



City Council Agenda 9/17/2024

Notice is hereby given of a regular meeting of the City Council of City of San Angelo to be held September 17, 2024 at 8:30 AM at the McNease Convention Center – South Meeting Room, 501 Rio Concho Drive, San Angelo, Texas, for the purpose of considering the following agenda items.

1. Call to Order

2. Chaplain Prayer & Pledges

3. Proclamations/Recognitions

Proclamation of September as Hunger Action Month

- a. Proclamation of September 2024 as Hunger Action Month
- b. Proclamation of September 2024 as Hispanic Heritage Month

4. Public Comment

Issues or concerns not on the Regular Agenda may be raised by the public at this time. Citizens should speak from the podium, address all comments to the dais, begin by stating their name and address or Single Member District number, and limit their remarks to less than three minutes.

5. Consent Agenda

- a. Consider approving the September 3, 2024, City Council regular meeting minutes (Heather Stastny)
- b. Consider approving Task Order 1 under the Professional Services Master Services Agreement in the amount of \$53,650 with SKG Engineering, LLC for surveying services for embankment measurement and boundary markers at Twin Buttes Dam and Reservoir and authorizing the City Manager to negotiate and execute all related documents (Patrick Frerich)
- c. Consider awarding Task Order #7 to Freese and Nichols for Dam Safety Services at Ben Ficklin Dam and Lake Nasworthy Dam in the amount of \$340,500 and authorizing the City Manager to negotiate and execute all related documents (Shane Kelton)
- d. Consider approving Change Order 4 to WU-05-21 Upper Colorado Regional Flood Planning Professional Services with HDR Engineering, Inc. for the total amount of \$2,194,000 allocated from the Texas Water Development Board and authorizing the City Manager to negotiate and execute all related documents (Shane Kelton)
- e. Consider awarding Buyboard Contract #660-21 for the Youth Sports Practice Area project to Basic IDIQ Inc. in the amount of \$1,460,605.64 and authorizing the City Manager to negotiate and execute all related documents (Alfonso Torres)
- f. Consider awarding RFB AP-02-24 Acquire/Replace Emergency Generator at the San Angelo Regional Airport to McDonald Municipal and Industrial – A Division of C.F. McDonald Electric, Inc. in the amount of \$546,469 and authorizing the City Manager to negotiate and execute all related documents (Jeremy Valgardson)

- g. Consider approving Amendment #7 to the Master Airport Agreement with Aviation, A Woolpert Company LLC. For engineering services to acquire and replace the Airport Terminal Emergency Generator in the amount of \$84,994.14 and authorizing the City Manager to negotiate and execute all related documents (Jeremy Valgardson)
- h. Consider approving a fourth amendment to the Santa Fe Municipal Golf Course Services Agreement with Two Pro Management that extends the term of the agreement to September 30, 2025, and authorizing the City Manager to negotiate and execute all related documents (Carl White)
- i. Consider revisions to the Animal Shelter Advisory Committee (ASAC) bylaws (Morgan Chegwiddden)
- j. Consider change in benefits provider for supplemental critical illness and accident insurance to allow for a better employee experience (Kimberly Holle)
- k. Consider ratifying COSADC approval of the sale of 8.2 acres at the Industrial Park to NAI Wheelhouse at a price of \$65,000 per acre, the exact price to be determined by a survey on the ground, and authorizing the Board President to negotiate and execute all related documents (Michael Dane)
- l. Consider ratifying the Administrative Services agreement between the City of San Angelo Development Corporation and the City of San Angelo to provide staff services and authorizing the City Manager or his designee to negotiate and execute all related documents (Michael Dane)
- m. Second reading of an ordinance designating Reinvestment Zone No. 24-2 to be located at the easterly 12.9 acres of land, more or less, out of a 32 acre tract of land, more or less, out of Survey 1114, Abstract No. 8036, F. Tankersley, Tom Green County, Texas, and being more particularly described as Parcel 2 in that certain Warranty Deed dated June 1, 2007, of record at Instrument No. 633054, Official Public Records, Tom Green County, Texas, for the purpose of providing an ad valorem commercial-industrial tax abatement (Michael Dane)
- n. Second reading of an ordinance amending the budget for the fiscal year beginning October 1, 2023, and ending September 30, 2024
 - 1. Short-term Debt
 - 2. Riverstage Phase I
 - 3. Fleet Services Materials
 - 4. Capital Improvement Projects
 - 5. Health Insurance Claims
 - 6. Property & Casualty Claims(Tina Dierschke)
- o. Second reading of an ordinance amending Chapter 11 "Utilities", Article 11.05 "Water Conservation and Drought Contingency Plan" of the City of San Angelo Code of Ordinances (Shane Kelton, Theresa James)
- p. Consider approving a five-year extension of the Water Remediation Technology LLC. Long Term Service Agreement "Radium Removal System Agreement", and authorizing the City Manager to negotiate and execute all related documents (Shane Kelton)
- q. Consider approving a revised encroachment agreement with Shannon Medical Center and authorizing the City Manager to negotiate and execute all related documents (Aaron Vannoy)

6. Regular Agenda

Comments regarding items on the Regular Agenda may be made by the public when each item is discussed as outlined above. Applicants, proponents, and appellants are exempt from the time limit above and instead must limit their remarks to less than five minutes.

- a. Consider approving Revision #1 to Amendment #4 to the Master Airport Agreement with Jviation, A Woolpert Company LLC. to construct the South Taxilane, adding \$186,961 to the base agreement and authorizing the City Manager to negotiate and execute all related documents (Presentation made by Airport Director Jeremy Valgardson)
- b. Discussion and direction regarding the Bill Aylor, Sr. Memorial River Stage renovations (Presentation made by Civic Events Manager Sidney Walker)
- c. Consider the following items regarding Meet & Confer:
 1. Approval of an agreement with the San Angelo Police Officers Coalition, establishing certain terms and conditions of employment for covered Police Officers, to be effective October 1, 2024 through December 31, 2025, and authorizing the City Manager to negotiate and execute all related documents; and
 2. First reading and public hearing of an ordinance amending the budget for the fiscal year beginning October 1, 2024, and ending September 30, 2025, for Police Department salary adjustments (Presentation made by Human Resources Director Bryan Kendrick, SAPOC President Noel Anderson and Finance Director Tina Dierschke)
- d. Consider approving agreements with non-profit organizations allocating up to \$75,000 of Hotel Occupancy Tax receipts for eligible activities listed as follows and authorizing the City Manager to negotiate and execute all related documents (Carl White)
 1. Annual Request
 - San Angelo Symphony -- \$25,000
 - Angelo Civic Theater -- \$15,000
 - Ballet San Angelo -- \$15,000
 - San Angelo Broadway Academy -- \$10,000
 - Fort Concho Museum - \$2,500
 2. Annual Special Projects
 - Hispanic Heritage Museum & Cultural Center, Dia de los Muertos -- \$2,500
 - San Angelo YMCA -- \$1,000
 - Emmanuel School of the Fine Arts -- \$1,000
 - Heritage Park -- \$500
 3. New Request
 - Downtown San Angelo, Mini Miss Wool Pageant -- \$1,000
- e. First reading and public hearing of an ordinance for Z24-08, a request to rezone property from General Commercial/Heavy Commercial zoning district to Single Family Residential zoning district, located at 21 E. 30th St. (Presentation made by Planning and Development Services Director Aaron Vannoy)
- f. First reading and public hearing of an ordinance for Z24-09, a request to rezone from Two-Family Residential zoning district to Low-Rise Multifamily zoning district, located at 1628 and 1640 Beacon St. (Presentation made by Planning and Development Services Director Aaron Vannoy)

- g. First reading and public hearing of ordinances for the following cases for property located at 2588 Armstrong:
 - 1. CP24-05, a request to amend the Comprehensive Plan, changing from Neighborhood and Commercial to Neighborhood Center;
 - 2. Z24-11, a request to rezone from the Single-Family Residential zoning district to the Neighborhood Commercial zoning district (Presentation by Planning and Development Services Director Aaron Vannoy)
- h. First reading and public hearing of an ordinance for Z24-12, a request to rezone property from the Neighborhood Commercial and Single-Family Residential zoning district to the Low Rise Multifamily zoning district, located at 2815, 2821, 2835 Houston St. and 2826 W. Houston Harte Expy. Frontage Rd. and an unaddressed lot being lots 4-8, block 81 of the Hatcher Addition (Presentation made by Planning and Development Services Director Aaron Vannoy)
- i. First reading and public hearing of an ordinance for Z24-13, a request to rezone property from the General Commercial/Heavy Commercial zoning district to the Low Rise Multifamily Residential zoning district, located at 2025 & 2029 Vaughn St. (Presentation made by Planning and Development Services Director Aaron Vannoy)

7. Closed Session

Executive Session under the provision of Government Code, Title 5. Open Government; Ethics, Subtitle A. Open Government, Chapter 551. Open Meetings, Subchapter D. Exceptions to Requirement that Meetings be Open under the following sections:

8. Follow Up and Administrative Issues

- a. Consider items discussed in Executive Session, if needed
- b. Announcements and consideration of Future Agenda Items

9. Adjournment

CERTIFICATION

I hereby certify that the above notice of meeting was posted on the bulletin board at City Hall in the City of San Angelo, Texas, on the 12th day of September 2024, at 11:02 a.m.


Heather Stastny, City Clerk

All agenda items are subject to action. The City Council reserves the right to consider business out of posted order and/or adjourn into closed session on any item on this agenda and at any time during the course of this meeting to discuss matter as authorized by law or by the Open Meetings Act, Texas Government Code Sections 551.071 (Consultation with Attorney), 551.072 (Deliberations Regarding Real Property), 551.073 (Deliberations Regarding Prospective Gifts), 551.074 (Personnel Matters), 551.076 (Deliberations Regarding Security Devices or Security Audits), 551.087 (Deliberations Regarding Economic Development Negotiations), and 551.089 (Deliberations Regarding Security Devices or Security Audits). Any final action or vote on any Closed Session item will be taken in Open Session.

In compliance with the Americans with Disabilities Act, the City of San Angelo will provide for reasonable accommodations for persons attending City Council meetings. To better serve you, requests should be received 48 hours prior to the meetings. Please contact the ADA Coordinator at 325-657-4407 for request, or by completing a request form online at cosatx.us/ada.

Citizen requests to display materials on the city's monitors must submit the request 96 hours prior to the meeting by email to Heather.Stastny@cosatx.us. Time limits for discussion are as stated above and materials cannot exceed 10-pages. Citizens bringing materials for distribution to City Council members during the meeting must bring a minimum of 12 copies.

City Council regular meetings are broadcast on SATV Channel 17-Government Access at 10:30 a.m. and 7:00 p.m. every day, beginning the evening of the meeting until the evening of the next meeting.

Proclamation

The Tom Green County Hunger Coalition is a group of organizations and community members taking action together to end hunger in our community. Our mission is to coordinate hunger relief efforts in Tom Green County by facilitating programs that address the issue of hunger for today, tomorrow, and a lifetime.

The Tom Green County Hunger Coalition strategically assesses the structure and procedures of local food delivery systems, identifies resources and gaps, makes decisions for change, and implements action plans to ensure that more people have access to healthy and nutritious food. We galvanize the community behind the cause, empower community leaders, build long-term bonds of collaboration, maximize effective use of resources and ensure mutual accountability for results.

Food Insecurity occurs when people do not have enough nutritious food to eat and do not know from where their next meal is coming. In Tom Green County the overall food insecurity rate is 15.7%, reflecting 18,720 food insecure persons. The Child Food Insecurity Rate is even higher at 20.3% with 5,840 children at risk for being hungry. There are many causes of food insecurity—poverty, chronic health conditions, unemployment, lack of affordable housing, and discrimination, among others.

The Tom Green County Hunger Coalition’s goal for the “Hunger Happens Here” Food Insecurity Awareness Campaign is to make our community more aware and sensitive to the fact that we do have a problem with food insecurity in our own community and that by working together to address it we can improve the lives of many of our fellow citizens. Hunger ends where community begins.

THEREFORE I, Brenda Gunter, Mayor of the City of San Angelo, Texas, on behalf of the City Council, do hereby acknowledge the month of September as Hunger Action Month and Food Insecurity Awareness Campaign Month.

“HUNGER HAPPENS HERE”

In Witness Whereof, I have hereunto set my hand and have caused the Official Seal of the City of San Angelo to be affixed this 17th day of September 2024.

Brenda Gunter
Mayor of the City of San Angelo

Proclamation

The San Angelo Hispanic Heritage Museum and Cultural Center (HHM) was established in 2020 with a mission to educate and provide public awareness of the Hispanic community's impact throughout the past, present, and future. The HHM, a 501(c)(3) nonprofit organization, operates through the dedication of volunteers and the support of our community, led by a committed board of 19 members. The Hispanic Heritage Committee's vision is to empower Hispanic leaders and create opportunities that have not yet been accomplished, fostering the promise of the Hispanic community through events, venues, and initiatives that promote culture, history, and accomplishments.

The HHM has made significant strides in cultural enrichment through impactful events and educational programs, such as the Día de los Muertos celebration and the Hispanic Heritage Month Banquet, showcasing outstanding individuals and organizations.

The nationwide theme for Hispanic Heritage Month 2024 is "Pioneers of Change: Shaping the Future Together," which celebrates the spirit of innovation, unity, and progress within Hispanic communities across the country. This theme highlights the collective efforts of individuals and organizations who are pioneering positive change and building a brighter future through their commitment to cultural preservation, education, and community engagement.

The HHM's upcoming events, including the Bienvenida al Año Nuevo Gala and the Catrina Workshop, reflect this theme by fostering cultural pride, educating the public, and providing meaningful experiences that connect our community to its heritage. The planned physical location of the HHM in the San Angelo Cultural District will serve as a permanent space to honor Hispanic contributions and host community events, creating a lasting impact for future generations.

Now, therefore, be it proclaimed by the City Council of San Angelo that we hereby recognize and commend the San Angelo Hispanic Heritage Museum and Cultural Center for its outstanding contributions to our community and its dedication to celebrating and preserving Hispanic heritage. Further, we support the nationwide theme

PIONEERS OF CHANGE: SHAPING THE FUTURE TOGETHER

and encourage all residents to engage with and support the museum's initiatives to foster a deeper appreciation of our shared cultural heritage and community spirit.

In Witness Whereof, I have hereunto set my hand and have caused the Official Seal of the City of San Angelo to be affixed this 17th day of September 2024.

Brenda Gunter
Mayor of the City of San Angelo

City of San Angelo, Texas
Regular City Council Meeting
Tuesday, September 3, 2024

Present:

Mayor Brenda Gunter
Pro tem Lucy Gonzales, SMD 4
Council Member Tommy Hiebert, SMD 1
Council Member Tom Thompson, SMD 2
Council Member Harry Thomas, SMD 3
Council Member Karen Hesse Smith, SMD 5
Council Member Larry Miller, SMD 6

1. Call to Order

With a quorum of the City Council Members present, Mayor Gunter called the regular session of the San Angelo City Council to order at 8:31 a.m. on Tuesday, September 3, 2024 at the San Angelo McNease Convention Center, 501 Rio Concho Drive, San Angelo, Texas 76903.

2. Chaplain Prayer & Pledges

An invocation was provided by San Angelo Police Chaplain Gary Jenkins, and pledges were led by San Angelo Police Department Chaplain Marcella Jenkins.

3. Proclamations/Recognitions

September 8-14, 2024 was proclaimed as National Assisted Living Week.

4. Public Comment

Keep San Angelo Beautiful Manager Charlotte Anderson announced the Tires-2-Go event scheduled for September 7, 2024, and presented Council Member Harry Thomas with the Texas Alliance for Recycling Region Super Star Award.

Citizen Jon Mark Hogg (SMD 5) requested Council consider an amendment to the abortion ordinance.

Ballet San Angelo Development Director Susan Kinney requested an increase in HOT funding.

5. Consent Agenda

- a. Approval of the August 19, 2024, City Council regular meeting minutes (Heather Stastny)
- b. Approval of granting a Utility Easement to AEP Texas for a new span of underground primary lines to be installed at Howard College and authorizing the City Manager to negotiate and execute all related documents (Sarah Tackett-Torres)
- c. Approval of a utility access easement between AEP and the San Angelo Regional Airport, finding a public purpose in granting such easement, and authorizing the City Manager to negotiate and execute all related documents (Jeremy Valgardson)
- d. Approval of a sole source contract with Avolve in the amount of \$65,400 for integration of plan review software and authorizing the City Manager to negotiate and execute all related documents (Aaron Vannoy)
- e. Approval of a pump repair purchase with Xylem Water Solutions USA, Inc. in the amount of \$66,589.65 and authorizing the City Manager to negotiate and execute all related documents (Shane Kelton)

- f. Approval of a DIR-TSO-3763 purchase with Weaver Technologies in the amount of \$101,549.18 and authorizing the City Manager to negotiate and execute all related documents (Bucky Hasty)
- g. Award of Buyboard Contract #703-23 for traffic signal detection cameras to Cubic ITS Inc. in the amount of \$50,125 and authorizing the City Manager to negotiate and execute all related documents (Patrick Frerich)
- h. Approval of Task Order #2 with Kimley Horn under RFQ PW-01-23 for professional services for the design of Johnson St. roadway and utility improvements totaling \$1,324,700 and authorizing the City Manager to negotiate and execute all related documents (Patrick Frerich)
- i. Approval of TIPS Contract #221001 for the purchase of one haul truck from Lonestar Truck Group, in the amount of \$169,944 and authorizing the City Manager to negotiate and execute all related documents (Ryan Kramer)
- j. Award of H-GAC contract FLO3-021 for the purchase a fire station diesel exhaust extraction system to MagnaGrip in the amount of \$137,822 and authorizing the City Manager to negotiate and execute all related documents (Patrick Brody)
- k. Adoption of an ordinance amending Appendix A, Article A8.000, Subsection A8.002 Monthly Water and Water Reclamation Rates (Patrick Frerich) (Pg. XXX, 2024-067)
- l. Adoption of an ordinance amending Appendix A, Article A8.000, Subsection A8.019 Landfill Charges (Patrick Frerich) (Pg. XXX, 2024-068)
- m. Adoption of an ordinance amending Appendix A, Article A8.000, Subsection A8.021 Municipal Drainage Utility System Fees (Patrick Frerich) (Pg. 294, 2024-069)
- n. Adoption of an ordinance amending PD02-01, a request to allow structures to be built within 50-ft. of Ben Ficklin Ave., located at 1326 The Crossing Ave., with a base zoning of Office Warehouse (Aaron Vannoy) (Pg. XXX, 2024-070)
- o. Adoption of an ordinance for PD24-04 Shriner's Point, a request to rezone a property on the 1000 block of E. 40th St. from Single-Family Residential to a Planned Development with a base zoning of Single-Family Residential (Aaron Vannoy) (Pg. XXX, 2024-071)
- p. Adoption of an ordinance for Z24-05, a request to rezone from Low Rise Multi-Family Residential to General Commercial located at 5129 W. Houston Harte Expy. (Aaron Vannoy) (Pg. XXX, 2024-072)
- q. Adoption of an ordinance for Z24-06, a request to zone an unzoned tract to Single-Family Residential in conjunction with a prior approved annexation, located in Bentwood Country Club Estates, a 22.096 acre tract located east of Riviera Ln. and Clubhouse Ln. (Aaron Vannoy) (Pg. XXX, 2024-073)

Motion: Council Member Thomas made a motion, seconded by Council Member Hesse, to approve the Consent Agenda. The motion carried unanimously (7) ayes to (0) nays, with no public comment.

6. Regular Agenda

- a. Award of WU-04-24 Glenna, Edmund, 29th Utility Improvements to Darnell Construction, LLC. in the amount of \$9,071,467, including a project contingency, utilizing \$6,620,628 from the Water Capital Fund balance and authorizing the City Manager to negotiate and execute all related documents (Shane Kelton)

Motion: Council Thompson made a motion, seconded by Council Member Miller, to approve the item as presented. The motion carried unanimously (7) ayes to (0) nays, with no public comment.

- b. Consider a resolution for a variance to Chapter 5, Alcoholic Beverages Regulations, Section 5.02.033 Prohibited Licenses to allow the sale of alcohol for on-premise consumption at 3029 Sherwood Way, a property within 300-ft. of a public school (Presentation made by Planning and Development Services Director Aaron Vannoy) (Pg. XXX, 2024-074)

Arnold Gutierrez (SMD 1) requested Council approve the request.

Motion: Council Member Hiebert made a motion, seconded by Council Member Thompson, to approve the item as presented, finding the request creates an undue hardship and variance does not serve its intended purpose. The motion carried unanimously (7) ayes to (0) nays.

- c. Adoption of an ordinance adopting the budget for the fiscal year beginning October 1, 2024, and ending September 30, 2025. This budget will raise more total property taxes than last year's budget by \$5,960,706 (11.66%), and of that amount, \$671,739 is tax revenue to be raised from new property added to the tax roll (Presentation made by Finance Director Tina Dierschke) (Pg. XXX, 2024-075)

Motion: Council Member Thompson made a motion, seconded by Council Member Miller, to approve the item as presented. A record vote was taken, and the motion carried unanimously (7) ayes (Council Members Hiebert, Thompson, Thomas, Gonzales, Hesse Smith, Miller and Mayor Gunter) to (0) nays, with no public comment.

- d. Second reading and public hearing of an ordinance fixing and levying ad valorem taxes for the current tax year for use and support of the municipal government of the City of San Angelo, Texas, for the 2024-2025 budget year; providing for the assessment and collection thereof; providing when the tax shall become due; providing when the tax shall become delinquent; providing for exemptions; providing for severability; providing for publication on the city-operated website; and, providing for an effective date (Presentation made by Finance Director Tina Dierschke) (Pg. XXX, 2024-076)

Motion: Council Member Thompson made a motion, seconded by Council Member Miller, for the property tax rate to be increased by the adoption of a tax rate of 0.7544 per \$100 valuation which is effectively a 13.34% increase in the tax rate. The motion carried unanimously (7) ayes to (0) nays, with no public comment.

- e. First reading and public hearing of an ordinance amending the budget for the fiscal year beginning October 1, 2023, and ending September 30, 2024
 - 1. Short-term Debt
 - 2. Riverstage Phase I
 - 3. Fleet Services Materials
 - 4. Capital Improvement Projects
 - 5. Health Insurance Claims
 - 6. Property & Casualty Claims(Presentation made by Finance Director Tina Dierschke)

Motion: Council Member Hiebert made a motion, seconded by Council Member Thomas, to approve the item as presented. The motion carried unanimously (7) ayes to (0) nays, with no public comment.

- f. First reading and public hearing of an ordinance designating Reinvestment Zone No. 24-2 to be located at the easterly 12.9 acres of land, more or less, out of a 32 acre tract of land, more

or less, out of Survey 1114, Abstract No. 8036, F. Tankersley, Tom Green County, Texas, and being more particularly described as Parcel 2 in that certain Warranty Deed dated June 1, 2007, of record at Instrument No. 633054, Official Public Records, Tom Green County, Texas, for the purpose of providing an ad valorem commercial-industrial tax abatement (Presentation made by Economic Development Interim Director Michael Dane)

Motion: Council Member Hiebert made a motion, seconded by Council Member Thomas, to approve the item as presented. The motion carried unanimously (7) ayes to (0) nays, with no public comment.

- g. First reading and public hearing of an ordinance amending Chapter 11 "Utilities", Article 11.05 "Water Conservation and Drought Contingency Plan" of the City of San Angelo Code of Ordinances (Presentation made by Public Works Executive Director Shane Kelton and City Attorney Theresa James)

Motion: Council Member Hiebert made a motion, seconded by Council Member Miller, to approve the item as presented. The motion carried unanimously (7) ayes to (0) nays, with no public comment.

7. Closed Session

Executive Session under the provision of Government Code, Title 5. Open Government; Ethics, Subtitle A. Open Government, Chapter 551. Open Meetings, Subchapter D. Exceptions to Requirement that Meetings be Open under the following sections:

- a. Section 551.072 – Deliberations about real property regarding 605 Rio Concho Dr.

8. Follow Up and Administrative Issues

- a. Consideration of items discussed in Closed Session, if needed

No action taken on this item.

- b. Announcements and consideration of Future Agenda Items

Council Member Thompson requested an update from staff on the needs and acquisition of fleet vehicles.

9. Adjournment

Motion: Council Member Hiebert made a motion, seconded by Council Member Thompson, to adjourn the meeting. The motion carried unanimously (7) ayes to (0) nays, with no public comment.

There being no further business, the meeting adjourned at 9:54 a.m.

THE CITY OF SAN ANGELO, TEXAS:

ATTEST:

Brenda Gunter, Mayor

Heather Stastny, City Clerk

In accordance with Chapter 2, Article 2.300, of the Official Code of the City of San Angelo, the minutes of this meeting consist of the preceding Minute Record and the Supplemental Minute Record. Details of Council meetings may be obtained from the City Clerk's Office, or a video of the entire meeting may be purchased from the Public Information Officer at 481-2727. (Portions of the Supplemental Minute Record video tape recording may be distorted due to equipment malfunction or other uncontrollable factors.)

REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Charles Michalewicz, Engineer, Operations

Meeting Date: September 17, 2024

Item type: Consent Item

Caption:

Consider approving Task Order 1 under the Professional Services Master Services Agreement in the amount of \$53,650 with SKG Engineering, LLC for surveying services for embankment measurement and boundary markers at Twin Buttes Dam and Reservoir and authorizing the City Manager to negotiate and execute all related documents (Patrick Frerich)

Staff Recommendation:

Approve

Summary/History:

The City of San Angelo performs maintenance and projects related to the Twin Buttes Dam and Reservoir under an agreement with the US Bureau of Reclamation. The dam and reservoir property are owned by the Bureau of Reclamation with the City as a partner for maintenance and operational oversight responsibilities. The agreement defines that costs of tasks requested by the Bureau and performed by the City are shared with a portion reimbursable to the City by the Bureau.

This item is for services requested by the US Bureau of Reclamation with the goal of surveying the embankment of the dam to determine cumulative settlement and deflection of the dam structure. Additionally, work will also include re-establishing missing boundary monuments around the Twin Buttes reservoir property. 53.52% of the costs are reimbursable per the City's agreement with Bureau of Reclamation.

Funding Source(s):

Fund:	Account:	Project Number:	Amount Budgeted:
Water Fund			\$53,650

Financial Impact:

Costs will be born by the City of San Angelo Water Fund with 53.52% of the cost reimbursed by the Bureau of Reclamation.

Other Information/Recommendation:

Staff recommends approving Task Order #1 with SKG Engineering under IDIQ PW-01-23.

Attachments:

1. Survey Proposal

Survey Proposal.pdf

Presentation:

Patrick Frerich

Approvals/Reviews:

Charles Michalewicz

Created/Initiated

Pete Madrid Jr.

Approved

Patrick Frerich

Approved

Shane Kelton

Approved

Theresa James

Approved

Jeffrey Tomlinson

Approved

Tina Dierschke

Approved

Theresa James

Approved

Heather Stastny

Final Approval

SKG
ENGINEERING, LLC
FIRM REGISTRATION NUMBER F-7608
SURVEYING ♦ ENVIRONMENTAL ♦ LAB/CMT

706 SOUTH ABE STREET
SAN ANGELO, TEXAS 76903

PHONE: 325.655.1288
FAX: 325.657.8189

August 21, 2024

Mr. Charles Michalewicz
Public Works Projects Administrator
City of San Angelo
301 W. Beauregard Ave.
San Angelo, Texas 76903

RE: Surveying Services Proposal
Twin Buttes Dam - San Angelo Project, Texas

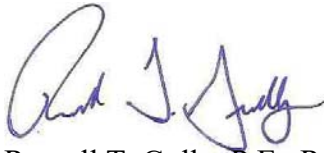
Dear Mr. Michalewicz,

I would like to thank you for the opportunity to provide you this proposal for surveying services for the Twin Buttes Dam - San Angelo Project, Texas. The scope of surveying services we will provide are as described herein.

We will provide the services as identified on the *Scope of Work for Embankment Measurement Points and Replacing Missing/Damaged Boundary Markers* attached hereto. The Embankment surveying and the Boundary surveying will be provided for \$36,400. We will set new boundary monuments in an 8" diameter sch 40 PVC pipe 18" long in a 24" deep hole filled with concrete with a cap provided by others for \$575 per each new boundary monument.

SKG Engineering appreciates the opportunity to respond to your request. Please feel free to contact us at 325-655-1288 if you have any questions or if additional information is required.

Sincerely,
SKG Engineering



Russell T. Gully, P.E., R.P.L.S.

attachment

Scope of Work for Embankment Measurement Points and Replacing Missing/Damaged Boundary Markers

Twin Buttes Dam - San Angelo Project, Texas

The goal for surveying the embankment measurement points is to determine cumulative settlement and deflection to within 0.01' on a repeatable basis.

The project horizontal control shall be Texas Central Zone, State Plane Coordinate System NAD 83 (2011)(EPOCH:2010.0000).

- Basis of Bearings: Grid North, Texas Central Zone, State Plane Coordinate System (4203 TX C), NAD 83.
- Horizontal Reference Frame: referenced to the Texas Central Zone, State Plane Coordinate System (4203 TX C), NAD83 (2011)(EPOCH:2010.0000).
- Vertical Reference Frame: Twin Buttes Dam Local. Elevations are in U.S Survey Feet. Elevations to be based on Twin Buttes Dam control point "SP-1 STA 30+51 333 D/S" elevation 1,980.210-feet (see drawing 825-523-488).

A base receiver located at the dam shall reference Twin Buttes Dam control point "REBAR STN1" (12' U/S Embankment Sta 275+00). An OPUS solution was obtained for this point.

The survey shall include at least one First-order, Class II National Geodetic Survey Monument located in proximity to the survey area.

Embankment Surveying

The contractor shall make an extensive physical search in the field for the following control stations required for the project. If found, provide coordinates, elevations, photo, description of condition, and mark with lathe.

- SP-20, SP-19, SP-18, SP-17, SP-16, SP-15, SP-14, SP-13, SP-12, SP-11, SP-10, SP-9, SP-8, SP-7, SP-6, SP-5, SP-4, SP-3, SP-2, SP-1

Provide coordinates and elevation of any spillway, and outlet works monuments.

Provide coordinates, calculated dam centerline stations and offsets and elevations of the following points along with a drawing:

- 17' downstream embankment measurement points. (41 pts)
- 12' upstream embankment measurement points (25 pts)
- Elevations of pins in outlet works conduit. (42 pts)
- Location and elevation of pins set on chute and stilling basin wall. (28 pts)
- Location and elevation of points on spillway chute and stilling basin walls. (60 pts)

Include comments of condition of points with photos of points that need repair and an estimation of precision of surveyed points.

The survey data should be entered into Survey Form for Twin Buttes.

Boundary surveying

The contractor shall make an extensive physical search in the field for the following Boundary Monuments (BM) and reestablish all missing or damaged monuments. Boundary Monuments shall be a brass or aluminum cap set in concrete and stamped with the BM number before being placed in concrete. The caps will be provided by Reclamation. The caps shall be placed in an 8" diameter sch 40 PVC pipe 18" long. The PVC pipe will be placed in a hole a minimum of 24" deep with the PVC extending to the surface. Adjustments can be made if encountering rock.

- BM#33
- BM#43 Damaged
- BM#44
- BM#53
- BM#63
- BM#69 Damaged
- BM#113 Damaged
- BM#114
- BM#128 damaged
- BM#134
- BM#137
- BM#141
- BM#142
- BM#143
- BM#144
- BM#148
- BM#150
- BM#151
- BM#152
- BM#167
- BM#184
- BM#188
- BM#196-A
- BM#196-H Monument may not be required.
- BM#196-E
- BM#196-I
- BM#196-J
- BM#199
- BM#200-pulled out

REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Charles Michalewicz, Engineer, Public Works

Meeting Date: September 17, 2024

Item type: Consent Item

Caption:

Consider awarding Task Order #7 to Freese and Nichols for Dam Safety Services at Ben Ficklin Dam and Lake Nasworthy Dam in the amount of \$340,500 and authorizing the City Manager to negotiate and execute all related documents (Shane Kelton)

Staff Recommendation:

Approve

Summary/History:

The TCEQ is responsible for dam safety for the State of Texas. During their most recent inspection of the Lake Nasworthy Dam and the Ben Ficklin Dam they discovered some deficiencies that need to be addressed. This task order with Freese and Nichols will provide for a full Dam Assessment, Conceptual Alternative Hydrologic Analysis, Summerized Technical Report, Gate Inspection, Structural Analysis, Lifting Beam Evaluation, Gate and Anchorage Evaluation and, a State Required Table Top Exercise for Both Dams. Once this has been completed, they will provide the City with an opinion of probable costs associated with any necessary work that will need to be completed to bring the dams into full compliance.

Funding Source(s):

Financial Impact:

This item is budgeted in the 2025 fiscal year.

Other Information/Recommendation:

Staff recommends approval.

Attachments:

1. FNI Proposal_ FNI Proposal_.pdf

Presentation:

Shane Kelton

Approvals/Reviews:

Charles Michalewicz
Shane Kelton
Theresa James
Jeffrey Tomlinson
Tina Dierschke
Heather Stastny

Created/Initiated
Approved
Approved
Approved
Approved
Final Approval



Innovative approaches
Practical results
Outstanding service

801 Cherry Street, Suite 2800 + Fort Worth, Texas 76102 + 817-735-7300 + FAX 817-735-7491

May 31, 2024

www.freeze.com

Shane Kelton
Executive Director of Public Works
City of San Angelo
301 W Beauregard Ave
San Angelo, TX 76903

Re: City of San Angelo - Dam Safety Services

Dear Mr. Kelton:

We are pleased to present this proposal for professional engineering services to the City of San Angelo (City/Client). It is our understanding the City is interested in developing a Preliminary Assessment report for Ben Ficklin Dam (TX04415) and address the recommendations listed by FNI in 2017 inspection report for Nasworthy Dam (TX03139). The services described herein will be performed in accordance with TCEQ guidelines and state dam safety regulations. A detailed scope of work is attached (ATTACHMENT SC).

The proposed scope of work will be completed based on the duration of tasks outlined in the attached schedule. We appreciate being given the opportunity to present this proposal. Please contact us if you have any questions or comments.

Sincerely,

A handwritten signature in black ink, appearing to read 'Mark Ickert', with a long horizontal flourish extending to the right.

Mark Ickert, P.E.
Associate

A handwritten signature in blue ink, appearing to read 'Murphy Parks', with a long horizontal flourish extending to the right.

Murphy Parks, P.E.
Principal/Vice President

SCOPE OF SERVICES

PROJECT UNDERSTANDING

Information about Ben Ficklin and Nasworthy Dams is summarized in Table 1, based on data collected from sources such as previous studies, Texas Commission on Environmental Quality (TCEQ) archives, the National Inventory of Dams (NID), and other online resources.

Table 1: Dam Summary

Name	National Inventory ID	Height (feet)	Maximum Pool Storage (acre-feet)	Normal Pool Storage (acre-feet)	TCEQ Size Classification	TCEQ Hazard Classification
Ben Ficklin Dam	TX04415	24	515	316	Small	High
Nasworthy Dam	TX03139	47	32,981	10,108	Intermediate	High

It is understood that the City has received TCEQ inspection reports and associated recommendation letters for Ben Ficklin and Nasworthy dams dated January 4, 2024 and February 26, 2024 respectively. In the inspection reports, TCEQ specifically highlights several maintenance items noted during the recent inspections of the dams.

