent permitted by Section 149(b) of the Code and the Regulations and rulings thereunder, the City shall not take or omit to take any action which would cause the Bonds to be federally guaranteed within the meaning of Section 149(b) of the Code and the Regulations and rulings thereunder.

(g) Information Report. The City shall timely file the information required by Section 149(e) of the Code with the Secretary of the Treasury on Form 8038-G or such other form and in such place as the Secretary may prescribe.

(h) Rebate of Arbitrage Profits. Except to the extent otherwise provided in Section 148(f) of the Code and the Regulations and rulings thereunder:

(1) The City shall account for all Gross Proceeds (including all receipts, expenditures and investments thereof) on its books of account separately and apart from all other funds (and receipts, expenditures and investments thereof) and shall retain all records of accounting for at least six years after the day on which the last outstanding Bond is discharged. However, to the extent permitted by law, the City may commingle Gross Proceeds of the Bonds with other money of the City, provided that the City separately accounts for each receipt and expenditure of Gross Proceeds and the obligations acquired therewith.

(2) Not less frequently than each Computation Date, the City shall calculate the Rebate Amount in accordance with rules set forth in Section 148(f) of the Code and the Regulations and rulings thereunder. The City shall maintain such calculations with its official transcript of proceedings relating to the issuance of the Bonds until six years after the final Computation Date.

(3) As additional consideration for the purchase of the Bonds by the Purchasers and the loan of the money represented thereby and in order to induce such purchase by measures designed to insure the excludability of the interest thereon from the gross income of the owners thereof for federal income tax purposes, the City shall pay to the United States out of the Interest and Sinking Fund or its general fund, as permitted by applicable Texas statute, regulation or opinion of the Attorney General of the State of Texas, the amount that when added to the future value of previous rebate payments made for the Bonds equals (i) in the case of a Final Computation Date as defined in Section 1.148-3(e)(2) of the Regulations, one hundred percent (100%) of the Rebate Amount on such date; and (ii) in the case of any other Computation Date, ninety percent (90%) of the Rebate Amount on such date. In all cases, the rebate payments shall be made at the times, in the installments, to the place, and in the manner as is or may be required by Section 148(f) of the Code and the Regulations and rulings thereunder, and shall be accompanied by Form 8038-T or such other forms and information as is or may be required by Section 148(f) of the Code and the Regulations and rulings thereunder.

(4) The City shall exercise reasonable diligence to assure that no errors are made in the calculations and payments required by paragraphs (2) and (3), and if an error is made, to discover and promptly correct such error within a reasonable amount of time thereafter (and in all events within one hundred eighty (180) days after discovery of the error), including payment to the United States of any additional Rebate Amount owed to it, interest thereon, and any penalty imposed under Section 1.148-3(h) of the Regulations.

(i) Not to Divert Arbitrage Profits. Except to the extent permitted by Section 148 of the Code and the Regulations and rulings thereunder, the City shall not, at any time prior to the earlier of the Stated Maturity or final payment of the Bonds, enter into any transaction that reduces the amount required to be paid to the United States pursuant to subsection (h) of this Section because such transaction results in a smaller profit or a larger loss than would have resulted if the transaction had been at arm's length and had the Yield of the Bonds not been relevant to either party.

(j) Bonds Not Hedge Bonds.

(1) At the time the original obligations refunded by the Bonds were issued, the City reasonably expected to spend at least 85% of the spendable proceeds of such obligations within three (3) years after such obligations were issued.

(2) Not more than 50% of the proceeds of the original obligations refunded by the Bonds were invested in Nonpurpose Investments having a substantially guaranteed Yield for a period of 4 years or more.

(k) Current Refunding. The Bonds are being issued to pay and discharge in full the Refunded Obligations and such payment of the Refunded Obligations will occur within ninety (90) days after the issuance of the Bonds.

(l) Elections. The City hereby directs and authorizes the Mayor, Mayor Pro Tem, City Manager and Chief Financial Officer, either or any combination of them, to make elections permitted or required pursuant to the provisions of the Code or the Regulations, as they deem necessary or appropriate in connection with the Bonds, in the Certificate as to Tax Exemption or similar or other appropriate certificate, form or document.

(m) Qualified Tax-Exempt Obligations. In accordance with the provisions of paragraph (3) of subsection (b) of Section 265 of the Code, the City hereby designates the Bonds to be "qualified tax-exempt obligations" in that the Bonds are not "private activity bonds" as defined in the Code and the reasonably anticipated amount of "qualified tax-exempt obligations" to be issued by the City (including all subordinate entities of the City) for the calendar year 2020 will not exceed \$10,000,000.

SECTION 14. Sale of Bonds - Purchase Letter Approval. The Bonds are hereby sold to Key Government Finance, Inc. (the "Purchaser") in accordance with the Bond Purchase Letter (the "Purchase Letter"), dated as of March 23, 2020, attached hereto as **Exhibit B** and incorporated herein by reference as a part of this Ordinance, which sale of the Bonds to said Purchaser is hereby determined to be in the best interests of the City and is approved and confirmed. Delivery of the Bonds to the Purchaser shall occur as soon as possible upon payment being made therefor in accordance with the terms of sale. The Mayor or Mayor Pro Tem is hereby authorized and directed to execute said Purchase Letter for and on behalf of the City and as the act and deed of this Council, and in regard to the approval and execution of the Purchase Letter, the Council hereby finds, determines, and declares that the representations, warranties, and agreements of the City contained in the Purchase Letter are true and correct in all material respects and shall be honored and performed by the City. The Initial Bond shall be registered in the name of the Purchaser.

SECTION 15. Control and Custody of Bonds. The Mayor or Mayor Pro Tem of the City shall be and is hereby authorized to take and have charge of all necessary orders and records pending investigation by the Attorney General of the State of Texas, including the printing and supply of definitive Bonds, and shall take and have charge and control of the Initial Bond pending the approval thereof by the Attorney General, the registration thereof by the Comptroller of Public Accounts and the delivery thereof to the Purchasers.

SECTION 16. Proceeds of Sale. Immediately following the delivery of the Bonds, the proceeds of sale (less those proceeds of sale designated to pay costs of issuance) shall be deposited with the respective paying agents for the Refunded Obligations (the "Refunded Obligations Paying Agents") for the refunding of the Refunded Obligations. The proceeds of sale of the Bonds not so deposited with the Refunded Obligations Paying Agents for the refunding of the Refunded Obligations shall be disbursed for payment of costs of issuance, or deposited in the Interest and Sinking Fund for the Bonds. Such proceeds of sale may be invested in authorized investments and any investment earnings realized may be deposited in the Interest and Sinking Fund as shall be determined by the City Council of the City.

Additionally, on or immediately prior to the date of the delivery of the Bonds to the Purchasers, the Chief Financial Officer shall cause to be transferred in immediately available funds to the Refunded Obligations Paying Agents from moneys on deposit in the interest and

sinking funds maintained for the payment of the Refunded Obligations the sum of \$59,444.42 to accomplish the refunding.

SECTION 17. Redemption of Refunded Obligations.

(a) The Series 2004 Refunded Bonds shall be redeemed and the same are hereby called for redemption on April 28, 2020 at the price of par and accrued interest to the date of redemption. The City Secretary is hereby authorized and directed to file a copy of this Ordinance, together with a suggested form of a notice of redemption to be sent to holders of the Series 2004 Refunded Bonds, with U.S. Bank National Association (successor paying agent/registrar to Wachovia Bank, National Association, for the Series 2004 Refunded Bonds), in accordance with the redemption provisions applicable to such obligations; such suggested form of notice of redemption being attached hereto as **Exhibit C** and incorporated herein by reference as a part of this Ordinance for all purposes.

(b) The Series 2008 Refunded Certificates shall be redeemed and the same are hereby called for redemption on April 28, 2020 at the price of par and accrued interest to the date of redemption. The City Secretary is hereby authorized and directed to file a copy of this Ordinance, together with a suggested form of a notice of redemption to be sent to holders of the Series 2008 Refunded Certificates, with The Frost National Bank (the current paying agent/registrar for the Series 2008 Refunded Certificates), in accordance with the redemption provisions applicable to such obligations; such suggested form of notice of redemption being attached hereto as **Exhibit D** and incorporated herein by reference as a part of this Ordinance for all purposes.

(c) The Series 2009 Refunded Certificates shall be redeemed and the same are hereby called for redemption on April 28, 2020 at the price of par and accrued interest to the date of redemption. The City Secretary is hereby authorized and directed to file a copy of this Ordinance, together with a suggested form of a notice of redemption to be sent to holders of the Series 2009 Refunded Certificates, with Wells Fargo Bank, National Association (the current paying agent/registrar for the Series 2009 Refunded Certificates), in accordance with the redemption provisions applicable to such obligations; such suggested form of notice of redemption being attached hereto as **Exhibit E** and incorporated herein by reference as a part of this Ordinance for all purposes.

(d) The redemption of the Refunded Obligations described above being associated with the refunding of such Refunded Obligations, the approval, authorization and arrangements herein given and provided for the redemption of such Refunded Obligations on the redemption date designated therefor and in the manner provided shall be irrevocable upon the issuance and delivery of the Bonds; and the City Secretary is hereby authorized and directed to make all arrangements necessary to notify the holders of such Refunded Obligations of the City's decision to redeem such Refunded Obligations on the date and in the manner herein provided and in accordance with the ordinances authorizing the issuance of such Refunded Obligations and this Ordinance.

SECTION 18. Notices to Holders - Waiver. Wherever this Ordinance provides for notice to Holders of any event, such notice shall be sufficiently given (unless otherwise herein expressly provided) if in writing and sent by United States mail, first class postage prepaid, to the address of each Holder appearing in the Register at the close of business on the business day next preceding the mailing of such notice.

In any case where notice to Holders is given by mail, neither the failure to mail such notice to any particular Holders, nor any defect in any notice so mailed, shall affect the sufficiency of such notice with respect to all other Bonds. Where this Ordinance provides for notice in any manner, such notice may be waived in writing by the Holder entitled to receive such notice, either before or after the event with respect to which such notice is given; and, such waiver shall be the equivalent of such notice. Waivers of notice by Holders shall be filed with the Paying Agent/Registrar, but such filing shall not be a condition precedent to the validity of any action taken in reliance upon such waiver.

SECTION 19. Cancellation. All Bonds surrendered for payment, transfer, exchange, or replacement, if surrendered to the Paying Agent/Registrar, shall be promptly canceled by it; and, if surrendered to the City, such Bonds shall be delivered to the Paying Agent/Registrar and, if not already canceled, shall be promptly canceled by the Paying Agent/Registrar. The City may at any time deliver to the Paying Agent/Registrar for cancellation any Bonds previously certified or registered and delivered which the City may have acquired in any manner whatsoever, and all Bonds so delivered shall be promptly canceled by the Paying Agent/Registrar. All canceled Bonds held by the Paying Agent/Registrar shall be returned to the City.

SECTION 20. Legal Opinion. The Purchaser's obligation to accept delivery of the Bonds is subject to being furnished a final opinion of Norton Rose Fulbright US LLP, Dallas, Texas, approving the Bonds as to their validity, with said opinion to be dated and delivered as of the date of delivery and payment for the Bonds. A true and correct reproduction of said opinion is hereby authorized to be printed on or attached to the definitive Bonds. The City Council confirms the continuation of the engagement of Norton Rose Fulbright US LLP as the City's bond counsel.

SECTION 21. Further Procedures. Any one or more of the Mayor, Mayor Pro Tem, City Manager, Chief Financial Officer and City Secretary are hereby expressly authorized, empowered and directed from time to time and at any time to do and perform all such acts and things and to execute, acknowledge and deliver in the name and on behalf of the City all agreements, instruments, certificates or other documents, whether mentioned herein or not, as may be necessary or desirable in order to carry out the terms and provisions of this Ordinance and the issuance of the Bonds. In addition, prior to the initial delivery of the Bonds, the Mayor, City Manager, Chief Financial Officer or Bond Counsel to the City are each hereby authorized and directed to approve any changes or corrections to this Ordinance or to any of the documents authorized and approved by this Ordinance: (i) in order to cure any ambiguity, formal defect or omission in the Ordinance or such other document; or (ii) as requested by the Attorney General of the State of Texas or his representative to obtain the approval of the Bonds by the Attorney General and if such officer or counsel determines that such changes are consistent with the intent and purpose of the Ordinance, which determination shall be final. In the event that any officer of the City whose signature shall appear on any document shall cease to be such officer before the delivery of such document, such signature nevertheless shall be valid and sufficient for all purposes the same as if such officer had remained in office until such delivery.

SECTION 22. Benefits of Ordinance. Nothing in this Ordinance, expressed or implied, is intended or shall be construed to confer upon any person other than the City, the Paying Agent/Registrar and the Holders, any right, remedy, or claim, legal or equitable, under or by reason of this Ordinance. This Ordinance in its entirety is intended to be and is for the sole and exclusive benefit of the City, the Paying Agent/Registrar and the Holders.

SECTION 23. Inconsistent Provisions. All ordinances, orders or resolutions, or parts thereof, which are in conflict or inconsistent with any provision of this Ordinance are hereby

repealed to the extent of such conflict; and, the provisions of this Ordinance shall be and remain controlling as to the matters contained herein.

SECTION 24. Governing Law. This Ordinance shall be construed and enforced in accordance with the laws of the State of Texas and the United States of America.

SECTION 25. Effect of Headings. The Section headings herein are for convenience of reference only and shall not affect the construction hereof.

SECTION 26. Construction of Terms. If appropriate in the context of this Ordinance, words of the singular number shall be considered to include the plural, words of the plural number shall be considered to include the singular, and words of the masculine, feminine or neuter gender shall be considered to include the other genders.

SECTION 27. Severability. If any provision of this Ordinance or the application thereof to any circumstance shall be held to be invalid, the remainder of this Ordinance and the application thereof to other circumstances shall nevertheless be valid; and, the Council hereby declares that this Ordinance would have been enacted without such invalid provision.

SECTION 28. Incorporation of Findings and Determinations. The findings and determinations of the Council contained in the preamble hereof are hereby incorporated by reference and made a part of this Ordinance for all purposes as if the same were restated in full in this Section.

SECTION 29. Public Meeting. It is officially found, determined, and declared that the meeting at which this Ordinance is adopted was open to the public and public notice of the time, place, and subject matter of the public business to be considered at such meeting, including this Ordinance, was given, all as required by Texas Government Code, Chapter 551, as amended.

SECTION 30. Effective Date. This Ordinance shall take effect and be in force from and after its passage and approval in accordance with the provisions of Texas Government Code, Section 1201.028, as amended.

[remainder of page intentionally left blank]

PASSED AND APPROVED, this March 23, 2020.

CITY OF TEXARKANA, TEXAS

Mayor

ATTEST:

City Secretary

(City Seal)

Attachment: 2020-030 ORD TEXARKANA GO REF 2020A - Ordinance - private placement - one term (2238 : 2020-030 ORD General Obligation

EXHIBIT A
PAYING AGENT/REGISTRAR AGREEMENT

Attachment: 2020-030 ORD TEXARKANA GO REF 2020A - Ordinance - private placement - one term (2238 : 2020-030 ORD General Obligation

EXHIBIT B
PURCHASE LETTER

Attachment: 2020-030 ORD TEXARKANA GO REF 2020A - Ordinance - private placement - one term (2238 : 2020-030 ORD General Obligation

EXHIBIT C**CONDITIONAL NOTICE OF REDEMPTION**

CITY OF TEXARKANA, TEXAS
 WATERWORKS AND SANITARY SEWER SYSTEM
 REVENUE BONDS
 SERIES 2004
 Dated January 15, 2004

CONDITIONAL NOTICE IS HEREBY GIVEN that all of the obligations of the above series maturing on February 1, 2023, and aggregating in the principal amount of \$545,000, have been called for redemption on April 28, 2020 (the "Redemption Date") at the redemption price of par and accrued interest to the date of redemption, such bonds (the "Bonds") being identified as follows:

<u>Year of Maturity</u>	<u>Principal Amount Outstanding/ Being Refunded (\$)</u>	<u>CUSIP Number</u>
2023*	545,000	

*Term Certificates

THIS CONDITIONAL NOTICE OF REDEMPTION, and the payment of the principal of and premium, if any, and interest on the Bonds (the "Redemption Price") on the Redemption Date, is subject to the receipt of an amount sufficient to pay in full the Redemption Price on the Redemption Date.

IN THE EVENT funds for the payment of the Redemption Price are not received by the Redemption Date, this notice shall be null and void and of no force and effect. Any Bonds theretofore delivered for redemption shall be returned to the respective owners thereof, and said Bonds shall remain outstanding as though this Conditional Notice of Redemption had not been given. Notice of failure to receive funds and rescission of this redemption shall be given by the Paying Agent/Registrar by first class mail to the registered holders of the Bonds.

Provided such funds are received by the Redemption Date, such Bonds shall become due and payable on the Redemption Date and interest thereon shall cease to accrue from and after said redemption date and payment of the redemption price of said Bonds shall be paid to the registered owners of the Bonds only upon presentation and surrender thereof to U.S. Bank National Association, Attention: Bond Operations, 111 Fillmore Avenue East, St. Paul, Minnesota 55107-1402.

THIS NOTICE is issued and given pursuant to the terms and conditions prescribed for the redemption of said Bonds and pursuant to an ordinance by the City Council of the City of Texarkana, Texas.

U.S. BANK NATIONAL ASSOCIATION
 13737 Noel Rd Suite 800
 Dallas, Texas 75240

EXHIBIT D**CONDITIONAL NOTICE OF REDEMPTION**

CITY OF TEXARKANA, TEXAS
 COMBINATION TAX AND REVENUE CERTIFICATES OF OBLIGATION
 SERIES 2008
 Dated February 1, 2008

CONDITIONAL NOTICE IS HEREBY GIVEN that all of the obligations of the above series maturing on February 1, 2023, and aggregating in the principal amount of \$595,000, have been called for redemption on April 28, 2020 (the "Redemption Date") at the redemption price of par and accrued interest to the date of redemption, such certificates of obligation (the "Certificates") being identified as follows:

<u>Year of Maturity</u>	<u>Principal Amount Outstanding/ Being Refunded (\$)</u>	<u>Number</u>
2023	595,000	

THIS CONDITIONAL NOTICE OF REDEMPTION, and the payment of the principal of and premium, if any, and interest on the Certificates (the "Redemption Price") on the Redemption Date, is subject to the receipt of an amount sufficient to pay in full the Redemption Price on the Redemption Date.

IN THE EVENT funds for the payment of the Redemption Price are not received by the Redemption Date, this notice shall be null and void and of no force and effect. Any Certificates theretofore delivered for redemption shall be returned to the respective owners thereof, and said Certificates shall remain outstanding as though this Conditional Notice of Redemption had not been given. Notice of failure to receive funds and rescission of this redemption shall be given by the Paying Agent/Registrar by first class mail to the registered holders of the Certificates.

Provided such funds are received by the Redemption Date, such Certificates shall become due and payable on the Redemption Date and interest thereon shall cease to accrue from and after said redemption date and payment of the redemption price of said obligations shall be paid to the registered owners of the obligations only upon presentation and surrender thereof to Frost Bank, _____, _____, Texas 7_____.

THIS NOTICE is issued and given pursuant to the terms and conditions prescribed for the redemption of said obligations and pursuant to an ordinance by the City Council of the City of Texarkana, Texas.

FROST BANK

_____, Texas 7_____

EXHIBIT E**CONDITIONAL NOTICE OF REDEMPTION**

**CITY OF TEXARKANA, TEXAS
COMBINATION TAX AND REVENUE CERTIFICATES OF OBLIGATION
SERIES 2009**

Dated December 1, 2009

CONDITIONAL NOTICE IS HEREBY GIVEN that all of the obligations of the above series maturing on and after February 1, 2022, and aggregating in the principal amount of \$2,440,000, have been called for redemption on April 28, 2020 (the "Redemption Date") at the redemption price of par and accrued interest to the date of redemption, such certificates of obligation (the "Certificates") being identified as follows:

<u>Year of Maturity</u>	<u>Principal Amount Outstanding/ Being Refunded (\$)</u>	<u>Number</u>
2021	865,000	
2022	900,000	
2023	940,000	
2024	975,000	
2025	1,015,000	
2026	1,060,000	
2027	1,105,000	
2028	1,150,000	
2029	1,200,000	
2030	1,255,000	

THIS CONDITIONAL NOTICE OF REDEMPTION, and the payment of the principal of and premium, if any, and interest on the Certificates (the "Redemption Price") on the Redemption Date, is subject to the receipt of an amount sufficient to pay in full the Redemption Price on the Redemption Date.

IN THE EVENT funds for the payment of the Redemption Price are not received by the Redemption Date, this notice shall be null and void and of no force and effect. Any Certificates theretofore delivered for redemption shall be returned to the respective owners thereof, and said Certificates shall remain outstanding as though this Conditional Notice of Redemption had not been given. Notice of failure to receive funds and rescission of this redemption shall be given by the Paying Agent/Registrar by first class mail to the registered holders of the Certificates.

Provided such funds are received by the Redemption Date, such Certificates shall become due and payable on the Redemption Date and interest thereon shall cease to accrue from and after said redemption date and payment of the redemption price of said obligations shall be paid to the registered owners of the obligations only upon presentation and surrender thereof to Wells Fargo Bank, National Association at its following addresses:

<u>First Class/Registered/Certified</u>	<u>Express Delivery/Courier</u>	<u>By Hand Only</u>
Wells Fargo Bank, National Association Corporate Trust Services P.O. Box 1517, MAC N9303-121 Minneapolis, Minnesota 55480	Wells Fargo Bank, National Association Corporate Trust Services, MAC N9303-121 6 th & Marquette Avenue, 12 th Floor Minneapolis, Minnesota 55479	Wells Fargo Bank, National Association Corporate Trust Operations Northstar East Building 608 2 nd Avenue South Minneapolis, Minnesota 55402

THIS NOTICE is issued and given pursuant to the terms and conditions prescribed for the redemption of said obligations and pursuant to an ordinance by the City Council of the City of Texarkana, Texas.

WELLS FARGO BANK, NATIONAL ASSOCIATION
625 Marquette Ave S, 11th Floor
Minneapolis, Minnesota 55749

City of Texarkana, Texas

Developing Perspectives and Goals Pending Approval by the City Council:

Perspectives	Goals
Serve the Community	☐ Promote an Environmentally Sensitive & Livable Community ☐ Provide a Safe Community ☐ Deliver Quality Services ☐ Foster a Healthy Community
Run the Operations	☐ Enhance Community Preparedness & Responsiveness ☐ Maximize Partnership Opportunities ☐ Provide Courteous & Responsive Customer Service ☐ Model a Positive City Image ☐ Deliver Efficient Services ☐ Cultivate Community Involvement & Access
Manage the Resources	☒ Maintain Fiscal Strength ☒ Maximize Utilization & Resources ☐ Invest in Infrastructure & Transportation
Develop Personnel	☐ Develop a Skilled & Diverse Workforce ☐ Create a Positive & Rewarding Work Culture

Perspectives and Goals Additional Comments:

NONE

Resource Impact:

Staff time required if item is approved: Medium

Other Potential Impacts:

NONE APPLICABLE

Public Information Plan:

☐ Newspaper Notice (Required by Statute)	☐ Public Hearing (Required by Statute)
☐ Public Forum/Input Session	☐ Press Release
☐ E-News Distribution	☐ Website Notice
☐ Social Media (Twitter, Facebook, etc.)	☐ Special Mailing
☐ Flyers Posted	☐ Banners Posted
☐ Survey	☐ Automated Phone Call
☒ None Required	☐

Other:

City of Texarkana, Texas

Briefing Sheet

Version:

Update Date: 3/18/2020 8:53 AM

Lead Department: Finance Department **Action Officer:** Kristin Peeples,
Ordinance No. 2020-031 discussing and considering all matters incident and
related to the issuance and sale of “City of Texarkana, Texas, General
Obligation Refunding Bonds, Taxable Series 2020B”, including the adoption of
an ordinance authorizing the issuance of such bonds and providing for the
Subject: redemption of the obligations being refunded.

Briefing: 3/23/2020 **Public Hearing:** **Council Vote:** 3/23/2020

Item Schedule

Updates/History of Briefing:

Not Applicable

Executive Summary and Background Information:

Jason Hughes, Managing Director of Hilltop Securities, presented information related to a proposed refunding of the Series 2010 Certificates of Obligation at the February 24, 2020 council meeting. Based on the current market interest rates, the City can refund these outstanding bonds for debt service savings. The City will solicit bids from local, regional and even national banks and the best bid with the lowest interest rate will win. The results will be considered by the City Council at the March 23, 2020 meeting.

Potential Options:

- Approve
- Deny

Fiscal Implications:

Approval of this item would allow for debt service savings.

Staff Recommendation:

Staff recommends approval.

Advisory Board/Committee Review:

None

Board/Committee Recommendation:

None

Advisory Board/Committee Meeting Date and Minutes:

Not Applicable

City of Texarkana, Texas

Attachments

- a. 2020-031 ORD TEXARKANA GO REF TAXABLE 2020B - private placement - one ter.._ (DOCX)
- b. 2020-031 Goals & Perspectives (DOCX)

Staff Coordination

Finance Department	Kristin Peebles	Department Head Review	Completed	
	03/11/2020 12:34 PM			
Finance Department	Kristin Peebles	Finance Review	Completed	03/11/2020
	12:34 PM			
City Manager	Shirley Jaster	City Manager Review	Completed	03/19/2020
	10:37 AM			
City Council	Vicky Coopwood	Meeting	Pending	03/23/2020
	6:00 PM			

Meeting History

ORDINANCE NO. 2020-031

AN ORDINANCE authorizing the issuance of "CITY OF TEXARKANA, TEXAS, GENERAL OBLIGATION REFUNDING BONDS, TAXABLE SERIES 2020B," specifying the terms and features of said bonds; levying a continuing direct annual ad valorem tax for the payment of said bonds; and resolving other matters incident and related to the issuance, sale, payment and delivery of said bonds, including the approval and execution of a Paying Agent/Registrar Agreement and a Purchase Letter, and providing an effective date.

WHEREAS, the City Council (the "Council") of the City of Texarkana, Texas (the "City"), has heretofore issued, sold and delivered, and there are currently outstanding obligations of the following issue, to wit: "City of Texarkana, Texas, Combination Tax and Revenue Certificates of Obligation, Taxable Series 2010", dated May 15, 2010, scheduled to mature on February 1 in each of the years 2021, 2022, 2025 and 2030 and aggregating in the principal amount of \$4,295,000 (the "Refunded Obligations"); and

WHEREAS, pursuant to the provisions of Texas Government Code, Chapter 1207, as amended, the Council is authorized to issue refunding bonds and deposit the proceeds of the sale thereof directly with the place of payment for the Refunded Obligations, and such deposit, when made in accordance with said statute, shall constitute the making of firm banking and financial arrangements for the discharge and final payment of the Refunded Obligations; and

WHEREAS, the Council hereby finds and determines that the Refunded Obligations should be refunded at this time in order to achieve a savings of \$857,615.38 in debt service payments on such indebtedness, and the refunding will further provide a net present value savings to the City of \$764,996.57; and

WHEREAS, the Council hereby finds and determines that the Refunded Obligations are scheduled to mature, or are subject to being redeemed, not more than twenty (20) years from the date of the refunding bonds herein authorized; now therefor

BE ORDAINED BY THE CITY COUNCIL OF THE CITY OF TEXARKANA, TEXAS:

SECTION 1. Authorization - Designation - Principal Amount - Purpose. General obligation bonds of the City shall be and are hereby authorized to be issued in the aggregate principal amount of \$4,330,000 to be designated and bear the title "CITY OF TEXARKANA, TEXAS, GENERAL OBLIGATION REFUNDING BONDS, TAXABLE SERIES 2020B" (the "Bonds"), for the purpose of providing funds (1) for the discharge and final payment of certain outstanding obligations of the City (identified in the preamble hereof and referred to as the "Refunded Obligations") and (2) to pay for professional services rendered in relation thereto, all in accordance with the authority conferred by and in conformity with the Constitution and laws of the State of Texas, including Chapter 1207 of the Texas Government Code, as amended.

SECTION 2. Fully Registered Obligations - Bond Date - Authorized Denominations - Stated Maturity - Interest Rate. The Bonds shall be issued as fully registered obligations only, shall be dated April 1, 2020 (the "Bond Date"), shall be in denominations of \$100,000 or any integral multiple of \$1,000 in excess thereof and shall become due and payable on February 1, 2030 (the "Stated Maturity").

The Bonds shall bear interest on the unpaid principal amounts from the date of delivery to the initial purchasers at the rate of 1.87% per annum (calculated on the basis of a 360-day year consisting of twelve 30-day months). Interest on the Bonds shall be payable on February 1 and August 1 in each year until maturity or prior redemption, commencing August 1, 2020.

Upon the occurrence of a payment default longer than 90 days, the interest rate of the Bonds will adjust to a rate of 6.87% which adjusted rate will apply to all outstanding principal on the Bonds until the payment default has been cured, at which time the interest rate will revert back to 1.87%.

SECTION 3. Terms of Payment - Paying Agent/Registrar. The principal of, premium, if any, and the interest on the Bonds, due and payable by reason of maturity or otherwise, shall be payable only to the registered owners or holders of the Bonds (the "Holders") appearing on the registration and transfer books maintained by the Paying Agent/Registrar and the payment thereof shall be in any coin or currency of the United States of America which at the time of payment is legal tender for the payment of public and private debts, and shall be without exchange or collection charges to the Holders.

The selection and appointment of U.S. Bank National Association, Dallas, Texas, to serve as Paying Agent/Registrar for the Bonds is hereby approved and confirmed. Books and records relating to the registration, payment, exchange, and transfer of the Bonds (the "Register") shall at all times be kept and maintained on behalf of the City by the Paying Agent/Registrar, all as provided herein, in accordance with the terms and provisions of a "Paying Agent Registrar Agreement," substantially in the form attached hereto as **Exhibit A**, and such reasonable rules and regulations as the Paying Agent/Registrar and the City may prescribe. The Mayor or Mayor Pro Tem and City Secretary are authorized to execute and deliver such Paying Agent/Registrar Agreement in connection with the delivery of the Bonds. The City covenants to maintain and provide a Paying Agent/Registrar at all times until the Bonds are paid and discharged; and, any successor Paying Agent/Registrar shall be a commercial bank, trust company, financial institution or other entity qualified and authorized to serve in such capacity and perform the duties and services of Paying Agent/Registrar. Upon any change in the Paying Agent/Registrar for the Bonds, the City agrees to promptly cause a written notice of the change to be sent to each Holder by United States mail, first class postage prepaid; and, such notice shall also give the address of the new Paying Agent/Registrar.

Principal of and premium, if any, on the Bonds, shall be payable at the Stated Maturity only upon presentation and surrender of the Bonds to the Paying Agent/Registrar at its designated offices, initially in St. Paul, Minnesota, or, with respect to a successor Paying Agent/Registrar, at the designated offices of such successor (the "Designated Payment/Transfer Office") provided; however, with respect to principal payments prior to the Stated Maturity, and so long as Key Government Finance, Inc. owns 100% of the Outstanding Bonds, the Bonds need not be surrendered to the Paying Agent/Registrar, who will merely document such payment on an internal ledger maintained by the Paying Agent/Registrar. The Paying Agent/Registrar shall pay interest on the Bonds only to the Holder whose name appears in the Register at the close of business on the fifteenth day of the month next preceding each interest payment date (the "Record Date") and shall pay either by: (1) check sent by United States Mail, first class postage prepaid, to the address of the registered owner recorded in the Register or (2) by such other method, acceptable to the Paying Agent/Registrar, requested by the Holder at the Holder's risk and expense. If the date for the payment of the principal of or interest on the Bonds shall be a Saturday, Sunday, a legal holiday, or a day when banking institutions in the city where the Designated Payment/Transfer Office of the Paying Agent/Registrar is located are authorized by

law or executive order to be closed; then, the date for such payment shall be the next succeeding day which is not such a Saturday, Sunday, legal holiday, or day when banking institutions are authorized to be closed and payment on such date shall have the same force and effect as if made on the original date payment was due.

In the event of a nonpayment of interest on a scheduled payment date, and for thirty (30) days thereafter, a new record date for such interest payment (a "Special Record Date") will be established by the Paying Agent/Registrar if and when funds for the payment of such interest have been received from the City. Notice of the Special Record Date and of the scheduled payment date of the past due interest (which shall be fifteen (15) days after the Special Record Date) shall be sent at least five (5) business days prior to the Special Record Date by United States mail, first class postage prepaid, to the address of each Holder appearing on the Register at the close of business on the last business day next preceding the date of mailing of such notice.

SECTION 4. Redemption.

(a) Optional Redemption. The Bonds shall be subject to redemption prior to maturity, at the option of the City on any date, in whole but not in part, in principal amounts of \$1,000 or any integral multiple thereof and by lot by the Paying Agent/Registrar at the redemption price of par, together with interest accrued to the redemption date.

At least forty-five (45) days prior to an optional redemption date for the Bonds (unless a shorter notification period shall be satisfactory to the Paying Agent/Registrar), the City shall notify the Paying Agent/Registrar of the decision to redeem the Bonds and the date of redemption therefor. The decision of the City to exercise the right to redeem Bonds shall be entered in the minutes of the governing body of the City.

(b) Mandatory Redemption. The Bonds shall be subject to mandatory redemption prior to maturity at the price of par plus accrued interest to the mandatory redemption date on the respective dates and in principal amounts as follows:

<u>Redemption Date</u>	<u>Principal Amount (\$)</u>
February 1, 2021	395,000
February 1, 2022	405,000
February 1, 2023	415,000
February 1, 2024	420,000
February 1, 2025	430,000
February 1, 2026	440,000
February 1, 2027	445,000
February 1, 2028	450,000
February 1, 2029	460,000
February 1, 2030*	470,000

*maturity

Approximately forty-five (45) days prior to each mandatory redemption date for the Bonds, the Paying Agent/Registrar shall select by lot the numbers of the Bonds to be redeemed on the next following March 1 from moneys set aside for that purpose in the Interest and Sinking Fund (as hereinafter defined). Any Bond not selected for prior redemption shall be paid on the date of the Stated Maturity.

The principal amount of the Bonds required to be redeemed on a mandatory redemption date may be reduced, at the option of the City, by the principal amount of Bonds which, at least 50 days prior to the mandatory redemption date, shall have been acquired by the City at a price not exceeding the principal amount of such Bonds plus accrued interest to the date of purchase thereof, and delivered to the Paying Agent/Registrar for cancellation and not theretofore credited against a mandatory redemption requirement.

(c) Notice of Redemption. Not less than thirty (30) days prior to an optional redemption date for the Bonds, a notice of redemption shall be sent by United States Mail, first class postage prepaid, in the name of the City and at the City's expense, or by such other method as the Paying Agent/Registrar shall deem appropriate and effective, to each Holder of the Bonds to be redeemed in whole at the address of the Holder appearing on the Register at the close of business on the business day next preceding the date of mailing such notice, and any notice of redemption so mailed shall be conclusively presumed to have been duly given irrespective of whether received by the Holder.

All notices of redemption shall (i) specify the date of redemption for the Bonds, (ii) identify the Bonds to be redeemed, (iii) state the redemption price, (iv) state that the Bonds shall become due and payable on the redemption date specified, and the interest thereon shall cease to accrue from and after the redemption date, and (v) solely with respect to the final payment of principal, specify that payment of the redemption price for the Bonds shall be made at the Designated Payment/Transfer Office of the Paying Agent/Registrar only upon presentation and surrender of the Bonds. If a Bond is subject by its terms to prior redemption and has been called for redemption and notice of redemption has been duly given as hereinabove provided, such Bond shall become due and payable and interest thereon shall cease to accrue from and after the redemption date therefor; provided moneys sufficient for the payment of such Bond at the then applicable redemption price are held for the purpose of such payment by the Paying Agent/Registrar.

(d) Conditional Notice of Redemption. With respect to any optional redemption of the Bonds, unless certain prerequisites to such redemption required by this Ordinance have been met and moneys sufficient to pay the principal of and premium, if any, and interest on the Bonds to be redeemed shall have been received by the Paying Agent/Registrar prior to the giving of such notice of redemption, such notice may state that said redemption is conditional upon the satisfaction of such prerequisites and receipt of such moneys by the Paying Agent/Registrar on or prior to the date fixed for such redemption. If a conditional notice of redemption is given and such prerequisites to the redemption are not satisfied or sufficient moneys are not received, such notice shall be of no force and effect, the City shall not redeem such Bonds and the Paying Agent/Registrar shall give notice, in the manner in which the notice of redemption was given, to the effect that the Bonds have not been redeemed.

SECTION 5. Registration - Transfer - Exchange of Bonds - Predecessor Bonds. A Register relating to the registration, payment, and transfer or exchange of the Bonds shall at all times be kept and maintained by the City at the Designated Payment/Transfer Office of the Paying Agent/Registrar and at a place within the State of Texas, as provided herein and in accordance with the provisions of an agreement with the Paying Agent/Registrar and such rules and regulations as the Paying Agent/Registrar and the City may prescribe. The Paying Agent/Registrar shall obtain, record, and maintain in the Register the name and address of each registered owner of the Bonds issued under and pursuant to the provisions of this Ordinance. Any Bond may, in accordance with its terms and the terms hereof, be transferred or exchanged for Bonds of like kind, of other authorized denominations upon the Register by the Holder, in person or by his duly authorized agent, upon surrender of such Bond to the Paying

Agent/Registrar for cancellation, accompanied by a written instrument of transfer or request for exchange duly executed by the Holder or by his duly authorized agent, in form satisfactory to the Paying Agent/Registrar.

Upon surrender for transfer of any Bond (other than the Initial Bond authorized in Section 7 hereof) at the Designated Payment/Transfer Office of the Paying Agent/Registrar, the Paying Agent/Registrar shall register and deliver, in the name of the designated transferee or transferees, one or more new Bonds, executed on behalf of, and furnished by, the City of authorized denominations and of like Stated Maturity and of a like aggregate principal amount as the Bond or Bonds surrendered for transfer.

At the option of the Holder, Bonds (other than the Initial Bond authorized in Section 7 hereof) may be exchanged for other Bonds of authorized denominations and of like aggregate principal amount as the Bonds surrendered for exchange, upon surrender of the Bonds to be exchanged at the Designated Payment/Transfer Office of the Paying Agent/Registrar. Whenever any Bonds are surrendered for exchange, the Paying Agent/Registrar shall register and deliver new Bonds, executed on behalf of, and furnished by, the City, to the Holder requesting the exchange.

All Bonds issued in any transfer or exchange of Bonds shall be delivered to the Holders at the Designated Payment/Transfer Office of the Paying Agent/Registrar or sent by United States mail, first class postage prepaid, to the Holders, and, upon the registration and delivery thereof, the same shall be the valid obligations of the City, evidencing the same obligation to pay, and entitled to the same benefits under this Ordinance, as the Bonds surrendered in such transfer or exchange.

All transfers or exchanges of Bonds pursuant to this Section shall be made without expense or service charge to the Holder, except as otherwise herein provided, and except that the Paying Agent/Registrar shall require payment by the Holder requesting such transfer or exchange of any tax or other governmental charges required to be paid with respect to such transfer or exchange.

Bonds cancelled by reason of an exchange or transfer pursuant to the provisions of this Section are hereby defined to be "Predecessor Bonds," evidencing all or a portion, as the case may be, of the same obligation to pay evidenced by the new Bond or Bonds registered and delivered in the exchange or transfer. Additionally, the term "Predecessor Bonds" shall include any mutilated, lost, destroyed, or stolen Bond for which a replacement Bond has been issued, registered, and delivered in lieu thereof pursuant to the provisions of Section 10 hereof and such new replacement Bond shall be deemed to evidence the same obligation as the mutilated, lost, destroyed, or stolen Bond.

SECTION 6. Execution - Registration. The Bonds shall be executed on behalf of the City by the Mayor or Mayor Pro Tem under its seal reproduced or impressed thereon and countersigned by the City Secretary. The signature of said officers and the seal of the City on the Bonds may be manual or facsimile. Bonds bearing the manual or facsimile signatures of individuals who are or were the proper officers of the City on the Bond Date shall be deemed to be duly executed on behalf of the City, notwithstanding that such individuals or either of them shall cease to hold such offices at the time of delivery of the Bonds to the initial purchaser(s) and with respect to Bonds delivered in subsequent exchanges and transfers, all as authorized and provided in Texas Government Code, Chapter 1201, as amended.

No Bond shall be entitled to any right or benefit under this Ordinance, or be valid or obligatory for any purpose, unless there appears on such Bond either a certificate of registration substantially in the form provided in Section 8C, manually executed by the Comptroller of Public Accounts of the State of Texas or his duly authorized agent, or a certificate of registration substantially in the form provided in Section 8D, manually executed by an authorized officer, employee or representative of the Paying Agent/Registrar, and either such certificate upon any Bond duly signed shall be conclusive evidence, and the only evidence, that such Bond has been duly certified, registered and delivered.

SECTION 7. Initial Bond. The Bonds herein authorized shall be initially issued as a single fully registered bond in the aggregate principal amount shown in Section 1 hereof and numbered T-1. The initial bond (the "Initial Bond") shall be registered in the name of the initial purchaser(s), or the designee thereof. The Initial Bond shall be the Bond submitted to the Office of the Attorney General of the State of Texas for approval, certified and registered by the Office of the Comptroller of Public Accounts of the State of Texas, and delivered to the initial purchaser(s). Any time after the delivery of the Initial Bond, the Paying Agent/Registrar, pursuant to written instructions from the initial purchaser(s), or the designee thereof, shall cancel the Initial Bond and exchange it for definitive Bonds of authorized denominations and principal amounts for transfer and delivery to the named Holders at the addresses identified for such purpose; all pursuant to and in accordance with such written instructions from the initial purchaser(s), or the designee thereof, and such other information and documentation as the Paying Agent/Registrar may reasonably require.

SECTION 8. Forms.

A. Forms Generally. The Bonds, the Registration Certificate of the Comptroller of Public Accounts of the State of Texas, the Registration Certificate of Paying Agent/Registrar, and the form of Assignment to be printed on each of the Bonds, shall be substantially in the forms set forth in this Section with such appropriate insertions, omissions, substitutions, and other variations as are permitted or required by this Ordinance and may have such letters, numbers, or other marks of identification (including identifying numbers and letters of the Committee on Uniform Securities Identification Procedures of the American Bankers Association) and such legends and endorsements (including insurance legends in the event the Bonds, or any maturities thereof, are purchased with insurance and any reproduction of an opinion of counsel) thereon as may, consistently herewith, be established by the City or determined by the officers executing such Bonds as evidenced by their execution. Any portion of the text of any Bonds may be set forth on the reverse thereof, with an appropriate reference thereto on the face of the Bond.

The definitive Bonds and the Initial Bond shall be printed, lithographed, engraved, typewritten, photocopied or otherwise reproduced in any other similar manner, all as determined by the officers executing such Bonds as evidenced by their execution thereof.

B. Form of Bonds.

REGISTERED
NO. [T-1][R-_____]

UNITED STATES OF AMERICA
STATE OF TEXAS
CITY OF TEXARKANA, TEXAS
GENERAL OBLIGATION REFUNDING BOND
TAXABLE SERIES 2020B

REGISTERED
\$ _____

Bond Date:
April 1, 2020

Interest Rate:
1.87%

Stated Maturity:
February 1, 2030

Registered Owner: _____

Principal Amount: _____ DOLLARS

The City of Texarkana (the "City"), a body corporate and municipal corporation in the County of Bowie, State of Texas, for value received, acknowledges itself indebted to and hereby promises to pay to the registered owner named above, or the registered assigns thereof, on the Stated Maturity date specified above the Principal Amount hereinabove stated (or so much thereof as shall not have been paid upon prior redemption) and to pay interest on the unpaid principal amount hereof from the interest payment date next preceding the "Registration Date" of this Bond appearing below (unless this Bond bears a "Registration Date" as of an interest payment date, in which case it shall bear interest from such date, or unless the "Registration Date" of this Bond is prior to the initial interest payment date in which case it shall bear interest from the date of delivery to the initial purchasers) at the per annum rate of interest specified above computed on the basis of a 360-day year consisting of twelve 30-day months; such interest being payable on February 1 and August 1 in each year, commencing August 1, 2020, until maturity or prior redemption. Principal of this Bond shall be payable at its Stated Maturity to the Registered Owner hereof upon presentation and surrender to U.S. Bank National Association, Dallas, Texas (the "Paying Agent/Registrar"), upon its presentation and surrender at its designated offices, initially in St. Paul, Minnesota, or, with respect to a successor paying agent/registrar, at the designated offices of such successor (the "Designated Payment/Transfer Office"); provided; however, with respect to principal payments prior to the Stated Maturity, and so long as Key Government Finance, Inc. owns 100% of the Outstanding Bonds, the Bonds need not be surrendered to the Paying Agent/Registrar, who will merely document such payment on an internal ledger maintained by the Paying Agent/Registrar. Interest is payable to the registered owner of this Bond (or one or more Predecessor Bonds, as defined in the Ordinance hereinafter referenced) whose name appears on the "Register" maintained by the Paying Agent/Registrar at the close of business on the "Record Date," which is the fifteenth day of the month next preceding each interest payment date, and interest shall be paid by the Paying Agent/Registrar by check sent United States mail, first class postage prepaid, to the address of the registered owner recorded in the Register or by such other method, acceptable to the Paying Agent/Registrar, requested by, and at the risk and expense of, the registered owner. If the date for the payment of the principal of or interest on the Bonds shall be a Saturday, Sunday, a legal holiday, or a day when banking institutions in the city where the Designated Payment/Transfer Office of the Paying Agent/Registrar is located are authorized by law or executive order to be closed, then the date for such payment shall be the next succeeding day which is not such a Saturday, Sunday, legal holiday, or day when banking institutions are authorized to be closed; and payment on such date shall have the same force and effect as if made on the original date payment was due. All payments of principal of, premium, if any, and interest on this Bond shall be without exchange or collection charges to the owner hereof and in any coin or currency of the United States of America which at the time of payment is legal tender for the payment of public and private debts.

This Bond is one of the series specified in its title issued in the aggregate principal amount of \$4,330,000 to be designated and bear the title "CITY OF TEXARKANA, TEXAS, GENERAL OBLIGATION REFUNDING BONDS, TAXABLE SERIES 2020B" (the "Bonds"), for the purpose of providing funds (1) for the discharge and final payment of certain outstanding obligations of the City (identified in the preamble of the Ordinance (defined below) and referred to as the "Refunded Obligations") and (2) to pay for professional services rendered in relation thereto, all in

accordance with the authority conferred by and in conformity with the Constitution and laws of the State of Texas, including Texas Government Code, Chapter 1207, as amended, and pursuant to an Ordinance adopted by the City Council of the City (herein referred to as the "Ordinance").

The Bonds shall be subject to redemption prior to maturity, at the option of the City on any date, in whole but not in part, in principal amounts of \$1,000 or any integral multiple thereof and by lot by the Paying Agent/Registrar at the redemption price of par, together with interest accrued to the redemption date.

At least forty-five (45) days prior to a redemption date for the Bonds (unless a shorter notification period shall be satisfactory to the Paying Agent/Registrar), the City shall notify the Paying Agent/Registrar of the decision to redeem the Bonds and the date of redemption therefor.

The Bonds are subject to mandatory redemption prior to maturity with funds on deposit in the Interest and Sinking Fund established and maintained for the payment thereof in the Ordinance, and shall be redeemed in part prior to maturity at the price of par and accrued interest thereon to the date of redemption, and without premium, on the dates and in the principal amounts as follows:

<u>Redemption Date</u>	<u>Principal Amount (\$)</u>
February 1, 2021	395,000
February 1, 2022	405,000
February 1, 2023	415,000
February 1, 2024	420,000
February 1, 2025	430,000
February 1, 2026	440,000
February 1, 2027	445,000
February 1, 2028	450,000
February 1, 2029	460,000
February 1, 2030*	470,000

*maturity

The particular Bonds to be redeemed on each redemption date shall be chosen by lot by the Paying Agent/Registrar; provided, however, that the principal amount of Bonds required to be redeemed on a mandatory redemption date may be reduced, at the option of the City, by the principal amount of Bonds which, at least 50 days prior to the mandatory redemption date, shall have been acquired by the City at a price not exceeding the principal amount of such Bonds plus accrued interest to the date of purchase thereof, and delivered to the Paying Agent/Registrar for cancellation.

At least thirty (30) days prior to an optional redemption of Bonds, the City shall cause a written notice of such redemption to be sent by United States mail, first class postage prepaid, to the registered owners of each Bond to be redeemed at the address shown on the Register and subject to the terms and provisions relating thereto contained in the Ordinance. If a Bond (or any portion of its principal sum) shall have been duly called for redemption and notice of such redemption duly given, then upon such redemption date such Bond (or the portion of its principal sum to be redeemed) shall become due and payable, and, if moneys for the payment of the redemption price and the interest accrued on the principal amount to be redeemed to the date of redemption are held for the purpose of such payment by the Paying Agent/Registrar, interest shall

cease to accrue and be payable from and after the redemption date on the principal amount hereof redeemed.

With respect to any optional redemption of the Bonds, unless certain prerequisites to such redemption required by the Ordinance have been met and moneys sufficient to pay the principal of and premium, if any, and interest on the Bonds to be redeemed shall have been received by the Paying Agent/Registrar prior to the giving of such notice of redemption, such notice may state that said redemption is conditional upon the satisfaction of such prerequisites and receipt of such moneys by the Paying Agent/Registrar on or prior to the date fixed for such redemption. If a conditional notice of redemption is given and such prerequisites to the redemption are not satisfied or sufficient moneys are not received, such notice shall be of no force and effect, the City shall not redeem such Bonds and the Paying Agent/Registrar shall give notice, in the manner in which the notice of redemption was given, to the effect that the Bonds have not been redeemed.

The Bonds are payable from the proceeds of an ad valorem tax levied, within the limitations prescribed by law, upon all taxable property in the City. Reference is hereby made to the Ordinance, a copy of which is on file in the Designated Payment/Transfer Office of the Paying Agent/Registrar, and to all of the provisions of which the registered owner of this Bond by the acceptance hereof hereby assents, for definitions of terms; the description of and the nature and extent of the tax levied for the payment of the Bonds; the terms and conditions relating to the transfer or exchange of this Bond; the conditions upon which the Ordinance may be amended or supplemented with or without the consent of the registered owners; the rights, duties, and obligations of the City and the Paying Agent/Registrar; the terms and provisions upon which this Bond may be discharged at or prior to its maturity, and deemed to be no longer Outstanding; and for other terms and provisions contained therein. Capitalized terms used herein have the meanings assigned in the Ordinance.

This Bond, subject to certain limitations contained in the Ordinance, may be transferred on the Register only upon its presentation and surrender at the Designated Payment/Transfer Office of the Paying Agent/Registrar, with the Assignment hereon duly endorsed by, or accompanied by a written instrument of transfer in form satisfactory to the Paying Agent/Registrar duly executed by, the registered owner hereof, or his duly authorized agent. When a transfer on the Register occurs, one or more new fully registered Bonds of the same Stated Maturity, of authorized denominations, bearing the same rate of interest, and of the same aggregate principal amount will be issued by the Paying Agent/Registrar to the designated transferee or transferees.

The City and the Paying Agent/Registrar, and any agent of either, shall treat the registered owner whose name appears on the Register (i) on the Record Date, as the owner entitled to payment of interest hereon, (ii) on the date of surrender of this Bond, as the owner entitled to payment of principal hereof at its Stated Maturity and (iii) on any other date, as the owner for all other purposes, and neither the City nor the Paying Agent/Registrar, or any agent of either, shall be affected by notice to the contrary. In the event of nonpayment of interest on a scheduled payment date and for thirty (30) days thereafter, a new record date for such interest payment (a "Special Record Date") will be established by the Paying Agent/Registrar, if and when funds for the payment of such interest have been received from the City. Notice of the Special Record Date and of the scheduled payment date of the past due interest (which shall be fifteen (15) days after the Special Record Date) shall be sent at least five (5) business days prior to the Special Record Date by United States mail, first class postage prepaid, to the address of each registered owner appearing on the Register at the close of business on the last business day next preceding the date of mailing of such notice.

It is hereby certified, recited, represented and declared that the City is a body corporate and political subdivision duly organized and legally existing under and by virtue of the Constitution and laws of the State of Texas; that the issuance of the Bonds is duly authorized by law; that all acts, conditions and things required to exist and be done precedent to and in the issuance of the Bonds to render the same lawful and valid obligations of the City have been properly done, have happened and have been performed in regular and due time, form and manner as required by the Constitution and laws of the State of Texas, and the Ordinance; that the Bonds do not exceed any Constitutional or statutory limitation; and that due provision has been made for the payment of the principal of and interest on the Bonds by the levy of a tax as stated above. In case any provision in this Bond shall be invalid, illegal, or unenforceable, the validity, legality, and enforceability of the remaining provisions shall not in any way be affected or impaired thereby. The terms and provisions of this Bond and the Ordinance shall be construed in accordance with and shall be governed by the laws of the State of Texas.

IN WITNESS WHEREOF, the City Council of the City has caused this Bond to be duly executed under the official seal of the City as of the Bond Date.

CITY OF TEXARKANA, TEXAS

[Mayor][Mayor Pro Tem]

COUNTERSIGNED:

City Secretary

(City Seal)

C. Form of Registration Certificate of Comptroller of Public Accounts to appear on Initial Bond only.

REGISTRATION CERTIFICATE OF
COMPTROLLER OF PUBLIC ACCOUNTS

OFFICE OF THE COMPTROLLER

OF PUBLIC ACCOUNTS

THE STATE OF TEXAS

(
(
(
(
(

REGISTER NO. _____

I HEREBY CERTIFY that this Bond has been examined, certified as to validity and approved by the Attorney General of the State of Texas, and duly registered by the Comptroller of Public Accounts of the State of Texas.

WITNESS my signature and seal of office this _____.

Comptroller of Public Accounts
of the State of Texas

(SEAL)

D. Form of Certificate of Paying Agent/Registrar to appear on Definitive Bonds only.

REGISTRATION CERTIFICATE OF PAYING AGENT/REGISTRAR

This Bond has been duly issued and registered under the provisions of the within mentioned Ordinance; the bond or bonds of the above entitled and designated series originally delivered having been approved by the Attorney General of the State of Texas and registered by the Comptroller of Public Accounts, as shown by the records of the Paying Agent/Registrar.

The designated office of the Paying Agent/Registrar in St. Paul, Minnesota is the Designated Payment/Transfer Office for this Bond.

U.S. BANK NATIONAL ASSOCIATION,
Dallas, Texas, as Paying Agent/Registrar

Registered this date:

_____ By: _____
Authorized Signature

E. Form of Assignment.

ASSIGNMENT

FOR VALUE RECEIVED the undersigned hereby sells, assigns, and transfers unto (Print or typewrite name, address, and zip code of transferee:) _____

(Social Security or other identifying number: _____)

)
the within Bond and all rights thereunder, and hereby irrevocably constitutes and appoints
attorney to transfer the within Bond on the books kept for registration thereof, with full power of substitution in the premises.

DATED: _____

Signature guaranteed:

NOTICE: The signature on this assignment must correspond with the name of the registered owner as it appears on the face of the within Bond in every particular.

SECTION 9. Levy of Taxes. To provide for the payment of the "Debt Service Requirements" of the Bonds, being (i) the interest on the Bonds and (ii) a sinking fund for their payment at maturity or a sinking fund of 2% (whichever amount is the greater), there is hereby levied, and there shall be annually assessed and collected in due time, form, and manner, a tax on all taxable property in the City, within the limitations prescribed by law, and such tax hereby levied on each one hundred dollars' valuation of taxable property in the City for the Debt Service Requirements of the Bonds shall be at a rate from year to year as will be ample and sufficient to provide funds each year to pay the principal of and interest on said Bonds while Outstanding; full allowance being made for delinquencies and costs of collection; separate books and records relating to the receipt and disbursement of taxes levied, assessed and collected for and on account of the Bonds shall be kept and maintained by the City at all times while the Bonds are Outstanding, and the taxes collected for the payment of the Debt Service Requirements on the Bonds shall be deposited to the credit of a "Special 2020B Bond Account" (the "Interest and Sinking Fund") maintained on the records of the City and deposited in a special fund maintained at an official depository of the City's funds; and such tax hereby levied, and to be assessed and collected annually, is hereby pledged to the payment of the Bonds.

The Mayor, Mayor Pro Tem, City Manager, Chief Financial Officer and City Secretary, any one or more of said officials of the City, are hereby authorized and directed to cause to be transferred to the Paying Agent/Registrar for the Bonds, from funds on deposit in the Interest and Sinking Fund, amounts sufficient to fully pay and discharge promptly each installment of interest and principal of the Bonds as the same accrues or matures; such transfers of funds to be made in such manner as will cause collected funds to be deposited with the Paying Agent/Registrar on or before each principal and interest payment date for the Bonds.

The City has sufficient current funds available and such funds are hereby appropriated to make the payments to become due on the Bonds on August 1, 2020, and the Mayor, Mayor Pro Tem, City Manager, Chief Financial Officer and City Secretary of the City, individually or jointly, are hereby authorized and directed to transfer and deposit in the Interest and Sinking Fund such amount of current funds which will be sufficient to pay the amounts to become due on the Bonds on August 1, 2020.

SECTION 10. Mutilated - Destroyed - Lost and Stolen Bonds. In case any Bond shall be mutilated, or destroyed, lost or stolen, the Paying Agent/Registrar may execute and deliver a replacement Bond of like form and tenor, and in the same denomination and bearing a number not contemporaneously outstanding, in exchange and substitution for such mutilated Bond, or in lieu of and in substitution for such destroyed, lost or stolen Bond, only upon the approval of the City and after (a) the filing by the Holder thereof with the Paying Agent/Registrar of evidence satisfactory to the Paying Agent/Registrar of the destruction, loss or theft of such Bond, and of the authenticity of the ownership thereof and (b) the furnishing to the Paying Agent/Registrar of indemnification in an amount satisfactory to hold the City and the Paying Agent/Registrar harmless. All expenses and charges associated with such indemnity and with the preparation,

execution and delivery of a replacement Bond shall be borne by the Holder of the Bond mutilated, or destroyed, lost or stolen.

Every replacement Bond issued pursuant to this Section shall be a valid and binding obligation of the City, and shall be entitled to all the benefits of this Ordinance equally and ratably with all other Outstanding Bonds; notwithstanding the enforceability of payment by anyone of the destroyed, lost, or stolen Bonds.

The provisions of this Section are exclusive and shall preclude (to the extent lawful) all other rights and remedies with respect to the replacement and payment of mutilated, destroyed, lost or stolen Bonds.

SECTION 11. Satisfaction of Obligation of City. If the City shall pay or cause to be paid, or there shall otherwise be paid to the Holders, the principal of, premium, if any, and interest on the Bonds, at the times and in the manner stipulated in this Ordinance, then the pledge of taxes levied under this Ordinance and all covenants, agreements, and other obligations of the City to the Holders shall thereupon cease, terminate, and be discharged and satisfied.

Bonds or any principal amount(s) thereof shall be deemed to have been paid within the meaning and with the effect expressed above in this Section when (i) money sufficient to pay in full such Bonds or the principal amount(s) thereof at maturity, together with all interest due thereon, shall have been irrevocably deposited with and held in trust by the Paying Agent/Registrar, or an authorized escrow agent, or (ii) Government Securities shall have been irrevocably deposited in trust with the Paying Agent/Registrar, or an authorized escrow agent, which Government Securities have been certified by an independent accounting or consulting firm to mature as to principal and interest in such amounts and at such times as will insure the availability, without reinvestment, of sufficient money, together with any moneys deposited therewith, if any, to pay when due the principal of and interest on such Bonds, or the principal amount(s) thereof, on and prior to the Stated Maturity thereof. The City covenants that no deposit of moneys or Government Securities will be made under this Section and no use made of any such deposit which would cause the Bonds to be treated as "arbitrage bonds" within the meaning of Section 148 of the Internal Revenue Code of 1986, as amended (the "Code"), or regulations adopted pursuant thereto.

Any moneys so deposited with the Paying Agent/Registrar, or an authorized escrow agent, and all income from Government Securities held in trust by the Paying Agent/Registrar, or an authorized escrow agent, pursuant to this Section which is not required for the payment of the Bonds, or any principal amount(s) thereof, or interest thereon with respect to which such moneys have been so deposited shall be remitted to the City or deposited as directed by the City. Furthermore, any money held by the Paying Agent/Registrar for the payment of the principal of and interest on the Bonds and remaining unclaimed for a period of three (3) years after the Stated Maturity of the Bonds such moneys were deposited and are held in trust to pay shall upon the request of the City be remitted to the City against a written receipt therefor. The provisions of this paragraph are subject to the applicable unclaimed property law of the State of Texas.

The term "Government Securities," as used herein, means (i) direct noncallable obligations of the United States of America, including obligations the principal of and interest on which are unconditionally guaranteed by the United States of America, (ii) noncallable obligations of an agency or instrumentality of the United States, including obligations unconditionally guaranteed or insured by the agency or instrumentality and, on the date of their acquisition or purchase by the City, are rated as to investment quality by a nationally recognized investment

rating firm not less than AAA or its equivalent, (iii) noncallable obligations of a state or an agency or a county, municipality, or other political subdivision of a state that have been refunded and that, on the date of their acquisition or purchase by the City, are rated as to investment quality by a nationally recognized investment rating firm not less than AAA or its equivalent and (iv) any other then authorized securities or obligations that may be used to defease obligations such as the Bonds under the then applicable laws of the State of Texas.

SECTION 12. Ordinance a Contract - Amendments - Outstanding Bonds. This Ordinance shall constitute a contract with the Holders from time to time, be binding on the City, and shall not be amended or repealed by the City so long as any Bond remains Outstanding except as permitted in this Section. The City may, without the consent of or notice to any Holders, from time to time and at any time, amend this Ordinance in any manner not detrimental to the interests of the Holders, including the curing of any ambiguity, inconsistency, or formal defect or omission in this Ordinance. Additionally, with the consent of Holders holding a majority in aggregate principal amount of the Bonds then Outstanding, the City may amend, add to, or rescind any of the provisions of this Ordinance; provided that, without the consent of all the Holders of Outstanding Bonds no amendment, addition, or rescission shall: (1) extend the time or times of payment of the principal of, premium, if any, and interest on the Bonds, reduce the principal amount thereof or the rate of interest thereon, or in any other way modify the terms of payment of the principal of, premium, if any, or interest on the Bonds, (2) give any preference to any Bond over any other Bond, or (3) reduce the aggregate principal amount of Bonds required to be held by Holders for consent to any such amendment, addition, or rescission.

The term "Outstanding" when used in this Ordinance with respect to Bonds means, as of the date of determination, all Bonds theretofore issued and delivered under this Ordinance, except:

- (1) those Bonds canceled by the Paying Agent/Registrar or delivered to the Paying Agent/Registrar for cancellation;
- (2) those Bonds deemed to be duly paid by the City in accordance with the provisions of Section 11 hereof; and
- (3) those mutilated, destroyed, lost, or stolen Bonds which have been replaced with Bonds registered and delivered in lieu thereof as provided in Section 10 hereof.

SECTION 13. Reserved.

SECTION 14. Sale of Bonds - Purchase Letter Approval. The Bonds are hereby sold to Key Government Finance, Inc. (the "Purchaser") in accordance with the Bond Purchase Letter (the "Purchase Letter"), dated as of March 23, 2020, attached hereto as **Exhibit B** and incorporated herein by reference as a part of this Ordinance, which sale of the Bonds to said Purchaser is hereby determined to be in the best interests of the City and is approved and confirmed. Delivery of the Bonds to the Purchaser shall occur as soon as possible upon payment being made therefor in accordance with the terms of sale. The Mayor or Mayor Pro Tem is hereby authorized and directed to execute said Purchase Letter for and on behalf of the City and as the act and deed of this Council, and in regard to the approval and execution of the Purchase Letter, the Council hereby finds, determines, and declares that the representations, warranties, and agreements of the City contained in the Purchase Letter are true and correct in all material respects and shall be honored and performed by the City. The Initial Bond shall be registered in the name of the Purchaser.

SECTION 15. Control and Custody of Bonds. The Mayor or Mayor Pro Tem of the City shall be and is hereby authorized to take and have charge of all necessary orders and records pending investigation by the Attorney General of the State of Texas, including the printing and supply of definitive Bonds, and shall take and have charge and control of the Initial Bond pending the approval thereof by the Attorney General, the registration thereof by the Comptroller of Public Accounts and the delivery thereof to the Purchasers.

SECTION 16. Proceeds of Sale. Immediately following the delivery of the Bonds, the proceeds of sale (less those proceeds of sale designated to pay costs of issuance) shall be deposited with the respective paying agents for the Refunded Obligations (the "Refunded Obligations Paying Agents") for the refunding of the Refunded Obligations. The proceeds of sale of the Bonds not so deposited with the Refunded Obligations Paying Agents for the refunding of the Refunded Obligations shall be disbursed for payment of costs of issuance, or deposited in the Interest and Sinking Fund for the Bonds. Such proceeds of sale may be invested in authorized investments and any investment earnings realized may be deposited in the Interest and Sinking Fund as shall be determined by the City Council of the City.

Additionally, on or immediately prior to the date of the delivery of the Bonds to the Purchasers, the Chief Financial Officer shall cause to be transferred in immediately available funds to the Refunded Obligations Paying Agents from moneys on deposit in the interest and sinking funds maintained for the payment of the Refunded Obligations the sum of \$94,030.87 to accomplish the refunding.

SECTION 17. Redemption of Refunded Obligations.

(a) The Refunded Obligations shall be redeemed and the same are hereby called for redemption on April 28, 2020 at the price of par and accrued interest to the date of redemption. The City Secretary is hereby authorized and directed to file a copy of this Ordinance, together with a suggested form of a notice of redemption to be sent to holders of the Refunded Obligations, with Wells Fargo Bank, National Association (the current paying agent/registrar for the Refunded Obligations), in accordance with the redemption provisions applicable to such obligations; such suggested form of notice of redemption being attached hereto as **Exhibit C** and incorporated herein by reference as a part of this Ordinance for all purposes.

(b) The redemption of the Refunded Obligations described above being associated with the refunding of such Refunded Obligations, the approval, authorization and arrangements herein given and provided for the redemption of such Refunded Obligations on the redemption date designated therefor and in the manner provided shall be irrevocable upon the issuance and delivery of the Bonds; and the City Secretary is hereby authorized and directed to make all arrangements necessary to notify the holders of such Refunded Obligations of the City's decision to redeem such Refunded Obligations on the date and in the manner herein provided and in accordance with the ordinance authorizing the issuance of such Refunded Obligations and this Ordinance.

SECTION 18. Notices to Holders - Waiver. Wherever this Ordinance provides for notice to Holders of any event, such notice shall be sufficiently given (unless otherwise herein expressly provided) if in writing and sent by United States mail, first class postage prepaid, to the address of each Holder appearing in the Register at the close of business on the business day next preceding the mailing of such notice.

In any case where notice to Holders is given by mail, neither the failure to mail such notice to any particular Holders, nor any defect in any notice so mailed, shall affect the sufficiency of such notice with respect to all other Bonds. Where this Ordinance provides for notice in any manner, such notice may be waived in writing by the Holder entitled to receive such notice, either before or after the event with respect to which such notice is given; and, such waiver shall be the equivalent of such notice. Waivers of notice by Holders shall be filed with the Paying Agent/Registrar, but such filing shall not be a condition precedent to the validity of any action taken in reliance upon such waiver.

SECTION 19. Cancellation. All Bonds surrendered for payment, transfer, exchange, or replacement, if surrendered to the Paying Agent/Registrar, shall be promptly canceled by it; and, if surrendered to the City, such Bonds shall be delivered to the Paying Agent/Registrar and, if not already canceled, shall be promptly canceled by the Paying Agent/Registrar. The City may at any time deliver to the Paying Agent/Registrar for cancellation any Bonds previously certified or registered and delivered which the City may have acquired in any manner whatsoever, and all Bonds so delivered shall be promptly canceled by the Paying Agent/Registrar. All canceled Bonds held by the Paying Agent/Registrar shall be returned to the City.

SECTION 20. Legal Opinion. The Purchaser's obligation to accept delivery of the Bonds is subject to being furnished a final opinion of Norton Rose Fulbright US LLP, Dallas, Texas, approving the Bonds as to their validity, with said opinion to be dated and delivered as of the date of delivery and payment for the Bonds. A true and correct reproduction of said opinion is hereby authorized to be printed on or attached to the definitive Bonds. The City Council confirms the continuation of the engagement of Norton Rose Fulbright US LLP as the City's bond counsel.

SECTION 21. Further Procedures. Any one or more of the Mayor, Mayor Pro Tem, City Manager, Chief Financial Officer and City Secretary are hereby expressly authorized, empowered and directed from time to time and at any time to do and perform all such acts and things and to execute, acknowledge and deliver in the name and on behalf of the City all agreements, instruments, certificates or other documents, whether mentioned herein or not, as may be necessary or desirable in order to carry out the terms and provisions of this Ordinance and the issuance of the Bonds. In addition, prior to the initial delivery of the Bonds, the Mayor, City Manager, Chief Financial Officer or Bond Counsel to the City are each hereby authorized and directed to approve any changes or corrections to this Ordinance or to any of the documents authorized and approved by this Ordinance: (i) in order to cure any ambiguity, formal defect or omission in the Ordinance or such other document; or (ii) as requested by the Attorney General of the State of Texas or his representative to obtain the approval of the Bonds by the Attorney General and if such officer or counsel determines that such changes are consistent with the intent and purpose of the Ordinance, which determination shall be final. In the event that any officer of the City whose signature shall appear on any document shall cease to be such officer before the delivery of such document, such signature nevertheless shall be valid and sufficient for all purposes the same as if such officer had remained in office until such delivery.

SECTION 22. Benefits of Ordinance. Nothing in this Ordinance, expressed or implied, is intended or shall be construed to confer upon any person other than the City, the Paying Agent/Registrar and the Holders, any right, remedy, or claim, legal or equitable, under or by reason of this Ordinance. This Ordinance in its entirety is intended to be and is for the sole and exclusive benefit of the City, the Paying Agent/Registrar and the Holders.

SECTION 23. Inconsistent Provisions. All ordinances, orders or resolutions, or parts thereof, which are in conflict or inconsistent with any provision of this Ordinance are hereby

repealed to the extent of such conflict; and, the provisions of this Ordinance shall be and remain controlling as to the matters contained herein.

SECTION 24. Governing Law. This Ordinance shall be construed and enforced in accordance with the laws of the State of Texas and the United States of America.

SECTION 25. Effect of Headings. The Section headings herein are for convenience of reference only and shall not affect the construction hereof.

SECTION 26. Construction of Terms. If appropriate in the context of this Ordinance, words of the singular number shall be considered to include the plural, words of the plural number shall be considered to include the singular, and words of the masculine, feminine or neuter gender shall be considered to include the other genders.

SECTION 27. Severability. If any provision of this Ordinance or the application thereof to any circumstance shall be held to be invalid, the remainder of this Ordinance and the application thereof to other circumstances shall nevertheless be valid; and, the Council hereby declares that this Ordinance would have been enacted without such invalid provision.

SECTION 28. Incorporation of Findings and Determinations. The findings and determinations of the Council contained in the preamble hereof are hereby incorporated by reference and made a part of this Ordinance for all purposes as if the same were restated in full in this Section.

SECTION 29. Public Meeting. It is officially found, determined, and declared that the meeting at which this Ordinance is adopted was open to the public and public notice of the time, place, and subject matter of the public business to be considered at such meeting, including this Ordinance, was given, all as required by Texas Government Code, Chapter 551, as amended.