Based on preliminary scoping discussions, the City seeks assistance with addressing the issues pointed out by TCEQ for each dam and is envisioned as a phased approach, as detailed below:

Phase I – Preliminary Investigation: A site visit and desktop analysis intended to determine: 1) estimated budget required to address imminent maintenance issues and 2) conceptual alternatives to upgrade the dam to meet design flood requirements (only for Ben Ficklin DamTX04415).

Phase II – Preliminary Design Services: Further analyses to refine the selected rehabilitation alternative (Phase I). Additional investigations may include the following: geotechnical site investigation (borings), stability analysis, site civil layout design, and other analyses deemed necessary.

Phase III – Final Design Services & Construction Management: Preparation of construction drawings and specifications suitable for procuring the services of a qualified contractor. Additional services may include construction management and inspection services, if requested.

Basis Services

At this time, only tasks related to **Phase I – Preliminary Investigation** are detailed as basic services in the following sections, along with a proposed fee. Future phases will be negotiated as the project progresses and upon the City's direction.

BASIC SERVICES

Task 1 – Project Management

Scope Items

1. Perform internal project setup and coordination, including project kickoff meetings and maintaining project schedule. Provide monthly status reports and invoices with backup documentation for the duration of the project. The assumed project duration is eight (8) months.
2. Participate in up to two (2) project coordination meetings with City staff, via teleconference, as specified in the following tasks. One (1) site visit will be performed to, review project requirements, and visually observe the dam.

Task 2 – Ben Ficklin Dam

2.1 - Dam Assessment

1. Research and gather historical information about Ben Ficklin Dam from sources such as City of San Angelo, TCEQ archives, and online resources.
2. Perform a 1 day long site visit to visually assess the dam and corroborate the findings documented in the 2023 TCEQ inspection report. Prior to this meeting review the two most recent existing inspection reports available for Ben Ficklin Dam.
3. Develop an opinion of probable construction cost (OPCC) to address issues noted during FNI's inspection. This OPCC will focus on short-term and maintenance issues such as concrete pitting, spalling, cracks, and rebar corrosion. The intent of this OPCC is to provide the city with a budgetary tool to allow them to address imminent maintenance issues separate from the noted hydraulic adequacy issues.

2.2 - Conceptual Alternative Analysis

The Hydrologic Assessment performed by FNI in 2017 determined that the dam does not currently meet TCEQ design flood criteria, thus, the dam will need to be modified to safely pass the required design flood. The purpose of this task is to evaluate two (2) conceptual rehabilitation alternatives to bring the dam into compliance with TCEQ regulations. This task will allow the City to select for a preferred dam modification alternative for a future final design phase. Upon selection of a preferred alternative, a registered professional engineer with dam safety experience must be engaged to complete the design, prepare construction drawings, and draft construction specifications. Any modifications to the dam must be reviewed and approved by TCEQ prior to construction.

1. Utilize hydrologic models developed in 2017 to develop up to two (2) rehabilitation alternatives to increase spillway and/or reservoir capacity to meet the required design flood, as defined by TCEQ under TAC § 299.15. Alternatives will be developed related to modifying the spillway structure, raising the top of dam elevation, overtopping armoring, or some combination thereof.
2. Develop plan and profile views for the two (2) rehabilitation alternatives, including typical cross-sections of the embankment and spillway, as appropriate. The depictions of each alternative will be at a conceptual level to provide only enough detail to quantify costs and understand a likely methodology by which a qualified contractor may perform the work.
3. Develop opinions of probable construction costs (OPCC) for the two (2) rehabilitation alternatives evaluated. Cost estimates will be conceptual in nature and intended for planning-level decisions, not final design or construction. The OPCCs will be developed in general conformance with the AACE

International guidelines for a Class 4 estimate appropriate for feasibility assessment and planning purposes.

2.3 - Summary Technical Report

1. Prepare a combined draft technical report documenting the processes, assumptions, and findings of the Dam Assessment (Task 2.1) and Conceptual Alternative Analysis (Task 2.2). A draft version (PDF) of the report will be provided for the City's review. Upon receipt of comments, incorporate the comments and furnish a PDF version and up to three (3) hard copies of the final report to CLIENT.
2. For documents submitted for the City's review, comments will be addressed, and documents finalized within one (1) month of receipt of comments. If the City's review extends beyond the estimated one (1) month timeframe, additional time may be required for addressing comments due to project staff availability. In this case, an updated plan and schedule will be communicated to the City upon receipt of the comments.

Task 3 – Nasworthy Dam

3.1 – Tabletop Exercise

TCEQ Dam Safety Rules (30 TAC §299, Section 299.61 (h)) require dam owners of significant- and high-hazard dams to conduct tabletop exercises at least every five years to exercise their EAPs (from the date of the EAPs acceptance by TCEQ). The City has an existing EAP (dated April 2012) for Nasworthy Dam and the last tabletop exercise was performed in August 2017. This scope of work provides professional services to facilitate a tabletop exercise for Nasworthy Dam.

1. Prepare agenda and develop content and meeting packets for attendees. The tabletop exercise will include:
 - Overall review of EAP and general response.
 - Realistic scenario for discussion during an exercise which will require the implementation of the EAP.
 - Discussion regarding the coordination efforts necessary during an emergency.
 - Discuss the utilization of resources including those belonging to the City and other participants.
 - Compile and review background data for Nasworthy Dam.
2. Coordinate with the City in developing an invitee list from various City departments and outside agencies. Coordinate with City to select attendees, location, date and time. Coordinate with external agencies (i.e. local law enforcement, emergency management coordinators, Texas Division of Emergency Management, TCEQ, etc.) to solicit and schedule their involvement in the tabletop exercise. It is assumed the City will provide the location for the exercise.
3. Facilitate a discussion-based in-person tabletop exercise to be held at a City facility to be determined by City staff. Provide one (1) facilitator and two (2) engineers to participate in the tabletop exercise. Assumed duration not to exceed 4 hours.
4. Develop an After-Action Report for the tabletop which will document the training as well as capture any issues or concerns determined during the course of the training. Provide an electronic copy to the City for review and comment. Upon receipt of comments, provide an electronic copy of the final report. The final Lessons Learned summary can be inserted in the EAP for documentation and future considerations.

5. Following the tabletop exercise updates to the Emergency Action Plan will be prepared. Updates will consist of items noted in the tabletop exercise, along with the following sections of the EAP:
 - Notification Flowcharts
 - Log sheet of Changes
 - Training Records
 - Distribution List
6. Submit draft of updates to the EAPs in electronic format to the City for review. Provide final updates pages in electronic format to the City for distribution.

3.2 – Gate Inspection

Per TCEQ's inspection report dated May 8, 2023 a periodic climbing inspection of the gates should be undertaken by a professional engineer registered in the State of Texas. This scope of work provides professional services to comply with TCEQ's inspection request for Nasworthy Dam.

1. Prior to the inspection, FNI will perform the following:
 - Review previous inspection reports, historical drawings, and memos.
 - Prepare an inspection plan that describes the following:
 - a. Inspection team members and roles
 - b. Inspection schedule
 - c. On-site support needed from Dam Safety and Operators
 - d. Site-specific field inspection sheets
 - e. Job hazard analysis for site work
 - The City of San Angelo representative will schedule a mutually agreeable inspection date with FNI.
2. Perform a detailed visual examination of three (3) tainter gates to record their current condition from the downstream side and two (2) on the upstream side. The examination will be performed by engineers with rope climbing training and equipment to access the gates to perform a visual examination of the condition of gates. It is assumed that City personnel will install the stoplogs and dewater the upstream face of two (2) gates to assist in the examination of the gates.
 - a. The following tasks will be performed related to the examination of the spillway gates. It is assumed the inspection of the spillway gates described in this scope will be completed in two (2) days on site.
 - i. Evaluate each gate arm and bracing member by looking for corrosion at connections and evidence of water standing on members due to missing or clogged drain holes. Visually inspect welds for cracks and corrosion. Visually inspect bolts for corrosion and tightness. If extensive corrosion is found, ultrasonic nondestructive testing may be recommended to measure the thickness. Any significant deficiencies or deterioration will immediately be brought to the attention of Luminant personnel.
 - ii. Examine signs of excessive camber and sweep of each gate arm and major horizontal members will be examined and recorded.
 - iii. Evaluate each trunnion assembly for misalignment (both horizontal and transverse) between the hub, pin and yoke. Visually check the grout pad's condition between both the trunnion girder (for horizontal loads) and the pier

face (for transverse loads). Observe the condition of grease present in the trunnion assembly for evidence of any corrosion or contamination. Check for signs of water standing on members and gusset plates of the trunnion assembly. Measure for corrosion or material loss on members observed to have significant corrosion.

- iv. Visually evaluate skin plate for corrosion on the upstream face and at skin plate joints, cracked or broken welds and damage due to floating debris. Both gates will be inspected from the upstream side.
 - v. Evaluate cable-bearing areas by looking for excessive wear, corrosion, or section loss.
 - vi. Evaluate each cable and lifting bracket assembly on the gate by looking for corrosion.
 - vii. Observe condition of side and bottom seals and check for leaks, wear, damage or weathering and loose or missing connection bolts. Check side seal plates for nicks, corrosion, pitting or wear. Visually observe sill beam and check for deterioration of grout adjacent to the sill plate, nicks, corrosion, pitting or wear of the top flange.
 - viii. Evaluate conditions of paint and coatings of the gates, stoplogs, and superstructure based on observed conditions of member surfaces.
 - ix. Verify sizes of structural members in-place against member sizes designated on original design drawings.
- In addition to the above-mentioned detailed climbing inspection, the downstream face of the remaining twelve (12) gates will be inspected from the ogee spillway.

3. Develop general preliminary recommendations for the following as needed:

- Coating removal and recoating
 - Repair of the skinplate
 - Reinforcement of existing members and/or replacement of existing members due to visible corrosion
 - Repair of welded connections
 - Replacement of the side and bottom seals and clamp bars
 - Lubrication of the wire ropes
 - Field tests and commissioning
4. Prepare an inspection memorandum, documenting the findings from the climbing inspections, including measurements, field notes, and photographs. The memorandum will summarize the current conditions of the gate and include preliminary recommendations for repair and/or maintenance.

Deliverables:

- Inspection Plan in PDF form (Draft and Final)
- Spillway Gate Inspection memorandum in PDF form (Draft and Final)

3.3 - Structural Analysis

The following scope items provide professional services to fulfill the recommendations made by FNI in the 2017 inspection report and provide an answer to TCEQ's information request included in the 2023

inspection report.

3.3.1 – Lifting Beam Evaluation

To address the following recommendation: “17-6 Verify the design, and if necessary, repair the lifting hook on the stop log which did not have the same length of weld as the other lifting hooks”, perform the following work items:

1. Evaluate the lifting beam based on ASME BTH-1 “Design of Below the Hook Lifting Devices” and EM 1110-2-2107 “Design of Hydraulic Steel Structures”.
 - a. Calculate the stresses in the structural members and evaluate the provided weld strengths.
2. Develop conceptual details for replacement or rehabilitation of existing members, connections, and lifting devices (if required).
3. Develop a technical memorandum of the structural analysis.

3.3.2 - Gate and Anchorage Evaluation

To address the following recommendation: “17-7 The cause of the cracking of the spillway adjacent to the trunnion anchorage should be studied. If a structural analysis has not been conducted, consider conducting such an analysis. The exposed rebar and/or anchorage should be covered with concrete to provide protection against further corrosion”, perform the following work items:

1. Develop a finite element model using the STAAD.Pro computer program. Incorporate critical findings from the gate inspection where appropriate.
2. Model the load cases currently specified by the United States Corps of Engineers (USACE) Engineering Manual for tainter gate designs, EM 1110-2-2107 “Design of Hydraulic Steel Structures” dated August 1, 2022.
3. Evaluate gate performance for trunnion pin friction coefficients of 0.15 and 0.30 to account for varying degrees of corrosion of the pins and bushings.
4. Using the computer structural model, calculate the utilization ratio in each gate member, including the arms, bracing, horizontal girders, and connections. Evaluate the strength capacity of each member in accordance with Chapter H of the AISC Manual of Steel Construction, Allowable Stress Design, 15th Edition.
5. Determine if any gate members or connections fail to meet the current code requirement for the various loading conditions.
6. Evaluate the reaction loads on the spillway gate trunnion anchorage using a simplified analysis of the tainter gates for the load cases defined in EM 1110-2-2107. If the evaluation indicates a repair is necessary, provide conceptual-level recommendations to strengthen or replace the trunnion anchorage.
7. Develop conceptual details for replacing existing members with stronger members (if required).
8. Develop a technical memorandum of structural analysis. The memo will include the following:
 - Description of structural analysis and summary of findings
 - Plots of a structural model
 - Tabulation of gate member adequacy

- Recommendations for repairs or rehabilitation based on results
- Technical references and bibliography
- Computer output

Deliverables

- Spillway Gate, Anchorage, and Lifting Beam Structural Analysis Memorandum in PDF form (Draft and Final)

TIME OF COMPLETION

FNI will commence work upon receipt of a notice to proceed (NTP). The tasks will be performed in accordance with the durations included in the attached schedule.

If FNI's services are delayed through no fault of FNI, FNI shall be entitled to equitable adjustment of rates and amounts of compensation and FNI shall be entitled to adjust contract schedule consistent with the number of days of delay.

COMPENSATION

The project tasks described in Attachment SC, Scope of Services, are proposed to be executed for a total lump sum fee of Three Hundred Forty Thousand and Five Hundred Dollars (\$340,500). as detailed below. All effort related to Project Management (Task 1) and the Summary Technical Reports (Task 2.3) is prorated across the technical tasks.

If FNI sees the Scope of Services changing so that additional services are needed, FNI will notify the CLIENT before proceeding. Additional services shall be negotiated at that time.

Payment of the services shall be due and payable upon submission of a statement for services. Statements for services shall not be submitted more frequently than monthly.

PROJECT FEE BREAKDOWN BY TASK

Ben Ficklin Dam	
Dam Assessment	\$ 26,600
Conceptual Alternative Analysis	\$ 63,400
Nasworthy Dam	
Tabletop Exercise	\$ 35,500
Gate inspection	\$ 75,600
Structural Analysis	\$ 139,400
TOTAL	\$ 340,500

If FNI sees the Scope of Services changing so that additional services are needed, FNI will notify the CLIENT before proceeding. Additional services shall be negotiated at that time.

ADDITIONAL SERVICES

The following services are additional and shall not be included in the Scope of Services unless specifically approved by the City. Engineer shall inform the City when a particular service falls into the "Additional Services" category. Compensation for Additional Services shall be negotiated via contract amendment.

1. In-person meetings other than those specified for the performance of the scope items.
2. Site visits other than those specified for the performance of the scope items.
3. Providing basic or additional services on an accelerated time schedule.

4. Updates to breach inundation maps.
5. Updates to the operation and maintenance manual.
6. Subsurface investigation activities, soil sampling, and laboratory testing services
7. Providing Geotechnical investigations, studies, and/or reports.
8. Detail design drawings to rehabilitate the dams.
9. Field layouts or the furnishing of construction line and grade surveys.
10. Gate climbing inspections in excess of the amount listed above.
11. GIS mapping services or assistance with these services.
12. Making property, boundary and right-of-way surveys, preparation of easement and deed descriptions, including title search and examination of deed records.
13. Preparing applications and supporting documents for government grants, loans, or planning advances and providing data for detailed applications
14. Providing environmental support services including the design and implementation of ecological baseline studies, environmental monitoring, impact assessment and analyses, permitting assistance, and other assistance required to address environmental issues.

RESPONSIBILITIES OF THE CITY

City shall perform the following in a timely manner so as not to delay the services of FNI:

1. Installation of the stoplogs and dewatering the upstream face of two (2) gates selected by FNI to perform the upstream inspection.
2. Designate in writing a person to act as City's representative with respect to the services to be rendered under this Agreement. Such person shall have contract authority to transmit instructions, receive information, interpret and define City's policies and decisions with respect to FNI's services for the Project.
3. Assist FNI by placing at FNI's disposal all available information pertinent to the Project including previous reports and any other data relative to the Project.
4. Arrange for access to and make all provisions for FNI to enter upon public and private property as required for FNI to perform services under this Agreement.
5. Examine all studies, reports, sketches, drawings, specifications, proposals, and other documents presented by FNI, obtain advice of an attorney, insurance counselor and other consultants as City deems appropriate for such examination and render in writing decisions pertaining thereto within a reasonable time so as not to delay the services of FNI.
6. City shall also make or arrange to have made the interpretations of data and reports resulting from such investigations. All costs associated with such investigations shall be paid by City.
7. Provide such accounting, independent cost estimating and insurance counseling services as may be required for the Project, such legal services as Client may require or FNI may reasonably request with regard to legal issues pertaining to the Project including any that may be raised by Contractor(s), such auditing service as Client may require to ascertain how or for what purpose any Contractor has used

the moneys paid under the construction contract, and such inspection services as Client may require to ascertain that Contractor(s) are complying with any law, rule, regulation, ordinance, code or order applicable to their furnishing and performing the work.

8. Give prompt written notice to FNI whenever Client observes or otherwise becomes aware of any development that affects the scope or timing of FNI's services, or any defect or nonconformance of the work of any Contractor.
9. Furnish, or direct FNI to provide, Additional Services as stipulated in Attachment SC of this Agreement or other services as required.

ID		Task Mode	Task Name	Duration	Start	Finish	Predecessors	Timeline											
								Jun	Qtr 3, 2024			Qtr 4, 2024			Qtr 1, 2025			Qtr 2, 2025	
								Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1			Ben Ficklin (TX04415) and Nasworthy (TX03139) dams	181 days	Mon 7/1/24	Mon 3/10/25													
2			NOTICE TO PROCEED	1 day	Mon 7/1/24	Mon 7/1/24													
3			Project Management	181 days	Mon 7/1/24	Mon 3/10/25													
4			Internal Project Set Up	5 days	Tue 7/2/24	Mon 7/8/24	2												
5			Ben Ficklin	150 days	Tue 7/9/24	Mon 2/3/25													
6			Client Kickoff Meeting and Site Visit	15 days	Tue 7/9/24	Mon 7/29/24	4												
7			Dam Assessment	40 days	Tue 7/30/24	Mon 9/23/24	6												
8			Conceptual Alternative Analysis	40 days	Tue 9/24/24	Mon 11/18/24	7												
9			Summary Technical Report	30 days	Tue 11/19/24	Mon 12/30/24	8												
10			Submittal draft Report to City	0 days	Mon 12/30/24	Mon 12/30/24	9												
11			Client Review (Assumed)	10 days	Tue 12/31/24	Mon 1/13/25	10												
12			Address Comments	15 days	Tue 1/14/25	Mon 2/3/25	11												
13			Finalize Report	0 days	Mon 2/3/25	Mon 2/3/25	12												
14			Nasworthy	155 days	Mon 8/5/24	Mon 3/10/25	4												
15			Table top Excersice	85 days	Mon 8/5/24	Mon 12/2/24													
16			Meeting to discuss details of Tabletop	0 days	Mon 8/5/24	Mon 8/5/24	6FS+5 days												
17			Prepare tabletop agenda and exercises	20 days	Tue 8/6/24	Mon 9/2/24	16												
18			Coordinate location, dates, attendees with the City	10 days	Tue 9/3/24	Mon 9/16/24	17												
19			Send invite for Tabletop	15 days	Tue 9/17/24	Mon 10/7/24	18												
20			Tabletop Exercise	0 days	Mon 10/7/24	Mon 10/7/24	19												
21			Prepare Draft After-Action Report	15 days	Tue 10/8/24	Mon 10/28/24	20												
22			Submit draft AAR to City	0 days	Mon 10/28/24	Mon 10/28/24	21												
23			Client Review (Assumed)	10 days	Tue 10/29/24	Mon 11/11/24	22												
24			Address Comments	15 days	Tue 11/12/24	Mon 12/2/24	23												
25			Final AAR to Client	0 days	Mon 12/2/24	Mon 12/2/24	24												
26			Structural Analysis	155 days	Tue 8/6/24	Mon 3/10/25													
27			Lifting Beam evaluation (needed for gate inspection)	10 days	Tue 8/6/24	Mon 8/19/24	6FS+5 days												
28			Gate inspection (field work and coordiantion)	10 days	Tue 8/20/24	Mon 9/2/24	27												
29			Structural Analysis	80 days	Tue 9/3/24	Mon 12/23/24	28												
30			SummaryTechnical Report	30 days	Tue 12/24/24	Mon 2/3/25	29												
31			Submittal draft Report to City	0 days	Mon 2/3/25	Mon 2/3/25	30												
32			Client Review (Assumed)	10 days	Tue 2/4/25	Mon 2/17/25	31												
33			Address Comments	15 days	Tue 2/18/25	Mon 3/10/25	32												
34			Finalize Report	0 days	Mon 3/10/25	Mon 3/10/25	33												

Project: Schedule
Date: Mon 5/13/24

Task

Split

Milestone

Summary

◆

Project Summary

Inactive Task

Inactive Milestone

Inactive Summary

◇

Manual Task

Duration-only

Manual Summary Rollup

Manual Summary

Start-only

Finish-only

External Tasks

External Milestone

Deadline

Progress

Manual Progress

↓

Page 1

REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Pete Madrid Jr., Operations, Water Utilities

Meeting Date: September 17, 2024

Item type: Consent Item

Caption:

Consider approving Change Order 4 to WU-05-21 Upper Colorado Regional Flood Planning Professional Services with HDR Engineering, Inc. for the total amount of \$2,194,000 allocated from the Texas Water Development Board and authorizing the City Manager to negotiate and execute all related documents (Shane Kelton)

Staff Recommendation:

Approve

Summary/History:

On January 16, 2024, City Council approved a resolution authorizing/allowing the City of San Angelo to serve as the Planning Group Sponsor (political subdivision) for the Region 9 Upper Colorado Regional Flood Planning Group. The key responsibilities of the Planning Group Sponsor is to apply for and receive financial assistance from the TWDB for the development of a regional flood plan, and to subsequently execute and administer the regional flood planning grant contract with the TWDB. As a part of administering the grant contract, it is necessary to procure a technical consultant for the preparation of the regional flood plan.

The Region 9 Upper Colorado Regional Flood Planning Group unanimously voted on August 1, 2024 to approve HDR Engineering, Inc. as the technical consultant for the Second Cycle Planning Group's preparation of the regional flood plan.

The 86th Texas Legislature appropriated \$38M for the second planning cycle grant funds. Of that amount, \$2,194,000.00 has been committed to supporting Region 9's technical consultant (HDR), who has been assisting the TWDB's upfront technical efforts to develop key flood planning technical guidance, including ensuring that the regional and state flood plans follow and incorporate a strong project ranking framework that will guide future investments.

The contract and funding for Cycle 2 with the TWDB are in place and this Change Order No.4 will enable the City to pay eligible expenses for Cycle 2 of the TWDB State Flood Plan.

Funding Source(s):

Financial Impact:

These are pass-through expenses and the City will not have any associated fiscal impacts.

Other Information/Recommendation:

Staff recommends approval.

Attachments:

- | | | |
|----|--|--|
| 1. | 2023-2028 RFPG Task Budget | 2023-2028 RFPG Task Budget.pdf |
| 2. | 2101792494_-_City_of_San_Angelo_-_Subcontract | 2101792494_-_City_of_San_Angelo_-_Subcontract.pdf |
| 3. | 2401792835_Contract_City of San Angelo R9_EXECUTED | 2401792835_Contract_City of San Angelo R9_EXECUTED.pdf |
| 4. | Subcontractor_Technical Consultant Expense Budget | Subcontractor_Technical Consultant Expense Budget.jpg |

Presentation:

Shane Kelton

Approvals/Reviews:

Pete Madrid Jr.	Created/Initiated
Pete Madrid Jr.	Approved
Shane Kelton	Approved
Theresa James	Approved
Jeffrey Tomlinson	Approved
Tina Dierschke	Approved
Heather Stastny	Final Approval

Summary of Recommended Funding Allocations for the Second Cycle of Regional Flood Planning (2023 -2028)

		REGION														
TASK		1. Canadian- Upper Red	2. Lower Red-Sulphur- Cypress	3. Trinity	4. Sabine	5. Neches	6. San Jacinto	7. Upper Brazos	8. Lower Brazos	9. Upper Colorado	10. Lower Colorado- Lavaca	11. Guadalupe	12. San Antonio	13. Nueces	14. Upper Rio Grande	15. Lower Rio Grande
1	Planning Area Description	\$115,255.00	\$103,920.00	\$142,890.00	\$107,565.00	\$119,735.00	\$188,500.00	\$117,255.00	\$126,030.00	\$116,200.00	\$130,625.00	\$107,230.00	\$107,315.00	\$132,695.00	\$129,590.00	\$155,195.00
2A	Existing Condition Flood Risk Analyses	\$161,357.00	\$145,488.00	\$200,046.00	\$150,591.00	\$167,629.00	\$263,900.00	\$164,157.00	\$176,442.00	\$162,680.00	\$182,875.00	\$150,122.00	\$150,241.00	\$185,773.00	\$181,426.00	\$217,273.00
2B	Future Condition Flood Risk Analyses	\$161,357.00	\$145,488.00	\$200,046.00	\$150,591.00	\$167,629.00	\$263,900.00	\$164,157.00	\$176,442.00	\$162,680.00	\$182,875.00	\$150,122.00	\$150,241.00	\$185,773.00	\$181,426.00	\$217,273.00
3A	Evaluation and Recommendations on Floodplain Management Practice	\$23,051.00	\$20,784.00	\$28,578.00	\$21,513.00	\$23,947.00	\$37,700.00	\$23,451.00	\$25,206.00	\$23,240.00	\$26,125.00	\$21,446.00	\$21,463.00	\$26,539.00	\$25,918.00	\$31,039.00
3B	Flood Mitigation Needs Analysis	\$46,102.00	\$41,568.00	\$57,156.00	\$43,026.00	\$47,894.00	\$75,400.00	\$46,902.00	\$50,412.00	\$46,480.00	\$52,250.00	\$42,892.00	\$42,926.00	\$53,078.00	\$51,836.00	\$62,078.00
3C	Flood Mitigation and Floodplain Management Goals	\$23,051.00	\$20,784.00	\$28,578.00	\$21,513.00	\$23,947.00	\$37,700.00	\$23,451.00	\$25,206.00	\$23,240.00	\$26,125.00	\$21,446.00	\$21,463.00	\$26,539.00	\$25,918.00	\$31,039.00
4A	Identification and Evaluation of Potential Flood Management Evaluations and Potentially Feasible Flood Management Strategies and Flood Mitigation Projects	\$230,510.00	\$207,840.00	\$285,780.00	\$215,130.00	\$239,470.00	\$377,000.00	\$234,510.00	\$252,060.00	\$232,400.00	\$261,250.00	\$214,460.00	\$214,630.00	\$265,390.00	\$259,180.00	\$310,390.00
4B	Prepare and Submit Technical Memorandum	\$46,102.00	\$41,568.00	\$57,156.00	\$43,026.00	\$47,894.00	\$75,400.00	\$46,902.00	\$50,412.00	\$46,480.00	\$52,250.00	\$42,892.00	\$42,926.00	\$53,078.00	\$51,836.00	\$62,078.00
4C	Performance of Identified Flood Management Evaluations	\$576,275.00	\$519,600.00	\$714,450.00	\$537,825.00	\$598,675.00	\$942,500.00	\$586,275.00	\$630,150.00	\$581,000.00	\$653,125.00	\$536,150.00	\$536,575.00	\$663,475.00	\$647,950.00	\$775,975.00
5A	Recommendation of flood management evaluations, flood mitigation projects and flood management strategies	\$230,510.00	\$207,840.00	\$285,780.00	\$215,130.00	\$239,470.00	\$377,000.00	\$234,510.00	\$252,060.00	\$232,400.00	\$261,250.00	\$214,460.00	\$214,630.00	\$265,390.00	\$259,180.00	\$310,390.00
5B	Recommend a list of flood management evaluations to be performed by TWDB	\$23,051.00	\$20,784.00	\$28,578.00	\$21,513.00	\$23,947.00	\$37,700.00	\$23,451.00	\$25,206.00	\$23,240.00	\$26,125.00	\$21,446.00	\$21,463.00	\$26,539.00	\$25,918.00	\$31,039.00
6A	Impacts of Regional Flood Plan	\$69,153.00	\$62,352.00	\$85,734.00	\$64,539.00	\$71,841.00	\$113,100.00	\$70,353.00	\$75,618.00	\$69,720.00	\$78,375.00	\$64,338.00	\$64,389.00	\$79,617.00	\$77,754.00	\$93,117.00
6B	Contributions to and Impacts on Water Supply Development and the State Water Plan	\$23,051.00	\$20,784.00	\$28,578.00	\$21,513.00	\$23,947.00	\$37,700.00	\$23,451.00	\$25,206.00	\$23,240.00	\$26,125.00	\$21,446.00	\$21,463.00	\$26,539.00	\$25,918.00	\$31,039.00
7	Flood Response Information and Activities	\$23,051.00	\$20,784.00	\$28,578.00	\$21,513.00	\$23,947.00	\$37,700.00	\$23,451.00	\$25,206.00	\$23,240.00	\$26,125.00	\$21,446.00	\$21,463.00	\$26,539.00	\$25,918.00	\$31,039.00
8	Administrative, Regulatory, and Legislative Recommendations	\$23,051.00	\$20,784.00	\$28,578.00	\$21,513.00	\$23,947.00	\$37,700.00	\$23,451.00	\$25,206.00	\$23,240.00	\$26,125.00	\$21,446.00	\$21,463.00	\$26,539.00	\$25,918.00	\$31,039.00
9	Flood Infrastructure Financing Analysis	\$46,102.00	\$41,568.00	\$57,156.00	\$43,026.00	\$47,894.00	\$75,400.00	\$46,902.00	\$50,412.00	\$46,480.00	\$52,250.00	\$42,892.00	\$42,926.00	\$53,078.00	\$51,836.00	\$62,078.00
10	Public Participation and Plan Adoption	\$461,020.00	\$415,680.00	\$571,560.00	\$430,260.00	\$478,940.00	\$754,000.00	\$469,020.00	\$504,120.00	\$464,800.00	\$522,500.00	\$428,920.00	\$429,260.00	\$530,780.00	\$518,360.00	\$620,780.00
11	Implementation and Comparison to Previous Regional Flood Plan	\$23,051.00	\$20,784.00	\$28,578.00	\$21,513.00	\$23,947.00	\$37,700.00	\$23,451.00	\$25,206.00	\$23,240.00	\$26,125.00	\$21,446.00	\$21,463.00	\$26,539.00	\$25,918.00	\$31,039.00
TOTAL		\$2,305,100.00	\$2,078,400.00	\$2,857,800.00	\$2,151,300.00	\$2,394,700.00	\$3,770,000.00	\$2,345,100.00	\$2,520,600.00	\$2,324,000.00	\$2,612,500.00	\$2,144,600.00	\$2,146,300.00	\$2,653,900.00	\$2,591,800.00	\$3,103,900.00

SUBCONTRACT APPROVAL

CONTRACT # 2101792494	CONTRACTOR: City of San Angelo	SUB: HDR Engineering, Inc.	DATE / INITIAL
Is this a Regional Water Planning or Regional Flood Planning subcontract?	☒ Yes (needs Certification of Procurement) ☐ No	DC 07/06/2021	
Procurement & Contract Services Daniel Cardin Contract Specialist The subcontract, on p. 2 of 330, references and incorporates both the Prime Contract and the TWDB Required Clauses	☒ Initial request received: _____ ☒ Update Worklog ☒ Use Subcontract Approval Checklist to validate Subcontract Agt ☒ Accepted – Acceptance letter processed ☐ Rejected – Rejection letter processed ☐ Is the subcontractor a HUB? ☐ Yes; If yes, HUB Category: _____ ☐ No	DC 07/06/2021 DC	
☒ Cameron Turner ☐ Jared Basurto ☐ Jenny Kim	☐ PCS Manager or Director reviews and approves	ct 7/7/21	
Contract Manager / SME Morgan White	☒ CM / SME Reviews and approves ☒ CM / SME provides Names / Emails needed for DocuSign Contractor Signatory: N/A CC copies to: Allison Strube <allison.strube@cosatx.us>; Morgan White	7/6/21 MW	
Morgan White	Manager or Team Lead reviews and approves	7/6/21 MW	
☐ Larry French ☐ Temple McKinnon ☐ Carla Guthrie ☐ Saul Nuccitelli ☐ ☒ Reem Zoun	Director reviews & approves	RZ 07/07/21	
Kaye Schultz ☒	Contract Attorney reviews and approves	KS 7/6/2021	
↓ DOCUSIGN – CONTRACT ADMINISTRATION ONLY ↓			
☐ Edna Jackson ☒ Jessica Pena ☐ John T. Dupnik, P.G. ☐ Rebecca Trevino ☐ Richard Wade ☐	Deputy Executive Administrator reviews, approves and signs transmittal letter via DocuSign 7/7/2021	SJP	
Additional DocuSign Recipients	☐ Contract Manager, Payment Group, Contractor		
Procurement & Contract Services Daniel Cardin	☐ Scan/Add to CAS ☐ Enter Budget in CAS ☒ Update WorkLog	DC 07/06/2021	
☐ PAYMENT PENDING APPROVAL ☐ BUDGET SPREADSHEET ATTACHED			

The subcontract, on p. 2 of 330, references and incorporates both the Prime Contract and the TWDB Required Clauses

SUBCONTRACT APPROVAL CHECKLIST**CONTRACT #** 2101792494**Contractor** City of San Angelo**Contractor Amount \$** 946,200.00**Subcontractor** HDR Engineering, Inc.**Subcontractor Amount \$** \$856,738.00**Sub-Subcontractor** _____**Sub-Subcontractor Amount \$** _____

✓	LOCATION WITHIN SUBCONTRACT	ITEM
✓	OK - p 29 Section 2.29 TERM	CONTRACT DATES (corresponds with the dates of the Prime Agreement)
✓	OK	SUBCONTRACT AMOUNT (must not exceed the amount listed in the subcontract category of the Prime Agt)
✓	p 35 (TWDB Subcontracting Guidelines are attached, as is the Prime Contract)	TERMS OF REIMBURSEMENT (a. no lump sum payments; b. the TWDB does not reimbursement "handling costs" (mark-ups) on any expenses; and c. all travel is reimbursed at the current rate for state employees which can be found at: https://comptroller.texas.gov/purchasing/programs/travel-management/rental/vendor-comparison.php
✓	OK	SCOPE OF WORK (appears to be consistent with the scope of the Prime Agt)
✓	p. 272	TASK BUDGET (consistent with TWDB Contract)
✓	p. 273	EXPENSE BUDGET (approvable without but must be received prior to first reimbursement)
✓		SUBCONTRACT IS SIGNED (approvable without but must be received prior to first reimbursement)
✓	NOTE: P. 2 of 330 says "Contract Documents Adopted by Reference: The parties to this Contract adopt in their entirety by reference thereto each of the following contract documents indicated by checkmark, as if each document were set forth herein word for word and in its entirety:" [and one of the Docs so adopted is the "TWDB Required Clauses"] (another is the Prime Contract)	STATE AUDITOR CLAUSE - By executing this Contract, the SUBCONTRACTOR accepts the authority of the State Auditor's Office, under direction of the legislative audit committee, to conduct audits and investigations in connection with any and all state funds received pursuant to this contract. The SUBCONTRACTOR shall comply with and cooperate in any such investigation or audit. The SUBCONTRACTOR agrees to provide the State Auditor with access to any information the State Auditor considers relevant to the investigation or audit. The SUBCONTRACTOR also agrees to include a provision in any subcontract related to this contract that requires the SUBCONTRACTOR to submit to audits and investigation by the State Auditor's Office in connection with any and all state funds received pursuant to the subcontract.
✓	Same as above	FINANCIAL RECORDS - The SUBCONTRACTOR (S) and its contracted parties shall maintain satisfactory financial accounting documents and records, including copies of invoices and receipts, and shall make them available for examination and audit by the EXECUTIVE ADMINISTRATOR of the TWDB. Accounting by the SUBCONTRACTOR (S) and its contracted parties shall be in a manner consistent with generally accepted accounting principles.
✓	Same as above	OWNERSHIP - The TWDB shall have unlimited rights to technical or other data resulting directly from the performance of services under this CONTRACT. It is agreed that all reports, drafts of reports, or other material, data, drawings, computer programs and codes associated with this CONTRACT and developed by the SUBCONTRACTOR (S) or its contracted parties pursuant to this CONTRACT shall become the joint property of the SUBCONTRACTOR (S) and the TWDB. These materials shall not be copyrighted or patented by the SUBCONTRACTOR (S) or by any consultants involved in this CONTRACT unless the EXECUTIVE ADMINISTRATOR of the TWDB approves in writing the right to establish copyright or patent; provided, however, that copyrighting or patenting by the SUBCONTRACTOR (S) or its SUB-SUBCONTRACTORS will in no way limit the TWDB's access to or right to request and receive or distribute data and information obtained or developed pursuant to this CONTRACT. Any material subject to a TWDB copyright and produced by the SUBCONTRACTOR (S) or TWDB pursuant to this CONTRACT may be printed by the SUBCONTRACTOR (S) or the TWDB at their own cost and distributed by either at their discretion. The SUBCONTRACTOR (S) may otherwise utilize such material

		provided under this CONTRACT as it deems necessary and appropriate, including the right to publish and distribute the materials or any parts thereof under its own name, provided that any TWDB copyright is appropriately noted on the printed materials. The SUBCONTRACTOR (S) and its contracted parties agree to acknowledge the TWDB in any news releases or other publications relating to the work performed under this CONTRACT.
✓	Same as above	NO DEBT AGAINST THE STATE - This SUBCONTRACT and Agreement shall not be construed as creating any debt by or on behalf of the State of Texas and the TWDB, and all obligations of the State of Texas are subject to the availability of funds. To the extent the performance of this SUBCONTRACT transcends the biennium in which this SUBCONTRACT is entered into, this SUBCONTRACT is specifically contingent upon the continued authority of the TWDB and appropriations therefore.
✓	Same as above	LICENSES, PERMIT, AND INSURANCE - For the purpose of this CONTRACT, the SUBCONTRACTOR (S) will be considered an independent SUBCONTRACTOR and therefore solely responsible for liability resulting from negligent acts or omissions. The SUBCONTRACTOR (S) shall obtain all necessary insurance, in the judgment of the SUBCONTRACTOR (S), to protect themselves, the CONTRACTOR, the TWDB, and employees and officials of the TWDB from liability arising out of this CONTRACT. The SUBCONTRACTOR (S) shall indemnify and hold the TWDB and the State of Texas harmless, to the extent the SUBCONTRACTOR (S) may do so in accordance with state law, from any and all losses, damages, liability, or claims therefore, on account of personal injury, death, or property damage of any nature whatsoever caused by the SUBCONTRACTOR (S), arising out of the activities under this CONTRACT. The SUBCONTRACTOR (S) shall be solely and entirely responsible for procuring all appropriate licenses and permits, which may be required by any competent authority for the SUBCONTRACTOR (S) to perform the subject work.
	REGIONAL WATER OR FLOOD PLANNING CONTRACT ONLY	
✓	OK	CERTIFICATE OF PROCUREMENT
✓	Same as above	OWNERSHIP - "It is agreed that all reports, drafts of reports, or other material, data, drawings, computer programs and codes associated with this contract and developed by the (Name of SUBCONTRACTOR) pursuant to this contract shall become the joint property of the REGIONAL WATER PLANNING GROUP, (Name of SUBCONTRACTOR), (Name of SUB-SUBCONTRACTOR), and the Texas Water Development Board. These materials shall not be copyrighted or patented by the (Name of SUBCONTRACTOR). (Name of SUBCONTRACTOR) agrees that neither the Regional Water Planning Group nor the Texas Water Development Board are parties to this contract and agrees that that these entities have no liability under the terms of this contract. The Texas Water Development Board is solely a third-party beneficiary under this contract."
✓	Same as above	COMPLIANCE WITH TWDB RULES AND STATE LAW - The SUB-CONTRACTOR (S) shall comply with TWDB rules and adhere to all requirements in state law pertaining to the procurement of professional services.



Exhibit F

Certification of Procurement of
Professional Services

**First Cycle of Regional Flood Plan Development
(2020–2023)**

Certification of Procurement of Professional Services – 2023 Regional Flood Plan

Each of the following subcontractor(s) was procured through a Request for Qualifications in accordance with the procurement requirements applicable to City of San Angelo, as required in 31 TAC 361.12 (a)(2) and 361.72 (c).

HDR Engineering, Inc.

5/4/2021

Subcontractor Name

Date Procured

Subcontractor Name

Date Procured

Subcontractor Name

Date Procured

Subcontractor Name

Date Procured

Subcontractor Name

Date Procured

Subcontractor Name

Date Procured

Subcontractor Name

Date Procured

Subcontractor Name

Date Procured

Certification:

I, Allison Strube the authorized representative for Region 9, do hereby certify that each of the subcontractor(s) listed above were procured through a Request for Qualifications which was either published or sent to more than one professional inviting their response, and that the subcontractor(s) listed above were selected from such responses based on their demonstrated competence and qualifications.


Signature of Authorized Representative

7-1-2021
Date

31 TAC 361.12 (a)(2). General Regional Flood Planning Group Responsibilities and Procedures. The following activities are required of each RFPG every planning cycle: Select a technical consultant(s) to be procured by the Planning Group Sponsor in accordance with the procurement requirements that apply to that political subdivision and Texas Government Code Chapter 2254.

31 TAC 361.72(c). A RFPG through the Planning Group Sponsor's contractor or subcontractor may obtain professional services, including the services of a planner, land surveyor, licensed engineer, or attorney, for development or revision of a regional flood plan only if such services are procured on the basis of demonstrated competence and qualifications through a request for qualifications process in accordance with Texas government Code Chapter 2254 including Qualifications Based Selection of an Architect, Engineer, or Land Surveyor.

PURCHASING DIVISION
72 West College Avenue, San Angelo, Texas 76903
325.657.4219 • sapurch@cosatx.us

**CITY OF SAN ANGELO, TEXAS**

PURCHASING DIVISION

72 West College Avenue, San Angelo, Texas 76903
325.657.4219 • sapurch@cosatx.us**Contract Time:**

- The term of this contract shall be for a period of SEVEN HUNDRED EIGHTY-SEVEN (787)
☒ DAYS, commencing on the "Effective Date" and automatically expiring on JUNE 30,2023.
 Subject to extension as may be provided for in the contract documents.

Davis Bacon Act: Davis-Bacon Act required payment of prevailing wages on federally funded (or assisted) construction projects.

- ☐ Applies ☒ Does Not Apply to this contract.

Texas Government Code Chapter 2258 Prevailing Wage Rates:

- ☐ Applies ☒ Does Not Apply to this contract.

Contract Price for Cost- Reimbursable Agreement: Notwithstanding anything to the contrary in the contract documents, compensation due and payable by the City under this Contract shall not exceed;

- ☒ Base Price \$ 856,738.00

for a total sum of EIGHT HUNDRED FIFTY-SIX SEVEN HUNDRED THIRTY-EIGHT AND NO/100 DOLLARS except upon Change Order authorized under this contract or written amendment executed by the authorized representatives of the parties pursuant to authority of their governing bodies.

Contract Documents Adopted by Reference: The parties to this Contract adopt in their entirety by reference thereto each of the following contract documents indicated by checkmark, as if each document were set forth herein word for word and in its entirety:

- ☒ RFQ: WU-05-21 Professional Services – Engineering
- ☒ Draft Working Schedule provided by Texas Water Development Board, dated December 2020
- ☒ TWDB Required Clauses:
https://www.twdb.texas.gov/about/contract_admin/doc/Subcontracting_Guidelines.pdf.
- ☒ TWDB Contract # 2101792494
- ☒ TWDB Contract # 2101792494 Scope of Work
- ☒ Technical Guidelines for Regional Flood Planning
- ☒ City of San Angelo Standard Professional Services Contract Terms (as amended 6/17/2021) *
- ☒ Upper Colorado Regional Map: Flood Planning Region 9, provided by Texas Water Development Board
- ☒ Region 9 Upper Colorado Flood Planning Group: Task and Expense Budgets, dated June 3, 2021
- ☒ TWDB Certification of Procurement of Professional Services
- ☒ Contractor's Response to RFQ: WU-05-21 Statement of Qualifications Professional Services, Consultant for Development of a Regional Flood Plan, provided by Contractor, dated March 30, 2021



CITY OF SAN ANGELO, TEXAS

PURCHASING DIVISION
72 West College Avenue, San Angelo, Texas 76903
325.657.4219 • sapurch@cosatx.us

* The terms and conditions in these referenced contract documents apply to the Contract to the exclusion of any other terms that the Contractor seeks to impose or incorporate, or which are implied by trade, custom, practice, or course of dealing.

Acknowledgement of Receipt of Contract Documents: The foregoing identified Contract Documents excluding Contractor's Response to this Request for Qualifications (RFQ) are posted on the City's website at <http://www.cosatx.us/bids>. Hard copies are available to the Contractor upon request addressed to the City of San Angelo, Purchasing Division, 72 W. College, San Angelo, Texas 76903; (325) 657-4219. BY THE EXECUTION HEREOF, CONTRACTOR REPRESENTS THAT CONTRACTOR HAS REVIEWED AND IS FAMILIAR WITH EACH OF THE CONTRACT DOCUMENTS, HAS SECURED HARD COPIES OF THE CONTRACT DOCUMENTS THAT CONTRACTOR DESIRES TO ACQUIRE, AND AGREES THAT IT IS THE INTENTION OF THE PARTIES THAT THE CONTRACT DOCUMENTS BE MADE A PART OF THIS AGREEMENT AS IF EACH WERE SET FORTH, VERBATIM IN THIS AGREEMENT.

The terms, provisions, specifications and conditions of RFQ and any other documents, conditions, specifications, technical data, drawings, requirements and addenda comprising said RFQ shall prevail over any conflicting term, provision, specification or condition in Contractor's Response.

Separately Executed Contract Documents: The following contract documents indicated by checkmark below are separately required to be executed by the Contractor as conditions precedent to City's performance obligations under the contract:

- ☒ Authorized Signature/Contact Form (with IRS Form W-9)
- ☒ "Conflict of Interest Questionnaire" – Chapter 176 of the Texas Local Government Code
- ☒ Debarment and Suspension Certification
- ☒ Verification Relating to Prohibited Contracts – Israel
- ☒ Certificate of Insurance
- ☒ Special Insurance Rider
- ☒ Certification for Federally Funded Projects
- ☒ Original of the Texas Ethics Commission Interested Parties Disclosure (Form 1295) completed online at https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm, with original submitted to City of San Angelo Purchasing Division (72 W. College Avenue, San Angelo, Texas 76903).

Contractor Representations and Warranty: Contractor represents and warrants to City that: (a) it has not employed or retained any person or company employed by City to solicit or secure this Agreement and that it has not offered to pay, paid, or agreed to pay any person any fee, percentage, brokerage fee, or gift of any kind contingent upon or in connection with the award of this Agreement; and (b) electronic signatures adopted in execution of this Contract and execution of any of the separately executed Contract Documents have been adopted by the persons so indicated with the intent to sign pursuant to the Texas Uniform Electronic Transaction Act and on authorization of CONTRACTOR/PROVIDER.

Required Subcontract Clause: HDR Engineering, Inc. (Subcontractor) agrees and acknowledges that it is subject to all applicable requirements of the contract between City of San Angelo (Sponsor) and the Texas Water Development Board, TWDB Contract No. 2101792494. Subcontractor adopts by reference the requirements of Article VI of TWDB Contract No. 2101792494 for this Subcontract.



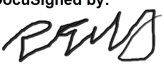
CITY OF SAN ANGELO, TEXAS

PURCHASING DIVISION
72 West College Avenue, San Angelo, Texas 76903
325.657.4219 • sapurch@cosatx.us

Authority to Execute: Each of the below named persons executing this contract hereby warrant and represent that he or she is properly authorized to execute the contract for purposes of legally binding the party on whose behalf the contract is executed.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed by their respective duly authorized officials the day and year indicated below.

CONTRACTOR: HDR Engineering, Inc.

DocuSigned by:

Authorized Signature: 5A2EF87DE5874E3
By: Ramon Miguez, Vice President / Area Manager

CITY OF SAN ANGELO, TEXAS:

DocuSigned by:

By: 32F0687237A9420...
Daniel Valenzuela, City Manager

ATTEST:

DocuSigned by:

By: 4C3EC4F6CC9044A...
Julia Antilley, City Clerk

APPROVED AS TO PURCHASING:

DocuSigned by:

C8D34D26AE3441B...
Jeffrey Tomlinson, Purchasing Manager

APPROVED AS TO CONTENT:

DocuSigned by:

0D4673DBF27C4CF...
Allison Strube, Water Utilities Director

APPROVED AS TO RISK:

DocuSigned by:

BD38BA9C4FF5480...
Charles Hagen, Risk Manager

APPROVED AS TO FORM:

DocuSigned by:

E822428D640A4D4...
Theresa James, City Attorney

CERTIFICATE OF INTERESTED PARTIES**FORM 1295**

1 of 1

Complete Nos. 1 - 4 and 6 if there are interested parties.
 Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.

**OFFICE USE ONLY
CERTIFICATION OF FILING**

1 Name of business entity filing form, and the city, state and country of the business entity's place of business.

HDR Engineering, Inc.
 Dallas, TX United States

Certificate Number:
 2021-747586

Date Filed:
 05/04/2021

Date Acknowledged:
 05/05/21

2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.

City of San Angelo

3 Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the services, goods, or other property to be provided under the contract.

WU-05-21
 Professional Engineering Services

4	Name of Interested Party	City, State, Country (place of business)	Nature of interest (check applicable)	
			Controlling	Intermediary
	HDR, Inc.	Omaha, NE United States	X	
	LeCureux, David	Omaha, NE United States	X	
	Crockett, Tim	Omaha, NE United States	X	
	Meysenberg, Galen	Omaha, TX United States	X	
	Keen, Eric	Omaha, NE United States	X	

5 Check only if there is NO Interested Party.

☐
6 UNSWORN DECLARATION

My name is Ramon F. Miguez, and my date of birth is 3/25/51.

My address is 17111 Preston Road, Suite 300, Dallas TX 75248 USA.
 (street) (city) (state) (zip code) (country)

I declare under penalty of perjury that the foregoing is true and correct.

Executed in Dallas County, State of Texas, on the 4th day of May, 20 21.
 (month) (year)

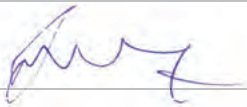

 Signature of authorized agent of contracting business entity
 (Declarant)

**CITY OF SAN ANGELO, TEXAS**

PURCHASING DIVISION

72 West College Avenue, San Angelo, Texas 76903
325.657.4219 • sapurch@cosatx.us**Contact Information****AUTHORIZED AGENT • PLEASE PRINT**

An Authorized Agent for an entity pursuant to this solicitation is an individual duly authorized by the entity and having full capacity to bind the entity. Authorized Agent may include an Officer of a Corporation, a General Partner of a Partnership, a Managing Member of a Limited Liability Company, or any other individual who has been granted such authority in writing executed by an individual having authority to bind the entity. City reserves the right to require written verification of an individual's authority to act on behalf of an entity.

NAME a. HDR Engineering, Inc.	
TITLE Vice President/Area Manager	E-MAIL Ramon.Miguez@hdrinc.com
SIGNATURE 	DATE March 30, 2021

PRIMARY CONTACT • PLEASE PRINT

Complete if different from above.

NAME Curtis Beitel, PE, CFM, ENV SP	
TITLE Project Manager	E-MAIL Curtis.Beitel@hdrinc.com
SIGNATURE 	DATE March 30, 2021

VENDOR DETAILS • PLEASE PRINT

VENDOR NAME HDR Engineering, Inc.	
PHONE (817) 333-2800	FAX (817) 333-2818
WEBSITE hdrinc.com	
MAILING ADDRESS 600 West Sixth Street, Suite 200	
CITY / STATE / ZIP Fort Worth, TX 76102	
PHYSICAL ADDRESS (NO PO BOXES) 600 West Sixth Street, Suite 200	
CITY / STATE / ZIP Fort Worth, TX 76102	

PLEASE ATTACH A CURRENT IRS FORM W-9.

Form **W-9**
(Rev. August 2013)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

**Give Form to the
requester. Do not
send to the IRS.**

Print or type
See Specific Instructions on page 2.

Name (as shown on your income tax return)

HDR Engineering Inc

Business name/disregarded entity name, if different from above

Check appropriate box for federal tax classification:

☐ Individual/sole proprietor ☐ C Corporation ☒ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ► _____

☐ Other (see instructions) ► _____

Exemptions (see instructions):

Exempt payee code (if any) _____

Exemption from FATCA reporting
code (if any) _____

Address (number, street, and apt. or suite no.)

8404 Indian Hills Drive

City, state, and ZIP code

Omaha NE 68114

Requester's name and address (optional)

List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on the "Name" line to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

Social security number

			-			-			
--	--	--	---	--	--	---	--	--	--

Employer identification number

4	7	-	0	6	8	0	5	6	8
---	---	---	---	---	---	---	---	---	---

Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
- I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
- I am a U.S. citizen or other U.S. person (defined below), and
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

**Sign
Here**

Signature of
U.S. person ►

Date ►

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. The IRS has created a page on IRS.gov for information about Form W-9, at www.irs.gov/w9. Information about any future developments affecting Form W-9 (such as legislation enacted after we release it) will be posted on that page.

Purpose of Form

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, payments made to you in settlement of payment card and third party network transactions, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

- Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
- Certify that you are not subject to backup withholding, or
- Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the

withholding tax on foreign partners' share of effectively connected income, and

- Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct.

Note. If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States,
- An estate (other than a foreign estate), or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.



CITY OF SAN ANGELO, TEXAS

PURCHASING DIVISION

72 West College Avenue, San Angelo, Texas 76903

325.657.4219 • sapurch@cosatx.us

Conflict of Interest Questionnaire

CONFLICT OF INTEREST QUESTIONNAIRE For vendor doing business with local governmental entity		FORM CIQ
This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session. This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a). By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. See Section 176.006(a-1), Local Government Code. A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.	OFFICE USE ONLY Date Received	
1 Name of vendor who has a business relationship with local governmental entity. HDR Engineering, Inc.		
2 ☐ Check this box if you are filing an update to a previously filed questionnaire. (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)		
3 Name of local government officer about whom the information is being disclosed. N/A Name of Officer		
4 Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary. A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor? ☐ Yes ☐ No B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity? ☐ Yes ☐ No		
5 Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.		
6 ☐ Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).		
7 Signature of vendor doing business with the governmental entity March 30, 2021 Date		

Form provided by Texas Ethics Commission

www.ethics.state.tx.us

Revised 11/30/2015

PLEASE NOTE: If you do not have any Conflict of Interest(s) to report, please write "N/A" in Box 1 and complete Box 7 with signature and date.



CITY OF SAN ANGELO, TEXAS

PURCHASING DIVISION

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CONFLICT OF INTEREST QUESTIONNAIRE

For vendor doing business with local governmental entity

A complete copy of Chapter 176 of the Local Government Code may be found at <http://www.statutes.legis.state.tx.us/Docs/LG/htm/LG.176.htm>. For easy reference, below are some of the sections cited on this form.

Local Government Code § 176.001(1-a): "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

- (A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;
- (B) a transaction conducted at a price and subject to terms available to the public; or
- (C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

Local Government Code § 176.003(a)(2)(A) and (B):

- (a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

- (2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds \$2,500 during the 12-month period preceding the date that the officer becomes aware that

- (i) a contract between the local governmental entity and vendor has been executed;
- or
- (ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than \$100 in the 12-month period preceding the date the officer becomes aware that:

- (i) a contract between the local governmental entity and vendor has been executed; or
- (ii) the local governmental entity is considering entering into a contract with the vendor.

Local Government Code § 176.006(a) and (a-1)

- (a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

- (1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);
- (2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or
- (3) has a family relationship with a local government officer of that local governmental entity.

- (a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

- (1) the date that the vendor:
 - (A) begins discussions or negotiations to enter into a contract with the local governmental entity; or
 - (B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or
- (2) the date the vendor becomes aware:
 - (A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);
 - (B) that the vendor has given one or more gifts described by Subsection (a); or
 - (C) of a family relationship with a local government officer.



CITY OF SAN ANGELO, TEXAS

PURCHASING DIVISION

72 West College Avenue, San Angelo, Texas 76903
325.657.4219 • sapurch@cosatx.us

Debarment and Suspension Certification Instructions

1. By signing and submitting this bid, the prospective vendor is providing the certification set out below.
2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective vendor shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the determination whether to enter into this transaction. However, failure of the prospective vendors to furnish a certification or an explanation shall disqualify such person from participation in this transaction.
3. The certification in this clause is a material representation of fact upon which reliance was placed when the City of San Angelo determined to enter into this transaction. If it is later determined that the prospective vendor knowingly rendered an erroneous certification, in addition to other remedies available, the City of San Angelo may terminate this transaction for cause.
4. The prospective vendor shall provide immediate written notice to the City of San Angelo to which this bid is submitted if at any time the prospective vendor learns that its certification was erroneous when submitted or has become erroneous because of changed circumstances.
5. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "vendor," "person," "primary covered transaction," "principal," "bid," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549(13 CFR Part 145). You may contact the City of San Angelo for assistance in obtaining a copy of these regulations.
6. The prospective vendor agrees by submitting this bid that, should the proposed transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the City of San Angelo.
7. The prospective vendor further agrees by submitting this bid that it will include the clause titled "Certification Regarding Debarment and Suspension" provided by the City of San Angelo, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
8. A vendor in a covered transaction may rely upon a certification of a prospective vendor in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A vendor may decide the method and frequency by which it determines the ineligibility of its principals. Each vendor may, but is not required to, check the Non-procurement List.
9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a vendor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
10. Except for transactions authorized under paragraph 6 of these instructions, if a vendor in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the City of San Angelo, the City of San Angelo may terminate this transaction for cause.

**CITY OF SAN ANGELO, TEXAS**

PURCHASING DIVISION

72 West College Avenue, San Angelo, Texas 76903
325.657.4219 • sapurch@cosatx.us**Debarment and Suspension Certification**

(1) The prospective primary vendor certifies to the best of its knowledge and belief that it and its principals:

(a) Are not presently debarred, suspended, proposed for disbarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

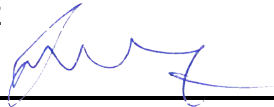
(b) Have not within a three-year period preceding this application been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application had one or more public transactions (Federal, State, or local) terminated for cause or default.

(2) Where the prospective primary vendor is unable to certify to any of the statements in this certification, such prospective primary vendor shall attach an explanation to this bid.

AUTHORIZED AGENT • PLEASE PRINT

VENDOR	
HDR Engineering, Inc.	
NAME	TITLE
Ramon Miguez, PE	Vice President/Area Manager
SIGNATURE	DATE
	March 30, 2021

**CITY OF SAN ANGELO, TEXAS**

PURCHASING DIVISION

72 West College Avenue, San Angelo, Texas 76903
325.657.4219 • sapurch@cosatx.us

Special Insurance Rider

The City of San Angelo requires contractors doing business with the City to provide and continuously maintain in effect at all times during the contract term insurance coverages as indicated on this Special Insurance Rider. Prior to commencement of Work, Contractor shall provide the City's Risk Management Office with a Certificate of Insurance on ACCORD 25 Form that confirms that Contractor has insurance coverages in compliance with the City's minimum insurance requirements set forth herein.

☒ **Commercial General Liability**

This policy shall be an occurrence-type policy and shall protect Provider and additional insureds against all claims arising from bodily injury, sickness, disease or death of any person (other than Provider's employees) and damage to property of City or others arising out of the act or omission of Provider or its agents and employees. This policy shall also include protection against claims for the contractual liability assumed by Provider under the paragraph of this Agreement entitled "Indemnification," including completed operations, products liability, contractual coverage, broad form property coverage, explosion, collapse, underground, premises/operations, and independent Vendors (to remain in force for two years after final payment). Coverage limits shall not be less than:

MINIMUM LIMIT(S):

\$1,000,000	Each Occurrence
\$1,000,000	Personal and Advertising Injury
\$2,000,000	General Aggregate
\$1,000,000	Products/Completed Operations Aggregate
\$100,000	Fire Damage

☒ **Business Auto Liability**

This policy shall be written in comprehensive form and shall protect Provider and the additional insureds against all claims for injuries to members of the public and damage to property of others arising from the use of motor vehicles and shall cover operation on and off the premises of all motor vehicles licensed for highway use, whether they are owned, non-owned or hired. Coverage shall be as follows:

MINIMUM LIMIT(S):

\$1,000,000	Each Accident Limit
-------------	---------------------

☒ **Workers' Compensation and Employer's Liability**

If Provider hires any employees, Provider shall maintain Workers' Compensation and Employer's Liability insurance, which shall protect Provider against all claims under applicable state workers' compensation laws and employer's liability. The insured shall also be protected against claim for injury, disease or death of employees which for any reason, may not fall within the provisions of a workers' compensation law. Coverage shall not be less than:

MINIMUM LIMIT(S):

\$500,000	Employer's Liability, Each Accident
\$500,000	Employer's Liability, Disease – Each Employee
\$500,000	Employer's Liability, Disease – Policy Limit

☒ **Professional Liability**

This insurance shall include contractual liability in its coverage, and the coverage under this policy shall survive the term of this Agreement as long as any liability could be asserted. Limit of liability per claim shall not be less than:

MINIMUM LIMIT(S):

\$2,000,000	Combined Single Limits
-------------	------------------------

**CITY OF SAN ANGELO, TEXAS**

PURCHASING DIVISION

72 West College Avenue, San Angelo, Texas 76903

325.657.4219 • sapurch@cosatx.us

☐ Environmental/Pollution Liability

This insurance shall include contractual liability in its coverage, and the coverage under this policy shall survive the term of this Agreement as long as any liability could be asserted. Limit of liability per claim shall not be less than:

MINIMUM LIMIT(S):

\$2,000,000 Combined Single Limits

☐ Cyber Liability

This policy shall be an occurrence-type policy and shall protect provider and additional insured against all claims arising from cyber-attacks against the insured, members of the public, and the City. Coverage shall not be less than:

MINIMUM LIMIT(S):

\$5,000,000	Privacy Notification and Crisis Management Expense
\$5,000,000	Information Security and Privacy Liability
\$5,000,000	Regulatory Defense and Penalties
\$5,000,000	Payment Card Industry Fines and Assessments
\$5,000,000	Website Media
\$5,000,000	Business Interruption
\$5,000,000	Extra Expense
\$5,000,000	Data Assets Coverage
\$5,000,000	Cyber-Extortion
\$5,000,000	Computer Fraud
\$5,000,000	Funds Transfer Fraud
\$5,000,000	Social Engineering/ Fraudulent Instruction Coverage

☐ Builder's Risk (All-Risk)

This insurance shall include contractual liability in its coverage, and the coverage under this policy shall survive the term of this Agreement as long as any liability could be asserted. Limit of liability per claim shall not be less than:

MINIMUM LIMIT(S):

\$2,000,000 Combined Single Limits

☐ Liquor Liability

**CITY OF SAN ANGELO, TEXAS**

PURCHASING DIVISION

72 West College Avenue, San Angelo, Texas 76903
325.657.4219 • sapurch@cosatx.us

The certificate of insurance shall indicate that the City of San Angelo is provided by endorsement a Waiver of Subrogation in favor of the City on all policies.

All insurance policies required herein shall be drawn in the name of Contractor with the City of San Angelo as an additional insured to include its employees, agents, and Council persons by endorsement on all policies except workers compensation.

Upon request of the City of San Angelo, Contractor shall produce copies of insurance policies and/or endorsements that reflect the required insurance coverages and endorsements.

Certificate Holder:

City of San Angelo, Texas
72 W. College Avenue
San Angelo, Texas 76903

Written contracts will contain more detailed information regarding insurance requirements.

Bonds are required for contracts that meet the following guidelines:

- ☐ Contract in excess of \$100,000 requires a Performance Bond
- ☐ Contract in excess of \$50,000 requires a Payment Bond

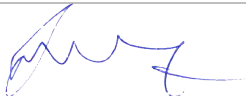
The Bond must be executed by a corporate surety in accordance with Section 1, Chapter 87, Acts of the 56th Legislature, Regular Session, 1959 (Article 7.19-1, Vernon's Texas Insurance Code) per Texas Government Code Sec. 2253.021 and must be payable to the City of San Angelo, Texas.

Please provide your agent or broker with a copy of these requirements.

If you have any questions concerning compliance with the City's minimum insurance requirements, please call the Risk Management Division at 325-657-4359.

Contractor agrees to comply with City of San Angelo Special Insurance Rider requirements.

CONTRACTOR**AUTHORIZED AGENT • PLEASE PRINT**

VENDOR	
HDR Engineering, Inc.	
NAME	TITLE
Ramon F. Miguez, PE	Vice President/Area Manager
SIGNATURE	DATE
	March 30, 2021



CERTIFICATE OF LIABILITY INSURANCE

 DATE (MM/DD/YYYY)
 06/07/2021

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Willis Towers Watson Midwest, Inc. c/o 26 Century Blvd P.O. Box 305191 Nashville, TN 372305191 USA	CONTACT NAME: Willis Towers Watson Certificate Center PHONE (A/C, No, Ext): 1-877-945-7378 FAX (A/C, No): 1-888-467-2378 E-MAIL ADDRESS: certificates@willis.com														
INSURED HDR Engineering, Inc. 1917 South 67th Street Omaha, NE 68106	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: center;">INSURER(S) AFFORDING COVERAGE</th> <th style="text-align: center;">NAIC #</th> </tr> <tr> <td>INSURER A: Liberty Mutual Fire Insurance Company</td> <td style="text-align: center;">23035</td> </tr> <tr> <td>INSURER B: Ohio Casualty Insurance Company</td> <td style="text-align: center;">24074</td> </tr> <tr> <td>INSURER C: Liberty Insurance Corporation</td> <td style="text-align: center;">42404</td> </tr> <tr> <td>INSURER D:</td> <td></td> </tr> <tr> <td>INSURER E:</td> <td></td> </tr> <tr> <td>INSURER F:</td> <td></td> </tr> </table>	INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A: Liberty Mutual Fire Insurance Company	23035	INSURER B: Ohio Casualty Insurance Company	24074	INSURER C: Liberty Insurance Corporation	42404	INSURER D:		INSURER E:		INSURER F:	
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INSURER D:															
INSURER E:															
INSURER F:															

COVERAGES

CERTIFICATE NUMBER: W21205239

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	☒ COMMERCIAL GENERAL LIABILITY	Y	Y	TB2-641-444950-031	06/01/2021	06/01/2022	EACH OCCURRENCE \$ 2,000,000
	☐ CLAIMS-MADE ☒ OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000
	☒ Contractual Liability						MED EXP (Any one person) \$ 10,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						PERSONAL & ADV INJURY \$ 2,000,000
	☐ POLICY ☒ PRO-JECT ☒ LOC						GENERAL AGGREGATE \$ 4,000,000
	OTHER:						PRODUCTS - COMP/OP AGG \$ 4,000,000
							\$
A	AUTOMOBILE LIABILITY	Y	Y	AS2-641-444950-041	06/01/2021	06/01/2022	COMBINED SINGLE LIMIT (Ea accident) \$ 2,000,000
	☒ ANY AUTO						BODILY INJURY (Per person) \$
	☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS NON-OWNED AUTOS ONLY						BODILY INJURY (Per accident) \$
	☐ HIRED AUTOS ONLY						PROPERTY DAMAGE (Per accident) \$
							\$
B	UMBRELLA LIAB ☒ OCCUR	Y	Y	EUO(22) 57919363	06/01/2021	06/01/2022	EACH OCCURRENCE \$ 10,000,000
	☒ EXCESS LIAB ☐ CLAIMS-MADE						AGGREGATE \$ 10,000,000
	DED ☒ RETENTION \$ 0						\$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	Y/N	N/A	WA7-64D-444950-011	06/01/2021	06/01/2022	☒ PER STATUTE ☐ OTH-ER
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)						E.L. EACH ACCIDENT \$ 1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE \$ 1,000,000
							E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Certificate Holder is named as Additional Insured on General Liability, Automobile Liability and Umbrella/Excess Liability on a Primary, Non-contributory basis where required by written contract. Waiver of Subrogation applies on General Liability, Automobile Liability, Umbrella/Excess Liability and Workers Compensation where required by written contract and as permitted by law. Umbrella/Excess policy is follow form over General Liability, Auto Liability and Employers Liability.

CERTIFICATE HOLDER

CANCELLATION

City of San Angelo, TX Attn: Allison Strube 72 W. College Avenue San Angelo, TX 76903	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE
--	---

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AGENCY CUSTOMER ID: _____

LOC #: _____

**ADDITIONAL REMARKS SCHEDULE**Page 2 of 2

AGENCY Willis Towers Watson Midwest, Inc.		NAMED INSURED HDR Engineering, Inc. 1917 South 67th Street Omaha, NE 68106
POLICY NUMBER See Page 1		
CARRIER See Page 1	NAIC CODE See Page 1	EFFECTIVE DATE: See Page 1

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,

FORM NUMBER: 25 FORM TITLE: Certificate of Liability Insurance

Project: City of San Angelo, COSA Contract No. WU-05-21 UPPER COLORADO REGIONAL FLOOD PLANNING PROFESSIONAL SERVICES, in relation to the contract between city of San Angelo and the Texas Water Development Board, TWBD Contract No. 2101792494

Additional Insureds: City of San Angelo, its employees, agents, and Council persons.

Waiver of Subrogation: City.