SECTION 30. Effective Date. This Ordinance shall take effect and be in force from and after its passage and approval in accordance with the provisions of Texas Government Code, Section 1201.028, as amended.

[remainder of page intentionally left blank]

PASSED AND APPROVED, this March 23, 2020.

CITY OF TEXARKANA, TEXAS

Mayor

ATTEST:

City Secretary

(City Seal)

Attachment: 2020-031 ORD TEXARKANA GO REF TAXABLE 2020B - private placement - one ter... (2239 : 2020-031 ORD General Obligation

EXHIBIT A
PAYING AGENT/REGISTRAR AGREEMENT

Attachment: 2020-031 ORD TEXARKANA GO REF TAXABLE 2020B - private placement - one ter.._ (2239 : 2020-031 ORD General Obligation

EXHIBIT B
PURCHASE LETTER

Attachment: 2020-031 ORD TEXARKANA GO REF TAXABLE 2020B - private placement - one ter... (2239 : 2020-031 ORD General Obligation

EXHIBIT C
CONDITIONAL NOTICE OF REDEMPTION

CITY OF TEXARKANA, TEXAS
COMBINATION TAX AND REVENUE CERTIFICATES OF OBLIGATION
TAXABLE SERIES 2010
Dated May 15, 2010

CONDITIONAL NOTICE IS HEREBY GIVEN that all of the obligations of the above series maturing on and after February 1, 2021, and aggregating in the principal amount of \$4,295,000, have been called for redemption on April 28, 2020 (the "Redemption Date") at the redemption price of par and accrued interest to the date of redemption, such certificates of obligation (the "Certificates") being identified as follows:

<u>Year of Maturity</u>	<u>Principal Amount Outstanding/ Being Refunded (\$)</u>	<u>CUSIP Number</u>
2021	335,000	
2022	350,000	
2025*	1,170,000	
2030*	2,440,000	

*term Certificates

THIS CONDITIONAL NOTICE OF REDEMPTION, and the payment of the principal of and premium, if any, and interest on the Certificates (the "Redemption Price") on the Redemption Date, is subject to the receipt of an amount sufficient to pay in full the Redemption Price on the Redemption Date.

IN THE EVENT funds for the payment of the Redemption Price are not received by the Redemption Date, this notice shall be null and void and of no force and effect. Any Certificates theretofore delivered for redemption shall be returned to the respective owners thereof, and said Certificates shall remain outstanding as though this Conditional Notice of Redemption had not been given. Notice of failure to receive funds and rescission of this redemption shall be given by the Paying Agent/Registrar by first class mail to the registered holders of the Certificates.

Provided such funds are received by the Redemption Date, such Certificates shall become due and payable on the Redemption Date and interest thereon shall cease to accrue from and after said redemption date and payment of the redemption price of said Certificate shall be paid to the registered owners of the obligations only upon presentation and surrender thereof to Wells Fargo Bank, National Association at its following addresses:

<u>First Class/Registered/Certified</u>	<u>Express Delivery/Courier</u>	<u>By Hand Only</u>
Wells Fargo Bank, National Association Corporate Trust Services P.O. Box 1517, MAC N9303-121 Minneapolis, Minnesota 55480	Wells Fargo Bank, National Association Corporate Trust Services, MAC N9303-121 6 th & Marquette Avenue, 12 th Floor Minneapolis, Minnesota 55479	Wells Fargo Bank, National Association Corporate Trust Operations Northstar East Building 608 2 nd Avenue South Minneapolis, Minnesota 55402

THIS NOTICE is issued and given pursuant to the terms and conditions prescribed for the redemption of said obligations and pursuant to an ordinance by the City Council of the City of Texarkana, Texas.

WELLS FARGO BANK, NATIONAL ASSOCIATION
625 Marquette Ave S, 11th Floor
Minneapolis, Minnesota 55749

City of Texarkana, Texas

Developing Perspectives and Goals Pending Approval by the City Council:

Perspectives	Goals
Serve the Community	☐ Promote an Environmentally Sensitive & Livable Community ☐ Provide a Safe Community ☐ Deliver Quality Services ☐ Foster a Healthy Community
Run the Operations	☐ Enhance Community Preparedness & Responsiveness ☐ Maximize Partnership Opportunities ☐ Provide Courteous & Responsive Customer Service ☐ Model a Positive City Image ☐ Deliver Efficient Services ☐ Cultivate Community Involvement & Access
Manage the Resources	☒ Maintain Fiscal Strength ☒ Maximize Utilization & Resources ☐ Invest in Infrastructure & Transportation
Develop Personnel	☐ Develop a Skilled & Diverse Workforce ☐ Create a Positive & Rewarding Work Culture

Perspectives and Goals Additional Comments:

NONE

Resource Impact:

Staff time required if item is approved: Medium

Other Potential Impacts:

NONE APPLICABLE

Public Information Plan:

☐ Newspaper Notice (Required by Statute)	☐ Public Hearing (Required by Statute)
☐ Public Forum/Input Session	☐ Press Release
☐ E-News Distribution	☐ Website Notice
☐ Social Media (Twitter, Facebook, etc.)	☐ Special Mailing
☐ Flyers Posted	☐ Banners Posted
☐ Survey	☐ Automated Phone Call
☒ None Required	☐

Other:

City of Texarkana, Texas

Briefing Sheet

Version:
Update Date: 3/17/2020 4:20 PM

Lead Department: City Manager **Action Officer:** Jennifer Evans, City Secretary
Subject: Resolution No. 2020-034 amending Resolution No. 2019-110 and the 2020 City Council regular meeting schedule.

Briefing: 3/23/2020 **Public Hearing:** **Council Vote:** 3/23/2020

Item Schedule

Updates/History of Briefing:

NOT APPLICABLE

Executive Summary and Background Information:

Extraordinary circumstances related to COVID 19 (Coronavirus) is prompting the City Council to adjust the 2020 schedule of City Council meetings approved by Resolution No. 2019-110 and recognize mayoral authority to make other adjustments, if or when needed, for scheduled City Council meetings in 2020.

Potential Options:

- None
-

Fiscal Implications:

None

Staff Recommendation:

Staff recommends adoption of this resolution which supports preventative action related to COVID 19 (Coronavirus)

Advisory Board/Committee Review:

NONE

Board/Committee Recommendation:

NOT APPLICABLE

Advisory Board/Committee Meeting Date and Minutes:

NOT APPLICABLE

Attachments

City of Texarkana, Texas

- a. 2020-034 RES amend 2019-110 RES setting 2020 Council Mtg and Holiday Schedule (DOC)
- b. 2020-034 ATTH 01 council mtg and holiday sched.(rev.) 032320 (PDF)
- c. 2020-034 Goals & Perspectives (DOCX)

Staff Coordination

City Manager	Jennifer Evans	Department Head Review	Completed
	03/17/2020 4:20 PM		
City Manager	Shirley Jaster	City Manager Review Completed	03/19/2020
10:39 AM			
City Council	Vicky Coopwood	Meeting	Pending
6:00 PM			03/23/2020

Meeting History

RESOLUTION NO. 2020 - 034

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF TEXARKANA, TEXAS, AMENDING RESOLUTION NO. 2019-110 AND THE 2020 CITY COUNCIL REGULAR MEETING SCHEDULE; RECOGNIZING MAYORAL AUTHORITY TO ADJUST SCHEDULED CITY COUNCIL MEETINGS IN 2020; AND ESTABLISHING AN EFFECTIVE DATE.

WHEREAS, in accordance with Article II, Section 8 of the City Charter, the City Council is required to meet at least monthly in regular session at city hall on a date as determined by the City Council; and

WHEREAS, under ordinary circumstances, the City Council generally meets twice monthly in regular session to conduct the city's business and consider policy items as presented and recommended by city staff; and

WHEREAS, extraordinary circumstances related to COVID 19 (Coronavirus) prompt the City Council to adjust the 2020 Schedule of City Council Meetings approved by Resolution No. 2019-110 and recognize mayoral authority to make other adjustments, if or when needed, for scheduled City Council meetings in 2020.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF TEXARKANA, TEXAS:

SECTION 1: Resolution No. 2019-110 is hereby amended, and the 2020 Schedule of City Council Meetings approved by said resolution is also amended, as follows:

- a. The City Council meeting scheduled for April 13, 2020, is CANCELLED.
- b. The Mayor shall have authority to make adjustments to the 2020 Schedule of City Council Meetings, including but not limited to rescheduling or cancellation of meetings.

SECTION 2: This Resolution shall be in full force and effect from and after its passage and approval.

PASSED AND APPROVED in Regular Council Session on this the 23rd day of March, 2020.

ATTEST:

JENNIFER EVANS, CITY SECRETARY

BOB BRUGGEMAN, MAYOR

2020 COUNCIL MEETING & HOLIDAY SCHEDULE

CITY COUNCIL MEETINGS

JANUARY 13TH AND 27THFEBRUARY 10TH AND 24THMARCH 9TH AND 23RDAPRIL 27THMAY 11TH AND 26THJUNE 8TH

COUNCIL CHAMBERS 6:00PM

JULY 13THAUGUST 10TH AND 24THSEPTEMBER 14TH AND 28THOCTOBER 12TH AND 26THNOVEMBER 9TH AND 23RDDECEMBER 14TH

CITY HOLIDAYS

JANUARY - 1ST, 20TH

FEBRUARY - NONE

MARCH - NONE

APRIL - 10THMAY - 25TH

JUNE - NONE

CITY HALL CLOSED

JULY - 3RD

AUGUST - NONE

SEPTEMBER - 7TH

OCTOBER - NONE

NOVEMBER - 11TH, 26TH, 27THDECEMBER - 23RD, 24TH, 25TH

JANUARY							FEBRUARY							MARCH							APRIL							MAY							JUNE							
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Developing Perspectives and Goals Pending Approval by the City Council:

Perspectives	Goals
Serve the Community	☐ Promote an Environmentally Sensitive & Livable Community ☒ Provide a Safe Community ☐ Deliver Quality Services ☒ Foster a Healthy Community
Run the Operations	☐ Enhance Community Preparedness & Responsiveness ☐ Maximize Partnership Opportunities ☐ Provide Courteous & Responsive Customer Service ☐ Model a Positive City Image ☐ Deliver Efficient Services ☐ Cultivate Community Involvement & Access
Manage the Resources	☐ Maintain Fiscal Strength ☐ Maximize Utilization & Resources ☐ Invest in Infrastructure & Transportation
Develop Personnel	☐ Develop a Skilled & Diverse Workforce ☐ Create a Positive & Rewarding Work Culture

Perspectives and Goals Additional Comments:

NONE

Resource Impact:

Staff time required if item is approved: No Additional

Other Potential Impacts:

NONE APPLICABLE

Public Information Plan:

☐ Newspaper Notice (Required by Statute)	☐ Public Hearing (Required by Statute)
☐ Public Forum/Input Session	☐ Press Release
☐ E-News Distribution	☐ Website Notice
☐ Social Media (Twitter, Facebook, etc.)	☐ Special Mailing
☐ Flyers Posted	☐ Banners Posted
☐ Survey	☐ Automated Phone Call
☒ None Required	☐

Other:

City of Texarkana, Texas

Briefing Sheet

Version:
Update Date: 3/19/2020 10:56 AM

Lead Department: City Manager **Action Officer:** Jennifer Evans, City Secretary
Subject: Ordinance No. 2020-035 continuing the declaration of local disaster proclaimed for the City of Texarkana, Texas, by Mayor Bob Bruggeman on March 18, 2020.

Briefing: 3/23/2020 **Public Hearing:** **Council Vote:** 3/23/2020

Item Schedule

Updates/History of Briefing:

NOT APPLICABLE

Executive Summary and Background Information:

On March 18, 2020, Mayor Bob Bruggeman, in his official capacity as Mayor of the City of Texarkana, Texas, and pursuant to lawful authority, declared a local disaster for the City of Texarkana, Texas, resulting from COVID-19 (Coronavirus) [the "Mayoral Declaration of Local Disaster", attached to this Ordinance as **Exhibit "A"**.

Texas Local Government Code Section 418.108(b) provides that a declaration of local disaster may not be continued for a period in excess of seven days without the consent of the governing body of the political subdivision.

Adoption of this ordinance allows the City Council to consent to a continuation of the Mayoral Declaration of Local Disaster until terminated by Order of the City Council.

Potential Options:

- None
-

Fiscal Implications:

None

Staff Recommendation:

Staff recommends approval of this ordinance.

Advisory Board/Committee Review:

NONE

Board/Committee Recommendation:

NOT APPLICABLE

City of Texarkana, Texas

Advisory Board/Committee Meeting Date and Minutes:

NOT APPLICABLE

Attachments

- a. 2020-035 ORD continuing decl disaster (rev 2) (DOCX)
- b. 2020-035 EXH 'A' Disaster Declaration COVID-19 20200317 (DOCX)
- c. 2020-035 Goals & Perspectives (DOCX)

Staff Coordination

City Manager	Jennifer Evans	Department Head Review	Completed
	03/19/2020 10:56 AM		
City Manager	Shirley Jaster	City Manager Review Completed	03/19/2020
11:27 AM			
City Council	Vicky Coopwood	Meeting	Pending
6:00 PM			03/23/2020

Meeting History

PUBLISH

ORDINANCE NO. 2020 - 035

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF TEXARKANA, TEXAS, CONTINUING THE DECLARATION OF DISASTER 2020-001 ORDERED FOR THE CITY OF TEXARKANA, TEXAS, BY MAYOR BOB BRUGGEMAN ON MARCH 18, 2020, UNTIL TERMINATED BY ORDER OF THE CITY COUNCIL; PROVIDING FOR PUBLICATION; AND ESTABLISHING AN EFFECTIVE DATE.

WHEREAS, on March 18, 2020, Mayor Bob Bruggeman, in his official capacity as Mayor of the City of Texarkana, Texas, and pursuant to lawful authority, ordered a Declaration of Disaster 2020-001 for the City of Texarkana, Texas, resulting from the COVID-19 / coronavirus global pandemic (the "Mayoral Declaration", attached to this Ordinance as **Exhibit "A"** and incorporated herein by reference for all purposes); and

WHEREAS, Texas Government Code Section 418.108(b) provides that a declaration of local disaster may not be continued for a period in excess of seven days without the consent of the governing body of the political subdivision; and

WHEREAS, by this Ordinance, the City Council consents to a continuation of the Mayoral Declaration until terminated by Order of the City Council.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF TEXARKANA, TEXAS:

SECTION 1: The City Council finds and determines that the conditions necessitating the Declaration of Disaster 2020-001, ordered for the City of Texarkana, Texas, by Mayor Bob Bruggeman on March 18, 2020, continue to exist; and pursuant to Texas Government Code Section 418.108(b), the City Council consents to a continuation of the Mayoral Declaration until terminated by Order of the City Council.

SECTION 2: The City Secretary shall give notice of the passage of this ordinance as provided in Article XI, Section 3 of the Charter of the City of Texarkana, Texas.

SECTION 3: This Ordinance shall be in full force and effect from and after its passage and approval.

PASSED AND APPROVED in Regular Council Session on this the **23rd** day of **March, 2020**.

ATTEST:

JENNIFER EVANS, CITY SECRETARY

BOB BRUGGEMAN, MAYOR

Attachment: 2020-035 ORD continuing decl disaster (rev 2) (2244 : 2020-035 ORD extending declaration of local disaster)



DECLARATION OF DISASTER 2020-001

WHEREAS, the World Health Organization has declared the coronavirus (COVID-19) as a global pandemic on March 11, 2020; and

WHEREAS, COVID-19 is a contagious virus with symptoms that include fever, coughing, and shortness of breath, and can range from mild to severe illness, which may lead to further complications including death; and

WHEREAS, the COVID-19 virus mainly spreads between people in close contact with one another through respiratory droplets produced when an infected person coughs or sneezes; and

WHEREAS, the continued worldwide spread of COVID-19 presents a an imminent threat of widespread illness, which requires emergency action for the protection of the citizens of Texarkana, Texas; and

WHEREAS, the implementation of mitigation strategies can slow the transmission of the virus; and

WHEREAS, the City of Texarkana, Texas, on the 17th day of March, 2020, experienced it's first confirmed case of the virus; and

WHEREAS, the Mayor of Texarkana, Texas has determined that extraordinary measures must be taken to protect the public health and welfare of our citizens.

NOW, THEREFORE, BE IT PROCLAIMED BY THE MAYOR OF TEXARKANA, TEXAS:

1. That a local state of disaster is hereby declared for Texarkana, Texas pursuant to §418.108(a) of the Texas Government Code.
2. Pursuant to §418.108(b) of the Government Code, the state of disaster shall continue for a period of not more than seven days from the date of this declaration unless continued or renewed by the City Council of Texarkana, Texas.
3. Pursuant to §418.108(c) of the Government Code, this declaration of a local state of disaster shall be given prompt and general publicity and shall be filed promptly with the City Secretary.
4. Pursuant to §418.108(d) of the Government Code, this declaration of a local state of disaster activates the city emergency management plan.
5. Pursuant to §418.108(g) of the Government Code, this declaration now limits the gathering of a group to not more than 50 people.
6. Pursuant to §418.108(g) of the Government Code, this declaration now strongly recommends a voluntary curfew from 7:00 PM to 7:00 AM for any person under the age of 18, not in the company of a parent or guardian, unless they are traveling to or from work or for a reasonable emergency situation.
7. That this proclamation shall take effect immediately from and after its issuance.

ORDERED this 18th day of March, 2020.



Bob Bruggeman
Mayor

City of Texarkana, Texas

Developing Perspectives and Goals Pending Approval by the City Council:

Perspectives	Goals
Serve the Community	☐ Promote an Environmentally Sensitive & Livable Community ☐ Provide a Safe Community ☒ Deliver Quality Services ☒ Foster a Healthy Community
Run the Operations	☒ Enhance Community Preparedness & Responsiveness ☐ Maximize Partnership Opportunities ☐ Provide Courteous & Responsive Customer Service ☐ Model a Positive City Image ☒ Deliver Efficient Services ☐ Cultivate Community Involvement & Access
Manage the Resources	☐ Maintain Fiscal Strength ☐ Maximize Utilization & Resources ☐ Invest in Infrastructure & Transportation
Develop Personnel	☐ Develop a Skilled & Diverse Workforce ☐ Create a Positive & Rewarding Work Culture

Perspectives and Goals Additional Comments:

NONE

Resource Impact:

Staff time required if item is approved: No Additional

Other Potential Impacts:

NONE APPLICABLE

Public Information Plan:

☐ Newspaper Notice (Required by Statute)	☐ Public Hearing (Required by Statute)
☐ Public Forum/Input Session	☐ Press Release
☐ E-News Distribution	☐ Website Notice
☐ Social Media (Twitter, Facebook, etc.)	☐ Special Mailing
☐ Flyers Posted	☐ Banners Posted
☐ Survey	☐ Automated Phone Call
☒ None Required	☐

Other:

Briefing Sheet

Version:
Update Date: 3/19/2020 3:13 PM

Lead Department: City Manager **Action Officer:** Jennifer Evans, City Secretary
(Standard Agreement between Owner and Engineer for Professional
Subject: Services.pdf)

Attachments

- a. 2020-033 ATTH 02 E-500-2014-Std-Form-Agmt-Of-Owner-and-Engineer-for-Profes..final (T) (PDF)

**AGREEMENT
BETWEEN OWNER AND ENGINEER
FOR PROFESSIONAL SERVICES**

Contract Number _____
City of Texarkana Texas

THIS IS AN AGREEMENT effective as of February 25, 2020 or TBD ("Effective Date") between
City of Texarkana, Texas ("Owner") and
Aqua Strategies, Inc. ("Engineer").

Owner's project, of which Engineer's services under this Agreement are a part, are generally identified as follows:
City of Texarkana, Texas's NRDA Days Creek Comprehensive Aquatic Restoration Project ("Project").

Other terms used in this Agreement are defined in Article 7, Definitions.

Engineer's services under this Agreement are generally identified as follows:

NRDA Trustees approved Work Plan associated with The Project and See Exhibit A, Engineer's Services and Exhibit A Attachment 1 Scope of Work, Exhibit A Attachment 2 Schedule, and Exhibit B Attachment 1 Project Budget and Fees.

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Owner and Engineer agree as follows:

ARTICLE 1 – SERVICES OF ENGINEER

1.01 Services and Scope

- A. Engineer shall provide, or cause to be provided, the services set forth within the NRDA Trustees approved Work Plan associated with The Project herein, additional associated work funded by other non-NRDA funding sources, and in Exhibit A.

ARTICLE 2 – OWNER’S RESPONSIBILITIES

2.01 General

- A. Owner shall have the responsibilities set forth herein and in Exhibit B.
- B. Owner shall pay Engineer as set forth in Article 4 and Exhibit C.
- C. Owner shall be responsible for all requirements and instructions that it furnishes to Engineer pursuant to this Agreement, and for the accuracy and completeness of all programs, reports, data, and other information furnished by Owner to Engineer pursuant to this Agreement. Engineer may use and rely upon such requirements, programs, instructions, reports, data, and information in performing or furnishing services under this Agreement, subject to any express limitations or reservations applicable to the furnished items.
- D. Owner shall give prompt written notice to Engineer whenever Owner observes or otherwise becomes aware of:
 - 1. any development that affects the scope or time of performance of Engineer’s services;
 - 2. the presence at the Site of any Constituent of Concern; or
 - 3. any relevant, material defect or nonconformance in: (a) Engineer’s services, (b) the Work, or (c) the performance of any Constructor, or (d) a delay in Owner’s performance of its responsibilities under this Agreement.

ARTICLE 3 – SCHEDULE FOR RENDERING SERVICES

3.01 Commencement

- A. Engineer is authorized to begin rendering services as of the Effective Date.

3.02 Time for Completion

- A. Engineer shall complete its obligations within a reasonable time. Specific periods of time for rendering services, or specific dates by which services are to be completed, are provided in Exhibit A, and are hereby agreed to be reasonable.

- B. If, through no fault of Engineer, such periods of time or dates are changed, or the orderly and continuous progress of Engineer's services is impaired, or Engineer's services are delayed or suspended, then the time for completion of Engineer's services, and the rates and amounts of Engineer's compensation, shall be adjusted equitably.
- C. If Owner authorizes changes in the scope, extent, or character of the Project or Engineer's services, then the time for completion of Engineer's services, and the rates and amounts of Engineer's compensation, shall be adjusted equitably.
- D. Owner shall make decisions and carry out its other responsibilities in a timely manner so as not to delay the Engineer's performance of its services.
- E. If Engineer fails, through its own fault, to complete the performance required in this Agreement within the time set forth, as duly adjusted, then Owner shall be entitled to the recovery of direct damages, if any, resulting from such failure.

ARTICLE 4 – INVOICES AND PAYMENTS

4.01 Invoices

- A. *Preparation and Submittal of Invoices:* Engineer shall prepare invoices in accordance with its standard invoicing practices and the terms of Exhibit C. Engineer shall submit its invoices to Owner on a monthly basis. Invoices are due and payable within 30 days of receipt.

4.02 Payments

- A. *Availability of Funds.* This Agreement and all claims, suits or obligations arising under or related to this Agreement related to the NRDA Project are subject to the receipt and availability of funds from NRDA Trustees. ~~In the event that Owner does not receive funds from NRDA Trustees or funds are recouped or rescinded by NRDA Trustees, Owner's obligations under this Agreement for payment shall immediately terminate.~~
Application to Interest and Principal: The City's payments under this Agreement and Contract, including the time of payment and the payment of interest on overdue amounts, are subject to Chapter 2251, Texas Government Code. The City reserves the right to modify any amount due to the Engineer presented by invoice to the City if necessary, to conform the amount to the terms of the contract. Payment will be credited first to any interest owed to Engineer and then to principal.
- B. *Failure to Pay:* If Owner fails to make any undisputed payment due Engineer for services and expenses within 30 days after receipt of Engineer's invoice, then:
 - 1. Undisputed amounts due Engineer will be increased at the rate of 1.0% per month (or the maximum rate of interest permitted by law, if less) from said thirtieth day;
 - 2. Engineer may, after giving seven days written notice to Owner, suspend services under this Agreement until Owner has paid in full all undisputed amounts due for services, expenses, and other related charges.
- C. *Disputed Invoices:* If Owner disputes an invoice, either as to amount or entitlement, then Owner shall promptly advise Engineer in writing of the specific basis for doing so, may

withhold only that portion so disputed, and must pay the undisputed portion subject to the terms of Paragraph 4.01. After a disputed item has been settled, Engineer shall include the disputed item payment on a subsequent regularly scheduled invoice or on a special invoice for the disputed item only.

- ~~D. Sales or Use Taxes:~~ If after the Effective Date any governmental entity takes a legislative action that imposes additional sales or use taxes on Engineer's services or compensation under this Agreement, then Engineer may invoice such additional sales or use taxes for reimbursement by Owner. Owner shall reimburse Engineer for the cost of such invoiced additional sales or use taxes; such reimbursement shall be in addition to the compensation to which Engineer is entitled under the terms of Exhibit C. CITY IS TAX EXEMPT.

ARTICLE 5 – OPINIONS OF COST

5.01 *Opinions of Probable Construction Cost*

- A. Engineer's opinions (if any) of probable Construction Cost are to be made on the basis of Engineer's experience, qualifications, and general familiarity with the construction industry. However, because Engineer has no control over the cost of labor, materials, equipment, or services furnished by others, or over contractors' methods of determining prices, or over competitive bidding or market or weather conditions, Engineer cannot and does not guarantee that proposals, bids, or actual Construction Cost will not vary from opinions of probable Construction Cost prepared by Engineer. If Owner requires greater assurance as to probable Construction Cost, then Owner agrees to obtain an independent cost estimate.

5.02 *Designing to Construction Cost Limit*

- A. If a Construction Cost limit is established between Owner and Engineer, such Construction Cost limit and a statement of Engineer's rights and responsibilities with respect thereto will be specifically set forth in Exhibit F to this Agreement as the approved NRDA Interlocal Agreement.

5.03 *Opinions of Total Project Costs*

- A. The services, if any, of Engineer with respect to Total Project Costs shall be limited to assisting the Owner in tabulating the various categories that comprise Total Project Costs. Engineer assumes no responsibility for the accuracy of any opinions of Total Project Costs.

ARTICLE 6 – GENERAL CONSIDERATIONS

6.01 *Standards of Performance*

- A. *Standard of Care:* The standard of care for all professional engineering and related services performed or furnished by Engineer under this Agreement will be the care and skill ordinarily used by members of the subject profession practicing under similar circumstances at the same time and in the same locality. Engineer makes no warranties, express or implied, under this Agreement or otherwise, in connection with any services performed or furnished by Engineer.

- B. *Technical Accuracy:* Owner shall not be responsible for discovering deficiencies in the technical accuracy of Engineer's services. Engineer shall correct deficiencies in technical accuracy without additional compensation, unless such corrective action is directly attributable to deficiencies in Owner-furnished information.
- C. *Consultants:* Engineer may retain such Consultants, as sub-consultants, as Engineer deems necessary to assist in the performance or furnishing of the services, subject to reasonable, timely, and substantive objections by Owner.
- D. *Reliance on Others:* Subject to the standard of care set forth in Paragraph 6.01.A, Engineer and its Consultants may use or rely upon design elements and information ordinarily or customarily furnished by others, including, but not limited to, specialty contractors, manufacturers, suppliers, and the publishers of technical standards.
- E. *Compliance with Laws and Regulations, and Policies and Procedures:*
 - 1. Engineer and Owner shall comply with applicable Laws and Regulations.
 - 2. Engineer shall comply with any and all policies, procedures, and instructions of Owner that are applicable to Engineer's performance of services under this Agreement and that Owner provides to Engineer in writing, subject to the standard of care set forth in Paragraph 6.01.A, and to the extent compliance is not inconsistent with professional practice requirements.
- F. Engineer shall not be required to sign any document, no matter by whom requested, that would result in the Engineer having to certify, guarantee, or warrant the existence of conditions whose existence the Engineer cannot ascertain. Owner agrees not to make resolution of any dispute with the Engineer or payment of any amount due to the Engineer in any way contingent upon the Engineer signing any such document.
- G. The general conditions for any construction contract documents prepared hereunder are to be EJCDC® C-700 "Standard General Conditions of the Construction Contract" (2013 Edition), prepared by the Engineers Joint Contract Documents Committee, unless expressly indicated otherwise in Exhibit J or elsewhere in this Agreement.
- H. Engineer shall supervise or direct on behalf of the Owner any Constructor's work. The Engineer will coordinate with any Constructor the means, methods, techniques, sequences, or procedures of construction selected or used by any Constructor, as applicable to the NRDA Agreement, specified performance criteria, and Project related permit conditions, for the safety precautions and programs incident thereto, for security or safety at the Site. The Engineer shall not be responsible for any failure of a Constructor to comply with Laws and Regulations applicable to that Constructor's furnishing and performing of its work. Engineer shall not be responsible for the acts or omissions of any Constructor.
- I. Engineer neither guarantees the performance of any Construction Contractor, i.e. "Constructor" nor assumes responsibility for any Constructor's, failure to furnish and perform the Work in accordance with the Construction Contract Documents.
- J. Engineer shall not be responsible for any changes or decision made after 100% complete construction documents have been prepared and approved by the NRDA Trustees

regarding changes made by others to the Construction Contract Documents, or any application, interpretation, clarification, or modification of the Construction Contract Documents, other than those made by Engineer or its Consultants.

- K. Engineer is not required to provide and does not have any responsibility for surety bonding or insurance-related advice, recommendations, counseling, or research, or enforcement of construction insurance or surety bonding requirements.
- L. Engineer's services do not include providing legal advice or representation.
- M. Engineer's services do not include (1) serving as a "municipal advisor" for purposes of the registration requirements of Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act (2010) or the municipal advisor registration rules issued by the Securities and Exchange Commission, or (2) advising Owner, or any municipal entity or other person or entity, regarding municipal financial products or the issuance of municipal securities, including advice with respect to the structure, timing, terms, or other similar matters concerning such products or issuances.
- N. While at the Site, Engineer, its Consultants, and their employees and representatives shall comply with the applicable requirements of Contractor's and Owner's safety programs of which Engineer has been informed in writing.

6.02 *Design Without Construction Phase Services*

- A. Engineer shall be responsible only for those Construction Phase services expressly required of Engineer in Exhibit A, Paragraph A1.05 and Exhibit A Attachment 1 Scope of Work. With the exception of such expressly required services, Engineer shall have design, Shop Drawing review, or other obligations during construction as applicable to the approved NRDA Trustees plans, associated performance criteria and permit conditions, and Owner assumes all responsibility for the application and interpretation of the Construction Contract Documents executed by The Owner between a Contractor, review and response to Contractor claims, Construction Contract administration, processing of Change Orders and submittals, revisions to the Construction Contract Documents during construction. The Engineer shall provide construction observation and review, review of Contractor's payment applications including application for final payment, and all other necessary Construction Phase administrative, engineering, and professional services and provide recommendations to the Owner.

6.03 *Use of Documents*

- A. All Documents are instruments of service, and Engineer shall retain an ownership and property interest therein (including the copyright and the right of reuse at the discretion of the Engineer) whether or not the Project is completed.
- B. If Engineer is required to prepare or furnish Drawings or Specifications under this Agreement, Engineer shall deliver to Owner at least one original printed record version of such Drawings and Specifications, signed and sealed according to applicable Laws and Regulations.
- C. Owner may make and retain copies of Documents for information and reference in connection with the use of the Documents on the Project, including but not limited to,

submission to TCEQ and other governmental agencies, to provide general public information to inform the public, for grant applications, and for any other reasonably necessary purpose to fulfil Owner's purposes. Engineer grants Owner a limited license to use the Documents on the Project, extensions of the Project, and for related uses of the Owner, including those uses set forth above, subject to receipt by Engineer of full payment due and owing for all undisputed services relating to preparation of the Documents, and subject to the following limitations: (1) Owner acknowledges that such Documents are not intended or represented to be suitable for use on the Project unless completed by Engineer, or for use or reuse by Owner or others on extensions of the Project, on any other project, or for any other use or purpose, without written verification or adaptation by Engineer; (2) any such use or reuse, or any modification of the Documents, without written verification, completion, or adaptation by Engineer, as appropriate for the specific purpose intended, will be at Owner's sole risk and without liability or legal exposure to Engineer or to its officers, directors, members, partners, agents, employees, and Consultants; (3) Owner shall indemnify and hold harmless Engineer and its officers, directors, members, partners, agents, employees, and Consultants from all claims, damages, losses, and expenses, including attorneys' fees, arising out of or resulting from any use, reuse, or modification of the pertinent Documents without written verification, completion, or adaptation by Engineer; and (4) such limited license to Owner shall not create any rights in third parties.

- D. Engineer acknowledges and agrees that the project undertaken in this agreement is critical "infrastructure", as that term is defined in Section 421.001 of the Government Code, such being a public system vital to the public health and safety of the State of Texas and to the United States. "Critical Infrastructure" includes all public or private assets, systems, and functions vital to the security, governance, public health and safety, economy, or morale of the state of the nation.
- E. If Engineer at Owner's request verifies the suitability of the Documents, completes them, or adapts them for extensions of the Project or for any other purpose, then Owner shall compensate Engineer at rates or in an amount to be agreed upon by Owner and Engineer.
- F. The Owner, described as the Performing Party within the NRDA Interlocal Agreement, and NRDA Trustees expressly agree that any data collected as a result of this Agreement shall be jointly owned by the Parties. All Parties shall have complete and unlimited access to all such data. Further, any data or other material developed under this Agreement shall be subject to any applicable federal and state laws governing access to and availability of public records. The Parties may convey ownership rights in collected data to subcontractors and recipients of subawards, with the approval of all Parties. Performing Party will ensure that this article is included in any subcontract awards. The Owner, as the Performing Party in the NRDA Interlocal Agreement, shall act to ensure that all subcontractors are advised of the rights in data and materials described herein and that subcontractors are prohibited from asserting any rights at common law or in equity or otherwise seeking to establish any claim to statutory copyright in any data, material, or information developed under this Agreement.

6.04 *Electronic Transmittals*

- A. Owner and Engineer may transmit, and shall accept, Project-related correspondence, Documents, text, data, drawings, information, and graphics, in electronic media or digital

format, either directly, or through access to a secure Project website, in accordance with a mutually agreeable protocol.

- B. If this Agreement does not establish protocols for electronic or digital transmittals, then Owner and Engineer shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

6.05 Insurance

- A. Engineer shall procure and maintain insurance as set forth in Exhibit G. Engineer shall cause Owner to be listed as an additional insured on any applicable general liability insurance policy carried by Engineer.
- B. Owner shall procure and maintain insurance as set forth in Exhibit G. Owner shall cause Engineer and its Consultants to be listed as additional insureds on any general liability policies carried by Owner, which are applicable to the Project completed within 30 days of the Effective Date.
- C. Owner shall require Constructor to purchase and maintain policies of insurance covering workers' compensation, general liability, motor vehicle damage and injuries, and other insurance necessary to protect Owner's and Engineer's interests in the Project. Owner shall require Contractor to cause Engineer and its Consultants to be listed as additional insureds with respect to such liability insurance purchased and maintained by Contractor for the Project.
- D. Owner and Engineer shall each deliver to the other certificates of insurance evidencing the coverages indicated in Exhibit G. Such certificates shall be furnished prior to commencement of Engineer's services and at renewals thereafter during the life of the Agreement.
- E. All policies of property insurance relating to the Project, including but not limited to any builder's risk policy, shall allow for waiver of subrogation rights and contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insured thereunder or against Engineer or its Consultants. Owner and Engineer waive all rights against each other, Contractor, the Consultants, and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by any builder's risk policy and any other property insurance relating to the Project. Owner and Engineer shall take appropriate measures in other Project-related contracts to secure waivers of rights consistent with those set forth in this paragraph.
- F. All policies of insurance shall contain a provision or endorsement that the coverage afforded will not be canceled or reduced in limits by endorsement, and that renewal will not be refused, until at least 10 days prior written notice has been given to the primary

insured. Upon receipt of such notice, the receiving party shall promptly forward a copy of the notice to the other party to this Agreement.

- G. At any time, Owner may request that Engineer or its Consultants, at Owner's sole expense, provide additional insurance coverage, increased limits, or revised deductibles that are more protective than those specified in Exhibit G. If ~~set~~^{so}, requested by Owner, and if commercially available, Engineer shall obtain and shall require its Consultants to obtain such additional insurance coverage, different limits, or revised deductibles for such periods of time as requested by Owner, and Exhibit G will be supplemented to incorporate these requirements.

6.06 *Suspension and Termination*

A. *Suspension:*

1. *By Owner:* Owner may suspend the Project for up to 90 days upon seven days written notice to Engineer.
2. *By Engineer:* Engineer may, after giving seven days written notice to Owner, suspend services under this Agreement if Owner has failed to pay Engineer for undisputed invoiced services and expenses, as set forth in Paragraph 4.02.B, or in response to the presence of Constituents of Concern at the Site, as set forth in Paragraph 6.10.D.

B. *Termination:* The obligation to provide further services under this Agreement may be terminated:

1. For cause,
 - a. by either party upon 30 days written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party.
 - b. by Engineer:
 - 1) upon seven days written notice if Owner demands that Engineer furnish or perform services contrary to Engineer's responsibilities as a licensed professional; or
 - 2) upon seven days written notice if the Engineer's services for the Project are delayed or suspended for more than 90 days for reasons beyond Engineer's control, or as the result of the presence at the Site of undisclosed Constituents of Concern, as set forth in Paragraph 6.10.D.
 - 3) Engineer shall have no liability to Owner on account of such termination other than those obligations which survive termination.
 - c. Notwithstanding the foregoing, this Agreement will not terminate under Paragraph 6.06.B.1.a if the party receiving such notice begins, within seven days of receipt of such notice, to correct its substantial failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt thereof; provided, however, that if and to the extent such substantial failure cannot be

reasonably cured within such 30 day period, and if such party has diligently attempted to cure the same and thereafter continues diligently to cure the same, then the cure period provided for herein shall extend up to, but in no case more than, 60 days after the date of receipt of the notice.

- C. *Effective Date of Termination:* The terminating party under Paragraph 6.06.B may set the effective date of termination at a time up to 30 days later than otherwise provided to allow Engineer to demobilize personnel and equipment from the Site, to complete tasks whose value would otherwise be lost, to prepare notes as to the status of completed and uncompleted tasks, and to assemble Project materials in orderly files.

D. *Payments Upon Termination:*

1. In the event of any termination under Paragraph 6.06, Engineer will be entitled to invoice Owner and to receive full payment for all services performed or furnished in accordance with this Agreement and all Reimbursable Expenses incurred through the effective date of termination.
2. In the event of termination by Owner or by Engineer for cause, Engineer shall be entitled, in addition to invoicing for those items identified in Paragraph 6.06.D.1, to invoice Owner and receive payment of a reasonable amount for services and expenses directly attributable to termination, both before and after the effective date of termination, such as reassignment of personnel, costs of terminating contracts with Engineer's Consultants, and other related close-out costs, using methods and rates for Additional Services as set forth in Exhibit C.

6.07 *Controlling Law*

- A. This Agreement is to be governed by the Laws and Regulations of the state in which the Project is located. Venue shall be the county in which the Project is located.

6.08 *Successors, Assigns, and Beneficiaries*

- A. Owner and Engineer are hereby bound and the successors, executors, administrators, and legal representatives of Owner and Engineer (and to the extent permitted by Paragraph 6.08.B the assigns of Owner and Engineer) are hereby bound to the other party to this Agreement and to the successors, executors, administrators and legal representatives (and said assigns) of such other party, in respect of all covenants, agreements, and obligations of this Agreement.
- B. Neither Owner nor Engineer may assign, sublet, or transfer any rights under or interest (including, but without limitation, money that is due or may become due) in this Agreement without the written consent of the other party, except to the extent that any assignment, subletting, or transfer is mandated by law. Unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under this Agreement.

C. Unless expressly provided otherwise in this Agreement:

1. Nothing in this Agreement shall be construed to create, impose, or give rise to any duty owed by Owner or Engineer to any Constructor, other third-party individual or entity, or to any surety for or employee of any of them.
2. All duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of Owner and Engineer and not for the benefit of any other party.
3. Owner agrees that the substance of the provisions of this Paragraph 6.08.C shall appear in the Construction Contract Documents.

6.09 *Dispute Resolution*

- A. Owner and Engineer agree to negotiate all disputes between them in good faith for a period of 30 days from the date of notice prior to invoking the procedures of Exhibit H or other provisions of this Agreement, or exercising their rights at law.
- B. If the parties fail to resolve a dispute through negotiation under Paragraph 6.09.A, then either or both may invoke the procedures of Exhibit H. If Exhibit H is not included, or if no dispute resolution method is specified in Exhibit H, then the parties may exercise their rights at law.

6.10 *Environmental Condition of Site*

- A. Owner represents to Engineer that as of the Effective Date to the best of Owner's knowledge no Constituents of Concern, other than those disclosed in writing to Engineer, exist at or adjacent to the Site.
- B. If Engineer encounters or learns of an undisclosed Constituent of Concern at the Site, then Engineer shall notify (1) Owner and (2) appropriate governmental officials if Engineer reasonably concludes that doing so is required by applicable Laws or Regulations.
- C. It is acknowledged by both parties that Engineer's scope of services does not include any services related to unknown or undisclosed Constituents of Concern. If Engineer or any other party encounters, uncovers, or reveals an undisclosed Constituent of Concern, then Owner shall promptly determine whether to retain a qualified expert to evaluate such condition or take any necessary corrective action.
- D. If investigative or remedial action, or other professional services, are necessary with respect to undisclosed Constituents of Concern, or if investigative or remedial action beyond that reasonably contemplated is needed to address a disclosed or known Constituent of Concern, then Engineer may, at its option and without liability for consequential or any other damages, suspend performance of services on the portion of the Project affected thereby until such portion of the Project is no longer affected.
- E. If the presence at the Site of undisclosed Constituents of Concern adversely affects the performance of Engineer's services under this Agreement, then the Engineer shall have the option of (1) accepting an equitable adjustment in its compensation or in the time of completion, or both; or (2) terminating this Agreement for cause on seven days notice.

- F. Owner acknowledges that Engineer is performing professional services for Owner and that Engineer is not and shall not be required to become an "owner," "arranger," "operator," "generator," or "transporter" of hazardous substances, as defined in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, which are or may be encountered at or near the Site in connection with Engineer's activities under this Agreement.

6.11 Indemnification and Mutual Waiver

- A. *Indemnification by Engineer:* To the fullest extent permitted by Laws and Regulations, Engineer shall indemnify and hold harmless Owner, and Owner's officers, directors, members, partners, agents, consultants, and employees, from losses, damages, and judgments (including reasonable consultants' and attorneys' fees and expenses) arising from third-party claims or actions relating to the Project, provided that any such claim, action, loss, damages, or judgment is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Engineer or Engineer's officers, directors, members, partners, agents, employees, or Consultants. **This indemnification provision is subject to and limited by the provisions, if any, agreed to by Owner and Engineer in Exhibit I, "Limitations of Liability."**

- B. *Indemnification by Owner:* Owner shall indemnify and hold harmless Engineer and its officers, directors, members, partners, agents, employees, and Consultants as required by Laws and Regulations **and to the extent (if any) required in Exhibit I, "Limitations of Liability."** ~~Nothing herein, however, shall be construed as a waiver of Owner's sovereign immunity.~~

- ~~C. TO THE EXTENT AUTHORIZED BY LAW, THE PERFORMING PARTY WITHIN THE INTERLOCAL AGREEMENT, THE OWNER, AGREES TO HOLD TRUSTEES AND THEIR ASSOCIATED AGENCIES HARMLESS TO THE FULL EXTENT PERMITTED UNDER STATE AND FEDERAL LAW FROM AND AGAINST ANY AND ALL CLAIMS, DEMANDS AND CAUSES OF ACTION TO THE EXTENT ARISING FROM THE MISCONDUCT, NEGLIGENCE, OMISSIONS, OR RECKLESS ACTS OF PERFORMING PARTY OR ITS EMPLOYEES OR AGENTS IN CONNECTION WITH THE PERFORMANCE OR SERVICES OR WORK BY PERFORMING PARTY UNDER THIS AGREEMENT.~~

TO THE EXTENT AUTHORIZED BY LAW, THE PERFORMING PARTY SHALL REQUIRE ALL CONTRACTORS PERFORMING ACTIVITIES ON BEHALF OF PERFORMING PARTY UNDER THIS AGREEMENT TO INDEMNIFY, DEFEND, AND HOLD HARMLESS THE TRUSTEES AND PERFORMING PARTY AND THEIR OFFICERS, AND EMPLOYEES, FROM AND AGAINST ALL LOSSES, LIABILITIES, DAMAGES, AND OTHER CLAIMS OF ANY TYPE ARISING FROM THE PERFORMANCE OF ACTIVITIES BY THE CONTRACTOR OR ITS SUBCONTRACTORS, SUPPLIERS AND AGENTS, INCLUDING THOSE ARISING FROM DEFECT IN DESIGN, WORKMANSHIP, MATERIALS, OR FROM INFRINGEMENT OF ANY PATENT, TRADEMARK OR COPYRIGHT; OR FROM A BREACH OF APPLICABLE LAWS, REGULATIONS, SAFETY STANDARDS OR DIRECTIVES. THE DEFENSE OF TRUSTEES SHALL BE SUBJECT TO THE AUTHORITY OF THE OFFICE OF THE ATTORNEY

Commented [CW1]: City considering approval of this deletion

Commented [GC2R1]: This is language directly from Trust Agreement however, may need to leave it in for now and discuss with Trustees when the Interlocal Agreement is provided

~~GENERAL OF TEXAS TO REPRESENT TRUSTEES; THIS COVENANT COVENANT SURVIVES THE TERMINATION OF THE AGREEMENT.~~

- D. *Environmental Indemnification:* To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Engineer and its officers, directors, members, partners, agents, employees, and Consultants from all claims, costs, losses, damages, actions, and judgments (including reasonable consultants' and attorneys fees and expenses) caused by, arising out of, relating to, or resulting from a Constituent of Concern at, on, or under the Site, provided that (1) any such claim, cost, loss, damages, action, or judgment is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, and (2) nothing in this paragraph shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence or willful misconduct.
- E. *No Defense Obligation:* The indemnification commitments in this Agreement do not include a defense obligation by the indemnitor unless such obligation is expressly stated.
- F. *Percentage Share of Negligence:* To the fullest extent permitted by Laws and Regulations, a party's total liability to the other party and anyone claiming by, through, or under the other party for any cost, loss, or damages caused in part by the negligence of the party and in part by the negligence of the other party or any other negligent entity or individual, shall not exceed the percentage share that the party's negligence bears to the total negligence of Owner, Engineer, and all other negligent entities and individuals.
- G. *Mutual Waiver:* To the fullest extent permitted by Laws and Regulations, Owner and Engineer waive against each other, and the other's employees, officers, directors, members, agents, insurers, partners, and consultants, any and all claims for or entitlement to special, incidental, indirect, or consequential damages arising out of, resulting from, or in any way related to this Agreement or the Project, from any cause or causes.

6.12 *Audits and Records Retention*

- A. Engineer shall maintain on file in legible form, for a period of five years following completion or termination of its services, all Documents, records (including cost records), and design calculations related to Engineer's services or pertinent to Engineer's performance under this Agreement. Upon Owner's request, Engineer shall provide a copy of any such item to Owner at cost.
- B. Audits and records submittals and retention will be in accordance of Section 14 of the approved NRDA Interlocal Agreement.

6.13 *Miscellaneous Provisions*

- A. *Notices:* Any notice required under this Agreement will be in writing, addressed to the appropriate party at its address on the signature page and given personally, by registered or certified mail postage prepaid, or by a commercial courier service. All notices shall be effective upon the date of receipt.
- B. *Survival:* All express representations, waivers, indemnifications, and limitations of liability included in this Agreement will survive its completion or termination for any reason.

- C. *Severability*: Any provision or part of the Agreement held to be void or unenforceable under any Laws or Regulations shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Engineer, which agree that the Agreement shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.
- D. *Waiver*: A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Agreement.
- E. *Accrual of Claims*: To the fullest extent permitted by Laws and Regulations, all causes of action arising under this Agreement shall be deemed to have accrued, and all statutory periods of limitation shall commence, no later than the date of Substantial Completion.

ARTICLE 7 – DEFINITIONS

7.01 *Defined Terms*

- A. Wherever used in this Agreement (including the Exhibits hereto) terms (including the singular and plural forms) printed with initial capital letters have the meanings indicated in the text above, in the exhibits, or in the following definitions:
 - 1. *Addenda*—Written or graphic instruments issued prior to the opening of bids which clarify, correct, or change the bidding requirements or the proposed Construction Contract Documents.
 - 2. *Additional Services*—The services to be performed for or furnished to Owner by Engineer in accordance with Part 2 of Exhibit A of this Agreement.
 - 3. *Agreement*—This written contract for professional services between Owner and Engineer, including all exhibits identified in Paragraph 8.01 and any duly executed amendments.
 - 4. *Application for Payment*—The form acceptable to Engineer and Owner which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Construction Contract.
 - 5. *Basic Services*—The services to be performed for or furnished to Owner by Engineer in accordance with Part 1 of Exhibit A of this Agreement.
 - 6. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Construction Contract Price or the Construction Contract Times, or other revision to the Construction Contract, issued on or after the effective date of the Construction Contract.
 - 7. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth in the Construction Contract, seeking an adjustment in Construction Contract Price or Construction Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the

Construction Contract Documents or the acceptability of Work under the Construction Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Construction Contract.

8. *Constituent of Concern*—Asbestos, petroleum, radioactive material, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. ("CERCLA"); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. ("RCRA"); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, State, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
9. *Construction Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
10. *Construction Contract Documents*—Those items designated as "Contract Documents" in the Construction Contract, and which together comprise the Construction Contract.
11. *Construction Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Construction Contract Documents.
12. *Construction Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve milestones, if any, in the Construction Contract; (b) achieve Substantial Completion; and (c) complete the Work.
13. *Construction Cost*—The cost to Owner of the construction of those portions of the entire Project designed or specified by or for Engineer under this Agreement, including construction labor, services, materials, equipment, insurance, and bonding costs, and allowances for contingencies. Construction Cost does not include costs of services of Engineer or other design professionals and consultants; cost of land or rights-of-way, or compensation for damages to property; Owner's costs for legal, accounting, insurance counseling, or auditing services; interest or financing charges incurred in connection with the Project; or the cost of other services to be provided by others to Owner. Construction Cost is one of the items comprising Total Project Costs.
14. *Constructor*—Any person or entity (not including the Engineer, its employees, agents, representatives, and Consultants), performing or supporting construction activities relating to the Project, including but not limited to Contractors, Subcontractors, Suppliers, Owner's work forces, utility companies, other contractors, construction managers, testing firms, shippers, and truckers, and the employees, agents, and representatives of any or all of them.
15. *Consultants*—Individuals or entities having a contract with Engineer to furnish services with respect to this Project as Engineer's independent professional associates and consultants; subcontractors; or vendors.

16. *Contractor*—The entity or individual with which Owner enters into a Construction Contract.
17. *Documents*—Data, reports, Drawings, Specifications, Record Drawings, building information models, civil integrated management models, and other deliverables, whether in printed or electronic format, provided or furnished in appropriate phases by Engineer to Owner pursuant to this Agreement.
18. *Drawings*—That part of the Construction Contract Documents that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date*—The date indicated in this Agreement on which it becomes effective, but if no such date is indicated, the date on which this Agreement is signed and delivered by the last of the parties to sign and deliver.
20. *Engineer*—The individual or entity named as such in this Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Construction Contract Price or the Construction Contract Times.
22. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
23. *Owner*—The individual or entity named as such in this Agreement and for which Engineer's services are to be performed. Unless indicated otherwise, this is the same individual or entity that will enter into any Construction Contracts concerning the Project.
24. *Performing Party* —The Owner under the Interlocal Agreement with the Natural Resource Damage Assessment (NRDA Trustees).
25. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the services to be performed or furnished by Engineer under this Agreement are a part.
26. *Record Drawings*—Drawings depicting the completed Project, or a specific portion of the completed Project, prepared by Engineer as an Additional Service and based on Contractor's record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications, as delivered to Engineer and annotated by Contractor to show changes made during construction.
27. *Reimbursable Expenses*—The expenses incurred directly by Engineer in connection with the performing or furnishing of Basic Services and Additional Services for the Project.
28. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site during the Construction Phase. As used herein, the term Resident Project Representative or "RPR" includes any assistants or field staff of

Resident Project Representative. The duties and responsibilities of the Resident Project Representative, if any, are as set forth in Exhibit D.

29. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
30. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Construction Contract Documents.
31. *Site*—Lands or areas to be indicated in the Construction Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.
32. *Specifications*—The part of the Construction Contract Documents that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
33. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
34. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer and Owner, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Construction Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
35. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
36. *Total Project Costs*—The total cost of planning, studying, designing, constructing, testing, commissioning, and start-up of the Project, including Construction Cost and all other Project labor, services, materials, equipment, insurance, and bonding costs, allowances for contingencies, and the total costs of services of Engineer or other design professionals and consultants, together with such other Project-related costs that Owner furnishes for inclusion, including but not limited to cost of land, rights-of-way, compensation for damages to properties, Owner’s costs for legal, accounting, insurance counseling, and auditing services, interest and financing charges incurred in connection with the Project, and the cost of other services to be provided by others to Owner.
37. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Construction Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all

materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Construction Contract Documents.

38. *Work Change Directive*—A written directive to Contractor issued on or after the effective date of the Construction Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

B. *Day*:

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

ARTICLE 8 – EXHIBITS AND SPECIAL PROVISIONS

8.01 *Exhibits Included:*

- A. Exhibit A, Engineer’s Services and Scope of Work.
- B. Exhibit B, Owner’s Responsibilities.
- C. Exhibit C, Payments to Engineer for Services and Reimbursable Expenses.
- D. Exhibit D, Duties, Responsibilities and Limitations of Authority of Resident Project Representative.
- E. Exhibit E, Notice of Acceptability of Work.
- F. Exhibit F, Construction Cost Limit.
- G. Exhibit G, Insurance.
- H. Exhibit H, Dispute Resolution.
- I. Exhibit I, Limitations of Liability.
- J. Exhibit J, Special Provisions.
- K. Exhibit K, Amendment to Owner-Engineer Agreement.

8.02 *Total Agreement*

- A. This Agreement, (together with the exhibits included above) constitutes the entire agreement between Owner and Engineer and supersedes all prior written or oral understandings. This Agreement may only be amended, supplemented, modified, or canceled by a written instrument duly executed by both parties. Amendments should be based whenever possible on the format of Exhibit K to this Agreement.

8.03 *Designated Representatives*

- A. With the execution of this Agreement, Engineer and Owner shall designate specific individuals to act as Engineer’s and Owner’s representatives with respect to the services to

be performed or furnished by Engineer and responsibilities of Owner under this Agreement. Such an individual shall have authority to transmit instructions, receive information, and render decisions relative to this Agreement on behalf of the respective party whom the individual represents.

8.04 *Engineer's Certifications*

- A. Engineer certifies that it has not engaged in corrupt, fraudulent, or coercive practices in competing for or in executing the Agreement. For the purposes of this Paragraph 8.04:
1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the selection process or in the Agreement execution;
 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the selection process or the execution of the Agreement to the detriment of Owner, or (b) to deprive Owner of the benefits of free and open competition;
 3. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the selection process or affect the execution of the Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement, the Effective Date of which is indicated on page 1.

Owner: []

Engineer: Aqua Strategies, Inc.

By: []

By: []

Print name: []

Print name: []

Title: []

Title: []

Date Signed: []

Date Signed: []

Engineer License or Firm's Certificate No. (if required):

[]

State of: []

Address for Owner's receipt of notices:

[]

Address for Engineer's receipt of notices:

14101 290 West, Building 1600B

Austin, Texas 78737

Designated Representative (Paragraph 8.03.A):

[]

Title: []

Phone Number: []

E-Mail Address: []

Designated Representative (Paragraph 8.03.A):

Georganna Collins, RLA

Title: Restoration Specialist and Project Manager

Phone Number: 346-293-3844

E-Mail Address: gcollins@aquastrategies.com

This is **EXHIBIT A**, consisting of [] pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated [].

Engineer's Services

Article 1 of the Agreement is supplemented to include the following agreement of the parties.

Engineer shall provide Basic and Additional Services as set forth below.

PART 1 – BASIC SERVICES

A1.01 Phase 1 Planning and Permitting

A. Engineer shall:

1. Consult with Owner to define and clarify Owner's requirements for the Project, including design objectives and constraints, space, capacity and performance requirements, flexibility, and expandability, and any budgetary limitations, and identify available data, information, reports, facilities plans, and site evaluations as refinement to the initial planning. Engineer will prepare a Work Plan to be approved by the NRDA Trustees specifying site surveys, various restoration planning activities, permitting, and other services identified in the Project NRDA Interlocal Agreement.
 - a. If Owner has already identified one or more potential solutions to meet its Project requirements, then proceed with the study and evaluation of such potential solutions.
 - b. If Owner has not identified specific potential solutions for study and evaluation, then assist Owner in determining whether Owner's requirements, and available data, reports, plans, and evaluations, point to a single potential solution for Engineer's study and evaluation, or are such that it will be necessary for Engineer to identify, study, and evaluate multiple potential solutions.
 - c. If it is necessary for Engineer to identify, study, and evaluate multiple potential solutions, then identify three alternative solutions potentially available to Owner, unless Owner and Engineer mutually agree that some other specific number of alternatives should be identified, studied, and evaluated.
2. Identify potential solution(s) to meet Owner's Project requirements, as needed.
3. Study and evaluate the potential solution(s) to meet Owner's Project requirements.
4. Visit the Site, or potential Project sites, to review existing conditions and facilities, unless such visits are not necessary or applicable to meeting the objectives of the Study and Report Phase.
5. Advise Owner of any need for Owner to obtain, furnish, or otherwise make available to Engineer additional Project-related data and information, for Engineer's use in the study

Exhibit A – Engineer's Services

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and evaluation of potential solution(s) to Owner's Project requirements, and preparation of related reports.

6. After consultation with Owner, recommend to Owner the solution(s) which in Engineer's judgment meet Owner's requirements for the Project.
7. Identify, consult with, and analyze requirements of governmental authorities having jurisdiction to approve the portions of the Project to be designed or specified by Engineer, including but not limited to mitigating measures identified in an environmental assessment for the Project.
8. Prepare a report (the "Report") which will, as appropriate, contain schematic layouts, sketches, and conceptual design criteria with appropriate exhibits to indicate the agreed-to requirements, considerations involved, and Engineer's recommended solution(s) described as 30% complete designs. For each recommended solution Engineer will provide the following, which will be separately itemized: opinion of probable Construction Cost; proposed allowances for contingencies; the estimated total costs of design, professional, and related services to be provided by Engineer and its Consultants; and, on the basis of information furnished by Owner, a tabulation of other items and services included within the definition of Total Project Costs.
9. Advise Owner of any need for Owner to provide data or services of the types described in Exhibit B, Owner's Responsibilities, for use in Project design, or in preparation for Contractor selection and construction.
10. When mutually agreed, assist Owner in evaluating the possible use of building information modeling; civil integrated management; geotechnical baselining of subsurface site conditions; innovative design, contracting, or procurement strategies; or other strategies, technologies, or techniques for assisting in the design, construction, and operation of Owner's facilities. The subject matter of this paragraph shall be referred to in Exhibit A and B of this Agreement as "Project Strategies, Technologies, and Techniques." And address what is described as 60-80% complete designs and plans in the NRDA Interlocal Agreement.
11. If requested to do so by Owner, assist Owner in identifying opportunities for enhancing the sustainability of the Project, and pursuant to Owner's instructions plan for the inclusion of sustainable features in the design.
12. Use ASCE 38, "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data" as a means to advise the Owner on a recommended scope of work and procedure for the identification and mapping of existing utilities.
13. Develop a scope of work and survey limits for any topographic and other surveys necessary for design.
14. Perform or provide the following other Study and Report Phase tasks or deliverables: see Exhibit A Attachment 1 Scope of Work as identified in the NRDA Trustees approved Work Plan.

Exhibit A – Engineer's Services

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15. Furnish two review copies of the Report and any other Study and Report Phase deliverables to Owner within seven days prior to the timeframes specified in the NRDA trustees approved Work Plan for review it with Owner. Within seven days of receipt, Owner shall submit to Engineer any comments regarding the furnished items.
 16. Revise the Report and any other Study and Report Phase deliverables in response to Owner's comments, as appropriate, and furnish two copies of the revised Report and any other Study and Report Phase deliverables to the Owner within ten days of receipt of Owner's review comments.
- B. Engineer's services under the Study and Report Phase will be considered complete on the date when Engineer has delivered to Owner the revised Report and any other Study and Report Phase deliverables and approved by NRDA Trustees.

A1.02 Phase 2 Engineering and Construction Phase Services

- A. After acceptance by Owner of the Report and any other Study and Report Phase deliverables; selection by Owner of a recommended solution; issuance by Owner of any instructions for use of Project Strategies, Technologies, and Techniques, or for inclusion of sustainable features in the design; and indication by Owner of any specific modifications or changes in the scope, extent, character, or design requirements of the Project desired by Owner, (1) Engineer and Owner shall discuss and resolve any necessary revisions to Engineer's compensation (through application of the provisions regarding Additional Services, or otherwise), or the time for completion of Engineer's services, resulting from the selected solution, related Project Strategies, Technologies, or Techniques, sustainable design instructions, or specific modifications to the Project, and (2) upon written authorization from Owner, Engineer shall:
1. Prepare Preliminary Design Phase documents consisting of final design criteria, preliminary drawings, outline specifications, and written descriptions of the Project.
 2. In preparing the Preliminary Design Phase documents, use any specific applicable Project Strategies, Technologies, and Techniques authorized by Owner during or following the Study and Report Phase, and include sustainable features, as appropriate, pursuant to Owner's instructions.
 3. Provide necessary field surveys and topographic and utility mapping for Engineer's design purposes. Comply with the scope of work and procedure for the identification and mapping of existing utilities selected and authorized by Owner pursuant to advice from Engineer based on ASCE 38, "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data," as set forth in Paragraph A1.01.A.12 above. If no such scope of work and procedure for utility mapping has been selected and authorized, then at a minimum the utility mapping will include Engineer contacting utility owners and obtaining available information.
 4. Visit the Site as needed to prepare the Preliminary Design Phase documents.
 5. Advise Owner if additional reports, data, information, or services of the types described in Exhibit B are necessary and assist Owner in obtaining such reports, data, information, or services.

Exhibit A – Engineer's Services

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6. Continue to assist Owner with Project Strategies, Technologies, and Techniques that Owner has chosen to implement.
 7. Based on the information contained in the Preliminary Design Phase documents, prepare a revised opinion of probable Construction Cost, and assist Owner in tabulating the various cost categories which comprise Total Project Costs.
 8. Obtain and review Owner's instructions regarding Owner's procurement of construction services (including instructions regarding advertisements for bids, instructions to bidders, and requests for proposals, as applicable), Owner's construction contract practices and requirements, insurance and bonding requirements, electronic transmittals during construction, and other information necessary for the finalization of Owner's bidding-related documents (or requests for proposals or other construction procurement documents), and Construction Contract Documents. Also obtain and review copies of Owner's design and construction standards, Owner's standard forms, general conditions (if other than EJCDC® C-700, Standard General Conditions of the Construction Contract, 2013 Edition), supplementary conditions, text, and related documents or content for Engineer to include in the draft bidding-related documents (or requests for proposals or other construction procurement documents), and in the draft Construction Contract Documents, when applicable.
 9. Perform or provide the following other Preliminary Design Phase tasks or deliverables: as identified in Exhibit A Attachment 1 Scope of Work.
 10. Furnish two review copies of the Preliminary Design Phase documents, opinion of probable Construction Cost, and any other Preliminary Design Phase deliverables to Owner within 240 days of authorization to proceed with this phase or as per the work and schedule specified within the approved Work Plan, and review them with Owner. Within seven days of receipt, Owner shall submit to Engineer any comments regarding the furnished items.
 11. Revise the Preliminary Design Phase documents, opinion of probable Construction Cost, and any other Preliminary Design Phase deliverables in response to Owner's comments, as appropriate, and furnish to Owner two copies of the revised Preliminary Design Phase documents, revised opinion of probable Construction Cost, and any other deliverables within 30 days after receipt of Owner's comments or as specified within schedule of deliverables within the approved Work Plan.
- B. Engineer's services under the Preliminary Design Phase will be considered complete on the date when Engineer has delivered to Owner the revised Preliminary Design Phase documents, revised opinion of probable Construction Cost, and any other Preliminary Design Phase deliverables and approved by NRDA Trustees.

A1.03 Phase 2 Final Design Phase Services

- A. After acceptance by Owner and NRDA Trustees of the Preliminary Design Phase documents, as described as 80% complete in the NRDA Interlocal Agreement, revised opinion of probable Construction Cost as determined in the Preliminary Design Phase, and any other Preliminary Design Phase deliverables, subject to any Owner-directed modifications or changes in the

scope, extent, character, or design requirements of or for the Project, and upon written authorization from Owner, Engineer shall:

1. Prepare final Drawings and Specifications indicating the scope, extent, and character of the Work to be performed, as described as 100% complete plans, to be furnished to a Contractor.
2. Visit the Site as needed to assist in preparing the final Drawings and Specifications.
3. Provide technical criteria, written descriptions, and design data for Owner's use in filing applications for permits from or approvals of governmental authorities having jurisdiction to review or approve the final design; assist Owner in consultations with such authorities; and revise the Drawings and Specifications in response to directives from such authorities, as appropriate.
4. Advise Owner of any recommended adjustments to the opinion of probable Construction Cost.
5. After consultation with Owner, include in the Construction Contract Documents any specific protocols for the transmittal of Project-related correspondence, documents, text, data, drawings, information, and graphics, in electronic media or digital format, either directly, or through access to a secure Project website. Any such protocols shall be applicable to transmittals between and among Owner, Engineer, and Contractor during the Construction Phase and Post-Construction Phase, and unless agreed otherwise shall supersede any conflicting protocols previously established for transmittals between Owner and Engineer.
6. Assist Owner in assembling known reports and drawings of Site conditions, and in identifying the technical data contained in such reports and drawings upon which bidders or other prospective contractors may rely.
7. In addition to preparing the final Drawings and Specifications, assemble drafts of other Construction Contract Documents based on specific instructions and contract forms, text, or content received from Owner.
8. Prepare or assemble draft bidding-related documents (or requests for proposals or other construction procurement documents), based on the specific bidding or procurement-related instructions and forms, text, or content received from Owner.
9. Perform or provide the following other Final Design Phase tasks or deliverables: as indicated in Exhibit A Attachment 1 Scope of Work and approved NRDA Trustees Work Plan.
10. Furnish for review by Owner, its legal counsel, and other advisors, two copies of the final Drawings and Specifications, assembled drafts of other Construction Contract Documents, the draft bidding-related documents (or requests for proposals or other construction procurement documents), and any other Final Design Phase deliverables, within 365 days of authorization to proceed or as adjusted by project schedule and permitting timeframe with the Final Design Phase or as specified in the approved Work Plan and any subsequent approved changes to the schedule, and review them with

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Owner. Within fourteen business days of receipt, Owner shall submit to Engineer any comments regarding the furnished items, and any instructions for revisions.

11. Revise the final Drawings and Specifications, assembled drafts of other Construction Contract Documents, the draft bidding-related documents (or requests for proposals or other construction procurement documents), and any other Final Design Phase deliverables in accordance with comments and instructions from the Owner, as appropriate, and submit two final copies of such documents to Owner within 10 days after receipt of Owner's comments and instructions or in accordance with approved Work Plan schedule for deliverables.
- B. Engineer's services under the Final Design Phase will be considered complete on the date when Engineer has delivered to Owner the final Drawings and Specifications, other assembled Construction Contract Documents, bidding-related documents (or requests for proposals or other construction procurement documents), and any other Final Design Phase deliverables and approved by NRDA Trustees.
 - C. In the event that the Work designed or specified by Engineer is to be performed or furnished under more than one prime contract, or if Engineer's services are to be separately sequenced with the work of one or more prime Contractors (such as in the case of fast-tracking), Owner and Engineer shall, prior to commencement of the Final Design Phase, develop a schedule for performance of Engineer's services during the Final Design, Bidding or Negotiating, Construction, and Post-Construction Phases in order to sequence and coordinate properly such services as are applicable to the work under such separate prime contracts. This schedule is to be prepared and included in or become an amendment to Exhibit A whether or not the work under such contracts is to proceed concurrently.
 - D. The number of prime contracts for Work designed or specified by Engineer upon which the Engineer's compensation has been established under this Agreement is one. If more prime contracts are awarded, Engineer shall be entitled to an equitable increase in its compensation under this Agreement.

A1.04 Phase 2 Bidding or Negotiating Phase Services

- A. After acceptance by Owner of the final Drawings and Specifications, other Construction Contract Documents, bidding-related documents (or requests for proposals or other construction procurement documents), and the most recent opinion of probable Construction Cost as determined in the Final Design Phase, and upon written authorization by Owner to proceed, Engineer shall:
 1. Assist Owner in advertising for and obtaining bids or proposals for the Work, assist Owner in issuing assembled design, contract, and bidding-related documents (or requests for proposals or other construction procurement documents) to prospective contractors, and, where applicable, maintain a record of prospective contractors to which documents have been issued, attend pre-bid conferences, if any, and receive and process contractor deposits or charges for the issued documents.
 2. Prepare and issue Addenda as appropriate to clarify, correct, or change the issued documents.

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3. Provide information or assistance needed by Owner in the course of any review of proposals or negotiations with prospective contractors.
 4. Consult with Owner as to the qualifications of prospective contractors.
 5. Consult with Owner as to the qualifications of subcontractors, suppliers, and other individuals and entities proposed by prospective contractors, for those portions of the Work as to which review of qualifications is required by the issued documents.
 6. If the issued documents require, the Engineer shall evaluate and determine the acceptability of "or equals" and substitute materials and equipment proposed by prospective contractors, provided that such proposals are allowed by the bidding-related documents (or requests for proposals or other construction procurement documents) prior to award of contracts for the Work. Services under this paragraph are subject to the provisions of Paragraph A2.02.A.2 of this Exhibit A.
 7. Attend the bid opening, prepare bid tabulation sheets to meet Owner's schedule, and assist Owner in evaluating bids or proposals, assembling final contracts for the Work for execution by Owner and Contractor, and in issuing notices of award of such contracts.
 8. If Owner engages in negotiations with bidders or proposers, assist Owner with respect to technical and engineering issues that arise during the negotiations.
 9. Perform or provide the following other Bidding or Negotiating Phase tasks or deliverables: as identified in Exhibit A Attachment 1 and NRDA Trustees approved Work Plan.
- B. The Bidding or Negotiating Phase will be considered complete upon commencement of the Construction Phase or upon cessation of negotiations with prospective contractors (except as may be required if Exhibit F is a part of this Agreement).

A1.05 Phase 2 Construction Phase Services

- A. Upon successful completion of the Bidding and Negotiating Phase, and upon written authorization from Owner, Engineer shall:
1. *General Administration of Construction Contract:* Consult with Owner and act as Owner's representative in coordination with Owner staff as provided in the Construction Contract. The extent and limitations of the duties, responsibilities, and authority of Engineer shall be as assigned in EJCDC® C-700, Standard General Conditions of the Construction Contract (2013 Edition), prepared by the Engineers Joint Contract Documents Committee, or other construction general conditions specified in this Agreement. If Owner, or Owner and Contractor, modify the duties, responsibilities, and authority of Engineer in the Construction Contract, or modify other terms of the Construction Contract having a direct bearing on Engineer, then Owner shall compensate Engineer for any related increases in the cost to provide Construction Phase services. Engineer shall not be required to furnish or perform services contrary to Engineer's responsibilities as a licensed professional. All of Owner's instructions to Contractor will be issued through Engineer, which shall have authority to act on behalf of Owner in coordination with Owner's authorized staff in dealings with Contractor to the

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extent provided in this Agreement and the Construction Contract except as otherwise provided in writing. Nothing herein authorizes Engineer to act without approval of Owner.

2. *Resident Project Representative (RPR):* Provide the services of an RPR at the Site to assist the Engineer and to provide more extensive observation of Contractor's work. Duties, responsibilities, and authority of the RPR are as set forth in Exhibit D. The furnishing of such RPR's services will not limit, extend, or modify Engineer's responsibilities or authority except as expressly set forth in Exhibit D.
3. *Selection of Independent Testing Laboratory:* Assist Owner in the selection of an independent testing laboratory to perform the services identified in Exhibit B, Paragraph B2.01.
4. *Pre-Construction Conference:* Participate in a pre-construction conference prior to commencement of Work at the Site.
5. *Electronic Transmittal Protocols:* If the Construction Contract Documents do not specify protocols for the transmittal of Project-related correspondence, documents, text, data, drawings, information, and graphics, in electronic media or digital format, either directly, or through access to a secure Project website, then together with Owner and Contractor jointly develop such protocols for transmittals between and among Owner, Contractor, and Engineer during the Construction Phase and Post-Construction Phase.
6. *Original Documents:* If requested by Owner to do so, maintain and safeguard during the Construction Phase at least one original printed record version of the Construction Contract Documents, including Drawings and Specifications signed and sealed by Engineer and other design professionals in accordance with applicable Laws and Regulations. Throughout the Construction Phase, make such original printed record version of the Construction Contract Documents available to Contractor and Owner for review.
7. *Schedules:* Receive, review, and determine the acceptability of any and all schedules that Contractor is required to submit to Engineer, including the Progress Schedule, Schedule of Submittals, and Schedule of Values. See Exhibit A Attachment 2 and the approved NRDA Work Plan Project Schedule.
8. *Baselines and Benchmarks:* As appropriate, establish baselines and benchmarks for locating the Work which in Engineer's and Owner's judgment are necessary to enable Contractor to proceed.
9. *Visits to Site and Observation of Construction:* In connection with observations of Contractor's Work while it is in progress:
 - a. Make visits to the Site at intervals appropriate to the various stages of construction, as Engineer and Owner deems necessary, to observe as an experienced and qualified design professional the progress of Contractor's executed Work. Such visits and observations by Engineer, and the Resident Project Representative, if any, are not intended to be exhaustive or to extend to every aspect of the Work or to involve detailed inspections of the Work beyond the responsibilities specifically

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assigned to Engineer in this Agreement and the Construction Contract Documents, but rather are to be limited to spot checking, selective sampling, and similar methods of general observation of the Work based on Engineer's exercise of professional judgment, as assisted by the Resident Project Representative, if any. Based on information obtained during such visits and observations, Engineer will determine in general if the Work is proceeding in accordance with the Construction Contract Documents, and Engineer shall keep Owner informed of the progress of the Work.

- b. The purpose of Engineer's visits to the Site, and representation by the Resident Project Representative, if any, at the Site, will be to enable Engineer to better carry out the duties and responsibilities assigned to and undertaken by Engineer during the Construction Phase, and, in addition, by the exercise of Engineer's efforts as an experienced and qualified design professional, to provide for Owner a greater degree of confidence that the completed Work will conform in general to the Construction Contract Documents and that Contractor has implemented and maintained the integrity of the design concept of the completed Project as a functioning whole as indicated in the Construction Contract Documents. Engineer shall, during such visits or as a result of such observations of the Work, provide recommendations to the Owner on the Work, Engineer shall have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected or used by any Constructor, for meeting the Project's performance criteria, not security or safety at the Site, for safety precautions and programs incident to any Constructor's work in progress, for the coordination of the Constructors' work or schedules, nor for any failure of any Constructor to comply with Laws and Regulations applicable to furnishing and performing of its work. Accordingly, Engineer neither guarantees the performance of any Constructor nor assumes responsibility for any Constructor's failure to furnish or perform the Work, or any portion of the Work, in accordance with the Construction Contract Documents.
10. *Defective Work:* Reject Work if, on the basis of Engineer's observations, Engineer believes that such Work is defective under the terms and standards set forth in the Construction Contract Documents. Provide recommendations to Owner regarding whether Contractor should correct such Work or remove and replace such Work, or whether Owner should consider accepting such Work as provided in the Construction Contract Documents.
 11. *Compatibility with Design Concept:* If Engineer has express knowledge that a specific part of the Work that is not defective under the terms and standards set forth in the Construction Contract Documents is nonetheless not compatible with the design concept of the completed Project as a functioning whole, then inform Owner of such incompatibility, and provide recommendations for addressing such Work.
 12. *Clarifications and Interpretations:* Accept from Contractor and Owner submittal of all matters in question concerning the requirements of the Construction Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Construction Contract Documents. With reasonable promptness, render a written clarification, interpretation, or decision

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on the issue submitted, or initiate an amendment or supplement to the Construction Contract Documents.

13. *Non-reviewable Matters:* If a submitted matter in question concerns the Engineer's performance of its duties and obligations, or terms and conditions of the Construction Contract Documents that do not involve (1) the performance or acceptability of the Work under the Construction Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer will not provide a decision or interpretation.
14. *Field Orders:* Subject to any limitations in the Construction Contract Documents, Engineer may with approval of Owner prepare and issue Field Orders requiring changes in the Work.
15. *Change Orders and Work Change Directives:* Recommend Change Orders and Work Change Directives to Owner, as appropriate, and prepare Change Orders and Work Change Directives as required.
16. *Differing Site Conditions:* Respond to any notice from Contractor of differing site conditions, including conditions relating to underground facilities such as utilities, and hazardous environmental conditions. Promptly conduct reviews and prepare findings, conclusions, and recommendations for Owner's use.
17. *Shop Drawings, Samples, and Other Submittals:* Review and approve or take other appropriate action with respect to Shop Drawings, Samples, and other required Contractor submittals, but only for conformance with the information given in the Construction Contract Documents and compatibility with the design concept of the completed Project as a functioning whole as indicated by the Construction Contract Documents. Such reviews and approvals or other action will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions and programs incident thereto. Engineer shall meet any Contractor's submittal schedule that Engineer has accepted.
18. *Substitutes and "Or-equal":* Evaluate and determine the acceptability of substitute or "or-equal" materials and equipment proposed by Contractor, but subject to the provisions of Paragraph A2.02.A.2 of this Exhibit A.
19. *Inspections and Tests:*
 - a. Receive and review all certificates of inspections, tests, and approvals required by Laws and Regulations or the Construction Contract Documents. Engineer's review of such certificates will be for the purpose of determining that the results certified indicate compliance with the Construction Contract Documents and will not constitute an independent evaluation that the content or procedures of such inspections, tests, or approvals comply with the requirements of the Construction Contract Documents. Engineer shall be entitled to rely on the results of such inspections and tests.

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- b. As deemed reasonably necessary, request that Contractor uncover Work that is to be inspected, tested, or approved.
 - c. Pursuant to the terms of the Construction Contract, require special inspections or testing of the Work, whether or not the Work is fabricated, installed, or completed.
20. *Change Proposals and Claims:* (a) Review and respond to Change Proposals. Review each duly submitted Change Proposal from Contractor and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer will not resolve the Change Proposal. (b) Provide information or data to Owner regarding engineering or technical matters pertaining to Claims.
21. *Applications for Payment:* Based on Engineer's observations and consistent with the overall NRDA project budget provided in Attachment 3 Project Budget as an experienced and qualified design professional and on review of Applications for Payment and accompanying supporting documentation:
- a. Determine the amounts that Engineer recommends Contractor be paid. Recommend reductions in payment (set-offs) based on the provisions for set-offs stated in the Construction Contract. Such recommendations of payment will be in writing and will constitute Engineer's representation to Owner, based on such observations and review, that, to the best of Engineer's knowledge, information and belief, Contractor's Work has progressed to the point indicated, the Work is generally in accordance with the Construction Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Construction Contract Documents, and to any other qualifications stated in the recommendation), and the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work. In the case of unit price Work, Engineer's recommendations of payment will include final determinations of quantities and classifications of the Work (subject to any subsequent adjustments allowed by the Construction Contract Documents).
 - b. By recommending payment, Engineer shall not thereby be deemed to have represented that observations made by Engineer to check the quality or quantity of Contractor's Work as it is performed and furnished have been exhaustive, extended to every aspect of Contractor's Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in this Agreement. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment including final payment will impose on Engineer responsibility to supervise, direct, or control the Work, or for the means, methods, techniques, sequences, or procedures of construction or safety precautions or programs incident thereto, or Contractor's compliance with Laws and Regulations applicable to Contractor's furnishing and performing the Work. It will also not impose responsibility on

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Engineer to make any examination to ascertain how or for what purposes Contractor has used the money paid to Contractor by Owner; to determine that title to any portion of the Work, including materials or equipment, has passed to Owner free and clear of any liens, claims, security interests, or encumbrances; or that there may not be other matters at issue between Owner and Contractor that might affect the amount that should be paid.

22. *Contractor's Completion Documents:* Receive from Contractor, review, and transmit to Owner maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance required by the Construction Contract Documents, certificates of inspection, tests and approvals, and Shop Drawings, Samples, and other data approved as provided under Paragraph A1.05.A.17. Receive from Contractor, review, and transmit to Owner the annotated record documents which are to be assembled by Contractor in accordance with the Construction Contract Documents to obtain final payment. The extent of Engineer's review of record documents shall be to check that Contractor has submitted all pages.
 23. *Substantial Completion:* Promptly after notice from Contractor that Contractor considers the entire Work ready for its intended use, in company with Owner and Contractor, visit the Site to review the Work and determine the status of completion. Follow the procedures in the Construction Contract regarding the preliminary certificate of Substantial Completion, punch list of items to be completed, Owner's objections, notice to Contractor, and issuance of a final certificate of Substantial Completion. Assist Owner regarding any remaining engineering or technical matters affecting Owner's use or occupancy of the Work following Substantial Completion.
 24. *Other Tasks:* Perform or provide the following other Construction Phase tasks or deliverables: as identified in Exhibit A Attachment 1 and the approved NRDA Work Plan and activities generated from the Project.
 25. *Final Notice of Acceptability of the Work:* Conduct a final visit to the Project to determine if the Work is complete and acceptable so that Engineer may recommend, in writing, final payment to Contractor. Accompanying the recommendation for final payment, Engineer shall also provide a notice to Owner and Contractor in the form attached hereto as Exhibit E ("Notice of Acceptability of Work") that the Work is acceptable (subject to the provisions of the Notice and Paragraph A1.05.A.21.b) to the best of Engineer's knowledge, information, and belief, and based on the extent of the services provided by Engineer under this Agreement.
 26. *Standards for Certain Construction-Phase Decisions:* Engineer in consultation with Owner will render decisions regarding the requirements of the Construction Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth in the Construction Contract for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.
- B. *Duration of Construction Phase:* The Construction Phase will commence with the execution of the first Construction Contract for the Project or any part thereof and will terminate upon written recommendation by Engineer, in consultation with Owner, for final payment to

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Contractors. If the Project involves more than one prime contract as indicated in Paragraph A1.03.D, then Construction Phase services may be rendered at different times in respect to the separate contracts. Subject to the provisions of Article 3, Engineer shall be entitled to an equitable increase in compensation if Construction Phase services (including Resident Project Representative services, if any) are required after the original date for completion and readiness for final payment of Contractor as set forth in the Construction Contract.

A1.06 Phase 3 Post-Construction Phase Services including Monitoring and Reporting

- A. Upon written authorization from Owner during the Post-Construction Phase, Engineer shall:
1. Together with Owner, visit the Project to observe any apparent defects in the Work, make recommendations as to replacement or correction of defective Work, if any, or the need to repair of any damage to the Site or adjacent areas, and assist Owner in consultations and discussions with Contractor concerning correction of any such defective Work and any needed repairs.
 2. Together with Owner, visit the Project within one month before the end of the Construction Contract's correction period to ascertain whether any portion of the Work or the repair of any damage to the Site or adjacent areas is defective and therefore subject to correction by Contractor.
 3. Perform or provide the following other Post-Construction Phase tasks or deliverables: as specified in Exhibit A attachment 1 and approved NRDA Trustees Work Plan.
- B. The Post-Construction Phase services may commence during the Construction Phase and, if not otherwise modified in this Exhibit A, will terminate twelve months after the commencement of the Construction Contract's correction period and when the NRDA Project Final Completion Report and certification of complete is provided by the NRDA Trustees in accordance with the approved NRDA Work Plan.

PART 2 – ADDITIONAL SERVICES

A2.01 Additional Services Requiring Owner's Written Authorization

- A. If authorized in writing by Owner, Engineer shall provide Additional Services of the types listed below. These services are not included as part of Basic Services and will be paid for by Owner as indicated in Exhibit C.
1. Preparation of applications and supporting documents (in addition to those furnished under Basic Services) for additional private or governmental grants, loans, or advances in connection with the Project; preparation or review of environmental assessments and impact statements; review and evaluation of the effects on the design requirements for the Project of any such statements and documents prepared by others; and assistance in obtaining approvals of authorities having jurisdiction over the anticipated environmental impact of the Project.
 2. Services to make measured drawings of existing conditions or facilities, to conduct tests or investigations of existing conditions or facilities, or to verify the accuracy of drawings or other information furnished by Owner or others.

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3. Services resulting from significant changes in the scope, extent, or character of the portions of the Project designed or specified by Engineer, or the Project's design requirements, including, but not limited to, changes in size, complexity, Owner's schedule, character of construction, or method of financing; and revising previously accepted studies, reports, Drawings, Specifications, or Construction Contract Documents when such revisions are required by changes in Laws and Regulations enacted subsequent to the Effective Date or are due to any other causes beyond Engineer's control.
4. Services resulting from Owner's request to evaluate additional Study and Report Phase alternative solutions beyond those agreed to in Paragraph A1.01.A.1 and 2.
5. Services required as a result of Owner's providing incomplete or incorrect Project information to Engineer.
6. Providing renderings or models for Owner's use, including services in support of building information modeling or civil integrated management.
7. Undertaking investigations and studies including, but not limited to:
 - a. detailed consideration of operations, maintenance, and overhead expenses;
 - b. the preparation of feasibility studies (such as those that include projections of output capacity, utility project rates, project market demand, or project revenues) and cash flow analyses, provided that such services are based on the engineering and technical aspects of the Project, and do not include rendering advice regarding municipal financial products or the issuance of municipal securities;
 - c. preparation of appraisals;
 - d. evaluating processes available for licensing, and assisting Owner in obtaining process licensing;
 - e. detailed quantity surveys of materials, equipment, and labor; and
 - f. audits or inventories required in connection with construction performed or furnished by Owner.
8. Furnishing services of Consultants for other than Basic Services.
9. Providing data or services of the types described in Exhibit B, when Owner retains Engineer to provide such data or services instead of Owner furnishing the same.
10. Providing the following services:
 - a. Services attributable to more prime construction contracts than specified in Paragraph A1.03.D.
 - b. Services to arrange for performance of construction services for Owner by contractors other than the principal prime Contractor and administering Owner's contract for such services.

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11. Services during out-of-town travel required of Engineer, other than for visits to the Site or Owner's office as required in Basic Services (Part 1 of Exhibit A).
12. Preparing for, coordinating with, participating in and responding to structured independent review processes, including, but not limited to, construction management, cost estimating, project peer review, value engineering, and constructibility review requested by Owner; and performing or furnishing services required to revise studies, reports, Drawings, Specifications, or other documents as a result of such review processes.
13. Preparing additional bidding-related documents (or requests for proposals or other construction procurement documents) or Construction Contract Documents for alternate bids or cost estimates requested by Owner for the Work or a portion thereof.
14. Assistance in connection with bid protests, rebidding, or renegotiating contracts for construction, materials, equipment, or services, except when such assistance is required to complete services required by Paragraph 5.02.A and Exhibit F.
15. Preparing conformed Construction Contract Documents that incorporate and integrate the content of all Addenda and any amendments negotiated by Owner and Contractor.
16. Providing Construction Phase services beyond the original date for completion and readiness for final payment of Contractor, but only if such services increase the total quantity of services to be performed in the Construction Phase, rather than merely shifting performance of such services to a later date.
17. Preparing Record Drawings, and furnishing such Record Drawings to Owner.
18. Supplementing Record Drawings with information regarding the completed Project, Site, and immediately adjacent areas obtained from field observations, Owner, utility companies, and other reliable sources.
19. Conducting surveys, investigations, and field measurements to verify the accuracy of Record Drawing content obtained from Contractor, Owner, utility companies, and other sources; revise and supplement Record Drawings as needed.
20. Preparation of operation, maintenance, and staffing manuals.
21. Protracted or extensive assistance in refining and adjusting of Project equipment and systems (such as initial startup, testing, and balancing).
22. Assistance to Owner in training Owner's staff to operate and maintain Project equipment and systems.
23. Assistance to Owner in developing systems and procedures for (a) control of the operation and maintenance of Project equipment and systems, and (b) related recordkeeping.

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24. Preparing to serve or serving as a consultant or witness for Owner in any litigation, arbitration, lien or bond claim, or other legal or administrative proceeding involving the Project.
25. Overtime work requiring higher than regular rates.
26. Providing construction surveys and staking to enable Contractor to perform its work other than as required under Paragraph A1.05.A.8; any type of property surveys or related engineering services needed for the transfer of interests in real property; and providing other special field surveys.
27. Providing more extensive services required to enable Engineer to issue notices or certifications requested by Owner.
28. Extensive services required during any correction period, or with respect to monitoring Contractor's compliance with warranties and guarantees called for in the Construction Contract (except as agreed to under Basic Services).
29. Other additional services performed or furnished by Engineer not otherwise provided for in this Agreement.

A2.02 Additional Services Not Requiring Owner's Written Authorization

- A. Engineer shall advise Owner that Engineer is commencing to perform or furnish the Additional Services of the types listed below. For such Additional Services, Engineer need not request or obtain specific advance written authorization from Owner, but shall notify Owner within twenty-four (24) hours of commencement of such Additional Services. Engineer shall cease performing or furnishing such Additional Services upon notice to cease from Owner.
 1. Services in connection with Work Change Directives and Change Orders to reflect changes requested by Owner.
 2. Services in making revisions to Drawings and Specifications occasioned by the acceptance of substitute materials or equipment other than "or equal" items; services after the award of the Construction Contract in evaluating and determining the acceptability of a proposed "or equal" or substitution which is found to be inappropriate for the Project; evaluation and determination of an excessive number of proposed "or equals" or substitutions, whether proposed before or after award of the Construction Contract.
 3. Services resulting from significant delays, changes, or price increases occurring as a direct or indirect result of materials, equipment, or energy shortages.
 4. Additional or extended services arising from (a) the presence at the Site of any Constituent of Concern or items of historical or cultural significance, (b) emergencies or acts of God endangering the Work, (c) damage to the Work by fire or other causes during construction, (d) a significant amount of defective, neglected, or delayed Work, (e) acceleration of the progress schedule involving services beyond normal working hours, or (f) default by Contractor.

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5. Services (other than Basic Services during the Post-Construction Phase) in connection with any partial utilization of the Work by Owner prior to Substantial Completion.
6. Evaluating unreasonable or frivolous requests for interpretation or information (RFIs), Change Proposals, or other demands from Contractor or others in connection with the Work, or an excessive number of RFIs, Change Proposals, or demands.
7. Reviewing a Shop Drawing or other Contractor submittal more than three times, as a result of repeated inadequate submissions by Contractor.
8. While at the Site, compliance by Engineer and its staff with those terms of Owner's or Contractor's safety program provided to Engineer subsequent to the Effective Date that exceed those normally required of engineering personnel by federal, State, or local safety authorities for similar construction sites.

Exhibit A – Engineer's Services

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Exhibit A. Attachment 1
Scope of Work
for
City of Texarkana, Texas
NRDA Days Creek Restoration Project
Days Creek Watershed Comprehensive Aquatic Ecosystem Restoration
Ten Projects on Cowhorn, Days, Howards, Swampoodle, and Waggoner Creeks
Restoration associated with natural resources damages from the Former Kerr-McGee Chemical
Corporation Wood-Treating Facility (TRONOX LLC), Texarkana, Bowie County, Texas

January 10, 2020

1.0 Scope of Work

The following identifies the major scope of work items to be undertaken which are:

- Phase 1- Planning, Design Development, and Permitting
- Phase 2- Engineering, Final Design, Construction Phase Services, and
- Phase 3- Post-Construction Phase Services including Monitoring and Reporting.

These major work items will be further developed by the Engineer, Aqua Strategies, Inc., with the development of a NRDA Project Work Plan to include Data Collection Plan, Design Development Plan, Permitting Plan, Construction Plan, Monitoring Plan, Reporting Plan, and Maintenance Plan.

Work Dates/Schedule (setting project components priorities) associated with each Plan for the ten project components are identified herein after consultation with the City of Texarkana, Texas (The City) and will be in accordance with the approved NRDA Project Work Plan. All the work can be completed within 5 years of the Notice To Proceed, but timing and completion will proceed based upon the NRDA Interlocal Agreement between the City of Texarkana, Texas and the NRDA Trustees approved NRDA Project schedule within the NRDA Work Plan.

The ten projects are briefly described within Table 1 as follows with corresponding NRDA restoration plan numbers, that may be refined according to a NRDA Project Work Plan developed during Phase 1 and approved by NRDA Trustees:

Table 1. Projects described with corresponding project numbers and restoration activities:

Project Number	Project Name	Project Description/Restoration Actions
1	Cowhorn Creek Convention Ctr	Stream restoration: Naturalize 2,600 Linear Ft
2	Cowhorn Creek Bioengineering & Planting	Stream restoration: Bioengineering 11,000 Linear Ft & 9,200 Linear Ft Native Planting
3	Cowhorn Creek Texarkana College	Stream restoration: 3,000 Linear Ft Restoration, and Preservation 2.5 Acres, & Creation 6 Acres Wetlands
4	Days Creek South State Line	Preservation 32 forested acres
5	Days Creek South of Texas Viaduct	Preservation 100 Forested Acres
6	Howard Creek Confluence with Days Creek	Stream restoration 2,000 lf with 23 acres wetland restoration
7	Swampoodle Creek Ferguson Park	Stream restoration 665 lf to 1,000 lf with 2.85 to 3 acres wetlands creation
8	Swampoodle Creek Naturalization & Stabilization	Stream restoration between Spring Lake Park & Days Creek 11,000 lf
9	Swampoodle Creek Stream Restoration & Re-Alignment	Stream restoration 1,100 lf
10	Waggoner Creek Southwest Rec Center	Stream restoration 2,000 lf

The project consists of 10 components located along Cowhorn, Swampoodle, Howard, Waggoner, and Days Creeks, within the City of Texarkana, Texas as shown in Figure 1.

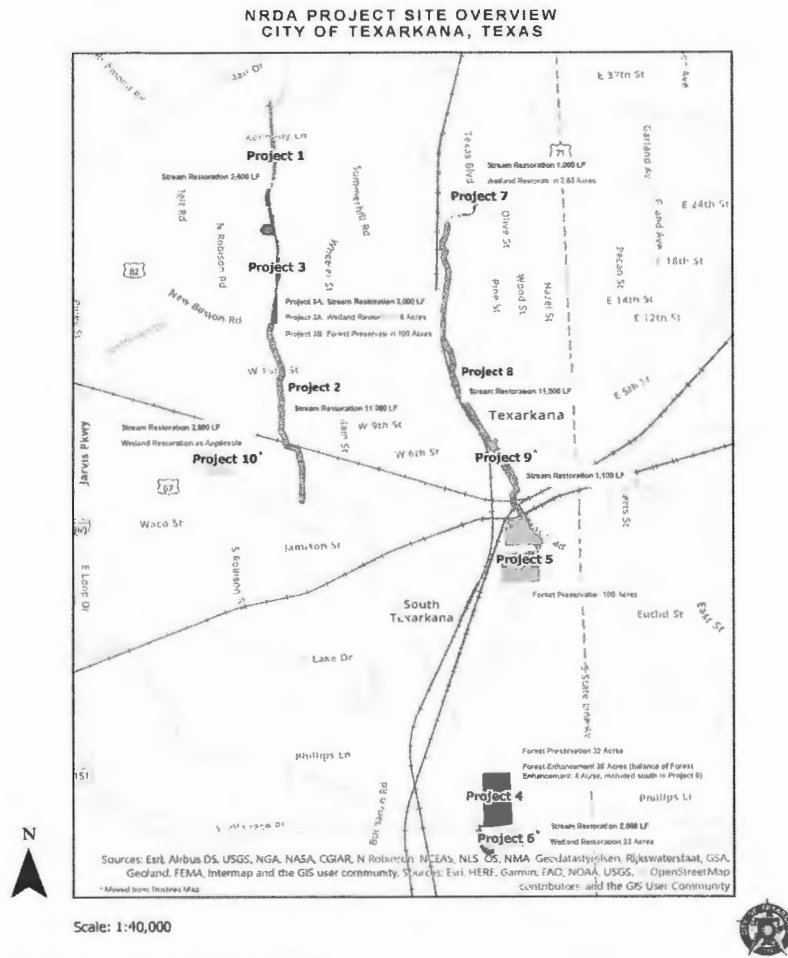


Figure 1. Project Location Map

1.1 Project and Restoration Goals and Outcomes

Aqua Strategies will help The City achieve its NRDA restoration project goals.

2.0 Work Design/Organization

2.1 Design The City will establish two teams, a Project Management Team (PMT) and Project Delivery Team (PDT). The PMT will be led by The City and consist of members from its project partners. The PMT will be responsible for coordinating with the NRDA Trustees and reviewing and approving the work for distribution of funds. The PMT will also set up the conservation easements.

The PDT will be led by the City's selected consultant Aqua Strategies Inc. and consist of staff from Aqua Strategies' as well as their subcontractors/subconsultants MTG Surveying and Engineering and Titanium Environmental. The PDT will be responsible for developing a Work Plan, project planning, data collection, stakeholder outreach and engagement, design development, identification/layout of staff, hours, materials, equipment, site visits, and facilitating meetings. Data collection will include: collecting existing data, identifying needed data, developing the sampling design, site characterization, survey transects and quantities and will be the responsibility of the PDT. In addition, the Aqua Strategies Team (PDT) will be responsible for data management over the duration of the project.

The PDT will undertake design development suitable for USACE permitting with 60% complete plans and applicable cross sections and other supporting documentation, i.e. permit application. The Engineer will be responsible for coordinating with USACE and other regulatory agencies on other applicable permits that include Texas Commission on Environmental Quality (TCEQ) 401 water quality certification.

The PDT will be responsible for applicable coordination with the floodplain administrator and City of Texarkana, Texas Engineering and Public Works Department.

3.2 Specific Work Items to be undertaken by Aqua Strategies, Inc. with PDT

- 3.2.1 Prepare the Work Plan including Data Collection Plan, Design Development Plan, Permitting Plan, Construction Plan, Monitoring Plan, Reporting Plan, and Maintenance Plan.
- 3.2.2 Undertake site investigations, including due diligence on three preservation only sites, and prepare baseline conditions report(s) including property/site work area boundaries survey, topographic survey, waters of the US (WOUS) delineation, including stream waters and associated wetlands, botanic survey including riparian areas, aquatic resource survey of predominant benthic species and fish presence and applicable Phase I Environmental Assessment reports on three preservation only sites. No cultural resources or threatened and endangered species survey are required since they were vetted under initial NRDA proposal and NRDA Trustees review.
- 3.2.3 Prepare preliminary site designs based on concepts already prepared in coordination with client and community engagement.
- 3.2.4 Undertake design development including hydrology and hydraulic (H&H) analysis, watershed and floodplain information, and input from The City's engineering/public works stormwater management plans/permit requirements.

- 3.2.5 Provide permitting assistance including USACE and other federal/state agencies under Rivers and Harbors Act/Clean Water Act and stormwater National Pollution Discharges Elimination (NPDES).
- 3.2.6 Prepare construction documentation and cost estimating with support to The City during bid advertisement, contractor bidding and selection.
- 3.2.7 Sequence restoration activities including individual project component construction priorities, vegetation establishment.
- 3.2.8 Provide construction oversight.
- 3.2.9 Provide monitoring and monitoring oversight in coordination with The City project partners.
- 3.2.10 Coordinate with The City on maintenance which is the responsibility of The City.
- 3.2.11 Coordinate with The City on adaptive site management.
- 3.2.12 Undertake support to The City on Reporting and Record Keeping including reporting on monitoring results, site maintenance needs, restoration results, and project expenditures associated with consulting activities and construction/monitoring/maintenance costs.

4.0 Field Methods and Equipment In accordance with the approved NRDA Work Plan, associated with data collection and monitoring, the PDT will work with The City on field methods and equipment needs.

5.0 Data Processing/Analysis Methods, Application to Design Development. The PDT will be responsible for data collection/processing/analysis as they apply to project component design development undertaken in accordance with the approved NRDA Work Plan.

6.0 Health and Safety Plans- The PDT will prepare applicable health and safety plans for any work on the field, including site surveys and monitoring. The PDT will require health and safety plans for general contractors during any construction and/or plantings.

7.0 Logistics- The PDT will prepare work schedules specific to each project component and its unique requirements in accordance with the approved NRDA Work Plan. As applicable, the PDT will coordinate with The City on events that may delay the work schedule such as weather and/or City activities.

8.0 Expenditures and Tracking (Costs)- The PDT will work with The City to track and report on project related expenditures, in accordance with the approved Work Plan and NRDA Interlocal Agreement.

9.0 Monitoring Results/Benefits Accrued- Restoration Value-Aqua Strategies will be responsible for documenting monitoring results with identification of benefits and restoration value to The City and NRDA Trustees. The documentation will be in accordance with the approved NRDA Work Plan.

Exhibit A Attachment 2
Anticipated Work Schedule

The schedule will be in accordance with schedule identified in the NRDA Interlocal Agreement and the approved NRDA Work Plan.

This is **EXHIBIT B**, consisting of [] pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated [].

Owner's Responsibilities

Article 2 of the Agreement is supplemented to include the following agreement of the parties.

B2.01 In addition to other responsibilities of Owner as set forth in this Agreement, Owner shall at its expense:

- A. Provide Engineer with all criteria and full information as to Owner's requirements for the Project, including design objectives and constraints, space, capacity and performance requirements, flexibility, and expandability, and any budgetary limitations. See Exhibit B of the NRDA Interlocal Agreement cost spreadsheet.
- B. Give instructions to Engineer regarding Owner's procurement of construction services (including instructions regarding advertisements for bids, instructions to bidders, and requests for proposals, as applicable), Owner's construction contract practices and requirements, insurance and bonding requirements, electronic transmittals during construction, and other information necessary for the finalization of Owner's bidding-related documents (or requests for proposals or other construction procurement documents), and Construction Contract Documents. Furnish copies (or give specific directions requesting Engineer to use copies already in Engineer's possession) of all design and construction standards, Owner's standard forms, general conditions (if other than EJCDC® C-700, Standard General Conditions of the Construction Contract, 2013 Edition), supplementary conditions, text, and related documents and content for Engineer to include in the draft bidding-related documents (or requests for proposals or other construction procurement documents), and draft Construction Contract Documents, when applicable. Owner shall have responsibility for the final content of (1) such bidding-related documents (or requests for proposals or other construction procurement documents), and (2) those portions of any Construction Contract other than the design (as set forth in the Drawings, Specifications, or otherwise), and other engineering or technical matters; and Owner shall seek the advice of Owner's legal counsel, risk managers, and insurance advisors with respect to the drafting and content of such documents.
- C. Furnish to Engineer any other available information pertinent to the Project including reports and data relative to previous designs, construction, or investigation at or adjacent to the Site.
- D. Following Engineer's assessment of initially-available Project information and data and upon Engineer's request, obtain, furnish, or otherwise make available (as necessary through title searches, or retention of specialists or consultants) such additional Project-related information and data as is reasonably required to enable Engineer to complete its Basic and Additional Services. Such additional information or data would generally include the following:
 1. Property descriptions.

Exhibit B – Owner's Responsibilities

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2. Zoning, deed, and other land use restrictions.
 3. Utility and topographic mapping and surveys.
 4. Property, boundary, easement, right-of-way, and other special surveys or data, including establishing relevant reference points.
 5. Explorations and tests of subsurface conditions at or adjacent to the Site; geotechnical reports and investigations; drawings of physical conditions relating to existing surface or subsurface structures at the Site; hydrographic surveys, laboratory tests and inspections of samples, materials, and equipment; with appropriate professional interpretation of such information or data.
 6. Environmental assessments, audits, investigations, and impact statements, and other relevant environmental, historical, or cultural studies relevant to the Project, the Site, and adjacent areas.
 7. Data or consultations as required for the Project but not otherwise identified in this Agreement.
- E. Arrange for safe access to and make all provisions for Engineer to enter upon public and private property as required for Engineer to perform services under the Agreement.
- F. Recognizing and acknowledging that Engineer's services and expertise do not include the following services, provide, as required for the Project:
1. Accounting, bond and financial advisory (including, if applicable, "municipal advisor" services as described in Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act (2010) and the municipal advisor registration rules issued by the Securities and Exchange Commission), independent cost estimating, and insurance counseling services.
 2. Legal services with regard to issues pertaining to the Project as Owner requires, Contractor raises, or Engineer reasonably requests.
 3. Such auditing services as Owner requires to ascertain how or for what purpose Contractor has used the money paid.
- G. Provide the services of an independent testing laboratory to perform all inspections, tests, and approvals of samples, materials, and equipment required by the Construction Contract Documents (other than those required to be furnished or arranged by Contractor), or to evaluate the performance of materials, equipment, and facilities of Owner, prior to their incorporation into the Work with appropriate professional interpretation thereof. Provide Engineer with the findings and reports generated by testing laboratories, including findings and reports obtained from or through Contractor.
- H. Provide reviews, approvals, and permits from all governmental authorities having jurisdiction to approve all phases of the Project designed or specified by Engineer and such reviews, approvals, and consents from others as may be necessary for completion of each phase of the Project.

Exhibit B – Owner's Responsibilities

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- I. Advise Engineer of the identity and scope of services of any independent consultants employed by Owner to perform or furnish services in regard to the Project, including, but not limited to, cost estimating, project peer review, value engineering, and constructibility review.
- J. If Owner designates a construction manager or an individual or entity other than, or in addition to, Engineer to represent Owner at the Site, define and set forth as an attachment to this Exhibit B the duties, responsibilities, and limitations of authority of such other party and the relation thereof to the duties, responsibilities, and authority of Engineer.
- K. If more than one prime contract is to be awarded for the Work designed or specified by Engineer, then designate a person or entity to have authority and responsibility for coordinating the activities among the various prime Contractors, and define and set forth the duties, responsibilities, and limitations of authority of such individual or entity and the relation thereof to the duties, responsibilities, and authority of Engineer as an attachment to this Exhibit B that is to be mutually agreed upon and made a part of this Agreement before such services begin.
- L. Inform Engineer in writing of any specific requirements of safety or security programs that are applicable to Engineer, as a visitor to the Site.
- M. Examine all alternative solutions, studies, reports, sketches, Drawings, Specifications, proposals, and other documents presented by Engineer (including obtaining advice of an attorney, risk manager, insurance counselor, financial/municipal advisor, and other advisors or consultants as Owner deems appropriate with respect to such examination) and render in writing timely decisions pertaining thereto.
- N. Inform Engineer regarding any need for assistance in evaluating the possible use of Project Strategies, Technologies, and Techniques, as defined in Exhibit A.
- O. Advise Engineer as to whether Engineer's assistance is requested in identifying opportunities for enhancing the sustainability of the Project.
- P. Place and pay for advertisement for Bids in appropriate publications.
- Q. Furnish to Engineer data as to Owner's anticipated costs for services to be provided by others (including, but not limited to, accounting, bond and financial, independent cost estimating, insurance counseling, and legal advice) for Owner so that Engineer may assist Owner in collating the various cost categories which comprise Total Project Costs.
- R. Attend and participate in the pre-bid conference, bid opening, pre-construction conferences, construction progress and other job-related meetings, and Site visits to determine Substantial Completion and readiness of the completed Work for final payment.
- S. Authorize Engineer to provide Additional Services as set forth in Part 2 of Exhibit A of the Agreement, as required.
- T. Perform or provide the following: [] *[List any other Owner responsibilities here.]*

Exhibit C**Payments to Engineer for Services and
Reimbursable Expenses**

Commented [GC3]: Include the NRDA Interlocal Agreement Exhibit B projects cost spreadsheet and refer to the budget/consulting fees specified in the Scope of Work, i.e. approved NRDA Work Plan

Exhibit C –Compensation Packet BC-2: Basic Services (other than RPR) – Standard Hourly Rates Method of Payment.
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The Engineer's fees for each phase of the work is fixed within the City's Interlocal Agreement with the NRDA Trustees. The fees per phase are as follows with disbursements in accordance with the schedule within the NRDA Interlocal Agreement:

Table 1. Consulting Fees per Phase with Work Activities

Phase I	Work Activity	Consulting Fees
Planning & Permitting		\$ 397,500
	Attend project kickoff meeting with City	
	Establish project schedule	
	Meet with City staff	
	Prepare/deliver/present a project overview to city council	
	Participate in an initial organizing call with The City and NRDA Trustees	
	Attend NRDA Trustees meeting with site visit	
	Develop a draft/final Work Plan	
	Prepare Data Collection Plan, Design Development Plan, Permitting Plan, Construction Plan, Monitoring Plan, Reporting Plan, and Maintenance Plan	
	Undertake baseline surveys and existing data collection	
	Undertake project designs for NRDA approved project components	
	Initiate/provide permitting support	
	Help develop conservation easements and coordinate applicable land acquisition	
	Coordinate with city to integrate with existing stormwater plans and prepare project applicable stormwater pollution prevention plans.	
	Coordinate with the City's project partners	
	Provide all site surveys and baseline monitoring results	
	Coordinate and undertake public outreach	
	Provide brief weekly progress reports	
Phase 2 Engineering and Construction Phase Services		\$ 350,000
	Undertake design development of each of the project components, including preparing suitable 60% plans	
	Prepare/submit permit applications	
	Respond to permit review comments	
	Prepare construction documents in coordination with the City, including 50%, 75%, and final plans	
	Assist the City with the bid process	

Exhibit C –Compensation Packet BC-2: Basic Services (other than RPR) – Standard Hourly Rates Method of Payment.
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	Providing construction oversight	
	Provide restoration activities oversight and document restoration outcome with applicable as-built drawings/plans and achievement of NRDA performance requirements	
	Provide monitoring and monitoring oversight	
	Establish a City project web page to maintain public outreach	
	Provide monthly progress reports	
Phase 3 Post-Construction Phase Services including Monitoring and Reporting		\$ 225,000
	Prepare monitoring forms for city project partners to use	
	Collect monitoring results with applicable surveys and compile	
	Prepare monitoring report and conveyed to the City and NRDA Trustees on an annual basis or as specified	
	Coordinate with City on maintenance needs	
Total Consulting Fees		\$1,000,000

Exhibit C – Compensation Packet BC-2: Basic Services (other than RPR) – Standard Hourly Rates Method of Payment.

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This is **EXHIBIT C**, consisting of [] pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated [].

Payments to Engineer for Services and Reimbursable Expenses
COMPENSATION PACKET BC-2: Basic Services – Standard Hourly Rates

Article 2 of the Agreement is supplemented to include the following agreement of the parties:

ARTICLE 2 – OWNER’S RESPONSIBILITIES

C2.01 Compensation For Basic Services (other than Resident Project Representative) – Standard Hourly Rates Method of Payment

- U. Owner shall pay Engineer for Basic Services set forth in Exhibit A, except for services of Engineer’s Resident Project Representative, if any, as follows:
1. An amount equal to the cumulative hours charged to the Project by each class of Engineer’s personnel times Standard Hourly Rates for each applicable billing class for all services performed on the Project, plus Reimbursable Expenses and Engineer’s Consultants’ charges, if any.
 2. The Standard Hourly Rates charged by Engineer constitute full and complete compensation for Engineer’s services, including labor costs, overhead, and profit; the Standard Hourly Rates do not include Reimbursable Expenses or Engineer’s Consultants’ charges.
 3. Engineer’s Reimbursable Expenses Schedule and Standard Hourly Rates are attached to this Exhibit C as Appendices 1 and 2. Escalation of rates will not exceed 5% per year.
 4. The total compensation for services under Paragraph C2.01 is estimated to be \$1,000,000 based on the NRDA approved project budget and following estimated distribution of compensation aligned with project phases 1, 2, and 3 and contingent upon NRDA Trustees disbursement schedule to The Owner:

a. Study and Report Phase	\$200,000
b. Preliminary Design Phase	\$195,000
c. Final Design Phase	\$105,000
d. Bidding and Negotiating Phase	\$ 50,000
e. Construction Phase	\$225,000
f. Post-Construction Phase	\$225,000

Exhibit C – Compensation Packet BC-2: Basic Services (other than RPR) – Standard Hourly Rates Method of Payment.
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5. Engineer may alter the distribution of compensation between individual phases of the work noted herein to be consistent with services actually rendered, but shall not exceed the total estimated compensation amount unless approved in writing by Owner. See also C2.03.C.2 below.
6. The total estimated compensation for Engineer's services included in the breakdown by phases as noted in Paragraph C2.01.A.3 incorporates all labor, overhead, profit, Reimbursable Expenses, and Engineer's Consultants' charges.
7. The amounts billed for Engineer's services under Paragraph C2.01 will be based on the cumulative hours charged to the Project during the billing period by each class of Engineer's employees times Standard Hourly Rates for each applicable billing class, plus Reimbursable Expenses and Engineer's Consultants' charges.
8. The Standard Hourly Rates and Reimbursable Expenses Schedule will be adjusted annually as of 2020 to reflect equitable changes in the compensation payable to Engineer.

C2.02 Compensation For Reimbursable Expenses

- V. Owner shall pay Engineer for all Reimbursable Expenses at the rates set forth in Appendix 1 to this Exhibit C.
- W. Reimbursable Expenses include the expenses identified in Appendix 1 and the following: transportation (including mileage), lodging, and subsistence incidental thereto; providing and maintaining field office facilities including furnishings and utilities; toll telephone calls, mobile phone charges, and courier charges; reproduction of reports, Drawings, Specifications, bidding-related or other procurement documents, Construction Contract Documents, and similar Project-related items; and Consultants' charges. In addition, if authorized in advance by Owner, Reimbursable Expenses will also include expenses incurred for the use of highly specialized equipment.
- X. The amounts payable to Engineer for Reimbursable Expenses will be the Project-related internal expenses actually incurred or allocated by Engineer, plus all invoiced external Reimbursable Expenses allocable to the Project, the latter multiplied by a factor of 1%.

C2.03 Other Provisions Concerning Payment

- Y. Whenever Engineer is entitled to compensation for the charges of Engineer's Consultants, those charges shall be the amounts billed by Engineer's Consultants to Engineer times a factor of 0.1 or 10%.
- Z. *Factors:* The external Reimbursable Expenses and Engineer's Consultants' factors include Engineer's overhead and profit associated with Engineer's responsibility for the administration of such services and costs.

AA. Estimated Compensation Amounts:

1. Engineer's estimate of the amounts that will become payable for specified services are only estimates for planning purposes, are not binding on the parties, and are not the minimum or maximum amounts payable to Engineer under the Agreement.
 2. When estimated compensation amounts have been stated herein and it subsequently becomes apparent to Engineer that the total compensation amount thus estimated will be exceeded, Engineer shall give Owner written notice thereof, allowing Owner to consider its options, including suspension or termination of Engineer's services for Owner's convenience. Upon notice, Owner and Engineer promptly shall review the matter of services remaining to be performed and compensation for such services. Owner shall either exercise its right to suspend or terminate Engineer's services for Owner's convenience, agree to such compensation exceeding said estimated amount, or agree to a reduction in the remaining services to be rendered by Engineer, so that total compensation for such services will not exceed said estimated amount when such services are completed. If Owner decides not to suspend the Engineer's services during the negotiations and Engineer exceeds the estimated amount before Owner and Engineer have agreed to an increase in the compensation due Engineer or a reduction in the remaining services, then Engineer shall be paid for all services rendered hereunder.
- BB. To the extent necessary to verify Engineer's charges and upon Owner's request, Engineer shall make copies of such records available to Owner at no cost.

Exhibit C – Compensation Packet BC-2: Basic Services (other than RPR) – Standard Hourly Rates Method of Payment.

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**COMPENSATION PACKET RPR-2:
Resident Project Representative – Standard Hourly Rates**

Article 2 of the Agreement is supplemented to include the following agreement of the parties:

C2.04 Compensation for Resident Project Representative Basic Services – Standard Hourly Rates Method of Payment

CC. Owner shall pay Engineer for Resident Project Representative Basic Services as follows:

1. *Resident Project Representative Services:* For services of Engineer's Resident Project Representative under Paragraph A1.05.A of Exhibit A, an amount equal to the cumulative hours charged to the Project by each class of Engineer's personnel times Standard Hourly Rates for each applicable billing class for all Resident Project Representative services performed on the Project, plus related Reimbursable Expenses and Engineer's Consultant's charges, if any. The total compensation under this paragraph is estimated to be \$225,000 based upon full-time RPR services on an eight-hour workday, Monday through Friday, over the construction period as anticipated in the NRDA approved Work Plan schedule.

DD. *Compensation for Reimbursable Expenses:*

1. For those Reimbursable Expenses that are not accounted for in the compensation for Basic Services under Paragraph C2.01, and are directly related to the provision of Resident Project Representative or Post-Construction Basic Services, Owner shall pay Engineer at the rates set forth in Appendix 1 to this Exhibit C.
2. Reimbursable Expenses include the expenses identified in Appendix 1 and the following: transportation (including mileage), lodging, and subsistence incidental thereto; providing and maintaining field office facilities including furnishings and utilities; subsistence and transportation of Resident Project Representative and assistants; toll telephone calls, mobile phone charges, and courier charges; reproduction of reports, Drawings, Specifications, bidding-related or other procurement documents, Construction Contract Documents, and similar Project-related items. In addition, if authorized in advance by Owner, Reimbursable Expenses will also include expenses incurred for the use of highly specialized equipment.
3. The amounts payable to Engineer for Reimbursable Expenses, if any, will be those internal expenses related to the Resident Project Representative Basic Services that are actually incurred or allocated by Engineer, plus all invoiced external Reimbursable Expenses allocable to such services.
4. The Reimbursable Expenses Schedule will be adjusted annually from the yearly anniversary of the Effective Date/Notice to Proceed to reflect equitable changes in the compensation payable to Engineer.

EE. *Other Provisions Concerning Payment Under this Paragraph C2.04:*

1. Whenever Engineer is entitled to compensation for the charges of Engineer's Consultants, those charges shall be the amounts billed by Engineer's Consultants to Engineer.
2. *Factors:* The external Reimbursable Expenses and Engineer's Consultant's factors include Engineer's overhead and profit associated with Engineer's responsibility for the administration of such services and costs.
3. *Estimated Compensation Amounts:*
 - a. Engineer's estimate of the amounts that will become payable for specified services are only estimates for planning purposes, are not binding on the parties, and are not the minimum or maximum amounts payable to Engineer under the Agreement.
 - b. When estimated compensation amounts have been stated herein and it subsequently becomes apparent to Engineer that the total compensation amount thus estimated will be exceeded, Engineer shall give Owner written notice thereof, allowing Owner to consider its options, including suspension or termination of Engineer's services for Owner's convenience. Upon notice Owner and Engineer promptly shall review the matter of services remaining to be performed and compensation for such services. Owner shall either exercise its right to suspend or terminate Engineer's services for Owner's convenience, agree to such compensation exceeding said estimated amount, or agree to a reduction in the remaining services to be rendered by Engineer, so that total compensation for such services will not exceed said estimated amount when such services are completed. If Owner decides not to suspend Engineer's services during negotiations and Engineer exceeds the estimated amount before Owner and Engineer have agreed to an increase in the compensation due Engineer or a reduction in the remaining services, then Engineer shall be paid for all services rendered hereunder.
4. To the extent necessary to verify Engineer's charges and upon Owner's request, Engineer shall make copies of such records available to Owner at no cost.

COMPENSATION PACKET AS-1:
Additional Services – Standard Hourly Rates

Article 2 of the Agreement is supplemented to include the following agreement of the parties:

C2.05 Compensation for Additional Services – Standard Hourly Rates Method of Payment

- A. Owner shall pay Engineer for Additional Services, if any, as follows:
1. *General:* For services of Engineer's personnel engaged directly on the Project pursuant to Paragraph A2.01 or A2.02 of Exhibit A, except for services as a consultant or witness under Paragraph A2.01.A.20, (which if needed shall be separately negotiated based on the nature of the required consultation or testimony) an amount equal to the cumulative hours charged to the Project by each class of Engineer's personnel times Standard Hourly Rates for each applicable billing class for all Additional Services performed on the Project, plus related Reimbursable Expenses and Engineer's Consultant's charges, if any.
- B. *Compensation For Reimbursable Expenses:*
1. For those Reimbursable Expenses that are not accounted for in the compensation for Basic Services under Paragraph C2.01 and are directly related to the provision of Additional Services, Owner shall pay Engineer at the rates set forth in Appendix 1 to this Exhibit C.
 2. Reimbursable Expenses include the expenses identified in Appendix 1 and the following categories: transportation (including mileage), lodging, and subsistence incidental thereto; providing and maintaining field office facilities including furnishings and utilities; toll telephone calls, mobile phone charges, and courier charges; reproduction of reports, Drawings, Specifications, bidding-related or other procurement documents, Construction Contract Documents, and similar Project-related items; and Consultants' charges. In addition, if authorized in advance by Owner, Reimbursable Expenses will also include expenses incurred for the use of highly specialized equipment.
 3. The amounts payable to Engineer for Reimbursable Expenses, if any, will be the Additional Services-related internal expenses actually incurred or allocated by Engineer, plus all invoiced external Reimbursable Expenses allocable to such Additional Services, the latter multiplied by a factor of 0.01 or 1%.
 4. The Reimbursable Expenses Schedule will be adjusted annually (as of one year anniversary of The Effective Date) to reflect equitable changes in the compensation payable to Engineer.
- C. *Other Provisions Concerning Payment for Additional Services:*
1. Whenever Engineer is entitled to compensation for the charges of Engineer's Consultants, those charges shall be the amounts billed by Engineer's Consultants to Engineer times a factor of 0.01 or 1%.

Exhibit C – Compensation Packet AS-1: Additional Services –
Standard Hourly Rates Method of Payment.

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2. *Factors:* The external Reimbursable Expenses and Engineer's Consultant's Factors include Engineer's overhead and profit associated with Engineer's responsibility for the administration of such services and costs.
3. To the extent necessary to verify Engineer's charges and upon Owner's timely request, Engineer shall make copies of such records available to Owner at cost.

Exhibit C – Compensation Packet AS-1: Additional Services –
Standard Hourly Rates Method of Payment.

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This is **Appendix 1 to EXHIBIT C**, consisting of [] pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated [].

Reimbursable Expenses Schedule

Reimbursable Expenses are subject to review and adjustment per Exhibit C. Rates and charges for Reimbursable Expenses as of the date of the Agreement are:

8"x11" Copies/Impressions	at cost
Copies of Drawings	at cost
Mileage (auto)	FEDERAL RATE
Air Transportation	at cost
CAD Charge	at cost
Laboratory Testing	at cost
Health and Safety Level D	NA
Health and Safety Level C	NA
Meals and Lodging	at cost subject to authorized caps

Exhibit C – Appendix 1: Reimbursable Expenses Schedule.

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This is **Appendix 2 to EXHIBIT C**, consisting of [] pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated [].

Standard Hourly Rates Schedule

A. Standard Hourly Rates:

1. Standard Hourly Rates are set forth in this Appendix 2 to this Exhibit C and include salaries and wages paid to personnel in each billing class plus the cost of customary and statutory benefits, general and administrative overhead, non-project operating costs, and operating margin or profit.
2. The Standard Hourly Rates apply only as specified in Article C2.

B. Schedule:

Hourly rates for services performed on or after the date of the Agreement are as attached:

Exhibit D - Resident Project Representative.

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This is **EXHIBIT D**, consisting of [] pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated [].

Duties, Responsibilities, and Limitations of Authority of Resident Project Representative

Article 1 of the Agreement is supplemented to include the following agreement of the parties:

ARTICLE 1 - SERVICES OF ENGINEER

D1.01 Resident Project Representative

- A. Engineer shall furnish a Resident Project Representative ("RPR") to assist Engineer in observing progress and quality of the Work. The RPR may provide full time representation or may provide representation to a lesser degree. RPR is Engineer's representative at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions.
- B. Through RPR's observations of the Work, including field checks of materials and installed equipment, Engineer shall endeavor to provide further protection for Owner against defects and deficiencies in the Work. However, Engineer shall, as a result of such RPR observations of the Work, provide recommendations to The Owner on the Work. Upon consultation with The Owner, the Engineer (including the RPR) shall have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected or used by any Constructor as applicable to meeting The Project performance criteria and permit conditions, but not for security or safety at the Site, for safety precautions and programs incident to the Work or any Constructor's work in progress, for the coordination of the Constructors' work or schedules, or for any failure of any Constructor to comply with Laws and Regulations applicable to the performing and furnishing of its work. The Engineer (including RPR) neither guarantees the performances of any Constructor nor assumes responsibility for any Constructor's failure to furnish and perform the Work, or any portion of the Work, in accordance with the Construction Contract Documents. In addition, the specific terms set forth in Exhibit A, Paragraph A1.05, of this Agreement are applicable.
- C. The duties and responsibilities of the RPR are as follows:
 1. *General:* RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner only with the knowledge of and under the direction of Engineer.
 2. *Schedules:* Review the progress schedule, schedule of Shop Drawing and Sample submittals, schedule of values, and other schedules prepared by Contractor and consult with Engineer concerning acceptability of such schedules.
 3. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings

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(but not including Contractor's safety meetings), and as appropriate prepare and circulate copies of minutes thereof.

4. *Safety Compliance:* Comply with Site safety programs, as they apply to RPR, and if required to do so by such safety programs, receive safety training specifically related to RPR's own personal safety while at the Site.
5. *Liaison:*
 - a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Construction Contract Documents.
 - b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-site operations.
 - c. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.
6. *Clarifications and Interpretations:* Receive from Contractor submittal of any matters in question concerning the requirements of the Construction Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Construction Contract Documents. Report to Engineer regarding such RFIs. Report to Engineer when clarifications and interpretations of the Construction Contract Documents are needed, whether as the result of a Contractor RFI or otherwise. Transmit Engineer's clarifications, interpretations, and decisions to Contractor.
7. *Shop Drawings and Samples:*
 - a. Record date of receipt of Samples and Contractor-approved Shop Drawings.
 - b. Receive Samples that are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.
 - c. Advise Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal, if RPR believes that the submittal has not been received from Contractor, or has not been approved by Contractor or Engineer.
8. *Proposed Modifications:* Consider and evaluate Contractor's suggestions for modifications to the Drawings or Specifications, and report such suggestions, together with RPR's recommendations, if any, to Engineer. Transmit Engineer's response (if any) to such suggestions to Contractor.
9. *Review of Work; Defective Work:*
 - a. Report to Engineer whenever RPR believes that any part of the Work is defective under the terms and standards set forth in the Construction Contract Documents, and provide recommendations as to whether such Work should be corrected,

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removed and replaced, or accepted as provided in the Construction Contract Documents.

- b. Inform Engineer of any Work that RPR believes is not defective under the terms and standards set forth in the Construction Contract Documents, but is nonetheless not compatible with the design concept of the completed Project as a functioning whole, and provide recommendations to Engineer for addressing such Work; and
 - c. Advise Engineer of that part of the Work that RPR believes should be uncovered for observation, or requires special testing, inspection, or approval.
10. *Inspections, Tests, and System Start-ups:*
- a. Consult with Engineer in advance of scheduled inspections, tests, and systems start-ups.
 - b. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.
 - c. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.
 - d. Observe whether Contractor has arranged for inspections required by Laws and Regulations, including but not limited to those to be performed by public or other agencies having jurisdiction over the Work.
 - e. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Work, record the results of these inspections, and report to Engineer.
11. *Records:*
- a. Maintain at the Site orderly files for correspondence, reports of job conferences, copies of Construction Contract Documents including all Change Orders, Field Orders, Work Change Directives, Addenda, additional Drawings issued subsequent to the execution of the Construction Contract, RFIs, Engineer's clarifications and interpretations of the Construction Contract Documents, progress reports, approved Shop Drawing and Sample submittals, and other Project-related documents.
 - b. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, Subcontractors present at the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, deliveries of equipment or materials, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.
 - c. Upon request from Owner to Engineer, photograph or video Work in progress or Site conditions.

Exhibit D - Resident Project Representative.

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- d. Record and maintain accurate, up-to-date lists of the names, addresses, fax numbers, e-mail addresses, websites, and telephone numbers (including mobile numbers) of all Contractors, Subcontractors, and major Suppliers of materials and equipment.
- e. Maintain records for use in preparing Project documentation.
- f. Upon completion of the Work, furnish original set of all RPR Project documentation to Engineer.

12. *Reports:*

- a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the progress schedule and schedule of Shop Drawing and Sample submittals.
- b. Draft and recommend to Engineer proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.
- c. Furnish to Engineer and Owner copies of all inspection, test, and system start-up reports.
- d. Immediately inform Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, possible force majeure or delay events, damage to property by fire or other causes, or the discovery of any potential differing site condition or Constituent of Concern.

13. *Payment Requests:* Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the schedule of values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.

14. *Certificates, Operation and Maintenance Manuals:* During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.

15. *Completion:*

- a. Participate in Engineer's visits to the Site regarding Substantial Completion, assist in the determination of Substantial Completion, and prior to the issuance of a Certificate of Substantial Completion submit a punch list of observed items requiring completion or correction.
- b. Participate in Engineer's visit to the Site in the company of Owner and Contractor, to determine completion of the Work, and prepare a final punch list of items to be completed or corrected by Contractor.

Exhibit D - Resident Project Representative.

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- c. Observe whether all items on the final punch list have been completed or corrected, and make recommendations to Engineer concerning acceptance and issuance of the Notice of Acceptability of the Work (Exhibit E).

D. Resident Project Representative shall not:

1. Authorize any deviation from the Construction Contract Documents or substitution of materials or equipment (including "or-equal" items).
2. Exceed limitations of Engineer's authority as set forth in this Agreement.
3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers, or any Constructor.
4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of the Work, by Contractor or any other Constructor.
5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.
8. Authorize Owner to occupy the Project in whole or in part.

Exhibit D - Resident Project Representative.

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This is **EXHIBIT E**, consisting of [] pages,
referred to in and part of the **Agreement
between Owner and Engineer for Professional
Services** dated [].

NOTICE OF ACCEPTABILITY OF WORK

PROJECT: City of Texarkana, Texas's NRDA Days Creek Comprehensive Aquatic Restoration Project

OWNER: City of Texarkana, Texas

CONTRACTOR:

OWNER'S CONSTRUCTION CONTRACT IDENTIFICATION:

EFFECTIVE DATE OF THE CONSTRUCTION CONTRACT:

ENGINEER: Aqua Strategies, Inc.

NOTICE DATE:

To: _____
Owner

And To: _____
Contractor

From: _____
Engineer

The Engineer hereby gives notice to the above Owner and Contractor that Engineer has recommended final payment of Contractor, and that the Work furnished and performed by Contractor under the above Construction Contract is acceptable, expressly subject to the provisions of the related Contract Documents, the Agreement between Owner and Engineer for Professional Services dated _____, and the following terms and conditions of this Notice:

CONDITIONS OF NOTICE OF ACCEPTABILITY OF WORK

The Notice of Acceptability of Work ("Notice") is expressly made subject to the following terms and conditions to which all those who receive said Notice in concurrence with NRDA Trustees approvals and rely thereon agree:

1. This Notice is given with the skill and care ordinarily used by members of the engineering profession practicing under similar conditions at the same time and in the same locality.

Exhibit E – Notice of Acceptability of Work.

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2. This Notice reflects and is an expression of the Engineer's professional opinion.
3. This Notice is given as to the best of Engineer's knowledge, information, and belief as of the Notice Date.
4. This Notice is based entirely on and expressly limited by the scope of services Engineer has been employed by Owner to perform or furnish during construction of the Project (including observation of the Contractor's work) under Engineer's Agreement with Owner, and applies only to facts that are within Engineer's knowledge or could reasonably have been ascertained by Engineer as a result of carrying out the responsibilities specifically assigned to Engineer under such Agreement.
5. This Notice is not a guarantee or warranty of Contractor's performance under the Construction Contract, an acceptance of Work that is not in accordance with the related Contract Documents, including but not limited to defective Work discovered after final inspection, nor an assumption of responsibility for any failure of Contractor to furnish and perform the Work thereunder in accordance with the Construction Contract Documents, or to otherwise comply with the Construction Contract Documents or the terms of any special guarantees specified therein.
6. This Notice does not relieve Contractor of any surviving obligations under the Construction Contract, and is subject to Owner's reservations of rights with respect to completion and final payment.

By: _____

Title: _____

Dated: _____

This is **EXHIBIT F**, consisting of [] pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated [].

Construction Cost Limit

Paragraph 5.02 of the Agreement is supplemented to include the following agreement of the parties:

F5.02 Designing to Construction Cost Limit

- A. Owner and Engineer hereby agree to a Construction Cost limit in the amount of \$8,450,000.
- B. A bidding or negotiating contingency of 15% percent may be added to any Construction Cost limit established pending NRDA Trustees approval.
- C. The acceptance by Owner at any time during Basic Services of a revised opinion of probable Construction Cost in excess of the then-established Construction Cost limit will constitute a corresponding increase in the Construction Cost limit.
- D. Engineer will be permitted to determine what types and quality of materials, equipment and component systems are to be included in the Drawings and Specifications. Engineer, in consultation with Owner, may make reasonable adjustments in the scope, extent, and character of the Project to the extent consistent with the Project requirements and sound engineering practices, to bring the Project within the Construction Cost limit.
- E. If the Bidding or Negotiating Phase has not commenced within three months after completion of the Final Design Phase, or if industry-wide prices are changed because of unusual or unanticipated events affecting the general level of prices or times of delivery in the construction industry, the established Construction Cost limit will not be binding on Engineer. In such cases, Owner shall consent to an adjustment in the Construction Cost limit commensurate with any applicable change in the general level of prices in the construction industry between the date of completion of the Final Design Phase and the date on which proposals or Bids are sought.
- F. If the lowest bona fide proposal or Bid exceeds the established Construction Cost limit, Owner shall (1) give written approval to increase such Construction Cost limit, or (2) authorize negotiating or rebidding the Project within a reasonable time, or (3) cooperate in revising the Project's scope, extent, or character to the extent consistent with the Project's requirements and with sound engineering practices. In the case of (3), Engineer shall modify the Construction Contract Documents as necessary to bring the Construction Cost within the Construction Cost Limit. Owner shall pay Engineer's cost to provide such modification services, including the costs of the services of its Consultants, all overhead expenses reasonably related thereto, and Reimbursable Expenses, but without profit to Engineer on account of such services. The providing of such services will be the limit of Engineer's responsibility in this regard and, having done so, Engineer shall be entitled to payment for services and expenses in accordance with this Agreement and will not otherwise be liable for damages attributable to the lowest bona fide proposal or bid exceeding the established Construction Cost limit.

Exhibit F -- Construction Cost Limit.

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This is **EXHIBIT G**, consisting of [] pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated [].

Insurance

Paragraph 6.05 of the Agreement is supplemented to include the following agreement of the parties:

G6.05 Insurance

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- A. The limits of liability for the insurance required by Paragraph 6.05.A and 6.05.B of the Agreement will be in accordance with limits specified by The NRDA Project and as shown on Aqua Strategies, Inc. attached insurance documents:

1. By Engineer:

- a. Workers' Compensation: Statutory

b. Employer's Liability --

- | | |
|---|-------|
| 1) Bodily injury, each accident: | \$[] |
| 2) Bodily injury by disease, each employee: | \$[] |
| 3) Bodily injury/disease, aggregate: | \$[] |

c. General Liability --

- | | |
|---|-------|
| 1) Each Occurrence (Bodily Injury and Property Damage): | \$[] |
| 2) General Aggregate: | \$[] |

d. Excess or Umbrella Liability --

- | | |
|-----------------------|-------|
| 1) Per Occurrence: | \$[] |
| 2) General Aggregate: | \$[] |

e. Automobile Liability --Combined Single Limit (Bodily Injury and Property Damage):

\$[]

f. Professional Liability --

- | | |
|---------------------|-------|
| 1) Each Claim Made | \$[] |
| 2) Annual Aggregate | \$[] |

g. Other (specify): \$[]

Exhibit G – Insurance.

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2. By Owner:

- a. Workers' Compensation: Statutory
- b. Employer's Liability --
 - 1) Bodily injury, Each Accident \$[]
 - 2) Bodily injury by Disease, Each Employee \$[]
 - 3) Bodily injury/Disease, Aggregate \$[]
- c. General Liability --
 - 1) General Aggregate: \$[1,000,000]
 - 2) Each Occurrence (Bodily Injury and Property Damage): \$[1,000,000]
- d. Excess Umbrella Liability
 - 1) Per Occurrence: \$[]
 - 2) General Aggregate: \$[]
- e. Automobile Liability – Combined Single Limit (Bodily Injury and Property Damage):
 - \$[1,000,000]
- f. Other (specify): \$[]

B. Additional Insureds:

- 1. The following individuals or entities are to be listed on Owner's general liability policies of insurance as additional insureds:

Exhibit G – Insurance.

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- a. []
Engineer
 - b. [MTG Surveying and Engineering]
Engineer's Consultant
 - c. [Titanium Environmental Services]
Engineer's Consultant
 - d. []
[other]
2. During the term of this Agreement the Engineer shall notify Owner of any other Consultant to be listed as an additional insured on Owner's general liability policies of insurance.
 3. The Owner shall be listed on Engineer's general liability policy as provided in Paragraph 6.05.A.

Exhibit G – Insurance.

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This is **EXHIBIT H**, consisting of [] pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated [].

Dispute Resolution

Paragraph 6.09 of the Agreement is supplemented to include the following agreement of the parties:

[NOTE TO USER: Select one of the two alternatives provided.]

H6.08 Dispute Resolution

6.08.1 Initial resolution process requiring the party raising a dispute to provide written notice to the other party with sufficient detail describing the provision of the Agreement alleged to be breached, the underlying facts of the dispute, a proposed solution consistent with the terms of the Agreement, and the relief sought.

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6.08.2 A required meeting of the designated representatives of the parties within thirty (30) days following receipt of the written notice to discuss the dispute.

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6.08.3 Mediation: Owner and Engineer agree that they shall first submit any and all unsettled claims, counterclaims, disputes, and other matters in question between them arising out of or relating to this Agreement or the breach thereof ("Disputes") to mediation by [A CERTIFIED MEDIATOR]. Owner and Engineer agree to participate in the mediation process in good faith. The process shall be conducted on a confidential basis, and shall be completed within 120 days. If such mediation is unsuccessful in resolving a Dispute, then (1) the parties may mutually agree to a dispute resolution of their choice, or (2) either party may seek to have the Dispute resolved by a court of competent jurisdiction.

A- 6.08.4 Mandatory arbitration: If initial resolution process and mediation results in an impasse, in accordance with and governed by Texas state law, the City and Aqua Strategies, Inc. shall each select a disinterested representative who shall be either a qualified registered engineer or certified public accountant experienced in economic development projects or projects similar to the one referenced in this agreement; the two selected representatives then choosing a third person similarly qualified and certified by the American Arbitration Association; the three persons shall comprise the "arbitration panel", with authority as provided under Chapter 171 of the Texas Civil Practice and Remedies Code, to render a non-binding decision on the matter in dispute; each party shall compensate its respective panel member and also shall equally share responsibility for compensating the third panel member.

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(or)

A- Arbitration: All Disputes between Owner and Engineer shall be settled by arbitration in accordance with the ~~insert the name of a specified arbitration service or organization here~~ rules effective at the Effective Date, subject to the conditions stated below. This agreement to arbitrate and any other agreement or consent to arbitrate entered into in accordance with this Paragraph H6.09.A will be specifically enforceable under prevailing law of any court having jurisdiction.

Commented [CW4]: City will provide their version of dispute resolution

Commented [GC5R4]: Inserted City provided text

1- Notice of the demand for arbitration must be filed in writing with the other party to the Agreement and with the ~~specified arbitration service or organization~~. The demand must

Exhibit H - Dispute Resolution.

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be made within a reasonable time after the Dispute has arisen. In no event may the demand for arbitration be made after the date when institution of legal or equitable proceedings based on such Dispute would be barred by the applicable statute of limitations.

2. All demands for arbitration and all answering statements thereto which include any monetary claims associated with services during the course of the NRDA Project must contain a statement that the total sum or value in controversy as alleged by the party making such demand or answering statement is not more than \$ { } (exclusive of interest and costs). The arbitrators will not have jurisdiction, power, or authority to consider, or make findings (except in denial of their own jurisdiction) concerning any Dispute if the amount in controversy in such Dispute is more than \$ { } (exclusive of interest and costs), or to render a monetary award in response thereto against any party which totals more than \$ { } (exclusive of interest and costs). Disputes that are not subject to arbitration under this paragraph may be resolved in any court of competent jurisdiction.
3. The rules of any arbitration shall be supplemented to include the following: The award rendered by the arbitrators shall be in writing, and shall include (a) a precise breakdown of the award, and (b) a written explanation of the award specifically citing the Agreement provisions deemed applicable and relied on in making the award.
4. The award rendered by the arbitrators will be consistent with the Agreement of the parties and final, and judgment may be entered upon it in any court having jurisdiction thereof, and will not be subject to appeal or modification.
5. If a Dispute in question between Owner and Engineer involves the work of a Contractor, Subcontractor, or consultants to the Owner or Engineer (each a "Joinable Party"), and such Joinable Party has agreed contractually or otherwise to participate in a consolidated arbitration concerning this Project, then either Owner or Engineer may join such Joinable Party as a party to the arbitration between Owner and Engineer hereunder. Nothing in this Paragraph H6.09.A.5 nor in the provision of such contract consenting to joinder shall create any claim, right, or cause of action in favor of the Joinable Party and against Owner or Engineer that does not otherwise exist.

Exhibit H - Dispute Resolution.

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This is **EXHIBIT I**, consisting of [] pages,
referred to in and part of the **Agreement
between Owner and Engineer for Professional
Services** dated [].

Limitations of Liability

Paragraph 6.11 of the Agreement is supplemented to include the following agreement of the parties:

A. *Limitation of Engineer's Liability*

[NOTE TO USER: Select one of the three alternatives listed below for I6.11. A.1]

1. *Engineer's Liability Limited to Stated Amount, or Amount of Engineer's Compensation:* To the fullest extent permitted by Laws and Regulations, and notwithstanding any other provision of this Agreement, the total liability, in the aggregate, of Engineer and Engineer's officers, directors, members, partners, agents, employees, and Consultants, to Owner and anyone claiming by, through, or under Owner for any and all injuries, claims, losses, expenses, costs, or damages whatsoever arising out of, resulting from, or in any way related to the Project, Engineer's or its Consultants' services. or this Agreement, from any cause or causes whatsoever, including but not limited to the negligence, professional errors or omissions, strict liability, breach of contract, indemnity obligations, or warranty express or implied, of Engineer or Engineer's officers, directors, members, partners, agents, employees, or Consultants, shall not exceed the total amount of \$[1,000,000] or the total compensation received by Engineer under this Agreement, whichever is greater. Higher limits are available for an additional fee.