CERTIFICATE OF LIABILITY INSURANCE

6/1/2022

DATE (MM/DD/YYYY)

6/7/2021

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Lockton Companies 444 W. 47th Street, Suite 900 Kansas City MO 64112-1906 (816) 960-9000	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">CONTACT NAME:</td> </tr> <tr> <td>PHONE (A/C. No. Ext):</td> <td>FAX (A/C. No.):</td> </tr> <tr> <td colspan="2">E-MAIL ADDRESS:</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">INSURER(S) AFFORDING COVERAGE</td> <td style="text-align: center;">NAIC #</td> </tr> <tr> <td>INSURER A: Lexington Insurance Company</td> <td style="text-align: center;">19437</td> </tr> <tr> <td>INSURER B:</td> <td></td> </tr> <tr> <td>INSURER C:</td> <td></td> </tr> <tr> <td>INSURER D:</td> <td></td> </tr> <tr> <td>INSURER E:</td> <td></td> </tr> <tr> <td>INSURER F:</td> <td></td> </tr> </table>	CONTACT NAME:		PHONE (A/C. No. Ext):	FAX (A/C. No.):	E-MAIL ADDRESS:		INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A: Lexington Insurance Company	19437	INSURER B:		INSURER C:		INSURER D:		INSURER E:		INSURER F:	
CONTACT NAME:																					
PHONE (A/C. No. Ext):	FAX (A/C. No.):																				
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INSURER C:																					
INSURER D:																					
INSURER E:																					
INSURER F:																					
INSURED 1016040 HDR ENGINEERING, INC. 1917 SOUTH 67TH STREET OMAHA NE 68106																					

COVERAGES * **CERTIFICATE NUMBER:** 17624547 **REVISION NUMBER:** XXXXXXXX

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☐ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☐ PRO-JECT ☐ LOC OTHER:			NOT APPLICABLE			EACH OCCURRENCE \$ XXXXXXXX DAMAGE TO RENTED PREMISES (Ea occurrence) \$ XXXXXXXX MED EXP (Any one person) \$ XXXXXXXX PERSONAL & ADV INJURY \$ XXXXXXXX GENERAL AGGREGATE \$ XXXXXXXX PRODUCTS - COMP/OP AGG \$ XXXXXXXX \$
	AUTOMOBILE LIABILITY ☐ ANY AUTO ☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS ☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY			NOT APPLICABLE			COMBINED SINGLE LIMIT (Ea accident) \$ XXXXXXXX BODILY INJURY (Per person) \$ XXXXXXXX BODILY INJURY (Per accident) \$ XXXXXXXX PROPERTY DAMAGE (Per accident) \$ XXXXXXXX \$ XXXXXXXX
	UMBRELLA LIAB ☐ OCCUR EXCESS LIAB ☐ CLAIMS-MADE DED RETENTION \$			NOT APPLICABLE			EACH OCCURRENCE \$ XXXXXXXX AGGREGATE \$ XXXXXXXX \$ XXXXXXXX
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A	NOT APPLICABLE			PER STATUTE OTH-ER E.L. EACH ACCIDENT \$ XXXXXXXX E.L. DISEASE - EA EMPLOYEE \$ XXXXXXXX E.L. DISEASE - POLICY LIMIT \$ XXXXXXXX
A	ARCH & ENG PROFESSIONAL LIABILITY	N	N	061853691	6/1/2021	6/1/2022	PER CLAIM: \$2,000,000 AGGREGATE: \$2,000,000.

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
 RE: CITY OF SAN ANGELO, COSA CONTRACT NO. WU-05-21 UPPER COLORADO REGIONAL FLOOD PLANNING PROFESSIONAL SERVICES, IN RELATION TO THE CONTRACT BETWEEN CITY OF SAN ANGELO AND THE TEXAS WATER DEVELOPMENT BOARD, TWBD CONTRACT NO. 2101792494, WAIVER OF SUBROGATION APPLIES WHERE ALLOWABLE BY LAW.

CERTIFICATE HOLDER
CANCELLATION

17624547 CITY OF SAN ANGELO, TX ATTENTION: ALLISON STRUBE 72 W. COLLEGE AVENUE SAN ANGELO TX 76903	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE
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CITY OF SAN ANGELO, TEXAS

PURCHASING DIVISION

72 West College Avenue, San Angelo, Texas 76903
325.657.4219 • sapurch@cosatx.us

Verification Relating to Prohibited Contracts – Israel

CITY OF SAN ANGELO, TEXAS

My name is Ramon F. Miguez "Declarant";
FIRST MIDDLE LASTMy date of birth is March 25, 1951 ; and,
BIRTHDAYMy address is 17111 Preston Rd. Suite 300 , Dallas . TX
STREET CITY STATE
75248 , and United States .
ZIP CODE COUNTRYMy position with HDR Engineering, Inc. , contracting company, is Vice President/Area Manager.
CONTRACTING COMPANY OFFICE HELD

(1) The foregoing named contracting Company does not now and will not during the term of this contract, have contracts with or provide supplies or services to, an entity or company known to have contracts with or to provide supplies or services to a foreign terroristic organization or with an entity or company identified as providing such on a list prepared and maintained by the Texas Comptroller pursuant to Subchapter "F", Sections 2252.151 et. seq., Chapter 2252 "Contracts with Governmental Entity" of the Texas Government Code; neither is contracting Company identified as an entity providing such supplies or services on said list.

(2) The foregoing named contracting Company does not boycott Israel; and will not boycott Israel during the term of the contract with the City of San Angelo.

I declare under penalty of perjury that the foregoing is true and correct.

Executed in Dallas County, State of Texas , on the
COUNTY OFFICE HELD
30 day of March , 20 21
DAY MONTH YEAR

DECLARANT SIGNATURE

**CITY OF SAN ANGELO, TEXAS**

PURCHASING DIVISION

72 West College Avenue, San Angelo, Texas 76903
325.657.4219 • sapurch@cosatx.us**CERTIFICATION FOR FEDERALLY FUNDED PROJECTS**

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instruction.
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Contractor, HDR Engineering, Inc., certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Chap. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

CONTRACTOR**AUTHORIZED AGENT • PLEASE PRINT**

VENDOR	
HDR Engineering, Inc.	
NAME	TITLE
Ramon Miguez	Vice President/Area Manager
SIGNATURE	DATE
	March 30, 2021



City of San Angelo

REQUEST FOR QUALIFICATIONS

RFQ WU-05-21 • Water Utilities Department
Professional Services - Engineering

SUBMITTAL DEADLINE: [AVAILABLE ON CITY OF SAN ANGELO - BONFIRE](#)

CITY OF SAN ANGELO • PURCHASING DIVISION • 72 WEST COLLEGE AVENUE • SAN ANGELO, TEXAS 76903

**CITY OF SAN ANGELO, TEXAS****PURCHASING DIVISION**

72 W. College Ave., San Angelo, TX 76903
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1. INVITATION

1.1 General

The City of San Angelo Water Utilities Department ("City") seeks responses to a Request for Qualifications ("RFQ") for Professional Engineering Services to serve as a Consultant for the Development of a Regional Flood Plan in coordination with the City and the Texas Water Development Board ("TWDB"). For a proposal to be considered, the persons (or organizations) responding to this RFQ ("Respondent") must demonstrate the capacity to perform the services described in this Request for Qualifications.

1.2 Confidentiality

All submissions shall remain confidential. After award, submissions will be made available for public inspection. The City shall not be responsible for the confidentiality of any trade secrets or other information contained or disclosed in the proposal unless clearly identified as such.

1.3 Document Availability

Solicitation Documents are available in the Purchasing Division or may be downloaded from the City's website at <https://cosatx.bonfirehub.com/>. To locate the documents on the Bonfire Portal, go to:

Open Public Opportunities > RFQ: WU-05-21 / Professional Services - Engineering

1.4 Digital Format

If proposal specifications are obtained in digital format in order to prepare a response, the response must be submitted in hard copy according to the instructions contained in this proposal package. If, in its response, respondents make any changes whatsoever to the published proposal specifications, the proposal specification **as published** shall control. Furthermore, if an alteration of any kind to the proposal specification is discovered after the contract is executed and is or is not being performed; the contract is subject to immediate cancellation without recourse.

1.5 Insurance and Indemnification Requirements

Insurance and indemnification requirements applicable to this project are detailed within the Special Insurance Rider and/or the draft project agreement included with this solicitation package. Please review the insurance and indemnification requirements with your insurance agent prior to submission.

1.6 Interpretations

All questions about the meaning or intent of the contract documents, including specifications shall be submitted to the Purchasing Division through [Bonfire](#), City's e-Procurement Platform. Please include the RFQ Number and Title in the subject line. Questions received after the deadline established for submitting questions/interpretations will not be answered.

Replies will be issued by addenda and posted on the Bonfire Project Page. Only questions answered by formal written addenda will be binding. Oral interpretations or clarifications will be without legal effect.

1.7 Required Response

The City requires a response to any Request for Proposal (RFQ) notifications sent to potential vendors. Should a company choose not to participate, then in order to remain on the City of San Angelo's potential vendors list, a "No Reply" form must be submitted.

1.8 Deadline and Delivery Location

Sealed submittals must be received no later than **the posted submission deadline listed in City's e-Procurement Portal ([Bonfire](#))**. The time recorded in Bonfire will serve as the official record of time. Submissions received after the submission deadline, regardless of the mode of delivery, will not be considered.

**CITY OF SAN ANGELO, TEXAS****PURCHASING DIVISION**

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It is the sole responsibility of the vendor to ensure that the sealed submittal arrives via Bonfire by the specified deadline.

1.9 Addenda

Should specifications be revised prior to the deadline for submittals, the City's Purchasing Division will issue addenda addressing the nature of the change and post them on the City's e-Procurement Portal ([Bonfire](#)). Respondents should **acknowledge any addenda as part of their submission in Bonfire**. Respondent is responsible for checking the City's e-Procurement Platform (Bonfire) to determine if any addenda have been issued prior to submitting a Statement of Qualifications. Failure to consider all addenda will be at the respondent's risk.

1.10 Award of Contract

The City reserves the right to accept or reject any or all proposals, and to waive any informalities or irregularities in the RFQ process. The City is an equal opportunity employer.

The City will select the most highly qualified respondent(s) of the requested services based on all evaluation factors and then attempt to negotiate a contract.

1.11 Acceptance of Solicitation Content

Before submitting a proposal, each respondent shall make all investigations and examinations necessary to ascertain all conditions and requirements affecting the performance of the contract and to verify any representations made by the City upon which the submission will rely. If the respondent receives an offer because of its submission, failure to have made such investigation and examinations will in no way relieve the respondent from its obligation to comply in every detail with all provisions and requirements.

1.12 Equal Employment Opportunity

Attention of respondents to the requirement for ensuring that employees and applicants for employment are not discriminated against because of their race, color religion, sex, national origin, age, or disability.

1.13 Anti-Lobbying Agreement

In submitting its Statement of Qualifications, the Respondent certifies that it has not lobbied the City or its officials, managers, employees, consultants, or Consultants in such a manner as to influence or to attempt to influence the procurement process. In the event it reasonably appears that the Respondent influenced or attempted to influence the procurement process, the City may, in its discretion, reject the submission.

1.14 Points of Contact

Nolan Sosa, Manager
Purchasing Division
City of San Angelo
72 W. College Ave.
San Angelo, Texas 76903
sapurch@cosatx.us
(325) 657-4219

Allison Strube, Director
Water Utilities Department
City of San Angelo
301 W. Beauregard Ave.
San Angelo, Texas 76903



CITY OF SAN ANGELO, TEXAS
 PURCHASING DIVISION
 72 W. College Ave., San Angelo, TX 76903
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2. INSTRUCTIONS TO RESPONDENTS

2.1 Corrections, Additions, or Deletions

Corrections, additions, or deletions to any portion of the invitation will be in the form of written addenda.

2.2 Examinations of RFQ Documents

Respondents are expected to examine all specifications, drawings, standard provisions, and instructions. Failure to do so will be at the respondent's risk.

2.3 Taxes

All quotations are to be submitted less Federal Excise and State of Texas Sales Taxes. Tax exemption certificates will be provided upon request.

2.4 Authorized Signature

Proposals must show vendor name, address, and be manually signed. The originals must include the copy with the manual signatures. The person signing the proposal must have authority to bind their firm in a contract. Any erasures or other changes must be initialed by the person signing the proposal.

2.5 Modification or Withdrawal of Proposals

Proposals **CANNOT** be altered or amended after the closing time. Proposals may be modified or withdrawn prior to the closing hour and date by written notice to the Purchasing Division. A proposal may also be withdrawn in person by a respondent or their authorized agent, provided their identity is made known and they sign a receipt for the proposal. No proposal may be withdrawn after the closing time and date without acceptable reason in writing and with approval of the Purchasing Division.

2.6 Restrictions on Communication

Respondents shall not communicate with 1) elected City officials, City staff, or contracted agents of the City regarding the RFQ from the time the RFQ has been released until the contract is posted as a City Council agenda item; and 2) City officials/employees/agents from the time the RFQ has been released until the contract is awarded. These restrictions extend to "thank you" letters, phone calls, emails and any contact that results in the direct or indirect discussion of the RFQ and/or proposal submitted by respondent. Violation of this provision by respondent and/or its agent may lead to disqualification of respondent's proposal from consideration and from opportunities to submit a response on future projects.

Exceptions to the Restrictions on Communication with City employees include:

1. Private (non-business) contacts with the City by the respondent's employees acting in their personal capacity.
2. Casual social contacts that do not include mention of the RFQ.
3. Respondents may submit written questions concerning this RFQ to the email listed below up to a week prior to submission due date. Questions received after the stated deadline will not be answered. Submission of questions to any other party prior to award may result in the disqualification of a respondent from participating as a respondent on this project as well as future projects for the City.

It is required that all questions be sent through the City's e-Procurement Platform, [Bonfire](#). **Please ensure the RFQ Number and Title is in the Subject Line.** Questions submitted and the City's responses will be published in the form of addenda to the Project Page in Bonfire. Respondent is responsible for calling the City or reviewing the Bonfire Project Page to determine if any addenda have been issued prior to their submittal. Only questions answered by formal addenda will be binding.

Respondents may provide responses to questions asked of them after responses are received and opened. During interviews, if any, verbal questions and explanations will be permitted. If interviews are conducted, respondents shall not bring lobbyists. All cost associated with interviews will be at the respondents' expense. The City reserves the right to exclude any persons from interviews as it deems in its best interests.

**CITY OF SAN ANGELO, TEXAS****PURCHASING DIVISION**

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Upon completion of the evaluation process, respondents shall receive a notification letter indicating the recommended firm and anticipated City Council agenda date. Respondents desiring a review of the solicitation process must submit a written request no later than five (5) calendar days from the date the letter was sent. Failure to submit a letter in writing to the Purchasing office prior to the end of the fifth day shall be at the risk of the respondent. The letter will indicate the name and address for submission of requests for review.

City reserves the right to contact any respondent to negotiate if such is deemed desirable by City. Such negotiations initiated by City staff persons shall not be considered a violation by respondent of this section.

2.7 Disqualification

The respondent may be disqualified for any of the following reasons:

- A. The respondent is involved in any litigation against the City of San Angelo.
- B. The respondent is in arrears on any existing contract or has defaulted on a previous contract with the City.
- C. The response is deemed non-conformant/non-responsive to the criteria/instructions highlighted herein.
- D. The respondent is debarred, suspended, terminated, or otherwise excluded from or ineligible covered transactions by any federal, state, or local government entity or agency.
- E. The proposal is not received by the proposal submittal deadline; or,
- F. The proposal is not executed by a person authorized to enter into a contract binding on the respondent.

2.8 Reservations

The City expressly reserves the right to accept, reject, or cancel all proposals AND:

- A. Waive any defect, irregularity, or informality in any proposal or solicitation procedure.
- B. Extend the proposal closing time and date.
- C. Reissue a solicitation or RFQ.
- D. Procure any item by other means; or,
- E. Increase or decrease the quantity specified, unless the vendor specifies otherwise.

2.9 Acceptance

Acceptance of respondent's qualifications will be in the form of a purchase order and contract. Notice for annual contract agreements will be a notice of award, purchase order, or contract.

2.10 Inspections

Inspections shall be at the discretion of the City within the requirements of the City. The vendor shall keep the entire project site and all pertinent documents, records, and files readily accessible to the City (and any other governmental entity that might exercise regulatory control over the project or any portion of the work) at all times.

2.11 Order Placement

No work shall be ordered without a Purchase Order and all invoices must reference the Purchase Order number. City's obligation is payable only and solely from funds available for the purpose of this purchase. Lack of funds shall render this contract null and void to the extent funds are not available and any delivered but unpaid for goods will be returned to vendor by City. Accepting orders without a Purchase Order number shall be at the risk of the vendor.

2.12 Invoices and Payment

Contractor will submit itemized invoices for all services rendered pursuant to this Request for Qualifications. Invoices will bear the name of the firm and will be addressed to the appropriate City Point of Contact, Contract Number (WU-05-21), and Purchase Order number. Invoices will be in itemized format and provide sufficient detail that demonstrates work performed.



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Payment may be withheld by City, at the discretion of the City, to vendor until all required documents pertaining to the incurred charges are provided to the authorized City representative.

2.13 Gratuities

The City may, by written notice to the vendor, cancel this contract without liability to vendor if it is determined by the City that gratuities were offered from an agent or representative of the vendor to any officer or employee of the City with a view toward securing a contract or securing favorable treatment with respect to the awarding or amending, or the making of any determinations in respect to the performing of such contract. In the event this contract is canceled by City, remedies to recover or withhold the amount of the cost shall be incurred by vendor in providing such gratuities.

2.14 Termination

Performance under this contract may be terminated in whole, or in part by the City in accordance with this provision. Termination performance hereunder shall be affected by the delivery to vendor of a "Notice of Termination" specifying the extent to which performance under this contract is terminated and the date upon which such termination becomes effective.

2.15 Force Majeure

Neither party shall be held responsible for losses resulting if the fulfillment of any terms or provisions of this contract is delayed or prevented by any cause not within the control of the party whose performance is interfered with, which by the exercise of reasonable diligence said party is unable to prevent.

2.16 Assignment – Delegation

No right or interest in the contract shall be assigned nor shall any delegation of any obligation made by vendor be valid without the written permission of the City. Any attempted assignment or delegation by vendor shall be wholly void and totally ineffective for all purposes unless made in conformity with this paragraph.

2.17 Waiver

No claim or right arising out of a breach of this contract can be discharged in whole or in part by a waiver or renunciation of the claim or right unless the waiver or renunciation is supported by consideration and is in writing signed by the aggrieved party.

2.18 Modifications

This contract can be modified or rescinded only in writing signed by both of the parties or their duly authorized agents.

2.19 Interpretation – Parol Evidence

This writing is intended by the parties as a final expression of their agreement and is intended as a complete agreement for dealings between the parties and no usage of the trade shall be relevant to supplement or explain any term used in this agreement. Acceptance or acquiescence in a course of performance rendered under this agreement shall not be relevant to determine the meaning of this agreement even though the accepting or acquiescing party has knowledge of the performance and opportunity for objection. Whenever a term defined by the Uniform Commercial Code is used in the agreement, the definition contained in the Code is to control.

2.20 Applicable Law

This agreement is subject to all applicable federal and state laws, statutes, codes, rules and regulations, and local ordinances, rules and regulations. This agreement is also subject to the Uniform Commercial Code. Whenever the term "Uniform Commercial Code" is used, it shall be construed as meaning the Uniform Commercial Code as adopted in the State of Texas as effective and in force on the date of this agreement.

**CITY OF SAN ANGELO, TEXAS****PURCHASING DIVISION**

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2.21 Advertising

Vendor shall not advertise or publish, without City's prior consent, the fact that City has entered into this contract, except to the extent necessary to comply with proper requests for information from an authorized representative of the federal, state, or local government.

2.22 Right to Assurance

Whenever one party to this contract in good faith has reason to question the other party's intent to perform, they may demand that the other party give written assurance of its intent to perform. If a demand is made, and no assurance is given within five (5) days, the demanding party may treat this failure as an anticipatory repudiation of the contract.

2.23 Equal Employment Opportunity

Vendor agrees that during the performance of its contract it will:

- Treat all applicants and employees without discrimination as to race, color, religion, sex, national origin, marital status, age, or handicap.
- Identify itself as an Equal Opportunity Employer in all help wanted advertising or request. The vendor shall be advised of any complaints filed with the City alleging that vendor is not an Equal Opportunity Employer. The City reserves the right to consider its reports from its human relations administrator in response to such complaints in determining whether or not to terminate any portion of this contract for which Purchase Orders or authorities to deliver have not been included; however, the vendor is specifically advised that no Equal Opportunity Employment complaint will be the basis for cancellation of this contract for which a Purchase Order has been issued or authority to deliver granted.

All vendors must be Equal Opportunity Employers. Disadvantaged and minority vendors are encouraged to participate.

2.24 Conflict of Interest

Vendor agrees to comply with the conflict-of-interest provisions of the City of San Angelo Charter and Code of Ordinances. Vendor agrees to maintain current, updated disclosure of information on file with the City Clerk throughout the term of the contract.

Chapter 176 of the Texas Local Government Code requires a vendor who enters or seeks to enter into a contract for the sale or purchase of real property, goods, or services with a local governmental entity or local government officer thereof to file a conflict of interests' disclosure questionnaire with the governmental entity prescribed.

A Conflict-of-Interest Questionnaire Form (CIQ) – included in the required forms - must be submitted no later than the seventh (7th) business day after the date the vendor begins discussion, negotiation, applies or responds to a request for qualifications or correspondence in writing related to a potential contract with the local governmental entity.

2.25 Certificate of Interested Parties (Form 1295)

In 2015, the Texas Legislature adopted [House Bill 1295](#), which added section 2252.908 of the Government Code. The law states that a governmental entity or state agency may not enter into certain contracts with a business entity unless the business entity submits a disclosure of interested parties to the governmental entity or state agency at the time the business entity submits the signed contract to the governmental entity or state agency. The law applies only to a contract of a governmental entity or state agency that either (1) requires an action or vote by the governing body of the entity or agency before the contract may be signed or (2) has a value of at least \$1 million. The disclosure requirement applies to a contract entered on or after January 1, 2016.

**CITY OF SAN ANGELO, TEXAS****PURCHASING DIVISION**

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Filing Process:

On January 1, 2016, the ethics commission made available on its website a new filing application that must be used to file Form 1295. A business entity must use the application to enter the required information on Form 1295 and print a copy of the completed form, which will include a certification of filing that will contain a unique certification number. An authorized agent of the business entity must sign the printed copy of the form. The completed Form 1295 with the certification of filing must be filed with the governmental body or state agency with which the business entity is entering into the contract.

Information regarding how to use the filing application and the application are both available at https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm. Instructional videos are available under the heading Instructional Videos for Business Entities.

The Form 1295 must be received, signed and original, within thirty (30) days of Council award or the contract may be voided.

2.26 Taxes and Permits

Attention is directed to the requirements of the General Conditions regarding payment of taxes and obtaining permits. All taxes that are lawfully assessed against the City or the selected vendor in connection with the work shall be paid by the vendor. The prices shall include all such taxes and the costs of all required permits. The City is exempt from State Sales Tax and Federal Excise Tax.

2.27 Examination of Contract Documents

Each vendor shall thoroughly examine and be familiar with this document, specifications, etc. The submission of a statement of qualifications shall constitute an acknowledgment that the vendor has thoroughly examined and is familiar with all solicitation and contract documents. The failure or neglect of a vendor to receive or examine any of the solicitation or contract documents shall in no way relieve them from any obligations with respect to their submission or to any resulting contract. No claim for extra or additional compensation will be allowed based upon a lack of knowledge of any contract document, and the City will in no case be responsible for any loss or for unanticipated costs that may be suffered by the selected vendor as a result of conditions pertaining to the work.

2.28 Legal Venue

Tom Green County, Texas

2.29 Term

The term of this Agreement shall be effective upon the date of award by the City Council, with concurrence by the Texas Water Development Board (TWDB). The term of the Agreement shall expire June 30, 2023, unless terminated earlier in writing under the provisions outlined in Termination.



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3. SCOPE OF SERVICES REQUESTED

3.1 General

The Scope of Services is outlined in Attachment A: *"Draft Regional Flood Planning Scope of Work"*.



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4. RFQ SUBMISSION FORMAT

Statements of Qualifications shall be submitted in the following format with each element requested and/or form furnished as specified to facilitate evaluation of the proposals. The detailed requirements in this RFQ are **mandatory**.

FAILURE TO ADHERE TO THE REQUIRED FORMAT MAY BE CAUSE FOR REJECTION OF PROPOSAL.

4.1 Cover Page (1 page maximum)

Show the subject, the name of your firm, address, telephone number(s), name of contact person, and date. Clearly indicate "RFQ: WU-05-21. Professional Services - Engineering" on this page.

4.2 Table of Contents (1 page maximum)

Clearly identify the materials by section and page number.

4.3 Team Capability (5 pages maximum)

Please outline the consultant and team's capability to perform the requested Scope of Services.

4.4 Key Personnel (3 pages maximum – Excluding Team Resumes)

Please identify the team's key personnel that will serve on this project. Please provide evidence of professional qualifications, experience, reputation, integrity and competence. Please detail the Key Personnel's knowledge of TWDB regulations, policies, and procedures, as related to the Scope of Services requested. Please include an organizational chart for the team assigned to this project.

4.5 Quality of Similar Projects (5 pages maximum)

Please outline the team's capability to meet schedules and deadlines. Please outline the quality of similar projects previously undertaken. Please provide evidence of the consultant's capability to complete similar projects without having major cost escalations or overruns. Provide at least three project descriptions and references from clients for which the team has performed similar work.

4.6 Technical Approach (10 pages maximum)

Please outline your proposed Technical Approach to perform the services outlined in Attachment "A". Your technical approach should outline Staff Allocations (role, name, and time commitment) and the deliverables that City will receive (with tentative deliverable dates).

Statements of Qualifications and Experience will be accepted until the deadline posted in Bonfire. Submittals shall be sent via Bonfire, City's e-Procurement Platform. Statements submitted after the deadline will be marked "late" and will not be accepted. The City of San Angelo will work towards selecting the top qualified consultant within sixty (60) days of opening.

No proposal meeting is scheduled.

FAILURE/REFUSAL TO ADHERE TO THE REQUIREMENTS IN THIS SOLICITATION MAY RESULT IN THE REJECTION OF YOUR SUBMISSION AS NON-CONFORMANT.



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5. ATTACHMENTS

- A. *Draft* Regional Flood Planning (RFQ) Scope of Work
- B. *Draft* Agreement
- C. Map – Flood Planning Region 9 – Upper Colorado
- D. Working Conceptual Schedule



6. SELECTION PROCESS

A selection committee will evaluate and rank the proposals in relation to the published selection criteria within 60 days after the opening.

The Regional Flood Planning Group (RFPG) reserves the right to negotiate and execute the final Agreement on an "as needed" when called for basis for numerous separate task orders for projects requiring Professional Services.

The selection process is as follows:

1. The RFPG will evaluate and rank the proposals in relation to the published selection criteria within sixty (60) days after the opening.
2. The RFPG will then select the firm(s) that offers the best value based on the published selection criteria and its ranking evaluation.
3. Following the selection process, the contract negotiation process begins, and the RFPG will negotiate first with the highest ranked offer. At this stage, the RFPG may discuss modifications to the proposed scope, time and price. Modifications are not required. If modifications are discussed but not mutually agreed upon, a final contract may still be negotiated and mutually agreed upon based on the original response to the RFQ. If the two parties are unable to reach a final agreement, the RFPG will notify that respondent in writing that formal negotiations are ended.
4. The RFPG may then negotiate with the next ranked respondent. This process continues in the order of the selection ranking until a final contract is reached or all proposals are rejected.
5. The RFPG reserves the right to reject all proposals and procure goods/services through alternative means.

The proposals will be evaluated based on the criteria and weighting detailed below:

Item	Criteria	Points
1	Team Capability	20
2	Key Project Personnel	15
3	Quality of Similar Projects	20
4	Technical Approach	30
5	Compliance and Conformity to the RFQ Requirements	15
Total		100

Working Conceptual Schedule****First Cycle of Regional Flood Planning**

As of December 2020



Item	Entity	Activity	Planning SOW Task #	2020			2021												2022												2023				
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
1	TWDB	Designation of RFPG members																																	
2	RFPG	RFPG First Meetings																																	
3	RFPG	Public participation, stakeholder input, post notices, hold meetings, maintain email lists and website.	10																																
4	TWDB	Publish Request for Regional Flood Planning Grant Applications																																	
5	RFPG/Sponsor	Submission of Applications for Regional Flood Planning Grants to TWDB					(DUE JAN 21, 2021)																												
6	TWDB/Sponsor	Review and Execution of Regional Flood Planning Grant Contracts																																	
7	RFPG/Sponsor	Solicitation for Technical Consultant by RFQ process																																	
8	RFPG	Pre-Planning Meetings for Public Input on Development of RFP																																	
9	RFPG	Selection of Technical Consultant																																	
10	RFPG/Sponsor	Execution of Technical Consultant Subcontract																																	
11	RFPG	Planning Area Description	1																																
12	RFPG	Existing Condition Flood Risk Analyses	2A																																
13	RFPG	Future Condition Flood Risk Analyses	2B																																
14	RFPG	Evaluation and Recommendations on Floodplain Management Practices	3A																																
15	RFPG	Flood Mitigation and Floodplain Management Goals	3B																																
16	RFPG	Flood Mitigation Need Analysis	4A																																
17	RFPG	Identification and Evaluation of Potential FMEs and Potentially Feasible FMSs and FMPs	4B																																
18	RFPG	Preparation and Submission of Technical Memorandum to the TWDB	4C																																
18	TWDB	Issue Notice-to-Proceed on Task 5																																	
20	RFPG	Recommendation of FMEs, FMSs, and FMPs	5																																
21	RFPG	Impacts of Regional Flood Plan	6A																																
22	RFPG	Contributions to and Impacts on Water Supply Development and the State Water Plan	6B																																
23	RFPG	Flood Response Information and Activities	7																																
24	RFPG	Administrative, Regulatory, and Legislative Recommendations	8																																
25	RFPG	Flood Infrastructure Financing Analysis	9																																
26	RFPG	Preparation and Submission of Draft RFP to the TWDB	10																																
27	RFPG	Public Input on Draft RFP	10																																
28	TWDB	TWDB Review and Comment on the Draft RFP																																	
29	RFPG	Incorporate TWDB & Public Input into Final RFP	10																																
30	RFPG	Adopt and Submit the 2023 RFP to the TWDB	All																															(DUE JAN 10, 2023)	

Acronyms:

RFP - Regional Flood Plan

RFPG - Regional Flood Planning Group

FME - Flood Management Evaluation

FMS - Flood Management Strategy

FMP - Flood Mitigation Project

Notes:

**This conceptual schedule contains approximate timeframes for high-level planning activities for the purpose of illustrating the anticipated order of and interrelationship/overlap between key activities. Each RFPG & Sponsor will develop their own working schedule and will direct its own planning effort which will vary by region. Milestone dates shown red are required deadlines contained in the Regional Flood Planning Grant Contracts.

Details work associated with each task can be found in the Draft Scope of Work: <https://www.twdb.texas.gov/flood/planning/doc/2020DraftSOW.pdf>

TWDB Subcontracting Guidelines

Provisions required in all TWDB subcontracts

If you enter into a contract with the Texas Water Development Board (TWDB), please be advised that you are required to submit any and all subcontracts to the TWDB for review and inspection. This review is conducted to ensure that the subcontract is consistent with the terms and requirements included in the TWDB funding contract (prime agreement).

Items that should be included in each subcontract of a TWDB contract include:

1. **Contract Dates** – there should be a starting date and ending date for your agreement.
 2. **Contract Amount** – your agreement should list the total value of the subcontract.
 3. **Terms of Reimbursement** - Subcontracts must be cost reimbursable. Lump sum agreements are not permitted for services. Please also note that the TWDB does not reimburse “handling costs” (mark-ups) on any expenses. Any eligible travel expenses related to a subcontract may be reimbursed at the current rate for State of Texas employees which can be found at:
<https://fm.x.cpa.state.tx.us/fmx/travel/texttravel/trans/personal.php>
 4. **Scope of Work** – the terms of the scope of work must be consistent with the scope of the prime agreement.
 5. **Task Budget** – as appropriate. The task budget must be consistent with the task budget specified in the TWDB prime agreement.
 6. **Expense Budget** – as appropriate. The expense budget must be consistent with the expense budget specified in the TWDB prime agreement.
 7. **Signatures** – each subcontract must be executed appropriately by signature, by each party to the agreement.
-

Specific Clause Requirements

The requirements listed in the next section of this guideline document must be included in your subcontract agreement in order for the agreement to be acceptable to TWDB. Please note that these requirements are provided to facilitate the contracting process and as such are not intended to be legal advice that would establish or create an attorney-client relationship. It is recommended that an attorney be consulted for any legal advice that you may require.

Continued on next page

TWDB Subcontracting Guidelines, Continued

**State Auditor
Clause**

The following clause should be included in TWDB subcontracting agreements:

“By executing this Contract, the SUBCONTRACTOR accepts the authority of the State Auditor's Office, under direction of the legislative audit committee, to conduct audits and investigations in connection with any and all state funds received pursuant to this contract. The SUBCONTRACTOR shall comply with and cooperate in any such investigation or audit. The SUBCONTRACTOR agrees to provide the State Auditor with access to any information the State Auditor considers relevant to the investigation or audit. The SUBCONTRACTOR also agrees to include a provision in any subcontract related to this contract that requires the SUBCONTRACTOR to submit to audits and investigation by the State Auditor's Office in connection with any and all state funds received pursuant to the subcontract.”

**Financial
Records Clause**

The following clause should be included in TWDB subcontracting agreements:

“The SUBCONTRACTOR (S) and its contracted parties shall maintain satisfactory financial accounting documents and records, including copies of invoices and receipts, and shall make them available for examination and audit by the EXECUTIVE ADMINISTRATOR of the TWDB. Accounting by the SUBCONTRACTOR (S) and its contracted parties shall be in a manner consistent with generally accepted accounting principles.”

**Ownership
Clause**

The following clause should be included in TWDB subcontracting agreements:

“The TWDB shall have unlimited rights to technical or other data resulting directly from the performance of services under this CONTRACT. It is agreed that all reports, drafts of reports, or other material, data, drawings, computer programs and codes associated with this CONTRACT and developed by the SUBCONTRACTOR (S) or its contracted parties pursuant to this CONTRACT shall become the joint property of the SUBCONTRACTOR (S) and the TWDB. These materials shall not be copyrighted or patented by the SUBCONTRACTOR (S) or by any consultants involved in this CONTRACT unless the EXECUTIVE ADMINISTRATOR of the TWDB approves in writing the right to establish

Continued on next page

TWDB Subcontracting Guidelines, Continued

Ownership Clause (continued)

copyright or patent; provided, however, that copyrighting or patenting by the SUBCONTRACTOR (S) or its SUB-SUBCONTRACTORS will in no way limit the TWDB 's access to or right to request and receive or distribute data and information obtained or developed pursuant to this CONTRACT. Any material subject to a TWDB copyright and produced by the SUBCONTRACTOR (S) or TWDB pursuant to this CONTRACT may be printed by the SUBCONTRACTOR (S) or the TWDB at their own cost and distributed by either at their discretion. The SUBCONTRACTOR (S) may otherwise utilize such material provided under this CONTRACT as it deems necessary and appropriate, including the right to publish and distribute the materials or any parts thereof under its own name, provided that any TWDB copyright is appropriately noted on the printed materials.

The SUBCONTRACTOR (S) and its contracted parties agree to acknowledge the TWDB in any news releases or other publications relating to the work performed under this CONTRACT.”

No Debt Against The State Clause

The following clause should be included in TWDB subcontracting agreements:

“This SUBCONTRACT and Agreement shall not be construed as creating any debt by or on behalf of the State of Texas and the TWDB, and all obligations of the State of Texas are subject to the availability of funds. To the extent the performance of this SUBCONTRACT transcends the biennium in which this SUBCONTRACT is entered into, this SUBCONTRACT is specifically contingent upon the continued authority of the TWDB and appropriations therefore.”

Licenses, Permit and Insurance Clause

The following clause should be included in TWDB subcontracting agreements:

“For the purpose of this CONTRACT, the SUBCONTRACTOR (S) will be considered an independent SUBCONTRACTOR and therefore solely responsible for liability resulting from negligent acts or omissions. The SUBCONTRACTOR (S) shall obtain all necessary insurance, in the judgment of the SUBCONTRACTOR (S), to protect themselves, the CONTRACTOR, the TWDB, and employees and officials of the TWDB from liability arising out of this CONTRACT. The SUBCONTRACTOR (S) shall indemnify and

Continued on next page

TWDB Subcontracting Guidelines, Continued

Licenses, Permit and Insurance Clause (continued)

hold the TWDB and the State of Texas harmless, to the extent the SUBCONTRACTOR (S) may do so in accordance with state law, from any and all losses, damages, liability, or claims therefore, on account of personal injury, death, or property damage of any nature whatsoever caused by the SUBCONTRACTOR (S), arising out of the activities under this CONTRACT.