[or]

1. *Engineer's Liability Limited to Amount of Engineer's Compensation:* To the fullest extent permitted by Laws and Regulations, and notwithstanding any other provision of this Agreement, the total liability, in the aggregate, of Engineer and Engineer's officers, directors, members, partners, agents, employees, and Consultants, to Owner and anyone claiming by, through, or under Owner for any and all claims, losses, costs, or damages whatsoever arising out of, resulting from, or in any way related to the Project or the Agreement from any cause or causes, including but not limited to the negligence, professional errors or omissions, strict liability, breach of contract, indemnity obligations, or warranty express or implied of Engineer or Engineer's officers, directors, members, partners, agents, employees, or Consultants shall not exceed the total compensation received by Engineer under this Agreement.

[or]

1. *Engineer's Liability Limited to Amount of Insurance Proceeds:* Engineer shall procure and maintain insurance as required by and set forth in Exhibit G to this Agreement. Notwithstanding any other provision of this Agreement, and to the fullest extent

Exhibit I - Limitations on Liability.

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permitted by Laws and Regulations, the total liability, in the aggregate, of Engineer and Engineer's officers, directors, members, partners, agents, employees, and Consultants to Owner and anyone claiming by, through, or under Owner for any and all claims, losses, costs, or damages whatsoever arising out of, resulting from, or in any way related to the Project or the Agreement from any cause or causes, including but not limited to the negligence, professional errors or omissions, strict liability, breach of contract, indemnity obligations, or warranty express or implied, of Engineer or Engineer's officers, directors, members, partners, agents, employees, or Consultants (hereafter "Owner's Claims"), shall not exceed the total insurance proceeds paid on behalf of or to Engineer by Engineer's insurers in settlement or satisfaction of Owner's Claims under the terms and conditions of Engineer's insurance policies applicable thereto (excluding fees, costs and expenses of investigation, claims adjustment, defense, and appeal), up to the amount of insurance required under this Agreement. If no such insurance coverage is provided with respect to Owner's Claims, then the total liability, in the aggregate, of Engineer and Engineer's officers, directors, members, partners, agents, employees, and Consultants to Owner and anyone claiming by, through, or under Owner for any and all such uninsured Owner's Claims shall not exceed \$[1,000,000].

2. *Exclusion of Special, Incidental, Indirect, and Consequential Damages:* To the fullest extent permitted by Laws and Regulations, and notwithstanding any other provision in the Agreement, consistent with the terms of Paragraph 6.11, the Engineer and Engineer's officers, directors, members, partners, agents, Consultants, and employees shall not be liable to Owner or anyone claiming by, through, or under Owner for any and all claims for or entitlement to special, incidental, indirect, or consequential damages arising out of, resulting from, or in any way related to this Agreement or the Project, from any cause or causes, including but not limited to:

Exhibit I - Limitations on Liability.

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This is **EXHIBIT J**, consisting of [] pages,
referred to in and part of the **Agreement
between Owner and Engineer for Professional
Services** dated [].

Special Provisions

Paragraph(s) [] of the Agreement is/are amended to include the following agreement(s) of the parties: left intentionally blank.

Exhibit J - Special Provisions.

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This is **EXHIBIT K**, consisting of [] pages,
referred to in and part of the **Agreement
between Owner and Engineer for Professional
Services** dated [].

AMENDMENT TO OWNER-ENGINEER AGREEMENT

Amendment No. _____

The Effective Date of this Amendment is: _____.

Background Data

Effective Date of Owner-Engineer Agreement:

Owner:

Engineer:

Project:

Nature of Amendment: [Check those that are applicable and delete those that are inapplicable.]

- _____ Additional Services to be performed by Engineer
- _____ Modifications to services of Engineer
- _____ Modifications to responsibilities of Owner
- _____ Modifications of payment to Engineer
- _____ Modifications to time(s) for rendering services
- _____ Modifications to other terms and conditions of the Agreement

Description of Modifications:

Here describe the modifications, in as much specificity and detail as needed. Use an attachment if necessary.

Agreement Summary:

Original agreement amount:	\$ _____
Net change for prior amendments:	\$ _____
This amendment amount:	\$ _____
Adjusted Agreement amount:	\$ _____

Change in time for services (days or date, as applicable): _____

The foregoing Agreement Summary is for reference only and does not alter the terms of the Agreement, including those set forth in Exhibit C.

Owner and Engineer hereby agree to modify the above-referenced Agreement as set forth in this Amendment. All provisions of the Agreement not modified by this or previous Amendments remain in effect.

OWNER:

ENGINEER:

By: _____
 Print
 name: _____

Title: _____

Date Signed: _____

By: _____
 Print
 name: _____

Title: _____

Date Signed: _____

Briefing Sheet

Version:
Update Date: 3/19/2020 3:14 PM

Lead Department: City Manager

Action Officer: Jennifer Evans, City Secretary

Subject: (Environmental Design & Engineering Services.pdf)

Attachments

- a. 2020-033 ATTH 01 TXR_Envir._Design_Engnrg._NRDA_SOQ_ASI_20190417 (T)
(PDF)

Response to Request for Qualifications
RFQ # 19-2001-08



**Environmental Design & Engineering
Services for Natural Resources Damage
Assessment Project**

15 April 2019

AquaStrategies

Water Planning, Science & Engineering

In Partnership with:



Titanium Environmental Services, LLC

April 15, 2019

Ms. Kimberly Russ, Interim Purchasing Manager
City of Texarkana, TX
Purchasing and Contracts Department
220 Texas Boulevard/ P.O. Box 1967
Texarkana, TX 75501/ Texarkana, TX 75504

RE: RFQ# 19-2001-08
Environmental Design & Engineering Services for NRDA Project:
Days Creek Watershed Comprehensive Aquatic Ecosystem Restoration

Dear Ms. Russ and City of Texarkana:

The Aqua Strategies Inc. Team (ASI Team) – including MTG Engineers & Surveyors, Inc. and Titanium Environmental Services, LLC – has worked side-by-side since 2015 with the City of Texarkana to successfully attract a \$9.8 million NRDA grant to provide significant ecological, educational and economic benefits to the City's urban center and connected waterways. ASI Team members, including Georganna Collins, David Donohue, Dan Murphy, and myself have extensive knowledge and useful background on this NRDA project. We propose Georganna Collins as the Project Manager – with urban restoration experience, she will be in her element running this project.

The ASI Team also has a very good understanding of the NRDA process and requirements, including the project components; site conditions; permitting requirements; aquatic ecosystem restoration planning/construction/monitoring/reporting; and the public outreach and engagement requirements. In addition, the ASI Team understands the goal of the City of Texarkana, to provide multiple benefits to the City above and beyond the NRDA requirements. In short, the ASI Team's experience and knowledge of the \$9.8 million NRDA grant and its performance requirements provide assurances to the City and its local stakeholders that the ASI Team is the best consultant team to work with moving forward. As shown throughout our Statement of Qualifications, the ASI Team also provides these additional benefits to the City:

- Aqua Strategies Inc., the prime consultant, is based in Austin with convenient access to the TCEQ NRDA Trustees who will oversee the grant funds.
- MTG Engineering & Surveying and Titanium Environmental are local firms to the Texarkana area for responsiveness to on-site needs.

On behalf of the entire ASI Team – and as the proposed Project Principal on this project – I thank you for this opportunity to continue our work with the City of Texarkana, to achieve a highly successful project outcome for the local ecology and community.

Sincerely,



Barney Austin, PhD, PE
President and CEO of Aqua Strategies Inc.

1. Experience and Understanding of Texarkana's NRDA Project

Key personnel from the Aqua Strategies Inc. Team (ASI Team) – including Georganna Collins, Barney Austin, David Donohue and Dan Murphy – first approached the City of Texarkana (City) in 2015 to propose an unconventional effort to seek NRDA funding for projects both upstream and downstream of the former Kerr McGee site. The effort was unconventional because NRDA funding has overwhelmingly gone to land conservation organizations to purchase large parcels of land, not to city governments to address damages in the communities adjacent to sites. Surprisingly, the Texas NRDA Trustees have never funded a city government in which the damages actually occurred...until the City of Texarkana was funded.

Working closely with the City and local stakeholders (Texarkana College, Texas A&M – Texarkana Campus, Texarkana Chamber of Commerce, etc.), the ASI Team helped develop a set of project components to attract the NRDA funding to uplift the ecological and economic conditions within the City itself. The ASI Team spent multiple pro-bono hours throughout the multi-year and multi-step process to develop and refine project components along Days Creek watershed, including the following key milestones:

- October 2015: Presentation to City of Texarkana by Georganna Collins, Barney Austin and David Donohue regarding \$20 million NRDA funding opportunities available to the City.
- December 2015: Proposal to the Texas NRDA Trustees for \$20 million funding request for “Days Creek Watershed Comprehensive Aquatic Ecosystem Restoration”, including conceptual designs/budgets for 22 coordinated project components within the City.
- May 2016: Response to questions from the Texas NRDA Trustees to justify and clarify the City of Texarkana’s \$20 million proposal.
- October 2018: Submission of public comments regarding the Texas NRDA Trustees draft proposal for funding of \$9.8 million to the City of Texarkana for 10 project components. This subsequently led to the finalization of \$9.8 million to the City in March 2019.

The final “Restoration Plan/Environmental Assessment for the Former Kerr McGee Facility” (March 2019) provides funding for 10 project components within the City of Texarkana, TX. In order to satisfy the terms of the NRDA funding, the City must demonstrate the restoration of 42,279 linear feet of stream channels and 25.85 acres of wetlands and preservation and enhancement of 170.5 acres of forested riparian habitats within the Days Creek ecosystem. The ASI Team has an intimate knowledge of these sites, concept plans, and other project component elements such as preliminary cost estimates, and has confidence that these important metrics can be met through a combination of land conservation measures (placing certain tracts under conservation easements) and restoration activities (planning, permitting, engineering/construction, monitoring/maintenance, and public outreach).

In addition to achieving the NRDA goals for the project, the ASI Team understands the economic and community benefits the City of Texarkana expects to achieve as a result of the NRDA project. For example, many of the project components will include educational opportunities to benefit the Liberty Independent School District, Texarkana College and Texas A&M-Texarkana Campus, local youth clubs, and the public. The ASI Team has worked with the City’s project partners over the past 3 years to ensure that these benefits are supportive of their goals and objectives.

The ASI Team (based in Austin, TX) includes local subcontractors MTG Engineering & Surveying and Titanium Environmental to ensure adequate capacity and responsiveness to the City, and provide seamless integration with city data collection, management and public outreach. This team will provide support so that grant funds are multiplied through the knowledge and leverage of other potential local Texarkana community opportunities.

2. Qualifications of the ASI Team

Aqua Strategies Inc. is an Austin-based, federal/state-certified small business with extraordinary capabilities in water resources engineering, water and other natural resource planning, permitting support, hydrology and hydrologic modeling, and ecosystem restoration (Texas Engineering Company Registration #15911). ASI staff has been providing project management on comparable, large scale, complex water resource related projects, master planning through

to site specific design development, with procedures in place to provide quality control on projects and quality assurance to our clients. Aqua Strategies will perform the role of prime consultant on this project with responsibility for the successful implementation of the City of Texarkana Project. Georganna Collins helped develop the city's NRDA proposal, working closely with city staff, and is experienced in project management to support the city with a successful outcome. As prime consultant, Aqua Strategies will be the primary point of contact for the City of Texarkana throughout the 5-year implementation of the project.

MTG Engineers & Surveyors, as a premier local Texarkana firm, has exceptional knowledge and experience in the greater Texarkana area. The firm has been involved in multiple high-profile local projects, including engineering and surveying services for Texas A&M-Texarkana Campus; Bringle Lake Park; Cowhorn Creek Road; Crossroads Business Park; Texarkana Convention Center; South Texarkana Water Loop; and North Texarkana Water Main. Staff include a Professional Land Surveyor, Registered Engineers, and Certified Floodplain Managers. Kayla Wood has excellent working relationships with city staff and stakeholders while staff have experience in related stormwater planning and permitting. MTG is also fully certified in Arkansas for business, engineering and surveying, should coordination be required with Arkansas (ADEQ and the USACE Vicksburg). Additionally, MTG has project experience and data associated with the site and adjacent properties from providing engineering and surveying services to the past site operator, KMCC. This information and staff familiarity will be important to the project.

Titanium Environmental Services, an East Texas-based environmental consulting company, has extensive experience with the environmental issues relevant to Texarkana. Staff members hold professional licenses, certifications and registrations including Professional Geoscientist, Professional Geologist, and Professional Engineer. The Natural Resources Group, managed by Dan Murphy, formerly with USACE, is experienced in performing environmental surveys and baseline studies that include characterization and analysis of terrestrial and aquatic habitat including streams, riparian areas, and wetlands. Additional staff members also have extensive experience in the applicable USACE Section 404/10 permitting, environmental surveys, monitoring and reporting. The ASI Team roles are summarized in the table below, and copies of firm licenses are provided in Attachment A.

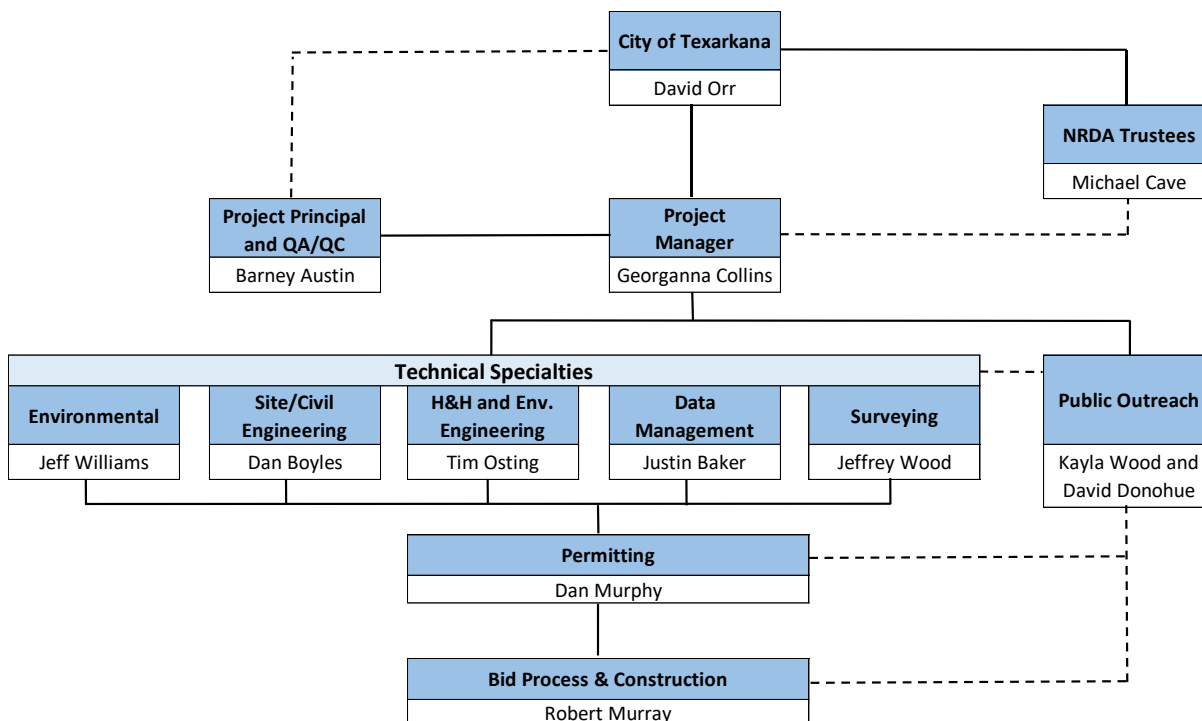
ASI Team Member Location	Project Role	Company Certifications
Aqua Strategies, Inc. 14101 Highway 290, West Austin, TX 78737 512-826-2604 www.AquaStrategies.com	Prime Consultant • Project Management • QA/QC • Master Planning • Engineering/H&H modeling • Ecological Restoration • Monitoring/Maintenance Oversight • Stakeholder Engagement	• Texas Engineering Company (#15911) • Texas Board of Professional Geoscientists (Firm #50598) • Small Business Enterprise
MTG Engineers & Surveyors P.O. Box 3786 Texarkana, TX 75501 903-838-8533 www.mtgengineers.com	Subcontractor Support • Licensed Professional Surveying Services • Civil Engineering Services • Construction Management Services • Public Outreach Support • Permitting Support	• Texas Engineering Company (#F-354) • Registered Professional Land Surveyor (#1017199) • Small Business Enterprise
Titanium Environmental Services 311 E. Cotton St. Longview, TX 75601 903-234-8443 www.titaniumenvironmental.com	Subcontractor Support • Environmental baseline/post-construction surveys • Monitoring support • Environmental permitting • Fieldwork/plant establishment support	• Texas Board of Professional Geoscientists (Firm #50085) • Small Business Enterprise

The ASI Team is aware of the City's timeframe of getting planning and permitting as well as conservation easements underway within the first six to eight months of the NRDA award and design development and construction phases

underway within the following two to three years, with post-construction monitoring to follow in years four and five. Reporting will span all five years. We understand, while this initial timeframe is flexible, the City would need to complete the restoration activities within five years. We further understand specific scope and schedule would be developed within a Work Plan in coordination with the City for NRDA Trustees' approval. To this end, upon being selected, the ASI Team will work closely with City staff, their project partners and our local subcontractors to quickly finalize a Work Plan and effectively perform all required work as proposed herein, provide the necessary coordination with City staff and its project partners and citizens, and be readily available to help the City meet its anticipated timeframe obligations to the NRDA Trustees. We understand the City's budgetary limits for the NRDA project and overall goals of City-wide and watershed focus, supporting the community revitalization and sustainability goals.

3. Key Personnel Qualifications & Experience

The Organizational Chart provided herein lays out the roles of key ASI Team staff members. Brief biographical sketches for each individual follow, and full resumes and copies of licenses/certifications are available upon request.



Georganna Collins, Project Manager	Aqua Strategies Inc. – Houston, TX
BLA & MLA Landscape Architecture, Texas A&M; BS Engineering, Texas A&M; Texas Registered Landscape Architect #786	
RELEVANT EXPERIENCE: Texarkana NRDA Funding: Since 2015, Ms. Collins, as a restoration specialist, has worked with the City to develop the initial concepts and refine multiple proposals to the Texas NRDA Trustees, resulting in a \$9.8 million award to Texarkana to address the past damages from the former Kerr McGee site within the Urban Stream Restoration Experience: Ms. Collins has designed/permitted/constructed and managed stakeholder involvement programs for multiple high-profile, successful urban stream restoration projects in Texas, Georgia, Alabama, Mississippi, Illinois, including North Park Village Nature Center Wetland Complex for Chicago, and others. Corps of Engineers “Engineering with Nature Initiative”: Ms. Collins is an active member to help write the International Guidance Manual for Corps of Engineers initiative for the intentional integration of natural solutions with engineered solutions to both improve the resilience and lower the operating costs of future flood control projects along urban streams and coastlines. Texas Stream Restoration Projects: Ms. Collins has successfully completed projects in multiple cities within Texas, including: Luce Bayou Mitigation along Trinity River near Houston, erosion control along the Brazos River, stream re-alignment San Marcos, Ft. Bend County, Bay City, and Liberty County. Wetland Construction: Mission Aransas National Estuarine Reserve Wetland Research Center, Port Aransas.	

Barney Austin, Project Principal and QA/QC	Aqua Strategies Inc. – Austin, TX
EDUCATION: BS Agr. Engineering, PhD Civil Engineering, Fellow of Center for Public Policy Dispute Resolution, PE #100370	
RELEVANT EXPERIENCE:	
• <u>Team leader and Division Director</u>: Beginning in 1999, Dr. Austin was the Team Leader of the Instream Flow program at the TWDB, with studies focusing initially on the Guadalupe River; the Sulphur and Brazos Rivers thereafter. In 2002 he became surface water section leader and then in 2004 he was appointed to the position of Director of the Surface Water Resources Division, providing technical direction and oversight to 9 programs and 20 staff. • <u>Program Director</u>: Since 2014, Dr. Austin has directed water supply planning and environmental flow work for the Choctaw and Chickasaw Nations in Southeast Oklahoma. With an annual budget of about \$500,000 in consulting fees he has raised several million dollars in federal funds for various activities benefitting the region, including infrastructure upgrades, and water supply and availability studies. • <u>Technical oversight and QA/QC</u>: Since 2018, Dr. Austin has been the main technical advisor on the USAID-funded Iraq Governance Performance Accountability (IGPA) project in Iraq. With a budget of some US\$160M, water is one of the two main areas of focus. Water supply planning, infrastructure upgrades, training and capacity-buildings are the main areas of focus right now, with model development and procurement support being the next high-profile activities.	

Tim Osting, H&H and Environmental Engineering	Aqua Strategies Inc. – Austin, TX
EDUCATION: MS Env. and Water Resources Engineering, BSE Civil Engineering, PE #91931, D.WRE #564, CFM #3492-18N	
RELEVANT EXPERIENCE:	
• <u>Project Manager</u>: Site restoration analysis for constructed wetlands near Petronila Creek. Coastal Bend Bays and Estuary Program (CBBEP). SWAT modeling and water quality assessment for constructed wetlands nutrient removal • <u>Technical Consultant and Project Lead</u>: Trinity River Long Term Monitoring and 2014-2017 SB3 Flow Validation, Trinity River Authority of Texas. Since 2011 coordinate with TRA staff to design and develop long-term river monitoring including geomorphic, sediment, riparian, habitat, water quality and hydrology. Establish long-term repeat survey monitoring sites; HECRAS inundation modeling; dynamic water quality modeling; sediment capacity modeling; bank stability modeling (BSTEM); data collection and lab measurements (sediment coring and JET testing). • <u>Project Manager</u>: Geomorphic Stream Sediment Assessment and Water Quality Assessment for HB1437 Interbasin Transfer. K Frieze & Associates, Brazos River Authority. Field assessment, sediment capacity study, water quality model. • <u>Project Manager and Task Manager</u>: Lake Wichita Revitalization Project. Water Planning and Water Quality. - USACE 404/401 permit. Carollo, City of Wichita Falls. 404 permit pre-app meetings with the USACE Tulsa District; managed multi-entity permitting coordination for lake sediment removal and shoreline amenities; lake level analysis, grading and design of shallow lakeshore habitats for wetland compensation areas; 401 certification and 404 permit approved. • <u>Project Manager and Technical Consultant</u>: Caddo Lake Environmental Flows, Hydrology and Water quality; WPP TCEQ, NETMWD, Caddo Lake Institute. Led water quality and sediment discussions; watershed and lake nutrient modeling	

Justin Baker, Data Management and GIS	Aqua Strategies Inc. – Austin, TX
MS Environmental and Water Resources Engineering, MA Global Policy Studies, BS Chemistry, EIT #55146, CFM #3548-18N.	
RELEVANT EXPERIENCE:	
• <u>Program Delivery Management for Hurricane Harvey Recovery</u>: Mr. Baker provided technical assistance as a contractor for FEMA in field offices and headquarters in Austin. In this role he helped public and non-profit entities apply for federal funding. His duties included managing damage assessments, site inspections, and applicant data. • <u>Water Resources Engineer-in-Training</u>: Over the past four years Mr. Baker has been involved in a large number of relevant water resources projects, including bridge scour analyses, stream modeling, site hydrology and hydraulic fieldwork, riprap sizing, rock berms, and culvert sizing. In addition, Mr. Baker has typically been the lead on GIS for these projects, charged with data management, geo-referencing, quality assurance, and development of figures. • <u>Red River Model Data Manager</u>: Mr. Baker has been involved in a project to develop water availability data for a large-scale model of the entire Red River Basin. His role has been to assemble input datasets and to manage model output datasets. In a later phase he will produce detailed maps, including model results.	

Jeffrey Wood, Surveying	MTG Engineers & Surveyors – Texarkana, TX
BS Geography, Texas A&M / Texas Registered Professional Land Surveyor # 6220, Arkansas RPLS # 1763	
RELEVANT EXPERIENCE: • <u>Texarkana boundary and land surveys</u>: Between 2015-2018, worked on Tronox Kerr McGee site developing multiple topographic and hydrologic surveys, including along 5,000 liner feet of Days Creek and numerous soil boring locations along Days and Howards Creeks, including 34 boring sites and 4 monitoring well location • <u>Boundary and land survey</u> 12 years of experience: Including GPS Survey of 12 established Corps of Engineer Monuments and survey of ~45 monitor wells as the Former Lone Star Army Ammunition Plant site • <u>Wetland Survey</u>: Provided boundary survey of 140 acres for the Wetland Reserve Program in Bowie County, Texas. • Mr. Wood provides coordination and supervision of survey field crews and can provide expert witness testimony in land boundary dispute cases.	

Robert Murray, Bid Process & Construction	MTG Engineers & Surveyors – Texarkana, TX
BS Civil Engineering, Texas PE #59111; Arkansas PE #6400	
RELEVANT EXPERIENCE: • Mr. Murray has over 38 years of project management, design, permitting, and construction management experience. Projects and types of sites have been widely varied but include Municipal Projects for Planning, Site Design, Utilities, Stormwater Management, and Water Resources. • Mr. Murray specialties include Engineering Support for the Municipal/Industrial Process Wastewater and Pretreatment Systems Design, Transportation Systems, Municipal/Industrial Drainage Systems, Engineering Services related to permit support and construction. • <u>Project Manager for Graphics Packaging, Inc.</u>: Solid Waste Basin providing site investigation for wetlands, primary design engineer, and regulatory liaison for the preparation of engineering drawings, registration, and technical support data for the construction of a new 50 acre solid waste basin and associated dikes, liner systems, and outlet structures on an approximately 500,000 cubic yard industrial clay liner and cover systems project near Domino, Texas. • Mr. Murray provides engineering services oversight and quality control/quality assurance on all MTG Engineers and Surveyors services and work products.	

Daniel Boyles, Site/Civil Engineering	MTG Engineers & Surveyors – Texarkana, TX
BS Civil Engineering, PE #68193, Arkansas PE #6421	
RELEVANT EXPERIENCE: • <u>City of Texarkana, Texas</u>: Completed two pedestrian/sidewalk projects using state and local funding. One project is in use and the other will be bid soon. Estimates for the two projects are approximately \$1,200,000. Facilities include parks, parking, landscaping, ADA and lighting. • <u>Wetland re-construction</u>: 30 Acres reconstructed in Bowie County, Texas and deed restricted. Activities included permitting, grading, plant selection and maintenance until accepted by the state and USACOE. This project created a wetland to relocate from another wetland site. • Multiple municipal park improvements including as project engineer for the City of Clarksville on six projects using four funding sources. These projects required grant applications, estimates and conceptual plans, final plan preparation, state and federal approvals and bid/award/construction. The following projects have been completed: ○ Downtown Square – Sidewalks, landscaping, parking and lighting totaling \$650,000. ○ Historic Creekwalk – Sidewalks, ADA facilities, lighting and parking totaling \$300,000 ○ Mainstreet Connections – Sidewalks, lighting and ADA facilities connecting the Square to the Creek Walk and totaling \$250,000 ○ Fireman's Park – This park project provided a pavilion, restrooms, playground equipment and renovation of a historic bridge converted to pedestrian use. The project totaled \$400,000. ○ Lake Langford Trails – Project provided trails, an accessible park area with parking, interpretive area for prairie/wetlands and access to Lake Langford. Project costs totaled \$200,000. ○ Northeast Texas Trail – This trail is located on Rails to Trails right of way from Farmersville to New Boston. MTG provided plans and grant application assistance to construct the trail through Clarksville. Project costs for the two mile section were approximately \$250,000. • Mr. Boyles provides comprehensive infrastructure design engineering including public improvements that are ADA accessible.	

Kayla Wood, Public Outreach	MTG Engineers & Surveyors – Texarkana, TX
BS Engineering, PE #104857, Arkansas PE #14543	
RELEVANT EXPERIENCE: • Project experience includes Master Planning and Development, Civil Site Design, Utility Systems, Road and Subdivision Projects, Availability and Cost of Design Options, and Drainage Impact Studies. • <u>City of Texarkana, TX</u>: Project engineer for various projects since 2009 • <u>City Sidewalk Rehabilitation and Improvements</u>: Mrs. Wood has been the project manager of many recent sidewalk rehabilitation projects for several city projects. These projects include the Friendship Center, New Boston Road, Rosehill Neighborhood and Robison Road. These have been CDBG funds and broken out into increments to meet funding requirements. • <u>City Planning for University Planning Development District</u>: Mrs. Wood worked with Ms. Shirley Jaster to help develop a University Overlay District for a good portion of north Texarkana. This included mapping, master planning, and developing an ordinance to cover future development of portions of Texarkana. • <u>Bringle Park West and East</u>: Mrs. Wood was the project manager for Bringle Park West and East. These projects included an elevated boardwalk structure and interconnected sidewalks, pocket park pavilions, restroom facilities, playground facilities and fishing docks. Bringle Park East also consisted of 1,000 LF of city street and parking facility. • <u>Pavilion Parkway North</u>: Mrs. Wood worked with the TIRZ funding for multiple land owners to construct the 2,500 LF road. She performed all design, layout, right-of-way acquisition and construction inspection for the project. This project also included regional detention and the conversion of the existing 4-way stop intersection into Texarkana's First Round-about.	

Dan Murphy, Permitting	Titanium Environmental Services, LLC – Longview, TX
BS Wildlife & Fisheries Sciences	
RELEVANT EXPERIENCE: • Mr. Murphy, Professional Wetland Scientist, manages the Natural Resources Group at Titanium Environmental Services, LLC and has served as the Environmental Practice Manager with other consulting firms over the past 25+ years. • Mr. Murphy was previously employed as a senior wetland biologist with the U.S. Army Corps of Engineers (USACE), and consequently, he has a comprehensive knowledge and extensive experience in preparing and coordinating permit applications under the USACE's Regulatory Program (Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act). • Mr. Murphy focuses on permitting, plan development assistance, and project management associated with restoration and mitigation projects. • He has been directly involved with a variety of restoration projects in Texas including north Texas and northeast Texas that includes various habitats, such as, upland woodlands, riparian habitat, stream systems, and wetland habitat (emergent and forested wetlands). The work performed for these projects included the identification and characterization biological resources associated with terrestrial and aquatic habitat including streams, wetlands, and riparian habitat; permitting and habitat restoration monitoring.	

Jeff Williams, Environmental	Titanium Environmental Services, LLC – Longview, TX
BS Biology	
RELEVANT EXPERIENCE: • With 11 years responsible for managing and performing natural resource services in support of various clients on a variety of projects, Mr. Williams has performed services including waters of the United States investigations; wetland delineations; biological evaluations; threatened and endangered species surveys; aquatic assessments including aquatic fauna sampling and analysis; stream and wetland functional assessments (HGM and TXRAM); and, mitigation and restoration planning, implementation, and monitoring. • He has prepared and coordinated various environmental documents (ESA informal consultation; environmental assessments, biological evaluations, Section 404 compliance, Section 10 compliance, etc.) in accordance with the National Environmental Policy Act, federal agency implementation rules (i.e. U.S. Army Corps of Engineers [USACE], U.S. Forest Service, Bureau of Land Management, etc.), and state agency guidelines. • He has extensive experience with USACE Section 404 permitting activities for waters of the U.S., including wetlands; restoration and mitigation planning and monitoring; threatened and endangered species investigations; habitat assessment; environmental baseline surveys. • XTO Energy Inc. Biological Evaluations, Special Use Permitting, United States Forest Service, Angelina and Sabine national Forests.	

4. Relevant Projects and Clients

The following projects and client references demonstrate the ASI Team's successful completion of projects similar to the work expected for the City of Texarkana.



Project: Mission Aransas Wetlands Restoration & Education Center

Firm/Key Personnel: Georganna Collins, RLA (formerly with AECOM)

Client Reference: Mr. Alton Meyers, USACE Galveston District (409-766-6317).
Reference for Aqua Strategies (Georganna Collins, Project Manager)

Project Description: As Project Manager, for USACE Galveston and Mission Aransas National Estuarine Research Reserve, Ms. Collins investigated the feasibility, undertook planning and design development, and constructed a wetland and prairie complex for use as a research and educational center for

the public, college and students of various ages. Services provided included site investigations/baseline data collection; coordination with Mission Aransas NERR staff and permit resource agencies; preliminary and final design engineering, including H&H modeling, sizing of inlet & outlet structures, retaining walls, grading and planting plans, cut and fill calculations, cost estimating; preparation of USACE permit application, feasibility and engineering reports, construction plans, details, and specifications; assistance with bidding process and contractor selection; construction support services, including field engineering and final approvals; and post construction monitoring and reporting. This project recently withstood Hurricane Harvey with no damages.



Project: Trinity River Authority Ecological Surveys/Water Modeling

Firm/Key Personnel: Aqua Strategies Inc. (Prime Consultant). Tim Osting, PE, Project Manager

Client Reference: Webster Mangham (817-493-5127). Reference for Aqua Strategies (Tim Osting)

Project Description: Since 2014 (until present), Aqua Strategies has supported the Trinity River Authority to perform hydrology, sediment and ecological surveys of the Trinity River between DFW and Trinity Bay. Aqua Strategies collected topographic information and water flow/quality information through field

analyses and LiDAR-based topography surveying. Also included are cross-section surveys, riparian vegetation surveys, HEC-RAS modeling (water surface profiles, sediment transport, bank stability, water quality). Sediment lab work and JET testing is in-progress and results are being used for sediment scour, bank stability and toe erosion modeling.



Project: Mississippi Urban Streams Ecological Uplift and Erosion Control

Firm/Key Personnel: Georganna Collins, RLA (formerly with Ecology and Environment, Inc.)

Client Reference: Jeff DeQuattro, The Nature Conservancy (251-348-0872).
Reference for Aqua Strategies (Georganna Collins, Project Manager)

Project Description: As Project Manager, Georganna Collins collected baseline information, coordinated professional land surveyors and identified ecological uplift measures (focusing on bioengineering measures) to improve stream water

quality and aesthetics. The scope of work also included: bank and bottom topographic surveys; hydrographic surveys; vegetation surveys; USACE permitting plans; stakeholder engagement; and, construction cost estimates, similar to the needs of the Texarkana NRDA project.

Project: USACE Environmental Permitting for Wetlands, multiple counties, TX

Firm/Key Personnel: Titanium Environmental (Prime Consultant). Dan Murphy, Project Manager

Client Reference: Dr. Danny Johns, XTO Energy, Inc. (903-258-8206). Reference for Titanium Environmental (Dan Murphy, Project Manager)

Project Description: Titanium performed regulatory agency consultations, biological surveys and permitting activities for temporary water intakes and for XTO Energy. Project activities performed by Titanium included environmental analysis and documentation; Section 10 and Section 404 permitting with the U.S. Army Corps of Engineers (USACE); flowage easement acquisition request through the USACE; and, U.S. Forest Service Special Use Permitting. Work included the evaluation of lacustrine wetland habitat, forested habitat, wetlands and stream locations. Further, Titanium coordinated with the U.S. Forest Service for obtaining a Special Use Permit for activities occurring within a national forest.

Project: Civil Engineering Services for the City of Texarkana, TX

Firm/Key Personnel: MTG Engineers & Surveyors (Prime Consultant). Dan Boyles, Project Manager

Client Reference: Mayor Allen Brown, City of Texarkana (870-779-4991). Reference for MTG (Dan Boyles, Project Manager)

Project Description: MTG provided licensed professional surveying and civil engineering services for water/sewer lines, new road sidewalks and drainage features. Easements and right-of-way documents were prepared. MTG also developed construction documents, bid documents and provided construction contract management. Projects included grant funds requiring proper grant reporting and documentation, also supported by MTG. This project completed over four phases addressed 275 acres of development with all roads and utilities. The project required 3 stream crossing permits and a full environmental review resulting in an environmental assessment (EA) findings of no significant impact (FONSI). Total project costs were approximately \$4,100,000.

5. Capacity, Timeliness and Responsiveness to Perform Work through Our Technical Approach

Our technical approach follows a sound process of close, timely and continued client coordination and utilizes three major tasks: Task 1- Planning & Project Phasing; Task 2- Design Development, Construction Documents, and Monitoring; and Task 3 Post-Restoration Activities including Monitoring. Supporting our technical approach are continuous project management and quality control/quality assurance roles and prime responsibility of the prime, Aqua Strategies. The ASI Team has capacity to perform the work on the timeline using the key staff we have identified herein. We have included some buffer within the proposed timeline that anticipates small typical delays from weather or coordination, though we cannot anticipate all possibilities outside of our control. The key staff have sufficient backup staff and resources to complete the work we describe within 5 years.

An element that demonstrates our responsiveness is that we have developed a draft Work Plan, including details of each of the project components. We can begin immediately with the city and be able to quickly provide assistance with negotiations of terms and conditions with the NRDA Trustees.

Task 1. Planning & Project Phasing, starting immediately and concluding before Year 2

Upon notice to proceed, the ASI Team will undertake a project kickoff meeting with the City to set the scope, schedule, deliverables, and begin to compile existing data within the first week. Establishment of a project schedule would include setting internal and public focus group and town hall meetings, and other community engagement opportunities. We will meet with City staff and also present a project overview to the City Manager, mayor, and council as directed by David Orr.

We will develop a final Work Plan with the City, with completion anticipated within the first month. We will assist the City present the Work Plan to gain NRDA Trustees' approval and help coordinate NRDA agreement with final terms and conditions, comparable to existing NRDA project examples such as Galveston Bay Foundation's bird island planning, permitting, and construction.

Within the first four months, we will have baseline surveys and existing data collection completed. The ASI Team will undertake project designs for NRDA approved project components and initiate permitting, including USACE stream/wetland permits, TCEQ water quality certification, applicable stormwater/floodplain permits, and others.

Within the first six months and NRDA Trustees' approval of the Work Plan, we will develop conservation easements and coordinate applicable land acquisition with the city.

During this first Task, we will integrate with existing stormwater plans and prepare project-applicable stormwater pollution prevention plans, provide all site surveys and baseline monitoring results, and coordinate with the City's project partners. We will coordinate and undertake public outreach including public meetings, open houses, workshops and design charrettes on several occasions to gain stakeholder input on project component concept plans. Design charrettes would include preliminary concepts for project component planning with stakeholders at various sites.

We anticipate that brief weekly progress reports will be provided to the City, to keep the project schedule on schedule, and identify and resolve any issues early. We anticipate quarterly and milestone-based progress reports will also be prepared by the ASI Team for the City to submit to the NRDA Trustees, for release of incremental project funds. These reports for the NRDA Trustees will be prepared for the entire project, through the completion of Task 3. We anticipate flexibility and/or changes to required reporting based upon a final approval of the Work Plan.

Task 2. Design Development, Construction Documents, and Monitoring, undertaken in Years 2 to 4

We anticipate Task 2 will span Years 2 through 4. We will work with City staff, City project partners, and NRDA Trustees on design development of each of the project components, including preparing suitable 60% plans for USACE permitting and budgetary requirements under final available NRDA award funds, thus keeping the overall project within budget. We anticipate permitting to be accomplished over a 6 to 8 month timeframe during this task. Once USACE has responded, we will then respond to permit review comments and move into preparation of construction documents in coordination with the City, including 50%, 75% and final plans with review submittals. We will assist the City with the bid process including bid document preparation, attending pre-bid meeting, answer questions and provide clarifications during bidding, help with contractor selection, etc. We will assist the City during the construction phase, including providing oversight of the construction and restoration activities for successful restoration outcome and achievement of NRDA performance requirements (i.e. wetland acres, riparian/forest acres, and stream channel lengths). This will include providing oversight of restoration site work and native plant establishment.

We will prepare a monitoring plan and provide oversight of the monitoring before, during, and after restoration activities to meet NRDA requirements. We will also provide coordination with City project partners and the public during the construction phase, to include initial monitoring and dissemination of information as needed. We anticipate establishing a City project web page to maintain public outreach during the flow of the work, providing progress reports on a stream mileage basis.

Task 3. Post-Restoration Activities including Monitoring, undertaken in Years 4 and 5

The ASI Team will develop monitoring reports in coordination with City project partners and work with City staff to develop a maintenance plan for each of the project components. This will include coordination with the City on maintenance needs, staffing, equipment and budget.

During Task 3 monitoring will include erosion, water quality, targeted plant community establishment and native benthic and aquatic organization utilization within restored sites/Days Creek aquatic ecosystem. We will coordinate with the City and its partners on monitoring data collection and reporting as specified in the final approved Work Plan. We will also provide project progress reports, including monitoring results to the City and on behalf of the City to the NRDA Trustees.

A full Gantt chart of the anticipated project activities and the time frame for their implementation is presented on the following page. Texarkana deserves the improvements this effort will bring, and we look forward to working alongside the City on this important project.

	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Task1: Planning & Project Phasing																				
Kickoff Meeting, Work Plan, Coordinate with NRDA																				
Initiate: Site surveys, baseline monitoring, conservation easement and land acquisition																				
Initiate project designs; initiate permitting																				
Address stormwater issues, incl. pollution plan. Public outreach begins in earnest																				
Task 2: Design Development, Construction Documents & Monitoring																				
Design development to 60% plans, plus budget																				
Prepare and discuss construction documents with City, incl. 75% and final with review submittals																				
Assist City with bid docs, contractor selection and oversight																				
Assist City during construction phase																				
Prepare monitoring plans and provide oversight before, during and after restoration activities																				
Provide oversight of restoration activities, including site work and native plant establishment																				
Coordinate with City partners and public during construction, and disseminate information																				
Task 3: Post Restoration Activities & Monitoring																				
Develop monitoring reports & maintenance plan																				
Coordinate with City on maintenance needs																				
Monitoring erosion, water quality, plant establishment, benthic and aquatic organisms, etc.																				
Coordinate with City and its partners on monitoring data collection and reporting																				

Attachment A:Firm Licenses



TEXAS BOARD OF PROFESSIONAL ENGINEERS CERTIFICATE OF REGISTRATION

This acknowledges that

Aqua Strategies Inc.

has fulfilled the requirements of the State of Texas
to offer and perform engineering services in the
State of Texas.

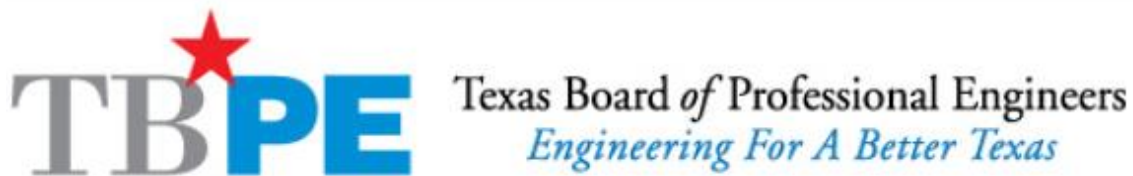
In witness whereof
we have hereunto set our hands and affixed the seal of the Board,
this 17th day of April 2014.



Registration # F-15911


BOARD CHAIR

BOARD SECRETARY



Page:

1

Updated on:

4-9-2019

Matches:

1

AQUA STRATEGIES INC. (DBA: AQUA STRATEGIES)

Firm# 15911

Status	Certified	Expires	Phone	Address
ACTIVE	04-17-2014	04-30-2020	512-203-1913	14101 Hwy 290 West Bldg 600 Austin TX 78737

Page:

1

Updated on:

4-9-2019

Matches:

1

H L MURRAY AND ASSOCIATES INC (DBA: MTG
ENGINEERS & SURVEYORS, INC.)

Firm# 354

Status	Certified	Expires	Phone	Address
ACTIVE	06-16-2000	06-30-2019	903-838-8533	5930 Summberhill Rd Texarkana TX 75503



Texas Board of Professional Geoscientists

[Logon](#)

Licensee Profile

Only current licenses are searchable in the public license search. The status of a Professional Geoscientist license, Geoscience Firm registration or Geoscientist-in-Training certification is one of the following:

Current - the individual or firm **may use** the title and engage in the practice or activities authorized by the license, registration or certification.

Conditional - the individual or firm **may use** the title and engage in the practice or activities authorized by the license, registration or certification; however, the individual or firm may be under non-disciplinary conditions or stipulations.

Please note that if a license status is affected by Board authorized disciplinary action, the status may be one of the following:

Current with Probation - the individual or firm **may use** the title and engage in the practice or activities authorized by the license, registration or certification; however, the individual or firm may be under conditions or stipulations.

Current with Recent Disciplinary Action - The Board has imposed a disciplinary action taken within the past 5 years. The licensee has satisfied all of the terms of the disciplinary action.

Current with Obligations - the individual or firm **may use** the title and engage in the practice or activities authorized by the license, registration or certification; however, the individual or firm may be under non-disciplinary conditions or stipulations.

Press "Search Results" to return to the Search Results list.

Press "New Search Criteria" to do another search of this type.

Press "New Search" to start a new search.

License Number: 50598

Current Date: 04/11/2019 11:07 AM

Name: **AQUA STRATEGIES INC**
 License Type: **Geoscience Firm**
 License Status: **Current**
 Expiration Date: **10/31/2019**
 License Issue Date: **10/23/2018**

Addresses

Mailing Address / Address of Record	Address	14101 HWY 290 WEST, BLDG 1600B AUSTIN , TX HAYS 78737 US
	Phone Number:	512-826-2604

Practice Area	Comment
----------------------	----------------

Discipline(s) Imposed
No disciplinary actions exist.

Discipline(s) Imposed	Date of Action:	Action(s):
------------------------------	------------------------	-------------------

Authorized Official

Licensee's Role:

Firm

Related Party Role:

Authorized Official

Related Party Name
OSTING, TIM

License Type

Address

Search Results

New Search Criteria

New Search

Print



[Contact TBPG](#)

Attachment: 2020-033 ATTH 01 TXR_Envir._Design_Engnrg._NRDA_SOQ_ASI_20190417 (T) (2247 : NRDA - RFQ Design Engineering Services)



Texas Board of Professional Land Surveying
Texas Funeral Service Commission
Texas Optometry Board
Texas State Board of Dental Examiners
Texas State Board of Examiners of Psychologists
Texas State Board of Pharmacy
Texas State Board of Plumbing Examiners

[Logon](#) | [Contact Us](#)**License / Registration Details**

Press "Search Results" to return to the Search Results list.

Press "New Search Criteria" to do another search of this type.

Press "New Search" to start a new search.

License Number: 10101100**Current Date: 04/11/2019 11:17 AM**

Name: MURRAY THOMAS & GRIFFIN, INC.
License Type: FIRM Headquarters
License Status: Registered
Expiry Date: 12/31/2019
Effective Rank Date: 01/08/2008

Addresses

Main Address

Address
5930 SUMMERHILL ROAD TEXARKANA , TX BOWIE 75503 US View on a map

Phone Number: (903) 838-8533

FIRM must have RPLS on Staff

Licensee's Role: FIRM
Related Party Role: RPLS

Related Party Name	License Type	Address
WOOD, JEFFREY ALLEN	Land Surveying - Registered Professional Land Surveyor	TEXARKANA , TX BOWIE 75503 US

[Search Results](#) [New Search Criteria](#) [New Search](#) [Print](#)



Texas Board of Professional Geoscientists

[Logon](#)

Licensee Profile

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Conditional - the individual or firm **may use** the title and engage in the practice or activities authorized by the license, registration or certification; however, the individual or firm may be under non-disciplinary conditions or stipulations.

Please note that if a license status is affected by Board authorized disciplinary action, the status may be one of the following:

Current with Probation - the individual or firm **may use** the title and engage in the practice or activities authorized by the license, registration or certification; however, the individual or firm may be under conditions or stipulations.

Current with Recent Disciplinary Action - The Board has imposed a disciplinary action taken within the past 5 years. The licensee has satisfied all of the terms of the disciplinary action.

Current with Obligations - the individual or firm **may use** the title and engage in the practice or activities authorized by the license, registration or certification; however, the individual or firm may be under non-disciplinary conditions or stipulations.

Press "Search Results" to return to the Search Results list.

Press "New Search Criteria" to do another search of this type.

Press "New Search" to start a new search.

License Number: 50085

Current Date: 04/11/2019 11:12 AM

Name:	TITANIUM ENVIRONMENTAL SERVICES LLC
License Type:	Geoscience Firm
License Status:	Current
Expiration Date:	02/29/2020
License Issue Date:	02/08/2007

Addresses

Mailing Address / Address of Record

Address

**311 East Cotton Street
ATTN: Laura Rectenwald
LONGVIEW , TX
GREGG
75601
US**

Phone Number:

903 234 8443

Addresses**Business Address**

Address

**TITANIUM ENVIRONMENTAL
SERVICES, LLC
311 E COTTON STREET
LONGVIEW , TX
GREGG
75601
US**

Phone Number:

903-234-8443**Practice Area****Comment**

**ESAs/Remediation
Evaluation/Monitoring
Petroleum Geoscience (e.g.,
Oil and Gas)**

Discipline(s) Imposed**No disciplinary actions exist.****Discipline(s) Imposed****Date of Action:****Action(s):****Authorized Official**

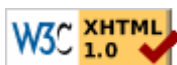
Licensee's Role:

Firm

Related Party Role:

Authorized Official**Related Party Name****License Type****Address****RECTENWALD, LAURA L.**

**LONGVIEW , TX
GREGG
75606
US**

[Search Results](#)[New Search Criteria](#)[New Search](#)[Print](#)[Contact TBPG](#)

Forms and Addendum

REQUEST FOR QUALIFICATIONS ENVIRONMENTAL DESIGN & ENGINEERING SERVICES FOR NATURAL RESOURCES DAMAGE ASSESSMENT PROJECT

DATE: April 1, 2019

City of Texarkana, Texas
PURCHASING AND CONTRACTS DEPARTMENT
220 TEXAS BLVD
TEXARKANA, TEXAS 75501
PH: (903) 798-3923
kimberly.russ@txkusa.org

RFQ# 19-2001-08

RFQ CLOSING DATE
April 18, 2019 @ 2PM CST

PLEASE FILL IN ORGANIZATION NAME & ADDRESS IN THE SPACES PROVIDED:

Aqua Strategies Inc.
14101 Highway 290 West
Bldg 1600B
Austin, TX 78737

DESCRIPTION OF REQUEST FOR QUALIFICATIONS

This document constitutes a request for qualifications for engineering, consulting, research, and reporting services related to the Natural Resources Damage Assessment award for the Texarkana Days Creek Watershed Comprehensive Aquatic Ecosystem Restoration Project.

IN COMPLIANCE WITH THIS SOLICITATION, THE UNDERSIGNED PROPOSER HAVING EXAMINED THE REQUEST FOR QUALIFICATIONS AND BEING FAMILIAR WITH THE CONDITIONS TO BE MET, HEREBY SUBMITS THE ATTACHED PROPOSAL. AN INDIVIDUAL AUTHORIZED TO BIND THE COMPANY MUST SIGN THE FOLLOWING SECTION. FAILURE TO EXECUTE THIS PORTION MAY RESULT IN PROPOSAL REJECTION.

Signature  Title President and CEO

Print Name Barney Austin, PE, PhD Date 15 April 2019

RETURN THIS ENTIRE DOCUMENT WITH YOUR PROPOSAL.

CITY OF TEXARKANA, TEXAS, TEXAS
RFQ# 19-2001-08

I. INSTRUCTIONS TO PROPOSERS

1. PROPOSAL DELIVERY, TIME & DATE

- 1.1 The City of Texarkana, Texas will receive written proposals until **2:00 p.m. CST, April 18, 2019** at the office of the Purchasing Manager listed below. Any proposal received after the date and hour specified will be rejected and returned unopened to the proposer. Proposals must be addressed to:

Physical Address:

Kim Russ, Interim Purchasing Manager
 City of Texarkana, Texas
 220 Texas Blvd
 Texarkana, Texas 75501

Mailing Address:

Kim Russ, Interim Purchasing Manager
 City of Texarkana, Texas
 P.O. Box 1967
 Texarkana, Texas 75504

- 1.2 The City of Texarkana, Texas reserves the right to postpone the date and time for accepting proposals through an addendum.

2. EXAMINATION OF DOCUMENTS AND REQUIREMENTS

- 2.1 Each proposer shall carefully examine all RFQ documents and thoroughly familiarize itself with all requirements prior to submitting a proposal to ensure that the proposal meets the intent of this RFQ.
- 2.2 Before submitting a proposal, each proposer shall be responsible for making all investigations and examinations that are necessary to ascertain conditions and requirements affecting the requirements of this RFQ. Failure to make such investigations and examinations shall not relieve the proposer from obligation to comply, in every detail, with all provisions and requirements of the Request for Qualifications.
- 2.3 To facilitate the clarification of requirements, please direct all questions concerning this RFQ to Kimberly Russ, Interim Purchasing Manager, by way of email to kimberly.russ@txkusa.org. Responses to questions, if any, will be posted on the City's website. The deadline for any questions will be April 12, 2019 at 4:00 p.m.

3. CONTENTS OF PROPOSAL

The Request for Qualifications shall be concise and complete. The following will be required for the evaluation process. The City will require six (6) hard copies and one digital copy of the proposals from the interested firm.

- 3.1 Firm's organization and qualifications.
- 3.2 Names and qualifications of team members projected to be involved with the project.
- 3.3 Copies of appropriate state licenses and/or certifications.

- 3.4 A list of relevant projects and clients (include contact person and phone numbers) that may be contacted for references and verification of background.
- 3.5 Firm's experience regarding the City's NRDA Project.
- 3.6 10 page limit on the response.

4. SELECTION CRITERIA

4.1	SCORING CRITERIA		
	Firm's Organization & Qualifications	20	_____
	Experience regarding the City's NRDA Project Proposal	20	_____
	Sub-Team Organization and Qualifications	20	_____
	Sub-Team Experience on Similar/Past Projects	20	_____
	Capacity and Timeliness to Perform Work	10	_____
	Overall Responsiveness to RFQ	10	_____
	Total Points	100	_____

II. INTENT

The intent of this Request for Qualifications (RFQ) is to provide proposers with sufficient information to prepare a proposal. The City is looking for a firm who is familiar with the City of Texarkana, Texas proposal related to the Natural Resources Damage Assessment award for the Texarkana Days Creek Watershed Comprehensive Aquatic Ecosystem Restoration Project as well as specific knowledge and experience of all aspects of environmental engineering and design.

III. LIMITATION OF LIABILITY

Neither Party hereto shall be liable to the other Party or its affiliates for any loss of profit, loss of revenue, loss of use or any other indirect, consequential or special damages excluding fines and penalties levied by the regulatory agency, even if caused by the sole or concurrent negligence of a party, whether active or passive, and even if advised of the possibility thereof. Nothing herein shall be construed as creating any personal liability on the part of any board member, any officer, employee or agent of the City of Texarkana.

IV. INSURANCE REQUIREMENTS

Prior to the award of this contract by the City and before commencing work, the successful proposer shall be required, at his own expense, to **furnish the City of Texarkana, Texas, Purchasing Manager within ten (10) days of notification of award** with certified copies of all insurance certificates showing the following insurance coverage to be in force throughout the term of the contract. The City shall have no duty to pay or perform under this contract until such certificate has been delivered to and approved by the City and no officer or employee of the City shall have authority to waive this requirement without written approval from the City Manager.

COVERAGE:

- A. Commercial General Liability Insurance
- B. Worker's Compensations
- C. Automobile Liability

LIMITS:

- \$1,000,000 each occurrence
- As required by Texas Law
- \$1,000,000 combined single limit

The City of Texarkana, Texas, its officials, employees and volunteers, are to be named as "Additional Insured" to the policy and contain a waiver of subrogation.

V. TERMS AND CONDITIONS FOR PROPOSAL

1. Planning & Project Phasing
 - a. Develop a Work Plan with the City that meets NRDA Trustee approval.
 - b. Coordinate NRDA agreement with final terms and conditions.
 - c. Develop conservation easements and coordinate land acquisition
 - d. Project Design
 - e. Responsible for all permitting for floodplains/wetlands/environmental permitting
 - f. Stormwater Pollution Prevention Plans
 - g. Site Surveys and base line monitoring
 - h. Coordinate with the City's Partner Team including members from Texas A&M-Texarkana, Texarkana College and local K-12 ISDs as needed.
 - i. Coordinate public outreach including public meetings and open house opportunities for project information dissemination regarding project components as needed.
2. Design Development, Construction Documents and Monitoring
 - a. Based upon design development in coordination with the City, prepare construction documents, assist with bid process and construction contractors to undertake environmental restoration work.
 - b. Provide set of construction plans (50%, 75%, and Final Plan submittals for review)
 - c. Prepare Probable Construction Cost
 - d. Prepare Contract Documents (City will provide a copy of our contract documents)
 - e. Time for Rendering Services
 - Provide accurate & obtainable time schedule for beginning and completion of Construction Documents
 - f. Assist Owner with bidding process.
 - g. Assist Owner during construction phase.
 - h. Prepare all contract documents and answer questions and clarifications during bid process
 - i. Attend pre-bid meetings as requested
 - j. Oversight of restoration site activities including site work and native plant establishment.
 - k. Baseline monitoring should be initiated prior to construction. Monitoring will continue during construction to ensure no added natural resource injuries would occur as a result of the restoration activities.
 - l. Coordinate with the City's Partner Team including members from Texas A&M-Texarkana, Texarkana College and local K-12 ISDs as needed.
 - m. Coordinate public outreach including public meetings and open house opportunities for project information dissemination regarding project components as needed.
3. Post Restoration Activities including Monitoring
 - a. Develop a monitoring and maintenance plan
 - b. Monitoring should address erosion control, water quality, plant community establishment, benthic and aquatic organization utilization.
 - c. Coordinate with the City's Partner Team including members from Texas A&M-Texarkana, Texarkana College and local K-12 ISDs as needed.

STANDARD TERMS AND CONDITIONS

1. **APPLICATION:** These standard terms and conditions shall apply to all City of Texarkana, Texas (hereafter referred to as "City") solicitations and procurements, unless specifically excepted in the solicitation specifications or additional documents negotiated by the parties prior to formal award.
2. **REQUIREMENTS:** By submitting qualifications, the respondent agrees to provide the City of Texarkana, Texas with the agreed upon services described in the solicitation in accordance with these standard terms and conditions, at the agreed upon price and in compliance with the stated specifications, any subsequent addendums issued prior to the date of the opening, and any negotiated terms subsequent to the acceptance of submissions.
3. **LEGAL COMPLIANCE:** Proposer must comply with all Federal, State and Local law, statutes, ordinances, regulations and standards in effect at the time of delivery of goods and services and must maintain any and all required licenses and certificates required under the same laws, statutes, ordinances, regulations and standards for services and/or goods provided in response to this solicitation.
4. **ESTIMATED QUANTITIES:** If the solicitation indicates estimated quantities, such quantities are estimated only and not guaranteed amounts. The actual amount ordered over the contract period may be more or less than the estimate. Quantities represent the City's best estimate, based on past history and anticipated purchases.
5. **MODIFICATIONS AND ADDENDENDUMS:** The City shall have the right to modify any of the solicitation documents prior to submission deadline and will endeavor to notify potential bidders, but failure to notify shall impose no liability or obligation on the City. All modifications and addendums must be in written form prepared by the City department issuing the solicitation. Submitters are responsible for incorporating any and all modifications and addendums into their submissions.
6. **INTERPRETATION OF SOLICITATION DOCUMENTS:** The City is the final judge of the meaning of any word(s) sentences, paragraphs or other parts of the solicitation documents. Submitters are encouraged to seek clarification, before submitting a proposal, of any portion of the bid documents that appears to be ambiguous, unclear, inconsistent, or otherwise in error. Clarifications will be in writing.
7. **LATE SUBMISSIONS:** Submissions must be received in the Purchasing Office by the time specified in the solicitation. The City will not accept late submissions and is not responsible for the lateness or non-delivery of submissions by the Postal Service or any private delivery firm.
8. **MINOR IRREGULARITIES:** The City reserves the right to waive any minor irregularities that do not materially affect the scope or pricing of submitted proposals.
9. **RESPONSIVENESS OF SUBMISSIONS:** The City wants to receive competitive proposals but will declare "non-responsive" submissions that fail to meet significant requirements outlined in the solicitation documents.
10. **WITHDRAWAL OF SUBMISSIONS:** Submitters may withdraw any submitted proposal prior to the submission deadline. Submitters may not withdraw once the proposals have been publicly opened, without the approval of the City's purchasing manager. Submitters who no longer wish to negotiate with City will be allowed to withdraw submissions, however, once a submission has been withdrawn, it can no longer be considered.

11. **DISQUALIFICATION OF SUBMITTER:** The City may disqualify submitters, and their proposals not be considered, for any of the following reasons: collusion among submitters; submitter's default on an existing or previous contract with the City, including failure to deliver goods and/or services of the quality and price bid or agreed upon; submitter's lack of financial stability; any factor concerning the submitter's inability to provide the quantity, quality, and timeliness of services specified in the solicitation; submitter involved in a current or pending lawsuit with the City; submitter's attempt to influence the outcome of the solicitation through unauthorized contact with City officials outside of those listed in the solicitation documents; and submitter's attempt to offer gifts, gratuities, or bribes to any City employee or elected official in connection with a solicitation.
12. **COST OF SUBMISSIONS:** The cost of submitting proposals shall be borne by the submitter. The City will not be liable for any costs incurred by a bidder associated with the preparation, transmittal, or presentation of any proposals or materials submitted in response to any bid, quotation, or proposal.
13. **AWARD:** The City of Texarkana, Texas reserves the right to accept or reject any and all bids in whole or in part and waive any minor technicality and enter into contract deemed to provide the best value to the City. The city of Texarkana, Texas reserves the right to award a separate contract to separate vendors for each item/group or to award one contract for the entire bid.
14. **PERMITS:** Successful bidder is responsible for obtaining any and all City permits when project requires.
15. **FAILURE TO DELIVER SERVICES:** If a submitter is unable to deliver the quantity or quality of specified services or is unable to deliver within a time period agreed upon prior to award, the City shall be authorized to purchase from any other available, source, consistent with State of Texas Procurement statutes.
16. **TAXPAYER IDENTIFICATION:** Submitters must provide the City a current W-9 "Request for Taxpayer Identification and Certification" before services can be procured from the submitter.
17. **TAXES:** The City is exempt from all federal excise taxes and all state and local sales and use taxes. If such taxes are listed on a submitter's invoice, they will not be paid. Additionally, submitters cannot use the City's tax exemption status to purchase goods or services related to this solicitation.
18. **PAYMENT:** Payment will be made net 30 days after invoice is received by the City contingent upon Natural Resources Damage Assessment (NRDA) funds received by the City.
19. **OUTSTANDING LIABILITIES:** Submitters shall not have outstanding, unpaid liabilities owed to the City. Liabilities may include, but are not limited to, property taxes, hotel occupancy taxes, license or permit fees, and water bills. Submissions will be considered non-responsible and not given further consideration if submitted by a submitter with such outstanding liabilities.
20. **OFFSET:** The City may, at its option, offset any amounts due and payable under a contract award under this solicitation against any debt lawfully due the City from a vendor, whether or not the amount due arises pursuant to the terms of the contract and whether or not the debt has been reduced to judgment by a court.
21. **INDEPENDENT CONTRACTORS:** It is expressly agreed and understood by both parties that the City is contracting with successful submitter as an independent contractor. The City shall not be liable for any claims which may be asserted by any third party occurring in connection with services performed by the successful bidder, and the successful bidder has no authority to bind the City.

22. **GOVERNING LAW:** All proposals submitted in response to this solicitation and any resulting contract shall be governed by, and construed in accordance with, the charter and ordinances of the City of Texarkana, Texas, and the laws and court decisions of the State of Texas.
23. **CONTROLLING DOCUMENTS:** In the case of a discrepancy between the solicitation and the formal contract, the formal contract will prevail and control.
24. **ASSIGNMENT:** Submitter shall not assign, transfer, or pledge a contract awarded under this solicitation, in whole or in part, without the prior written consent of the City's purchasing manager. Assignment of the contract, if approved by the City, shall not relieve the submitter's obligations under the contract. Approval by the City of one assignment shall not constitute approval of any future assignment of the contract.
25. **TERMINATION:** If an awarded submitter fails in any manner to fully perform each and all of the terms, conditions and covenants of a contract awarded by this solicitation, he shall be in default and notice of default shall be given to the bidder by the City's purchasing manager. In the event that Vendor continues in default for a period of seven (7) days after receipt of the above-mentioned notice of default, City may terminate or cancel the contract. The City may also cancel a contract for convenience and without cause with thirty days' written notice. In any cancellation of contract, the City will pay the bidder for any and all services provided and accepted up to and including the date of termination.
26. **INDEMNIFICATION:** Submitter shall defend, indemnify, and hold harmless the City of Texarkana, Texas, its officers, agents, employees, appointees and volunteers against any and all claims, lawsuits, judgments, costs and expenses for personal injury (including death), property damage or other harm for which recovery of damages is sought, suffered by any person or persons, that may arise out of or be occasioned by bidder's breach of any of the terms or provisions of any contract awarded as a result of this solicitation, or by any negligent or strictly liable act or omission of the bidder, its officers, agents, employees, or subcontractors, in the performance of an awarded contract; except that the negligence or fault of the City, its officers, agents or employees, and in the event of joint and concurrent negligence or fault of the bidder and City, responsibility and indemnity, if any, shall be apportioned comparatively in accordance with the laws of the State of Texas, without waiving any governmental immunity available to the City under Texas law and without waiving any defenses of the parties under Texas law. The provisions of this paragraph are solely for the benefit of the parties hereto and are not intended to create or grant any rights, contractual or otherwise, to any other person or entity.
27. **VENUE:** The obligations of the parties under a contract awarded through this solicitation are performed in Bowie County, Texas, and if legal action is necessary to enforce same, exclusive venue shall be within Bowie County, Texas.
28. **FUNDING:** State of Texas statutes prohibit the obligation and expenditure of public funds beyond the fiscal year for which a budget has been approved. Orders or other obligations that may arise beyond the year for which a budget has been approved. Orders or other obligations that may arise beyond the end of the current fiscal year shall be subject to approval of budget funds. Funding of this project is contingent on Natural Resources Damage Assessment (NRDA) award and funds received by the City.
29. **SOLICITATION RESULTS:** The City normally posts solicitation results online by the end of the next business day after submissions are received. The City's web site is www.ci.texarkana.tx.us. Results are on the Purchasing solicitation page, in the same place as the original solicitation documents. In the case of RFP's, only the names of the submitters are listed. Results are for informational purposes only and are not a notice of award.

30. **OPEN RECORDS:** Submissions do not become public record until an award is made. Trade secrets and other material considered confidential by the bidder should be clearly marked as such. If a request is made under the Texas Open Records Act to inspect information designated as trade secret or confidential in a bid, the City will forward the appropriate documents to the Attorney General of Texas who will contact the bidder to request sufficient written reasons and information as to why the information should be protected from disclosure. Upon review of the submitter's response the Attorney General will make a determination as to the confidentiality of the requested material(s), or lack thereof, and the City will respond accordingly.
31. **CONFLICT OF INTEREST DISCLOSURE:** Disclosure requirements of potential conflicts of interest involving counties, cities, and other local government entities must be filed after January 1, 2006. The disclosures must be filed by vendors or potential vendors to local government entities. The new requirements are set forth in a new Chapter 176 of the Texas Local Government Code added by H.B. No. 914 of the last Texas Legislature.

A local government entity includes counties, municipalities, school districts, and other political subdivisions of the state or any entity to which a member is appointed by a county commissioner's court or the mayor or governing body of a municipality. A local government officer means a member of the governing body of a local government entity and the person designated as the chief executive officer of the local government entity.

Companies and individuals who contract, or seek to contract, with the City of Texarkana, Texas and its agents (including employees involved in the business with the entity) must file with the City Secretary's Office at 220 Texas Blvd., Room 102, Texarkana, Texas 75504 a Conflict of Interest Questionnaire that describes, among other things, affiliations or business relationships with City of Texarkana, Texas officers, or certain family members or other businesses of the City of Texarkana, Texas officer, and certain employees or other contractors of the City of Texarkana, Texas with which such persons do business.

The new requirements are in addition to any other disclosures required by law. The dates for filing disclosure statements begin on January 1, 2006. A violation of the filing requirements is a Class C misdemeanor.

The Conflict of Interest Questionnaire (Form CIQ) may be downloaded from http://www.ethics.state.tx.us/conflict_forms.htm.

32. **HB 1295 DISCLOSING INTERESTED PARTIES TO A CONTRACT:** House Bill 1295, adopted by the 84th Legislature, created §2252.908, Texas Government Code. Section 2252.908 requires a business entity entering into certain contracts with a governmental entity or state agency to file with the governmental entity or state agency a disclosure of interested parties at the time the business entity submits the signed contract to the governmental entity or state agency.

§2252.908, Texas Government Code requires the commission to adopt rules necessary to implement the new disclosure requirement and to prescribe the disclosure form. Section 2252.908 requires the disclosure form to be signed by the authorized agent of the contracting business entity, acknowledging that the disclosure is made under oath and under penalty of perjury. Section 2252.908 applies only to a contract that requires an action or vote by the governing body of the governmental entity or state agency before the contract may be signed or has a value of at least \$1 million. Section 2252.908 provides definitions of certain terms occurring in the section. House Bill 1295 provides that §2252.908 applies only to a contract entered into on or after January 1, 2016.

An interested party is defined as a person who has a controlling interest in a business entity with whom a governmental entity or state agency contracts or who actively participates in facilitating

the contract or negotiating the terms of the contract, including a broker, intermediary, adviser, or attorney for the business entity.

Contractors are required to acquire Form 1295 via the Texas Ethics Commission website. This requires registration, generation of Form 1295 with a unique Certificate Number & filing date, printing the form, notarizing and returning the form to City of Texarkana Purchasing & Contract Management Department.

Once the form is received by the Purchasing and Contract Management Department, the Buyer associated with the project will log-in to the Texas Ethics Commission portal and acknowledge receipt of the form not later than the 30th day after the date the contract for which the form was filed binds all parties to the contract. This will complete the form for the contract with which the form is associated. The completed form will be made available via the Texas Ethics Commission website.

Form 1295 can be generated via the Texas Ethics Commission web portal. The website and detailed instructions are located at:

https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm

City of Texarkana, TX

Suspension and Debarment Certification

Federal Law (A-102 Common Rule and OMB Circular A-110) prohibits non-Federal entities from contracting with or making sub-awards under covered transactions to parties that are suspended or debarred or whose principals are suspended or debarred. Covered transactions include procurement contracts for goods or services equal to or in excess of \$25,000 and all non-procurement transactions (e.g., sub-awards to sub-recipients).

Contractors receiving individual awards of \$25,000 or more and all sub-recipients must certify that their organization and its principals are not suspended or debarred by a Federal agency.

Before an award of \$25,000 or more can be made to your firm, you must certify that your organization and its principals are not suspended or debarred by a Federal agency.

I, the undersigned agent for the firm named below, certify that neither this firm nor its principals are suspended or debarred by a Federal agency.

COMPANY NAME: Aqua Strategies Inc.

FEDERAL TAX ID or SOCIAL SECURITY No. 37-1749536

Signature of Company Official: 

Printed name of company official signing above: Barney Austin, PE, PhD

Date Signed: 15 April 2019

City of Texarkana, TX
Chapter 2270 Prohibition on Contracts with Companies Boycotting Israel

House Bill 89, adopted by the 85th Legislature, created §2270.001, Texas Government Code, Section Subtitle F, Title 10, requires a company entering to a contract with a governmental entity or state agency to verify that the company: (1) does not boycott Israel; and (2) will not boycott Israel during the term of the contract. (Effective September 1, 2017)

I, the undersigned agent for the company named below, certify that the Company does not boycott Israel and will not boycott Israel during the term of the contract.

COMPANY NAME: Aqua Strategies Inc.

FEDERAL TAX ID or SOCIAL SECURITY No. 37-1749536

Signature of Company Official: 

Printed name of company official signing above: Barney Austin, PE, PhD

Date Signed: 15 April 2019

ADDENDUM #1**Date: April 10, 2019****To Bidders: RFQ 19-2001-08 DESIGN & ENGINEERING FOR NATURAL RESOURCES DAMAGE ASSESSMENT PROJECT****Opening Date: Thursday, April 18, 2019 at 2:00 PM**

Question #1 - Is it acceptable to email a PDF of the proposal to Ms. Kimberly Russ to satisfy the requirement to submit one (1) electronic copy of the proposal? Or does the City prefer the digital copy on electronic media (i.e. thumb drive, disk) to be submitted with the submission of the hard copies?

Answer #1 – An emailed PDF file of the proposal is acceptable. Please email your proposal to kimberly.russ@txkusa.org. In the subject line please include RFQ 19-2001-08 Design & Engineering for NRDA Project PDF File.

Question #2 - Is it acceptable to provide license/certification registration numbers for the firms/individuals rather than attach each license/certification certificate?

Answer #2 – Yes, this can be supplemental and in addition to the 10-page limit.

Question #3 - Regarding the 10-page limit, can we assume that the following elements are not counted for the proposal page limit:

- a. Signed RFQ document as required by the RFQ (consisting of 11 pages)
- b. Cover Page
- c. Cover Letter

Answer #3 – The signed RFQ document as required by the RFQ (consisting of 11 pages), the cover page, and the cover letter are not included in the 10-page limit.



Kimberly Russ, Interim Purchasing Manager

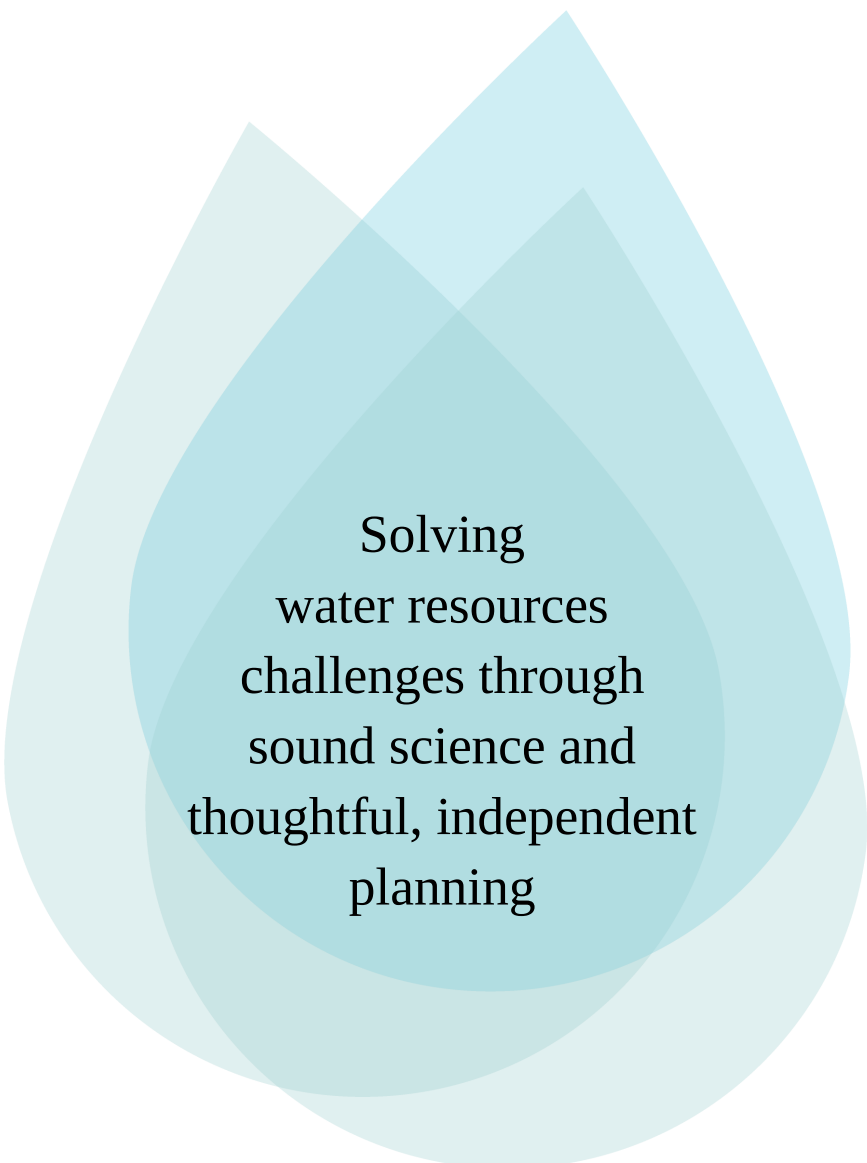
IN THE SUBMISSION OF THE BID, BIDDER MUST ACKNOWLEDGE RECEIPT OF THIS ADDENDUM; OTHERWISE THE BID MAY NOT BE GIVEN CONSIDERATION. BIDDER MAY ACKNOWLEDGE RECEIPT ON FACE OF BID OR BY RETURNING ONE COPY OF THIS NOTICE.



Signature of Bidder

Aqua Strategies Inc.

Name of Company



Solving
water resources
challenges through
sound science and
thoughtful, independent
planning

Briefing Sheet

Version:
Update Date: 3/19/2020 3:15 PM

Lead Department: City Manager

Action Officer: Jennifer Evans, City Secretary

Subject: (Restoration Plan PowerPoint.pdf)

Attachments

- a. 2020-032 ATTH 05 NRDA Restoration PPT(PDF)

Days Creek Watershed Comprehensive Aquatic Ecosystem Restoration

City of Texarkana, Texas

\$9.8 million NRDA Funding Award

Restoration Plan with 10 proposed project components

Project Partners:



Days Creek Watershed Comprehensive Aquatic Ecosystem Restoration

The project will use a comprehensive watershed approach that includes preservation, restoration, and enhancement of creek systems leading through the City including Days Creek, Cowhorn Creek, Waggoner Creek, Howard Creek and Swampoodle Creek.

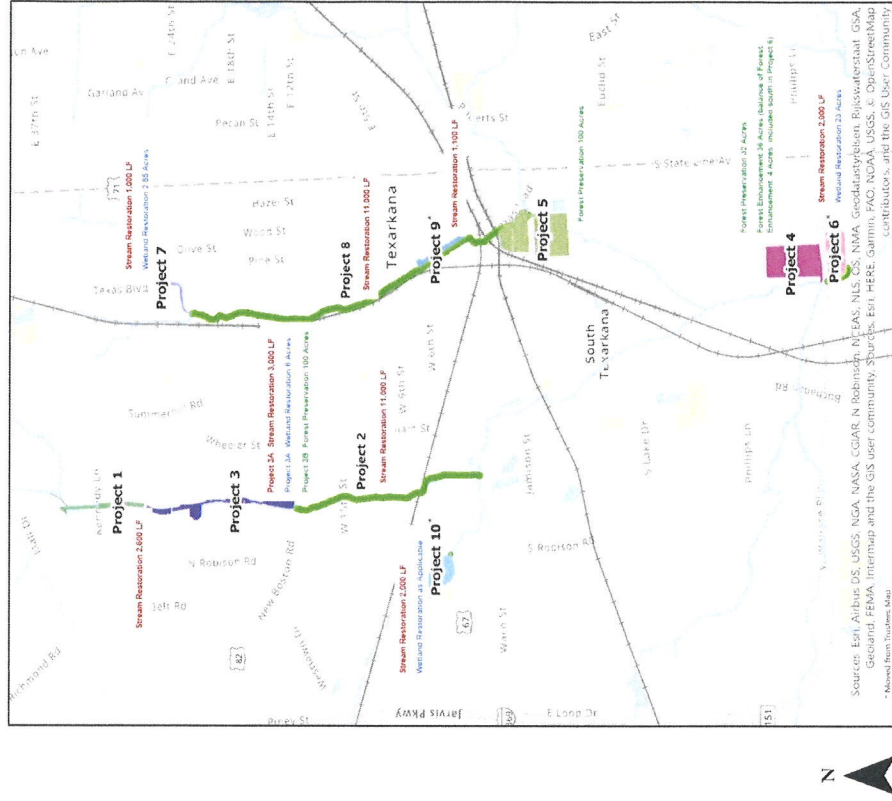
Project Goals

- Stabilize and naturalize **33,365 linear feet** of stream channels,
- Restore **32 acres** of wetlands, and
- Preserve **135 acres** of forest with enhancing **36 acres** of the forested acres.
- Provide ecological uplift of surface waters and habitats that contribute to Days Creek in immediate to very close proximity to the former Kerr-McGee Chemical Corporation Wood Treating Facility (Tronox LLC) offsetting the resource injuries and ecological service losses that have occurred over time.

Project Locations

10 sites along the affected stream channels with preservation and enhancement of additional riparian buffer areas of the quality and quantity to adequately compensate for the injuries.

NRDA PROJECT SITE OVERVIEW
CITY OF TEXARKANA, TEXAS

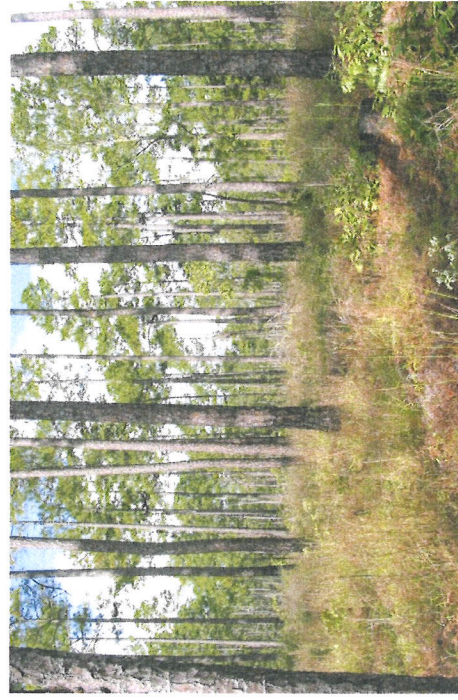


Scale: 1:40,000

Days Creek Watershed Comprehensive Aquatic Ecosystem Restoration

Project Partners

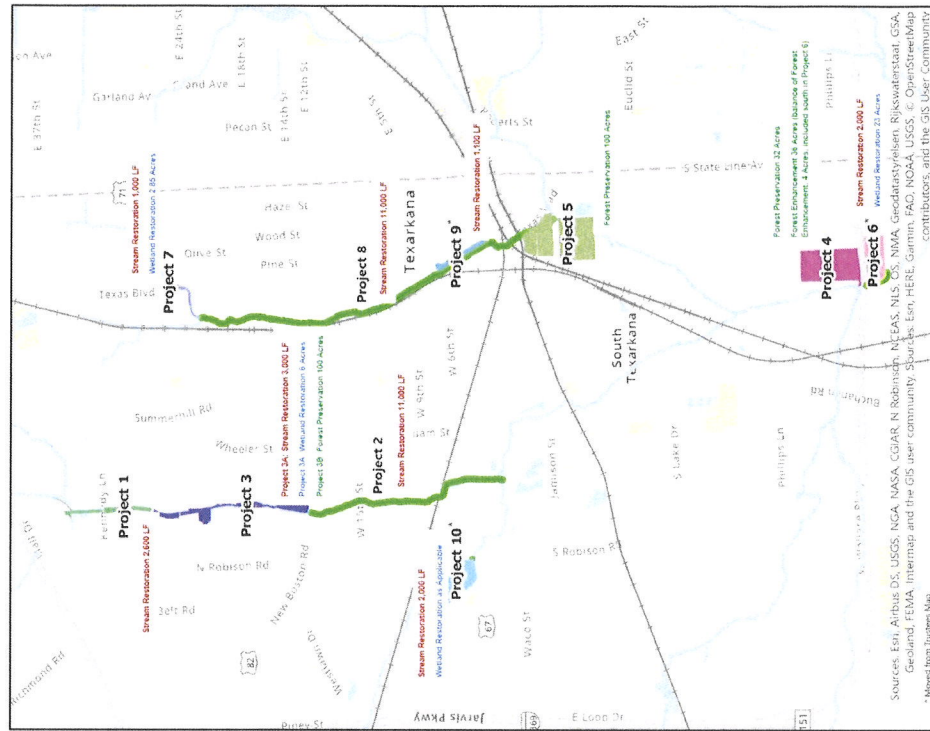
ORGANIZATION/LOCATION	CONTACT PERSON	ROLE
City of Texarkana, Texas Planning, Parks & Public Works Departments	David Orr, Director of Planning & Community Development Dusty Henslee, Public Works Director Robby Robertson, Parks & Recreation Director	Project management, contract oversight and 'Adopt-a-Spot' volunteer management.
Texarkana College Texarkana, TX	Dr. Catherine Howard, PhD, Dean of Science, Technology, Engineering, and Mathematics	Long-term monitoring and maintenance of wetland restoration areas; wetland plants
Texas A&M – Texarkana Texarkana, TX	Dr. David Yells, Provost and Vice President for Academic Affairs	Wetland restoration planting and monitoring. Stream quality monitoring; educational access to wetlands.
Urban Forestry, Texas A&M Forestry Service	Daniel Duncan, TAMU NE Texas Area Urban Forester	Urban forestry, provide native trees
AquaStrategies, Inc. Houston and Austin, TX	Georganna Collins, RLA	Stream & Wetland restoration planning, design, permitting, and construction management support
AquaStrategies, LLC Austin, TX	Dr. Barney Austin, PE	Hydrology and hydraulics issues; engineering, surface water quality and monitoring support



Days Creek Watershed Comprehensive Aquatic Ecosystem Restoration

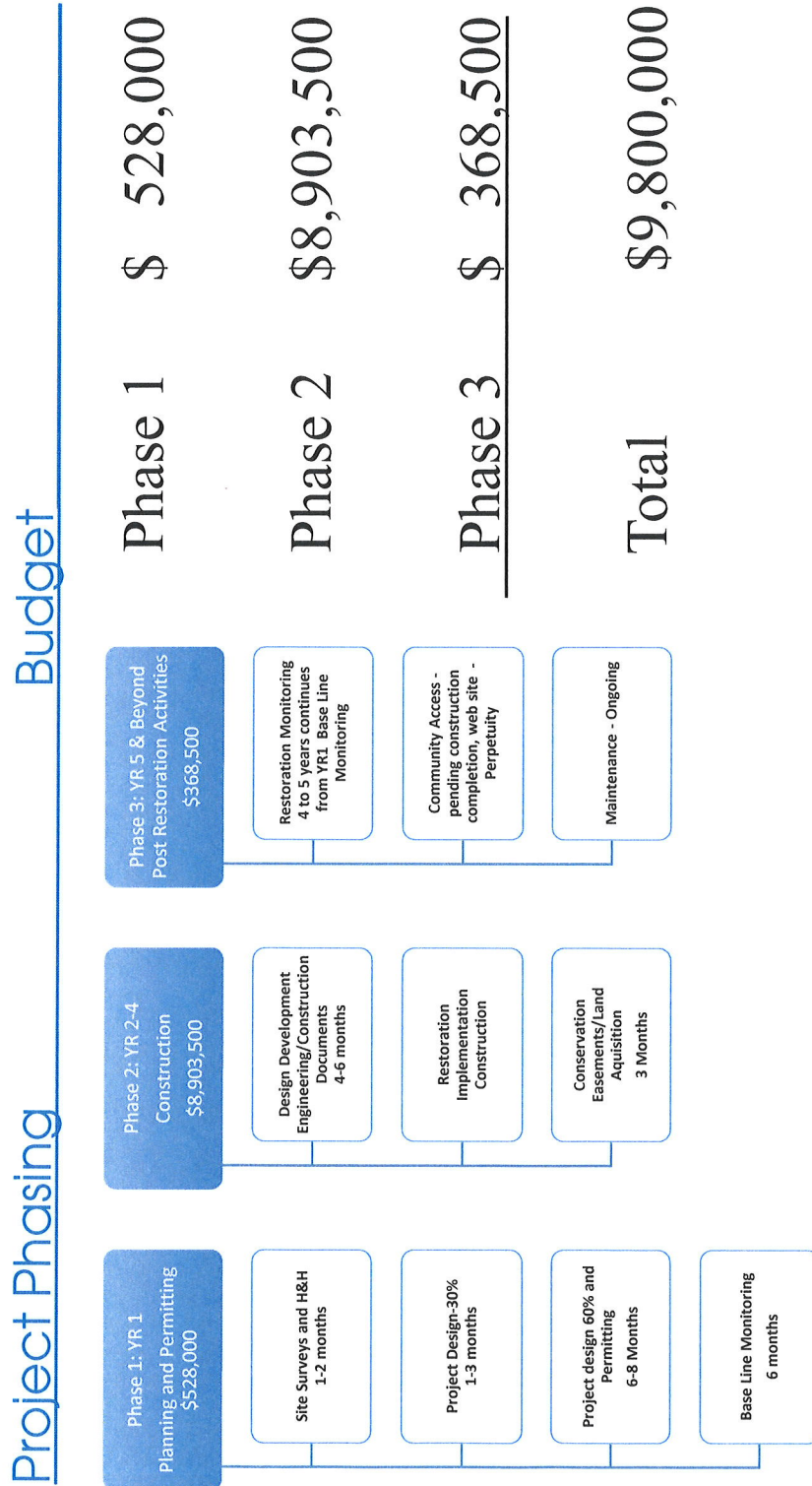
NRDA PROJECT SITE OVERVIEW
CITY OF TEXARKANA, TEXAS

Project Name/Number	Description	Project Cost
NRDA 1 Cowhorn Creek Convention Ctr	Naturalize 2,600 lf Cowhorn Creek near Convention Center	\$1,300,000.00
NRDA 2 Cowhorn Creek Bioengineering & Planting	Restore/stabilize 11,000 lf with 2A 9,000 lf bioengineering & 2B 2,000 lf plantings, bioengineering will include plantings	\$547,500.00 (2A \$366,000 and 2B \$181,500
NRDA 3 Cowhorn Creek Texarkana College	3A Restoration 3,000 lf near TC & Beverly Park Rd 3B Preservation 2.5 Acres & Creation 6 Acres Wetlands	\$1,350,000.00
NRDA 4 Days Creek South State Line	East of Facility & Days Creek 4A Preservation & Perpetuity 32 acres & 4B Enhancement of 36 Acres	\$30,000.00 (4A \$0, 4B \$30,000
NRDA 5 Days Creek Texas Viaduct	Preservation 100 Acres Along Days Creek South of Texas Viaduct	\$20,000.00
NRDA Days 6 Howard/Days Creek	Restore 2,000 lf and 23 ac wetlands south of Convergence of Howard & Days Creek	\$455,000.00
NRDA 7 Swampoodle Creek Ferguson Park	Naturalize 665-1,000 lf Swampoodle within Ferguson Park and construct 3.0 ac wetlands	\$3,350,000.00
NRDA 8 Swampoodle Creek Naturalization/stabilization	Naturalize/stabilize 11,000 lf between Spring Lake Park southward along Swampoodle	\$1,697,500.00
NRDA 9 Swampoodle Creek Restoration & Re-Alignment	Restore/Re-alignment 1,100 lf of Swampoodle Creek	\$650,000.00
NRDA Waggoner Creek 10 Southwest Rec Center	Restoration 2,000 Linear Ft Waggoner Creek East of I-369	\$400,000.00



Scale: 1:40,000

Days Creek Watershed Comprehensive Aquatic Ecosystem Restoration



Days Creek Watershed Comprehensive Aquatic Ecosystem Restoration

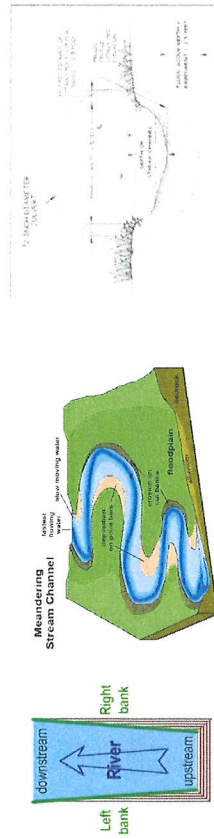
Phase 1

Phase 1 Conservation Easements and Site Surveys:

Immediately upon approval of the City of Texarkana's NRDA Funding and Implementation Agreements, the City will initiate actions to place the NRDA project sites to be preserved under conservation easements. Because the City currently controls/owns all the land offered for the vast majority of this restoration project, this process is expected to take no longer than six months, conservation easements will be in-place on those preservation sites within the first six months of Phase 1.

One project, Project 9, will include acquisition of a 1.4-acre parcel adjacent to the creek to enable creek re-alignment. This parcel will be acquired by the City during Phase 1. During which time site surveys will be initiated and community comment/input sought via public workshops and meetings. Site surveys provide the baseline conditions for monitoring.

Applicable deed restrictions will be in place on restoration sites at the successful conclusion of restoration, i.e. end of Phase 2 or the beginning of Phase 3.



Phase 1 Restoration Planning/Design:

The City of Texarkana will initiate the planning/design process for restoration on the stream restoration, wetland creation, and forest enhancement with site survey results and preliminary planning, i.e. 30% complete for review and approvals.

City will coordinate and obtain necessary federal CWA Section 404/Rivers and Harbors Act, Section 10 USACE permit, state's water quality certificate, and other applicable permits during this time. Necessary for permitting will be restoration planning and design moved to 60% complete.

During this Phase 1, a monitoring plan will be developed.

Phase 1 also includes the City's administration of contracts, coordination with project partners and NRDA Trustees, stakeholder engagement, funds oversight, project planning and design development oversight.



The subtotal cost for Phase 1 is \$528,000 which includes site surveys and restoration planning/design for \$378,000 plus \$150,000 for city administration costs.

Days Creek Watershed Comprehensive Aquatic Ecosystem Restoration

Phase 2

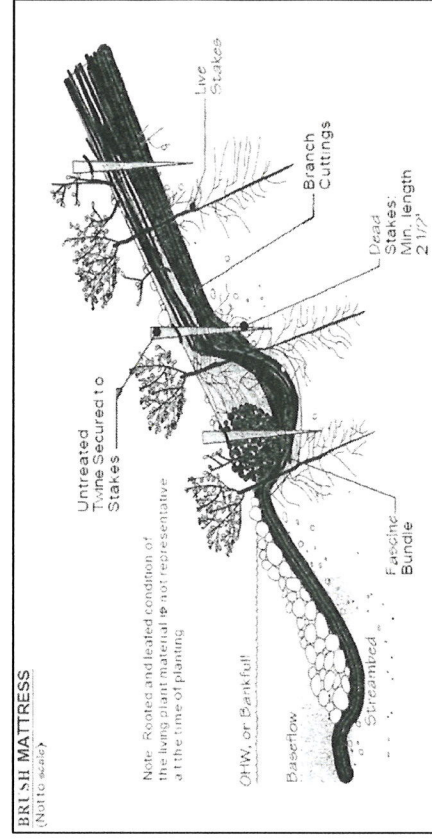
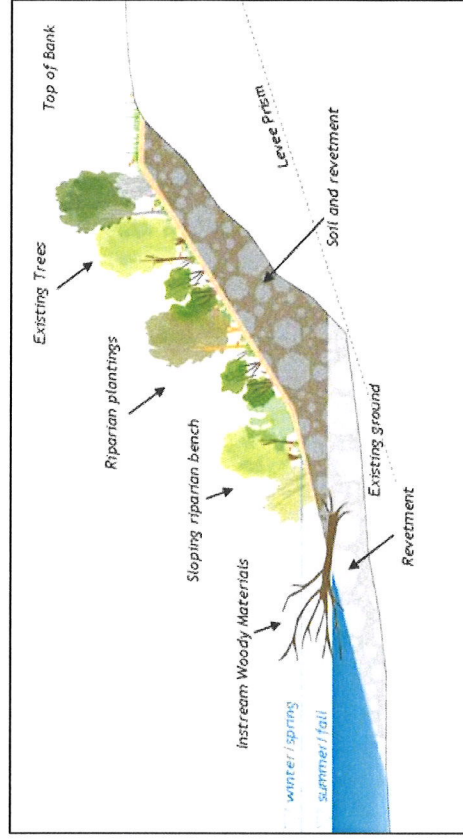
Phase 2 Restoration Implementation/Construction:

Detailed design development and applicable engineering will be undertaken, coordinated through the City's Public Works and Planning Departments and the NRDA Trustees. Based upon design development, construction documents of 100% complete plans and specifications will be prepared.

A construction contractor bidding process undertaken. Construction contractors selected to undertake the restoration work. Restoration implementation/construction site activities include mobilization of the contractor, site work and native plant community establishment.

Baseline monitoring would be initiated prior to construction following the monitoring plan. Monitoring will continue during construction to ensure no added natural resource injuries would occur as result of restoration activities.

The subtotal for Phase 2 construction is \$8,903,500.



Days Creek Watershed Comprehensive Aquatic Ecosystem Restoration

Phase 3

Phase 3 Post Restoration Activities including Monitoring:

Long-term monitoring and maintenance, i.e. adaptive site management, of the restoration project sites will be performed by Texas A&M Texarkana, Texarkana College and local environmental organizations as the City's Partner Team thereby measuring restoration benefits.

Texarkana Parks and Recreation will also provide maintenance of park and downtown locations at public access points.

Monitoring will begin during the initial planting/restoration activities and continue at least 4 years, or until the restoration projects are fully established and success/performance criteria met. Performance criteria is laid out in the City's Work Plan. Monitoring will address erosion control, water quality, plant community establishment, benthic and aquatic organism utilization, and invasive species.

Maintenance of the restoration sites will be ongoing, with at least semi-annual "community cleanup days" as part of the City's already successful "Adopt a Spot" program.

The subtotal for Phase 3 activities is \$368,500.



	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Task 1: Planning & Project Phasing																				
Kickoff Meeting, Work Plan, Coordinate with NRDA																				
Initiate: Site surveys, baseline monitoring, conservation easement and land acquisition																				
Initiate project designs; initiate permitting																				
Address stormwater issues, incl. pollution plan. Public outreach begins in earnest																				
Task 2: Design Development, Construction Documents & Monitoring																				
Design development to 60% plans, plus budget																				
Prepare and discuss construction documents with City, incl. 75% and final with review submittals																				
Assist City with bid docs, contractor selection and oversight																				
Assist City during construction phase																				
Prepare monitoring plans and provide oversight before, during and after restoration activities																				
Provide oversight of restoration activities, including site work and native plant establishment																				
Coordinate with City partners and public during construction, and disseminate information																				
Task 3: Post Restoration Activities & Monitoring																				
Develop monitoring reports & maintenance plan																				
Coordinate with City on maintenance needs																				
Monitoring erosion, water quality, plant establishment, benthic and aquatic organisms, etc.																				
Coordinate with City and its partners on monitoring data collection and reporting																				



City of Texarkana, Texas

Days Creek Watershed Comprehensive Aquatic Ecosystem Restoration

NRDA Tronox Texarkana Natural Resource Restoration Project

Questions & Contact Information

AquaStrategies

Water Planning, Science & Engineering

14101 Hwy 290 West, Building 1600B

Austin, TX 78737



Liberty Eylau Independent School District



Texarkana Community College



Texas A&M Texarkana

Briefing Sheet

Version:
Update Date: 3/19/2020 3:15 PM

Lead Department: City Manager

Action Officer: Jennifer Evans, City Secretary

Subject: (Restoration Plan/Environmental Assessment.pdf)

Attachments

- a. 2020-032 ATTH 01 Final Tronox RPEA FONSI (T) (PDF)

RESTORATION PLAN/ENVIRONMENTAL ASSESSMENT
FOR FORMER KERR-MCGEE
CHEMICAL CORPORATION WOOD-TREATING FACILITY (TRONOX LLC),
TEXARKANA, BOWIE COUNTY, TEXAS

MARCH 2019

PREPARED BY THE:

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

TEXAS GENERAL LAND OFFICE

TEXAS PARKS AND WILDLIFE DEPARTMENT

AND

UNITED STATES FISH AND WILDLIFE SERVICE

Attachment: 2020-032 ATTH 01 Final Tronox RPEA FONSI (T) (2245 : NRDA Restoration Plan/Env. Assessment doc)

EXECUTIVE SUMMARY

This Restoration Plan/Environmental Assessment (RP/EA) was developed by the Texas Commission on Environmental Quality (TCEQ), Texas Parks and Wildlife Department (TPWD), Texas General Land Office (GLO), and the United States Fish and Wildlife Service (USFWS) acting on behalf of the United States Department of the Interior (DOI) (collectively, the Trustees) for public review and comment. The purpose of this RP/EA is to describe how the Trustees propose to use recovered funds to restore natural resources injured, lost, or destroyed due to releases of hazardous substances at or from the former Kerr-McGee Chemical Corporation (Kerr-McGee) wood-treating facility in Texarkana, Bowie County, Texas (the Facility). The Trustees have recovered approximately \$21.3 million in natural resource damages.

The Facility was built in 1905 and operated under various companies, including Kerr-McGee, until operations ceased in 2003. On May 20, 2008, the Trustees and Tronox LLC (Tronox), the property owner, entered into a memorandum of agreement to perform a cooperative assessment under the Natural Resource Damage Assessment (NRDA) regulations to address potential natural resource damages liability for releases of hazardous substances at or from the Facility. After Tronox declared bankruptcy in 2009 and the Bankruptcy Court approved a Consent Decree and settlement agreement, the natural resource damage assessment became a direct Trustee effort. The Trustees determined, as part of the bankruptcy claim, that there had been injury to freshwater aquatic benthic habitat at three perennial streams at or downstream of the Facility: Days Creek, Howard Creek, and Waggoner Creek. In addition, there was potential injury to riparian and bottomland hardwood habitats adjacent to Days and Howard creeks.

In this RP/EA, the Trustees have selected five restoration actions to restore those natural resources injured due to releases at or from the Facility by: 1) acquiring tracts associated with Caddo Lake, the Neches River, and Talbot Prairie; 2) restoring and enhancing bottomland hardwoods within the Mineola Nature Preserve in Wood County; and 3) constructing wetlands, preserving forested habitat, and stabilizing, restoring, and enhancing freshwater streams in the Texarkana area. The Trustees will implement these actions pursuant to the terms of the settlement of natural resource damage claims for the Facility. The Trustees may elect to utilize remaining restoration funds from the NRDA settlement, as well as interest earned on these recoveries, to pay for the Trustees' administrative costs to develop and implement the alternatives and to potentially supplement the selected restoration alternatives, increasing the size of the NRDA-funded conservation.

Summary of Proposed Action

Selected Restoration Alternatives	Alternative Cost
Alternative 3: Caddo Lake Habitat Acquisition Project	\$5,900,000
Alternative 4: Days Creek Enhancement and Restoration Projects for Cowhorn, Days, Howard, Swampoodle, and Waggoner creeks	\$9,800,000
Alternative 7: Mineola Nature Preserve Projects	\$500,000
Alternative 8: Neches River Bottomland Forest Conservation	\$2,200,000
Alternative 10: Talbot Prairie and Forest Land Acquisition	\$1,000,000
Total Proposed Restoration:	\$19,400,000

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviations	Definition
AR	Administrative Record
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
C.F.R.	Code of Federal Regulations
COC	Chemical of Concern
DOI	United States Department of the Interior
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
The Facility	Former Kerr McGee Chemical Corporation wood treating facility in Bowie County, Texas
FONSI	Finding of No Significant Impact
GLO	Texas General Land Office
H&H	Hydrology and Hydraulic
Kerr-McGee	Kerr-McGee Chemical Corporation
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act of 1966
NOAA	National Oceanic and Atmospheric Administration
NPAT	Native Prairies Association of Texas
NRDA	Natural Resource Damage Assessment
NWR	National Wildlife Refuge
PAH	Polycyclic Aromatic Hydrocarbons
PCP	Pentachlorophenol
RCRA	Resource Conservation and Recovery Act
RP/EA	Restoration Plan/Environmental Assessment
TCEQ	Texas Commission on Environmental Quality
TCF	The Conservation Fund
TexReg	Texas Register
TNC	The Nature Conservancy
TPWD	Texas Parks and Wildlife Department

Tronox	Tronox LLC
the Trustees	TCEQ, TPWD, GLO, and USFWS
TWC	Texas Water Commission (predecessor agency to the TCEQ)
U.S.C.	United States Code
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
WMA	Wildlife Management Area

1.0 INTRODUCTION

This Restoration Plan/Environmental Assessment (RP/EA) was developed by the Texas Commission on Environmental Quality (TCEQ), Texas Parks and Wildlife Department (TPWD), Texas General Land Office (GLO), and the United States Fish and Wildlife Service (USFWS) acting on behalf of the United States Department of the Interior (DOI) (collectively, the Trustees). This RP/EA describes how the Trustees will use recovered funds to address natural resources (including associated ecological services) that were injured, lost, or destroyed due to releases of hazardous substances at or from the former Kerr-McGee Chemical Corporation (Kerr-McGee) wood-treating facility in Texarkana, Bowie County, Texas (the Facility).

The Facility property included approximately 500 acres of upland and bottomland hardwoods, including the floodplains of Days, Howard, and Waggoner creeks (see Figure 1-1). The Facility was built in 1905 and operated under various companies before being acquired and operated by Kerr-McGee in 1969. Operations at the Facility included treating railroad ties and other railroad timber products with a creosote-based preservative. The creosote was released to the surface soil and subsequently leached to groundwater. It traveled off-site into the nearby creeks by overland flow and the discharge of groundwater from seeps. Treating operations at the Facility ceased in 2003, and the production Facility was decommissioned in 2004. In 2005, Kerr-McGee transferred ownership of the Facility to Tronox LLC (Tronox). On June 23, 2006, Anadarko Petroleum Corporation acquired what remained of Kerr-McGee.

In 2008, the Trustees began an assessment to identify whether natural resources were injured by the releases of creosote and other hazardous substances at or from the Facility. Through this assessment, the Trustees determined that the releases caused injury to freshwater aquatic and benthic habitats at three perennial streams at or downstream of the Facility: Days Creek, Howard Creek, and Waggoner Creek (Figure 1-1). In addition, there was potential injury to riparian and bottomland hardwood habitats adjacent to Days and Howard creeks.

While the Trustees were conducting the damage assessment, Tronox declared bankruptcy. In 2009, the Trustees filed a claim for natural resource damages with the Bankruptcy Court. Pursuant to the settlement agreements approved by the Bankruptcy Court, the Trustees received nearly \$21.3 million to compensate the public for natural resources injured at the Facility. The Trustees have prepared this RP/EA to describe how the recovered funds will be used to restore, replace, or acquire the equivalent of the natural resources injured, and to provide the public with an opportunity to comment on these proposed actions.

This RP/EA presents the range of alternatives that the Trustees considered and identifies the selected alternatives which the Trustees believe will restore natural resources injured by the releases of hazardous substances at or from the Facility. The selected restoration alternatives are all located within northeast and east Texas and would be implemented by the Trustees in conjunction with local partners.

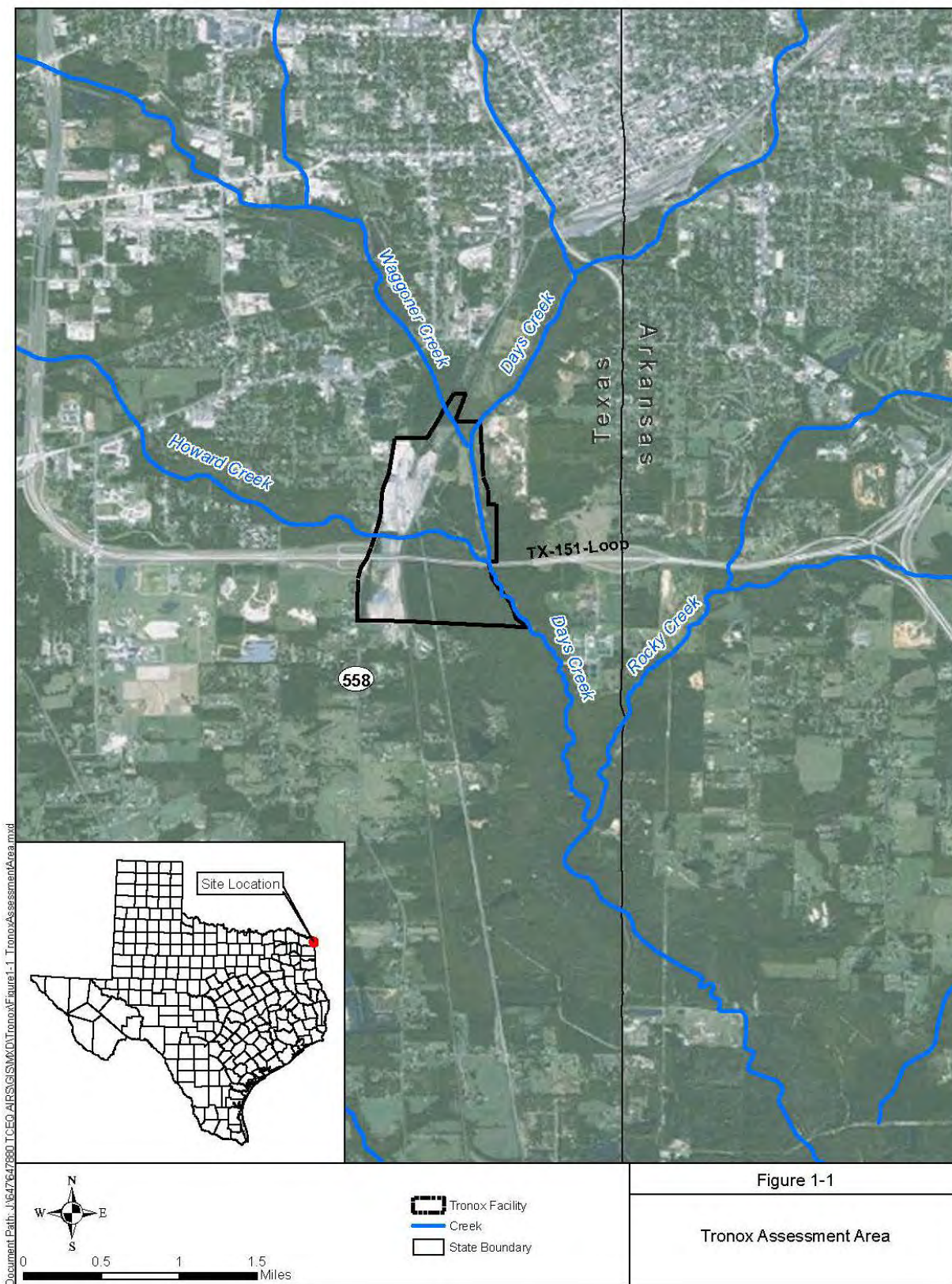


Figure 1-1 Tronox Assessment Area

1.1 Authority

This RP/EA was prepared jointly by the Trustees pursuant to their respective authorities and responsibilities as natural resource trustees under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §§ 9601 *et seq.*, and other applicable federal and state laws. Relevant regulations include Subpart G of the National Oil and Hazardous Substances Pollution Contingency Plan (40 C.F.R. §§ 300.600 through 300.615), and DOI's regulations at 43 C.F.R. Part 11, which provide guidance for the NRDA process under CERCLA. In addition, the Texas Water Code provides for recovery of costs to determine impacts on the environment of a spill or discharge and to restore land and aquatic resources held in trust or owned by the State (Tex. Water Code § 26.265).

In addition to addressing the remediation of contaminated sites, CERCLA establishes liability for the injury to, destruction of, or loss of natural resources caused by releases of hazardous substances. Damages recovered for these losses must be used to restore, replace, or acquire the equivalent of the injured natural resources and services, in accordance with a restoration plan developed by the designated natural resource trustees.

Pursuant to 43 C.F.R § 11.23(e), to determine whether to proceed with an assessment, the Trustees must establish that 1) a release of hazardous substance occurred; 2) natural resources for which the Trustees may assert trusteeship under CERCLA have been or are likely to have been adversely affected by the release; 3) the quantity and concentration of the released hazardous substance is sufficient to potentially cause injury to those natural resources; 4) data sufficient to pursue an assessment are readily available or likely to be obtained at reasonable cost; and 5) response actions, if any, carried out or planned do not or will not sufficiently remedy the injury to natural resources without further action.

Pursuant to their respective authorities and responsibilities as natural resource trustees under CERCLA, the Trustees determined that releases of hazardous substances at or from the Facility resulted in injuries or potential injuries to natural resources under their jurisdiction. The Trustees undertook this restoration planning effort to restore those natural resources and services injured as a result of releases at or from the Facility. Restoration activities are intended to restore or replace habitats, species, and services to their baseline condition and to compensate the public for the time natural resources are injured until they recover to baseline conditions.

1.2 NEPA Compliance

Actions undertaken by the federal Trustees to restore natural resources or services under CERCLA and other federal laws are subject to the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321 *et seq.*, and the regulations guiding its implementation at 40 C.F.R. Parts 1500 - 1508. NEPA requires federal agencies to consider the potential environmental impacts of proposed federal actions. It provides a mandate and framework for federal agencies to determine if proposed actions will have significant environmental effects and related social and economic effects. According to the regulations at 40 C.F.R. § 1508.9, an environmental assessment (EA) is a concise public document designed to (1) help determine whether to prepare an environmental impact statement (EIS) or a finding of no significant impact (FONSI), (2) aid an agency's compliance with NEPA when the agency determines no EIS is necessary, and (3) facilitate preparation of an EIS when one is necessary. If a federal agency determines through an EA that

a proposed action will not significantly impact the quality of the human environment, the agency will issue a finding of no Significant Impact (FONSI) concurrent with the Trustees' issuance of a Final RP/EA describing the selected restoration action(s).

USFWS is the lead federal Trustee for preparing this RP/EA pursuant to NEPA. The state Trustee agencies (TCEQ, TPWD, and GLO) are acting as cooperating agencies for the purposes of compliance with NEPA in the development of this RP/EA. This RP/EA describes the purpose and need for restoration actions; provides opportunity for public comment; summarizes the current environmental setting; identifies alternative actions; and determine their applicability and potential impact of the restoration actions on the quality of the physical, biological, and cultural environment.

Based upon a review and evaluation of the information contained in this final RP/EA as well as other documents and actions of record, the USFWS, as the lead federal Trustee for preparing this RP/EA pursuant to NEPA, in cooperation with the state Trustees, has determined that the selected restoration alternatives in this RP/EA do not constitute a major Federal action significantly affecting the quality of the human environment under the meaning of section 102 (2) (c) of the National Environmental Policy Act of 1969 (as amended). As such, an environmental impact statement is not required, and the USFWS has prepared and issued a FONSI (Chapter 9).

1.3 Purpose and Need for the Proposed Action

The purpose of this RP/EA is to identify and analyze the reasonable range of alternatives that the Trustees have developed to address natural resource injuries. The proposed actions are needed to restore those natural resources and services lost to the public as a result of the releases of hazardous substances at or from the Facility, and to compensate the public for the loss of those services pending restoration. The Trustees developed the restoration alternatives based on criteria evaluated in this RP/EA and input received from the public.

1.4 Compliance with Other Authorities

In addition to CERCLA and NEPA, other legal requirements may apply to NRDA planning or implementation. These may include:

- Endangered Species Act (16 U.S.C. §§ 1531 *et seq.*),
- National Historic Preservation Act (16 U.S.C. §§ 470 *et seq.*),
- Federal Water Pollution Control Act (Clean Water Act, 33 U.S.C. §§ 1251 *et seq.*),
- Fish and Wildlife Coordination Act (16 U.S.C. §§ 661 *et seq.*),
- Migratory Bird Treaty Act (16 U.S.C. §§ 703-712), and
- Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668-668c).

The Trustees will ensure compliance with authorities, consultations, and permitting applicable to the selected restoration alternatives prior to implementation.

In addition to compliance with these statutes and regulations, the Trustees will consider relevant environmental or economic programs or plans that are ongoing or planned in or near the affected

environment, and they will ensure that restoration projects neither impede nor duplicate such programs or plans. By coordinating restoration projects identified in this RP/EA with other relevant restoration programs and plans, the Trustees will enhance the overall effort to restore and improve the environment and resources affected by the releases of hazardous substances at or from the Facility.

1.5 Public Participation

Public participation and review is an integral part of the restoration planning process. CERCLA and NEPA provide a mandate and a framework for the Trustees to inform and involve the public in their environmental analysis and decision-making processes. The Trustees have integrated both the CERCLA and NEPA processes in this RP/EA.

On March 11, 2016, the Trustees issued a request in the *Texas Register* (41 TexReg 2008) for project ideas in counties in northeast and east Texas that would restore, rehabilitate, or conserve forested riparian, bottomland hardwoods, aquatic, and/or wetland habitats. In response to the request for scopes of work, the Trustees received 12 project ideas, which are identified in Section 3.2 of this RP/EA. In November 2016, the Trustees requested additional information from the entities that submitted projects. The Trustees used this information to develop a reasonable range of alternatives that could restore those resources injured as a result of the releases of hazardous substances at or from the Facility.

On October 26, 2018, the Trustees announced a Draft RP/EA in the *Texas Register* (43 TexReg 7251) and published the document on the U.S. Department of the Interior's (DOI) Natural Resource Damage Assessment and Restoration Program case map and document library. The public was encouraged to review and comment on the Draft RP/EA during a 30-day comment period using a mailing address and an email address. The public comment period ended on November 26, 2018. The Trustees received a total of 14 submissions from private citizens, elected officials, city and county officials, educational institutions, and non-governmental organizations. Chapter 6 of this document provides further detail on the public comment process and includes a summary of all public comments received on the Draft RP/EA and the Trustees' responses.

1.6 Administrative Record

The Trustees maintain records documenting the information considered and actions they have taken during this NRDA process. These records comprise the Trustees' administrative record (AR) supporting this RP/EA. Documents germane to the development of this RP/EA are included in the AR. The AR is available for public review and may be requested by contacting Mr. Mike Cave by email at michael.cave@tceq.texas.gov or at the address provided below.

Texas Commission on Environmental Quality
MC-136, P.O. Box 13087
Austin, TX 78711-3087

Arrangements must be made in advance to review or obtain copies of the AR. Access to and copying of the AR is subject to all applicable laws and policies including, but not limited to, laws and policies relating to copying fees and the reproduction or use of any copyrighted material.

2.0 OVERVIEW AND BACKGROUND

The restoration alternatives proposed in this RP/EA are intended to restore those natural resources injured, lost, or destroyed due to releases of hazardous substances at and downstream of the Facility in Texarkana, Bowie County, Texas. This includes the loss of the services associated with injuries to benthic freshwater habitats and associated potential injuries to adjacent riparian, bottomland hardwood and wetland habitats.

This chapter describes the Facility and its operational history, the environment impacted by the Facility, and summarizes the response actions undertaken to address contamination released at or from the Facility. This chapter also details and summarizes the bankruptcy and NRDA settlement.

2.1 Overview of the Facility Site

The former wood-treating Facility is located at 2513 Buchanan Road in Texarkana, Bowie County, Texas (Figure 1-1). The Facility was built in 1905 and operated under various companies before being acquired and operated by Kerr-McGee in 1969. Wood-treating operations at the Facility ceased in late 2003, and the production Facility was decommissioned in 2004. In 2005, Kerr-McGee transferred its chemical business, including the Facility, to Tronox. On June 23, 2006, Anadarko Petroleum Corporation acquired what remained of Kerr-McGee.

The Facility property includes approximately 500 acres of upland and bottomland hardwoods and floodplains of Days, Howard, and Waggoner creeks. The properties north, south, and east of the Facility are mostly undeveloped. Residential dwellings are located west and northwest of the Facility. Liberty-Eylau Independent School District's C. K. Bender Elementary School is located on Buchanan Road immediately northwest of the Facility. Recent development in the general area has included new highways, subdivisions, and a prison system facility.

Figure 1-1 shows Days, Waggoner, and Howard creeks in relation to the Facility. Days Creek flows through the eastern-most portion of the Facility. Waggoner Creek enters the northern portion of the Facility from the northwest and flows for approximately 0.25 miles through the Facility to Days Creek. Howard Creek enters the Facility west of State Route 558 (i.e. Buchanan Road) and flows for 0.75 miles roughly parallel to State Loop Highway 151 bisecting the Facility. Stands of hardwood can be found along the creeks and within the undeveloped portions of the Facility. Image 1 shows the confluence of Days and Howard creeks. After exiting the Facility property, Days Creek flows to the south into Arkansas before joining the Sulphur River (downstream of Lake Wright Patman) about 10 miles south of the Facility. Approximately 362 acres of the property (78%) lies within the 100-year floodplain; however, the areas inundated during flood events drain rapidly as Days Creek recedes from flood stage.



Image 1 Confluence of Days Creek and Howard Creek (July 2017)

The past operations area of the Facility consisted of a drip pad, treated and untreated wood storage areas, wood-treating cylinders, chemical storage tanks, and wastewater lagoons. Facility products included railroad timbers treated with creosote-based preservatives. The wood-treating process used at the Facility included a drying phase which, as an industry standard, used an aqueous solution containing 0.25% sodium fluoride and 1.75% arsenic trioxide. The chemicals used in the preservation process included creosote, which contained polycyclic aromatic hydrocarbons (PAHs) and 2% pentachlorophenol (PCP). The Facility discontinued use of PCP in the wood preservation process in 1984.

During the wood-treating process, four pressure vessels were used to dry the wood by live steam or boultonizing, followed by pressure creosote impregnation. Wastes produced from this process included equipment washdown water, boiler blowdown, and discharges from various pumps and equipment seals. Before 1989, wastewaters generated by the wood-treatment process were treated in American Petroleum Institute oil-water separators prior to being discharged through a series of six surface impoundments that provided treatment and retention. Prior to construction of the six surface impoundments, wastewaters were allowed to flow into natural depressions located just east of the impoundments.

2.2 Impacted Environment

This section briefly describes the physical and biological environments of the area potentially affected by the releases at or from the Facility.

2.2.1 The Physical Environment

The Facility is located in the headwaters of the Red River and Sulphur River watersheds. The bottomland floodplain ecosystem directly impacted by activities at the Facility is described further in the sections below. Three creeks were identified as impacted by releases from the Facility: Days Creek, Howard Creek, and Waggoner Creek. In addition, the adjacent deciduous and riparian deciduous forests transported materials released from the Facility to the creek channels through surface water runoff or groundwater discharge and were also potentially impacted by releases.

Days, Howard, and Waggoner creeks are perennial streams with riffle/run habitat, pools ranging from 1 to greater than 6 feet deep, and shallow, low-energy depositional areas (See Figure 1-1 and Image 1).

2.2.1.1 Days Creek

Days Creek flows through the eastern most portion of the Facility, from the Facility's northern- to southern-most boundaries. Originally, Days Creek flowed closer to the Facility's operational area, and the lower reach of Howard Creek was part of Days Creek. However, Days Creek was diverted to its present location in the 1940s. The top bank width of Days Creek, adjacent to the Facility, ranges from 60 to 120 feet including primary flow channels, sandbars, and secondary high-water flow channels. Banks are generally incised, ranging from 6 to 12 feet in height. During normal flow regimes, water channel depths range from only a few inches in riffle areas to 1 to 4 feet in the deeper pools. Days Creek sediments consist of cobbles, pebbles, gravels, and coarse sands in riffle zones and higher energy flow areas. The Days Creek sand bars within this reach consist of gravels, coarse to very fine sands, and sandy to silty clays, with organic material in the lower energy flow areas (Trustee site investigations, AquAeTer & Kerr-McGee 1994, Exponent 1999a). Image 2 shows Days Creek adjacent to the Facility.



Image 2 Days Creek (July 2017)

2.2.1.2 *Howard Creek*

Howard Creek enters the Facility from just west of Buchanan Road and flows for 0.75 miles roughly parallel to State Loop Highway 151 in the southern portion of the Facility property. The Howard Creek sediments range from cobble, pebble, gravel, and coarse-grained sands in the upper reaches at the western property line to gravel and fine-grained sands from mid-reach on the Facility property to its confluence with Days Creek. The top bank width of Howard Creek ranges from 10 to 40 or more feet. Approximate normal flow water depths range from less than 1 foot over most of the reach through the Facility to 3 to 4 feet at the confluence of Days and Howard creeks. Bank heights range from 4 to 6 feet where Howard Creek enters the Facility to 6 to 8 feet at its confluence with Days Creek (Trustee site investigations, AquAeTer & Kerr-McGee 1994, Exponent 1999a). Image 3 shows Howard Creek adjacent to the Facility.



Image 3 **Howard Creek (July 2017)**

2.2.1.3 *Waggoner Creek*

Waggoner Creek enters the northern portion of the Facility from the northwest and flows for approximately 0.25 miles through the Facility to Days Creek. The Waggoner creek-top bank width averages approximately 70 feet. The channel includes primary channels, sandbars, and secondary high-water flow channels. Banks are incised with bank height ranging from 10 to 12 feet. Approximate normal flow water width ranges from 5 to 10 feet with water depths ranging from less than 1 foot to 3 feet. Creek sediments consist of cobble, pebble, gravel, and coarse-grained sands in high-energy flow areas and silty

to sandy clays in low-energy flow and shallow pooled areas (Trustee site investigations, AquAeTer & Kerr-McGee 1994, Exponent 1999a). Image 4 shows the confluence of Waggoner Creek and Days Creek near the Facility.



Image 4 Confluence of Days Creek (right) and Waggoner Creek (left) (July 2017)

2.2.2 The Biological Environment

The forested areas adjacent to Waggoner, Howard, and Days creeks in the vicinity of the Facility have been identified as deciduous and riparian deciduous forest. This section includes descriptions of these habitats and associated species of the impacted environment.

Deciduous Forest: The deciduous forest classification is used for areas in which the tree canopy is comprised of deciduous species. Two subdivisions have been recognized based on differences in canopy species composition and location: 1) upland deciduous forest in slightly more elevated areas and 2) bottomland forest where flooding occurs seasonally. On the slightly more elevated surfaces, sweet gum, water oak, and American elm dominate the tree canopy. In areas of slightly lower elevation and/or closer to stream and pond edges, the tree canopy is comprised of black willow, plains cottonwood, green ash, and American elm. Other common species found in this second subdivision include Chinese and common privet, greenbriar, wild grapes, mimosa trees, Chinese tallow, box elder, pecan, black walnut, trumpet flower, and other vines.

Riparian Deciduous Forest: The riparian deciduous forest classification is found along Howard and Waggoner creeks at the Facility and Days Creek at and below the Facility. The dominant tree canopy species along the creeks are river birch, sycamore, and plains cottonwood. Other tree species include

white mulberry, box elder, green ash, American elm, water oak, and winged elm. Under-story species include Chinese and common privet, stinging nettle, inland sea oats, salt pennywort, widow's tears, green briar, poison ivy and poison oak, wild grape, and buttonbush. The invasive species Chinese tallow was noted along Days Creek in 2017.

Flora and Fauna: The terrestrial habitat on and adjacent to the Facility and the combined creeks support numerous bird species. Bird species are represented by predators (e.g., Coopers hawk and the great horned owl), cavity nesters (e.g., red-bellied woodpeckers and Carolina chickadee), wading birds (e.g., snowy egrets and great blue herons), and seed eaters (e.g., northern cardinal). Most bird species observed occupy the forest habitats and edge habitats between the forest and the grasslands. In addition, the aquatic habitats in the creeks provide stopover habitat for other migratory avian species.

Reptiles have been observed throughout the three creeks. Turtle species found in the area were the red-eared slider, common musk turtle, and river cooter turtle. Common snapping turtles are also suspected to inhabit the area. Three-toed box turtles and pallid spiny softshell turtles have also been observed in the upper reaches of Waggoner Creek and Days Creek. Alligators have also been reported in the area (Exponent 1999a).

Frogs and toads were observed and heard in and around the three creeks and the Facility property. Their distribution is widespread over the surrounding area. Species such as the leopard frog, the chorus frog, and the red-spotted toad have been observed in the upper reaches of Waggoner Creek and are suspected further downstream in Days and Howard creeks (Exponent 1999b).

Scat and tracks at the Facility indicate the area is utilized by deer, eastern cottontail rabbits, and raccoons. These appeared to be common terrestrial mammals in the area. Slides and wildlife trails along the banks of the three creeks indicate the presence of wild pigs. The eastern gray squirrel has been spotted on the Facility property and adjacent properties. No mammal surveys have been conducted, but evidence such as burrows and tracks indicate mice, voles, raccoons, and deer are common in the Facility and riparian areas.

The in-stream environment of the combined creeks provide habitat for benthic invertebrates. The aquatic species present include, but are not limited to, golden shiner, red shiner, blackspot shiner, bullhead minnow, western mosquito-fish, redbfin shiner, warmouth, longear sunfish, green sunfish, bluegill, spotted sunfish, largemouth bass, grass pickerel, yellow bullhead, and gar. Additionally, benthic resources such as mollusks, crustaceans, and various families and species of insects occupy vegetated and open water areas (AquAeTer & Kerr-McGee 1994, Exponent 1999a and 1999b). Image 5 shows a fish bed in Howard Creek. These beds were common in all three creeks adjacent to the Facility in July 2017.



Image 5 Fish Bed in Howard Creek (July 2017)

Two community studies were conducted in the Days Creek watershed in conjunction with sediment sampling in 1994 and 2004 (Crowe 1995, Cook & Buttram 2006). Crowe (1995) concluded, based on fish and benthic macroinvertebrate data, that the aquatic life use in the Days Creek watershed was impaired when compared to the least-impacted reference sites within the area. Cook & Buttram (2006) found that species tolerant of adverse conditions were well represented and only one intolerant species (a darter) was collected.

2.2.3 Threatened and Endangered Species

The Endangered Species Act (ESA) of 1973 (16 U.S.C. §§ 1531 *et seq.*) requires federal agencies to conserve endangered and threatened species and to conserve the ecosystems upon which these species depend. As part of describing the biological environment of the affected area, the Trustees considered the known distribution and potential occurrence of protected species for Bowie County. The creeks provide aquatic habitat and water resources to threatened and endangered species that may be present or may historically have been present in the area, such as the alligator snapping turtle.

The potential occurrence of federally-or state-listed species in the vicinity of the Facility is summarized in Table 2-1. The species listed were obtained from the most recent Bowie County list developed and maintained by the TPWD (2017) and the USFWS Environmental Conservation Online System (ECOS). Table 2-1 provides a brief evaluation of the likely presence or absence of the species at the Facility.

Table 2-1 Federal and State Threatened and Endangered Species – Bowie County

Common Name	Status ¹		Potentially Present in Facility Habitats ²		Comments
	Federal	State	Forest	Creeks	
Reptiles					
Alligator snapping turtle	--	T	No	Yes	Creeks could provide sufficient habitat, especially in lower reaches with deeper depths
Northern scarlet snake	--	T	Yes	No	Found in mixed hardwood scrub on sandy soils, semi-fossorial
Timber rattlesnake	--	T	Yes	Yes	Riparian area and heavily vegetated floodplains provide good habitat
Fishes					
Blackside darter	--	T	No	Yes	Sulfur River basin. Prefers clear, gravelly streams with pools and some current
Creek chubsucker	--	T	No	Yes	Found in small rivers and creeks of various types
Birds					
Bachman’s sparrow	--	T	Yes	No	Found in open pine woods with scattered brushes and grassy understory
Interior least tern	LE	E	No	Yes	Nests along braided streams and rivers and manmade structures
Piping plover	LT	T	PM	PM	Rare migrant only, Facility is not within designated critical habitat
Red Knot	LT		PM	PM	Ground foragers, pecking to obtain some surface foods in the wintering and migratory feeding grounds.
Wood stork	--	T	Yes	Yes	Forages in prairie ponds, flooded pastures or fields, ditches

Common Name	Status ¹		Potentially Present in Facility Habitats ²		Comments
	Federal	State	Forest	Creeks	
Mammals					
Rafinesque’s big-eared bat	--	T	Yes	Yes	Roosts in cavity trees of bottomland hardwoods

1. Listing status under the federal Endangered Species Act and/or Texas rules: LE, LT = Federally Listed Endangered/Threatened; C = Federal Candidate for Listing, formerly Category 1 Candidate; DL= Federally Delisted; E, T = State Listed Endangered/Threatened. The species are listed based on TPWD's Bowie County Annotated County List of Rare Species, Last Revision 5/4/2017. USFWS Environmental Conservation Online System (ECOS) for the Facility area was also consulted – no critical habitats in the area, Least tern could be present.

2. Habitats available to wildlife are broadly divided into the forest, which includes bottomland hardwood forest and deciduous forest, and the riparian habitats associated with the creeks. Known or potential occurrences in the respective habitats of representatives of particular species are indicated as: "No" = absent or highly unlikely; "Yes" = present or highly likely to be present; and "PM" = potential migrant (i.e., if present, likely to be very occasional).

2.3 Summary of Facility Response Actions

The hazardous waste generated at the Facility was held in six surface impoundments located west of Waggoner Creek. Bottom sediment and sludge generated from the treatment of wastewater during wood preserving processes that use creosote and/or PCP are listed as hazardous wastes, classified as K001 under the Resource Conservation and Recovery Act (RCRA) hazardous waste rules in 40 C.F.R. § 261.32.

During an assessment completed in 1985, the Texas Water Commission (TWC), now TCEQ, identified the presence of creosote in the upper aquifer and discharge of the constituents to Waggoner Creek. On September 30, 1986, the TWC issued Solid Waste Registration No. SWR-31002 to Kerr-McGee for the Facility. On March 31, 1987, the TWC issued Compliance Plan No. CP-50076 (Compliance Plan) in conjunction with Hazardous Waste Permit No. HW-50076. In accordance with the Compliance Plan's corrective measures, Kerr-McGee began groundwater monitoring, groundwater corrective action, and dense non-aqueous phase liquid recovery at the Facility. Voluntary corrective measures for groundwater remediation were implemented at the Facility from 1988 to approximately 1993. These corrective measures included subsurface barriers and a groundwater pump-and-treat system to remove creosote and other hazardous substances from the groundwater. In addition to complying with the performance standards of the Compliance Plan, Kerr-McGee was required to comply with the requirements of the Hazard Waste Permit No. HW-50076, which includes responding to newly identified releases of hazardous substances. The six surface impoundments were closed as required by the closure plan in the Hazardous Waste Permit during 1988 and 1989. The groundwater pump-and-treat system, sampling, and remedial investigations continued at the Facility until 2009, when Tronox filed for bankruptcy.

Currently, the Facility is owned and managed by the Greenfield Environmental Multistate Trust LLC (Greenfield). Greenfield, in its representative capacity as trustee of the Multistate Environmental Response Trust (the Multistate Trust), assumed responsibility for the Facility pursuant to the Consent Decree and Environmental Settlement Agreement approved by the United States Bankruptcy Court (New York) on February 14, 2011. The Multistate Trust was established by the Consent Decree and Environmental Settlement Agreement and is responsible for implementing all environmental actions at the Facility including the groundwater pump-and-treat system. Other required environmental actions include the characterization and cleanup of the Facility and all post-closure care obligations.

2.4 Summary of Resource Injury

The Trustees conducted an assessment to identify the nature and extent of natural resource injuries attributable to releases of hazardous substances at or from the Facility, to quantify the resulting natural resource and ecological service losses, and to provide the technical basis for determining the need for, type of, and amount of restoration appropriate to compensate the public for those losses.

The assessment process is guided by NRDA regulations issued under CERCLA and found at 43 C.F.R. Part 11. A number of factors are considered in identifying and quantifying natural resource injuries, including, but not limited to:

- Hazardous chemicals of concern (COCs);
- Specific natural resources and ecological services of concern;

- Evidence indicating exposure, pathway and injury;
- Mechanism(s) by which injury to natural resources of concern would occur;
- Type, degree, spatial and temporal extent of injury; and
- Type(s) of restoration that would be appropriate and feasible for use as compensation.

As part of the assessment, the Trustees must determine if an injury (a measurable adverse change resulting either directly or indirectly from exposure to a release of a hazardous substance) occurred. There must be a release of hazardous substance and a pathway that caused natural resources to be exposed to the hazardous substance. A “pathway” is defined as the route or medium (e.g., water or soil) through which hazardous substances are transported from the source of contamination to the natural resource of concern (43 C.F.R. § 11.14(dd)). The Trustees concluded that processing activities, surface water runoff from the Facility, and groundwater discharges were the transport pathways to the affected habitats of Days, Howard, and Waggoner creeks. The COCs transported from the Facility via these pathways included PAHs, PCP, and arsenic.

Sediment data have been collected from Days, Howard, and Waggoner creeks by several entities, including the Department of Water Resources, the Trustees, Kerr-McGee and their contractors, the TCEQ (including its predecessor agencies), and Tronox and their contractors. All studies conducted identified elevated levels of PAHs within the creeks that consistently exceeded established ecotoxicological thresholds. The sediment data also identified concentrations of arsenic and PCP high enough to cause injury in portions of Days and Howard creeks. These studies identified the Facility as the most significant contributor of PAH and arsenic to these water bodies adjacent to and downstream of the Facility. The Trustees determined that releases of creosote and other hazardous substances at or from the Facility injured benthic freshwater habitats in Days, Howard, and Waggoner creeks and potentially injured adjacent riparian and bottomland hardwood habitats. More information about the Trustees’ injury determination can be found in the 2009 Natural Resources Damage Assessment Claim (TPWD et al., 2009).

2.5 Summary of Settlement

On May 20, 2008, Tronox and the Trustees entered into a memorandum of agreement to perform a cooperative restoration-based assessment to address potential natural resource damage liability for releases of hazardous substances at or from the Facility. However, on January 12, 2009, Tronox, Inc.¹ filed for protection under Chapter 11 of the Bankruptcy Code in the United States Bankruptcy Court for the Southern District of New York (*In re Tronox Incorporated, et. al.*, Case No. 09-10156). In light of the bankruptcy filing and short timeline to file a proof of claim, the federal and state Trustees developed a

¹ Tronox, Inc. was formed as a holding company to hold the limited liability company membership interests in Tronox Worldwide LLC, the parent company of Tronox LLC.

joint claim for natural resource damages which they filed with the Bankruptcy Court. Subsequently, the State filed a separate claim for natural resource damages and past assessment costs.

On January 26, 2011, the Bankruptcy Court approved a Consent Decree and Settlement Agreement (Order Granting the U.S. Motion to Approve the Consent Decree and Environmental Settlement Agreement, Case No. 09-10156), the details of which were published for public comment in the Texas Register (35 TexReg 10777, December 3, 2010). On November 10, 2014 the United States District Court, Southern District of New York, approved the Settlement Agreement in the fraudulent conveyance lawsuit (*In re Tronox Incorporated, Tronox Incorporated, et. al., v. Anadarko Petroleum Corporation, et. al.*, Case No. 1:14-cv-05495-KBF) filed against Kerr-McGee and its parent company, Anadarko Petroleum Company. As part of these two settlements, the Trustees received \$21,292,395.06 for natural resource damages: \$7,336,099.60 for the State of Texas Trustees natural resource damage claim, and \$13,956,295.46 for the joint State of Texas Trustees and DOI natural resource damage claim. The State of Texas Trustees funds and the joint State of Texas Trustees and DOI funds have been held in respective jointly managed interest-bearing accounts within the Texas Treasury Safekeeping Trust Company and the DOI Natural Resource Damage Assessment and Restoration Fund, pending their use for restoration projects to restore the natural resources injured by releases of hazardous substances from the Facility.

3.0 RESTORATION SCOPING AND SCREENING PROCESS

The Trustees preferentially seek to restore injured natural resources in kind (e.g., create new wetlands to compensate for lost wetland function) and in the geographical vicinity affected, while working to maximize ecosystem benefit and provide cost-effective restoration as a whole. However, in-kind restoration is not always possible or feasible or may not otherwise fit the restoration selection criteria, and in those instances, enhancement or acquisition of alternative resources that provide similar ecological benefits may be appropriate. Increased benefits and improved cost effectiveness may often be obtained by addressing several injured resources and/or services or classes of injury with a single restoration project.

The Trustees approached restoration planning with the view that the injured resources and associated services lost are part of an integrated ecological system including northeast and east Texas watersheds, and that the South Central Plains ecoregion (see Image 6) represents the relevant geographical area for appropriate restoration actions. Further, the Trustees determined that forested riparian, bottomland hardwoods, aquatic, and/or wetland habitats would provide natural resources or services equivalent to the aquatic and benthic communities of Days, Waggoner and Howard creeks, which are the primary injury associated with the release of hazardous substances from the Facility. This approach ensures that the benefits of restoration actions are related, or have an appropriate nexus, to the resource injuries and service losses due to releases of hazardous substances at or from the Facility.

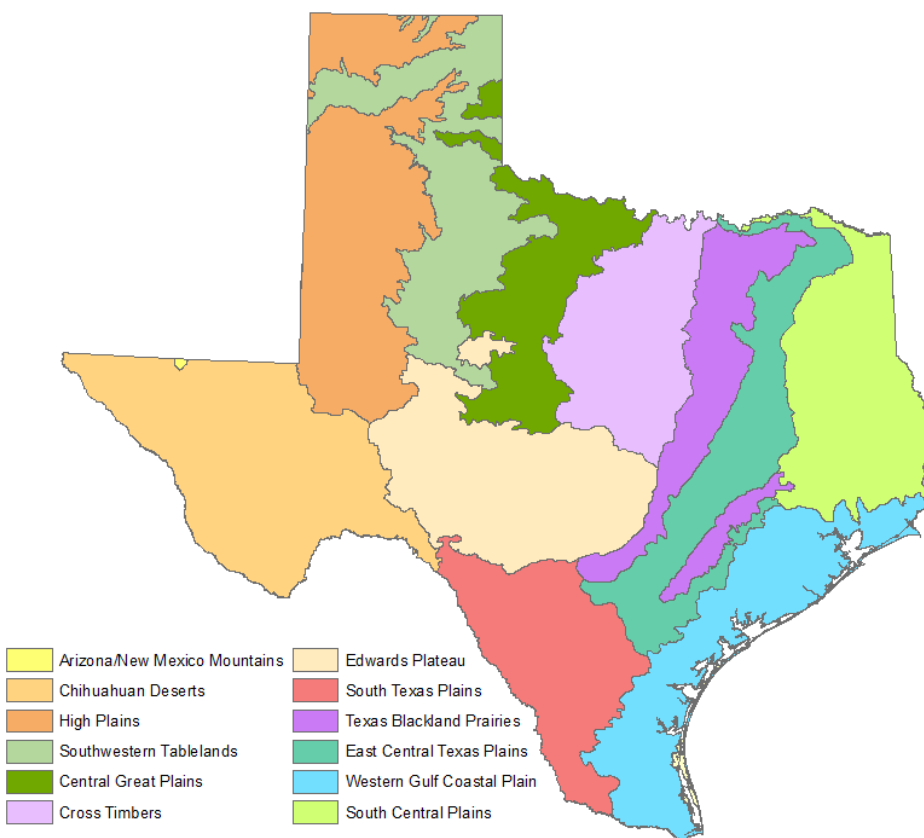


Image 6 Ecoregions of Texas

In accordance with the NRDA regulations, the Trustees identified and evaluated a reasonable range of alternatives capable of restoring ecological services comparable to those lost due to injury to natural resources from releases at the Facility. The alternatives identified and evaluated in this RP/EA are also consistent with NEPA's requirement that the Trustees analyze the environmental consequences of the proposed action, including the environmental consequences of alternatives to the proposed action, as well as a no action alternative. This chapter describes the process through which the Trustees evaluated the 13 restoration alternatives proposed in this RP/EA.

3.1 Affected Area

This section describes the environment of the area(s) to be affected by any proposed alternatives being considered, with emphasis commensurate with the importance of the impact on those resources (40 C.F.R. §1502.15).

The South Central Plains ecoregion, locally termed the "piney woods," is the western edge of the southern coniferous forest belt (Griffith *et al.*, 2007). Once blanketed by a mix of pine and hardwood forests, much of the region is now in loblolly and shortleaf pine plantations. Soils are mostly acidic sands and sandy loams. Covering parts of Louisiana, Arkansas, northeast Texas, east Texas, and Oklahoma, only about one sixth of the region is in cropland, primarily within the Red River floodplain, while about two thirds of the region is in forests and woodland. Lumber, pulpwood, oil, and gas production are major economic activities for this ecoregion. Distinct sub-regions within the South Central Plain ecoregion include the Tertiary Uplands, the Floodplain and Low Terraces, and the Flatwood sub-regions.