The SUBCONTRACTOR (S) shall be solely and entirely responsible for procuring all appropriate licenses and permits, which may be required by any competent authority for the SUBCONTRACTOR (S) to perform the subject work.”

REGIONAL WATER PLANNING

If you have entered into a Regional Water Planning agreement with the TWDB, you must include the previously listed clauses for **State Auditor, Financial Records, No Debt Against The State, Licenses, Permit and Insurance** in your subcontracts – and the following requirements:

OWNERSHIP (*substitutes for content listed on pages 2 and 3 of this document*)

"It is agreed that all reports, drafts of reports, or other material, data, drawings, computer programs and codes associated with this contract and developed by the (Name of SUBCONTRACTOR) pursuant to this contract shall become the joint property of the REGIONAL WATER PLANNING GROUP, (Name of SUBCONTRACTOR), (Name of SUB- SUBCONTRACTOR), and the Texas Water Development Board. These materials shall not be copyrighted or patented by the (Name of SUBCONTRACTOR). (Name of SUBCONTRACTOR) agrees that neither the Regional Water Planning Group nor the Texas Water Development Board are parties to this contract and agrees that that these entities have no liability under the terms of this contract. The Texas Water Development Board is solely a third-party beneficiary under this contract."

COMPLIANCE WITH BOARD RULES AND STATE LAW

The SUB-CONTRACTOR (S) shall comply with BOARD rules and adhere to all requirements in state law pertaining to the procurement of professional services.

Questions?

If you have any questions regarding these requirements, please send an email to contracts@twdb.texas.gov.



STATE OF TEXAS

TWDB Contract No. 2101792494

COUNTY OF TRAVIS

Floodplain Management Account

REGIONAL FLOOD PLANNING

THIS Contract, (hereinafter "CONTRACT"), between the Texas Water Development Board (hereinafter "TWDB") and City of San Angelo, the political subdivision designated by the REGIONAL FLOOD PLANNING GROUP as its representative (hereinafter "CONTRACTOR"), is composed of two parts: Section I - Specific Conditions and Exceptions to the Standard Agreement; and Section II - Standard Agreement. In the event of any conflict, the terms and conditions set forth in Section I will prevail over terms and conditions in Section II.

SECTION I. SPECIFIC CONDITIONS AND EXCEPTIONS TO STANDARD AGREEMENT

ARTICLE I. DEFINITIONS:

For the purposes of this CONTRACT, the following terms or phrases are defined as follows:

- A. TWDB – the Texas Water Development Board, or its designated representative.
- B. TWDB APPROVAL DATE – November 19, 2020
- C. COMMITTED FUNDS – \$ 946,200.00 is currently available to CONTRACTOR pursuant to the terms of this CONTRACT for the development of the TECHNICAL MEMORANDUM and the REGIONAL FLOOD PLAN. The COMMITTED FUNDS include necessary and direct costs incurred on or after CONTRACT EXECUTION DATE, and certain eligible costs related to Task 10 incurred on or after the CONTRACT INITIATION DATE.
- D. CONTRACT INITIATION DATE – October 26, 2020
- E. CONTRACTOR – City of San Angelo
- F. DEADLINE FOR CONTRACT EXECUTION – April 15, 2021
- G. EXECUTIVE ADMINISTRATOR – the Executive Administrator of TWDB or a designated representative.
- H. TECHNICAL MEMORANDUM – a memorandum to be prepared by CONTRACTOR and submitted to the EXECUTIVE ADMINISTRATOR summarizing the findings and all work performed under the Scope of Work and any future amended Scope of Work

(i.e., through the identification of the region's flood risks and identification of potential flood management evaluations and potentially feasible flood management strategies and flood mitigation projects).

- I. TECHNICAL MEMORANDUM DEADLINE – January 7, 2022
- J. DRAFT REGIONAL FLOOD PLAN – the Regional Flood Plan to be initially prepared by CONTRACTOR and submitted to the EXECUTIVE ADMINISTRATOR for comments pursuant to the CONTRACT.
- K. DRAFT REGIONAL FLOOD PLAN DEADLINE – August 1, 2022
- L. REGIONAL FLOOD PLAN – a plan including any amendments that have been adopted by the REGIONAL FLOOD PLANNING GROUP and that meets the requirements contained in Texas Water Code § 16.062 and 31 Texas Administrative Code Chapters 361 and 362 and is submitted to TWDB for approval.
- M. FINAL REGIONAL FLOOD PLAN DEADLINE – January 10, 2023
- N. FIRST REIMBURSEABLE EXPENSE DATE – The first day that work performed under this CONTRACT is eligible for reimbursement will be the CONTRACT INITIATION DATE for limited administrative costs associated with public notices. TWDB will not reimburse expenses associated with Exhibit A, Scope of Work, until after CONTRACT EXECUTION DATE.
- O. FINAL REIMBURSEABLE EXPENSE DATE – The last day that work performed under this CONTRACT is eligible for reimbursement will be June 30, 2023.
- P. CONTRACT EXPIRATION DATE – This CONTRACT expires on June 30, 2023. The last day that any budget amendment requests may be submitted under the CONTRACT will be May 1, 2023.
- Q. FINAL PAYMENT REQUEST DEADLINE – The latest day that the final payment request may be submitted for reimbursement will be September 30, 2023.
- R. FLOOD PLANNING REGION – Region 9 Upper Colorado designated under Texas Water Code § 16.062(a)(1) and 31 Texas Administrative Code § 361.11.
- S. REGIONAL FLOOD PLANNING GROUP – Region 9 Upper Colorado Regional Flood Planning Group, designated under and in compliance with Texas Water Code §16.062(c) and 31 Texas Administrative Code § 361.11 to develop regional flood plans.
- T. STATE FLOOD PLANNING DATASET – A data platform to be developed and maintained by TWDB that stores data related to flood planning. It is used to collect, analyze, and disseminate regional and statewide flood planning data.

- U. PAYMENT REQUEST SUBMISSION SCHEDULE – A minimum of quarterly.
- V. CONTRACT EXECUTION DATE– The date CONTRACT is signed by the EXECUTIVE ADMINISTRATOR as shown on the last page of this CONTRACT document.

ARTICLE II. OTHER SPECIAL CONDITIONS AND EXCEPTIONS TO STANDARD AGREEMENT OF THIS CONTRACT.

- A. TWDB will not be liable for any expenses incurred in excess of COMMITTED FUNDS.

This CONTRACT does not require CONTRACTOR to incur costs beyond those that can be paid with COMMITTED FUNDS. However, this provision does not relieve the REGIONAL FLOOD PLANNING GROUP from its duty under Texas Water Code § 16.062 to prepare a regional flood plan.
- B. Other provisions specific to each region: None.

SECTION II. STANDARD AGREEMENT

ARTICLE I. RECITALS

Whereas, CONTRACTOR has been designated by the REGIONAL FLOOD PLANNING GROUP as its representative to enter into Contracts with TWDB for financial assistance to develop a REGIONAL FLOOD PLAN for the FLOOD PLANNING REGION;

Whereas, CONTRACTOR applied to TWDB for a planning grant to develop a REGIONAL FLOOD PLAN;

Whereas, CONTRACTOR is the entity acting as administrator of TWDB's planning grant and responsible for the execution of this CONTRACT; and

Whereas, on TWDB APPROVAL DATE, TWDB approved CONTRACTOR's application for financial assistance.

Now, therefore, TWDB and CONTRACTOR, agree as follows:

ARTICLE II. PROJECT DESCRIPTION AND SERVICES TO BE PERFORMED

- A. CONTRACTOR must develop a TECHNICAL MEMORANDUM and REGIONAL FLOOD PLAN for the FLOOD PLANNING REGION according to:
 - 1. Exhibit A – Scope of Work
 - 2. Exhibit B – Task and Expense Budgets

3. Exhibit C – Technical Guidelines for Regional Flood Planning¹
 4. Exhibit D – Data Submittal Guidelines for Regional Flood Planning¹
 5. Exhibit E – Original Application (cover pages as a reference to the full, original grant application)
 6. Exhibit F – Certification of Procurement of Professional Services and in accordance with the requirements of Texas Water Code Chapter 16 and with 31 Texas Administrative Code Chapters 361 and 362.
- B. The EXECUTIVE ADMINISTRATOR will provide technical assistance within available resources to CONTRACTOR if such assistance is requested for performing regional flood planning activities; and, as necessary, will facilitate resolution of conflicts within the FLOOD PLANNING REGION or between regions.
- C. CONTRACTOR must provide for public participation in the planning process as specified in Texas Water Code § 16.062 and 31 Texas Administrative Code § 361.21.
- D. CONTRACTOR must provide its best efforts as determined by the EXECUTIVE ADMINISTRATOR to produce a REGIONAL FLOOD PLAN that has been adopted by the REGIONAL FLOOD PLANNING GROUP and that was developed in accordance with the statutory and rule requirements identified in this CONTRACT.
- E. CONTRACTOR must obtain prior approval of the REGIONAL FLOOD PLANNING GROUP for all potential flood management evaluations and potentially feasible flood management strategies and flood mitigation projects to be evaluated as part of the REGIONAL FLOOD PLAN development.

ARTICLE III. SCHEDULE, REPORTS, AND OTHER PRODUCTS

- A. CONTRACTOR must execute this CONTRACT on or before the DEADLINE FOR CONTRACT EXECUTION or TWDB's commitment to pay COMMITTED FUNDS will be rescinded.
- B. This CONTRACT begins on the CONTRACT INITIATION DATE and expires on the CONTRACT EXPIRATION DATE.
- C. CONTRACTOR must provide written progress reports according to the PAYMENT REQUEST SUBMISSION SCHEDULE with each payment reimbursement request or release of advance funds. The progress reports must include:
1. a brief statement of the overall progress made since the last progress report for each task budget item;
 2. a brief description of any problems that have been encountered during the previous reporting period that may affect the study, delay the timely

¹ Exhibit C, Technical Guidelines for Regional Flood Planning, and Exhibit D, Data Submittal Guidelines for Regional Flood Planning, will be posted on the TWDB website at:
<https://www.twdb.texas.gov/flood/planning/planningdocu/2023/index.asp>.
The RFPs must utilize the latest version posted on the website until July 31, 2021.

- 3. completion of any portion of this CONTRACT, or inhibit the completion of or cause a change in any of the study's products or objects; and
- 3. a description of any action CONTRACTOR plans to take to correct any problems that have been encountered or identified.

- D. CONTRACTOR must complete the TECHNICAL MEMORANDUM according to Article II, Paragraph A of this Section. CONTRACTOR must submit the TECHNICAL MEMORANDUM to the REGIONAL FLOOD PLANNING GROUP for approval at a regular REGIONAL FLOOD PLANNING GROUP meeting. After approval, CONTRACTOR must submit the TECHNICAL MEMORANDUM to the EXECUTIVE ADMINISTRATOR, if the REGIONAL FLOOD PLANNING GROUP authorizes such submittal. CONTRACTOR must deliver two electronic copies of the TECHNICAL MEMORANDUM, one (1) in searchable Portable Document Format (PDF) and one (1) in Microsoft Word (MSWord) Format, to the EXECUTIVE ADMINISTRATOR no later than the TECHNICAL MEMORANDUM DEADLINE.

CONTRACTOR must populate TWDB's state flood planning database with associated data, prior to submission of the TECHNICAL MEMORANDUM in accordance with this CONTRACT.

The TECHNICAL MEMORANDUM DEADLINE may be extended at the discretion of the EXECUTIVE ADMINISTRATOR either on the EXECUTIVE ADMINISTRATOR's initiative or upon a written request received from CONTRACTOR, at least thirty (30) days prior to the deadline, stating good cause for the extension.

TWDB will not accept a TECHNICAL MEMORANDUM or consider it administratively complete until the associated data in TWDB's state flood planning data submittal is complete and accurate, and the required summary tables are included in the TECHNICAL MEMORANDUM in accordance with this CONTRACT.

After a 30-day review period, the EXECUTIVE ADMINISTRATOR will either accept or reject the TECHNICAL MEMORANDUM based on administrative completeness. If the TECHNICAL MEMORANDUM is rejected, the rejection letter sent to CONTRACTOR will state the reasons for rejection and the steps CONTRACTOR needs to take to have the TECHNICAL MEMORANDUM accepted.

In the event CONTRACTOR has produced a TECHNICAL MEMORANDUM that, despite CONTRACTOR'S best efforts, has not been authorized for submittal by the REGIONAL FLOOD PLANNING GROUP, CONTRACTOR must provide all data, material, reports, and work accomplished under the CONTRACT to TWDB.

- E. CONTRACTOR or CONTRACTOR's representative (e.g., Subcontractor) must attend at least one state flood planning data submittal training session provided by TWDB staff at times and locations to be determined by TWDB.
- F. CONTRACTOR must complete the DRAFT REGIONAL FLOOD PLAN according to Article II, Paragraph A of this Section. CONTRACTOR must submit the DRAFT

REGIONAL FLOOD PLAN to the REGIONAL FLOOD PLANNING GROUP and allow the REGIONAL FLOOD PLANNING GROUP to conduct a public meeting to receive and consider comments on the DRAFT REGIONAL FLOOD PLAN. CONTRACTOR must submit the DRAFT REGIONAL FLOOD PLAN to the EXECUTIVE ADMINISTRATOR after the REGIONAL FLOOD PLANNING GROUP authorizes such submittal. The REGIONAL FLOOD PLANNING GROUP may submit the DRAFT REGIONAL FLOOD PLAN prior to the required public meeting but must assure the EXECUTIVE ADMINISTRATOR that the meeting will be completed in time to meet the FINAL REGIONAL FLOOD PLAN DEADLINE for submission of an APPROVED REGIONAL FLOOD PLAN. CONTRACTOR must deliver two electronic copies of a DRAFT REGIONAL FLOOD PLAN, one (1) in searchable Portable Document Format (PDF) and one (1) in Microsoft Word (MSWord) Format, to the EXECUTIVE ADMINISTRATOR no later than the DRAFT REGIONAL FLOOD PLAN DEADLINE. The EXECUTIVE ADMINISTRATOR will provide any written comments to CONTRACTOR within 120 calendar days.

CONTRACTOR must provide the pertinent TWDB state flood planning dataset, including appropriate documentation and quality check, by DRAFT REGIONAL FLOOD PLAN DEADLINE, in accordance with this CONTRACT. CONTRACTOR must incorporate the required online planning database reports from the state flood planning database within the submitted DRAFT REGIONAL FLOOD PLAN in accordance with this CONTRACT.

The DRAFT REGIONAL FLOOD PLAN DEADLINE may be extended at the discretion of the EXECUTIVE ADMINISTRATOR either on their own initiative or upon a written request received from CONTRACTOR at least thirty (30) days prior to the deadline, stating good cause for the extension.

- G. CONTRACTOR must include a copy of the EXECUTIVE ADMINISTRATOR'S comments on the DRAFT REGIONAL FLOOD PLAN in the adopted REGIONAL FLOOD PLAN, with a summary of all other comments received on the DRAFT REGIONAL FLOOD PLAN, including written explanations of how the REGIONAL FLOOD PLAN was revised in response to comments or why changes recommended in a comment were not warranted.

CONTRACTOR must submit:

- one (1) electronic copy of all files on which the plan is based (e.g. spreadsheets, maps);
- two (2) electronic copies of the entire REGIONAL FLOOD PLAN, one (1) in searchable Portable Document Format (PDF) and one (1) in Microsoft Word (MSWord) Format. In compliance with 1 Texas Administrative Code Chapters 206 and 213 (related to Accessibility and Usability of State Web Sites, Web Content Accessibility Guidelines (WCAG) 2.1 Level AA Standard – WCAG 2.1 Quick Reference, which can be found at: <https://www.w3.org/WAI/WCAG21/quickref/>), the electronic copy of the REGIONAL FLOOD PLAN must comply with the requirements and standards specified in statute; and,

- five (5) bound, double-sided copies of the REGIONAL FLOOD PLAN to the EXECUTIVE ADMINISTRATOR no later than the FINAL REGIONAL FLOOD PLAN DEADLINE.
- H. CONTRACTOR must make corrections, updates, or modifications, to the TWDB state flood planning dataset, as necessary, prior to the FINAL REGIONAL FLOOD PLAN DEADLINE in accordance with this CONTRACT. TWDB will not accept a REGIONAL FLOOD PLAN or consider it administratively complete until the associated data in TWDB's state flood planning dataset is complete and accurate and the relevant flood planning data and maps are included in the REGIONAL FLOOD PLAN. CONTRACTOR also must transfer copies of all data and reports generated by the planning process and used in developing the REGIONAL FLOOD PLAN to the EXECUTIVE ADMINISTRATOR no later than the FINAL REGIONAL FLOOD PLAN DEADLINE. The REGIONAL FLOOD PLAN and the data collected and transmitted for the REGIONAL FLOOD PLAN must be prepared in the format and according to specifications prescribed in Flood Planning Guidance Documents to this CONTRACT. In the event CONTRACTOR has produced a REGIONAL FLOOD PLAN, that despite CONTRACTOR'S best efforts has not been adopted by the REGIONAL FLOOD PLANNING GROUP, CONTRACTOR must provide all data, material, reports, and work accomplished under the CONTRACT to TWDB.
- I. Delivery of a REGIONAL FLOOD PLAN that meets statutory and rule requirements as determined by the EXECUTIVE ADMINISTRATOR on or before the FINAL REGIONAL FLOOD PLAN DEADLINE constitutes completion of the terms of this CONTRACT by CONTRACTOR.
- J. After a 90-day review period, the EXECUTIVE ADMINISTRATOR will either accept or reject the REGIONAL FLOOD PLAN. If the final plan is rejected, the rejection letter sent to CONTRACTOR will state the reasons for rejection and the steps CONTRACTOR must take to have the REGIONAL FLOOD PLAN accepted and the retainage released.
- K. ANNUAL AUDIT. During the term of this CONTRACT, TWDB reserves the right to request that CONTRACTOR submit an annual audit of the general purpose financial statements prepared in accordance with generally accepted auditing standards by a certified public accountant or licensed public accountant. Audits must be submitted to TWDB no later than 120 days following the close of CONTRACTOR's fiscal year.

ARTICLE IV. COMPENSATION AND REIMBURSEMENT

- A. TWDB agrees to compensate and reimburse CONTRACTOR in a total amount not to exceed the COMMITTED FUNDS for costs incurred and paid by CONTRACTOR pursuant to performance of this CONTRACT, as specified in Section I, Article I.
- B. Eligible expenses incurred by CONTRACTOR from the FIRST REIMBURSEABLE EXPENSE DATE through FINAL REIMBURSEABLE EXPENSE DATE will be reimbursed by TWDB. CONTRACTOR will be eligible for reimbursement only for the categories set forth in the budget for this CONTRACT. All requests for reimbursement must be

accompanied by copies of invoices and receipts. TWDB will reimburse the actual expenses allowed herein during the term of the CONTRACT.

- C. Requests for Advance or Reimbursement for Subcontractor Expenses. Requests for advance or reimbursement for subcontractor expenses will only be considered where such subcontracts or agreements have been determined by the EXECUTIVE ADMINISTRATOR to be consistent with the terms of this CONTRACT. The purpose of this review is Solely to ensure that the subcontracts and agreements are consistent with this CONTRACT and that the rights of TWDB, particularly in regard to ownership of data, are protected. CONTRACTOR understands that CONTRACTOR should obtain its own legal review of subcontracts and agreements that CONTRACTOR enters into. CONTRACTOR agrees that TWDB assumes no legal obligations under its subcontracts or agreements and is merely a third-party beneficiary of the same. CONTRACTOR is fully responsible for paying all eligible charges by subcontractors prior to reimbursement by TWDB.

Each subcontract or agreement must include a task and expense budget estimate in a format similar to Exhibit B to this CONTRACT, with specific cost details for each task or specific item of work to be performed by the subcontractor and for each category of reimbursable expenses. The subcontracts and agreements must conform to the terms of the CONTRACT and include provisions which require subcontractor compliance with TWDB rules. The subcontracts and agreements must provide that in the event of any conflict with the provisions of this CONTRACT the provisions of the CONTRACT will prevail. In addition, each subcontract or agreement that in any manner involves the collection or manipulation of data must include the provisions in Paragraph D of this Article below.

- D. CONTRACTOR must adhere to all requirements in state law and TWDB rules pertaining to the procurement of professional services, including 31 TAC § 361.72(c). Prior to associated reimbursements, CONTRACTOR must submit a Certification of Procurement of Professional Services in accordance with Exhibit F to this CONTRACT, evidencing that the Region's subcontractors were properly and competitively procured for this planning cycle. Expenses incurred under subcontracts or agreements that have not been approved by the EXECUTIVE ADMINISTRATOR or do not otherwise comply with the terms of this CONTRACT are not eligible for reimbursement.
- E. At the sole discretion of the EXECUTIVE ADMINISTRATOR, CONTRACTOR may modify task and expense budget categories to the extent that the resulting change in amount in any one task or expense category does not exceed 35% of the total authorized amount by this CONTRACT for that task or category. Larger deviations require submission of a written request that is approved by the Regional Flood Planning Group and approved by the EXECUTIVE ADMINISTRATOR or designee which will be documented through an Approved Budget Memorandum to the TWDB CONTRACT file. CONTRACTOR will be required to provide written explanation for the overage and reallocation of the task and expense amount. Associated shifts in

amounts between budget task and expense categories authorized under this paragraph will not change the COMMITTED FUNDS amount.

- F. CONTRACTOR and its subcontractors must maintain satisfactory financial accounting documents and records, including copies of invoices, receipts, time and attendance records, supporting salaries and wages, in accordance with generally accepted accounting principles for a term of three years after completion of this CONTRACT and must make them available for examination and audit by TWDB at any time upon 24 hours' notice from the EXECUTIVE ADMINISTRATOR or the EXECUTIVE ADMINISTRATOR's designee. Accounting by CONTRACTOR and its subcontractors must be in a manner consistent with generally accepted accounting principles.
- G. CONTRACTOR must provide information to an entity or person who is independent of CONTRACTOR and who is selected by the REGIONAL FLOOD PLANNING GROUP sufficient to allow that person or entity to routinely provide reports of expenses and use of planning funds to the REGIONAL FLOOD PLANNING GROUP. The person to whom the information is provided may be a member of the REGIONAL FLOOD PLANNING GROUP. CONTRACTOR must allow such person or entity full access to all records relating to this CONTRACT, including all financial records.

Method of Payment: Initial Advance followed by Reimbursement of Invoice

- H. Within thirty (30) days after the execution of this CONTRACT, the EXECUTIVE ADMINISTRATOR will advance to CONTRACTOR twenty percent of the COMMITTED FUNDS, unless CONTRACTOR requests and the EXECUTIVE ADMINISTRATOR approves advances of less than twenty percent.
- I. All advanced funds received must be deposited into an interest-bearing account by CONTRACTOR and proportionate share of the interest earned must be allocated to the grant to be used to reimburse the SUBCONTRACTOR(S).
- J. After CONTRACTOR has received the initial advance, TWDB will begin reimbursing CONTRACTOR based on reimbursement request amounts, in addition to and aside from the initial twenty percent advance, so that after the first TWDB reimbursement is received by CONTRACTOR, CONTRACTOR will have retained the full amount of the initial advance funds to be available to pay its SUBCONTRACTOR prior to the CONTRACTOR'S second reimbursement request to TWDB.
- K. The TWDB will reimburse CONTRACTOR up to 95 percent of the COMMITTED FUNDS available for costs incurred and paid by CONTRACTOR pursuant to performance of this CONTRACT. Once seventy-five percent of the contract amount has been reimbursed, aside from the initial twenty percent advance amount, CONTRACTOR may submit reimbursement requests that will apply to the twenty percent advance amount remaining. The five percent retainage will be withheld until CONTRACTOR submits a REGIONAL FLOOD PLAN, as described in Article III, Paragraphs G and H of this section. If the EXECUTIVE ADMINISTRATOR determines that CONTRACTOR has utilized its best efforts to have a DRAFT REGIONAL FLOOD PLAN adopted by the

REGIONAL FLOOD PLANNING GROUP for submittal to TWDB, but has been unable, despite those best efforts, to do so, the EXECUTIVE ADMINISTRATOR may release the five percent retainage solely within the EXECUTIVE ADMINISTRATOR's discretion.

- L. CONTRACTOR must submit payment requests and documentation for reimbursement in accordance with the approved task and expense budgets contained in Exhibit B to this CONTRACT. For all reimbursement billings, including any subcontractor's expenses, the EXECUTIVE ADMINISTRATOR must have provided written approval of all CONTRACTS or agreements between CONTRACTOR and the subcontractor. CONTRACTOR is fully responsible for paying all eligible charges by subcontractors prior to reimbursement by TWDB.

- M. The written progress report required by Article III, Paragraph C of this Section, and the following documentation which documents the COMMITTED FUNDS, must be submitted by CONTRACTOR to the EXECUTIVE ADMINISTRATOR in support of its requests for reimbursement. CONTRACTOR must submit a progress report and the following documentation which documents the COMMITTED FUNDS for the reporting period even if the COMMITTED FUNDS for the period is ZERO:
 - 1. Completed and Signed Payment Request Checklist which includes the following:
 - (a) TWDB CONTRACT Number;
 - (b) Total expenses for the billing period; beginning (date) to ending (date);
 - (c) Total Services for this billing period;
 - (d) Total In-kind services;
 - (e) Less Local Share of the COMMITTED FUNDS for the billing period;
 - (f) Total of TWDB's share of the COMMITTED FUNDS for the billing period;
 - (g) Amount of retainage to be withheld for the billing period;
 - (h) Total costs to be reimbursed by TWDB for the billing period; and
 - (i) Certification, signed by CONTRACTOR's authorized representative, that the expenses submitted for the billing period are a true and correct representation of amounts paid for work performed directly related to this CONTRACT.

 - 2. For direct expenses incurred by CONTRACTOR other than subcontracted work:
 - (a) A spreadsheet showing the tasks that were performed; the percent and cost of each task completed; a total cost figure for each direct expense category including labor, fringe, overhead, travel, and other expenses such as communication and postage, technical and computer services, expendable supplies, printing and reproduction; and
 - (b) Copies of invoices for other expenses.

 - 3. For direct expenses incurred by CONTRACTOR for subcontracted work:
 - (a) Copies of invoices from the SUBCONTRACTOR(S) to CONTRACTOR
 - (b) A spreadsheet showing the tasks that were performed; the percent and cost of each task completed; a total cost figure for each direct expense

- category including labor, fringe, overhead, travel, and other expenses such as communication and postage, technical and computer services, expendable supplies, printing and reproduction; and the total dollar amount due to the SUBCONTRACTOR(S); and
 - (c) Copies of invoices for other expenses.
4. For travel expenses for CONTRACTOR and/or subcontractor(s):
 - (a) Names, dates, work locations, time periods at work locations, itemization of subsistence expenses of each employee, which will be reimbursed at rates authorized for state employees by the General Appropriations Act, Tex. Leg. Regular Session, 2019, Article IX, Part 5, as amended or superseded. Receipts required for lodging. Any eligible travel expenses related to a subcontract may be reimbursed at the current rate for State of Texas employees which can be found at: <https://fm.xcpa.state.tx.us/fmx/travel/texttravel/trans/personal.php>
 - (b) Copies of invoices or tickets for transportation costs or, if not available, names, dates, and points of travel of individuals; and
 - (c) All other reimbursable travel expenses -- invoices or purchase vouchers showing reason for expense with receipts to evidence the amount incurred.
 5. Incomplete requests will be returned to CONTRACTOR if deficiencies are not resolved within ten (10) business days.
 6. If for some reason the reimbursement request cannot be processed due to the need for an amendment to the CONTRACT, CONTRACTOR must resubmit the Payment Request Checklist dated after the execution of the amendment.
- N. In accordance with Section I, Article I, CONTRACTOR must provide a final reconciliation of expended amounts under the CONTRACT. Within thirty (30) days of the EXECUTIVE ADMINISTRATOR'S final accounting of the amounts expended by CONTRACTOR and the amounts reimbursed by TWDB to CONTRACTOR, the EXECUTIVE ADMINISTRATOR will reimburse the difference provided the reimbursement does not exceed the COMMITTED FUNDS.

ARTICLE V. INTELLECTUAL PROPERTY: OWNERSHIP, PUBLICATION, AND ACKNOWLEDGEMENT

- A. "Use" of a work product, whether a Contractor Work, a Subcontractor Work or otherwise, means and includes, without limitation, any lawful use, copying or dissemination of the work product, or any lawful development, use, copying or dissemination of derivative works of the work product, in any media or forms, whether now known or later existing.
- B. "No Compensation Obligation" means there is no obligation on the part of one co-owner or licensee of a work, whether a Contractor Work, a Subcontractor Work or otherwise, to compensate other co-owners, licensees or licensors of the work for any

use of the work by the using co-owner or licensee, including but not limited to compensation for or in the form of: royalties; co-owner or licensee accounting; sharing of revenues or profits among co-owners, licensees or licensors; or any other form of compensation to the other co-owners, licensees or licensors on account of any use of the work.

- C. "Dissemination" includes, without limitation, any and all manner of: physical distribution; publication; broadcast; electronic transmission; Internet streaming; posting on the Internet or world wide web; or any other form of communication, transmission, distribution, sending or providing, in any forms or formats, and in or using any media, whether now known or later existing.
- D. TWDB has an unlimited, unrestricted, perpetual, irrevocable, non-exclusive royalty-free right to access and receive in usable form and format, and to use all technical or other data or information developed by CONTRACTOR and SUBCONTRACTOR in, or otherwise resulting from, the performance of services under this CONTRACT.
- E. For purposes of this Article, "Contractor Works" are work products developed by CONTRACTOR and Subcontractor(s) using funds provided under this CONTRACT or otherwise rendered in or related to the performance in whole or in part of this CONTRACT, including but not limited to reports, drafts of reports, or other material, data, drawings, studies, analyses, notes, plans, computer programs and codes, or other work products, whether final or intermediate.
 - 1. It is agreed that all Contractor Works will be the joint property of TWDB and CONTRACTOR.
 - 2. The parties hereby agree that, if recognized as such by applicable law, the Contractor Works are intended to and will be works-made-for-hire with joint ownership between TWDB and CONTRACTOR as such works are created in whole or in part.
 - 3. If the Contractor Works do not qualify as works-made-for-hire under applicable law, CONTRACTOR hereby conveys co-ownership interest in such works to TWDB as they are created in whole or in part. If present conveyance is ineffective under applicable law, CONTRACTOR agrees to convey a co-ownership interest in the Contractor Works to TWDB after creation in whole or in part of such works, and to provide written documentation of such conveyance upon request by TWDB.
 - 4. TWDB and CONTRACTOR acknowledge that the copyright in and to a copyrightable Contractor Work exists upon creation of the Contractor Work and its fixing in any tangible medium. CONTRACTOR or TWDB may register the copyrights to such Works jointly in the names of CONTRACTOR and TWDB.
 - 5. TWDB and CONTRACTOR each have full and unrestricted rights to use a Contractor Work with No Compensation Obligation.
- F. For purposes of this Article, "Subcontractor Works" include all work product developed in whole or in part by or on behalf of SUBCONTRACTOR(S) engaged by CONTRACTOR to perform work for or on behalf of CONTRACTOR under this

CONTRACT (or by the SUBCONTRACTOR'S SUBCONTRACTOR(S) hereunder, and so on). CONTRACTOR must secure in writing from any SUBCONTRACTOR(S) so engaged:

1. unlimited, unrestricted, perpetual, irrevocable, royalty-free rights of TWDB (and, if desired, of CONTRACTOR) to access and receive, and to use, any and all technical or other data or information developed in or resulting from the performance of services under such engagement, with No Compensation Obligation; and either:
 2. assignment by the Subcontractor to TWDB (and, if desired by them, jointly to CONTRACTOR) of ownership (or joint ownership with CONTRACTOR) of all Subcontractor Works, with No Compensation Obligation; or
 3. grant by Subcontractor of a non-exclusive, unrestricted, unlimited, perpetual, irrevocable, world-wide, royalty-free license to TWDB (and, if desired by them, CONTRACTOR) to use any and all Subcontractor Works, including the right to sublicense use to third parties, with No Compensation Obligation.
- G. No unauthorized patents. Contractor Works and Subcontractor Works or other work product developed or created in the performance of this CONTRACT or otherwise using funds provided hereunder must not be patented by CONTRACTOR or their SUBCONTRACTOR(S) unless the Executive Administrator consents in writing to submission of an application for patent on such works; and provided that, unless otherwise agreed in writing:
1. any application made for patent must include and name TWDB (and, as applicable and desired by them, both CONTRACTOR and the SUBCONTRACTOR(S)) as co-owners of the patented work;
 2. no patent granted will in any way limit, or be used by CONTRACTOR or Subcontractor to limit or bar TWDB's rights hereunder to access and receive in useable form and format, and right to use, any and all technical or other data or information developed in or resulting from performance pursuant to this CONTRACT or Subcontract or the use of funds provided hereunder; and
 3. TWDB (and, if applicable, CONTRACTOR) has No Compensation Obligation to any other co-owners or licensees of any such patented work.
- H. CONTRACTOR must include terms and conditions in all CONTRACTS or other engagement agreements with any SUBCONTRACTOR(S) as are necessary to secure these rights and protections for TWDB; and must require that their Subcontractors include similar such terms and conditions in any CONTRACTS or other engagements with their Subcontractors. For the purposes of this section, "SUBCONTRACTOR(S)" includes independent contractors (including consultants) and also employees working outside the course and scope of employment.
- I. Any work products subject to a TWDB copyright or joint copyright and produced or developed by CONTRACTOR or their SUBCONTRACTOR(S) pursuant to this CONTRACT or Subcontract or using any funding provided by TWDB may be reproduced in any media, forms or formats by TWDB or CONTRACTOR at their own cost, and be disseminated in any medium, format or form by any party at its sole cost

and in its sole discretion. CONTRACTOR may utilize such work products as they may deem appropriate, including Dissemination of such work products or parts thereof under their own name, provided that any TWDB copyright is noted on the materials.

- J. CONTRACTOR agrees to acknowledge TWDB in any news releases or other publications relating to the work performed under this CONTRACT.

ARTICLE VI. SUBCONTRACTS

Each Subcontract entered into to perform required work under this CONTRACT must contain the following information and provisions:

- A. **Contract Dates** – There should be a starting date and ending date for work under the Subcontract.
- B. **Contract Amount** – The subcontract should list the total dollar value.
- C. **Terms of Reimbursement** – Subcontracts must be cost reimbursable. Lump sum agreements are not permitted for services. Please also note that TWDB does not reimburse “handling costs” (mark-ups) on any expenses. Any eligible travel expenses related to a subcontract may be reimbursed at the current rate for State of Texas employees which can be found at: <https://fmx.cpa.texas.gov/fmx/travel/texttravel/>
- D. **Scope of Work** – The terms of the scope of work must be consistent with the scope of the CONTRACT.
- E. **Task Budget** – as appropriate. The task budget must be consistent with the task budget specified in the TWDB CONTRACT.
- F. **Expense Budget** – as appropriate. The expense budget must be consistent with the expense budget specified in the TWDB CONTRACT.
- G. **Signatures** – Each subcontract must be executed appropriately by signature, by each party to the agreement.
- H. **State Auditor’s Right to Audit** - The state auditor may conduct an audit or investigation of any entity receiving funds from the state directly under the CONTRACT or indirectly through a Subcontract under the CONTRACT. The acceptance of funds directly under the CONTRACT or indirectly through a Subcontract under the CONTRACT acts as acceptance of the authority of the state auditor, under the direction of the legislative audit committee, to conduct an audit or investigation in connection with those funds. Under the direction of the legislative audit committee, an entity that is the subject of an audit or investigation by the state auditor must provide the state auditor with access to any information the state auditor considers relevant to the investigation or audit.