The Tertiary Upland sub-region of the South Central Plains can generally be characterized as gently to moderately sloping, covering a large area in northeast Texas, east Texas, southern Arkansas, and northern Louisiana. Numerous small streams dissect the landscape, and the region contains a large diversity of habitats and species. The natural vegetation has been altered by multiple timber harvests and commercial pine plantation activities. Many areas of the ecoregion are replanted to loblolly pine for timber production or are in improved pasture. Lumber and pulpwood production, livestock grazing, and poultry production are typical land uses. Oil and gas production activities are also widespread.

The Floodplains and Low Terraces of the South Central Plains ecoregion comprise the western margin of the southern bottomland hardwood communities that extend along the Gulf and Atlantic coastal plains from Texas to Virginia. Within the South Central Plains, this area is generally delineated by a distinct vegetation change into bottomland oaks (*Quercus* spp.) and gum (*Nyssa* spp.) forest. In Texas, the region includes sections of the Sulphur River, Big Cypress Bayou, Sabine River, Angelina River, Neches River, and Trinity River. Active, meandering alluvial river channels are dynamic systems, with erosion and deposition reworking the topography of levees, ridges, and swales. Overbank flooding, subsurface groundwater, and local precipitation recharges water levels in backswamps, pools, sloughs, oxbows, and depressions of this floodplain region. Wetness and flooding present severe limitations for agriculture. A few of the higher terraces may have some pasture, but most of the region has deciduous forest land cover. Silviculture activities range from selective tree removal to clearcutting to, in some areas, replacement with pine monoculture. Reservoirs have inundated large areas of this habitat and altered downstream hydrology. The bottomland forests provide important wildlife habitat with a high diversity of species. One estimate

of east Texas bottomlands fauna listed 119 fish, 36 amphibian, 59 reptile, 279 bird, and 48 mammal species (Wilkinson *et al.*, 1987).

Mostly flat to gently sloping, the Flatwoods of the South Central Plains ecoregion occurs on Pleistocene sediments in southeast Texas and southwest Louisiana. Some flatwood landscapes are characterized by pimple mounds, small hillocks that are abundant across the flats. This region is warmer, wetter, flatter, less dissected, and lower in elevation than the other sub-regions. Almost all of the Big Thicket National Preserve is within this sub-region. The area has a long history of modification, particularly by the lumber, railroad, and oil and gas industries that contributed to boom and bust cycles of development and occupancy (Gunter 1993). Historically, longleaf pine flatwoods and rare wetland savannas with bluestem grasses and other herbaceous species in understory dominated this region. A high diversity of plant and animal species can also be found here (Griffith *et al.*, 2007).

Specific information on the affected environment and environmental consequences for each alternative is provided in subsequent discussions in Sections 4.2 and 4.3.

3.2 Restoration Evaluation Criteria

The Trustees' first step in developing restoration alternatives was to identify the criteria by which they would evaluate potential restoration actions. Consistent with the factors listed in the NRDA regulations (43 C.F.R. § 11.82(d)), the Trustees identified the following criteria for use in evaluating restoration alternatives:

Criterion #1: Alternative provides direct ecological benefits to forested riparian, bottomland hardwoods, aquatic, and/or wetland habitats in the identified geographic area: The primary goal of any restoration alternative is to provide a level and quality of resources and services comparable to those lost due to the assessed injuries. To determine if a proposed restoration alternative meets the goal of this criterion, the Trustees considered factors such as the potential relative productivity of the habitat to be restored and whether the habitat is being created or enhanced. Proximity to the injury, the quality and type of habitat, and whether the restoration provides benefits to more than one resource are considered. At a minimum, restoration alternatives considered in this RP/EA had to provide ecological benefits to forested riparian, bottomland hardwoods, aquatic, and/or wetland habitats in the identified geographic area.

Criterion #2: Technical feasibility: Technical feasibility means that the technology and management skills necessary to implement a restoration alternative are well known and that each element of the plan has a reasonable chance of successful completion in an acceptable period of time. In evaluating the restoration alternatives in this RP/EA, the Trustees considered whether the restoration alternative would be adequately protected for the long term, as well as any potential difficulties in implementation, including acquisition of state and federal permits. The Trustees also considered if the alternative is self-sustaining and if long-term maintenance of project features will likely be necessary and feasible.

Criterion #3: Cost effectiveness: The benefits provided by an alternative relative to its cost are an important factor in evaluating restoration alternatives. Cost effective or cost effectiveness means that when two or more activities provide the same or a similar level of benefits, the least costly activity will be selected. Factors that can affect the costs of implementing the restoration alternatives were considered and include project management costs, costs of personnel, overhead, project location, timing, complexity of

construction and access to the restoration site (e.g., with heavy equipment), acquisition of necessary land, scale of the project, and the potential liability from project construction. The timeline to complete all project activities and availability of match funding was also considered by the Trustees.

Criterion #4: Reasonable probability of success: Restoration alternatives must have a reasonable probability of being successfully implemented. The Trustees evaluated if project success depended on factors outside of the project implementor's control. The Trustees considered the capacity and previous successes of project proponents and project teams, including if management measures are likely to be maintained after project completion. Project roles and responsibilities for all project partners must be clearly defined. A commitment for future action and management, including financial support from partners, must be identified.

Criterion #5: Measurable results: Restoration alternatives must identify and quantify measures of success for project components during the implementation and describe how those measures relate back to project goals and objectives to restore injuries to natural resources resulting from releases at or from the Facility. Project components should provide measurable success criteria and monitoring methodology and address corrective action strategies to ensure achievement of the project objectives.

Criterion #6: Avoids collateral injury to natural resources: Restoration alternatives should not result in additional losses of natural resources and should minimize the potential to affect surrounding resources during implementation. Restoration alternatives less likely to adversely impact surrounding resources are generally viewed more favorably. Compatibility of a restoration alternative with the surrounding land use and potential conflicts with endangered species are also considered.

Criterion #7: Effect of each alternative on public health and safety, and compatibility with the remediation process: Restoration alternatives that would negatively affect public health, public safety, or remedial actions were not considered by the Trustees.

Criterion #8: Consistency with federal, state, or local laws, regulations, or policies: Restoration alternatives that are inconsistent with laws, regulations, or policies were not considered by the Trustees.

Criterion #9: Alternative is not already required by existing laws, regulations, permits, settlements, or enforcement orders, including anticipated requirements such as mitigation requirements or draft permits unrelated to the project scope of work: Restoration alternatives already required as part of other regulatory or enforcement actions are not appropriate and were not considered by the Trustees.

3.3 Solicitation of Project Ideas from the Public

After developing the restoration evaluation criteria, the Trustees released a public request for project ideas on March 11, 2016 to involve the public early in this process. In response, the Trustees received 12 project proposals from a variety of interested parties. The Trustees reviewed the submitted project ideas and requested additional information from the proponents. Brief descriptions of the 12 project ideas submitted in response to the Trustees' March 11, 2016, request are provided below. Figure 3-1 shows the project locations in relation to the Tronox Facility.

Big Thicket Acquisition and Conservation: This project idea involved acquisition and protection of about 1,200 acres of bottomland hardwood forest. Upon acquisition, the property would transfer to the United

States National Park Service to be incorporated into the Big Thicket National Preserve. The property is east of Lumberton in Hardin County. The project proponent estimated the total project cost to be \$2,400,000.

Bottomland Hardwood Restoration and Chinese Tallow Eradication: This project idea involved removal and treatment of Chinese tallow, an invasive species, and planting of native hardwood species in the Stephen F. Austin Experimental Forest within the Angelina National Forest and in the Alazan Bayou Wildlife Management Area (WMA). Habitat improvement activities would be implemented throughout 4,000 acres of conservation lands in Nacogdoches County. The project proponent estimated the total project cost to be \$1,700,000.

Caddo Lake Habitat Acquisition Project: This project idea involved the protection through fee title acquisition or conservation easement of land in two tiers of acquisition: Tier 1) approximately 3,900 acres at an estimated cost of \$7,200,000 and Tier 2) approximately 1,000 acres at an estimated cost of \$2,300,000. The properties are adjacent to the Caddo Lake WMA and Caddo Lake National Wildlife Refuge (NWR), effectively increasing the contiguous size of conserved lands. Properties include a variety of wetland and upland ecosystems. The properties are located within Marion and Harrison counties. The project proponent estimated the total project cost to be approximately \$9,500,000.

Days Creek Watershed Comprehensive Aquatic Ecosystem Restoration: This project idea consisted of 22 project components located in Bowie County adjacent to, upstream of, and immediately downstream of the Facility, and involved the construction and/or restoration of about 350 acres within the Days Creek watershed, including approximately 100 acres of freshwater wetlands, 100 acres of riparian habitat, and 100 acres of open water aquatic habitat. The project proponent estimated the total project cost to be \$20,000,000.

Longview Arboretum and Nature Center: This project idea involved funding the Phase 1 construction of a public park in Gregg County. The proposal includes the development of a nature center, gardens, and associated infrastructure. The project is part of a Master Plan for the property. The project proponent estimated the total project cost of Phase I development to be approximately \$1,100,000.

Mineola Nature Preserve: This project idea involved the restoration and enhancement of bottomland hardwoods within the 2,911-acre Mineola Nature Preserve in Wood County. Restoration activities include plantings, hydrological work to improve drainage to restore natural hydrology, and mechanical land clearing (i.e. mulching/grinding activities) to remove large woody debris caused by flooding. The project proponent estimated the total project cost to be \$500,000.

Neches River Bottomland Forest Conservation: This project idea involved the acquisition and protection of approximately 6,900 acres of land, including approximately 5,900 acres of riparian bottomland hardwood forest along the Neches River in Anderson, Cherokee, Trinity Counties. The acquisition would expand the network of protected tracts associated with the Davy Crockett National Forest and Neches River NWR. The project proponent estimated the total project cost to be approximately \$13,600,000.

Sulphur Springs Wastewater Treatment Plant Wetlands Habitat: This project idea involved the construction of at least 100 acres of wetlands for water quality enhancement and the purchase of an additional 100 acres of wetlands around Lake Sulphur Springs in Hopkins County for preservation and

recreational use. The created wetlands would be intended for water quality enhancement. The project proponent estimated the total project cost to be approximately \$6,000,000.

Talbot Prairie and Forest Land Acquisition: This project idea involved the acquisition and protection of at least 370 acres of land, including 140 acres of endemic *Silveanus dropseed* prairie and 230 acres of hardwood forest, 75% of which is seasonally flooded. The property is located southwest of New Boston in Bowie County. The project proponent estimated the total project cost to be approximately \$1,000,000.

Tonkawa Sandhills Land Acquisition Project: This project idea involved the acquisition of at least 4,900 acres for preservation and restoration in the Tonkawa Sandhills of Rusk and Nacogdoches Counties. The area includes riparian and bottomland hardwood forest, natural springs, and hydric bogs as features of the sandhill ecosystem. The project proponent estimated the total project cost to be \$10,000,000.

T&J Hunting Properties #1 – Caddo Creek Bottom: This project idea involved the purchase of a conservation easement, to be held in perpetuity, for at least 111 acres of bottomland hardwoods in Panola County. Land would remain in original ownership, with hunting, fishing, and hiking rights reserved. The project proponent estimated the total project cost to be \$1,300,000 for the purchase of development rights.

T&J Hunting Properties #2 – Sabine River Frontage: This project idea involved the purchase of a conservation easement, to be held in perpetuity, for at least 30 acres of bottomland hardwoods in Panola County on the Sabine River. Land would remain in original ownership, with hunting, fishing, and hiking rights reserved. The project proponent estimated the total project cost to be \$500,000.

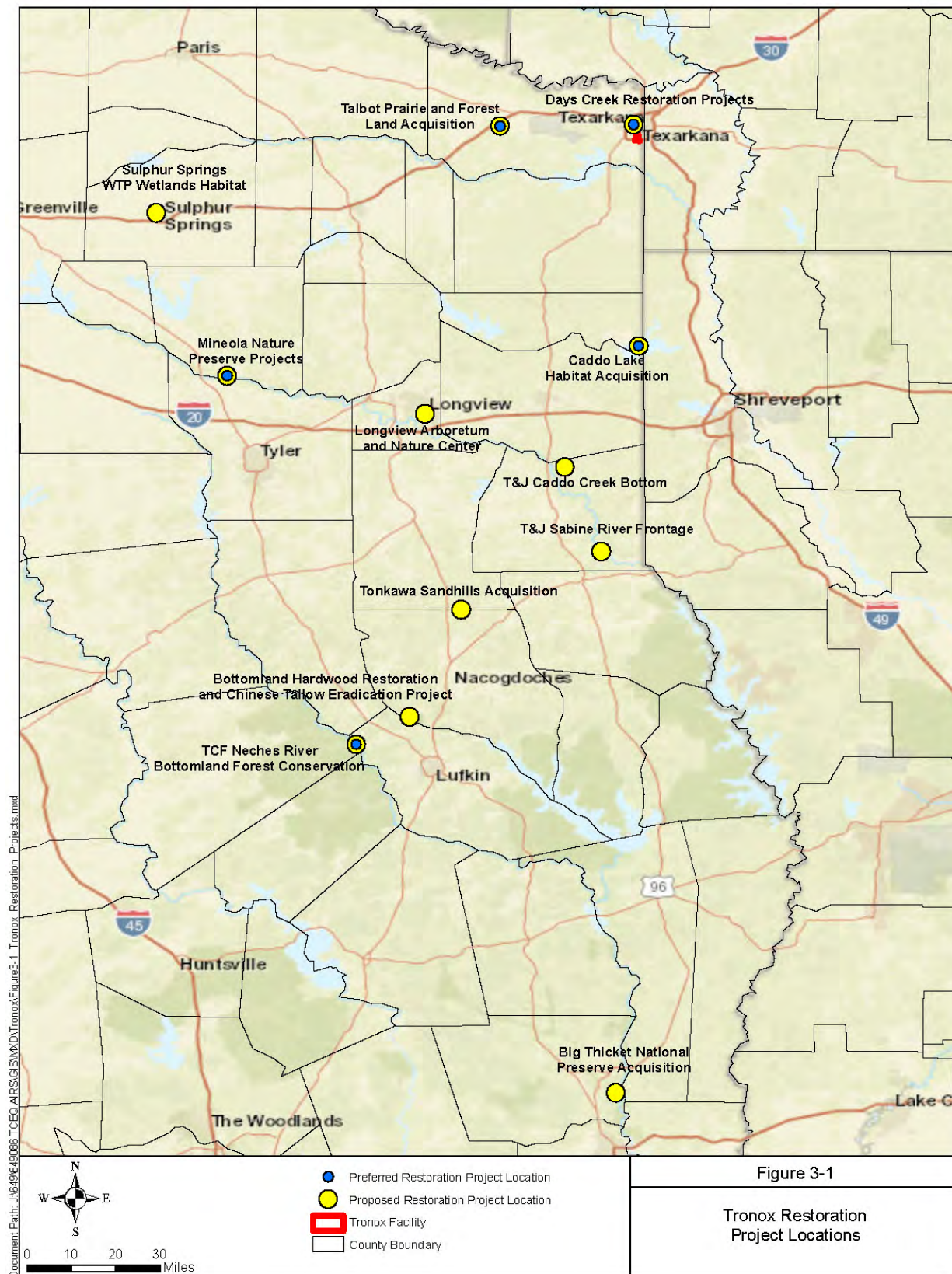


Figure 3-1 Tronox Restoration Project Locations

3.4 Development of Restoration Alternatives

After reviewing the submitted project ideas, the Trustees developed a suite of restoration alternatives to evaluate. The Trustees considered restoration actions that would provide natural resources and/or services of the equivalent type, quality, and comparable value as those impacted. Throughout this process, the Trustees emphasized projects that benefited the areas and natural resources directly affected by the historical releases of hazardous substances at or from the Facility in Texarkana, Texas. The Trustees also recognized that the affected natural resources are part of a larger ecological system comprising the freshwater, riparian, and bottomland hardwood habitats of east and northeast Texas. Under this approach, the Trustees are better able to compensate for natural resource injuries while also considering the multiple ecological benefits of restoration within the larger area.

The Trustees sought to strike a balance between restoration alternatives that would impact natural resources affected by releases at or from the Facility and restoration alternatives that could provide major ecological benefits to the South Central Plains ecoregion. The Trustees also weighed cost effectiveness with the amount and quality of ecological services each project provided when developing restoration alternatives. In some instances, the Trustees combined the elements of related projects into one restoration alternative for consideration. For example, the Trustees combined two similar easement acquisition properties into the T&J Hunting Properties alternative. In other instances, the Trustees separated out individual components of a project idea to develop multiple restoration alternatives. For example, the proposed Days Creek Watershed Comprehensive Aquatic Ecosystem Restoration project idea included 22 different project components. The Trustees grouped individual components into two alternatives: (1) components that would provide for the preservation and enhancement of forested riparian habitats as well as the naturalization and stabilization of urban stream channels which directly feed into the area of injury, and (2) components related to urban restoration, isolated wetland habitats and enhancement projects.

The Trustees developed 12 distinct restoration alternatives for evaluation, in addition to a “no action” alternative as required by 43 C.F.R. § 11.82(c)(2) and NEPA:

- Alternative 1: Big Thicket Acquisition and Conservation
- Alternative 2: Bottomland Hardwood Restoration and Chinese Tallow Eradication
- Alternative 3: Caddo Lake Habitat Acquisition
- Alternative 4: Days Creek – Enhancement and Restoration
- Alternative 5: Days Creek – Urban Wetland Restoration and Enhancement
- Alternative 6: Longview Arboretum and Nature Park
- Alternative 7: Mineola Nature Preserve – Restoration and Enhancement
- Alternative 8: Neches River Bottomland Forest Acquisition
- Alternative 9: Sulphur Springs Wastewater Treatment Plant Wetlands Habitat
- Alternative 10: Talbot Prairie and Forest Land Acquisition
- Alternative 11: Tonkawa Sandhills Land Acquisition
- Alternative 12: T&J Hunting Properties

- Alternative 13: No Action

Each Alternative is described below.

3.4.1 Alternative 1: Big Thicket Acquisition and Conservation

This alternative involves acquisition and protection of up to 1,200 acres of bottomland hardwood forest previously utilized as industrial forest land from a timber company, a willing seller. Upon acquisition, the property would transfer to the United States National Park Service to be incorporated into the Big Thicket National Preserve (BTNP).

The BTNP's unique natural features and species diversity have earned it designation as an International Biosphere Reserve and Globally Important Bird Area. Acquiring and permanently protecting the property would improve water quality, prevent fragmentation, reduce the effects of flooding, and conserve bottomland hardwoods, important wildlife habitat and habitat corridors. Over 1,320 species of trees, shrubs, vines, and grasses; 60 mammal species; 86 reptile and amphibian species; 34 species of freshwater mussel; 1,800 invertebrate species; 97 fish species; and 300 bird species have been identified within the BTNP. The targeted acquisition property contains habitat for the red-cockaded woodpecker and the Texas trailing phlox, two federally-listed species.

The BTNP is composed of 9 land units and 6 narrow water corridors, totaling approximately 110,000 acres separated by miles of privately held lands. The discontinuous nature of the BTNP makes its resources more vulnerable to negative effects from adjacent development and logging activities that fragment the natural landscape. The 2005 National Parks Conservation Association's "State of the Parks Report" rated the overall condition of natural resources at the BTNP as "fair" due to habitat fragmentation resulting from residential, commercial, industrial, and road development in the region.

The property is located east of Lumberton and north of Village Creek State Park in Hardin County near the confluence of Village Creek and the Neches River and adjacent to the Lower Neches River Corridor Unit of the BTNP (Figure 3-2). The property, which contains bottomland hardwood, wetlands, and parts of an inlet/island on the Neches River, would bridge the gap between Village Creek and the Neches River.

The estimated total cost of Alternative 1 is \$2,400,000.

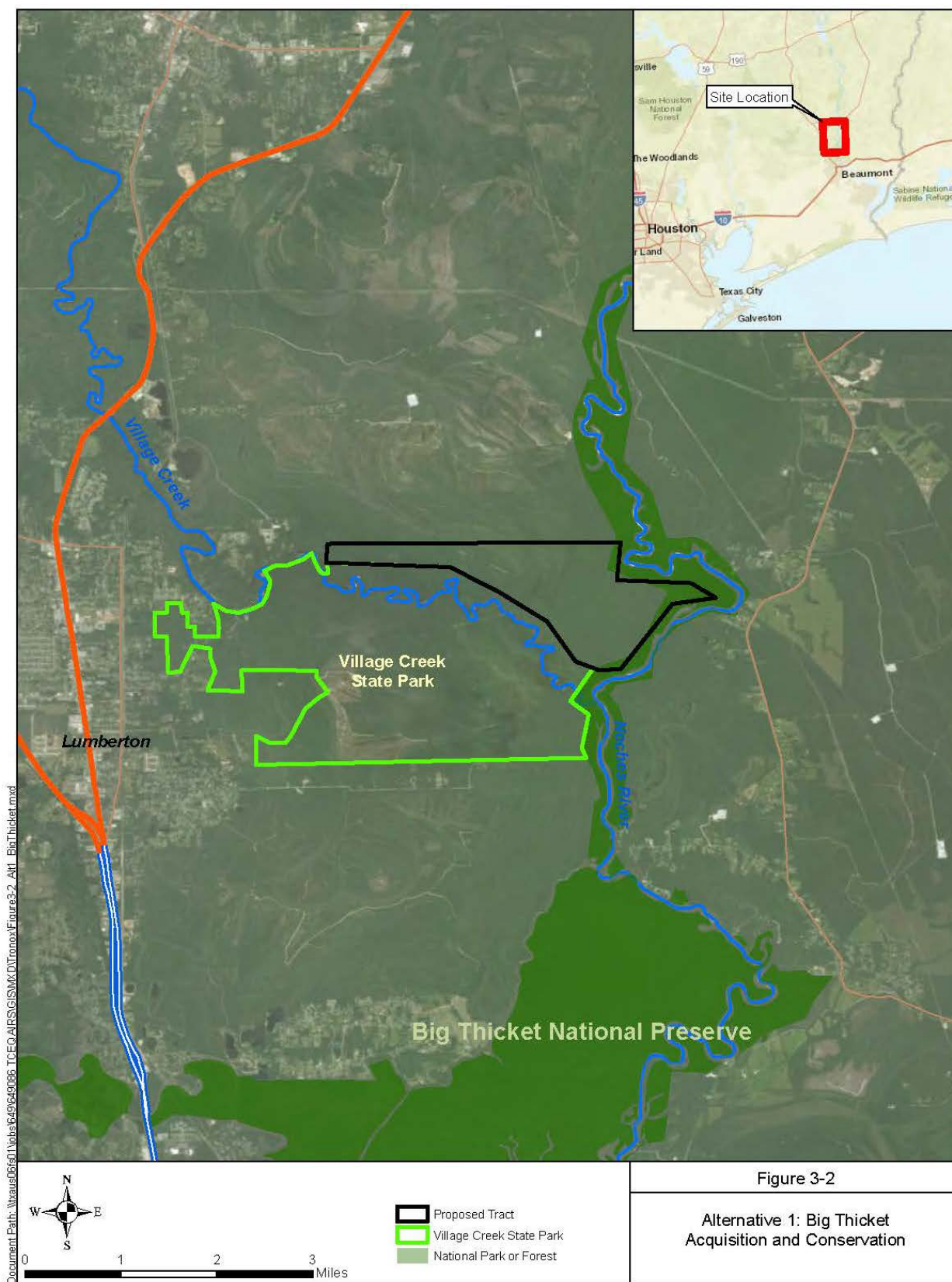


Figure 3-2 Alternative 1: Big Thicket Acquisition and Conservation

3.4.2 Alternative 2: Bottomland Hardwood Restoration and Chinese Tallow Eradication

This alternative involves treatment of Chinese tallow, an invasive species, and planting of hardwood species in Nacogdoches County within the Stephen F. Austin Experimental Forest, part of the Angelina National Forest. The area is bordered to the east by the Alazan Bayou WMA. The Alazan Bayou WMA also has a large bottomland/floodplain hardwood component and has a severe Chinese tallow infestation. Habitat improvement activities would be implemented throughout 4,000 acres of conservation lands along the Bayou Loco/Bonaldo Creek/Upper Angelina River watershed. The treatment area would include 1,800 acres in the Stephen F. Austin Experimental Forest and 2,200 acres in the Alazan Bayou WMA. The treatment area is also seasonally flooded, and improvements would support the long-term sustainability of important habitat and natural systems.

The Trustees expect the project would take at least 5 years to complete but could take longer in order to completely ensure the seedbank is devoid of Chinese tallow seeds and a sufficient number of hardwood species become established in the affected area. Because the area is seasonally flooded, Chinese tallow treatments would generally occur in late summer or early fall before seed maturity. Hardwood planting would occur during the dormant season.

Activities would include pesticide application to remove/reduce infestations of Chinese tallow, collection and propagation of acorns from suitable hardwood species, hardwood planting in suitable sites, and monitoring of success. Figure 3-3 shows the location of Alternative 2.

The estimated total cost of Alternative 2 is \$1,700,000.

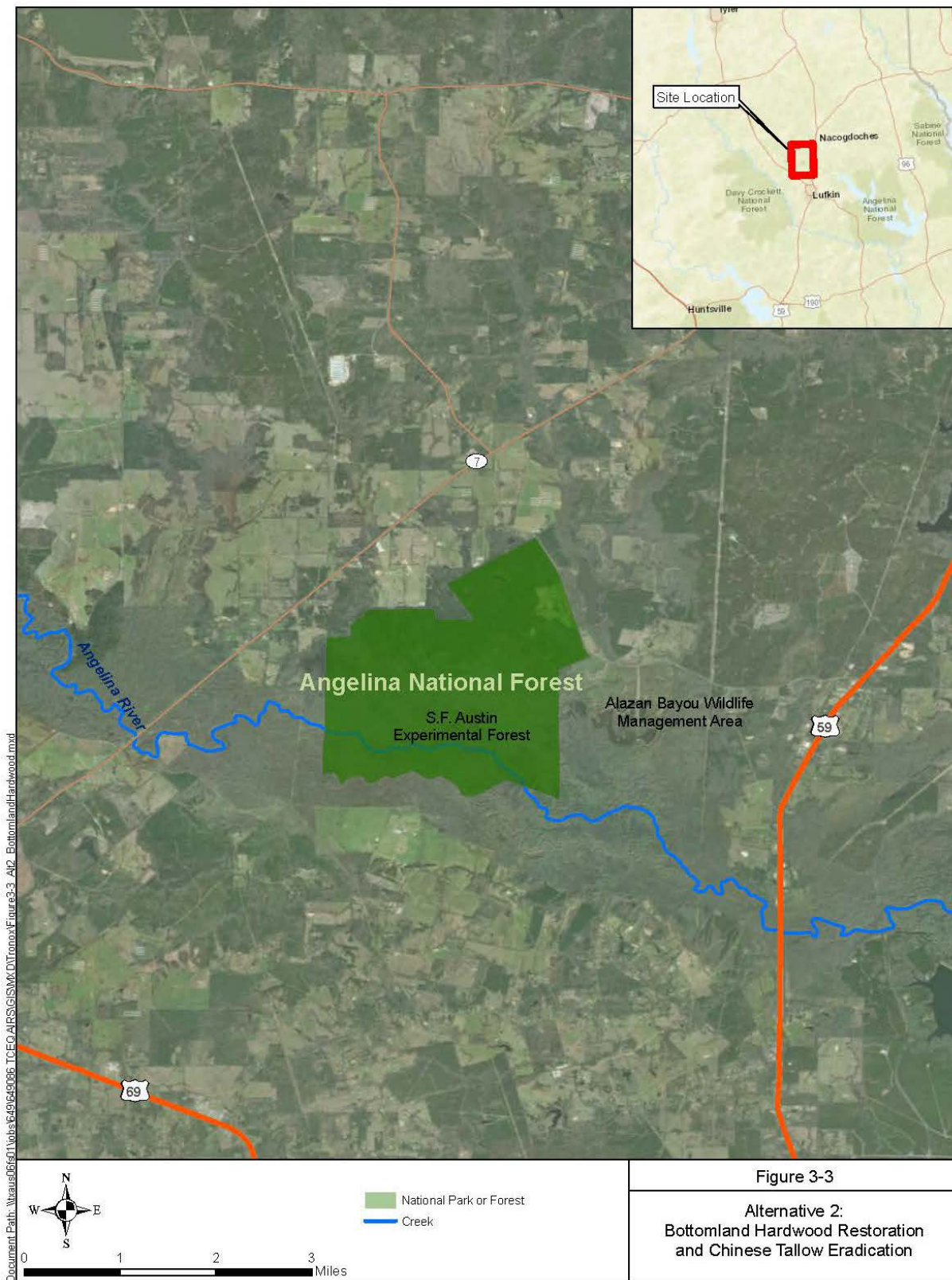


Figure 3-3 Alternative 2: Bottomland Hardwood Restoration and Chinese Tallow Eradication

3.4.3 Alternative 3: Caddo Lake Habitat Acquisition

The Trustees developed Alternative 3 to include the acquisition and protection of approximately 3,500 acres of swamp, slough, and headwaters habitat to better connect the landscape into either the Caddo Lake WMA or Caddo Lake State Park. Figure 3-4 shows the land acquisition area in relation to Caddo Lake State Park, the Caddo Lake NWR, and the Caddo Lake WMA.

The Caddo Lake system includes Caddo Lake, the only natural freshwater lake in Texas, and its upstream network of bayous, sloughs, and forested wetlands. Caddo Lake is a highly productive ecosystem and serves as a vibrant recreational fishery and habitat for waterfowl and other wildlife. Much of Caddo Lake's backwater system is already managed for conservation purposes as the Caddo Lake State Park, Caddo Lake WMR, and the Caddo Lake NWR, for a combined acreage of approximately 18,100 acres of protected land. Despite these efforts, these protected areas are fragmented, and threats posed by invasive species and development persist. There is a critical need to acquire and preserve a contiguous headwater ecosystem for Caddo Lake.

Several protected species are known to be present in the Caddo Lake system and are likely found within the properties proposed for acquisition: wood storks, bald eagles, paddlefish, Rafinesque's big-eared bat, alligator snapping turtles, northern scarlet snake, timber rattlesnake, southern hickorynut mussel, Louisiana pigtoe mussel, and the plant species earth-fruit. The targeted properties also contain habitat for earth fruit (*Geocarpon minimum*) and the Neches River rose-mallow (*Hibiscus dasycalyx*), two federally-listed species. Many of these species are also present in the Facility area (see Table 3-1) in Bowie County, presenting an opportunity to positively influence the populations of protected species that may have been impacted at the Facility.

The estimated total cost of Alternative 3 is \$5,900,000.

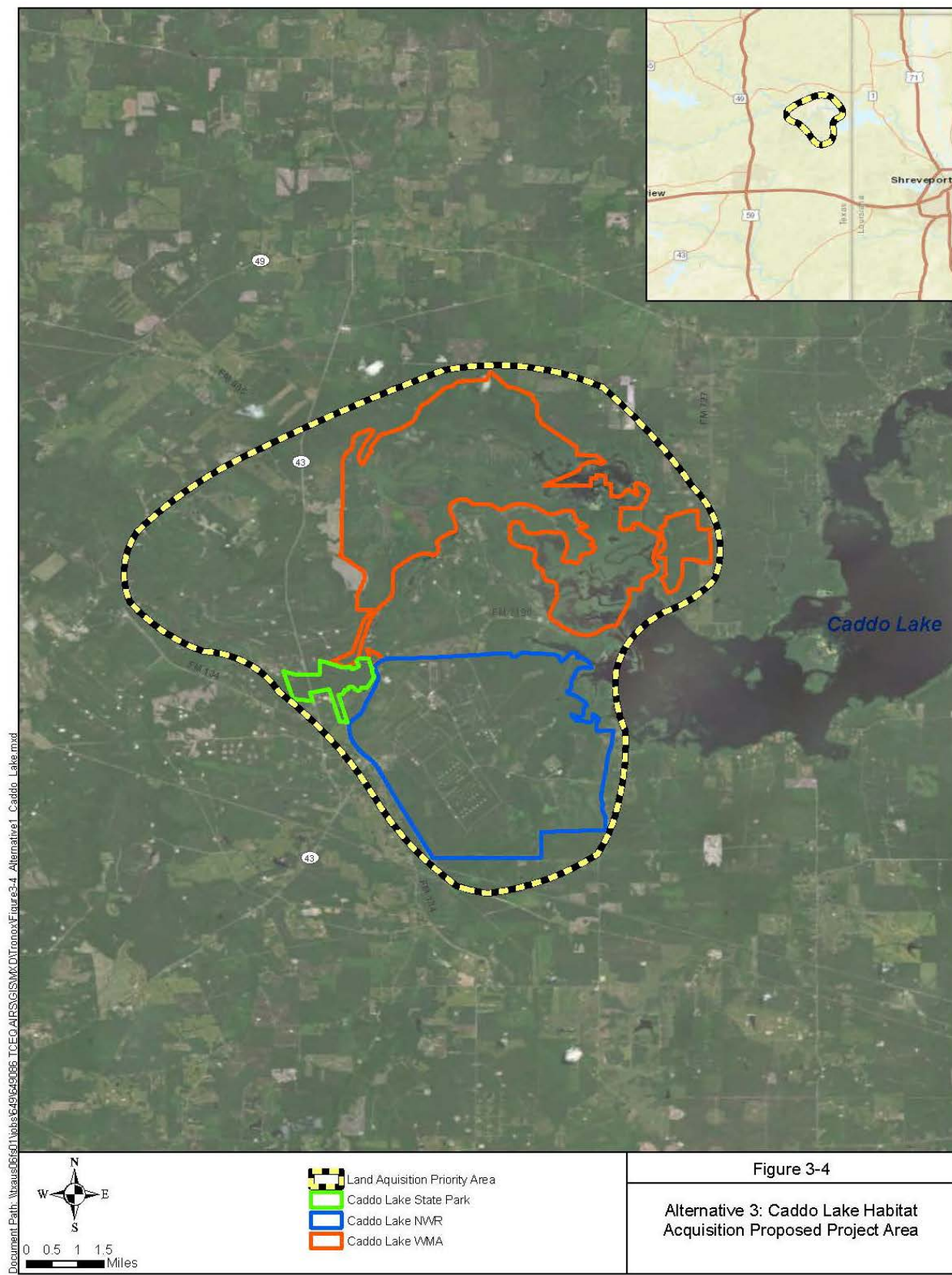


Figure 3-4 Alternative 3: Caddo Lake Habitat Acquisition

3.4.4 Alternative 4: Days Creek Enhancement and Restoration

The Trustees developed Alternative 4 by combining various components of the Days Creek Watershed Comprehensive Aquatic Ecosystem Restoration project idea into an alternative that would preserve and enhance approximately 200 acres of forested riparian habitats and restore and stabilize about 6 miles of urban creek channels. This alternative would restore and enhance the urban ecosystem upstream of and near the Facility. Figure 3-5 shows the project components and their geographic extent in relation to the City of Texarkana and the Facility.

This alternative includes restoration, creek channel stabilization, and preservation of riparian and bottomland habitats along Cowhorn, Days, Howard, Swampoodle, and Waggoner creeks in Texarkana. Most of the Upper and Middle Days Creek sub-watershed in Texarkana is urbanized. Creek channels have been streamlined, canopy cover reduced or eliminated, and urban development borders the creeks throughout the watershed. Much of the shoreline has been planted and maintained with turfgrass. The following are descriptions of individual project components proposed by the City of Texarkana that the Trustees incorporated into this alternative.

Cowhorn Creek Enhancement - This combination of project components would result in restoration of Cowhorn Creek from its headwaters near Richmond Road to below its confluence with Waggoner Creek. Figure 3-5 shows the extent of restoration planned along Cowhorn Creek in relation to the City of Texarkana and the Facility. In general, Cowhorn Creek is an urban channel with eroding banks. The channel is incised with no connection to active floodplains and lacks a riparian corridor.

- Project Component 1: Naturalization of approximately 2,600 linear feet of creek channel along Cowhorn Creek near the Convention Center. Additional actions include planting and expansion of bottomland hardwood habitats along this reach. Estimated project costs are \$300,000.
- Project Component 2: Stabilization of approximately 11,000 linear feet of eroding banks with bioengineering and approximately 9,200 linear feet of native planting along Cowhorn Creek. Bioengineering includes the use of riprap made of natural materials (e.g., brushwood, vegetation, and brush layers) to stabilize the banks as an alternative to lining the banks with concrete. Project component costs are estimated to be \$550,000.
- Project Component 3: Restoration of the natural alignment, stabilization, and enhancement of approximately 3,000 linear feet along Cowhorn Creek near Texarkana Community College and Berkey Park Road. This component also includes the preservation of an estimated 2.5 acres of forested habitat adjacent to this reach, and the creation of approximately 6 acres of wetlands through the restoration of the meandering creek channel. Project component costs are estimated to be \$1,350,000.

Days Creek Enhancement - These two project components would preserve and enhance wetlands along Days Creek (see Figure 3-5).

- Project Component 4: Preservation in perpetuity of approximately 32 acres of wet forested habitat and enhancement of approximately 36 acres of wet forested habitat east of the Facility and Days Creek. This land is currently owned by the City and consists of high quality deciduous hardwoods. Project component costs are estimated to be \$40,000.

- Project Component 5: Preservation by third-party conservation easement in perpetuity of approximately 100 acres of high quality forested riparian habitat along Days Creek, south of the Texas Viaduct. Project component costs are estimated to be \$110,000.

Howard Creek Enhancement - Figure 3-5 shows the extent of restoration planned along Howard Creek in relation to the City of Texarkana and the Facility.

- Project Component 6: Restoration and enhancement of approximately 2,000 linear feet along Howard Creek and the construction of approximately 23 acres of wetlands adjacent to Howard Creek between Flower Acre Road and Bender Road. Currently, the channel is in marginal to poor condition and has been widened and deepened to convey urban stormwater runoff. There is no connection to an active floodplain and the channel lacks riparian cover. The top of the bank is mowed grass, predominantly common Bermuda. Project component costs are estimated to be \$1,000,000.

Swampoodle Creek Enhancement - These project components would result in restoration of Swampoodle Creek from its headwaters near Ferguson Park to its confluence with Days Creek. Figure 3-5 shows the extent of restoration planned along Swampoodle Creek in relation to the City of Texarkana and the Facility.

- Project Component 7: Construction of approximately 2.85 acres of wetlands and removal of concrete liner along a tributary of Swampoodle Creek at Ferguson Park. The existing concrete-lined channel is 10 feet wide, approximately 2.5 to 3.0 feet deep, and 2,000 linear feet in length with no natural banks or creek beds. Mowed grass is the predominate ground cover and the creek segment through Ferguson Park is in a severe channel condition. The channel is incised and excavated with no natural access to an active floodplain. Aquatic habitat and riparian and bottomland hardwood are not present. The channel receives direct, untreated runoff from a nearby parking lot. In this project component, wetlands would be created by allowing surface water to meander and sheet flow through parts of the landscape using bioswales. Project component costs are estimated to be \$3,700,000.
- Project Component 8: Naturalization and stabilization of approximately 11,000 linear feet of creek channel on Swampoodle Creek between Spring Lake Park and Days Creek. Swampoodle Creek flows directly into Days Creek north of the Facility. Currently, habitat conditions are highly degraded. A portion of the channel has concrete-lined banks and bed. The unlined channel is unstable with eroding banks. There is no aquatic habitat, no riparian corridor, or adjacent wetland habitat. The City of Texarkana would perform hydrology and hydraulic (H&H) modeling to determine the most effective methodology for channel stabilization. Potential actions under this project component include 1) removal of concrete lining, where applicable, 2) restoration of natural bed and bank conditions, 3) naturalization of channel alignment, and 4) an increase of areas with native plantings. Project component costs are estimated to be \$1,700,000.
- Project Component 9: Restoration of the natural alignment of approximately 1,700 linear feet of Swampoodle Creek. Currently, the channel is concrete lined with no access to an active floodplain. There is little to no aquatic habitat or riparian corridor. The bottomland hardwoods cleared from

the project site would be restored. This project component would remove the concrete lining, recreate the natural meander, and restore forested riparian habitat along this segment. Project component costs are estimated to be \$650,000.

Waggoner Creek Enhancement - Figure 3-5 shows the extent of restoration planned along Waggoner Creek in relation to the City of Texarkana and the Facility.

- Project Component 10: Creek channel and riparian habitat restoration of approximately 2,000 linear feet along Waggoner Creek east of Interstate 369. Moderate to good aquatic habitat conditions currently exist in this stretch of Waggoner Creek. Where banks are eroding, live staking, live fascines, and brush layers may be incorporated. In cleared areas that are currently a mix of grass and deciduous bottomland forest, the habitat would be restored to a more native state. Project component costs are estimated to be \$400,000.

The estimated total cost of Alternative 4 is \$9,800,000.

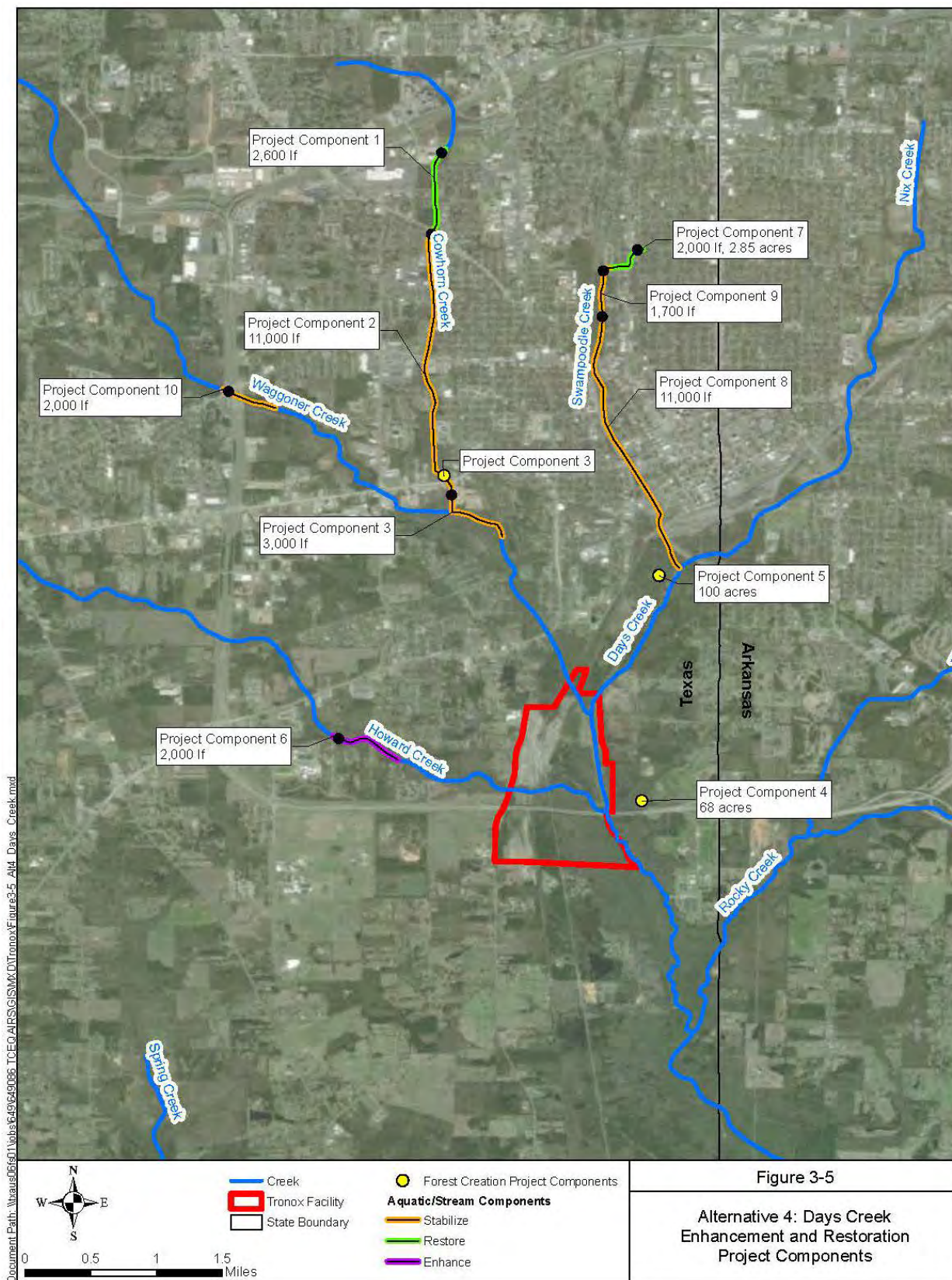


Figure 3-5 Alternative 4: Days Creek Enhancement and Restoration Project Components

3.4.5 Alternative 5: Days Creek – Urban Wetland Restoration and Enhancement

The Trustees developed Alternative 5 by combining various components of the Days Creek Watershed Comprehensive Aquatic Ecosystem Restoration project idea into an alternative focused on urban wetland restoration. This alternative includes urban wetland restoration and enhancement projects in and around the City of Texarkana within Days Creek, Swampoodle Creek, and Spring Lake Park. Many of the project components are located in upland mowed areas with limited or minimal aquatic habitat. Restoring and enhancing these areas to include wetlands, riparian cover, and bottomland trees would serve to manage or enhance surface water quality, create or enhance aquatic habitat, and provide educational and aesthetic benefits to Texarkana residents. Figure 3-6 shows the project components of Alternative 5 and their geographic extent in relation to the City of Texarkana and the Facility. The following are descriptions of individual project components proposed by the City of Texarkana that the Trustees incorporated into this alternative.

Days Creek Watershed Enhancement – These project components would enhance the Days Creek watershed by increasing wetlands and wooded habitat in the watershed.

- Project Component 1: Create approximately 18 to 20 acres of freshwater wetlands between Days Creek and the City's wastewater treatment plant in cleared open upland areas consisting predominantly of mowed grass. Estimated costs are \$1,200,000.
- Project Component 2: Stabilize approximately 4,000 linear feet downstream of the Facility and create a series of treatment wetlands near the City's mulch operation and wastewater treatment plant. Estimated project costs are \$2,000,000.
- Project Component 3: Create approximately 1.2 acres of wet woods within Karrh Park. Currently the location is open mowed grass. Estimated project costs are \$15,000.
- Project Component 4: Restore and enhance approximately 1.6 acres of wooded habitat between Liberty Lane and C.K. Bender Elementary School. The area is cleared and previously supported wet woods. Currently the location is open mowed grass. Estimated project costs are \$115,000.
- Project Component 5: Create approximately 12 acres of wooded wetlands along C.K. Bender Elementary School property. The location is flat open upland with routinely mowed grass on the eastern half. Common Bermuda grass is the prevalent plant species. The western half of the site is less frequently mowed and has an unpaved road that leads to debris piles and a soil borrow pit. Approximately seven trees are scattered in the center of the site, including oak and elm species. Currently, this location lacks any aquatic areas, i.e., open water or wetlands. Since there are no native habitats in the proposed 12-acre wetland area, native aquatic and forest habitat would increase 100%. Layout of the wetland and associated forested areas would avoid impacts to the existing trees in the center of the site. Restoration of hardwoods would serve to reduce forest fragmentation in the vicinity and enhance aquatic habitat conditions for local wildlife. Estimated project costs are \$1,550,000.
- Project Component 6: Restore approximately 2 acres of wet woods around an existing pond and stream channel within Karrh Park. The area is currently open mowed upland consisting of

common Bermuda grass. This location lacks any aquatic areas. Estimated project costs are \$220,000.

- Project Component 7: Work with a private landowner along an approximate 310 linear-foot segment of an unnamed stream channel to establish a conservation easement and restore approximately 0.5 acres of riparian habitat before the stream flows into Days Creek. The area is currently a drainage swale with minimal aquatic habitat. The channel is a shallow swale which functions to convey water from the west to the east where it flows under railroad tracks. The culvert under the railroad does not function well, and water ponds on the west side of the railroad tracks. Various small woody shrubs are scattered along the channel. No earthmoving activity is proposed, only planting. Restoration of the riparian cover and bottomland trees in the ponded area would serve to reconnect a broader tree canopy cover in the area and potentially enhance water quality. A project cost was not provided.

Swampoodle Creek Enhancement – These three project components would increase wetlands along Swampoodle Creek. Swampoodle Creek is sandwiched between railroad tracks on the west and residential developments and downtown Texarkana to the east. Swampoodle Creek within the Sulphur River basin has been identified as having water quality issues including fecal coliforms and ammonia nitrogen. Portions of the Swampoodle Creek channel are highly rectified, concrete lined, or severely eroding. Development of wetlands associated with Swampoodle Creek could potentially increase water quality and act as a buffer with large volumes of urban surface water runoff minimizing erosion. Figure 3-6 shows the location of these project components.

- Project Component 8: Create approximately 5 acres of wetland between Martin Luther King Boulevard and West 4th Street. This area is cleared and previously supported wet woods, but the area is currently open mowed grass. Estimated project costs are \$300,000.
- Project Component 9: Create approximately 10 acres of wetland along Swampoodle between College Drive and West 4th Street. This area is cleared and previously supported wet woods, but the area is currently open mowed grass. Estimated project costs are \$600,000.
- Project Component 10: Restore approximately 6 acres of riparian habitat along 11,000 linear feet of Swampoodle between College Drive and West 4th Street. Estimated project costs are \$60,000.

Spring Lake Enhancement – These two project components would increase the amount of wetlands in Spring Lake Park. Swampoodle Creek begins as discharge from Spring Lake via a drainage pipe under Spring Lake Park Road to a natural channel that flows through an approximately 1,140 linear foot segment with a heavy native riparian and bottomland hardwood tree canopy cover. Development of wetlands around Spring Lake would enhance the water quality of Spring Lake and potentially into Swampoodle Creek. Figure 3-6 shows the location of these project components.

- Project Component 11: Create approximately 5 acres of wetlands along Spring Lake in Spring Lake Park. Currently, Spring Lake is mostly devoid of a wetland fringe. Bank conditions are eroding. This project area is currently open mowed grass. Estimated project costs are \$300,000.
- Project Component 12: Construct approximately 3 acres of wetlands and approximately 300 feet of boardwalk at Spring Lake Park. Estimated project costs are \$240,000.

The estimated total cost of Alternative 5 is \$6,600,000.

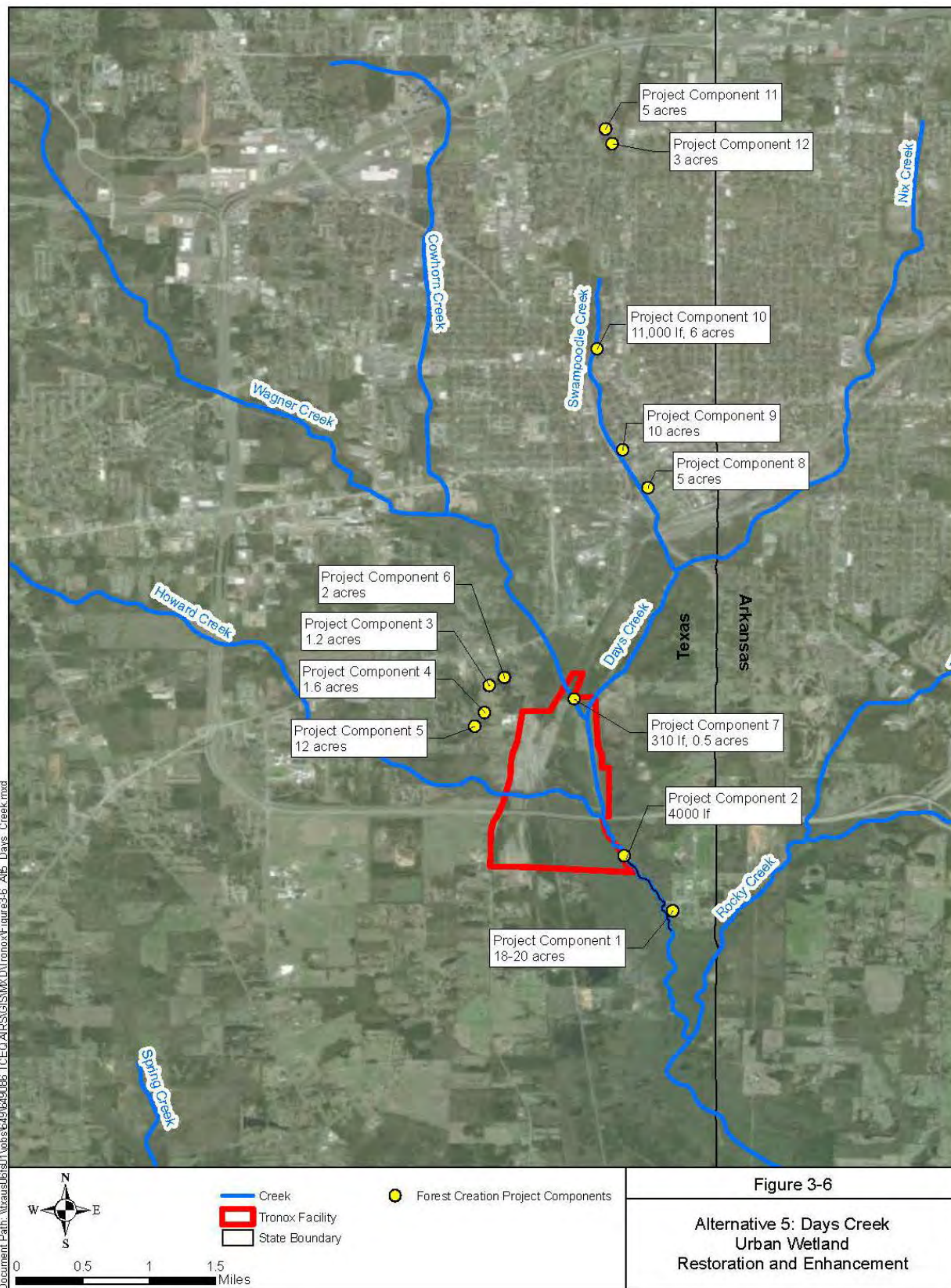


Figure 3-6 Alternative 5: Days Creek - Urban Wetland Restoration and Enhancement

3.4.6 Alternative 6: Longview Arboretum and Nature Park

This alternative would fund the construction of Phase 1 of a public park as part of the Master Plan for the Longview Arboretum and Nature Center. The proposal includes the development of a nature center, gardens, and associated infrastructure. The City of Longview set aside approximately 28 acres of land adjacent to Grace Creek, a tributary of the Sabine River, and in 2012 designated the land as a public park. The land is bordered on the west by the Maude Cobb Convention and Activity Complex, on the south by State Highway 31, on the east by Grace Creek, and on the north by Cotton Street. Figure 3-7 shows the location of this alternative.

The mission of the Longview Arboretum is to enhance the quality of life by educating the greater community about the recreational, educational, and ecological resources of the region. While small portions of the property, particularly on the west side, are designated for higher intensity uses (e.g., formal gardens, learning notes, and the Nature Center), the greatest portion of the property is being conserved to demonstrate the significant biodiversity of the area. This project fully supports the City of Longview's Comprehensive Plan that was completed in 2015. Among the goals identified by the community and adopted by the City Council is: "Enhance Longview's natural beauty and preserve its natural resources."

As part of this alternative, the City would pass a resolution designating the 28 acres as natural open space in perpetuity. Per the Master Plan, "the property is uniquely representative of the South Central Plains Ecoregion with a mixture of hardwood and pine forest communities as well as riparian and open space biodiversity."

The estimated total cost of Alternative 6 is \$1,100,000 to assist with Phase 1 development. The funding would address costs for water lines and faucets, bridges, the maintenance facility, development of the lawn area and irrigation, restrooms and utilities, pond creations and creek improvements, restoration and management, contractual fees, permitting, and contingency. Costs include shaping and reconstructing habitat impacted by earlier construction and controlling run-off entering the site from adjacent properties; managing drainage and erosion; and plantings of native grasses, trees, and plants to provide migratory bird habitat. Water features would include waterfalls to increase oxygen levels and bridges for access and connectivity. Non-native and invasive species would be removed from the property.



Figure 3-7 Alternative 6: Longview Arboretum and Nature Park

3.4.7 Alternative 7: Mineola Nature Preserve – Restoration and Enhancement

This alternative includes the following restoration and rehabilitation activities: 1) plant hardwood trees and prevent the establishment of invasive species, 2) perform hydrological work to improve drainage so that the natural flow of water is not restricted, and 3) mechanically clear land (i.e. mulching/grinding activities) to remove large woody debris piles in the southeast portion of the Mineola Nature Preserve (Preserve) to improve hydrology in bottomland hardwood and riparian habitats.

The Preserve includes approximately 2,911 acres adjacent to the Sabine River in close proximity to the Little Sandy NWR and the Old Sabine Bottom WMA. Figure 3-8 shows the Preserve. The Preserve lies within the Sabine River Corridor, a state- and locally-designated natural area, and comprises various habitat types including upland maintained pasture, upland mixed hardwood, pine habitat, emergent/marsh wetland habitat, open water features, riparian habitat, and hardwood bottomland. Riparian and hardwood bottomland habitats make up the majority of the habitat type due to the location of the Preserve within the floodplain of the Sabine River.

During the 1980s, the USFWS identified the Preserve and several adjacent tracts of land as having biologically important bottomland hardwoods that should be preserved and protected. Because of the diversity of habitat types, wildlife, including various species of waterfowl and other birds, are abundant. Protected species potentially found in the Preserve include species similar to those potentially found at the Facility (interior least tern, Bachman's sparrow, piping plover, fish such as the blackside darter and creek chubsucker, freshwater mussels such as the Texas pigtoe, and reptiles such as the timber rattlesnake). Improvements in the Preserve would increase habitat quality and thereby benefit several species, including protected species.

The estimated total cost of Alternative 7 is \$500,000, which includes site preparation, purchase of seedlings, maintenance and monitoring, and construction activities.

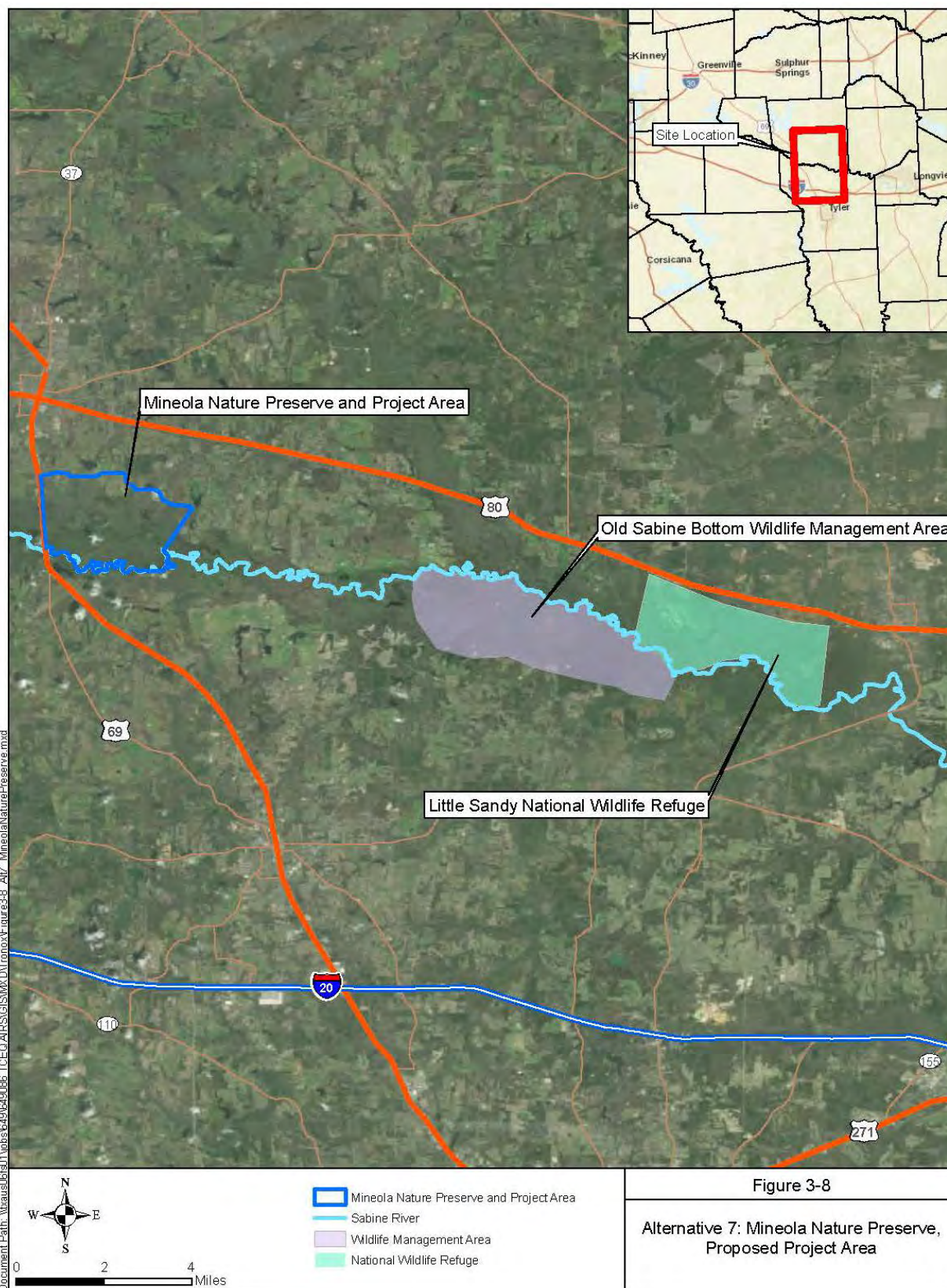


Figure 3-8 Alternative 7: Mineola Nature Preserve

3.4.8 Alternative 8: Neches River Bottomland Forest Acquisition

The Trustees developed Alternative 8 to include the acquisition and protection of approximately 1,100 acres of land, including riparian bottomland hardwood forest along the Neches River. The Neches River system contains large contiguous blocks of high conservation value bottomland hardwood forest in east Texas. Acquisition of the proposed properties would expand the network of protected tracts associated with the Neches River NWR and conserve, in perpetuity, a significant habitat corridor along the Neches River. Figure 3-9 shows the proposed land acquisition areas in relation to the Neches River NWR.

The properties consist of Neches River frontage, expanses of river bottom habitat, as well as swamps and sloughs. This acquisition would provide habitat for freshwater sediment benthic invertebrate communities and would protect the variability and productivity of the overall Neches River system. Other ecosystem benefits of this project include the preservation of habitat for 12 state-threatened species, including the Artic peregrine falcon, wood stork, American shallow-tailed kite, bald eagle, paddlefish, Rafinesque's big-eared bat, alligator snapping turtle, timber rattlesnake, and 4 freshwater mussel species.

The river bottom forests provide critical habitat for the federally-threatened Louisiana black bear which has been reported in Anderson County along the Neches River bottoms and play a key role in sustaining the Central Flyway waterfowl population. The site also contains habitat for the red-cockaded woodpecker, Neches River rose-mallow, and earth fruit, all federally-listed species. According to the USFWS' East Texas/Oklahoma Emphasis Area Work Plan for the Neches River Watershed, the Neches River watershed is a hotspot of biodiversity in the Pineywoods of east Texas. Forty-three percent of all bird species documented in Texas (including 44 birds of conservation concern) are found along the Neches River. The Neches river bottom is known to support over 20 plant communities, 45 species of mammals, 54 species of reptiles and amphibians, and 116 species of fish, and numerous invertebrates.

The estimated total cost of Alternative 8 is \$2,200,000.

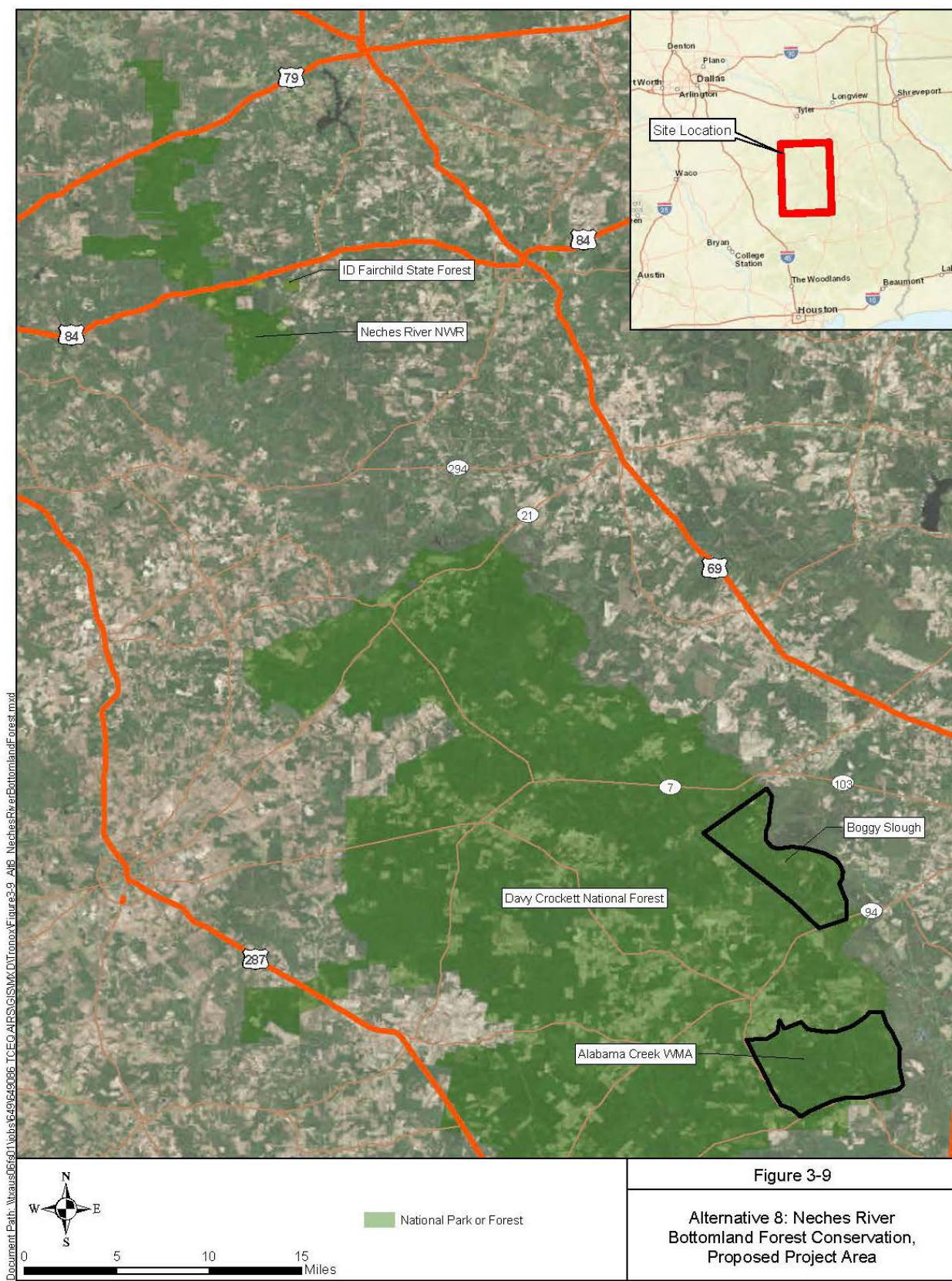


Figure 3-9 Alternative 8: Neches River Bottomland Forest Conservation

3.4.9 Alternative 9: Sulphur Springs Wastewater Treatment Plant Wetlands Habitat

This alternative would involve working with the City of Sulphur Springs to convert 100 acres of grass meadow to wetlands and to purchase an additional 100 acres of wetlands around Lake Sulphur Springs for preservation and recreational use. The process would consist of transferring water from the existing wastewater treatment plant to the constructed wetlands. The wetlands habitat would provide a natural filtration system for approximately 3 million gallons of reclaimed water every day. After the water cycles through the wetlands area, it would gravity flow to a stream to Lake Sulphur Springs. The additional water supply to Lake Sulphur Springs would enhance the lake by keeping the lake water level consistent year-round. In addition, water quality in the lake would be enhanced due to the wetlands filtration and the constant water movement from the stream. The created wetlands are intended for water quality enhancement, and in order for them to function properly, infrastructure would have to be provided, such as large pipes and a pump system. The pump system and pipes are necessary to supply approximately 3 million gallons of water per day to the constructed wetlands. After the completion of the wetlands, recreational facilities such as boardwalks, wildlife viewing stations and interpretive signage can be constructed to benefit the local community and others.

In addition to converting approximately 100 acres to wetlands habitat, the City is committed to purchasing an additional 100 acres of existing low land and wetlands areas around Lake Sulphur Springs to serve as preserved habitat for wildlife. Portions of the site would also be developed for recreational opportunities. Figure 3-10 shows the alternative area.

The overall scope of the project is to acquire approximately 100 acres of existing low land and wetlands areas around Lake Sulphur Springs, construct approximately 100 acres of wetlands habitat to enhance the surrounding environment and enhance the water quality and provide additional recreational opportunities to the local community.

The estimated total cost of Alternative 9 is \$6,000,000, which includes the purchase of land, the construction of the wetlands habitat, recreational amenities, and all the utilities necessary to get reclaimed water from the wastewater treatment plant to the wetlands area.



Final Tronox RP/EA

3.4.10 Alternative 10: Talbot Prairie and Forest Land Acquisition

This alternative involves the acquisition and protection of approximately 366 acres of land including 136 acres of endemic *Silveus*' dropseed prairie and 230 acres of hardwood forest, 75% of which is seasonally flooded (see Images 7 and 8). Northeast Texas, including Bowie County, is a transition zone between several ecological regions including the Texas Blackland Prairie, Post Oak Savanna, and Pineywoods regions of Texas and adjacent states. The area supports species and plant communities which are not found elsewhere in Texas. Less than 2% remains of what was once 10 million acres of native tallgrass prairie and calcareous woodland. Functional ecosystems in the region are fragmented, as most of the region has been converted to cropland or urban areas or invaded by non-native forage species. Native tallgrass prairies, which occur in a few northeast Texas counties from Texarkana to Bonham, are among the few recognized vegetation types unique to the state and are considered globally endangered.

Unlike tallgrass prairies elsewhere in Texas, which are dominated by little bluestem grass and Indiangrass, *Silveus*' dropseed prairies are dominated by a different suite of native grasses including *Silveus*' dropseed and longspike tridens with a large variety of colorful wildflowers. "Wet-prairies" are seasonally flooded areas within open grasslands that contain high botanical diversity. Such prairies usually occur as isolated inclusions within calcareous forests or woodlands, forming a mosaic of habitats unique to the South Central Plains ecoregion. Most wet prairies have been converted to farmland or rangeland, permanently destroying their native diversity. These sites are among the state's least conserved natural communities and have long been recognized as important for conservation. Several tracts of land in western Bowie County owned by the Talbot family contain *Silveus*' dropseed prairie, wet prairie, and hardwood forest.

Figure 3-11 shows the general location of the project. If acquired, the 136 acres of open prairie would be the largest example of *Silveus*' dropseed prairie in conservation ownership. At least 40% of the prairie area is seasonally inundated "wet prairie" which is characterized by hydrophilic species, especially sedges and rushes. The property contains a number of plant communities correlating with slight topographic gradients, ranging from upland and seasonally flooded prairie to hardwood forest with "pimple mounds" and swale wetlands. A preliminary botanical survey identified 316 plant species, including scarlet paintbrush, a wildflower not previously recorded in Texas. More species are expected to be identified as the property is inventoried further. Sheet flow over the property feeds numerous drainages to a creek which drains south to Anderson Creek, a relatively intact hydrologic system and a tributary of the Sulphur River.

The estimated total cost of Alternative 10 is \$1,000,000.



Image 7 Hardwood Forest with Drainages and Seasonally Flooded Flatwood Ponds



Image 8 Silveus' Dropseed Prairie, one of Texas' Rarest Plant Communities



Figure 3-11 Alternative 10: Talbot Prairie and Forest Land Acquisition

3.4.11 Alternative 11: Tonkawa Sandhills Land Acquisition

This alternative includes the acquisition of approximately 4,900 acres in the Tonkawa Sandhills of Rusk and Nacogdoches Counties. Figure 3-12 shows the location of this alternative. The area includes riparian and bottomland hardwood forest, natural springs, and hydric bogs as features of the sandhill ecosystem. The Tonkawa Sandhills is a unique area of large natural springs and spring-fed creeks which recharge out of deep sandhills. These deep sands also serve as part of the recharge zone for the Carrizo-Wilcox Aquifer.

The property to be acquired contains the headwaters of five separate stream drainages which flow into the Attoyac River and Naconiche Creek. The largest springs impact the water quality in the recently completed reservoir, Lake Naconiche, located 2 miles downstream of the property. The property contains extensive intact riparian and bottomland hardwood forest and hydric bogs or acid “baygalls,” globally imperiled plant associations which are not well represented in existing parks and natural areas. Rare plants known to inhabit the property include Nixon’s hawthorn, a recently described species first discovered on the property, as well as Texas trillium, Murray penstemon, Carrizo leatherflower, barbed rattlesnake-root, Mohlenbrock’s sedge, grass-of-parnassus, and prairie fameflower. The site contains habitat for the red-cockaded woodpecker and the Neches River rose-mallow, two federally-listed species.

The Tonkawa Sandhills area is a combination of bottomland hardwood forest, wetlands, and adjacent uplands. These areas support native shortleaf pine-oak savannas, a vanishing ecosystem which is important habitat for migratory songbirds such as Bachman’s sparrow and game species including northern bobwhite and wild turkey.

The 4,900 acres would be placed into a conservation easement held by the Nature Conservancy (TNC) to ensure the long-term protection of the property. A restoration and management plan governing public access, riparian wetland protection, and habitat restoration activities would be developed.

The estimated total cost of Alternative 11 is \$10,000,000.

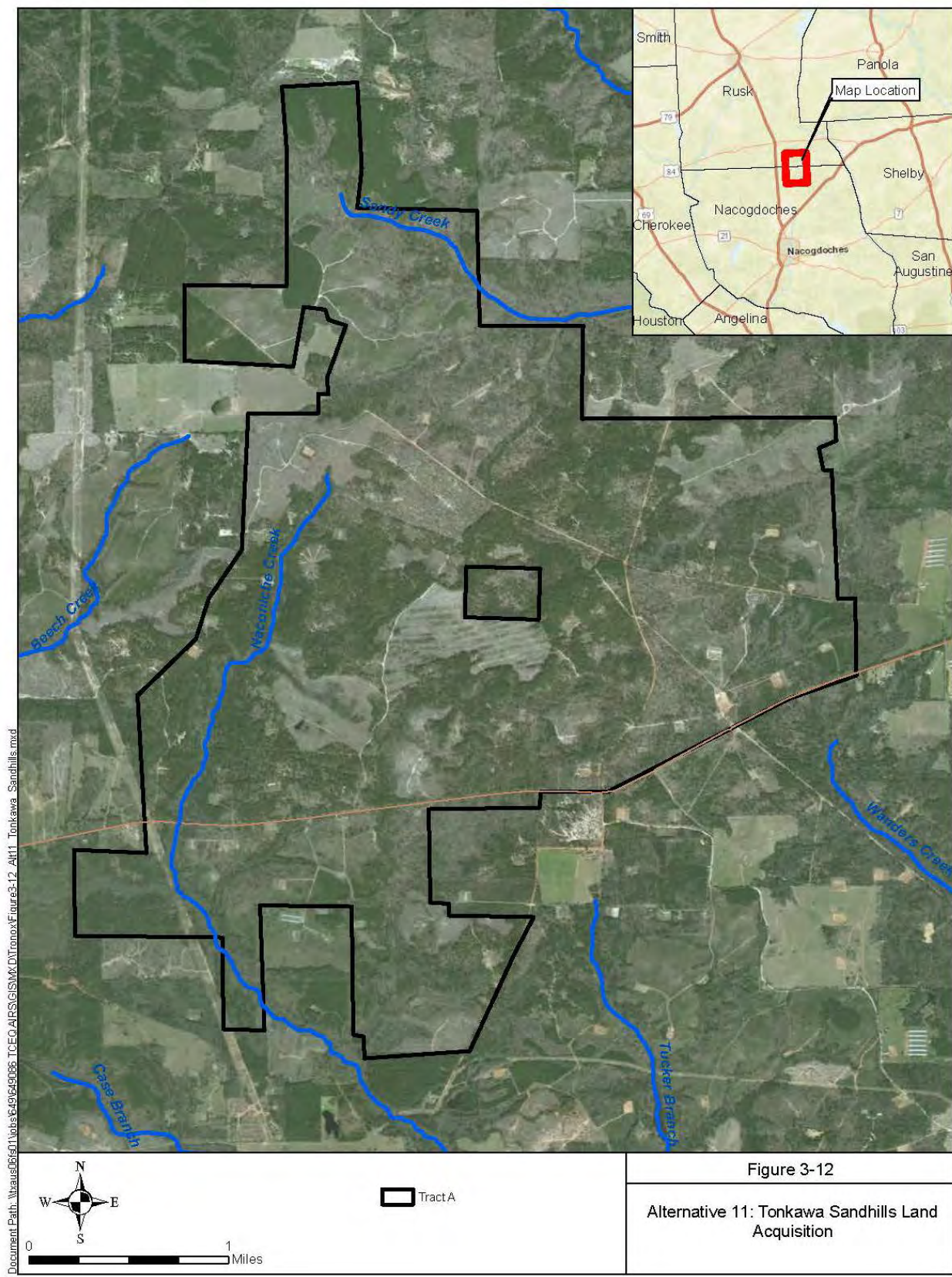


Figure 3-12 Alternative 11: Tonkawa Sandhills Land Acquisition

3.4.12 Alternative 12: T&J Hunting Properties

This alternative involves the purchase of two separate properties: 1) 111 acres of bottomland hardwoods in Panola County and 2) 30 acres of wetlands and bottomland hardwoods along the Sabine River. Due to the similarity of the scopes of work, both from T&J Hunt Club, the Trustees combined two related project ideas to generate this alternative. Figure 3-13 shows the locations of the two properties.

Both tracts are composed of deciduous forested wetlands and frequently flooded bottomland hardwoods forming a riparian forest ecosystem that supports a variety of South Central Plains ecoregion wildlife and bird habitat. Numerous old growth trees such as bald cypress, water oaks, willow oaks, overcup oaks, green ash, hackberry, and American elm are found on the properties, as well as numerous woody shrubs, vines, native grasses, and forb species. Large mast-producing trees provide shelter and resting sites for numerous species and a large food resource during the fall. Smaller soft mast-producing trees and shrubs also provide a food resource as well. New woody growth provides winter browse for white-tailed deer.

The habitat diversity on the two tracts supports a variety of wildlife species including white-tailed deer, coyotes, bobcats, fox, squirrel, and numerous bird species including bald eagles. There are numerous reptiles and amphibians also found on the property. Habitat potentially supports the alligator snapping turtle and timber rattle snake, both state-listed species, and *Geocarpon* (*Geocarpon minimum*) a federally-listed plant species.

Historically managed for timber production as a hunting club, the tracts would be owned by the T&J Hunt Club. Under this alternative, the properties would be placed under conservation easements and managed for wildlife diversity and limited recreational hunting and fishing.

The estimated total cost of Alternative 12 is \$1,800,000, which includes \$1,300,000 for the 111-acre site and \$500,000 for the 30-acre site.

3.4.13 Alternative 13: No Action

Both 43 C.F.R. § 11.82(c)(2) and NEPA require consideration of a “No Action” alternative. Under the “No Action” alternative, the Trustees would take no action to restore, rehabilitate, replace, or acquire natural resources or services equivalent to those lost due to hazardous substance releases at or from the Facility or the remedial actions taken to prevent further or future harm.

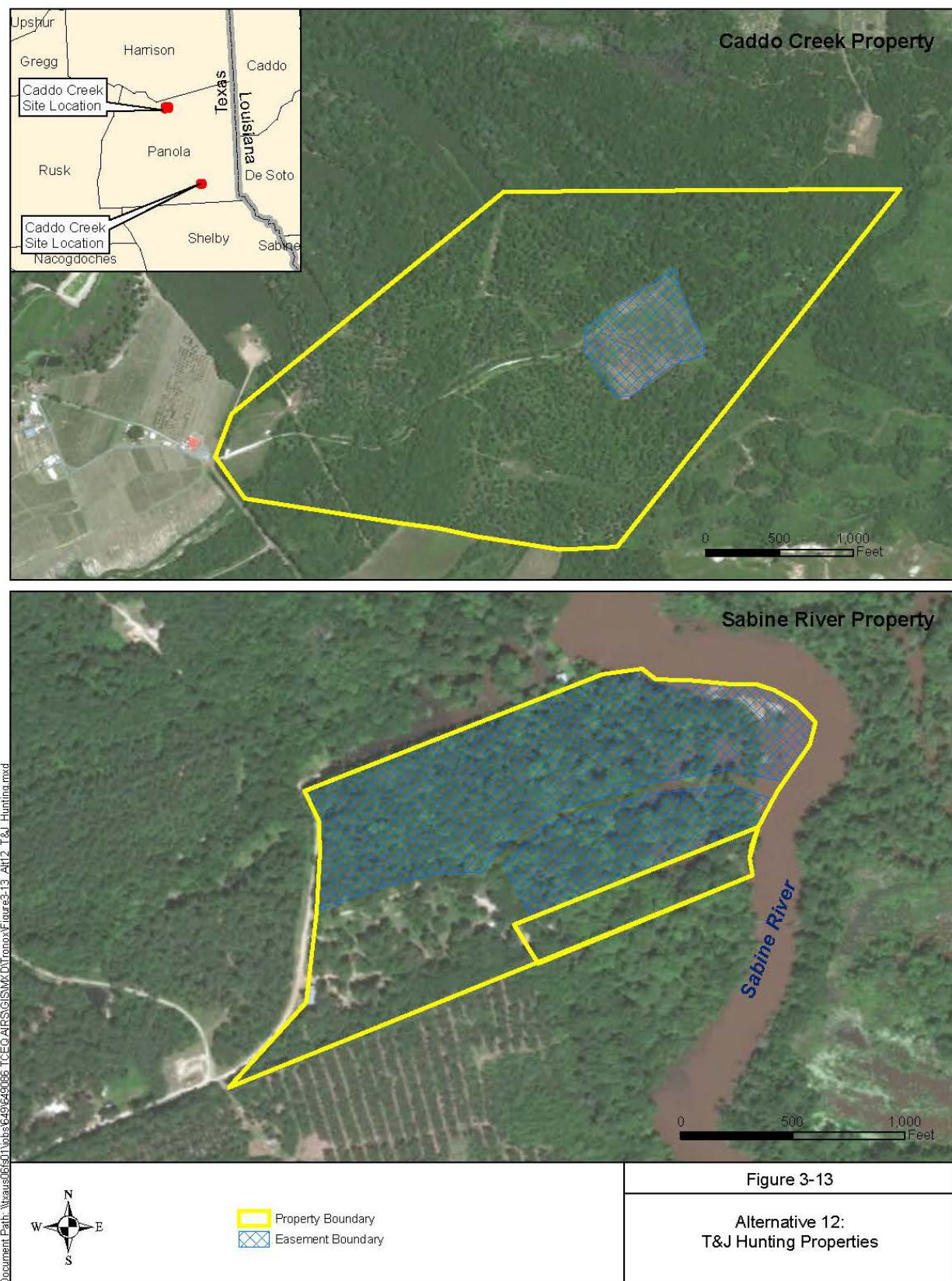


Figure 3-13 Alternative 12: T&J Hunting Properties

4.0 EVALUATION OF RESTORATION ALTERNATIVES

This chapter describes the Trustees' evaluation and analysis of the 13 alternatives listed in Section 3.3 and 3.4. The Trustees have integrated the CERCLA and NEPA evaluation processes in this RP/EA. To most efficiently present the CERCLA and NEPA evaluations of the various restoration alternatives, the Trustees divided the alternatives into two groups. The first group, presented in Section 4.1, contains the CERCLA evaluations of the habitat acquisition alternatives. The second group, presented in Section 4.2, contains the CERCLA and NEPA evaluations of the habitat enhancement and construction alternatives.

As described in Section 3.2, consistent with the restoration factors listed in the CERCLA NRDA regulations, the Trustees considered the following criteria in evaluating the restoration alternatives: (1) Direct ecological benefits; (2) Technical feasibility; (3) Cost effectiveness; (4) Reasonable probability of success; (5) Measurable results; (6) Avoids collateral injury to natural resources; (7) Effect of each alternative on public health and safety, and compatibility with the remediation process; (8) Consistency with laws, regulations or policies; and (9) Alternative is not already required by existing laws, regulations, permits, or enforcement orders. All 12 restoration action alternatives met Criterion 8 and Criterion 9, and as such, those criteria are not further discussed for each specific alternative. For each alternative in the reasonable range of alternatives, the remaining seven CERCLA criteria are evaluated independently and a determination is made regarding how well the alternative meets that element. The Trustees used this evaluation in combination with Trustee priorities, the amount of funding available, and consideration of the relevant conservation landscape within the South Central Plains ecoregion to identify a suite of selected restoration alternatives.

Under NEPA, federal agencies must consider environmental effects of their actions, including impacts on social, cultural, and economic resources, as well as natural resources. An agency's NEPA evaluation may take the form of a categorical exclusion, an environmental assessment (EA), or an environmental impact statement (EIS). A categorical exclusion is a category of actions that an agency has determined does not individually or cumulatively have a significant effect on the human environment. When determining whether a categorical exclusion applies for a proposed activity, a Federal agency must ensure that the proposed action fits within the category of actions described in the categorical exclusion. The agency must then consider the specific circumstances associated with each proposed activity to ensure no extraordinary circumstances are present that might give rise to significant environmental effects. The EA determines whether or not a federal action has the potential to cause significant environmental effects.

The Trustees have prepared a NEPA analysis, in the form of an Environmental Assessment (EA), for the habitat enhancement and construction alternatives in Section 4.2. Detailed information on the affected environment is presented in Section 3.1. The Trustees' evaluation under NEPA of the potential environmental impacts in terms of both context, duration, and intensity informed the Trustees' analysis and decision-making process under CERCLA. For the proposed actions identified in this RP/EA, the appropriate context for considering potential significance of the actions is local, as opposed to national or worldwide. Duration refers to whether the impacts are short- or long-term, and intensity refers to the severity of impact as well as whether the impact is beneficial or adverse. The NEPA analysis of the habitat enhancement and construction alternatives is based on alternative-specific preliminary design concepts rather than detailed plans. There are alternatives that will involve planning, engineering, design,

permitting, and budget development to arrive at a shovel-ready alternative. Any steps prior to construction are not expected to reduce the anticipated benefits of the alternative or affect the analyses conducted for NEPA.

Two of the CERCLA evaluation criteria, “(6) Avoids collateral injury to natural resources” and “(7) Effect of each alternative on public health and safety, and compatibility with the remediation process” are related to effects that are evaluated as part of the EA for the habitat enhancement and construction alternatives; therefore, the degree to which each of these alternatives meets these two criteria is described in the NEPA evaluation discussions. All of the habitat acquisition alternatives met criteria 6 and 7. The acquisition of a property would ensure its biological integrity and simply acquiring the property would not be expected to result in collateral injury or any type of effect on public health and safety, or compatibility with a given remediation process. As such, criteria 6 and 7 are not specifically discussed for each of the habitat acquisition alternatives.

The USFWS, as the Federal Trustee, has determined that the habitat acquisition alternatives selected for implementation qualify for a categorical exclusion, described in 516 DM 8.5(A)(4). This RP/EA concludes that the actions associated with the selected habitat enhancement and construction alternatives will not lead to significant adverse impacts to the environment. Subsequently the USFWS has completed its review of the findings in this RP/EA and has issued a finding of no significant impact (FONSI) on the selected habitat enhancement and construction alternatives.

4.1 Habitat Acquisition Alternatives

Six of the 13 alternatives considered in this RP/EA include land acquisition as their major restoration action. The Federal Trustee, having completed their evaluation of these alternatives, has determined that the acquisitions are intended in part to preserve the watershed and improve local water quality and will not adversely affect floodplains, wetlands, or municipal watersheds. A search of the Texas Historical Commission’s online Atlas Map did not indicate the presence of American Indian religious or cultural sites, archaeological sites, or historic properties within the alternatives. Both Alternative 3: Caddo Lake Habitat Acquisition and Alternative 8: Neches River Bottomland Forest Acquisition will acquire lands adjacent to State Parks, State Wildlife Management Areas, National Wildlife Refuges, or National Forests. Two federally listed plant species, Geocarpon (*Geocarpon minimum*) and Neches River rosemallow (*Hibiscus dasycalyx*), may be located in the project areas; however, there is no designated critical habitat within any of the proposed habitat acquisition alternatives. Lands acquired for Alternatives 3 and 8 meet conservation objectives and expand protected areas. As such, these projects would have no adverse effect on federally listed, threatened, or endangered species or their designated critical habitat; species proposed for federal listing; or proposed critical habitat. Therefore, the alternatives selected for implementation are consistent with the categorical exclusion described in 516 DM 8.5(A)(4). Since these six alternatives are categorically excluded from further NEPA evaluation, they are grouped together in this section to allow the Trustees to more efficiently evaluate the alternatives. Discussion of the Trustees CERCLA evaluation for each of the land acquisition alternatives follows.

Summary of Habitat Acquisition Alternatives

Alternative Name	County
Alternative 1: Big Thicket Acquisition and Conservation	Hardin
Alternative 3: Caddo Lake Habitat Acquisition	Marion, Harrison
Alternative 8: Neches River Bottomland Forest Acquisition	Houston, Angelina, Trinity, Anderson
Alternative 10: Talbot Prairie and Forest Land Acquisition	Bowie
Alternative 11: Tonkawa Sandhills Land Acquisition	Rusk, Nacogdoches
Alternative 12: T&J Hunting Properties	Panola

4.1.1 Alternative 1: Big Thicket Acquisition and Conservation

This alternative involves acquisition and protection of up to 1,200 acres of bottomland hardwood forest previously utilized as industrial forest land by a timber company, a willing seller. Upon acquisition, the property would transfer to the United States National Park Service to be incorporated as contiguous to the Big Thicket National Preserve (BTNP). The Trustees evaluated this alternative based on the following criteria.

- Criterion #1-Direct Ecological Benefits:** This alternative would provide benefits to bottomland hardwood forest; however, the subject properties and adjacent properties have been logged for pine and hardwoods and some pipeline infrastructure remains on the properties. American Forest Management, a for-profit tree management business, manages the property adjacent to the northern boundary of the 1,200 acres. Adjacent preserve property will remain in a natural state in perpetuity. The Trustees determined that the site has lower ecological value due to past and present operations on the property and the long distance from the Facility, weakens the correlation to the injury for benthic invertebrates. In addition, the use of timber sales to generate funds for restoration actions may not align with the goals of the Trustees.
- Criterion #2-Technical Feasibility:** Preservation of the donated property in perpetuity through inclusion in the BTNP would require an Act of Congress. The lengthy timeline reduces the technical feasibility of this alternative. The Trustees also considered the current state of the property, including its use as industrial forest land for over 100 years, the presence of pipelines and supporting infrastructure, as well the presence of Chinese Tallow and feral hogs, as part of this evaluation. Except for the already conserved BTNP property, timber businesses own the subject and adjacent properties, so it is likely that at least the adjacent property will be logged eventually, reducing the value of the subject tract unless the adjacent property was also preserved. The technical feasibility was considered to be low because of the extended time frame for the conveyance process to be completed, the actions required to restore the landscape to historical

species, and the active timber management activities that will continue to occur adjacent to the alternative.

- *Criterion #3-Cost Effectiveness:* The total alternative cost is estimated to be \$2,400,000 or approximately \$2,000 per acre. This cost includes acquisition, appraisal, title review, closing costs, and environmental studies. Based on previous Trustee experience a range of \$1,000 to \$3,500 per acre is considered reasonable for acquisition of rural acreage in east Texas. These comparative costs are influenced by proximity to urban areas, quality of habitat, and the size of the tract. According to the Texas Lands Trends Report (2016), *“Rural land values vary by location, land use, property size, and other characteristics. Changes in land value were closely tied to distance from major metropolitan growth areas. The average land value, for example, within the top 25 fastest growing counties was \$5,266 per acre in 2012, compared to the state-wide average of \$1,573 per acre.”* The inclusion of the appraisal, environmental studies and closing costs within the \$2,000 per acre cost make this project cost effective.
- *Criterion #4-Reasonable Probability of Success:* Given the current condition of the property, the timeframe required to acquire the property, and the potential for logging at or near the property, the Trustees considered this alternative to have a low probability of success.
- *Criterion #5-Measurable Results:* The measures of success are primarily the acquisition of the property, finalization of the conservation easement, inclusion in the BTNP, and preservation of the property in perpetuity. As with Criterion #2, based on the length of time required for the acquisition and conveyance of the property to the BTNP, the Trustees determined this to have a low probability for timely measurable results.

4.1.2 Alternative 3: Caddo Lake Habitat Acquisition

This alternative involves the acquisition of approximately 3,500 acres within the Caddo Lake system. The acquired habitat would be swamp, slough, and headwaters, with the intention to better connect the landscape into either the Caddo Lake WMA or the Caddo Lake State Park. The Trustees evaluated this alternative based on the following criteria.

- *Criterion #1-Direct Ecological Benefits:* This acquisition would benefit and protect habitat for freshwater benthic invertebrate communities, bottomland hardwood, and the overall freshwater system. Other ecosystem benefits include the preservation and maintenance of natural hydrology, reducing the spread of invasive species, reducing nutrient loads, and the introduction and proliferation of sensitive and threatened fishes. This alternative provides natural resources or services equivalent to the injury to freshwater benthic invertebrate communities in Days, Waggoner, and Howard creeks.
- *Criterion #2-Technical Feasibility:* The technical feasibility depends on the long-term protection of the tract(s). Conservation of the acquired tracts will be reflected in the greater Caddo Lake system, and benefits to water quality, wildlife populations, and habitat patterns could be observed at the landscape scale.
- *Criterion #3-Cost Effectiveness:* There are multiple tracts of land that make up the 3,500 acres within this alternative. There is uncertainty as to which tracts can be purchased until property owners have been contacted; however, the estimated costs range from \$1,000 to \$4,400 per acre

for the various tracts. Costs include the appraisal, title review, survey, environmental assessment, staff time and land acquisition. Based on previous Trustee experience, a range of \$1,000 to \$3,500 per acre is considered reasonable for acquisition of bottomland acreage in east Texas. Only one of the proposed tracts estimated costs above the range. The most expensive tract in the proposal, (\$4,400 per acre) is open water and bottomland forest, would protect a mile of riverbank of Big Cypress Bayou adjacent to Caddo Lake State Park. Because of the exceptional quality of the habitat and proximity to the Caddo Lake State Park, \$4,400 per acre is still considered to be cost effective. The other tracks are priced within the commonly found range of costs that the Trustee consider to be acceptable. The inclusion of necessary activities outside of the acquisition in the estimated costs make Alternative 3 cost effective. Depending on the specific tracts, the acquisition process may include purchase of fee title to be held by TPWD or USFWS, and/or conservation easements to be held by the Nature Conservancy (TNC). All acquisitions will be managed for conservation in perpetuity. The purchase price of the land would be based on a recent appraisal to ensure it is purchased at current market value.

- *Criterion #4-Reasonable Probability of Success:* There is a high probability of success for this alternative based on the past partnerships of the managing entities and stability of the Caddo Lake system. The proponents of this alternative, the TPWD and TNC, have demonstrated successful implementation of similar projects, such as the acquisition of Palo Pinto Mountains State Park, Goose Island State Park, and Powderhorn Ranch, and therefore, this alternative is considered to have a high probability of success by the Trustees.
- *Criterion #5-Measurable Results:* The measure of success is the acquisition of the property, finalization of the conservation easement, and preservation of the property in perpetuity. The Trustees determined the project meets this criterion.

4.1.3 Alternative 8: Neches River Bottomland Forest Acquisition

This alternative involves the acquisition and protection of approximately 1,100 acres of land, including riparian bottomland hardwood forest along the Neches River. The Trustees evaluated this alternative based on the following criteria.

- *Criterion #1-Direct Ecological Benefits:* The properties in this alternative contain riparian areas that become inundated similarly to riparian areas adjacent to Days, Howard, and Waggoner creeks. This alternative provides natural resources or services equivalent to the injury to freshwater benthic invertebrate communities in Days, Waggoner, and Howard creeks and any impacts to the riparian corridor along the creeks. Additionally, this alternative will help ensure that the wetlands of the Neches River continue to provide high quality habitat, clean water, flood retention, recreation, and drinking water to communities upstream and downstream.
- *Criterion #2-Technical Feasibility:* The technical feasibility depends on the long-term protection of the tract(s). For this alternative, the Trustees would protect tracts within the Neches River NWR through fee title acquisition. Upon acquisition, the property would be donated to USFWS. This alternative is expected to take 24 months to complete and all acquisitions would be managed for conservation in perpetuity. The Trustees determined the project meets this criterion.

- *Criterion #3-Cost Effectiveness:* Approximately 1,100 acres in the Neches River NWR have been identified as potential targets for acquisition. There is uncertainty as to which tracts can be purchased until negotiations with property owners have been completed; however, the estimated cost per acre is approximately \$1,500 to \$2,100 per acre. Costs include the appraisal, title review, survey, environmental assessment, staff time and land acquisition. Based on previous Trustee experience, a range of \$1,000 to \$3,500 per acre is considered reasonable for acquisition of bottomland acreage in east Texas. For example, the recent Trustee-led acquisition of 612 acres in the Neches River NWR cost \$1,825 per acre. The estimated costs for Alternative 8 are within this range. The purchase price of the land would be based on a recent appraisal to ensure it is purchased at current market value.
- *Criterion #4-Reasonable Probability of Success:* The Conservation Fund (TCF), along with their proposal partner, the USFWS, have demonstrated successful implementation of similar projects. In the last 10 years, TCF has secured over \$60 million in public and private dollars to conserve bottomland forests bordering the length of the Neches River. This alternative has a high probability of success based on past performance by TCF and the past partnerships of the managing entities and stability of the Neches River NWR.
- *Criterion #5-Measurable Results:* The measure of success is primarily the acquisition of the property in perpetuity, finalization of the conservation easement, and the conservation and preservation of the property in perpetuity. The Trustees determined the project meets this criterion.

4.1.4 Alternative 10: Talbot Prairie and Forest Land Acquisition

This alternative involves the acquisition and protection of approximately 366 acres of land including 136 acres of endemic *Silveus'* dropseed prairie and 230 acres of hardwood forest, 75 percent of which is seasonally flooded. The Trustees evaluated this alternative based on the following criteria.

- *Criterion #1-Direct Ecological Benefits:* The property is the highest quality native prairie remnant in the vicinity and possibly in Bowie County. This proposed alternative provides ecological services equivalent to the injury, in that benthic invertebrate communities within the wetlands and within the drainage areas would be preserved and protected. The protection of the 366 acres would reduce urban runoff and improve water quality in the area. This alternative provides ecological benefits to riparian, bottomland hardwoods, aquatic, and wetland habitats within 25 miles of the Facility and within the same river basin and county as the Facility. Additionally, this alternative will add to the representation of *Silveus'* dropseed prairie and calcareous hardwood forest in conservation ownership.
- *Criterion #2-Technical Feasibility:* This alternative is considered technically feasible. In 2012, TNC successfully assisted the Native Prairies Association of Texas (NPAT) with acquiring a nearby preserve and currently enforces a deed restriction on that property.
- *Criterion #3-Cost Effectiveness:* Total costs are estimated to be \$1,000,000 or approximately \$2,700 per acre. The costs include the appraisal, title policy, survey, environmental assessment, land acquisition, and an endowment to TNC to support monitoring of the conservation easement. Based on previous Trustee experience, a range of \$1,500 to \$3,200 per acre is considered

reasonable for acquisition of wet prairie habitat acreage. The estimated costs for this alternative are within this range. The Trustees consider this alternative to be cost effective based on a comparison to similar projects and the inclusion of administrative costs and the endowment to TNC. The purchase price of the land would be based on a recent appraisal to ensure property is purchased at current market value.

- *Criterion #4-Reasonable Probability of Success:* For this property, the NPAT, a Texas-based land trust, would purchase and manage the property. TNC would accept a conservation easement on the property. NPAT and TNC would jointly create and submit to the Trustees a land management plan with the goal of maintaining the optimal diversity of plant and animal species. This alternative has a high probability of success based on the past partnerships of the managing entities.
- *Criterion #5-Measurable Results:* The measurable results are directly associated with the successful acquisition of the property, finalization of the conservation easement, and the conservation and preservation of the property in perpetuity. A land management plan would be submitted to the Trustees to further define the measures of success. The Trustees determined the project meets this criterion.

4.1.5 Alternative 11: Tonkawa Sandhills Land Acquisition

This alternative includes the acquisition of 4,900 acres for preservation in the Tonkawa Sandhills of Rusk and Nacogdoches counties. The Trustees evaluated this alternative based on the following criteria.

- *Criterion #1-Direct Ecological Benefits:* The acquisition area includes riparian and bottomland hardwood forest, natural springs, sandhills, and hydric bogs as features of the sandhill ecosystem. The property contains approximately 2,880 acres of planted pine stands composed predominantly of loblolly pine, which naturally occurs in more mesic communities, and slash pine, which is non-native in east Texas. Previous land use including oil and gas development and road and utility crossings have impacted streams and riparian corridors. Almost all the upland areas would require restoration (70% of the total alternative area). Upland habitat on the property has been severely degraded, predominately through soil organic matter depletion from site preparation practices, farming activities, and the replacement of native shortleaf pine with loblolly and slash pine. This proposed alternative would provide similar ecological services directly comparable to the injury, in the bottomland hardwoods and benthic communities within the wet portions of the property, however, due to the degraded nature of the upland communities, the Trustees determine ecological benefits to be moderate as a whole.
- *Criterion #2-Technical Feasibility:* The acquisition of this property is technically feasible. The amount of restoration required on both the riparian and upland areas, as well as current and future oil and gas operations on the property, are of concern to the Trustees with regard to the technical feasibility of this project. In addition, an inholding near the center of the property is owned by a private individual for recreational hunting and timber production.
- *Criterion #3-Cost Effectiveness:* The estimated total cost of this alternative is \$10,000,000 or approximately \$2,000 per acre. The cost includes the appraisal, survey, Phase I environmental report, title policy, closing costs, and an endowment for the conservation easement. The cost of acquisition of the acreage is reasonable as compared to other similar projects, especially since the

costs include implementation costs and an endowment. The purchase price of the land would be based on a recent appraisal to ensure it is purchased at current market value.

- *Criterion #4-Reasonable Probability of Success:* The 4,900 acres would be placed into a conservation easement with TNC to ensure the long-term protection of the property. The acquisition and execution of the conservation easement are highly probable given past partnerships with the managing entities. Once acquired, a restoration and management plan governing public access, riparian wetland protection, and habitat restoration activities would be developed. The Trustees consider this alternative to have a mixed probability of long-term success based on current and past land use.
- *Criterion #5-Measurable Results:* The measurable results are directly associated with the successful acquisition of the property and finalization of the conservation easement, and the conservation and preservation of the property in perpetuity which the Trustees determined to be feasible.

4.1.6 Alternative 12: T&J Hunting Properties

This alternative involves the purchase of two separate properties: 1) 111 acres of bottomland hardwoods in Panola County and 2) 30 acres of wetlands and bottomland hardwoods along the Sabine River.

- *Criterion #1-Direct Ecological Benefits:* The acquisition of these properties would provide ecological services (e.g., benthic invertebrate services) consistent with the injury. Both tracts are composed of deciduous forested wetlands and frequently flooded bottomland hardwoods forming a riparian forest ecosystem that supports a variety of east Texas wildlife and bird habitats. However, the proposed properties are small (111 acres and 30 acres), isolated, and not contiguous with other preserved properties in the region, thereby reducing their overall benefit.
- *Criterion #2-Technical Feasibility:* The floodplain perpetuity easements would be held by the United States Corps of Engineers or the United States Department of Agriculture. Based on previous experience, the Trustees are concerned that easements held by these entities would have requirements that do not align with Trustee restoration goals. Historically managed for timber production as a hunting club, the tracts would be owned by the T&J Hunt Club. Under this alternative, the properties would be placed under conservation easements and managed for wildlife diversity and limited recreational hunting and fishing. The technical feasibility of this alternative is low because the perpetuity requirement for the easement(s) and future land use associated with the property may not align with Trustee restoration goals.
- *Criterion #3-Cost Effectiveness:* The estimated total cost of this alternative is \$1,800,000: \$1,300,000 for the 111-acre site (approximately \$12,000 per acre) and \$500,000 for the 30-acre site (approximately \$16,500 per acre). Based on previous Trustee experience a range of \$1,000 to \$3,500 per acre is considered reasonable for acquisition of acreage in east Texas. These comparative costs are influenced by proximity to urban areas, quality of habitat, and the size of the tract. The estimated costs, as presented, do not include costs for appraisal, environmental studies and closing costs, reducing cost effectiveness. Based on the comparative costs for acquisition, this alternative is not cost effective.

- *Criterion #4-Reasonable Probability of Success:* Although conservation easements on the properties could likely be obtained, the probability of success for this alternative is low because of Trustee concerns with the conservation easement requirements and restrictions, and the prohibitive cost for small parcels that are discontinuous with currently preserved acreage.
- *Criterion #5-Measurable Results:* The measurable results are directly associated with the successful acquisition of the properties, finalization of the conservation easement, and management in perpetuity. As with Criterion #2, based on past experience with floodplain perpetuity easements and the requirements of the entities that would hold them, the Trustees determined the project did not meet this criterion.

4.2 Habitat Enhancement and Construction Alternatives

The remaining seven alternatives considered in this RP/EA focus on habitat enhancement and construction. Since these projects are not eligible for a NEPA categorical exclusion, this section assesses the CERCLA evaluation of each alternative as well as the environmental consequences analysis pursuant to NEPA.

Summary of Habitat Enhancement and Construction Alternatives

Alternative Name	County
Alternative 2: Bottomland Hardwood Restoration and Chinese Tallow Eradication	Nacogdoches
Alternative 4: Days Creek Enhancement and Restoration	Bowie
Alternative 5: Days Creek Urban Wetland Restoration and Enhancement	Bowie
Alternative 6: Longview Arboretum and Nature Park	Gregg
Alternative 7: Mineola Nature Preserve Restoration and Enhancement	Wood
Alternative 9: Sulphur Springs Wastewater Treatment Plant Wetlands Habitat	Hopkins

4.2.1 Alternative 2: Bottomland Hardwood Restoration and Chinese Tallow Eradication

This alternative involves treatment of Chinese tallow, an invasive species, and planting of hardwood species. This alternative is located in Nacogdoches County within the Stephen F. Austin Experimental Forest which is part of the Angelina National Forest. The treatment area would be 1,800 acres in the Stephen F. Austin Experimental Forest and 2,200 acres in the Alazan Bayou WMA. The treatment area is infested with Chinese tallow and is seasonally flooded. Improvements would help the long-term sustainability of important habitat and natural systems.

4.2.1.1 CERCLA Evaluation

- *Criterion #1-Direct Ecological Benefits:* The removal of Chinese tallow and improvement of Texas bottomland/floodplain would increase the biological diversity and therefore would ultimately benefit riparian and benthic invertebrate health in the bottomland hardwood habitat; however, the benefits may not be realized for 5 years or more. Any restoration and rehabilitation of bottomland and floodplain communities will ultimately benefit the benthic invertebrate communities and water quality consistent with Trustee goals for this project.
- *Criterion #2-Technical Feasibility:* The methods used in the eradication of Chinese Tallow are established, and the Trustees determined that this project is technically feasible. However, the project proponent expects this alternative could take at least 5 years to complete. Additional time may be needed to ensure the seedbank is devoid of Chinese tallow seeds and a sufficient number of hardwood species become established in the affected area. The Trustees are also concerned with the technical feasibility involved in restoring an area infested with an invasive species and returning it to native hardwood bottomland for perpetuity. It is difficult to predict success based on the scale and objective of the eradication phase and restoration phase. Chinese tallow can be difficult to control because it will regrow from the roots and from seeds, requiring chemical control using systemic herbicides.
- *Criterion #3-Cost Effectiveness:* Total alternative cost is estimated to be approximately \$1,700,000 or approximately \$425 per acre. This cost includes: 1) \$700,000 for cutting stumps, 2) \$700,000 for herbicide foliar spraying, 3) \$100,000 for hardwood planting using USFS supplied plants, 4) \$100,000 for hardwood planting from seedlings, and 5) \$100,000 for monitoring over 5 years.

The costs for stump cutting and herbicide foliar spray are estimated to be \$175 per acre, each. Published costs for mowing or other mechanical manipulations depends on labor, fuel, and machinery costs. Herbicide applications using broadcast application methods range from \$80 to \$120 per acre. The estimated project costs are slightly more expensive than published values, but a direct comparison is difficult without additional breakdown of assumptions used to develop the project costs (e.g., equipment rental, fuel, labor, and herbicide costs).

Estimated costs for planting hardwood seedling (bare root) is \$200,000 or \$50 per acre. This assumes that the USFS will supply the plant material. Costs for planting hardwoods are influenced by planting rates, labor rates, and costs for any necessary supporting materials such as tree shelters or geotextile mats. Published costs per acre for planting of trees range from \$350 to \$550. Because of the support from the USFS, the planting of hardwoods in this alternative is estimated to be \$50 per acre and is considered cost effective.

Monitoring is assumed to occur over a 5-year period at \$25 per acre for a total estimated cost of \$100,000. Information is not provided on the activities to be conducted during monitoring, nor are there costs included or discussed to address corrective actions if eradication efforts are not sufficiently effective or if the survival rate of the planted hardwoods is unacceptably low.

- *Criterion #4-Reasonable Probability of Success:* The Trustees are concerned with the long-term success involved in restoring an area infested with an invasive species and returning it to native hardwood bottomland in perpetuity. The Alazan Bayou WMA and the USFS already have

established Chinese tallow treatment programs and would continue treatments after project activities have concluded. A project partner, the Southern Research Station, can provide expertise in identifying priority areas most suitable for planting hardwoods and monitoring hardwood survival rates. The National Wild Turkey Federation's liaison to the USFWS has proven experience with bottomland hardwood restoration and would assist with project oversight by providing guidance on project implementation and aiding in measuring project success. The project proponents did not respond to requests for more information on the project, calling into question the probability of success. The Trustees determined the project did not meet this criterion.

- *Criterion #5-Measurable Results:* A work plan with milestones and clear measures of success would be developed with the Trustees. Tasks include Chinese tallow treatment, hardwood planting, and monitoring. Monitoring beyond the 5-year predicted life of the alternative may be required along with re-planting of hardwoods if sufficient success is not achieved. This project will require long-term monitoring and maintenance, as well as agreement on decision points between multiple stakeholders. The Trustees determined that clear performance measures will be difficult to establish and evaluate.

4.2.1.2 NEPA Evaluation

Environmental and Socio-Economic Impacts Evaluation

The removal and eventual eradication of Chinese tallow (*Triadica sebifera*, formerly known as *Sapium sebiferum*) within the Stephen F. Austin Experimental Forest and Alazan Bayou WMA would benefit the bottomland hardwood ecosystem of the Angelina National Forest in Nacogdoches County. Chinese tallow represents a significant invasive species problem in many areas of Texas and across the South. The species adversely affects the diversity of native plants by invading and eventually dominating habitats including marshes, coastal prairies, river bottoms, and upland forests, as well as disturbed sites and abandoned agricultural fields. Chinese tallow prefers wet soils but is very adaptable. The species has become a serious problem on private and federal lands, such as the Big Thicket National Preserve and national forests in Texas. Chinese tallow can transform areas into a single-species forest. The rapid forestation of Chinese tallow has contributed significantly to the degradation of wetlands along the Gulf Coast. Chinese tallow may alter soil chemistry, allowing the species to self-perpetuate once established.

Eradication coupled with plantings of native hardwood species within the 4,000 acres of affected area is, in part, proposed using herbicide application techniques. Herbicides can be effective but are temporary control measures requiring repeated treatments. Based on the scale and objective of restoration, it is difficult to predict and guarantee success. Chinese tallow can be difficult to control because the trees will regrow from the roots and from seeds, requiring chemical control using systemic herbicides. No negative socio-economic effects would be anticipated as a result of this alternative. As with the other proposed alternatives, restoration of bottomland hardwoods would positively impact riparian ecosystems, indirectly benefiting recreation, education opportunities, and local economies. A cost-benefit analysis of this alternative is difficult to evaluate due to the low certainty of total alternative costs and probability of success.

Physical, Biological, and Cultural Impacts Evaluation

Air Quality, Noise, Traffic, Energy: This alternative is located in a low-population rural setting. The increased presence of heavy equipment has little potential to disturb local residents. Any noise, traffic, or air quality impacts would be temporary. Minimal equipment use would be expected to implement this alternative; therefore, no air quality, noise, traffic, or energy impacts would be anticipated as a result of this alternative.

Water Quality, Geology: Over the long term, the reestablishment of native hardwood species displaced by Chinese tallow would help improve local water quality, increase local species diversity, and increase resilience to erosion and nutrient loading during high precipitation events.

Contaminants, Public Health and Safety: Restoration activities are not expected to have any impacts on public health and safety. The introduction and use of herbicides, when properly applied, would not negatively impact human or ecological health; however, the risk of contamination is difficult to evaluate without a detailed proposal on type and rate of herbicide application. Prior to implementation, the Trustees would coordinate and consult with applicable county, state, and federal regulatory authorities to properly evaluate and minimize environmental impacts from herbicide application in terrestrial and aquatic habitats.

Biological Environment: The combined effort of Chinese tallow destruction and native tree plantings would substantially improve vegetative diversity, and eventually faunal diversity within the riparian wetlands of the Bayou Loco, Bonaldo Creek, and Upper Angelina River watersheds. Invasive species eradication and native species reestablishment can take years, with an initially slow improvement to local ecologies. Ultimately, the construction, enhancement, and preservation of riparian wetland services achieved through the proposed alternative restoration activities would positively impact wildlife, invertebrate, and wetland plant communities.

Endangered Species: Several state-and federally-listed species may be present in the alternative area. The site contains habitat for the following federally-listed species: red-cockaded woodpecker (*Picoides borealis*), Louisiana pine snake (*Pituophis ruthveni*), and the Neches River rose-mallow (*Hibiscus dasycalyx*). The proposed actions may result in limited exposure to herbicide; however, impacts are avoidable when applying best management practices in concert with conducting endangered species surveys and employing monitors. The eradication of Chinese tallow and planting of native species would likely benefit threatened and endangered species and their designated critical habitats over time.

Prior to project implementation, the Trustees would coordinate and complete consultation with USFWS to address any potential impacts to protected species in accordance with Section 7 of the ESA. The Trustees, in consultation with USFWS, would incorporate and implement conservation measures recommended during consultation in final project design and implementation to avoid or minimize impacts to protected species and critical habitats.

Environmental Justice: This alternative would not have the potential to negatively or disproportionately affect minority or low-income populations in the alternative area, including economically, socially, or in terms of conditions affecting their health. Stephen F. Austin Experimental Forest and Alazan Bayou WMA

are already managed for conservation purposes. The proposed activities would help restore an environment that is of benefit to all citizens.

Recreation: The restoration of communities at the Alazan Bayou WMA could enhance the current level of recreation. Removal of invasive species should improve habitat for multiple species of plants and animals which would likely improve recreational opportunities such as hunting, fishing, hiking, and wildlife viewing.

Cultural Resources: There are no known historic sites or significant cultural, scientific, or historic resources in the area that would be affected by the proposed restoration actions. If this alternative is selected, a complete review of the site under section 106 of the National Historic Preservation Act of 1966 (NHPA) would be completed prior to any construction activities being implemented, with consideration of measures to avoid, minimize, or mitigate any adverse effects on any cultural resources located within the site area. This alternative would be implemented in accordance with all applicable laws and regulations applicable to the protection of cultural and historic resources.

4.2.2 Alternative 4: Days Creek Enhancement and Restoration

This alternative combines various components of the Days Creek Watershed Comprehensive Aquatic Ecosystem Restoration project idea into an alternative that would preserve and enhance approximately 200 acres of forested riparian habitats and restore and stabilize about 6 miles of urban creek channels.

4.2.2.1 CERCLA Evaluation

- *Criterion #1-Direct Ecological Benefits:* These actions would directly compensate for habitat value lost at and adjacent to the Facility within the same watershed through the reestablishment of natural stream meanders, creation of wetland ecosystem services, and the preservation of existing habitats. The selected components that comprise Alternative 4 align with the Trustees' objective to compensate for injuries to freshwater benthic and riparian habitats in the South Central Plains ecoregion through the preservation, restoration, and creation of analogous habitat. Because these alternative components are located in Bowie County and in the same watershed and river basins (Red River and Sulphur River) as the injury, any enhancements to water quality in the area would benefit any protected species in the watershed and river basin impacted by the injury.
- *Criterion #2-Technical Feasibility:* Alternative 4 is technically feasible given the participation of engineers, hydrologists, and city planners in the planning process with oversight by the Trustees. This alternative is restoration and enhancement of existing stream corridors but also includes some development of wetlands and wet forest adjacent to the existing water ways. Because the wetlands and forested habitats are not isolated, there is a high likelihood that they will be viable and self-sustaining for the long term. The proposed activities are commonly completed and highly effective.
- *Criterion #3-Cost Effectiveness:* The Trustees estimate the total cost of this alternative to be \$9,800,000. These components utilize mostly City of Texarkana property and there are no costs for land purchase. Typical urban stream restoration costs range between \$500 and \$1,200 per foot and are generally more expensive than stop gap measures such as detention ponds to

manage nitrogen loads from stormwater at \$30-\$120 per foot or placement of rip-rap to armor streambanks at \$0 to \$120 per foot. The long-term benefits of urban stream restoration are primarily water quality improvements and infrastructure protection. Other benefits include educational, ethical, and community benefits that arise from restoring a naturalized environment within an urban setting, as well as enhancing aquatic and riparian ecosystems along streams with improved water quality (Kenney et al., 2012).

Cost estimations for wetland restoration in urban areas are complex given the many human and natural constraints and can vary widely. The most expensive cost factors tend to be the design accommodations (for example, access, clearing, grading, placement of weirs, pumps or other controls, and excavations or earthwork) that must be made for co-existing or adjacent land uses and infrastructure. Estimates of restoration of seasonal wetlands and creeks range from \$9,000 to \$40,000 per acre (Steere, 2000). Zentner et al (2003) also describes the costs for constructed wetlands from seasonal or wet meadows. These costs include grading and contouring to manage and encourage the water input but assume that water is readily available and is easily manipulated. Plantings are usually required because naturally dominant native plants do not readily invade the restored basin. Costs for plants and planting vary widely depending on type of plants, planting method, density of plants and the potential replanting of areas if unsuccessful. Costs for 1 acre of wetland restoration in a seasonal or wet meadow range from \$12,000 to \$42,000 (Zentner et al., 2003).

Riparian woodlands consist of a channel, an overstory of trees and shrubs and an understory of native herbs. Restoration or reforestation of the riparian corridor is dependent on multiple factors. Planting for the riparian woodland is complex because of the range of plant sizes and types and the potential need for irrigation. Bair (2000) estimates that costs range from \$4,000 to \$8,000 per mile with an average of \$5,000 a river mile or \$110 per acre and was developed assuming planting hard woods and shrubs with conventional hand crews and heavy equipment (Bair, 2000). Zentner et al. (2003) estimates that typical riparian woodland restoration costs are approximately \$40,000 per acre, but these costs are comprehensive and include surface grading, a diverse and highly dense planting strategy, irrigation and mowing or herbicide application to eliminate weeds (Zentner, et al., 2003).

Costs for bank stabilization range from \$46,000 to \$222,000 per mile with a mean of \$86,000 per mile (Bair, 2000). Factors that influence the costs include:

1. Project size – Larger projects tend to have a lower cost per mile. Planning, design, and permitting requirements on small bank stabilization projects (<3000 feet) can quickly drive up the cost per mile. Large scale projects (1 to 9 miles) can absorb or reduce the implementation to fixed cost ratio and are more efficient.
2. Treatment intensity – Treatment intensity varies from site to site. For example, 200 feet of bank at one site may be treated with a single log jam or linear rock structures (e.g., bank barbs), while another site with 200 feet of unstable bank may require a series of barbs and floodplain contouring to stabilize.
3. Stream size – Planning, design, regulatory coordination, and treatment intensity typically increase with stream size and are inversely proportional to stream order.

4. Access – Access to the site usually dictates the equipment type and labor intensity. Clearing of debris or construction of temporary roads may be necessary. If larger equipment is required, then the scope and dimensions of the physical access may be greater than if smaller equipment is sufficient.
5. Other factors include material, equipment, and labor availability and the length of time for the project.

Each component in this alternative is considered cost effective for the amount of creek restoration that will be gained. A breakdown of the costs per alternative component is listed below.

- o This combination of alternative components (1, 2 and 3) would result in restoration of Cowhorn Creek upstream of the Facility. Approximately 16,600 linear feet, 2.5 acres of forested habitat, and six acres of wetland along Cowhorn Creek would be restored for \$2,200,000. Component 1 is naturalization of 2,600 linear feet of the Cowhorn Creek channel in the downtown area for \$300,000. Component 2 is stabilization of approximately 11,000 linear feet of eroding streambanks and native plantings along 9,200 linear feet for \$550,000. Component 3 is naturalizing the alignment, stabilizing and enhancing approximately 3,000 linear feet along Cowhorn Creek for \$1,350,000. Approximately 6 acres of wetlands will be constructed, and 2.5 acres of forested habitat will be preserved. At an assumed cost of \$42,000 per acre, the wetland construction and preservation would cost \$357,000 leaving \$1,843,000 or approximately \$111 per linear foot for stream restoration if funding were solely applied to stream restoration. The components (1, 2 and 3) estimated costs are well below the typical stream restoration published costs.
- o Two alternative components (4 and 5) would preserve and enhance approximately 168 acres of wet forested habitat along Days Creek. Component 4 is preservation of 32 acres of wet forested habitat and enhancement of an additional 36 acres for \$40,000. Planned enhancements include litter pickup, understory seeding with native shade tolerant species mix to increase the biodiversity. Component 5 is preservation of 100 acres of forested riparian habitat for \$110,000. The City of Texarkana currently owns these properties and costs will address enhancements for 36 acres and administrative costs for preservation of 132 acres. Total costs for these components are estimated to be \$150,000 or approximately \$900 per acre. The components (4 and 5) estimated costs are in line with the published estimates for simple acquisition of acreage of at least \$1,000 per acre.
- o Alternative component 6 is restoration and enhancement of approximately 2,000 linear feet along Howard Creek and the construction of approximately 23 acres of wetlands. This component costs are estimated to be \$1,000,000. At \$12,000 to \$42,000 per acre of constructed wetland cost, the total cost of construction of the 23 acres of wetland could range from \$276,000 to \$966,000 leaving anywhere from \$714,000 to \$24,000 for restoration and enhancement of 2,000 linear feet of Howard Creek. This component is considered cost effective because there are no property acquisition costs; however, the costs between the wetlands construction and stream restoration will have to be balanced appropriately so that all of the ecological goals are achieved.

- o Alternative components 7, 8, and 9 would restore and enhance Swampoodle Creek at a total cost of \$6,050,000. Component 7 is construction of 2.85 acres of wetlands, removal of 665 linear feet of concrete lining in the stream channel and naturalization of the stream through Ferguson Park. The cost of component 7 is \$3,700,000 and includes the costs for removal of 1,100 to 1,700 linear feet of concrete downstream into the area represented in component 9. The cost of component 9 is \$650,000 and includes channel naturalizing/excavation, re-grading and planting. Component 8 is stabilization of 11,000 linear feet along Swampoodle Creek before it enters Days Creek north of the Facility at a cost of \$1,700,000. The 2.85-acre wetland would be constructed on the existing channel and therefore the water source is readily available. At an assumed cost of \$42,000 per acre, the wetland construction would cost \$120,000 leaving approximately \$5,930,000 or approximately \$400 per linear foot for stream restoration if funding were all applied to stream restoration. The components (7, 8 and 9) estimated costs are well below the typical stream restoration and wetland restoration comparison costs.
- o Alternative component 10 is restoration of approximately 2,000 linear feet along Waggoner Creek with costs estimated to be \$400,000 or \$200 per linear foot. The component 10 estimated costs are well below the typical stream restoration published costs of \$500 to \$1,200.
- *Criterion #4-Reasonable Probability of Success:* The probability of success is considered high by the Trustees. The City of Texarkana is committed to the long-term success of this alternative as evidenced by more efficient management of storm water in the city. The properties are all owned by the City of Texarkana, so there are no land purchase that are required. The various components are located along existing urban streams and creeks that run through the City of Texarkana and south of the city. Because the proposed wetland restoration projects are located adjacent to existing streams, the maintenance of the wetlands should be less challenging than if the proposed components were upland fields located away from a perennial water source. Engineers will have to understand how to maintain consistent water flow in the creeks and wetlands as well as providing for urban flood controls. The wetlands can be used as a buffer for water management during times of heavy rains but must also be maintained as wet during dry times.
- *Criterion #5-Measurable Results:* Planning documents (e.g., engineering designs) will be developed but readily available standards and methodologies to measure performance and construction completion are common practice in the industry. The measures of success can be further defined with the Trustees during the planning process. A long-term management and monitoring plan would be developed with the Trustees to ensure that the wetlands were maintained properly, and any re-planting occurred in a timely manner.

4.2.2.2 NEPA Evaluation

Environmental and Socio-Economic Impacts Evaluation

The environmental and socio-economic impacts of the described restoration actions in this alternative are largely beneficial. This proposed stream channel restoration stabilizes the stream banks through native plantings, bioengineering, and recreating the natural plan alignments. This alternative would improve

water quality, reduce erosion and nutrient loading from adjacent urban land use, improve benthic and forage fish habitats, and naturalize hydrologic regimes. Similar benefits are anticipated with the creation of emergent and forested riparian wetlands along the waterways. Preservation of large tracts of deciduous and bottomland forest will ensure the continued presence of high quality refuge habitat for wildlife. The actions associated with this alternative could potentially affect noise levels and the pursuit of recreational activities in the vicinity of the alternative area. However, these effects will be minor and short-term and are not expected to influence long-term use of the area by the public. Beyond the short-term effects mentioned above, the area is expected to foster and enhance the ecological value and continued public use of the affected portion of the area through the improvements to the environment. Increases in productivity should improve species abundance and diversity at the site and enhance public use of the area, especially for environmental education and bird watching. Hydrologic improvements are expected to reduce flooding and erosion concerns. Implementation of this alternative would have a positive effect on the local economy and its citizens, given its proximity to the population center. Considering the setting and information available, the Trustees do not believe there is any meaningful uncertainty as to potential effects or unknown risks to the environment associated with implementing the proposed actions.

Physical, Biological, and Cultural Impacts Evaluation

Air Quality, Noise, Energy, Traffic: This alternative is located in a populated area with residential land use. Minor short-term adverse impacts to noise, traffic, and air quality may result from the construction and enhancement of wetlands. Exhaust emissions, construction traffic and noise, and energy consumption from construction equipment may result, but these impacts would be minimal and only occur during the construction phase of the alternative. Air contaminants would be quickly dissipated by prevailing winds. There would be no long-term negative impacts.

Water Quality and Geology: In the short term, during the period of construction, earth-moving activities will increase turbidity in the area resulting in moderate adverse impacts. Over the longer term, the selected restoration action will re-establish, enhance, and increase the acreage of freshwater wetlands and help improve local water quality via filtration of larger volumes of water through better management of rainfall runoff. Cowhorn, Days, Swampoodle, and Waggoner creeks are all on the TCEQ Concerns List for organics and/or impaired habitat and microbenthic communities (TCEQ, 2015). The restoration actions will improve these known water quality issues, directly addressing habitat and species concerns recognized by the State in these waterbodies.

Freshwater wetland and stream restoration would improve riparian habitat function but would not displace or diminish unique geographic areas. No unique or rare habitat would be destroyed due to alternative implementation. Stream restoration activities will facilitate a natural flux of sediment in and out of floodplains. The return of more natural hydrologic regimes would reduce the “flashiness” of stream hydrology responsible for flash flooding and extreme erosion.

Contaminants, Public Health and Safety: Restoration activities are not expected to have any impacts on public health and safety. The risk of spills from construction equipment should be acknowledged but can be minimized using secondary containments and other preventative measures. Likewise, sediment runoff

from clearing and construction activities is possible; however, silt fences and other measures can be implemented to prevent erosion.

Biological Environment: During the active restoration phase of this alternative, potential short-term and localized impacts include increased noise levels from vehicle traffic and use of large equipment. Increases in turbidity during construction are also possible. Work in stream channels will utilize proper sediment and erosion control measures. These effects will be minor and short-term and are not expected to influence long-term use of the area by wildlife. The Trustees do not believe that the proposed alternative would have a net adverse effect on vegetation and wildlife. There is currently limited wetland vegetation at the sites of proposed alternative construction. Any wildlife that may be present in the area during restoration activities are likely mobile and would move during construction activity. There is adequate habitat adjacent to the area to provide sufficient space for refuge during operations. Ultimately, the wildlife, invertebrate, and wetland plant communities would be positively impacted by the construction, enhancement, and preservation of riparian wetland services that would be achieved through the proposed alternative restoration activities.

Endangered Species: As noted in Section 2.2.3, several state- and federally-listed species may be present in Bowie County; however, the proposed actions are not likely to adversely affect threatened or endangered species or their designated critical habitats. The area is heavily urbanized and does not provide habitat to threatened and endangered species. Some listed species, such as the bald eagle, may benefit from the restoration alternatives. Prior to project implementation, the Trustees would coordinate and complete consultation with USFWS on this alternative regarding any potential impacts to protected species in accordance with section 7 of the ESA. The Trustees, in consultation with USFWS, would incorporate and implement conservation measures recommended during consultation in final project design and implementation to avoid or minimize impacts to protected species and critical habitats.

Environmental Justice: The proposed alternative does not have the potential to negatively or disproportionately affect minority or low-income populations in the City of Texarkana, either economically, socially, or in terms of conditions affecting their health. In particular, Cowhorn Creek enhancement components are located in a low-income housing area of Texarkana and would directly benefit an economically disadvantaged population. The alternative outlines plans which would include an H&H study to avoid unintentional flooding as a result of construction or final disposition of stream hydrology. The proposed activities would help restore an environment that is of benefit to all citizens.

Recreation: The noise and increased turbidity of surface waters resulting from earth-moving activities during alternative construction are expected to discourage and decrease recreational activities in the vicinity of the site during construction. Any such effect will be limited to the short time period of construction and should be minor. Over the longer term, the selected restoration action will increase the quality, quantity, and productivity of natural areas. The unique urban setting of these alternatives provides an opportunity to increase educational and recreational values of existing natural resources in the City. The restored riparian habitat in Days Creek will support many recreational activities (e.g., bird watching), and the improvement in site conditions will enhance opportunities for, and quality of, a variety of recreational uses.

Cultural Resources: There are no known historic sites or significant cultural, scientific, or historic resources in the area that would be affected by the proposed restoration actions. If this alternative is selected, a complete review of the site under section 106 of the NHPA would be completed prior to any construction activities being implemented, with consideration of measures to avoid, minimize, or mitigate any adverse effects on any cultural resources located within the site area. This alternative would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

4.2.3 Alternative 5: Days Creek – Urban Wetland Restoration and Enhancement

The Trustees developed Alternative 5 by combining various components of the Days Creek Watershed Comprehensive Aquatic Ecosystem Restoration project idea into an alternative focused on urban wetland restoration. This alternative includes approximately 66 acres of urban wetland restoration and enhancement of approximately 15,000 linear feet of creek stabilization, development, or restoration in and around the City of Texarkana within the Days Creek and Swampoodle Creek watersheds and Spring Lake Park.

4.2.3.1 CERCLA Evaluation

- *Criterion #1-Direct Ecological Benefits:* The creation and enhancement of urban wetlands, wet woods, and riparian habitat, and the stabilization/restoration of urban stream channels would improve water quality and other ecological services associated with aquatic habitats. This alternative is generally located upstream of the Facility, and the creation of enhanced ecosystem services (improved water quality and management of urban runoff) would directly benefit the portions of Days and Waggoner creeks that flow adjacent to the Facility. However, a lack of continuity between the alternative components (i.e., they are disconnected geographically) could lower the ecological benefits from the project. For example, a 5-acre isolated wetland in an urban setting provides some level of ecological value but is not as productive and provides less ecological value than wetlands that are part of a connected system such as a larger wetland or creek. The Trustees concluded that there are direct ecological benefits, but they are limited due to the lack of connectivity between the restoration areas and the potential future surrounding urban encroachment.
- *Criterion #2-Technical Feasibility:* The Trustees have concerns about the technical feasibility for this alternative. The majority of the project components included in this alternative are urban, isolated wetlands not constructed in naturally wet areas and therefore unlikely to be self-sustaining.
- *Criterion #3-Cost Effectiveness:* Costs for wetlands developed vary widely depending on if the project site is currently a perennial wetland, seasonal wetland, or wet meadow. The costs per acre for the creation of wetlands from mowed, upland lots in an urban environment is higher than the acquisition, restoration, and preservation of existing wet areas or freshwater wetlands. As described in Section 4.2.2, the costs for constructed wetlands from seasonal or wet meadows range from \$9,000 to \$42,000 per acre, and the costs for bank stabilization range average \$86,000 per mile.

The Trustees estimate the total cost of Alternative 5 to be \$6,600,000. Individual component costs are described below².

- o Component 1: Create approximately 18 to 20 acres of freshwater wetlands. Estimated costs are \$1,200,000 or approximately \$60,000 per acre. The wetlands will be located between Days Creek and the City's wastewater treatment plant in cleared open areas that are currently uplands consisting predominantly of mowed grass. Published costs for constructed wetlands from seasonal or wet meadows range from \$9,000 to \$42,000 per acre. This component cost is greater than the higher end of the range, but the area prior to wetlands construction is not considered a seasonal or wet meadow, but an upland mowed field and therefore costs are expected to be higher. Development of wetlands from upland non-wet areas most likely include excavation, earth moving, plantings, and some method to maintain the water in the area. Given the comparable costs, this component cost is reasonable.
- o Component 2: Stabilize approximately 4,000 linear feet downstream of the Facility and create a series of treatment wetlands near the City's mulch operation and wastewater treatment plant. Estimated component costs are \$2,000,000. Assuming the total acreage of the wetlands will be 30 acres, the cost is approximately \$1,260,000 (assuming \$42,000 per acre), and the remaining \$740,000 could be applied to stream stabilization (approximately \$185 per linear foot). This component cost as compared to published values is cost effective, but sufficient detail on the scope of the stabilization or the current nature of the areas slated to become wetlands (i.e., how wet the areas are currently) is not well understood.
- o Component 3: Create 1.2 acres of wet woods within Karrh Park. Estimated alternative costs are \$15,000 or approximately \$12,500 per acre. As compared to published costs for development of wet woods, this component is reasonable.
- o Component 4: Restore and enhance 1.6 acres of wooded habitat. Estimated alternative costs are \$115,000 or approximately \$72,000 per acre. Zentner et al. (2003) estimates that typical riparian woodland restoration costs are approximately \$40,000 per acre. Comparative wetland construction costs are reported to be \$42,000. Based on these comparisons, the restoration an enhancement of 1.6 acres of wooded habitat is not cost effective.

² A cost was not estimated for component 7. This component involves working with a private landowner along an approximate 310-linear-foot segment of an unnamed stream channel, establishing a conservation easement, and restoring approximately 0.5 acres of riparian habitat.

- o Component 5: Create 12 acres of wooded wetlands along C.K. Bender Elementary School property. Estimated alternative costs are \$1,550,000 or approximately \$129,000 per acre. Comparative wetland construction costs are reported to be \$42,000. Based on this comparison, the creation of 12 acres of wooded wetlands is not cost effective.
- o Component 6: Restore approximately 2 acres of wet woods around an existing pond and stream channel within Karrh Park. Estimated alternative costs are \$220,000 or \$110,000 per acre. Comparative wetland construction costs are reported to be \$42,000. Based on this comparison, the creation of 2 acres of wet woods is not cost effective.
- o Component 8: Create approximately 5 acres of wetland between Martin Luther King Boulevard and West 4th Street. Estimated alternative costs are \$300,000 or \$60,000 per acre. Comparative wetland construction costs are reported to be \$42,000. Based on this comparison, the creation of 5 acres of wetlands is not cost effective.
- o Component 9: Create approximately 10 acres of wetland along Swampoodle between College Drive and West 4th Street. Estimated alternative costs are \$600,000 or approximately \$60,000 per acre. Comparative wetland construction costs are reported to be \$42,000. Based on this comparison, the creation of 10 acres of wetlands is not cost effective.
- o Component 10: Restore approximately 6 acres of riparian habitat along 11,000 linear feet of Swampoodle between College Drive and West 4th Street. Estimated alternative costs are \$60,000 or approximately \$10,000 per acre. Planting for the riparian woodland is complex because of the range of plant sizes and types and the potential need for irrigation. Bair (2000) estimates that costs range from \$4,000 to \$8,000 per mile with an average of \$5,000 a river mile or \$110 per acre assuming conventional hand crews and heavy equipment are used for planting hard woods and shrubs. Zentner et al. (2003) estimates that typical riparian woodland restoration costs are approximately \$40,000 per acre, but these costs are comprehensive and include surface grading, a diverse and highly dense planting strategy, irrigation, and mowing or herbicide application to eliminate weeds. Because this component is to occur within the urban area of College Drive and West 4th street, it is assumed that significant earth moving, planting, and management of water would be required. Based on these assumptions and the comparative cost analysis, component 10 is reasonably cost effective.
- o Component 11: Create approximately 5 acres of wetlands along Spring Lake in Spring Lake Park. Estimated alternative costs are \$300,000 or approximately \$60,000 per acre. Comparative wetland construction costs are reported to be \$42,000. Based on this comparison, the creation of 5 acres of wetlands is not cost effective.
- o Component 12: Construct approximately 3 acres of wetlands and approximately 300 feet of boardwalk at Spring Lake Park. Estimated alternative costs are \$240,000 or approximately \$80,000 per acre. Comparative wetland construction costs are reported to be \$42,000. Based on this comparison, the creation of 3 acres of wetlands is not cost effective.

- *Criterion #4-Reasonable Probability of Success:* The Trustees consider this alternative to have a reasonable probability of success. The commitment by the City of Texarkana is key to the success of this alternative.
- *Criterion #5-Measurable Results:* For the majority of these alternative components, the primary measure of success is the creation of the wetlands. A long-term management plan would be developed with the Trustees to ensure that the wetlands were maintained properly, and any re-planting occurred in a timely manner. Various planning documents (e.g., engineering designs) would be developed. The measures of success and monitoring can be further defined with the Trustees during the planning process.

4.2.3.2 NEPA Evaluation

Environmental and Socio-Economic Impacts Evaluation

The environmental impacts of Alternative 5 are largely beneficial; however, those benefits were deemed relatively small compared to the larger stream rehabilitation and preservation projects selected by the Trustees. The creation of small, isolated wetlands in an urban setting can provide environmental benefits through improvements in water quality, aesthetics, and localized flood control. These areas can be susceptible to invasive species and eutrophication, making them expensive to maintain. There are small socio-economic benefits to the alternative components (e.g., added educational and recreational value to school grounds).

Physical, Biological, and Cultural Impacts Evaluation

Air Quality, Noise, Energy, Traffic: This alternative is located in a populated area with residential land use. Minor short-term adverse noise, traffic, and air quality impacts may result from the construction and enhancement of wetlands. Exhaust emissions, construction traffic and noise, and energy consumption from construction equipment may result, but these impacts would be minimal and only occur during the construction phase of the alternative. Air contaminants would be quickly dissipated by prevailing winds. There would be no long-term negative impacts.

Water Quality and Geology: In the short term, during the period of construction, earth-moving activities would increase turbidity in the area. After construction, regrading, and planting is completed, water quality would significantly improve. Over the longer term, the wetland construction and use would improve local water quality up to the capacity of the wetlands to treat flow-through surface water. Stream restoration activities will facilitate a natural flux of sediment in and out of floodplains. The return of more natural hydrologic regimes reduces the “flashiness” of stream hydrology responsible for flash flooding and extreme erosion. However, the small size and location of the projects included in this alternative limits the potential for water quality improvement.

Contaminants, Public Health and Safety: Wetland construction activities are not expected to have any negative impacts on public health and safety. The risk of spills from construction equipment should be acknowledged but can be minimized using secondary containments and other preventative measures. Likewise, sediment runoff from clearing and construction activities is possible; however, silt fences and other measures can be implemented to prevent erosion.

Biological Environment: Minor long-term ecological benefits may be recognized by the construction and enhancement of small, isolated urban wetlands. Those benefits come at the price of considerable maintenance costs, litter cleaning, invasive plant treatment, and possible eutrophication concerns. Some bird and wildlife species may utilize these wetlands for foraging and nesting; however, more sensitive species may avoid these areas or be unsuccessful in living and breeding in them.

Endangered Species: The proposed actions are not likely to adversely affect threatened or endangered species or their designated critical habitats. The site is heavily urbanized and does not currently provide habitat to threatened and endangered species. Prior to project implementation, the Trustees would coordinate and complete consultation with USFWS on this alternative regarding any potential impacts to protected species in accordance with section 7 of the ESA. The Trustees, in consultation with USFWS, would incorporate and implement conservation measures recommended during consultation in final project design and implementation to avoid or minimize impacts to protected species and critical habitats.

Environmental Justice: The proposed alternative does not have the potential to negatively or disproportionately affect minority or low-income populations in the City of Texarkana, either economically, socially, or in terms of conditions affecting their health. Components of this alternative are generally not located in demographically-disadvantaged neighborhoods. The proposed activities may improve environmental conditions to the benefit of all citizens.

Recreation: There are components that would directly benefit the public by improving or creating recreational opportunities (e.g., creation of a boardwalk, wetland creation in a city park). None of the alternative components would negatively influence the availability and quality of recreation within the City of Texarkana.

Cultural Resources: There are no known historic sites or significant cultural, scientific, or historic resources in the area that would be affected by the proposed restoration actions. Prior to project implementation, the Trustees would coordinate and complete consultation with USFWS on this alternative regarding any potential impacts to protected species in accordance with section 7 of the ESA. The Trustees, in consultation with USFWS, would incorporate and implement conservation measures recommended during consultation in final project design and implementation to avoid or minimize impacts to protected species and critical habitats. If this alternative is selected, a complete review of the site under section 106 of the NHPA would be completed prior to any construction activities being implemented, with consideration of measures to avoid, minimize, or mitigate any adverse effects on any cultural resources located within the site area. This alternative would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

4.2.4 Alternative 6: Longview Arboretum and Nature Park

This alternative would fund the construction of Phase 1 of a public park as part of the Master Plan for the Longview Arboretum and Nature Center. The proposal includes the development of a nature center, gardens, and associated infrastructure.