- I. **Financial Records:** SUBCONTRACTOR(s) and any contracted parties must maintain satisfactory financial accounting documents and records, including copies of invoices and receipts, and must make them available for examination and audit by the EXECUTIVE ADMINISTRATOR of TWDB. Accounting by the SUBCONTRACTOR(s) and any contracted parties must be in a manner consistent with generally accepted accounting principles.
- J. **Excess Obligations Prohibited/No Debt Against the State:** Any SUBCONTRACT is subject to termination or cancellation without penalty to TWDB, either in whole or in part, subject to the availability of state funds.
- K. **License, Permits, and Insurance:** For the purpose of this SUBCONTRACT, SUBCONTRACTOR is an independent contractor and therefore solely responsible for liability resulting from negligent acts or omissions. SUBCONTRACTOR must obtain all necessary insurance, in the judgment of the SUBCONTRACTOR, to protect itself, CONTRACTOR, TWDB, and employees and officials of TWDB from liability arising out of this SUBCONTRACT. SUBCONTRACTOR must indemnify and hold TWDB and the State of Texas harmless, to the extent the SUBCONTRACTOR may do so in accordance with state law, from any and all losses, damages, liability, or claims therefore, on account of personal injury, death, or property damage of any nature whatsoever caused by the SUBCONTRACTOR, arising out of the activities under this SUBCONTRACT. SUBCONTRACTOR must be solely and entirely responsible for procuring all necessary licenses and permits which may be required for SUBCONTRACTOR to perform the subject work.
- L. **Ownership:** It is agreed that all reports, drafts of reports, or other material, data, drawings, computer programs and codes associated with this SUBCONTRACT and developed by SUBCONTRACTOR pursuant to this SUBCONTRACT will become the joint property of the REGIONAL FLOOD PLANNING GROUP, CONTRACTOR, SUBCONTRACTOR, and the Texas Water Development Board. These materials must not be copyrighted or patented by the SUBCONTRACTOR. SUBCONTRACTOR agrees that neither the Regional Flood Planning Group nor the Texas Water Development Board are parties to this SUBCONTRACT and agrees that that these entities have no liability under the terms of this SUBCONTRACT. The Texas Water Development Board is solely a third-party beneficiary under this SUBCONTRACT.
- M. **Compliance with TWDB rules and state law:** SUBCONTRACTOR must comply with TWDB rules and adhere to all requirements in state law pertaining to the procurement of professional services.

ARTICLE VII. AMENDMENT, TERMINATION, AND STOP ORDERS

- A. This CONTRACT may be altered or amended by mutual written consent or terminated by the EXECUTIVE ADMINISTRATOR at any time by written notice to CONTRACTOR. The EXECUTIVE ADMINISTRATOR may terminate this CONTRACT if the REGIONAL FLOOD PLANNING GROUP withdraws its designation of CONTRACTOR as the CONTRACT representative of the REGIONAL FLOOD PLANNING GROUP. Upon receipt of such termination notice, CONTRACTOR must, unless the notice directs otherwise, immediately discontinue all work in connection with the performance of this CONTRACT and cancel all existing orders insofar as such orders are chargeable to this CONTRACT. CONTRACTOR must submit a statement showing in detail the work performed under this CONTRACT up to the date of termination. TWDB, at its discretion, will pay CONTRACTOR for the work, actually performed under this CONTRACT, less all payments that have been previously made and any approved by the EXECUTIVE ADMINISTRATOR to conclude the CONTRACT. Thereupon, copies of all work accomplished under this CONTRACT must be delivered promptly to TWDB.
- B. Any request to amend the CONTRACT Scope of Work (Exhibit A) must be submitted in writing by CONTRACTOR to TWDB following approval by the REGIONAL FLOOD PLANNING GROUP [31 TAC § 361.12(a)(5)].
- C. The EXECUTIVE ADMINISTRATOR may issue a Stop Work Order to CONTRACTOR at any time. Upon receipt of such order, CONTRACTOR must discontinue all work and cancel all orders under to this CONTRACT, unless the Stop Work Order directs otherwise. If the EXECUTIVE ADMINISTRATOR does not issue a Restart Order within 60 days after receipt by CONTRACTOR of the Stop Work Order, this CONTRACT terminated in accordance with the foregoing provisions.

ARTICLE IX. LICENSES, PERMIT, AND INSURANCE

- A. For the purpose of this CONTRACT, CONTRACTOR is an independent contractor and therefore solely responsible for liability resulting from negligent acts or omissions.
- B. CONTRACTOR is solely and entirely responsible for procuring all necessary licenses and permits which may be required for CONTRACTOR to perform the subject work.

ARTICLE X. SEVERANCE PROVISION

Should any one or more provisions of this CONTRACT be held to be null, void, voidable, or for any reason whatsoever of no force and effect, such provision(s) will be construed as severable from the remainder of this CONTRACT and will not affect the validity of all other provisions of this CONTRACT, which will remain of full force and effect.

ARTICLE XI. GENERAL TERMS AND CONDITIONS

1. GENERAL TERMS

- A. **Disaster Recovery Plan.** Upon request of TWDB, CONTRACTOR must provide descriptions or copies of its business continuity and disaster recovery plans.
- B. **Dispute Resolution.** The dispute resolution process provided for in Texas Government Code Chapter 2260 must be used to attempt to resolve any dispute arising under this CONTRACT.
- C. **Excess Obligations Prohibited/No Debt Against the State.** This Contract is subject to termination or cancellation without penalty to TWDB, either in whole or in part, subject to the availability of state funds
- D. **False Statements.** If CONTRACTOR signs its application with a false statement or it is subsequently determined that CONTRACTOR has violated any of the representations, guarantees, warranties, certifications or affirmations included in its application, CONTRACTOR will be in default under the CONTRACT and TWDB may terminate or void the CONTRACT.
- E. **Force Majeure.** Neither CONTRACTOR nor TWDB will be liable to the other for any delay in or failure of performance of any requirement contained in this CONTRACT caused by force majeure. The existence of such causes of delay or failure will extend the period of performance until after the causes of delay or failure have been removed, provided the non-performing party exercises all reasonable due diligence to perform. Force majeure is defined as acts of God, war, fires, explosions, hurricanes, floods, failure of transportation or other causes that are beyond the reasonable control of either party and that by exercise of due foresight such party could not reasonably have been expected to avoid, and which, by the exercise of all reasonable due diligence, such party is unable to overcome.
- F. **Governing Law and Venue.** This CONTRACT is governed by and construed in accordance with the laws of the State of Texas, without regard to the conflicts of law provisions. The venue of any suit arising under this CONTRACT is fixed in any court of competent jurisdiction in Travis County, Texas, unless the specific venue is otherwise identified in a statute which directly names or otherwise identifies its applicability to TWDB.
- G. **Indemnification.** CONTRACTOR AGREES TO DEFEND, INDEMNIFY AND HOLD HARMLESS THE STATE OF TEXAS AND TWDB, AND/OR THEIR OFFICERS, AGENTS, EMPLOYEES, REPRESENTATIVES, CONTRACTORS, ASSIGNEES, AND/OR DESIGNEES FROM ANY AND ALL LIABILITY, ACTIONS, CLAIMS, DEMANDS, OR SUITS, AND ALL RELATED COSTS, ATTORNEY FEES, AND EXPENSES ARISING OUT OF, OR RESULTING FROM ANY ACTS OR OMISSIONS OF CONTRACTOR OR ITS AGENTS, EMPLOYEES, SUBCONTRACTORS, ORDER FULFILLERS, OR SUPPLIERS OF

SUBCONTRACTORS IN THE EXECUTION OR PERFORMANCE OF THE CONTRACT AND ANY PURCHASE ORDERS ISSUED UNDER THE CONTRACT. THE DEFENSE MUST BE COORDINATED BY CONTRACTOR WITH THE OFFICE OF THE TEXAS ATTORNEY GENERAL WHEN TEXAS STATE AGENCIES ARE NAMED DEFENDANTS IN ANY LAWSUIT, AND CONTRACTOR MAY NOT AGREE TO ANY SETTLEMENT WITHOUT FIRST OBTAINING THE CONCURRENCE FROM THE OFFICE OF THE TEXAS ATTORNEY GENERAL. CONTRACTOR AND TWDB AGREE TO FURNISH TIMELY WRITTEN NOTICE TO EACH OTHER OF ANY SUCH CLAIM.

- H. **Public Information Act.** CONTRACTOR understands that TWDB will comply with the Texas Public Information Act, Texas Government Code Chapter 552, as interpreted by judicial rulings and opinions of the Attorney General of the State of Texas. Information, documentation and other material in connection with this CONTRACT may be subject to public disclosure pursuant to the Texas Public Information Act. In accordance with Texas Government Code § 2252.907, CONTRACTOR is required to make any information created or exchanged with the State pursuant to this CONTRACT, and not otherwise excepted from disclosure under the Texas Public Information Act, available in a format that is accessible by the public at no additional charge to the State.
- I. **State Auditor's Right to Audit.** The state auditor may conduct an audit or investigation of any entity receiving funds from the state directly under the contract or indirectly through a subcontract under the contract. The acceptance of funds directly under the contract or indirectly through a subcontract under the contract acts as acceptance of the authority of the state auditor, under the direction of the legislative audit committee, to conduct an audit or investigation in connection with those funds. Under the direction of the legislative audit committee, an entity that is the subject of an audit or investigation by the state auditor must provide the state auditor with access to any information the state auditor considers relevant to the investigation or audit.
- J. **Uniform Grant Management Standards.** CONTRACTOR is required to follow the Texas Comptroller of Public Account's Uniform Grant Management Standards in accordance with Chapter 783 of the Texas Government Code, as applicable.

2. STANDARDS OF PERFORMANCE

- A. **Personnel.** CONTRACTOR must assign only qualified personnel to perform the services required under this CONTRACT. CONTRACTOR is responsible for ensuring that any Subcontractor utilized also assigns only qualified personnel. Qualified personnel are persons who are properly licensed to perform the work and who have sufficient knowledge, skill and ability to perform the tasks and services required herein according to the standards of performance and care for their trade or profession.

- B. **Professional Standards.** CONTRACTOR must provide the services and deliverables in accordance with applicable professional standards. CONTRACTOR represents and warrants that it is authorized to acquire Subcontractors with the requisite qualifications, experience, personnel and other resources to perform in the manner required by this CONTRACT.
- C. **Procurement Laws.** CONTRACTOR must comply with applicable State of Texas procurement laws, rules and policies, including but not limited to competitive bidding and the Professional Services Procurement Act, Texas Government Code, Chapter 2254, relating to contracting with persons whose services are within the scope of practice of: accountants, architects, landscape architects, land surveyors, medical doctors, optometrists, professional engineers, real estate appraisers, professional nurses, and certified public accountants.
- D. **Independent Contractor.** Both parties hereto, in the performance of this CONTRACT, act in an individual capacity and not as agents, employees, partners, joint ventures or associates of one another. The employees or agents of one party will not be deemed or construed to be the employees or agents of the other party for any purposes whatsoever.
- E. **Proprietary and Confidential Information.** CONTRACTOR warrants and represents that any information that is proprietary or confidential and is received by CONTRACTOR from TWDB or any governmental entity will not be disclosed to third parties without the written consent of TWDB or applicable governmental entity, whose consent will not be unreasonably withheld.
- F. **Contract Administration.** TWDB will designate a project manager for this CONTRACT. The project manager will serve as the point of contact between TWDB and CONTRACTOR. TWDB's project manager will supervise TWDB's review of CONTRACTOR's technical work, deliverables, draft reports, the FINAL REPORT, payment requests, schedules, financial and budget administration, and similar matters. The project manager does not have any express or implied authority to vary the terms of the CONTRACT, amend the CONTRACT in any way or waive strict performance of the terms or conditions of the CONTRACT.
- G. **Nepotism.** CONTRACTOR must comply with Texas Government Code Chapter 573 by ensuring that no officer, employee or member of CONTRACTOR's governing body votes or confirm the employment of any person related within the second degree of affinity or the third degree of consanguinity to any member of the governing body or to any other officer or employee authorized to employ or supervise such person. This prohibition does not prohibit the employment of a person who has been continuously employed for a period of two years prior to the election or appointment of the officer, employee or

governing body member related to such person in the prohibited degree.

- H. **Open Meetings.** CONTRACTOR must comply with Texas Government Code Chapter 551, which requires all regular, special or called meetings of governmental bodies to be open to the public, except as otherwise provided by law.

3. AFFIRMATIONS AND CERTIFICATIONS

- A. **Antitrust Affirmation.** CONTRACTOR represents and warrants that, in accordance with Texas Government Code § 2155.005, neither CONTRACTOR nor any firm, corporation, partnership, or institution represented by CONTRACTOR, or anyone acting for such a firm, corporation, partnership, or institution has (1) violated any provision of the Texas Free Enterprise and Antitrust Act of 1983, Chapter 15 of the Texas Business & Commerce Code, or the federal antitrust laws; or (2) communicated directly or indirectly the contents of the proposal resulting in this CONTRACT to any competitor or any other person engaged in the same line of business as CONTRACTOR.
- B. **Child Support Obligation Affirmation.** Under Texas Family Code § 231.006, CONTRACTOR certifies that the individual or business entity named in this CONTRACT is not ineligible to receive the specified grant, loan or payment, and acknowledges that this CONTRACT may be terminated and payment may be withheld if this certification is inaccurate.
- C. **Dealings With Public Servants.** Pursuant to Texas Government Code § 2155.003, CONTRACTOR represents and warrants that it has not given, offered to give, nor intends to give at any time hereafter any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a public servant in connection with the goods or services being supplied.
- D. **Debts and Delinquencies Affirmation.** CONTRACTOR agrees that any payments due under the CONTRACT will be applied towards any debt or delinquency that is owed to the State of Texas.
- E. **E-Verify Program.** CONTRACTOR certifies that for contracts for services, CONTRACTOR will utilize the U.S. Department of Homeland Security's E-Verify system during the term of the CONTRACT to determine the eligibility of: 1) all persons employed by CONTRACTOR to perform duties within Texas; and 2) all persons, including Subcontractors, assigned by CONTRACTOR to perform work pursuant to the CONTRACT within the United States of America.
- F. **Entities that Boycott Israel.** Pursuant to Texas Government Code § 2270.002, CONTRACTOR certifies that either (i) it meets one of the exemption criteria under § 2270.002; or (ii) it does not boycott Israel and will not boycott Israel during the term of the contract resulting from this solicitation. CONTRACTOR must state any facts that make it exempt from the boycott certification.

- G. **Excluded Parties.** CONTRACTOR certifies that it is not listed on the federal government's terrorism watch list as described in Executive Order 13224.
- H. **Executive Head of a State Agency Affirmation.** In accordance with Texas Government Code § 669.003, relating to contracting with the executive head of a state agency, CONTRACTOR certifies that it is not: 1) the executive head of TWDB; 2) a person who at any time during the four years before the date of this CONTRACT was the executive head of TWDB; or 3) a person who employs a current or former executive head of TWDB.

If Section 669.003 applies, CONTRACTOR must provide the following information:

Name of Former Executive:

Name of State Agency:

Date of Separation from State Agency:

Position with Contractor:

Date of Employment with Contractor:

- I. **Financial Participation Prohibited.** Pursuant to Texas Government Code § 2155.004(a), CONTRACTOR certifies that neither CONTRACTOR nor any person or entity represented by CONTRACTOR has received compensation from TWDB or any agency of the State of Texas for participation in the preparation of the specifications or solicitation on which this CONTRACT is based. Under Texas Government Code § 2155.004(b), CONTRACTOR certifies that the individual or business entity named in this CONTRACT is not ineligible to receive the specified contract and acknowledges that this CONTRACT may be terminated and payment withheld if this certification is inaccurate.
- J. **Foreign Terrorist Organizations.** CONTRACTOR represents and warrants that it is not engaged in business with Iran, Sudan, or a foreign terrorist organization, as prohibited by Texas Government Code § 2252.152.
- K. **Human Trafficking Prohibition.** Under Texas Government Code § 2155.0061, CONTRACTOR certifies that the individual or business entity named in this CONTRACT is not ineligible to receive the specified contract and acknowledges that this Contract may be terminated and payment withheld if this certification is inaccurate.
- L. **Lobbying Prohibition.** CONTRACTOR represents and warrants that TWDB's payments to CONTRACTOR and CONTRACTOR's receipt of appropriated or other funds under the contract are not prohibited by Texas Government Code §§ 556.005 or 556.0055, related to the prohibition on payment of state funds to a lobbyist or for lobbying activities.

- M. **No Conflict of Interest.** CONTRACTOR represents and warrants that the provision of goods and services or other performance under this CONTRACT will not constitute an actual or potential conflict of interest or reasonably create an appearance of impropriety. CONTRACTOR also represents and warrants that, during the term of this CONTRACT, CONTRACTOR will immediately notify TWDB, in writing, of any existing or potential conflict of interest relative to the performance of the CONTRACT.
- N. **Prior Disaster Relief Declaration.** Texas Government Code §§ 2155.006 and 2261.053 prohibit state agencies from accepting a response or awarding a contract that includes proposed financial participation by a person who, in the past five years, has been convicted of violating a federal law or assessed a penalty in connection with a contract involving relief for Hurricane Rita, Hurricane Katrina, or any other disaster, as defined by Texas Government Code § 418.004, occurring after September 24, 2005. Under Texas Government Code §§ 2155.006 and 2261.053, CONTRACTOR certifies that the individual or business entity named in this CONTRACT is not ineligible to receive the specified contract and acknowledges that this CONTRACT may be terminated and payment withheld if this certification is inaccurate.
- O. **Suspension and Debarment.** Contractor certifies that it and its principals are not suspended or debarred from doing business with the state or federal government as listed on the State of Texas Debarred Vendor List maintained by the Texas Comptroller of Public Accounts and the System for Award Management (SAM) maintained by the General Services Administration.

ARTICLE XII. CORRESPONDENCE

All correspondence between the parties must be made to the following addresses:

For TWDB:

Contract Issues:

Texas Water Development Board
Attention: Procurement & Contract
Services
P.O. Box 13231
Austin, Texas 78711-3231
Email: contracts@twdb.texas.gov

Payment Request Submission:

Texas Water Development Board
Attention: Accounts Payable
P.O. Box 13231
Austin, Texas 78711-3231
Email: invoice@twdb.texas.gov

Physical Address:

Stephen F. Austin Building
1700 N. Congress Avenue, 6th Floor
Austin, Texas 78701

For CITY OF SAN ANGELO

Contract Issues:

Allison Strube
City of San Angelo
72 W. College Ave.
San Angelo, Texas 76903
Email: allison.strube@cosatx.us

Payment Request Submission:

Allison Strube
City of San Angelo
72 W. College Ave.
San Angelo, Texas 76903
Email: allison.strube@cosatx.us

Physical Address:

City of San Angelo
72 W. College Ave.
San Angelo, Texas 76903

IN WITNESS WHEREOF, the parties have caused this CONTRACT to be duly executed.

TEXAS WATER DEVELOPMENT BOARD

CITY OF SAN ANGELO

Jeff Walker
Jeff Walker
Executive Administrator

Daniel Valenzuela
Daniel Valenzuela
City Manager

Date: 4/2/2021

Date: 4/1/2021

Theresa James
Theresa James

Date: 3/30/2021

Exhibit A

Scope of Work

March 2021

**First Cycle of Regional Flood Plan Development
(2020–2023)**

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Task 1 – Planning Area Description

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 Texas Administrative Code (TAC) Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.30, 361.31, and 361.32.

The objective of this task is to prepare a standalone chapter to be included in the 2023 Regional Flood Plan that describes the Flood Planning Region (FPR).

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to prepare a chapter that includes:

1. A brief, general descriptions of the following:
 - a. social and economic character of the region such as information on development, population, economic activity, and economic sectors most at risk of flood impacts;
 - b. the areas in the FPR that are flood-prone and the types of major flood risks to life and property in the region;
 - c. key historical flood events within the region including associated fatalities and loss of property;
 - d. political subdivisions with flood-related authority and whether they are currently actively engaged in flood planning, floodplain management, and flood mitigation activities;
 - e. the general extent of local regulation and development codes relevant to existing and future flood risk;
 - f. agricultural and natural resources most impacted by flooding; and
 - g. existing local and regional flood plans within the FPR.
2. A general description of the location, condition, and functionality of existing natural flood mitigation features and constructed major flood infrastructure within the FPR, including but not limited to:
 - a. rivers, tributaries, and functioning floodplains;
 - b. wetlands;
 - c. playa lakes;
 - d. sinkholes;
 - e. alluvial fans;
 - f. vegetated dunes;
 - g. levees;
 - h. sea barriers, walls, and revetments;
 - i. tidal barriers and gates;
 - j. stormwater tunnels;
 - k. stormwater canals;
 - l. dams that provide flood protection;
 - m. detention and retention ponds;
 - n. weirs;
 - o. storm drain systems; and
 - p. any other flood-related infrastructure within the FPR.

3. Include a tabulated list and GIS map of existing infrastructure.
4. Include an assessment of existing infrastructure.
5. Explain, in general, the reasons for non-functional or deficient natural flood mitigation features or major flood infrastructure being non-functional or deficient, provide a description of the condition and functionality of the feature or infrastructure and whether and when the natural flood feature or major flood infrastructure may become fully functional, and provide the name of the owner and operator of the major flood infrastructure.
6. A general description of the location, source of funding, and anticipated benefits of proposed or ongoing major infrastructure and flood mitigation projects in the FPR, including:
 - a. new structural flood mitigation projects currently under construction;
 - b. non-structural flood mitigation projects currently being implemented; and
 - c. structural and non-structural flood mitigation projects with dedicated funding to construct and the expected year of completion.
7. A review and summary of relevant existing planning documents in the region. Documents to be summarized include those referenced under 31 TAC §361.22.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: A completed Chapter 1 describing the FPR, existing natural flood mitigation features, constructed major flood infrastructure, and major infrastructure and flood mitigation projects currently under development. A tabulated list and GIS map of existing infrastructure and their conditions. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 2A – Existing Condition Flood Risk Analyses

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.33.

The objective of this task is to prepare a chapter to be combined with Task 2B and included in the 2023 Regional Flood Plan that describes the existing and future condition flood risk in the FPR.

The RFPGs must perform existing condition flood risk analyses for the region comprising: (1) flood hazard analyses that determine the location, magnitude, and frequency of flooding; (2) flood exposure analyses to identify who and what might be harmed within the region; and (3) vulnerability analyses to identify vulnerabilities of communities and critical facilities.

The information developed must be used to assist the RFPG to establish priorities in subsequent planning tasks, to identify areas that need Flood Management Evaluations (FMEs), and to efficiently deploy its resources.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Perform existing condition flood hazard analyses to determine the location and magnitude of both 1% annual chance and 0.2% annual chance flood events as follows:
 - a. collect data and conduct analyses sufficient to characterize the existing conditions for the planning area;
 - b. identify areas within each FPR where hydrologic and hydraulic model results are already available and summarize the information;
 - c. utilize best available data, including hydrologic and hydraulic models for each area;
 - d. prepare a map showing areas identified by the RFPG as having an annual likelihood of inundation of more than 1% and 0.2%, the areal extent of this inundation, and the sources of flooding for each area; and
 - e. prepare a map showing gaps in inundation boundary mapping and identify known flood-prone areas based on location of hydrologic features, historic flooding and/or local knowledge.
2. Develop high-level, region-wide, and largely GIS-based existing condition flood exposure analyses using the information identified in the flood hazard analysis to identify who and what might be harmed within the region for, at a minimum, both 1% annual chance and 0.2% annual chance flood events as follows:
 - a. analyses of existing development within the existing condition floodplain and the associated flood hazard exposure;
 - b. for the floodplain as defined by FEMA or as defined by an alternative analysis if the FEMA-defined floodplain is not considered best available;
 - c. may include only those flood mitigation projects with dedicated construction funding and scheduled for completion prior to adoption of the next state flood plan.
 - d. must consider the population and property located in areas where existing levees or dams do not meet FEMA accreditation as inundated by flooding without those structures in place. Provisionally accredited structures may be allowed to provide flood protection, unless best available information demonstrates otherwise.
 - e. must consider available datasets to estimate the potential flood hazard exposure including, but not limited to:
 - i. number of residential properties and associated population;
 - ii. number of non-residential properties;
 - iii. other public infrastructure;
 - iv. major industrial and power generation facilities;
 - v. number and types of critical facilities;
 - vi. number of roadway crossings;
 - vii. length of roadway segments; and
 - viii. agricultural area and value of crops exposed.
 - f. must include a qualitative description of expected loss of function, which is the effect that a flood event could have on the function of inundated structures (residential, commercial, industrial, public, or others) and infrastructure, such as transportation, health and human services, water supply, wastewater treatment, utilities, energy generation, and emergency services.

3. Perform existing condition vulnerability analyses as follows:
 - a. identify resilience of communities located in flood-prone areas identified as part of the existing condition flood exposure analyses, utilizing relevant data and tools.
 - b. identify vulnerabilities of critical facilities to flooding by looking at factors such as proximity to a floodplain or other bodies of water, past flooding issues, emergency management plans, and location of critical systems like primary and back-up power.
4. All data produced as part of the existing condition flood exposure analysis and the existing condition vulnerability analysis must include:
 - a. underlying flood event return frequency;
 - b. type of flood risk;
 - c. county;
 - d. HUC12;
 - e. existing flood authority boundaries;
 - f. Social Vulnerability Indices for counties and census tracts; and
 - g. other categories as determined by RFPGs or in TWDB Flood Planning guidance documents.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone chapter (including work from both Tasks 2A & 2B) to be included in the 2023 Regional Flood Plan.
- Prepare maps according to 1(d) and 1(e).
- A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 2B – Future Condition Flood Risk Analyses

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.34.

The objective of this task is to prepare a chapter to be combined with Task 2A and included in the 2023 Regional Flood Plan that describes the existing and future condition flood risk in the FPR.

RFPGs must perform future condition flood risk analyses for the region comprising: (1) flood hazard analyses that determine the location, magnitude and frequency of flooding; (2) flood exposure analyses to identify who and what might be harmed within the region; and (3) vulnerability analyses to identify vulnerabilities of communities and critical facilities.

The information developed must be used to assist the RFPG to establish priorities in subsequent planning tasks, to identify areas that need FMEs, and to efficiently deploy its resources.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Perform future condition flood hazard analyses to determine the location and magnitude of both 1% annual chance and 0.2% annual chance flood events as follows:
 - a. collect data and conduct analyses sufficient to characterize the future conditions for the planning area based on a "no-action" scenario of approximately 30 years of continued development and population growth under current development trends and patterns, and existing flood regulations and policies based on:
 - i. current land use and development trends and practices and associated projected population based on the most recently adopted state water plan decade and population nearest the next regional flood plan adoption date plus approximately 30 years or as provided for in TWDB Flood Planning guidance documents;
 - ii. reasonable assumptions regarding locations of residential development and associated population growth;
 - iii. anticipated relative sea level change and subsidence based on existing information;
 - iv. anticipated changes to the functionality of the existing floodplain;
 - v. anticipated sedimentation in flood control structures and major geomorphic changes in riverine, playa, or coastal systems based on existing information;
 - vi. assumed completion of flood mitigation projects currently under construction or that already have dedicated construction funding; and
 - vii. other factors deemed relevant by the RFPG.
 - b. identify areas within each FPR where future condition hydrologic and hydraulic model results are already available and summarize the information;
 - c. utilize best available data, including hydrologic and hydraulic models for each area;
 - d. where future condition results are not available, but existing condition hydrologic and hydraulic model results are already available, the RFPGs must modify hydraulic models to identify future conditions flood risk for 1% and 0.2% annual chance storms based on simplified assumptions utilizing the information identified in this task.
 - e. prepare a map showing areas of 1% and 0.2% annual chance of inundation for future conditions, the areal extent of this inundation, and the sources of flooding for each area.
 - f. prepare a map showing gaps in inundation boundary mapping and identify known flood-prone areas based on location of hydrologic features, historic flooding, and/ or local knowledge.
2. Perform future condition flood exposure analyses using the information identified in the future condition flood hazard analysis to identify who and what might be harmed within the region for, at a minimum, both future condition 1% annual chance and future condition 0.2% annual chance flood events as follows:
 - a. analyses of existing and future developments within the future condition floodplain and the associated flood hazard exposure; and

- b. to include only those flood mitigation projects with dedicated construction funding scheduled for completion prior to the next regional flood plan adoption date plus 30 years or as provided for in TWDB Flood Planning guidance documents.
 - c. Identification of flood prone areas associated with the hazard exposure analyses must be based on analyses that rely primarily on the use and incorporation of existing and available:
 - i. FIRMs or other flood inundation maps and GIS related data and analyses;
 - ii. available hydraulic flood modeling results;
 - iii. model-based or other types of geographic screening tools for identifying flood prone areas; and
 - iv. other best available data or relevant technical analyses that the RFPG determines to be the most updated or reliable.
 3. Perform future condition vulnerability analyses as follows:
 - a. identify resilience of communities located in flood-prone areas identified as part of the future condition flood exposure analyses, utilizing relevant data and tools.
 - b. identify vulnerabilities of critical facilities to flooding by looking at factors such as proximity to a floodplain or other bodies of water, past flooding issues, emergency management plans, and location of critical systems like primary and back-up power.
 4. All data produced as part of the future condition flood exposure analysis and the future condition vulnerability analysis must include:
 - a. underlying flood event return frequency;
 - b. type of flood risk;
 - c. county;
 - d. HUC12;
 - e. existing flood authority boundaries;
 - f. Social Vulnerability Indices for counties and census tracts; and
 - g. other categories as determined in TWDB Flood Planning guidance documents.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone chapter (including work from both Tasks 2A & 2B) to be included in the 2023 Regional Flood Plan.
- Prepare maps according to 1(e) and 1(f). A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 3A – Evaluation and Recommendations on Floodplain Management Practices

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.35.

Recognizing the extent that previous and current practices may have increased flood risks, including residual risks, and considering broad floodplain management and land use approaches that will avoid increasing flood risks, and avoid negatively affecting neighboring areas, the RFPG must accomplish the following tasks.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Consider the extent to which a lack of, insufficient, or ineffective current floodplain management and land use practices, regulations, policies, and trends related to land use, economic development, and population growth, allow, cause, or otherwise encourage increases to flood risks to both:
 - a. existing population and property, and
 - b. future population and property.
2. Take into consideration the future flood hazard exposure analyses performed under Task 2B, consider the extent to which the 1% annual chance floodplain, along with associated flood risks, may change over time in response to anticipated development and associated population growth and other relevant man-made causes, and assess how to best address these potential changes.
3. Based on the analyses in (1) and (2), make recommendations regarding forward-looking floodplain management and land use recommendations, and economic development practices and strategies, that should be implemented by entities within the FPR. These region-specific recommendations may include minimum floodplain management and land use standards and should focus on how to best address the changes in (2) for entities within the region. These recommendations will inform recommended strategies for inclusion in the Regional Flood Plan.
4. RFPGs may also choose to adopt region-specific, minimum floodplain management or land use or other standards that impact flood-risk, that may vary geographically across the region, that each entity in the FPR must adopt prior to the RFPG including in the Regional Flood Plan any Flood Management Evaluations, Flood Management Strategies, or Flood Mitigation Projects that are sponsored by or that will otherwise be implemented by that entity.
5. Consider example floodplain management and infrastructure protection standards provided by TWDB.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone chapter (including work from both Tasks 3A & 3B) to be included in the 2023 Regional Flood Plan.
- List region-specific recommendations regarding forward-looking floodplain management and land use, which may include minimum floodplain management and land use standards.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 3B – Flood Mitigation and Floodplain Management Goals

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.36.

In this task, the RFPG must consider the Guidance Principles under 31 TAC §362.3, Tasks 1-3A, input from the public, and other relevant information and considerations.

The RFPG must use these goals to guide the RFPG in carrying out the following Tasks 4A – 5.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Identify specific and achievable flood mitigation and floodplain management goals along with target years by which to meet those goals for the FPR to include, at a minimum, goals specifically addressing risks to life and property.
2. Recognize and clearly state the levels of residual risk that will remain in the FPR even after the stated flood mitigation goals are fully met.
3. Structure and present the goals and the residual risks in an easily understandable format for the public including in conformance with TWDB Flood Planning guidance documents.
4. When appropriate, choose goals that apply to full single HUC8 watershed boundaries or coterminous groups of HUC8 boundaries within the FPR.
5. Identify both short-term goals (10 years) and long-term goals (30 years).

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone chapter (including work from both Tasks 3A & 3B) to be included in the 2023 Regional Flood Plan.
- Identify flood mitigation and floodplain management goals considering minimum recommended flood protection goal provided by TWDB.
- Identify specific and achievable flood mitigation and floodplain management goals (10 year and 30 year) in an easily understandable format for the public.

- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 4A – Flood Mitigation Needs Analysis

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.37.

The RFPG must conduct the analysis in a manner that will ensure the most effective and efficient use of the resources available to the RFPG.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Based on the analyses and goals developed by the RFPG under Tasks 2A through 3B and any additional analyses or information developed using available screening-level models or methods, the RFPG must identify locations within the FPR that the RFPG considers to have the greatest flood mitigation and flood risk study needs by considering:
 - a. the areas in the FPR that the RFPG identified as the most prone to flooding that threatens life and property;
 - b. the relative locations, extent, and performance of current floodplain management and land use policies and infrastructure located within the FPR, particularly within the locations described in (a);
 - c. areas identified by the RFPG as prone to flooding that don't have adequate inundation maps;
 - d. areas identified by the RFPG as prone to flooding that don't have hydrologic and hydraulic models;
 - e. areas with an emergency need;
 - f. existing modeling analyses and flood risk mitigation plans within the FPR;
 - g. flood mitigation projects already identified and evaluated by other flood mitigation plans and studies;
 - h. documentation of historic flooding events;
 - i. flood mitigation projects already being implemented; and
 - j. any other factors that the RFPG deems relevant to identifying the geographic locations where potential FMEs and potentially feasible FMSs and FMPs must be identified and evaluated under §361.38.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone chapter (including work from both Tasks 4A & 4B) to be included in the 2023 Regional Flood Plan.
- A map identifying the geographic locations within the FPR considered to have the greatest flood mitigation and flood risk study needs where potential FMEs and potentially feasible FMSs and FMPs must be evaluated
- A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 4B – Identification and Evaluation of Potential Flood Management Evaluations and Potentially Feasible Flood Management Strategies and Flood Mitigation Projects

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.38.