4.2.4.1 CERCLA Evaluation

- *Criterion #1-Direct Ecological Benefits:* Once completed, the Longview Arboretum and Nature Park would improve water quality and mitigate the effects of stormwater. Restoration for pine woodlands, bottomland hardwood, and riparian areas is planned within the 28-acre park. Due to the scale of the restoration of bottomland hardwoods and riparian areas, as well as potential future development of the surrounding area, the Trustees concluded that direct ecological benefits are small in comparison to other alternatives proposed in this RP/EA.
- *Criterion #2-Technical Feasibility:* The Longview Arboretum and Nature Park will be situated within a 28-acre area and will require significant construction and management. The long-term technical feasibility was determined to be low by the Trustees.
- *Criterion #3-Cost Effectiveness:* The estimated total cost of this alternative is \$1,100,000. The funding would primarily address infrastructure costs for waterlines and faucets, bridges, maintenance facility, development of lawn area and irrigation, restrooms and utilities, pond creation and creek improvements, restoration and management, contractual fees, permitting, and contingency. Although this alternative does include development of aquatic and wetland habitat, funds will largely be applied to the infrastructure placement. Given the limited amount of ecological benefits to forested riparian, bottomland hardwoods, aquatic, and/or wetland habitats, this alternative is not considered cost effective.
- *Criterion #4-Reasonable Probability of Success:* This alternative has a reasonably high probability of success as an arboretum and park in an urban setting. The City of Longview has completed significant planning and investigation as is shown in the Master Plan documentation, though the availability of future funds needed to complete the project is unknown.
- *Criterion #5-Measurable Results:* The Phase I infrastructure development would provide minimal measurable result that align with the Trustees' goal to restore, replace, or acquire the equivalent of the injured natural resources.

4.2.4.2 NEPA Evaluation

Environmental and Socio-Economic Impacts Evaluation

The installation of the Longview Arboretum and Nature Park would provide some environmental benefits to the larger urban environment through the creation of new green spaces, increased coverage of native flora, and possible a wildlife refuge. A detailed environmental impacts evaluation of this alternative is difficult to ascertain due to the limited ecological objectives of the alternative and the divergence of alignment from offsetting damages associated with losses of ecological services at the Facility. The majority of benefits are associated with socio-economic effects of the alternative. Considerable outdoor recreational opportunities would be created constructing the alternative.

Physical, Biological, and Cultural Impacts Evaluation

Air Quality, Noise, Energy, Traffic: The site of the arboretum and park is located in a populated residential area. Minor short-term adverse impacts may result from the development of the arboretum and park. Exhaust emissions, construction traffic and noise, and energy consumption from this equipment may

result, but these impacts would be minimal and only occur during the construction phase of the alternative. Air contaminants would be quickly dissipated by prevailing winds. There would be no long-term negative impacts.

Water Quality and Geology: After construction, regrading, and planting are completed, water quality may improve in Grace Creek through reduced erosion, nutrient loads, and runoff. These improvements would be contingent upon management of fertilization application, water drainage, water storage, and landscaping associated with the final design.

Contaminants, Public Health and Safety: The alternative should not result in any contaminants released into the environment. The risk of spills from construction equipment should be acknowledged but can be minimized using secondary containments and other preventative measures. Likewise, sediment runoff from clearing and construction activities is possible; however, silt fences and other measures can be implemented to prevent erosion.

Biological Environment: The construction of an arboretum and park in the City of Longview may provide nesting sites for local fauna; however, benefits to the biological environment are anticipated to be minimal. Urban green spaces are common through the City already. The arboretum and park are planned to be managed for recreation and educational uses, minimizing the opportunity for in-kind compensation of ecosystem services lost at the Facility.

Endangered Species: The proposed actions are not likely to adversely affect threatened or endangered species or their designated critical habitats. The site is urbanized and does not currently provide critical habitat to threatened and endangered species. Some listed migratory waterfowl and wading birds, including piping plover (*Charadrius melodus*), least tern (*Sterna antillarum*), and red knot (*Calidris canutus rufa*), may benefit from the construction of the alternative.

Prior to project implementation, the Trustees would coordinate and complete consultation with USFWS on this alternative regarding any potential impacts to protected species in accordance with section 7 of the ESA. The Trustees, in consultation with USFWS, would incorporate and implement conservation measures recommended during consultation in final project design and implementation to avoid or minimize impacts to protected species and critical habitats.

Environmental Justice: Adjacent land use to the proposed alternative is limited to commercial development. The proposed alternative impacts, positive and negative, would be realized throughout the City of Longview for all its residents. The proposed alternative does not have the potential to negatively or disproportionately affect minority or low-income populations in the City of Longview, either economically, socially, or in terms of conditions affecting their health. The proposed activities should improve access to green spaces and educational opportunities of benefit to all citizens.

Recreation: The alternative would substantially improve recreational opportunity (e.g., hiking, birding) in the City of Longview. The alternative has a unique design that would inspire and educate residents and visitors.

Cultural Resources: There are no known historic sites or significant cultural, scientific, or historic resources in the area that would be affected by the proposed actions. If this alternative is selected, a complete

review of the site under section 106 of the NHPA would be completed prior to any construction activities being implemented, with consideration of measures to avoid, minimize, or mitigate any adverse effects on any cultural resources located within the site area. This alternative would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

4.2.5 Alternative 7: Mineola Nature Preserve – Restoration and Enhancement

This alternative includes the following restoration and rehabilitation activities: 1) plant hardwood trees and prevent the establishment of invasive species, 2) perform hydrological work to improve drainage so that the natural flow of water is not restricted, and 3) mechanically clear land (e.g., mulching/grinding activities) to remove large woody debris piles in the southeast portion of the Mineola Nature Preserve (Preserve) to improve hydrology.

4.2.5.1 CERCLA Evaluation

- *Criterion #1-Direct Ecological Benefits:* This alternative provides direct ecological benefits to forested riparian, bottomland hardwoods, aquatic and wetland habitats in the geographic area identified by the Trustees. These restored habitats are equivalent to the injury to freshwater benthic invertebrate communities in Days, Waggoner, and Howard creeks in that they enhance freshwater flow and riparian and bottomland hardwood diversity and health. Because of the enhancements to the Preserve, aquatic habitat and surface water flow would be improved, providing habitat for benthic invertebrate communities. In addition, the Preserve provides connectivity along the Sabine River due to its proximity to the Little Sandy National Wildlife Refuge and the Old Sabine Bottom Wildlife Management Area.
- *Criterion #2-Technical Feasibility:* The Preserve is owned and maintained by the City of Mineola as part of a comprehensive development plan to protect wildlife and habitat. The active management of the Preserve by the City has led to a good understanding of where the actions described in this alternative will be most effective for the long term. All the activities proposed would be technically feasible.
- *Criterion #3-Cost Effectiveness:* Total estimated cost for this alternative is \$500,000. The planting of hardwood trees is estimated to cost \$150,000 and includes site preparation, purchase and planting of seedlings, herbicide application, and annual maintenance and monitoring for 5 years. Published costs for planting of trees range from \$350 to \$550 per acre. Only a portion of the 2,911-acre Preserve will be planted. The cost of \$150,000 for this alternative would allow approximately 300 acres to be replanted with hardwoods.

Hydrological improvements are estimated to cost between \$125,000 and \$175,000. The alternative would occur over 2 years followed by annual monitoring for 5 years. Costs for mowing or other mechanical manipulations depends on labor, fuel, and machinery costs. Hydrological improvements might include placement of culverts or other structures to enhance the natural flow of water. The cost of \$175,000 for this alternative would include surveying, engineering designs, heavy equipment, and labor.

Debris removal would be achieved by purchasing mulching/grinding equipment, which is estimated to be \$150,000 with an additional \$50,000 for a part-time operator. Equipment for management of dead trees

and debris ranges from \$20,000 for a trailer chipper/shredder pulled behind a standard pickup truck to \$200,000 for a tub grinder that can demolish large tree trunks. More expensive models up to \$600,000 are available that can turn 45-inch diameter trees into mulch. The estimate of \$150,000 for this alternative would allow for purchase of a reasonable sized commercial shredder.

- *Criterion #4-Reasonable Probability of Success:* The TPWD and the City of Mineola have already demonstrated a successful working relationship with the initial development of the Preserve in 2002. The City of Mineola and the TPWD have a Texas Recreation and Parks Account Agreement which requires the City of Mineola to obtain prior authorization from the TPWD before performing certain types of activities at the Preserve. This alternative was given a high probability of success by the Trustees.
- *Criterion #5-Measurable Results:* Potential measures of success include 1) successful planting and growth of native hardwoods, 2) measured improvement in water flow and water quality, and 3) removal of debris. These measures require considerable development through an implementation and monitoring plan.

4.2.5.2 NEPA Evaluation

Environmental and Socio-Economic Impacts Evaluation

The environmental and socio-economic impacts of the described restoration action for the Mineola Nature Preserve are entirely beneficial. This alternative entails the restoration and enhancement of areas already under conservation through planting, improvements to surface water drainage, and removal of excess large wood debris. Given the setting and information available, the Trustees do not believe there is any meaningful uncertainty as to potential effects or unknown risks to the environment associated with implementing the selected actions. The proposed actions will provide direct ecological benefits to the various wetland habitats within the Preserve and to the overall aquatic ecosystem. Additionally, the proposed alternative would also provide improved habitat for various wildlife species.

The Preserve supports visitor access for hiking, biking, birding, wildlife viewing, horseback riding, fishing, camping, and education and event opportunities. Clearing, construction, and earth-moving activities associated with restoration and enhancement of Preserve lands will affect noise levels and the pursuit of recreational activities in the nearby area. However, these effects will be short-term and are not expected to influence long-term use of the area by the public. Beyond the short-term effects mentioned above, the proposed restoration work is expected to enhance the ecological value and foster continued public use of the affected portion of the Preserve through the improvements to the environment. Increases in productivity should improve species abundance and diversity and enhance public use of the area, especially for environmental education, recreational fishing, and bird watching. Implementation of this proposed alternative could positively affect the local economy and its citizens through increased visitation to the Preserve.

Physical, Biological, and Cultural Impacts Evaluation

Air Quality, Noise, Energy, Traffic: The Preserve is not located in a populated area; however, minor short-term adverse impacts may result from the proposed construction activities. Exhaust emissions,

construction traffic, and noise may periodically and temporarily disturb wildlife in the immediate vicinity of the site, or cause movement of wildlife away from the Preserve. Similarly, recreating humans may avoid this area due to noise during construction, but as with wildlife, these impacts would only occur during the construction phase of the alternative, with minimal impacts, and air contaminants should be quickly dissipated by prevailing winds. There would be no long-term negative impacts.

Water Quality and Geology: In the short term, earth-moving activities during the period of construction may increase turbidity in adjacent surface waters to some degree. Best management practices (e.g., containment berms, erosion control) should be employed to minimize the extent, duration, and intensity of water quality impacts during construction. After construction is completed, the sediments should generally be stable as the material removed from the artificial uplands has already de-watered. Over the longer term, the selected restoration action will re-establish, enhance, and increase productivity by removal of excess large woody debris, restoration of natural hydrology, and new plant growth, and help improve local water quality.

Contaminants, Public Health and Safety: Restoration activities are not expected to have any impacts on public health and safety. The restoration alternative would not present any unique physical hazards to humans. The risk of spills from construction equipment should be acknowledged but can be minimized using secondary containments and other preventative measures. Likewise, sediment runoff from clearing and construction activities is possible; however, silt fences and other measures can be implemented to prevent erosion.

Biological Environment: The Preserve has a relatively high diversity of ecological communities for its overall size. Communities present include open water, emergent marshes, wetland scrub, forested bottomland hardwoods, riparian wetlands, improved pastureland, and upland hardwood/pine habitat. Waterfowl and bird species utilizing the Preserve are diverse and abundant.

During the active restoration phase of this proposed alternative, short-term and localized impacts including increased noise levels from vehicle traffic and use of large equipment could occur. Impacts to water quality within and near the proposed alternative site during construction are also possible. These effects will be minor and short-term and are not expected to influence long-term use of the area by wildlife such as wintering ducks, shore birds, or wading birds. Mobile fish and invertebrates would probably not be affected, since these would most likely leave the area and return after completion of construction activities. The Trustees do not believe that the proposed alternative would have a net adverse effect on vegetation and wildlife. Any wildlife that may be present in the area during restoration activities are likely mobile and would move during construction activity. There is adequate habitat adjacent to the area to have sufficient opportunity for refuge during operations. Ultimately, the wildlife, invertebrate, and wetland plant communities would be positively impacted by the enhancement of wetland services that would be achieved through the proposed alternative restoration activities.

Endangered Species: As noted in Section 2.2.3, several state- and federally-listed species may be present. A TPWD assessment of potential threatened and endangered species was provided by the project proponent. Potential species include bald eagle, creek chubsucker, paddlefish, alligator snapping turtle, Louisiana pine snake, northern scarlet snake, and timber rattlesnake. A query of federally-listed species habitat on USFWS resource list database did not return any listed species likely to use the on-site habitat.

The proposed action is not likely to adversely affect threatened or endangered species or their designated critical habitats. Some listed species, such as the bald eagle and alligator snapping turtle, can be temporarily relocated during construction, if deemed necessary, but would ultimately benefit from the restoration. If necessary, the Trustees would coordinate and complete consultation with USFWS on this alternative regarding potential impacts to protected species in accordance with section 7 of the ESA prior to project implementation. Surveys would be completed and, if protected species were present, conservation measures recommended during consultation would be incorporated in final project design and implementation to avoid or minimize impacts to protected species and critical habitats.

Environmental Justice: The proposed alternative does not have the potential to negatively or disproportionately affect minority or low-income populations in the Mineola area, including economically, socially, or in terms of conditions affecting their health. The proposed restoration alternative has no unique attributes or characteristics in regard to the mission or activities currently imposed at the Preserve. The proposed activities would help restore an environment that is of benefit to all citizens.

Recreation: The restoration of biological communities at the Preserve could enhance the current level of recreation.

Cultural Resources: There are no known historic sites or significant cultural, scientific, or historic resources in the area that would be affected by the proposed restoration actions. If this alternative is selected, a complete review of the site under section 106 of the NHPA would be completed prior to any construction activities being implemented, with consideration of measures to avoid, minimize, or mitigate any adverse effects on any cultural resources located within the site area. This alternative would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

4.2.6 Alternative 9: Sulphur Springs Wastewater Treatment Plant Wetlands Habitat

This alternative involves working with the City of Sulphur Springs to convert 100 acres of grass meadow to wetlands and purchase an additional 100 acres of wetlands around Lake Sulphur Springs for preservation and recreational use. The process would include transferring water from the existing wastewater treatment plant to the constructed wetlands.

4.2.6.1 CERCLA Evaluation

- *Criterion #1-Direct Ecological Benefits:* The alternative does provide enhancement of benthic and freshwater habitats through the construction and acquisition of wetlands. Isolated constructed wetland habitats provide unique ecological benefits, but they may not be equivalent to the service losses associated with the Facility.
- *Criterion #2-Technical Feasibility:* The initial design documentation demonstrates that the alternative is technically feasible; however, the technical feasibility of developing and maintaining a constructed wetland using pipes and pumps to provide water does not result in a self-sustaining wetland in perpetuity.
- *Criterion #3-Cost Effectiveness:* The total cost of this alternative, \$6,000,000, includes the purchase of land, construction of 100 acres of wetlands, preservation of another 100 acres of

existing wetlands, recreational amenities, and all the utilities necessary to get reclaimed water from the wastewater treatment plant to the wetlands area. This is a cost of approximately \$30,000 per acre, though this cost does not distinguish between construction and preservation. Costs for wetland construction can typically cost \$42,000 per acre. Given this comparison, the construction of 100 acres of wetlands and preservation of another 100 acres would be below typical cost and therefore considered acceptable. The greatest costs associated with this project (\$3.4 million) appear to be related to the construction of the water conveyance pipeline systems which run over long distances at the project site. The development of infrastructure piping, and their associated cost, does not align with the Trustees' restoration goals (restoration of riparian and benthic invertebrate habitat).

- *Criterion #4-Reasonable Probability of Success:* The Trustees determined the project has a reasonable probability of success; however, although the acquisition and maintenance of existing wetlands is likely to provide cumulative benefit, the long-term success of developing and maintaining a constructed wetland using pipes and pumps to provide water is a concern to the Trustees. The constructed wetlands are isolated and not contiguous with larger tracts of preserved wetland habitat.
- *Criterion #5-Measurable Results:* Potential measurable results for this alternative would be the successful development of constructed wetlands and maintenance of constructed and acquired wetlands; however, considerable planning and development are required. The infrastructure development would provide minimal measurable results that align with the Trustees' goal to restore, replace, or acquire the equivalent of the injured natural resources.

4.2.6.2 NEPA Evaluation

Environmental and Socio-Economic Impacts Evaluation

The construction of 100 acres of wetland habitat associated with the existing wastewater treatment plant would provide entirely positive benefits to the City of Sulphur Springs. The wetlands would accept water from the treatment plant to provide tertiary treatment of plant effluent. The additional supply of water from the constructed wetlands to Lake Sulphur Springs would supplement water supplies and improve water quality downstream via natural wetland filtration mechanisms. Additional benefits include the creation of ecological habitat, recreational opportunities, and educational assets. It is unclear as to the specific type of wetland habitat that would be created, but most flow-through wetlands designed for water treatment are emergent marshes due to the superior water quality treatment services they provide. These habitats provide unique ecological benefits but may not be equivalent to the services lost associated with the Facility.

Socio-economic effects would be largely positive. Improvements to downstream water quality would make the use of Lake Sulphur Springs as drinking water source more feasible. The cost-benefit balance of such an alternative is difficult to ascertain due to the uncertainty of future water use; however, recreational and ecological uses are already established and would largely benefit from the alternative.

Physical, Biological, and Cultural Impacts Evaluation

Air Quality, Noise, Energy, Traffic: The proposed site for creation of the wetland habitat is located near a residential area of the City of Sulphur Springs. Minor short-term adverse impacts may result from the construction of wetlands and installation of pumps and pipes. Exhaust emissions, construction traffic and noise, and energy consumption from construction equipment may result, but these impacts would be minimal and only occur during the construction phase of the alternative. Air contaminants would be quickly dissipated by prevailing winds. There would be no long-term negative impacts.

Water Quality and Geology: In the short term, earth-moving activities during the period of construction will increase turbidity in the area resulting in a moderate adverse impact. After construction, regrading, and planting are completed, water quality will significantly improve. Over the longer term, the selected wetland construction and use will improve local water quality via filtration of larger volumes of water as better management of rainfall runoff will be in place. Significant water quality benefits would be achieved through additional removal of nitrogen and phosphorus loads to the lake. The alternative would not result in any geological or soil effects.

Contaminants, Public Health and Safety: Wetland construction activities are not expected to have any negative impacts on public health and safety. The risk of spills from construction equipment should be acknowledged but can be minimized using secondary containments and other preventative measures. Likewise, sediment runoff from clearing and construction activities is possible; however, silt fences and other measures can be implemented to prevent erosion. The reduction of nutrient loads into downstream waters reduces the risk of detrimental algal and bacterial blooms, which can cause significant harm to human health.

Biological Environment: The construction of the 100-acre wetland may provide forage and nesting sites for local and migratory fauna. The City of Sulphur Springs anticipates acquiring an additional 100 acres of existing wetlands around the Lake of Sulphur Springs. This combined approach would increase the quality of habitat the lake provides to wildlife. Constructed wetlands, especially those used for water quality treatment, may be susceptible to encroachment of invasive plant species. Considerable effort may be required to maintain native plant community structure. If the alternative is implemented successfully, wildlife, invertebrate, fish, and wetland plant communities would be positively impacted by the additional wetland services achieved through the proposed alternative.

Endangered Species: The proposed actions are not likely to adversely affect threatened or endangered species or their designated critical habitats. The site is heavily urbanized and do not currently provide critical habitat to threatened and endangered species. Some listed migratory waterfowl and wading birds (e.g. piping plover, red knot, and least tern) may benefit from the creation of wetlands at Lake Sulphur Springs. If necessary, the Trustees would coordinate and complete consultation with USFWS on this alternative regarding potential impacts to protected species in accordance with section 7 of the ESA prior to project implementation. Surveys would be completed and, if protected species were present, conservation measures recommended during consultation would be incorporated in final project design and implementation to avoid or minimize impacts to protected species and critical habitats.

Environmental Justice: The proposed alternative impacts, positive and negative, would be realized throughout the City of Sulphur Springs by all residents. The proposed alternative does not have the potential to negatively or disproportionately affect minority or low-income populations in the City of Sulphur Springs, including economically, socially, or in terms of conditions affecting their health. The proposed activities should improve environmental conditions that are of benefit to all citizens.

Recreation: Proper alternative design and preventative measures should minimize the noise and potential for increased turbidity of surface waters arising from earth-moving activities during alternative construction. Over the longer term, the proposed wetland construction will increase the quality of recreational value at Lake Sulphur Springs. The unique urban setting of this alternative provides an opportunity to increase educational and recreational values of existing natural resources in the City. Improved water quality and expansion of wetland habitat would enhance opportunities for, and quality of, a variety of recreational uses.

Cultural Resources: There are no known historic sites or significant cultural, scientific, or historic resources in the area that would be affected by the proposed restoration actions. If this alternative is selected, a complete review of the site under section 106 of the NHPA would be completed prior to any construction activities being implemented, with consideration of measures to avoid, minimize, or mitigate any adverse effects on any cultural resources located within the site area. This alternative would be implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resources.

4.2.7 Alternative 13: No Action

Under the “No Action” alternative, the Trustees would take no action to restore, rehabilitate, replace, or acquire natural resources or services equivalent to those lost due to hazardous substance releases at or from the Facility or remedial actions taken to prevent further or future harm.

4.2.7.1 CERCLA Evaluation

The Trustees’ injury assessment indicated that benthic resources were injured due to hazardous substances released from the Facility. Response actions have not yet been determined for this Facility, but they may not fully allow the injured resource to recover and would not compensate the public for the resource services lost over time due to the injuries. Natural resources will likely take decades to return to baseline ecological conditions. The Trustees believe there are feasible and appropriate opportunities within the northeast and east Texas watersheds to restore, replace, or provide services equivalent to those lost due to the release of hazardous substances and subsequent benthic, riparian, and bottomland hardwood injury (see 2.3 and 2.4). Under the “No Action” alternative, restoration actions needed to compensate the public for the natural resource injuries would not occur. The no-action alternative would not provide the conditions necessary for recovery of the injured riparian ecosystem in a comprehensive, timely manner. With no action, key natural resources and services might not ever return or be replaced. If the proposed alternatives are not implemented, an opportunity would be lost to preserve the habitats specifically injured by actions at the Facility. Additionally, the public would not be compensated for the loss of ecosystem services associated with the Facility. This is inconsistent with the goals of the natural resource

damage provisions of CERCLA. The Trustees determined that the “No Action” alternative should be rejected on this basis.

The Trustees evaluated the potential for restoration actions associated with both the proposed and the No Action alternative to impact the following: the physical environment (air and noise pollution, water quality, geological and energy resources, contaminants), the biological environment (fisheries, vegetation, wildlife and endangered species), the cultural and human use environment (environmental justice, recreation, traffic, and cultural resources), and the potential for cumulative impacts. Remedial actions proposed for or undertaken at the Facility are of a nature that precludes natural recovery under this option.

4.2.7.2 NEPA Evaluation

Environmental and Socio-Economic Impacts Evaluation

Under this alternative, no direct action would be taken to compensate for injured natural resources; instead, the natural processes for recovery of the injured natural resources would be allowed to occur at the Facility. The principal advantages of this approach are the ease of implementation and cost effectiveness. This approach relies on the capacity of the ecosystem to “self-heal.” While some natural recovery of the injured natural resources in the riparian communities associated with and downstream from the Facility will likely occur over time, compensation for loss of ecological services would not be provided under the No Action recovery alternative. Losses were suffered in the aquatic stream benthos and forested riparian wetlands, and technically feasible, cost-effective alternatives exist to compensate for these losses. Therefore, the No Action alternative was not selected for implementation.

Physical, Biological, and Cultural Impacts Evaluation

Air Quality, Noise, Energy, Traffic: There would be no negative impacts to air quality, noise, energy, or traffic from the No Action alternative.

Water Quality and Geology: Under the No Action alternative, surface water quality and streambank stability benefits anticipated in Days Creek due to the proposed restoration actions would not occur. Under the No Action alternative there would be no compensation of additional freshwater wetlands in the area.

Contaminants, Public Health and Safety: The No Action alternative would not change current conditions or create a new potential for the release of contaminants affecting public health and safety.

Environmental Justice: By taking no action, there would be no enhanced benefits to the public from improvements to water quality in the area. The lack of meaningful recovery would contribute negatively to the economic and social well-being of all citizens.

Recreation: The No Action alternative would not implement the proposed actions and therefore would not result in any increased opportunities for recreational use.

Cultural Resources: The No Action alternative would have no effect on cultural resources in the area.

4.3 Cumulative Impacts

The combined proposed preservation and restoration actions outlined in this RP/EA are expected to result in cumulative landscape-level benefits across east and northeast Texas bottomland hardwood and riparian ecosystems. The direct effects of the potential alternatives are local; however, the nature of watersheds is such that both benefits and impacts to one area can affect the system on a regional scale. While the alternative actions would not result in any change in the larger current pattern of boat traffic, economic activity, or land use, the creation and protection of habitat for benthos and fish species may contribute to an improved fishery. Naturalization of stream channels and the creation and preservation of floodplain in the Days Creek watershed will improve flood protection in a growing urban area. The addition of wetland acreage in the Days Creek watershed and enhancement activities at the Mineola Nature Preserve has the direct potential to improve water quality. The preservation of wildlife habitat in the proposed acquisition actions supplements existing habitat in the region, expanding and connecting critical habitat and increasing the resiliency of bird and mammal populations that utilize the network of wetlands and wildlife corridors of the greater ecosystem. The construction of the arboretum and park in the City of Longview could have cumulative economic impacts by benefitting local business and improving the quality of life through aesthetics and recreational opportunities; however, those cumulative impacts would only indirectly benefit the benthos and instream aquatic habitats injured by the release of hazardous substances at or from the facility.

Overall, no significant adverse cumulative impacts are anticipated from the proposed actions. A net cumulative beneficial impact may result from synergy with past, current, and future restoration activities.

In this RP/EA, the proposed restoration actions to compensate for environmental damages associated with the Facility were considered in light of multiple planning efforts and opportunities in the region. These alternatives build upon prior and anticipated conservation activities implemented by the Trustees and their partners. Further, the actions selected are intended to compensate the public for resources injuries caused by the release of hazardous substances into the watershed.

5.0 SUMMARY OF THE SELECTED RESTORATION ALTERNATIVES

The Trustees considered each alternative individually and comparatively to identify the alternatives that best provide direct ecological benefits to forested riparian, bottomland hardwoods, aquatic, and/or wetland habitats cost effectively and with the highest probability of success in perpetuity. All the alternatives were ecologically equivalent to the injury (i.e., providing some kind of bottomland or aquatic benefit), and several of the alternatives added large amounts of acreage to existing preserved habitat areas (e.g., Caddo Lake Habitat Acquisition, Mineola Nature Preserve or Neches River Acquisition). The Trustees selected five alternatives for implementation: Alternative 3: Caddo Lake Habitat Acquisition, Alternative 4: Days Creek – Enhancement and Restoration, Alternative 7: Mineola Nature Preserve, Alternative 8: Neches River Bottomland Forest Acquisition, and Alternative 10: Talbot Prairie and Forest Land Acquisition.

5.1 Individual Alternative Summaries

A summary of the assessment and the conclusions of the Trustees for each of the alternatives is presented below.

5.1.1 Alternative 1: Big Thicket Acquisition and Conservation

This alternative involves acquisition and protection of up to 1,200 acres of bottomland hardwood forest previously utilized as industrial forest land from a timber company, a willing seller. Upon acquisition, the project would transfer the property to the United States National Park Service to be incorporated as contiguous to the Big Thicket National Preserve (BTNP).

This alternative would provide benefits to bottomland hardwood forest; however, since the subject properties and adjacent properties have been logged for pine and hardwoods, and some pipeline infrastructure remains on the properties, the Trustees determined that the site has lower ecological value than other options considered. Preservation of the donated property in perpetuity through inclusion in the BTNP would require an Act of Congress. The associated lengthy timeline reduces the technical feasibility of this alternative. Although the cost of acquisition of the acreage is considered reasonable, the use of timber sales to generate funds for restoration actions may not align with the goals of the Trustees. The probability for success was considered to be low because of the extended time frame required for the conveyance process to be completed, the actions required to restore the landscape to historical species, and the active timber management activities that will continue to occur adjacent to the subject properties. The Trustees did not select Alternative 1 for implementation.

5.1.2 Alternative 2: Bottomland Hardwood Restoration and Chinese Tallow Eradication

This alternative involves treatment of Chinese tallow and planting of bottomland hardwood species. The treatment area would comprise 1,800 acres in the Stephen F. Austin Experimental Forest and 2,200 acres in the Alazan Bayou WMA. The treatment area is infested with Chinese tallow but is also seasonally flooded, and improvements would help the long-term sustainability of important habitat and natural systems.

The removal of Chinese tallow and improvement of Texas bottomland/floodplain would increase the biological diversity and ultimately benefit riparian and benthic invertebrate health in the bottomland hardwood habitat. The Trustees expect the alternative could take at least 5 years to complete but could take longer to completely ensure that the seedbank is devoid of Chinese tallow seeds and a sufficient number of hardwood species become established in the affected area. Total alternative cost is estimated to be \$1,700,000 or approximately \$425 per acre. This cost includes: 1) \$700,000 for cutting stumps, 2) \$700,000 for herbicide foliar spraying, 3) \$100,000 for hardwood planting using USFS supplied plants, 4) \$100,000 for hardwood planting from seedlings, and 5) \$100,000 for monitoring over 5 years. Although these costs appear to be reasonable and cost effective given relevant comparisons, costs do not include contingency costs if the eradication or hardwood planting is not successful. Instead, the project relies on existing programs within the Alazan WMA and USFS to continue herbicide treatments. The measures of success do not include hardwood success rates, invasive eradication rates, or actions to address insufficient success. The Trustees did not select Alternative 2 for implementation.

5.1.3 Alternative 3: Caddo Lake Habitat Acquisition

This alternative involves the acquisition of approximately 3,500 acres within the Caddo Lake system. The acquired habitat would be swamp, slough, and headwaters, with the intention to better connect the landscape into either the Caddo Lake Wildlife Management Area or the Caddo Lake State Park.

This alternative will protect habitat for freshwater benthic invertebrate communities and the overall freshwater system. Alternative 3 is directly applicable to the injury to freshwater benthic invertebrate communities in Days, Waggoner, and Howard creeks. There are several tracts available for acquisition within Alternative 3, and the estimated costs range from \$1,000 to \$4,400. When these costs are compared to previous acquisitions by the Trustees, all the tracts would be considered cost effective because of the exceptional habitat quality and the increased congruency with other preserved properties. The inclusion of necessary activities outside of the acquisition in the estimated costs increases the cost effectiveness of Alternative 3. There is also a high probability of success for this alternative based on the past partnerships of the managing entities and stability of the Caddo Lake system. The Trustees selected Alternative 3 for implementation.

5.1.4 Alternative 4: Days Creek – Enhancement and Restoration

This alternative was developed by combining various components of the Days Creek Watershed Comprehensive Aquatic Ecosystem Restoration project idea into an alternative that would preserve and enhance approximately 200 acres of forested riparian habitats and restore and stabilize about 6 miles of urban creek channels.

This alternative entails restoration and enhancement of existing stream corridors but also includes some development of wetlands and wet forest adjacent to the existing waterways. Because the wetlands and forested habitats are not isolated, there is a high likelihood that they will be viable and self-sustaining for the long term. The proposed activities are commonly completed in the industry and highly effective. These actions would directly compensate for habitat value lost at the Facility within the same watershed through the reestablishment of natural stream meanders, creation of wetland ecosystem services, and the

preservation of existing habitats. The components that comprise Alternative 4 align with the Trustees' objective to compensate for injuries to freshwater benthic and riparian habitats in the South Central Plains ecoregion through the preservation, restoration, and creation of analogous habitat. The Trustees estimate the total cost of this alternative to be \$9,800,000. These components utilize mostly City of Texarkana property and include no costs for land purchase. The costs estimated for the individual components are well within or below comparison costs. The probability of success is considered high by the Trustees. Engineers will have to understand how to maintain consistent water flow in the creeks and wetlands as well as providing for urban flood controls. Planning documents (e.g., engineering designs) will be developed, but readily available standards and methodologies to measure performance and construction completion are common practice in the industry. The Trustees selected Alternative 4 for implementation.

5.1.5 Alternative 5: Days Creek – Urban Wetland Restoration and Enhancement

The Trustees developed Alternative 5 by combining various components of the Days Creek Watershed Comprehensive Aquatic Ecosystem Restoration project idea into an alternative focused on urban wetland restoration. This alternative includes urban wetland restoration and enhancement in and around the City of Texarkana within the Days Creek and Swampoodle Creek watersheds and Spring Lake Park.

The development of urban wetlands, wet woods, riparian habitat and stabilization/restoration of urban stream channels would adequately compensate for habitat lost at the Facility by improving water quality and benthic invertebrate habitat within the same watershed as the injury. However, there is a lack of continuity between the alternative components (i.e., they are disconnected geographically and are small amounts of acreage). For example, a 2- or 6-acre isolated wetland in an urban setting, although providing some level of ecological value, would be more productive and provide more ecological value if it was connected or part of a larger wetland or creek. The isolated and urban nature of these components not constructed in naturally wet areas and are unlikely to be self-sustaining. Overall, this alternative is not considered cost effective for the amount of stabilization, restoration, and wetland development proposed. Development of wetlands from upland non-wet areas most likely include excavation, earth moving, plantings, and some method to maintain the water in the area. Some of the individual components propose reasonable costs, but many of them are significantly greater than comparative costs. The Trustees did not select Alternative 5 for implementation.

5.1.6 Alternative 6: Longview Arboretum and Nature Park

This alternative would partially fund the construction of a public park as part of the Master Plan for the Longview Arboretum and Nature Center. The proposal includes the development of a nature center, gardens, and associated infrastructure.

The Longview Arboretum and Nature Park will be situated within a 28-acre area and will require significant construction and management. Once completed, the arboretum and park would improve water quality and potentially mitigate the effects of stormwater. The estimated total cost of Alternative 6 is \$1,100,000. Although this alternative includes development of aquatic and wetland habitat, funds will largely be applied to the infrastructure placement. Given the limited amount of direct ecological benefits to forested riparian, bottomland hardwoods, aquatic, and/or wetland habitats, Alternative 6 is not considered cost effective. This alternative has a reasonably high probability of success as an arboretum and park in an

urban setting. Significant planning and investigation has already occurred as is shown in the Master Plan documentation. Ultimately, this alternative does not align with the Trustees' goal to restore, replace, or acquire the equivalent of the injured natural resources. The Trustees selected Alternative 6 for implementation.

5.1.7 Alternative 7: Mineola Nature Preserve – Restoration and Enhancement

This alternative includes the following restoration and rehabilitation activities: 1) plant hardwood trees and prevent the establishment of invasive species, 2) improve drainage so that the natural flow of water is not restricted, and 3) mechanically clear land to remove large woody debris piles in the southeast portion of the Mineola Nature Preserve (Preserve) to improve hydrology.

This alternative provides direct ecological benefits to forested riparian, bottomland hardwoods, aquatic and wetland habitats that are directly comparable to the injury to freshwater benthic invertebrate communities in Days, Waggoner, and Howard creeks. Because of the enhancements to the Preserve, aquatic habitat and surface water flow would be improved, providing habitat for benthic invertebrate communities. The Preserve is owned and maintained by the City of Mineola as part of a comprehensive development plan to protect wildlife and habitat. The active management of the Preserve by the City has led to a good understanding of where the actions described in this alternative will be most effective for the long term. All of the activities proposed would be technically feasible. The alternative is considered cost effective. Total estimated costs for this alternative is \$500,000 and will include hardwood planting in specific areas, drainage improvements and purchase of shredding equipment to be used in the long-term. The TPWD and the City of Mineola have already demonstrated a successful working relationship with the initial development of the Preserve in 2002. This alternative was given a high probability of success by the Trustees. The Trustees selected Alternative 7 for implementation.

5.1.8 Alternative 8: Neches River Bottomland Forest Acquisition

This alternative involves the acquisition and protection of up to approximately 1,100 acres of land, including riparian bottomland hardwood forest along the Neches River.

The properties contain river frontage with riparian areas that become inundated similarly to the site of the injury. Based on past performance by TCF, this alternative is considered to have a reasonable probability of success by the Trustees. There is uncertainty as to which tracts can be purchased until negotiations with property owners have been completed; however, the estimated cost per acre is approximately \$1,500 to \$2,100 per acre. Costs include the appraisal, title review, survey, environmental assessment, staff time and land acquisition. Based on previous Trustee experience, a range of \$1,000 to \$3,500 per acre is considered reasonable for acquisition of bottomland acreage in east Texas. This alternative is expected to take 24 months to complete and all acquisitions would be managed for conservation in perpetuity. There are no restoration activities projected for this alternative. There is a high probability of success for this alternative based on past partnerships with the managing entities and stability of the Neches River NWR. The Trustees selected Alternative 8 for implementation.

5.1.9 Alternative 9: Sulphur Springs Wastewater Treatment Plant Wetlands Habitat

This alternative involves converting 100 acres of grass meadow to wetlands and the purchase of an additional 100 acres of wetlands around Lake Sulphur Springs for preservation and recreational use. The process would include transferring water from the existing wastewater treatment plant to the constructed wetlands.

The initial design documentation demonstrates that the alternative is technically feasible. However, developing and maintaining a constructed wetland using pipes and pumps to provide water does not result in a self-sustaining wetland in perpetuity. The total cost of this alternative is \$6,000,000 and includes the purchase of land, construction of 100 acres of wetlands, preservation of another 100 acres of existing wetlands, recreational amenities, and all utilities necessary to move reclaimed water from the wastewater treatment plant to the wetlands area. The development of infrastructure piping does not align with the Trustees' restoration goals (restoration, replacement, or preservation of the equivalent of the injured natural resources); therefore, this alternative is not considered cost effective. The constructed wetlands are isolated and not contiguous with larger tracts of preserved wetland habitat. The Trustees did not select Alternative 9 for implementation.

5.1.10 Alternative 10: Talbot Prairie and Forest Land Acquisition

This alternative involves the acquisition and protection of approximately 366 acres of land, including 136 acres of endemic Silveus' dropseed prairie and 230 acres of hardwood forest, 75 percent of which is seasonally flooded. The property is the highest quality native prairie remnant in the vicinity and possibly in Bowie County. The Native Prairies Association of Texas (NPAT), a Texas-based land trust, would purchase and manage the property. TNC would accept a conservation easement on the property. The NPAT and TNC would jointly create and submit to the Trustees a land management plan with the goal of maintaining the optimal diversity of plant and animal species.

This alternative provides ecological services directly comparable to the injury within 25 miles of the Facility. Additionally, this alternative will add to the representation of Silveus' dropseed prairie and calcareous hardwood forest in conservation ownership. This alternative is considered to have a reasonable probability of success because of the past successful working relationship between TNC and the NPAT. Total alternative costs are estimated to be \$1,000,000 or approximately \$2,700 per acre. This alternative is considered cost effective by the Trustees based on a comparison to similar projects, the inclusion of administrative costs and the endowment to TNC. The Trustees selected Alternative 10 for implementation.

5.1.11 Alternative 11: Tonkawa Sandhills Land Acquisition

This alternative includes the acquisition of 4,900 acres for preservation and restoration in the Tonkawa Sandhills of Rusk and Nacogdoches counties.

The acquisition area includes riparian and bottomland hardwood forest, natural springs, and hydric bogs as features of the sandhill ecosystem. This proposed alternative would provide ecological services directly comparable to the injury, in that bottomland hardwoods and benthic invertebrate communities within the wetter areas and drainages would be preserved and protected. The riparian and wetland portions on

6 to 20 acres are in need of restoration. Almost all the upland shortleaf pine-hardwood ecosystem areas need restoration (70% of the total alternative area).

The amount of restoration required is of concern to the Trustees. Current and future oil and gas operations on the property are also a concern for long-term restoration planning and meeting Trustee restoration goals. The Trustees estimate the total cost of this alternative to be \$10,000,000 or approximately \$2,000 per acre. Although the cost of acquisition of the acreage is reasonable as compared to other similar projects, especially since the costs include implementation costs and an endowment, the dependency on the generation of revenue for restoration activities is a concern. The Trustees consider this alternative to have a mixed probability of long-term success. The Trustees did not select Alternative 11 for implementation.

5.1.12 Alternative 12: T&J Hunting Properties

This alternative involves the purchase of two separate properties: 1) 111 acres of bottomland hardwoods in Panola County and 2) 30 acres of wetlands and bottomland hardwoods along the Sabine River.

The acquisition of these properties would provide ecological services (e.g., benthic invertebrate services) in line with the injury; however, the proposed properties are small (111 acres and 30 acres), isolated, and not contiguous with other preserved properties in the region, thereby reducing their overall benefit. The floodplain perpetuity easements would be held by the United States Corps of Engineers or the United States Department of Agriculture. Based on experience, the Trustees are concerned that easements held by these entities would have easement requirements that do not align with Trustee restoration goals. Historically managed for timber production and used as a hunting club, the tracts would be owned by the T&J Hunt Club. Under this alternative, the properties would be placed under conservation easements and managed for wildlife diversity and limited recreational hunting and fishing. The technical feasibility of this alternative is low because the perpetuity requirement for the easement(s), as well as the continued use for recreational hunting and fishing, do not align with Trustee restoration goals.

The estimated total cost of Alternative 12 is \$1,800,000: \$1,300,000 for the 111-acre site (approximately \$12,000 per acre) and \$500,000 for the 30-acre site (approximately \$16,500 per acre). Based on previous Trustee experience a range of \$1,000 - \$3,500 per acre is considered reasonable for acquisition of acreage in east Texas. Based on the comparative costs for acquisition, this alternative is not cost effective. Although conservation easements on the properties could likely be obtained, the probability of success for this alternative is low because of Trustee concerns with the conservation easement requirements and restrictions, and the prohibitive cost for small parcels that are discontinuous with currently preserved acreage. The Trustees did not select Alternative 12 for implementation.

5.1.13 Alternative 13: No Action

Under the “No Action” alternative, restoration actions needed to compensate the public for natural resource injuries would not occur. The Trustees did not select Alternative 13 for implementation because of the settlement and the availability of acceptable alternatives.

	Criterion # 1: Direct ecological benefits to bottomland and aquatic habitats in the identified geographic area	Criterion # 2: Technical feasibility	Criterion # 3: Cost effectiveness	Criterion # 4: Reasonable probability of success	Criterion # 5: Measurable results	Criterion # 6: Avoids collateral injury to natural resources	Criterion # 7: Effect on public health and safety, and compatibility with the remediation process
Alternative 1: Big Thicket Acquisition and Conservation			✓			✓	✓
Alternative 2: Bottomland Hardwood Restoration and Chinese Tallow Eradication	✓	✓	✓			✓	✓
Alternative 3: Caddo Lake Habitat Acquisition	✓	✓	✓	✓	✓	✓	✓
Alternative 4: Days Creek – Enhancement and Restoration	✓	✓	✓	✓	✓	✓	✓
Alternative 5: Days Creek – Urban Wetland Restoration and Enhancement	✓			✓	✓	✓	✓
Alternative 6: Longview Arboretum and Nature Park				✓			✓
Alternative 7: Mineola Nature Preserve – Restoration and Enhancement	✓	✓	✓	✓		✓	✓
Alternative 8: Neches River Bottomland Forest Acquisition	✓	✓	✓	✓	✓	✓	✓
Alternative 9: Sulphur Springs Wastewater Treatment Plant Wetlands Habitat	✓	✓		✓		✓	✓
Alternative 10: Talbot Prairie and Forest Land Acquisition	✓	✓	✓	✓	✓	✓	✓
Alternative 11: Tonkawa Sandhills Land Acquisition	✓	✓	✓		✓	✓	✓
Alternative 12: T&J Hunting Properties	✓					✓	✓
Alternative 13: No Action		✓	✓			✓	

Figure 5-1 CERCLA Criteria Summary

Note: CERCLA Criteria 8 (Consistency with federal, state, or local laws, regulations, or policies) and 9 (Alternative is not already required by existing laws, regulations, permits, settlements, or enforcement orders, including anticipated requirements such as mitigation requirements or draft permits unrelated to the project scope of work) were found to have been met by all of the alternatives and therefore are not presented in the figure above.

5.2 Selected Restoration Alternatives

The Trustees are proposing to spend \$19.2 million to implement the five selected restoration alternatives. In some cases, the description and analysis of the alternatives is based on alternative-specific preliminary design concepts rather than detailed plans. There are selected alternatives that will require the Trustees to develop a budget, plan, engineer, design, and permit before the alternative becomes a shovel-ready alternative. Any time required in preparation for construction is not expected to reduce the anticipated benefits of the alternative or affect the analyses conducted for NEPA. The Trustees may elect to utilize remaining restoration funds from the NRDA settlement, as well as interest earned on these recoveries, to pay for the Trustees' administrative costs to develop and implement the alternatives, and to potentially supplement the funding for currently proposed restoration alternatives. Table 5-1 summarizes the selected restoration alternatives, the estimated costs, the funding allocated by the Trustees, and acres to be restored and or preserved.

Table 5-1 Summary of Selected Restoration Alternatives

Selected Alternative	Allocated Funds ^a	Size and Type of Alternative
Alternative 3: Caddo Lake Habitat Acquisition	\$5,900,000	Acquisition of approximately 3,500 acres
Alternative 4: Days Creek Enhancement and Restoration	\$9,800,000	Restore approximately 6 miles of creek and preserve approximately 200 acres of wetlands
Alternative 7: Mineola Nature Preserve – Restoration and Enhancement	\$500,000	Restoration and enhancement within the 2,911-acre preserve
Alternative 8: Neches River Bottomland Forest Conservation	\$2,200,000	Acquisition of approximately 1,100 acres
Alternative 10: Talbot Prairie and Forest Land Acquisition	\$1,000,000	Acquisition of an estimated 370 acres

a – Total allocated funds are approximately 91% of funds available to the Trustees. Administrative and Trustee oversight costs will be covered by the remaining 9%.

6.0 PUBLIC COMMENT ON THE DRAFT RESTORATION PLAN/ENVIRONMENTAL ASSESSMENT

The public comment period for the Draft Restoration Plan/Environmental Assessment for the Former Kerr-McGee Chemical Corporation Wood Treating Facility (Tronox LLC), Texarkana, Bowie County, Texas opened on October 26, 2018 and closed on November 26, 2018. The mailing and email address for the public to provide comments was posted in a notice in the Texas Register on October 26, 2018. During the public comment period, the Trustees received 14 comments from private citizens, elected officials, city and county officials, educational institutions, and non-governmental organizations. An additional two comments were received after the public comment period had ended. All comments submitted during the period for public comment were reviewed and considered by the Trustees prior to finalizing this RP/EA. These comments are represented in the summary comment descriptions listed in this chapter, and all public comments will be included in the Administrative Record (see Section 1.6).

6.1 Comments Summary

Submissions received during the public comment period included one general comment and multiple specific comments concerning three of the alternatives considered in the RP/EA: Days Creek – Enhancement and Restoration, Days Creek – Urban Wetland Restoration, and Mineola Nature Preserve Restoration and Enhancement. Similar or related comments have been grouped and summarized by alternative for purposes of the response. Below is a summary of comments received by the Trustees during the comment period and the Trustees’ response.

6.1.1 General Comment

1. **Comment:** The Greenfield Environmental Multistate Trust (MST), a court-appointed trustee for hundreds of former Tronox/Kerr-McGee properties, commented that the MST is preparing a site-wide Affected Property Assessment for the Facility and welcomes coordination with some or all of the Trustees to ensure that an appropriate permanent remedy is selected to return the Facility to beneficial use and to fulfill its environmental goals, including the protection of Days, Waggoner, and Howard Creeks.

Response: The Trustees look forward to working with the MST to ensure any final remedy implemented at the Facility will be protective of natural resources under their trust and to coordinate restoration project work with remedial actions at the Facility to ensure mutual success.

6.1.2 Alternative 4: Days Creek – Enhancement and Restoration

1. **Comment:** Multiple commenters requested the Trustees include additional funding in Alternative 4 for “Planning, Monitoring/Management/Maintenance, Project Management” as listed in the original Days Creek Watershed Comprehensive Aquatic Ecosystem Restoration project proposal, from which the Trustees created Alternatives 4 and 5 in the RP/EA. Commenters emphasized that pre- and post-project environmental assessments, planning and monitoring, scientific data collection and analysis, planting of terrestrial and aquatic plants and trees within proposed stream/riparian corridors, and the

development and implementation of environmental education activities for local schools, organizations, and community members are contingent upon inclusion of these funds.

Response: Based on all the information received by the Trustees, costs associated with the “Planning, Monitoring/Management/Maintenance, Project Management” line item were already included in cost estimates for each project component. Following finalization of the RP/EA, the Trustees will meet with project proponents and stakeholders, enter into implementation agreements, and develop detailed work plans and budgets, including necessary expenses for planning, monitoring, management, and maintenance for each selected alternative.

2. **Comment:** One commenter requested the Trustees include additional funding for contingencies for Alternative 4.

Response: The Trustees will consider contingency costs on a project-by-project basis during the development of implementation agreements and/or workplans and will draw any necessary contingency costs from remaining restoration funds from the NRDA settlement.

3. **Comment:** One commenter requested the Trustees consider eliminating Project Component 6 from Alternative 4 and replacing it with Project Component 5 from Alternative 5.

Response: The Trustees selected Project Component 6 and the other project components included in Alternative 4 because these components align well with the Trustees’ restoration goals, are considered cost effective and technically feasible, have a reasonable probability of success, could produce measurable results, and do not have the potential to cause significant adverse environmental effects. Specifically, the Trustees view the restoration and enhancement of 2,000 linear feet of Howard Creek, one of the streams directly impacted by releases from the facility, and the creation of 23 acres of wetland along an existing streambed as better aligned with the Trustees’ restoration goals than the creation of 12 acres of wooded wetland on flat open upland habitat with no existing aquatic areas.

6.1.3 Alternative 5: Days Creek – Urban Wetland Restoration

1. **Comment:** Several commenters requested the Trustees reconsider funding Project Component 5 from Alternative 5: Days Creek - Urban Wetland Restoration and Enhancement.

Response: When considering how to spend the restoration funds recovered under NRDA, the Trustees were required to evaluate and compare all the available alternatives using criteria developed from NRDA regulations (43 C.F.R. § 11.82(d)). Educational and socioeconomic benefits were considered secondary and indirect, including with respect to cost-effectiveness, compared to the primary goal of restoring the equivalent of those natural resources and resource services injured due to releases at or from the Facility. While the components in Alternative 5 have ecological benefits, the benefits were deemed relatively small compared to larger stream rehabilitation and preservation projects preferred by the Trustees. The Trustees determined that projects associated with the selected alternatives

would restore the natural resources and resource services equivalent to those injured in more direct, technically feasible, and cost-effective ways.

2. **Comment:** One commenter requested the Trustees reconsider funding Project Components 5 and 8 from Alternative 5: Days Creek – Urban Wetland Restoration and Enhancement.

Response: See response to comment 6.1.3 - 1.

3. **Comment:** One commenter requested the Trustees give proximity to the Facility greater value as a factor for selection of preferred alternatives. The commenter highlighted Texarkana as being closest in proximity to the Facility and the only restoration alternative within the South Central Plains Ecoregion III Subdivision of Level IV 35a or Tertiary Uplands sub region.

Response: While proximity to injury is not specifically listed as a factor under C.F.R. §11.82(d) (“Factors to consider when selecting the alternative to pursue”), proximity was considered by the Trustees under Criterion #1 as described in Section 3.2 of the RP/EA. In this way, the Trustees emphasized projects that benefited the areas and natural resources directly affected by the historical releases from the Facility.

6.1.4 Alternative 7: Mineola Nature Preserve Restoration and Enhancement

1. **Comment:** Multiple commenters expressed support for the Mineola Nature Preserve project.

Response: The Trustees acknowledge this support.

7.0 LIST OF PREPARERS AND REVIEWERS

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9.0 FINDING OF NO SIGNIFICANT IMPACT (FONSI)

Attachment: 2020-032 ATTH 01 Final Tronox RPEA FONSI (T) (2245 : NRDA Restoration Plan/Env. Assessment doc)

FINDING OF NO SIGNIFICANT IMPACT

RESTORATION PLAN/ENVIRONMENTAL ASSESSMENT
FOR FORMER KERR-MCGEE
CHEMICAL CORPORATION WOOD-TREATING FACILITY (TRONOX LLC),
TEXARKANA, BOWIE COUNTY, TEXAS

The U.S. Fish and Wildlife Service (USFWS), on behalf of the United States Department of the Interior (DOI) and in coordination with the State of Texas Natural Resource Trustees (the Texas Commission on Environmental Quality (TCEQ), Texas Parks and Wildlife Department (TPWD), and Texas General Land Office (GLO), collectively the "Trustees"), propose to implement the 5 restoration alternatives selected in the Restoration Plan / Environmental Assessment for the Former Kerr-McGee Chemical Corporation Wood-Treating Facility (TRONOX LLC) Texarkana, Bowie County, Texas (RP/EA). As part of the RP/EA, an environmental assessment was prepared in compliance with the National Environmental Policy Act (NEPA) to provide a decision-making framework that 1) explores a reasonable range of alternatives to meet project objectives, 2) evaluates potential issues and impacts to the resources and values, and 3) identifies mitigation measures to lessen the degree or extent of these impacts. The RP/EA evaluated the effects associated with 13 alternatives including a "No Action" alternative.

Alternatives Considered and Analyzed

Alternative A—Continuation of Current Project (No Action)

Pursuant to their respective authorities and responsibilities as natural resource trustees under CERCLA, the Trustees determined that releases of hazardous substances at or from the Facility resulted in injuries or potential injuries to natural resources under their jurisdiction. The Trustees undertook this restoration planning effort to restore those natural resources and services injured as a result of releases at or from the Facility. Restoration activities are intended to restore or replace habitats, species, and services to their baseline condition and to compensate the public from the time natural resources are injured until they recover to baseline conditions.

Both the DOI Rule (43 C.F.R. § 11.82(c)(2)) and NEPA require consideration of a "No Action" alternative. Under the "No Action" alternative, the Trustees would take no action to restore, rehabilitate, replace, or acquire natural resources or services equivalent to those lost due to hazardous substance releases at or from the Facility or the remedial actions taken to prevent further or future harm. Under the "No Action" alternative, restoration actions needed to make the environment and public whole for its losses would not occur. The Trustees did not select the "No Action" alternative for implementation because of the settlement being in place and the availability of acceptable alternatives.

Alternative B— Selected Restoration Alternatives (Proposed Action):

The RP/EA considered each alternative individually and comparatively to identify the alternatives that best provide direct ecological benefits cost effectively and with the highest probability of success in perpetuity to forested riparian, bottomland hardwoods, aquatic, and/or wetland habitats. All the alternatives provided some kind of bottomland or aquatic benefit, and several of the alternatives added large amounts of acreage to existing preserved habitat areas (e.g., Caddo Lake Habitat Acquisition, Mineola Nature Preserve, or Neches River Acquisition). The Trustees selected five restoration alternatives for implementation: Alternative 3: Caddo Lake Habitat Acquisition; Alternative 4: Days Creek Enhancement and Restoration; Alternative 7: Mineola Nature Preserve – Restoration and Enhancement; Alternative 8: Neches River Bottomland Forest Conservation; and Alternative 10: Talbot Prairie and Forest Land Acquisition. The selected alternatives compensate for environmental damages associated with the Facility were considered in light of multiple planning efforts and opportunities in the region. These alternatives build upon prior and anticipated conservation activities implemented by the

Trustees and their partners. Further, the selected alternatives are intended to compensate the public for resources injuries caused by the release of hazardous substances into the watershed.

*NEPA requires that the agencies consider the environmental effects of the proposed action. These effects may include, among others, impacts to social, cultural, and economic resources as well as natural resources, except where a categorical exclusion or other exception to NEPA applies. Alternatives 3, 8, and 10 include land acquisition as their major restoration action. These three projects are intended in part to preserve the watershed and improve local water quality, and the acquisition will not adversely affect floodplains, wetlands, or municipal watersheds. A search of the Texas Historical Commission's online Atlas Map did not indicate the presence of American Indian religious or cultural sites, archaeological sites, or historic properties within the selected restoration alternatives. Alternatives 3 and 8 propose acquiring lands adjacent to National Wildlife Refuges or National Forests. In addition, two federally listed plant species *Geocarpon* (*Geocarpon minimum*) and *Neches River rosemallow* (*Hibiscus dasycalyx*), may be located in the project areas; however, there is no designated critical habitat within the project areas. Lands acquired for this project shall serve conservation objectives and expand protected areas. As such, the land acquired through these projects would have no adverse effect on federally listed, threatened, or endangered species or their designated critical habitat; species proposed for federal listing; or proposed critical habitat. Therefore, based upon the information provided above, these three land acquisition projects were consistent with the categorical exclusion described in 516 DM 8.5(A)(4) (FWS Form 3-2185 and Environmental Action Statement). The remaining two selected alternatives in the RP/EA focus on restoration and enhancement of bottomland hardwoods, riparian, and stream habitats. Under NEPA, federal agencies must consider environmental effects of their actions, including impacts on social, cultural, and economic resources, as well as on natural resources. Overall, the RP/EA determined that no significant adverse impacts are anticipated from the selected alternatives. In fact, a net cumulative beneficial impact may result from synergy with past, current, and future restoration activities. The RP/EA concludes that the actions associated with the selected habitat enhancement and construction alternatives will not lead to significant adverse impacts to the environment.*

Alternative C— Restoration Alternatives Not Selected

Seven of the proposed alternatives were not selected for implementation based on the Trustees' analysis and decision-making process under CERCLA. These alternatives include; Alternative 1: Big Thicket Acquisition and Conservation; Alternative 2: Bottomland Hardwood Restoration and Chinese Tallow Eradication; Alternative 5: Days Creek – Urban Wetland Restoration and Enhancement; Alternative 6: Longview Arboretum and Nature Park; Alternative 9: Sulphur Springs Wastewater Treatment Plant Wetlands Habitat; Alternative 11: Tonkawa Sandhills Land Acquisition; Alternative 12: T&J Hunting Properties.

Alternatives 1, 11, and 12 include land acquisition as their major restoration action and are intended in part to preserve the watershed and improve local water quality. An environmental assessment was not prepared for these alternatives because, had these alternatives been selected for implementation, they would have been consistent with the categorical exclusion described in 516 DM 8.5(A)(4).

The remaining 4 habitat and construction alternatives evaluated in the RP/EA, Alternatives 2, 5, 6, and 9 focus on restoration and enhancement of bottomland hardwoods, riparian, and stream habitats. The RP/EA considered environmental effects of their actions, including impacts on social, cultural, and economic resources, as well as on natural resources. Overall, the RP/EA determined that no significant adverse impacts are anticipated from these 4 alternatives. However, the 4 proposed alternatives were not selected for implementation based on the Trustees' analysis and decision-making process under CERCLA.

Proposed/Selected Alternative

The RP/EA was prepared jointly by the Trustees pursuant to their respective authorities and responsibilities as natural resource trustees under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §§ 9601 et seq., and other applicable federal and state laws. Relevant regulations include Subpart G of the National Oil and Hazardous Substances Pollution Contingency Plan (40 C.F.R. §§ 300.600 through 300.615) and DOI's regulations at 43 C.F.R. Part 11, which provide guidance for the NRDA process under CERCLA.

CERCLA establishes liability for the injury to, destruction of, or loss of natural resources caused by releases of hazardous substances. Damages recovered for these losses must be used to restore, replace, or acquire the equivalent of the injured natural resources and services, in accordance with a restoration plan developed by the designated natural resource trustees. The Trustees have integrated the CERCLA and NEPA evaluation processes in the RP/EA to most efficiently present the CERCLA and NEPA evaluations of the various restoration alternatives. Under NEPA, the potential environmental impacts in terms of both context, duration, and intensity informed the Trustees' analysis and decision-making process under CERCLA.

The Trustees are proposing to spend approximately \$19.4 million to implement the 5 selected restoration alternatives. In some cases, the description and analysis of the alternatives is based on alternative-specific preliminary design concepts rather than detailed plans. Some of the selected alternatives will require the Trustees to develop a budget, plan, engineer, design, and permit before the alternative becomes a shovel-ready alternative. Any time required in preparation for construction is not expected to reduce the anticipated benefits of the alternative or affect the analyses conducted for NEPA. Table 1 summarizes the proposed action (selected alternatives), the estimated costs, the funding allocated by the Trustees, and acres to be restored and or preserved.

Table 1 Summary of Proposed Action

<i>Selected Alternative</i>	<i>Allocated Funds ^a</i>	<i>Size and Type of Alternative</i>
<i>Alternative 3: Caddo Lake Habitat Acquisition</i>	<i>\$5,900,000</i>	<i>Acquisition of approximately 3,500 acres</i>
<i>Alternative 4: Days Creek – Enhancement and Restoration</i>	<i>\$9,800,000</i>	<i>Restore approximately 6 miles of creek and preserve approximately 200 acres of wetlands</i>
<i>Alternative 7: Mineola Nature Preserve – Restoration and Enhancement</i>	<i>\$500,000</i>	<i>Restoration and enhancement within the 2,911-acre preserve</i>
<i>Alternative 8: Neches River Bottomland Forest Conservation</i>	<i>\$2,200,000</i>	<i>Acquisition of approximately 1,100 acres</i>
<i>Alternative 10: Talbot Prairie and Forest Land Acquisition</i>	<i>\$1,000,000</i>	<i>Acquisition of an estimated 370 acres</i>

a – Total allocated funds are approximately 91% of funds available to the Trustees. Administrative and Trustee oversight costs will be covered by the remaining 9%.

Summary of Effects

Implementation of the agency's decision would be expected to result in the following environmental, social, and economic effects:

Overall, the RP/EA determined that no significant adverse impacts are anticipated from the selected alternatives. In fact, a net cumulative beneficial impact may result from synergy with past, current, and future restoration activities. The RP/EA concludes that the activities associated with the selected habitat enhancement and construction alternatives will not lead to significant adverse impacts to the environment.

Measures to mitigate and/or minimize adverse effects have been incorporated into the proposal. These measures include:

In some cases, the description and analysis of the alternatives is based on alternative-specific preliminary design concepts rather than detailed plans. The selected alternatives will require the Trustees to develop a budget, plan, engineer, design, and permit before the alternative becomes a shovel-ready alternative. The necessity for any mitigation, permitting, and consultation is anticipated to be addressed through this process. Any time required in preparation for construction is not expected to reduce the anticipated benefits of the alternative or affect the analyses conducted for NEPA.

The proposal is not expected to have any significant adverse effects on wetlands and floodplains, pursuant to Executive Orders 11990 and 11988 because:

The RP/EA determined that no significant adverse impacts are anticipated from the selected alternatives. In fact, a net cumulative beneficial impact may result from preservation, enhancement, and restoration activities.

Public Review

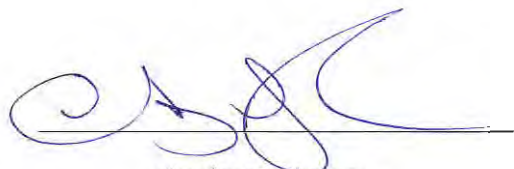
The proposal has been thoroughly coordinated with all interested and/or affected parties. Public participation and review is an integral part of the restoration planning process. CERCLA and NEPA provide a mandate and framework for the Trustees to inform and involve the public in their environmental analysis and decision-making processes.

On March 11, 2016, the Trustees issued a request in the Texas Register (41 TexReg 2008) for project ideas in counties in northeast and east Texas that would restore, rehabilitate, or conserve forested riparian, bottomland hardwoods, aquatic, and/or wetland habitats. In response to the request for scopes of work, the Trustees received 12 project ideas, which are identified in Section 3.2 of this RP/EA. In November 2016, the Trustees requested additional information from the entities that submitted projects. The Trustees used this information to develop a reasonable range of alternatives that could restore those resources injured as a result of the releases of hazardous substances at or from the Facility.

On October 26, 2018, the Trustees announced a Draft RP/EA in the Texas Register (43 TexReg 7251) and published the document on the U.S. Department of the Interior's (DOI) Natural Resource Damage Assessment and Restoration Program case map and document library. The public was encouraged to review and comment on the Draft RP/EA during a 30-day comment period using a mailing address and an email address. The public comment period ended on November 26, 2018. The Trustees received a total of 14 submissions from private citizens, elected officials, city and county officials, educational institutions, and non-governmental organizations. Chapter 6 of the RP/EA provides further detail on the public comment process and includes a summary of all public comments received on the Draft RP/EA and the Trustees' responses.

Determination

Based upon a review and evaluation of the information contained in the RP/EA, as well as other documents and actions of record affiliated with this proposal, the USFWS has determined that the proposal to implement the selected restoration alternatives in the RP/EA does not constitute a major Federal action significantly affecting the quality of the human environment under the meaning of section 102 (2) (c) of the National Environmental Policy Act of 1969 (as amended). As such, an environmental impact statement is not required. An environmental assessment has been prepared in support of this finding and is available upon request to the U.S. Fish and Wildlife Service facility identified above.



Regional Director

March 8 2019

Date

UNITED STATES FISH AND WILDLIFE SERVICE
ENVIRONMENTAL ACTION STATEMENT

9.a

Within the spirit and intent of the Council on Environmental Quality's regulations for implementing the National Environmental Policy Act (NEPA), and other statutes, orders, and policies that protect fish and wildlife resources, I have established the following administrative record and determined that the action of (describe action):

Land acquisition as presented in the Restoration Plan / Environmental Assessment for the Former Kerr-Mcgee Chemical Corporation Wood-Treating Facility (Tronox LLC), Texarkana, Bowie County, Texas.

Check One:

- ☒ is a categorical exclusion as provided by 43 CFR §46.210 and/or 516 DM 8.5 and 43 CFR §46.215. No further NEPA documentation will therefore be made. The proposed action falls under categorical exclusion:
- A(4) The acquisition of real property obtained either through discretionary acts or when acquired by law, whether by way of condemnation, donation, escheat, right-of-entry, escrow, exchange, lapses, purchase, or transfer and that will be under the jurisdiction or control of the United States. Such acquisition of real property shall be in accordance with 602 DM 2 and the Service's procedures, when the acquisition is from a willing seller, continuance of or minor modification to the existing land use is planned, and the acquisition planning process has been performed in coordination with the affected public.
- B(11) Natural resource damage assessment restoration plans, prepared under sections 107, 111, and 122(j) of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA); section 311(f)(4) of the Clean Water Act; and the Oil Pollution Act; when only minor or negligible change in the use of the affected areas is planned.
- ☐ is found not to have significant environmental effects as determined by the attached environmental assessment and finding of no significant impact.
- ☐ is found to have significant effects and, therefore, further consideration of this action will require a notice of intent to be published in the Federal Register announcing the decision to prepare an environmental impact statement.
- ☐ is not approved because of unacceptable environmental damage, or violation of Fish and Wildlife Service mandates, policy, regulations, or procedures.
- ☐ is an emergency action within the context of 40 CFR §1506.11. Only those actions necessary to control the immediate impacts of the emergency will be taken. Other related actions remain subject to NEPA review.

Other supporting documents (list):

Final Restoration Plan / Environmental Assessment for the Former Kerr-Mcgee Chemical Corporation Wood-Treating Facility (Tronox LLC), Texarkana, Bowie County, Texas

FONSI Final Restoration Plan / Environmental Assessment for the Former Kerr-Mcgee Chemical Corporation Wood-Treating Facility (Tronox LLC), Texarkana, Bowie County, Texas

NEPA Compliance Checklist Final Restoration Plan / Environmental Assessment for the Former Kerr-Mcgee Chemical Corporation Wood-Treating Facility (Tronox LLC), Texarkana, Bowie County, Texas

Signature Approval:



Signature Chuck Ardizzone Project Leader Texas Coastal EFSO

2-27-19

Date

Attachment: 2020-032 ATTH 01 Final Tronox RPEA FONSI (T) (2245 : NRDA Restoration Plan/Env. Assessment doc)

NEPA COMPLIANCE CHECKLIST

9.a

State: Texas

Federal Financial Assistance Grant/Agreement/Amendment Number:

Grant/Project Name: Land acquisition as presented in the Restoration Plan / Environmental Assessment for the Former Kerr-Mcgee Chemical Corporation Wood-Treating Facility (Tronox LLC), Texarkana, Bowie County, Texas.

This proposal ☒ **is**; ☐ **is not** completely covered by categorical exclusion No(s). A(4), B(11), 516 DM 8.5.

(check (✓) one) (Review proposed activities. An appropriate categorical exclusion must be identified before completing the remainder of the Checklist. If a categorical exclusion cannot be identified, or the proposal cannot meet the qualifying criteria in the categorical exclusion, an EA must be prepared.)

Exceptions:

Will This Proposal (check (✓) yes or no for each item below):

- | Yes | No | |
|--------------------------|-------------------------------------|--|
| ☐ | ☒ | 1. Have significant adverse effects on public health or safety. |
| ☐ | ☒ | 2. Have adverse effects on such unique geographic characteristics as historic or cultural resources, park, recreation or refuge lands, wilderness areas, wild or scenic rivers, sole or principal drinking water aquifers, prime farmlands, wetlands, floodplains, or ecologically significant or critical areas, including those listed on the Department's National Register of Natural Landmarks. |
| ☐ | ☒ | 3. Have highly controversial environmental effects. |
| ☐ | ☒ | 4. Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks. |
| ☐ | ☒ | 5. Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects. |
| ☐ | ☒ | 6. Be directly related to other actions with individually insignificant, but cumulatively significant environmental effects. |
| ☐ | ☒ | 7. Have adverse effects on properties listed or eligible for listing on the National Register of Historic Places. |
| ☐ | ☒ | 8. Have adverse effects on species listed or proposed to be listed on the List of Endangered or Threatened Species, or have adverse effects on designated Critical Habitat for these species. |
| ☐ | ☒ | 9. Have material adverse effects on resources requiring compliance with Executive Order 11988 (Floodplain Management), Executive Order 11990 (Protection of Wetlands), or the Fish and Wildlife Coordination Act. |
| ☐ | ☒ | 10. Threaten to violate a Federal, State, local or tribal law or requirement imposed for the protection of the environment. |

(If any of the above exceptions receive a "Yes" check (✓), an EA must be prepared.)

Concurrences/Approvals:

Project Leader:



Date:

2-27-19

State Authority Concurrence:

(with financial assistance signature authority, if applicable)

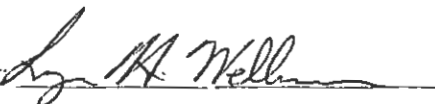
Date:

Within the spirit and intent of the Council of Environmental Quality's regulations for implementing the National Environmental Policy Act (NEPA) and other statutes, orders, and policies that protect fish and wildlife resources, I have established the following administrative record and have determined that the grant/agreement/amendment:

- ☒ is a categorical exclusion as provided by 516 DM 8.5. No further NEPA documentation will therefore be made.
- ☐ is not completely covered by the categorical exclusion as provided by 516 DM 8.5. An EA must be prepared.
- ☐ includes other attached information supporting the Checklist.

Service signature approval:

RO or WO Environmental Coordinator:



Date:

4 March 2019

Staff Specialist, Division of Federal Aid:

(or authorized Service representative with financial assistance signature authority)

Date:

FWS Form 3-2185

08/00

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Attachment: 2020-032 ATTH 01 Final Tronox RPEA FONSI (T) (2245 : NRDA Restoration Plan/Env. Assessment doc)