Based on analyses and decisions under Tasks 2A through 4A the RFPG must identify and evaluate potential FMEs and potentially feasible FMSs and FMPs, including nature-based solutions, some of which may have already been identified by previous evaluations and analyses by others.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Receive public comment on a proposed process to be used by the RFPG to identify and select FMEs, FMSs, and FMPs for the 2023 Regional Flood Plan.
2. Summarize the RFPG process for identifying potential FMEs and potentially feasible FMSs and FMPs and include a description of the process in the draft and final adopted Regional Flood Plan.
3. Identify potentially feasible FMSs and FMPs in accordance with the RFPG established process.
4. When evaluating FMSs and FMPs the RFPG must, at a minimum, identify one solution that provides flood mitigation associated with a 1% annual chance flood event. In instances where mitigating for 1% annual chance events is not feasible, the RFPG must document the reasons for its infeasibility, and at the discretion of the RFPG, other FMSs and FMPs to mitigate more frequent events may also be identified and evaluated based on TWDB Flood Planning guidance documents.
5. For areas within the FPR that the RFPG does not yet have sufficient information or resources to identify potentially feasible FMSs and FMPs, the RFPG must identify areas for potential FMEs that may eventually result in FMSs and/or FMPs.
6. The RFPG must evaluate potentially feasible FMSs and FMPs understanding that, upon evaluation and further inspection, some FMSs or FMPs initially identified as potentially feasible may, after further inspection, be reclassified as infeasible.
7. FMPs will be ranked in the state flood plan and
 - a. must represent discrete, projects;
 - b. must not entail an entire capital program or drainage masterplan; and

- c. may rely on other flood-related projects.
8. Evaluations of potentially feasible FMSs and FMPs require associated, detailed hydrologic and hydraulic modeling results that quantify the reduced impacts from flood events and the associated benefits and costs. Information may be based on previously performed evaluations of projects and related information. Evaluations of potentially feasible FMS and FMPs must include the following information and be based on the following analyses:
- a. A reference to the specific flood mitigation or floodplain management goal addressed by the feasible FMS or FMP;
 - b. A determination of whether FMS or FMP meets an emergency need;
 - c. An indication regarding the potential use of federal funds, or other sources of funding, as a component of the total funding mechanism;
 - d. An equitable comparison between and consistent assessment of all FMSs and FMPs that the RFPG determines to be potentially feasible;
 - e. A demonstration that the FMS or FMP will not negatively affect a neighboring area;
 - f. A quantitative reporting of the estimated benefits of the FMS or FMP, including reductions of flood impacts of the 1% annual chance flood event and other storm events identified and evaluated if the project mitigates to a more frequent event, to include, but not limited to:
 - (1) Associated flood events that must, at a minimum, include the 1% annual chance flood event and other storm events identified and evaluated;
 - (2) Reduction in habitable, equivalent living units flood risk;
 - (3) Reduction in residential population flood risk;
 - (4) Reduction in critical facilities flood risk;
 - (5) Reduction in road closure occurrences;
 - (6) Reduction in acres of active farmland and ranchland flood risk;
 - (7) Estimated reduction in fatalities, when available;
 - (8) Estimated reduction in injuries, when available;
 - (9) Reduction in expected annual damages from residential, commercial, and public property; and
 - (10) Other benefits as deemed relevant by the RFPG including environmental benefits and other public benefits.
 - g. A quantitative reporting of the estimated capital cost of FMPs in accordance with TWDB Flood Planning guidance documents;
 - h. Calculated benefit-cost ratio for FMPs in accordance with *Exhibit C: General Guidelines* and based on current, observed conditions;
 - i. For projects that will contribute to water supply, all relevant evaluations required under §357.34(e) (relating to Identification and Evaluation of Potentially Feasible Water Management Strategies and Water Management Strategy Projects), as determined by the EA based on the type of contribution, and a description of its consistency with the currently adopted State Water Plan;
 - j. A description of potential impacts and benefits from the FMS or FMP to the environment, agriculture, recreational resources, navigation, water quality, erosion, sedimentation, and impacts to any other resources deemed relevant by the RFPG;

- k. A description of residual, post-project, and future risks associated with FMPs including the risk of potential catastrophic failure and the potential for future increases to these risks due to lack of maintenance;
 - l. Implementation issues including those related to rights-of-way, permitting, acquisitions, relocations, utilities and transportation; and
 - m. Funding sources and options that exist or will be developed to pay for development, operation, and maintenance of the FMS or FMP.
- 9. Evaluations of potential FMEs must be at a reconnaissance or screening-level, unsupported by associated detailed hydrologic and hydraulic analyses. These must be identified for areas that the RFPG considers a priority for flood risk evaluation but that do not yet have the required detailed hydrologic and hydraulic modeling or associated project evaluations available to evaluate specific FMSs or FMPs for recommendation in the Regional Flood Plan. These FMEs must be based on recognition of the need to develop detailed hydrologic models or to perform associated hydraulic analyses and associated project evaluations in certain areas identified by the RFPG. Evaluations of potential FMEs must include the following analyses:
 - a. A reference to the specific flood mitigation or floodplain management goal to be addressed by the potential FME.
 - b. A determination of whether FME may meet an emergency need.
 - c. An indication regarding the potential use of federal funds, or other sources of funding as a component of the total funding mechanism.
 - d. An equitable comparison between and consistent assessment of all FMEs.
 - e. An indication of whether hydrologic and or hydraulic models are already being developed or are anticipated in the near future and that could be used in the FME.
 - f. A quantitative reporting of the estimated benefits, including reductions of flood risks, to include:
 - (1) Estimated habitable, living unit equivalent and associated population in FME area;
 - (2) Estimated critical facilities in FME area;
 - (3) Estimated number of roads closures occurrences in FME area;
 - (4) Estimated acres of active farmland and ranchland in FME area; and
 - (5) A quantitative reporting of the estimated study cost of the FME and whether the cost includes use of existing or development of new hydrologic or hydraulic models.
 - g. For FMEs, RFPGs do not need to demonstrate that an FME will not negatively affect a neighboring area.
- 10. RFPGs must evaluate and present potential FMEs and potentially feasible FMSs and FMPs with sufficient specificity to allow state agencies to make financial or regulatory decisions to determine consistency of the proposed action before the state agency with an approved Regional Flood Plan.
- 11. Analyses must clearly designate a representative location of the FME and beneficiaries including a map and designation of HUC12 and county location.
- 12. Analyses must be performed in accordance with TWDB Flood Planning guidance documents.
- 13. All data produced as part of the analyses under this task must be organized and summarized in the Regional Flood Plan in accordance with TWDB Flood Planning guidance documents.

14. Plans to be considered in developing this chapter include relevant plans referenced under 31 TAC §361.22.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone chapter (including work from both Tasks 4B & 5) to be included in the 2023 Regional Flood Plan.
- A list of the potentially feasible FMSs and associated FMPs that were identified by the RFPG. The TWDB Flood Planning guidance documents will include minimum data submittal requirements and deliverable format.
- A map identifying the geographic locations within the FPR considered to have the greatest flood mitigation and flood risk study needs where potential FMEs and potentially feasible FMSs and FMPs must be evaluated. TWDB Flood Planning guidance documents will include minimum data submittal requirements and deliverable format.
- Data must be organized and summarized in the Regional Flood Plan in accordance with TWDB Flood Planning guidance documents.
- A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 4C – Prepare and Submit Technical Memorandum

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.13(e).

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Prepare a concise Technical Memorandum to include:
 - a. A list of existing political subdivisions within the FPR that have flood-related authorities or responsibilities;
 - b. A list of previous flood studies considered by the RFPG to be relevant to development of the Regional Flood Plan;
 - c. A geodatabase and associated maps in accordance with TWDB Flood Planning guidance documents that the RFPG considers to be best representation of the region-wide 1% annual chance flood event and 0.2% annual chance flood event inundation boundaries, and the source of flooding for each area, for use in its risk analysis, including indications of locations where such boundaries remain undefined;

- d. A geodatabase and associated maps in accordance with TWDB Flood Planning guidance documents that identifies additional flood-prone areas not described in (c) based on location of hydrologic features, historic flooding, and/or local knowledge;
 - e. A geodatabase and associated maps in accordance with TWDB Flood Planning guidance documents that identifies areas where existing hydrologic and hydraulic models needed to evaluate FMSs and FMPs are available;
 - f. A list of available flood-related models that the RFPG considers of most value in developing its plan;
 - g. The flood mitigation and floodplain management goals adopted by the RFPG per §361.36;
 - h. The documented process used by the RFPG to identify potentially feasible FMSs and FMPs;
 - i. A list of potential FMEs and potentially feasible FMSs and FMPs identified by the RFPG, if any; and
 - j. A list of FMSs and FMPs that were identified but determined by the RFPG to be infeasible, including the primary reason for it being infeasible.
2. Approve submittal of the Technical Memorandum to TWDB at a RFPG meeting subject notice requirements in accordance with 31 TAC §361.21(h). The Technical Memorandum must be submitted to TWDB in accordance with Section I Article I of the contract.

Task 5 – Recommendation of Flood Management Evaluations and Flood Management Strategies and Associated Flood Mitigation Projects

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.39.

The objective of this task is to evaluate and recommend Flood Management Evaluations (FMEs), Flood Management Strategies (FMSs) and their associated Flood Mitigation Projects (FMPs) to be included in the 2023 Regional Flood Plan that describes the work completed, presents the potential FMEs, potentially feasible FMSs and FMPs, recommended and alternative FMSs and FMPs, including all the technical evaluations, and presents which entities will benefit from the recommended FMSs and FMPs.

Work associated with any Task 5 subtasks is contingent upon a written notice-to-proceed. This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Recommend FMSs and FMPs to reduce the potential impacts of flood based on the evaluations under §361.38 and RFPG goals and that must, at a minimum, mitigate for flood events associated with at 1% annual chance (100-yr flood) where feasible. In instances where mitigating for 100-year events is not feasible, FMS and FMPs to mitigate more frequent events may be recommended based on TWDB Flood Planning guidance documents. Recommendations must be based upon the identification, analysis, and comparison of alternatives that the RFPG determines will provide measurable reductions in flood impacts in support of the RFPG's specific flood mitigation and/or floodplain management goals.

2. Provide additional information in conformance with TWDB Flood Planning guidance documents which will be used to rank recommended FMPs in the state flood plan.
3. Recommend FMEs that the RFPG determines are most likely to result in identification of potentially feasible FMSs and FMPs that would, at a minimum, identify and investigate one solution to mitigate for flood events associated with a 1% annual chance flood event and that support specific RFPG flood mitigation and/or floodplain management goals.
4. Recommended FMSs or FMPs may not negatively affect a neighboring area or an entity's water supply.
5. Recommended FMSs or FMPs that will contribute to water supply may not result in an overallocation of a water source based on the water availability allocations in the most recently adopted State Water Plan.
6. Specific types of FMEs, FMSs, or FMPs that should be included and that should not be included in Regional Flood Plans must be in accordance with TWDB Flood Planning guidance documents.
7. FMS and FMP documentation must include a strategy or project description, discussion of associated facilities, project map, and technical evaluations addressing all considerations and factors required under 31 TAC §361.38(h).
8. Coordinate and communicate with FME, FMS, and FMP sponsors, individual local governments, regional authorities, and other political subdivisions.
9. Process documentation of selecting all recommended FMSs and associated FMPs including development of FMS evaluations matrices and other tools required to assist the RFPG in comparing and selecting recommended FMSs and FMPs.
10. Document the evaluation and selection of all recommended FMS and FMPs, including an explanation for why certain types of strategies may not have been recommended.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone chapter (including work from both Tasks 4B & 5) to be included in the 2023 Regional Flood Plan to include technical analyses of all evaluated FMSs and FMPs.
- A list of the recommended FMEs, FMSs, and associated FMPs that were identified by the RFPG. TWDB Flood Planning guidance documents will include minimum data submittal requirements and deliverable format.
- Data must be organized and summarized in the Regional Flood Plan in accordance with TWDB Flood Planning guidance documents.
- A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 6A – Impacts of Regional Flood Plan

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.40.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to include:

1. a region-wide summary of the relative reduction in flood risk that implementation of the Regional Flood Plan would achieve within the region including with regard to life, injuries, and property.
2. a statement that the FMPs in the plan, when implemented, will not negatively affect neighboring areas located within or outside of the FPR.
3. a general description of the types of potential positive and negative socioeconomic or recreational impacts of the recommended FMSs and FMPs within the FPR.
4. a general description of the overall impacts of the recommended FMPs and FMSs in the Regional Flood Plan on the environment, agriculture, recreational resources, water quality, erosion, sedimentation, and navigation.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: Prepare a stand-alone chapter (including work from both Tasks 6A & 6B) to be included in the 2023 Regional Flood Plan. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 6B – Contributions to and Impacts on Water Supply Development and the State Water Plan

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.41.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Include a region-wide summary and description of the contribution that the regional flood plan would have to water supply development including a list of the specific FMSs and FMPs that would contribute to water supply.
2. Include a description of any anticipated impacts, including to water supply or water availability or projects in the State Water Plan, that the regional flood plan FMSs and FMPs may have.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: Prepare a stand-alone chapter (including work from both Tasks 6A & 6B) to be included in the 2023 Regional Flood Plan. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 7 – Flood Response Information and Activities

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.42.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Summarize the nature and types of flood response preparations within the FPR including providing where more detailed information is available regarding recovery.
2. Coordinate and communicate, as necessary, with entities in the region to gather information.
3. RFPGs must not perform analyses or other activities related to planning for disaster response or recovery activities.
4. Plans to be considered in developing this chapter include relevant plans referenced under 31 TAC §361.22.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: Prepare a stand-alone chapter to be included in the 2023 Regional Flood Plan. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 8 – Administrative, Regulatory, and Legislative Recommendations

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.43.

The objective of this task is to prepare a separate chapter to be included in the 2023 Regional Flood Plan that presents the RFPG's administrative, legislative, and regulatory recommendations.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to develop:

1. Legislative recommendations that they consider necessary to facilitate floodplain management and flood mitigation planning and implementation.
2. Other regulatory or administrative recommendations that they consider necessary to facilitate floodplain management and flood mitigation planning and implementation.
3. Any other recommendations that the RFPG believes are needed and desirable to achieve its regional flood mitigation and floodplain management goals.
4. Recommendations regarding potential, new revenue-raising opportunities, including potential new municipal drainage utilities or regional flood authorities, that could fund the development, operation, and maintenance of floodplain management or flood mitigation activities in the region.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: Prepare a stand-alone chapter to be included in the 2023 Regional Flood Plan. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 9 – Flood Infrastructure Financing Analysis

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.44.

The objective of this task is to report on how sponsors of recommended FMPs propose to finance projects.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Coordinate and communicate with individual local governments, regional authorities, and other political subdivisions.
2. Perform a survey, including the following work:
 - a. Contacting FME and FMP sponsors.
 - b. Collection and collation of data.
 - c. Documentation of the effectiveness of survey methodology, providing percent survey completions, and whether an acceptable minimum percent survey completion was achieved.
 - d. Submission of data.

3. Coordinate with FME and FMP sponsors as necessary to ensure detailed needs and costs associated with their anticipated evaluations and projects are sufficiently represented in the Regional Flood Plan for future funding determinations.
4. Indicate how individual local governments, regional authorities, and other political subdivisions in their region propose to finance the region's recommended FMPs, and FMEs included in their flood plan. The assessment must also describe what role the RFPG proposes for the state in financing recommended FMPs, and FMEs. As projects are implemented, those improvements and associated benefits must be incorporated into and reflected in the subsequent Regional Flood Plans.
5. Summarize the survey results.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: A completed Chapter 9 must be delivered in the 2023 Regional Flood Plan to include summary of reported financing approaches for all recommended FMPs and FMEs. Data must be submitted in accordance with TWDB guidance documents. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 10 – Public Participation and Plan Adoption

The objective of this task is to address public participation, public meetings, eligible administrative and technical support activities, and other requirements and activities eligible for reimbursement. Objectives also include activities necessary to complete and submit a draft and final Regional Flood Plan, and obtain TWDB approval of the Regional Flood Plan.

In this task, the RFPG must evaluate and ensure that the draft and final Regional Flood Plan satisfies the requirements for regional flood plans in the guidance principles adopted in Title 31 TAC §362.3 and must include a statement in the draft and final Regional Flood Plan explaining how the Regional Flood Plan satisfies the requirements of each of the guidance principles in accordance with Title 31 TAC §361.20.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. In addition to generally meeting all applicable statute requirements governing regional and state flood planning this portion of work must, in particular, include all technical and administrative support activities necessary to meet all the requirements of 31 TAC Chapters 361 and 362 that are not already addressed under the scope of work associated with other contract Tasks but that are necessary and or required to complete and deliver an draft Regional Flood Plan and final, adopted Regional Flood Plan to TWDB and obtain approval of the adopted Regional Flood Plan by TWDB.
2. Organization, support, facilitation, and documentation of all meetings associated with: preplanning meeting; consideration of a substitution of alternative flood management

strategies; public meeting after adoption of the draft Regional Flood Plan and prior to adoption of the final Regional Flood Plan; and consideration of Regional Flood Plan amendments, alternative FMS substitutions, or Board-directed revisions.

Technical Support and Administrative Activities

1. RFPGs must support and accommodate periodic presentations by the TWDB for the purpose of orientation, training, and retraining as determined and provided by the TWDB during regular RFPG meetings.
2. Attendance and participation of technical consultants at RFPG, subgroup, subcommittees, special and or other meetings including preparation and follow-up activities.
3. Developing technical and other presentations and handout materials for regular and special meetings to provide technical and explanatory data to the RFPG and its subcommittees, including follow-up activities.
4. Administrative and technical support and participation in RFPG activities, and documentation of any RFPG workshops, work groups, subgroup and/or subcommittee activities.
5. Technical support and administrative activities associated with periodic and special meetings of the RFPG including developing agendas and coordinating activities for the RFPG.
6. Provision of progress reports to TWDB for work performed under this Contract.
7. Development of draft and final responses for RFPG approval to public questions or comments as well as approval of the final responses to comments on Regional Flood Plan documents.
8. Intraregional and interregional coordination and communication, and or facilitation required within the FPR and with other RFPGs to develop a Regional Flood Plan.
9. Incorporation of all required data and reports into Regional Flood Plan document.
10. Modifications to the Regional Flood Plan documents based on RFPG, public, and or agency comments.
11. Preparation of a Regional Flood Plan chapter summarizing Task 10 activities including review by RFPG and modification of document as necessary.
12. Development and inclusion of Executive Summaries in both draft Regional Flood Plan and final Regional Flood Plan.
13. Production, distribution, and submittal of all draft and final Regional Flood Plan-related planning documents for RFPG, public and agency review, including in hard-copy format when required.
14. Assembling, compiling, and production of the completed draft Regional Flood Plan and Final Regional Flood Plan document(s) that meet all requirements of statute, 31 TAC Chapters 361 and 362, Contract and associated guidance documents.
15. Submittal of the Regional Flood Plan documents in both hard copy and electronic formats to TWDB for review and approval; and all effort required to obtain final approval of the Regional Flood Plan by TWDB.

Other Activities

1. Review of all Regional Flood Plan-related documents by RFPG members.
2. Development and maintenance of a RFPG website or RFPG-dedicated webpage on the RFPG administrator's website for posting planning group meeting notices, agendas, materials, and plan information.
3. Limited non-labor, direct costs associated with maintenance of the RFPG website.

4. Development of agendas, presentations, and handout materials for the public meetings to provide to the general public.
5. Documentation of meetings to include recorded minutes and/or audio recordings as required by the RFPG bylaws and archiving and provision of minutes to public.
6. Preparation and transmission of correspondence, for example, directly related to public comments on Regional Flood Plan documents.
7. Promoting consensus decisions through conflict resolution efforts including monitoring and facilitation required to resolve issues between and among RFPG members and stakeholders in the event that issues arise during the process of developing the Regional Flood Plan, including mediation between RFPG members, if necessary.
8. RFPG membership solicitation activities.
9. Meeting all posting, meeting, and other public notice requirements in accordance with the open meetings act, statute, and 31 TAC §361.21 and any other applicable public notice requirements.
10. Solicitation, review, and dissemination of public input, as necessary.
11. Any efforts required, but not otherwise addressed in other SOW tasks that may be required to complete an Regional Flood Plan in accordance with all statute and rule requirements.

Deliverables:

- A completed Chapter 10 summarizing public participation activities and appendices with public comments and RFPG responses to comments.
- Complete draft Regional Flood Plan and final, adopted Regional Flood Plan documents.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Exhibit B

Region 9 Upper Colorado Flood Planning Group Task and Expense Budgets

March 2021

First Cycle of Regional Flood Plan Development (2020–2023)

This document is subject to future revision based upon any future Legislative actions.

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2 Contractor Expense Budget 5

1 Contractor Task Budget

	TASK		AMOUNT
CAS Item No.	Regional Flood Planning Task No.	Description	
1	1	Planning Area Description	\$47,310.00
2	2A	Existing Condition Flood Risk Analysis	\$94,620.00
3	2B	Future Condition Flood Risk Analysis	\$94,620.00
4	3A	Evaluation and Recommendations on Floodplain Management Practices	\$18,924.00
5	3B	Flood Mitigation and Floodplain Management Goals	\$9,462.00
6	4A	Flood Mitigation Needs Analysis	\$28,386.00
7	4B	Identification and Evaluation of Potential Flood Management Evaluations and Potentially Feasible Flood Management Strategies and Flood Mitigations Projects	\$141,930.00
8	4C	Prepare and Submit Technical Memorandum	\$18,924.00
9	5	Recommendation of Flood Management Evaluations and Flood Management Strategies and Associated Flood Mitigation Projects	\$189,240.00
10	6A	Impacts of Regional Flood Plan	\$37,848.00
11	6B	Contributions to and Impacts on Water Supply Development and the State Water Plan	\$9,462.00
12	7	Flood Response Information and Activities	\$9,462.00
13	8	Administrative, Regulatory, and Legislative Recommendations	\$9,462.00
14	9	Flood Infrastructure Financing Analysis	\$18,924.00
15	10	Public Participation and Plan Adoption	\$217,626.00
		Total Committed Funds	\$946,200.00

2 Contractor Expense Budget

CATEGORY	AMOUNT
Other Expenses ¹	\$ 80,000.00
Subcontract Services #1	\$ 856,738.00
Subcontract Services #2	\$ 0
Subcontract Services #3	\$0
Voting Planning Member Travel ²	\$ 9,462.00
Total Committed Funds ³	\$ 946,200.00

¹Eligible Other Expenses as described in 31 TAC § 361.72(b) include the following administrative costs if the RFPG or its chairperson certifies, during a public meeting, that the expenses are eligible for reimbursement and are correct and necessary:

- a) Travel expenses as authorized by the General Appropriations Act are available only for attendance at a posted meeting of the RFPG, unless the travel is specifically authorized by the RFPG and EA;
- b) Costs associated with providing translators and accommodations for persons with disabilities for public meetings when required by law or deemed necessary by the RFPGs and certified by the chairperson;
- c) Direct costs, excluding personnel-related costs of the Planning Group Sponsor, for placing public notices for the legally required public meetings and of providing copies of information for the public and for members of the RFPGs as needed for the efficient performance of planning work such as:
 -
 - 1. expendable supplies actually consumed in direct support of the planning process;
 - 2. direct communication charges;
 - 3. limited direct costs/fees of maintaining RFPG website domain, website hosting, and/or website;
 - 4. reproduction of materials directly associated with notification or planning activities (the actual non-labor direct costs as documented by the Contractor);
 - 5. direct postage (e.g., postage for mailed notification of funding applications or meetings); and
 - 6. other direct costs of public meetings, all of which must be directly related to planning (e.g., newspaper and other public notice posting costs).
 -
- d) The cost of public notice postings including a website and for postage for mailing notices of public meetings; and
- e) The Planning Group Sponsor's personnel costs for the staff hours that are directly spent providing, preparing for, and posting public notice for RFPG meetings, including labor, fringe, overhead, and other expenses for their support of and attendance at such RFPG meetings, in accordance with, and as specifically limited by, the flood

planning grant contract with the Board. This may not exceed: \$5,000 per regular RFPG meeting nor a total of \$60,000 over the first planning cycle.

² Voting Planning Member Travel Expenses is defined as eligible mileage expenses incurred by regional flood planning members that cannot be reimbursed by any other entity, planning group sponsor, etc. as certified by the voting member. Travel expenses are available only for attendance at a posted meeting of the RFPG unless the travel is specifically authorized by the RFPG and EA. The reimbursed amount is limited to the maximum amounts authorized for state employees by the General Appropriations Act, Tex. Leg. Regular Session, 2019, Article IX, Part 5, as amended or superseded.

³ Ineligible Expenses as described in 31 TAC § 361.72(a) include, but are not limited to:

- a) Activities for which the Board determines existing information, data, or analyses are sufficient for the planning effort
- b) Activities directly related to the preparation of applications for state or federal permits or other approvals, activities associated with administrative or legal proceedings by regulatory agencies, and preparation of engineering plans and specifications;
- c) Compensation for the time or expenses of RFPGs members' service on or for the RFPG
- d) Costs of administering the RFPG, other than those explicitly allowed under 31 TAC § 361.72(b)
- e) Staff or overhead costs for time spent providing public notice and meetings, including time and expenses for attendance at such meetings;
- f) Costs for training;
- g) Costs of developing an application for funding or reviewing materials developed due to this grant;
- h) Costs of administering the regional flood planning grant and associated contracts;
- i) Analysis or other activities related to planning for disaster response or recovery activities; and
- j) Analyses of benefits and costs of FMSs beyond the scope of such analyses that is specifically allowed or required by regional flood planning guidance to be provided by the EA unless the RFPG demonstrates to the satisfaction of the EA that these analyses are needed to determine the selection of the FMS or FMP.
- k) Labor, reproduction, or distribution of newsletters;
- l) Food, drink, or lodging for Regional Flood Planning Group members (including tips and alcoholic beverages);
- m) Purchase, rental, or depreciation of equipment (e.g., computers, copiers, fax machines);
- n) General purchases of office supplies not documented as consumed directly for the planning process; and
- o) Costs associated with social events or tours.

Exhibit C

Technical Guidelines for Regional Flood Planning

When available, the document will be posted at
<https://www.twdb.texas.gov/flood/planning/planningdocu/2023/index.asp>

First Cycle of Regional Flood Plan Development (2020–2023)

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Exhibit D

Data Submittal Guidelines for Regional Flood Planning

When available, the document will be posted at
<https://www.twdb.texas.gov/flood/planning/planningdocu/2023/index.asp>

First Cycle of Regional Flood Plan Development (2020–2023)

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Exhibit E

Cover Page

(Original application in contract file)

First Cycle of Regional Flood Plan Development(2020–2023)

Exhibit F

Certification of Procurement of
Professional Services

**First Cycle of Regional Flood Plan Development
(2020–2023)**

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Certification of Procurement of Professional Services – 2023 Regional Flood Plan

Each of the following subcontractor(s) was procured through a Request for Qualifications in accordance with the procurement requirements applicable to Brazos River Authority, as required in 31 TAC 361.12 (a)(2) and 361.72 (c).

Subcontractor Name	Date Procured
Subcontractor Name	Date Procured
Subcontractor Name	Date Procured
Subcontractor Name	Date Procured
Subcontractor Name	Date Procured
Subcontractor Name	Date Procured
Subcontractor Name	Date Procured
Subcontractor Name	Date Procured

Certification:

I, _____ the authorized representative for Region _____, do hereby certify that each of the subcontractor(s) listed above were procured through a Request for Qualifications which was either published or sent to more than one professional inviting their response, and that the subcontractor(s) listed above were selected from such responses based on their demonstrated competence and qualifications.

Signature of Authorized Representative	Date
---	-----------------

31 TAC 361.12 (a)(2). General Regional Flood Planning Group Responsibilities and Procedures. The following activities are required of each RFPG every planning cycle: Select a technical consultant(s) to be procured by the Planning Group Sponsor in accordance with the procurement requirements that apply to that political subdivision and Texas Government Code Chapter 2254.

31 TAC 361.72(c). A RFPG through the Planning Group Sponsor’s contractor or subcontractor may obtain professional services, including the services of a planner, land surveyor, licensed engineer, or attorney, for development or revision of a regional flood plan only if such services are procured on the basis of demonstrated competence and qualifications through a request for qualifications process in accordance with Texas government Code Chapter 2254 including Qualifications Based Selection of an Architect, Engineer, or Land Surveyor.

Exhibit

Scope of Work

March 2021

Disclaimer: This document includes the standard Scope of Work developed for Regional Flood Planning Grant Contracts by the Texas Water Development Board. The Scope of Work for certain grant contracts may contain revised language to reflect requested edits from Regional Flood Planning Groups and Planning Group Sponsors.

**First Cycle of Regional Flood Plan Development
(2020–2023)**

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Task 1 – Planning Area Description

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 Texas Administrative Code (TAC) Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.30, 361.31, and 361.32.

The objective of this task is to prepare a standalone chapter to be included in the 2023 Regional Flood Plan that describes the Flood Planning Region (FPR).

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to prepare a chapter that includes:

1. A brief, general descriptions of the following:
 - a. social and economic character of the region such as information on development, population, economic activity, and economic sectors most at risk of flood impacts;
 - b. the areas in the FPR that are flood-prone and the types of major flood risks to life and property in the region;
 - c. key historical flood events within the region including associated fatalities and loss of property;
 - d. political subdivisions with flood-related authority and whether they are currently actively engaged in flood planning, floodplain management, and flood mitigation activities;
 - e. the general extent of local regulation and development codes relevant to existing and future flood risk;
 - f. agricultural and natural resources most impacted by flooding; and
 - g. existing local and regional flood plans within the FPR.
2. A general description of the location, condition, and functionality of existing natural flood mitigation features and constructed major flood infrastructure within the FPR, including but not limited to:
 - a. rivers, tributaries, and functioning floodplains;
 - b. wetlands;
 - c. playa lakes;
 - d. sinkholes;
 - e. alluvial fans;
 - f. vegetated dunes;
 - g. levees;
 - h. sea barriers, walls, and revetments;
 - i. tidal barriers and gates;
 - j. stormwater tunnels;
 - k. stormwater canals;
 - l. dams that provide flood protection;
 - m. detention and retention ponds;
 - n. weirs;
 - o. storm drain systems; and
 - p. any other flood-related infrastructure within the FPR.

3. Include a tabulated list and GIS map of existing infrastructure.
4. Include an assessment of existing infrastructure.
5. Explain, in general, the reasons for non-functional or deficient natural flood mitigation features or major flood infrastructure being non-functional or deficient, provide a description of the condition and functionality of the feature or infrastructure and whether and when the natural flood feature or major flood infrastructure may become fully functional, and provide the name of the owner and operator of the major flood infrastructure.
6. A general description of the location, source of funding, and anticipated benefits of proposed or ongoing major infrastructure and flood mitigation projects in the FPR, including:
 - a. new structural flood mitigation projects currently under construction;
 - b. non-structural flood mitigation projects currently being implemented; and
 - c. structural and non-structural flood mitigation projects with dedicated funding to construct and the expected year of completion.
7. A review and summary of relevant existing planning documents in the region. Documents to be summarized include those referenced under 31 TAC §361.22.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: A completed Chapter 1 describing the FPR, existing natural flood mitigation features, constructed major flood infrastructure, and major infrastructure and flood mitigation projects currently under development. A tabulated list and GIS map of existing infrastructure and their conditions. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 2A – Existing Condition Flood Risk Analyses

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.33.

The objective of this task is to prepare a chapter to be combined with Task 2B and included in the 2023 Regional Flood Plan that describes the existing and future condition flood risk in the FPR.

The RFPGs must perform existing condition flood risk analyses for the region comprising: (1) flood hazard analyses that determine the location, magnitude, and frequency of flooding; (2) flood exposure analyses to identify who and what might be harmed within the region; and (3) vulnerability analyses to identify vulnerabilities of communities and critical facilities.

The information developed must be used to assist the RFPG to establish priorities in subsequent planning tasks, to identify areas that need Flood Management Evaluations (FMEs), and to efficiently deploy its resources.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Perform existing condition flood hazard analyses to determine the location and magnitude of both 1% annual chance and 0.2% annual chance flood events as follows:
 - a. collect data and conduct analyses sufficient to characterize the existing conditions for the planning area;
 - b. identify areas within each FPR where hydrologic and hydraulic model results are already available and summarize the information;
 - c. utilize best available data, including hydrologic and hydraulic models for each area;
 - d. prepare a map showing areas identified by the RFPG as having an annual likelihood of inundation of more than 1% and 0.2%, the areal extent of this inundation, and the sources of flooding for each area; and
 - e. prepare a map showing gaps in inundation boundary mapping and identify known flood-prone areas based on location of hydrologic features, historic flooding and/or local knowledge.
2. Develop high-level, region-wide, and largely GIS-based existing condition flood exposure analyses using the information identified in the flood hazard analysis to identify who and what might be harmed within the region for, at a minimum, both 1% annual chance and 0.2% annual chance flood events as follows:
 - a. analyses of existing development within the existing condition floodplain and the associated flood hazard exposure;
 - b. for the floodplain as defined by FEMA or as defined by an alternative analysis if the FEMA-defined floodplain is not considered best available;
 - c. may include only those flood mitigation projects with dedicated construction funding and scheduled for completion prior to adoption of the next state flood plan.
 - d. must consider the population and property located in areas where existing levees or dams do not meet FEMA accreditation as inundated by flooding without those structures in place. Provisionally accredited structures may be allowed to provide flood protection, unless best available information demonstrates otherwise.
 - e. must consider available datasets to estimate the potential flood hazard exposure including, but not limited to:
 - i. number of residential properties and associated population;
 - ii. number of non-residential properties;
 - iii. other public infrastructure;
 - iv. major industrial and power generation facilities;
 - v. number and types of critical facilities;
 - vi. number of roadway crossings;
 - vii. length of roadway segments; and
 - viii. agricultural area and value of crops exposed.
 - f. must include a qualitative description of expected loss of function, which is the effect that a flood event could have on the function of inundated structures (residential, commercial, industrial, public, or others) and infrastructure, such as transportation, health and human services, water supply, wastewater treatment, utilities, energy generation, and emergency services.

3. Perform existing condition vulnerability analyses as follows:
 - a. identify resilience of communities located in flood-prone areas identified as part of the existing condition flood exposure analyses, utilizing relevant data and tools.
 - b. identify vulnerabilities of critical facilities to flooding by looking at factors such as proximity to a floodplain or other bodies of water, past flooding issues, emergency management plans, and location of critical systems like primary and back-up power.
4. All data produced as part of the existing condition flood exposure analysis and the existing condition vulnerability analysis must include:
 - a. underlying flood event return frequency;
 - b. type of flood risk;
 - c. county;
 - d. HUC12;
 - e. existing flood authority boundaries;
 - f. Social Vulnerability Indices for counties and census tracts; and
 - g. other categories as determined by RFPGs or in TWDB Flood Planning guidance documents.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone chapter (including work from both Tasks 2A & 2B) to be included in the 2023 Regional Flood Plan.
- Prepare maps according to 1(d) and 1(e).
- A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 2B – Future Condition Flood Risk Analyses

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.34.

The objective of this task is to prepare a chapter to be combined with Task 2A and included in the 2023 Regional Flood Plan that describes the existing and future condition flood risk in the FPR.

RFPGs must perform future condition flood risk analyses for the region comprising: (1) flood hazard analyses that determine the location, magnitude and frequency of flooding; (2) flood exposure analyses to identify who and what might be harmed within the region; and (3) vulnerability analyses to identify vulnerabilities of communities and critical facilities.

The information developed must be used to assist the RFPG to establish priorities in subsequent planning tasks, to identify areas that need FMEs, and to efficiently deploy its resources.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Perform future condition flood hazard analyses to determine the location and magnitude of both 1% annual chance and 0.2% annual chance flood events as follows:
 - a. collect data and conduct analyses sufficient to characterize the future conditions for the planning area based on a "no-action" scenario of approximately 30 years of continued development and population growth under current development trends and patterns, and existing flood regulations and policies based on:
 - i. current land use and development trends and practices and associated projected population based on the most recently adopted state water plan decade and population nearest the next regional flood plan adoption date plus approximately 30 years or as provided for in TWDB Flood Planning guidance documents;
 - ii. reasonable assumptions regarding locations of residential development and associated population growth;
 - iii. anticipated relative sea level change and subsidence based on existing information;
 - iv. anticipated changes to the functionality of the existing floodplain;
 - v. anticipated sedimentation in flood control structures and major geomorphic changes in riverine, playa, or coastal systems based on existing information;
 - vi. assumed completion of flood mitigation projects currently under construction or that already have dedicated construction funding; and
 - vii. other factors deemed relevant by the RFPG.
 - b. identify areas within each FPR where future condition hydrologic and hydraulic model results are already available and summarize the information;
 - c. utilize best available data, including hydrologic and hydraulic models for each area;
 - d. where future condition results are not available, but existing condition hydrologic and hydraulic model results are already available, the RFPGs must modify hydraulic models to identify future conditions flood risk for 1% and 0.2% annual chance storms based on simplified assumptions utilizing the information identified in this task.
 - e. prepare a map showing areas of 1% and 0.2% annual chance of inundation for future conditions, the areal extent of this inundation, and the sources of flooding for each area.
 - f. prepare a map showing gaps in inundation boundary mapping and identify known flood-prone areas based on location of hydrologic features, historic flooding, and/ or local knowledge.
2. Perform future condition flood exposure analyses using the information identified in the future condition flood hazard analysis to identify who and what might be harmed within the region for, at a minimum, both future condition 1% annual chance and future condition 0.2% annual chance flood events as follows:
 - a. analyses of existing and future developments within the future condition floodplain and the associated flood hazard exposure; and

- b. to include only those flood mitigation projects with dedicated construction funding scheduled for completion prior to the next regional flood plan adoption date plus 30 years or as provided for in TWDB Flood Planning guidance documents.
 - c. Identification of flood prone areas associated with the hazard exposure analyses must be based on analyses that rely primarily on the use and incorporation of existing and available:
 - i. FIRMs or other flood inundation maps and GIS related data and analyses;
 - ii. available hydraulic flood modeling results;
 - iii. model-based or other types of geographic screening tools for identifying flood prone areas; and
 - iv. other best available data or relevant technical analyses that the RFPG determines to be the most updated or reliable.
- 3. Perform future condition vulnerability analyses as follows:
 - a. identify resilience of communities located in flood-prone areas identified as part of the future condition flood exposure analyses, utilizing relevant data and tools.
 - b. identify vulnerabilities of critical facilities to flooding by looking at factors such as proximity to a floodplain or other bodies of water, past flooding issues, emergency management plans, and location of critical systems like primary and back-up power.
- 4. All data produced as part of the future condition flood exposure analysis and the future condition vulnerability analysis must include:
 - a. underlying flood event return frequency;
 - b. type of flood risk;
 - c. county;
 - d. HUC12;
 - e. existing flood authority boundaries;
 - f. Social Vulnerability Indices for counties and census tracts; and
 - g. other categories as determined in TWDB Flood Planning guidance documents.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

- 1. Review of the chapter documents and related information by RFPG members.
- 2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
- 3. Submittal of chapter document to TWDB for review and approval.
- 4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone chapter (including work from both Tasks 2A & 2B) to be included in the 2023 Regional Flood Plan.
- Prepare maps according to 1(e) and 1(f). A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 3A – Evaluation and Recommendations on Floodplain Management Practices

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.35.

Recognizing the extent that previous and current practices may have increased flood risks, including residual risks, and considering broad floodplain management and land use approaches that will avoid increasing flood risks, and avoid negatively affecting neighboring areas, the RFPG must accomplish the following tasks.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Consider the extent to which a lack of, insufficient, or ineffective current floodplain management and land use practices, regulations, policies, and trends related to land use, economic development, and population growth, allow, cause, or otherwise encourage increases to flood risks to both:
 - a. existing population and property, and
 - b. future population and property.
2. Take into consideration the future flood hazard exposure analyses performed under Task 2B, consider the extent to which the 1% annual chance floodplain, along with associated flood risks, may change over time in response to anticipated development and associated population growth and other relevant man-made causes, and assess how to best address these potential changes.
3. Based on the analyses in (1) and (2), make recommendations regarding forward-looking floodplain management and land use recommendations, and economic development practices and strategies, that should be implemented by entities within the FPR. These region-specific recommendations may include minimum floodplain management and land use standards and should focus on how to best address the changes in (2) for entities within the region. These recommendations will inform recommended strategies for inclusion in the Regional Flood Plan.
4. RFPGs may also choose to adopt region-specific, minimum floodplain management or land use or other standards that impact flood-risk, that may vary geographically across the region, that each entity in the FPR must adopt prior to the RFPG including in the Regional Flood Plan any Flood Management Evaluations, Flood Management Strategies, or Flood Mitigation Projects that are sponsored by or that will otherwise be implemented by that entity.
5. Consider example floodplain management and infrastructure protection standards provided by TWDB.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone chapter (including work from both Tasks 3A & 3B) to be included in the 2023 Regional Flood Plan.
- List region-specific recommendations regarding forward-looking floodplain management and land use, which may include minimum floodplain management and land use standards.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 3B – Flood Mitigation and Floodplain Management Goals

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.36.

In this task, the RFPG must consider the Guidance Principles under 31 TAC §362.3, Tasks 1-3A, input from the public, and other relevant information and considerations.

The RFPG must use these goals to guide the RFPG in carrying out the following Tasks 4A – 5.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Identify specific and achievable flood mitigation and floodplain management goals along with target years by which to meet those goals for the FPR to include, at a minimum, goals specifically addressing risks to life and property.
2. Recognize and clearly state the levels of residual risk that will remain in the FPR even after the stated flood mitigation goals are fully met.
3. Structure and present the goals and the residual risks in an easily understandable format for the public including in conformance with TWDB Flood Planning guidance documents.
4. When appropriate, choose goals that apply to full single HUC8 watershed boundaries or coterminous groups of HUC8 boundaries within the FPR.
5. Identify both short-term goals (10 years) and long-term goals (30 years).

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone chapter (including work from both Tasks 3A & 3B) to be included in the 2023 Regional Flood Plan.
- Identify flood mitigation and floodplain management goals considering minimum recommended flood protection goal provided by TWDB.
- Identify specific and achievable flood mitigation and floodplain management goals (10 year and 30 year) in an easily understandable format for the public.

- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 4A – Flood Mitigation Needs Analysis

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.37.

The RFPG must conduct the analysis in a manner that will ensure the most effective and efficient use of the resources available to the RFPG.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Based on the analyses and goals developed by the RFPG under Tasks 2A through 3B and any additional analyses or information developed using available screening-level models or methods, the RFPG must identify locations within the FPR that the RFPG considers to have the greatest flood mitigation and flood risk study needs by considering:
 - a. the areas in the FPR that the RFPG identified as the most prone to flooding that threatens life and property;
 - b. the relative locations, extent, and performance of current floodplain management and land use policies and infrastructure located within the FPR, particularly within the locations described in (a);
 - c. areas identified by the RFPG as prone to flooding that don't have adequate inundation maps;
 - d. areas identified by the RFPG as prone to flooding that don't have hydrologic and hydraulic models;
 - e. areas with an emergency need;
 - f. existing modeling analyses and flood risk mitigation plans within the FPR;
 - g. flood mitigation projects already identified and evaluated by other flood mitigation plans and studies;
 - h. documentation of historic flooding events;
 - i. flood mitigation projects already being implemented; and
 - j. any other factors that the RFPG deems relevant to identifying the geographic locations where potential FMEs and potentially feasible FMSs and FMPs must be identified and evaluated under §361.38.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone chapter (including work from both Tasks 4A & 4B) to be included in the 2023 Regional Flood Plan.
- A map identifying the geographic locations within the FPR considered to have the greatest flood mitigation and flood risk study needs where potential FMEs and potentially feasible FMSs and FMPs must be evaluated
- A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 4B – Identification and Evaluation of Potential Flood Management Evaluations and Potentially Feasible Flood Management Strategies and Flood Mitigation Projects

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.38.

Based on analyses and decisions under Tasks 2A through 4A the RFPG must identify and evaluate potential FMEs and potentially feasible FMSs and FMPs, including nature-based solutions, some of which may have already been identified by previous evaluations and analyses by others.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Receive public comment on a proposed process to be used by the RFPG to identify and select FMEs, FMSs, and FMPs for the 2023 Regional Flood Plan.
2. Summarize the RFPG process for identifying potential FMEs and potentially feasible FMSs and FMPs and include a description of the process in the draft and final adopted Regional Flood Plan.
3. Identify potentially feasible FMSs and FMPs in accordance with the RFPG established process.
4. When evaluating FMSs and FMPs the RFPG must, at a minimum, identify one solution that provides flood mitigation associated with a 1% annual chance flood event. In instances where mitigating for 1% annual chance events is not feasible, the RFPG must document the reasons for its infeasibility, and at the discretion of the RFPG, other FMSs and FMPs to mitigate more frequent events may also be identified and evaluated based on TWDB Flood Planning guidance documents.
5. For areas within the FPR that the RFPG does not yet have sufficient information or resources to identify potentially feasible FMSs and FMPs, the RFPG must identify areas for potential FMEs that may eventually result in FMSs and/or FMPs.
6. The RFPG must evaluate potentially feasible FMSs and FMPs understanding that, upon evaluation and further inspection, some FMSs or FMPs initially identified as potentially feasible may, after further inspection, be reclassified as infeasible.
7. FMPs will be ranked in the state flood plan and
 - a. must represent discrete, projects;
 - b. must not entail an entire capital program or drainage masterplan; and

- c. may rely on other flood-related projects.
- 8. Evaluations of potentially feasible FMSs and FMPs require associated, detailed hydrologic and hydraulic modeling results that quantify the reduced impacts from flood events and the associated benefits and costs. Information may be based on previously performed evaluations of projects and related information. Evaluations of potentially feasible FMS and FMPs must include the following information and be based on the following analyses:
 - a. A reference to the specific flood mitigation or floodplain management goal addressed by the feasible FMS or FMP;
 - b. A determination of whether FMS or FMP meets an emergency need;
 - c. An indication regarding the potential use of federal funds, or other sources of funding, as a component of the total funding mechanism;
 - d. An equitable comparison between and consistent assessment of all FMSs and FMPs that the RFPG determines to be potentially feasible;
 - e. A demonstration that the FMS or FMP will not negatively affect a neighboring area;
 - f. A quantitative reporting of the estimated benefits of the FMS or FMP, including reductions of flood impacts of the 1% annual chance flood event and other storm events identified and evaluated if the project mitigates to a more frequent event, to include, but not limited to:
 - (1) Associated flood events that must, at a minimum, include the 1% annual chance flood event and other storm events identified and evaluated;
 - (2) Reduction in habitable, equivalent living units flood risk;
 - (3) Reduction in residential population flood risk;
 - (4) Reduction in critical facilities flood risk;
 - (5) Reduction in road closure occurrences;
 - (6) Reduction in acres of active farmland and ranchland flood risk;
 - (7) Estimated reduction in fatalities, when available;
 - (8) Estimated reduction in injuries, when available;
 - (9) Reduction in expected annual damages from residential, commercial, and public property; and
 - (10) Other benefits as deemed relevant by the RFPG including environmental benefits and other public benefits.
 - g. A quantitative reporting of the estimated capital cost of FMPs in accordance with TWDB Flood Planning guidance documents;
 - h. Calculated benefit-cost ratio for FMPs in accordance with *Exhibit C: General Guidelines* and based on current, observed conditions;
 - i. For projects that will contribute to water supply, all relevant evaluations required under §357.34(e) (relating to Identification and Evaluation of Potentially Feasible Water Management Strategies and Water Management Strategy Projects), as determined by the EA based on the type of contribution, and a description of its consistency with the currently adopted State Water Plan;
 - j. A description of potential impacts and benefits from the FMS or FMP to the environment, agriculture, recreational resources, navigation, water quality, erosion, sedimentation, and impacts to any other resources deemed relevant by the RFPG;

- k. A description of residual, post-project, and future risks associated with FMPs including the risk of potential catastrophic failure and the potential for future increases to these risks due to lack of maintenance;
 - l. Implementation issues including those related to rights-of-way, permitting, acquisitions, relocations, utilities and transportation; and
 - m. Funding sources and options that exist or will be developed to pay for development, operation, and maintenance of the FMS or FMP.
- 9. Evaluations of potential FMEs must be at a reconnaissance or screening-level, unsupported by associated detailed hydrologic and hydraulic analyses. These must be identified for areas that the RFPG considers a priority for flood risk evaluation but that do not yet have the required detailed hydrologic and hydraulic modeling or associated project evaluations available to evaluate specific FMSs or FMPs for recommendation in the Regional Flood Plan. These FMEs must be based on recognition of the need to develop detailed hydrologic models or to perform associated hydraulic analyses and associated project evaluations in certain areas identified by the RFPG. Evaluations of potential FMEs must include the following analyses:
 - a. A reference to the specific flood mitigation or floodplain management goal to be addressed by the potential FME.
 - b. A determination of whether FME may meet an emergency need.
 - c. An indication regarding the potential use of federal funds, or other sources of funding as a component of the total funding mechanism.
 - d. An equitable comparison between and consistent assessment of all FMEs.
 - e. An indication of whether hydrologic and or hydraulic models are already being developed or are anticipated in the near future and that could be used in the FME.
 - f. A quantitative reporting of the estimated benefits, including reductions of flood risks, to include:
 - (1) Estimated habitable, living unit equivalent and associated population in FME area;
 - (2) Estimated critical facilities in FME area;
 - (3) Estimated number of roads closures occurrences in FME area;
 - (4) Estimated acres of active farmland and ranchland in FME area; and
 - (5) A quantitative reporting of the estimated study cost of the FME and whether the cost includes use of existing or development of new hydrologic or hydraulic models.
 - g. For FMEs, RFPGs do not need to demonstrate that an FME will not negatively affect a neighboring area.
- 10. RFPGs must evaluate and present potential FMEs and potentially feasible FMSs and FMPs with sufficient specificity to allow state agencies to make financial or regulatory decisions to determine consistency of the proposed action before the state agency with an approved Regional Flood Plan.
- 11. Analyses must clearly designate a representative location of the FME and beneficiaries including a map and designation of HUC12 and county location.
- 12. Analyses must be performed in accordance with TWDB Flood Planning guidance documents.
- 13. All data produced as part of the analyses under this task must be organized and summarized in the Regional Flood Plan in accordance with TWDB Flood Planning guidance documents.

14. Plans to be considered in developing this chapter include relevant plans referenced under 31 TAC §361.22.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone chapter (including work from both Tasks 4B & 5) to be included in the 2023 Regional Flood Plan.
- A list of the potentially feasible FMSs and associated FMPs that were identified by the RFPG. The TWDB Flood Planning guidance documents will include minimum data submittal requirements and deliverable format.
- A map identifying the geographic locations within the FPR considered to have the greatest flood mitigation and flood risk study needs where potential FMEs and potentially feasible FMSs and FMPs must be evaluated. TWDB Flood Planning guidance documents will include minimum data submittal requirements and deliverable format.
- Data must be organized and summarized in the Regional Flood Plan in accordance with TWDB Flood Planning guidance documents.
- A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 4C – Prepare and Submit Technical Memorandum

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.13(e).

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Prepare a concise Technical Memorandum to include:
 - a. A list of existing political subdivisions within the FPR that have flood-related authorities or responsibilities;
 - b. A list of previous flood studies considered by the RFPG to be relevant to development of the Regional Flood Plan;
 - c. A geodatabase and associated maps in accordance with TWDB Flood Planning guidance documents that the RFPG considers to be best representation of the region-wide 1% annual chance flood event and 0.2% annual chance flood event inundation boundaries, and the source of flooding for each area, for use in its risk analysis, including indications of locations where such boundaries remain undefined;

- d. A geodatabase and associated maps in accordance with TWDB Flood Planning guidance documents that identifies additional flood-prone areas not described in (c) based on location of hydrologic features, historic flooding, and/or local knowledge;
 - e. A geodatabase and associated maps in accordance with TWDB Flood Planning guidance documents that identifies areas where existing hydrologic and hydraulic models needed to evaluate FMSs and FMPs are available;
 - f. A list of available flood-related models that the RFPG considers of most value in developing its plan;
 - g. The flood mitigation and floodplain management goals adopted by the RFPG per §361.36;
 - h. The documented process used by the RFPG to identify potentially feasible FMSs and FMPs;
 - i. A list of potential FMEs and potentially feasible FMSs and FMPs identified by the RFPG, if any; and
 - j. A list of FMSs and FMPs that were identified but determined by the RFPG to be infeasible, including the primary reason for it being infeasible.
2. Approve submittal of the Technical Memorandum to TWDB at a RFPG meeting subject notice requirements in accordance with 31 TAC §361.21(h). The Technical Memorandum must be submitted to TWDB in accordance with Section I Article I of the contract.

Task 5 – Recommendation of Flood Management Evaluations and Flood Management Strategies and Associated Flood Mitigation Projects

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.39.

The objective of this task is to evaluate and recommend Flood Management Evaluations (FMEs), Flood Management Strategies (FMSs) and their associated Flood Mitigation Projects (FMPs) to be included in the 2023 Regional Flood Plan that describes the work completed, presents the potential FMEs, potentially feasible FMSs and FMPs, recommended and alternative FMSs and FMPs, including all the technical evaluations, and presents which entities will benefit from the recommended FMSs and FMPs.

Work associated with any Task 5 subtasks is contingent upon a written notice-to-proceed. This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Recommend FMSs and FMPs to reduce the potential impacts of flood based on the evaluations under §361.38 and RFPG goals and that must, at a minimum, mitigate for flood events associated with at 1% annual chance (100-yr flood) where feasible. In instances where mitigating for 100-year events is not feasible, FMS and FMPs to mitigate more frequent events may be recommended based on TWDB Flood Planning guidance documents. Recommendations must be based upon the identification, analysis, and comparison of alternatives that the RFPG

determines will provide measurable reductions in flood impacts in support of the RFPG's specific flood mitigation and/or floodplain management goals.

2. Provide additional information in conformance with TWDB Flood Planning guidance documents which will be used to rank recommended FMPs in the state flood plan.
3. Recommend FMEs that the RFPG determines are most likely to result in identification of potentially feasible FMSs and FMPs that would, at a minimum, identify and investigate one solution to mitigate for flood events associated with a 1% annual chance flood event and that support specific RFPG flood mitigation and/or floodplain management goals.
4. Recommended FMSs or FMPs may not negatively affect a neighboring area or an entity's water supply.
5. Recommended FMSs or FMPs that will contribute to water supply may not result in an overallocation of a water source based on the water availability allocations in the most recently adopted State Water Plan.
6. Specific types of FMEs, FMSs, or FMPs that should be included and that should not be included in Regional Flood Plans must be in accordance with TWDB Flood Planning guidance documents.
7. FMS and FMP documentation must include a strategy or project description, discussion of associated facilities, project map, and technical evaluations addressing all considerations and factors required under 31 TAC §361.38(h).
8. Coordinate and communicate with FME, FMS, and FMP sponsors, individual local governments, regional authorities, and other political subdivisions.
9. Process documentation of selecting all recommended FMSs and associated FMPs including development of FMS evaluations matrices and other tools required to assist the RFPG in comparing and selecting recommended FMSs and FMPs.
10. Document the evaluation and selection of all recommended FMS and FMPs, including an explanation for why certain types of strategies may not have been recommended.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone chapter (including work from both Tasks 4B & 5) to be included in the 2023 Regional Flood Plan to include technical analyses of all evaluated FMSs and FMPs.
- A list of the recommended FMEs, FMSs, and associated FMPs that were identified by the RFPG. TWDB Flood Planning guidance documents will include minimum data submittal requirements and deliverable format.
- Data must be organized and summarized in the Regional Flood Plan in accordance with TWDB Flood Planning guidance documents.
- A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 6A – Impacts of Regional Flood Plan

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.40.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to include:

1. a region-wide summary of the relative reduction in flood risk that implementation of the Regional Flood Plan would achieve within the region including with regard to life, injuries, and property.
2. a statement that the FMPs in the plan, when implemented, will not negatively affect neighboring areas located within or outside of the FPR.
3. a general description of the types of potential positive and negative socioeconomic or recreational impacts of the recommended FMSs and FMPs within the FPR.
4. a general description of the overall impacts of the recommended FMPs and FMSs in the Regional Flood Plan on the environment, agriculture, recreational resources, water quality, erosion, sedimentation, and navigation.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: Prepare a stand-alone chapter (including work from both Tasks 6A & 6B) to be included in the 2023 Regional Flood Plan. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 6B – Contributions to and Impacts on Water Supply Development and the State Water Plan

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.41.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Include a region-wide summary and description of the contribution that the regional flood plan would have to water supply development including a list of the specific FMSs and FMPs that would contribute to water supply.
2. Include a description of any anticipated impacts, including to water supply or water availability or projects in the State Water Plan, that the regional flood plan FMSs and FMPs may have.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: Prepare a stand-alone chapter (including work from both Tasks 6A & 6B) to be included in the 2023 Regional Flood Plan. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 7 – Flood Response Information and Activities

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.42.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Summarize the nature and types of flood response preparations within the FPR including providing where more detailed information is available regarding recovery.
2. Coordinate and communicate, as necessary, with entities in the region to gather information.
3. RFPGs must not perform analyses or other activities related to planning for disaster response or recovery activities.
4. Plans to be considered in developing this chapter include relevant plans referenced under 31 TAC §361.22.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: Prepare a stand-alone chapter to be included in the 2023 Regional Flood Plan. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 8 – Administrative, Regulatory, and Legislative Recommendations

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.43.

The objective of this task is to prepare a separate chapter to be included in the 2023 Regional Flood Plan that presents the RFPG's administrative, legislative, and regulatory recommendations.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to develop:

1. Legislative recommendations that they consider necessary to facilitate floodplain management and flood mitigation planning and implementation.
2. Other regulatory or administrative recommendations that they consider necessary to facilitate floodplain management and flood mitigation planning and implementation.
3. Any other recommendations that the RFPG believes are needed and desirable to achieve its regional flood mitigation and floodplain management goals.
4. Recommendations regarding potential, new revenue-raising opportunities, including potential new municipal drainage utilities or regional flood authorities, that could fund the development, operation, and maintenance of floodplain management or flood mitigation activities in the region.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: Prepare a stand-alone chapter to be included in the 2023 Regional Flood Plan. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 9 – Flood Infrastructure Financing Analysis

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must, in particular, include all work necessary to meet all the requirements of 31 TAC §361.44.

The objective of this task is to report on how sponsors of recommended FMPs propose to finance projects.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Coordinate and communicate with individual local governments, regional authorities, and other political subdivisions.
2. Perform a survey, including the following work:
 - a. Contacting FME and FMP sponsors.
 - b. Collection and collation of data.
 - c. Documentation of the effectiveness of survey methodology, providing percent survey completions, and whether an acceptable minimum percent survey completion was achieved.

- d. Submission of data.
3. Coordinate with FME and FMP sponsors as necessary to ensure detailed needs and costs associated with their anticipated evaluations and projects are sufficiently represented in the Regional Flood Plan for future funding determinations.
4. Indicate how individual local governments, regional authorities, and other political subdivisions in their region propose to finance the region's recommended FMPs, and FMEs included in their flood plan. The assessment must also describe what role the RFPG proposes for the state in financing recommended FMPs, and FMEs. As projects are implemented, those improvements and associated benefits must be incorporated into and reflected in the subsequent Regional Flood Plans.
5. Summarize the survey results.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: A completed Chapter 9 must be delivered in the 2023 Regional Flood Plan to include summary of reported financing approaches for all recommended FMPs and FMEs. Data must be submitted in accordance with TWDB guidance documents. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 10 – Public Participation and Plan Adoption

The objective of this task is to address public participation, public meetings, eligible administrative and technical support activities, and other requirements and activities eligible for reimbursement. Objectives also include activities necessary to complete and submit a draft and final Regional Flood Plan, and obtain TWDB approval of the Regional Flood Plan.

In this task, the RFPG must evaluate and ensure that the draft and final Regional Flood Plan satisfies the requirements for regional flood plans in the guidance principles adopted in Title 31 TAC §362.3 and must include a statement in the draft and final Regional Flood Plan explaining how the Regional Flood Plan satisfies the requirements of each of the guidance principles in accordance with Title 31 TAC §361.20.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. In addition to generally meeting all applicable statute requirements governing regional and state flood planning this portion of work must, in particular, include all technical and administrative support activities necessary to meet all the requirements of 31 TAC Chapters 361 and 362 that are not already addressed under the scope of work associated with other contract Tasks but that are necessary and or required to complete and deliver an draft Regional Flood Plan and final, adopted Regional Flood Plan to TWDB and obtain approval of the adopted Regional Flood Plan by TWDB.

2. Organization, support, facilitation, and documentation of all meetings associated with: preplanning meeting; consideration of a substitution of alternative flood management strategies; public meeting after adoption of the draft Regional Flood Plan and prior to adoption of the final Regional Flood Plan; and consideration of Regional Flood Plan amendments, alternative FMS substitutions, or Board-directed revisions.

Technical Support and Administrative Activities

1. RFPGs must support and accommodate periodic presentations by the TWDB for the purpose of orientation, training, and retraining as determined and provided by the TWDB during regular RFPG meetings.
2. Attendance and participation of technical consultants at RFPG, subgroup, subcommittees, special and or other meetings including preparation and follow-up activities.
3. Developing technical and other presentations and handout materials for regular and special meetings to provide technical and explanatory data to the RFPG and its subcommittees, including follow-up activities.
4. Administrative and technical support and participation in RFPG activities, and documentation of any RFPG workshops, work groups, subgroup and/or subcommittee activities.
5. Technical support and administrative activities associated with periodic and special meetings of the RFPG including developing agendas and coordinating activities for the RFPG.
6. Provision of progress reports to TWDB for work performed under this Contract.
7. Development of draft and final responses for RFPG approval to public questions or comments as well as approval of the final responses to comments on Regional Flood Plan documents.
8. Intraregional and interregional coordination and communication, and or facilitation required within the FPR and with other RFPGs to develop a Regional Flood Plan.
9. Incorporation of all required data and reports into Regional Flood Plan document.
10. Modifications to the Regional Flood Plan documents based on RFPG, public, and or agency comments.
11. Preparation of a Regional Flood Plan chapter summarizing Task 10 activities including review by RFPG and modification of document as necessary.
12. Development and inclusion of Executive Summaries in both draft Regional Flood Plan and final Regional Flood Plan.
13. Production, distribution, and submittal of all draft and final Regional Flood Plan-related planning documents for RFPG, public and agency review, including in hard-copy format when required.
14. Assembling, compiling, and production of the completed draft Regional Flood Plan and Final Regional Flood Plan document(s) that meet all requirements of statute, 31 TAC Chapters 361 and 362, Contract and associated guidance documents.
15. Submittal of the Regional Flood Plan documents in both hard copy and electronic formats to TWDB for review and approval; and all effort required to obtain final approval of the Regional Flood Plan by TWDB.

Other Activities

1. Review of all Regional Flood Plan-related documents by RFPG members.
2. Development and maintenance of a RFPG website or RFPG-dedicated webpage on the RFPG administrator's website for posting planning group meeting notices, agendas, materials, and plan information.

3. Limited non-labor, direct costs associated with maintenance of the RFPG website.
4. Development of agendas, presentations, and handout materials for the public meetings to provide to the general public.
5. Documentation of meetings to include recorded minutes and/or audio recordings as required by the RFPG bylaws and archiving and provision of minutes to public.
6. Preparation and transmission of correspondence, for example, directly related to public comments on Regional Flood Plan documents.
7. Promoting consensus decisions through conflict resolution efforts including monitoring and facilitation required to resolve issues between and among RFPG members and stakeholders in the event that issues arise during the process of developing the Regional Flood Plan, including mediation between RFPG members, if necessary.
8. RFPG membership solicitation activities.
9. Meeting all posting, meeting, and other public notice requirements in accordance with the open meetings act, statute, and 31 TAC §361.21 and any other applicable public notice requirements.
10. Solicitation, review, and dissemination of public input, as necessary.
11. Any efforts required, but not otherwise addressed in other SOW tasks that may be required to complete an Regional Flood Plan in accordance with all statute and rule requirements.

Deliverables:

- A completed Chapter 10 summarizing public participation activities and appendices with public comments and RFPG responses to comments.
- Complete draft Regional Flood Plan and final, adopted Regional Flood Plan documents.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Exhibit

Technical Guidelines for Regional Flood Planning¹

NOTE: REMAINS SUBJECT TO NON-SUBSTANTIAL CHANGE

April 2021

First Cycle of Regional Flood Plan Development (2020–2023)

¹ This document augments existing statute and rules that govern regional flood planning. Provisions of Title 31 of TAC Chapters 361 and 362 serve as the foundation for much of the information in this document and are not superseded or abridged by anything contained within or excluded from this document.

Exhibit C: Technical Guidelines for Regional Flood Planning

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PART 1 – Orientation

1.1 Background

The TWDB designated 15 regional flood planning areas each of which then began with a designated regional planning group that will develop a regional flood plan for their region by January 2023. The TWDB will bring the regional flood plans together to produce the first state flood plan by September 1, 2024. While the regional flood plan development will be directed by the flood planning groups, in order to ensure that the regional flood plans will follow a consistent and credible approach, the Executive Administrator prepared the following guidelines to assist with the planning process. These guidelines augment the Texas Water Code and the administrative rules related to regional flood planning and are part of the regional flood planning grant contracts.

1.2 Purpose

These guidelines build upon and provide additional information and greater detail about how to implement the administrative rules, including regarding the required methods, content, and format of information to be contained and presented in each Regional Flood Plan (Plan) to meet rule and contractual requirements including the Scope of Work (SOW). For convenience, the sections of this document include excerpts directly from regional flood planning rules and the Exhibit A: Scope of Work followed by 'Additional Guidance' content provided by the Executive Administrator (EA).

While each regional plan will be unique to its region, this guidance is intended to ensure that the 15 regional flood plans are developed in a generally consistent and similar manner to produce information that may be combined and aggregated, at the state level, to support the development of a meaningful and credible state flood plan. The intent is to ensure that the 15 regions generally produce and provide 'apples to apples' data across the entire state including key information that will support the TWDB's development of a statewide ranking of all recommended flood projects in the state flood plan.

Depending upon the nature or importance of particular flood planning rules or contract tasks, this guidance intentionally varies in its degree of specificity and flexibility. This is to strike a reasonable balance between ensuring consistency across regions and yet giving the regional flood planning groups (RFPG) some room to maneuver to find the best ways to approach this new flood planning process. Some sections of this guidance provide very specific direction about certain work that must be performed and/or information that must be delivered, whereas other sections give the RFPGs significantly more flexibility and latitude in how they may meet the regional flood planning requirements. By providing examples, templates, and flexibility where possible, this guidance aims to assist the RFPGs in being successful during this first planning cycle. How the RFPGs apply this guidance, the innovative ways they may choose to develop their plans, including the choices they make within the latitude of this first guidance document, will help to shape the next regional flood planning cycle including informing the next version of this guidance.

The draft regional flood plans and the final adopted regional flood plans will be reviewed by TWDB based on statute, regional flood planning rules, as well as requirements that are included in this and all other contract documents including the SOW.

This document augments existing statute and rules that govern regional flood planning. Provisions of Title 31 of TAC Chapters 361, and 362 serve as the foundation for information in this document and are not superseded or abridged by anything contained within or excluded from this document.

For your reference, the Texas Water Code excerpts below list specific statutory requirements for regional and state flood plans.

Texas Water Code Section 16.062

A regional flood plan must:

- (1) use information based on scientific data and updated mapping; and
- (2) include:
 - (A) a general description of the condition and functionality of flood control infrastructure in the flood planning region;
 - (B) flood control projects under construction or in the planning stage;
 - (C) information on land use changes and population growth in the flood planning region;
 - (D) an identification of the areas in the flood planning region that are prone to flood and flood control solutions for those areas; and
 - (E) an indication of whether a particular flood control solution:
 - (i) meets an emergency need;
 - (ii) uses federal money as a funding component; and
 - (iii) may also serve as a water supply source.

Texas Water Code Section 16.061

The state flood plan must:

- (1) provide for orderly preparation for and response to flood conditions to protect against the loss of life and property;
- (2) be a guide to state and local flood control policy; and
- (3) contribute to water development where possible.

The state flood plan must include:

- (1) an evaluation of the condition and adequacy of flood control infrastructure on a regional basis;
- (2) a statewide, ranked list of ongoing and proposed flood control and mitigation projects and strategies necessary to protect against the loss of life and property from flooding and a discussion of how those projects and strategies might further water development, where applicable;
- (3) an analysis of completed, ongoing, and proposed flood control projects included in previous state flood plans, including which projects received funding;
- (4) an analysis of development in the 100-year floodplain areas as defined by the Federal Emergency Management Agency; and
- (5) legislative recommendations the board considers necessary to facilitate flood control planning and project construction.

Exhibit C: Technical Guidelines for Regional Flood Planning

1.3 General format and content of this document

This guidance consists of three Parts:

Part 1 – Orientation includes background orientation material and a *General Document Cross-Reference* (below) that illustrates how the administrative rules, contract scope of work, and guidance documents, all relate and align with one other.

Part 2 – Scope of Work Task-Specific General Guidelines includes general guidance organized by Contract Scope of Work tasks and related rules sections. Each task in this section is organized in several parts: goals, excerpts from relevant rules and scope of work, followed by additional guidance and submittal requirements. The section identifies various summary table that are required to be included in the technical memo and the flood plan. An excel template file “Exhibit C Tables” is made available with this guidance document that includes the summary tables that are required to be included.

Part 3 – Technical Guidance includes broader ‘technical guidelines’ that describe more substantial technical approaches and methodologies that must be followed and that apply more broadly to multiple analyses that will occur under multiple scope of work tasks and/or administrative rule items.

Tables – Example data is presented in tables for the purpose of making data entry clearer.

Note that, throughout the document, verbatim statute, rule, and Scope of Work language that is included at the top of most sections (for convenience) is ‘greyed’ in order to distinguish it as such.

1.4 General guidance

1. The regional flood plan must include an Executive Summary including key findings and recommendations.
2. This guidance document includes the minimum reporting requirements where information and data are available. It is understood that during the first planning cycle, the RFPGs may not be able to generate all information requested in the guidance documents. The RFPGs must document reasonable effort for generating the requested information in the case where they are not able to include it. An RFPG may present more information and findings in their plan than is required by this guidance.
3. RFPGs must submit all data identified in Exhibit D: Data Submittal Guidelines to the TWDB.
4. The TWDB will provide a GIS geodatabase template for the RFPGs to fill in with region-specific data. The geodatabase template will be pre-populated with all feature classes and fields but will not have any data. This geodatabase template is not to be altered, reduced, or limited in any manner that would detract from the original template. These templates must be maintained and returned in a manner that will allow the TWDB to easily assemble a statewide dataset from the 15 templates when they are provided, populated with data, back to the TWDB. If region specific need for any changes arise, TWDB will review those requests from RFPGs.
5. All maps that are included as part of each regional flood plan, either within the published plan document or as a supplement to the plan, must be submitted with underlying GIS data utilized to prepare them.
6. The regional flood plan is intended to include data reflective of a **planning level** analysis.
7. It is understood that not all communities have the level of details requested in the technical guidelines. Many rural counties and smaller cities have limited detailed data and further have limited staff available to process through the data. There may be a disparity between communities who had the prior level of details and expertise required to identify flood projects, for example, and those that did not. These guidelines seek to work towards reducing that gap in

upcoming years and planning cycles by identifying areas where further evaluations and resources are needed to reduce the risk of flooding in all of Texas.

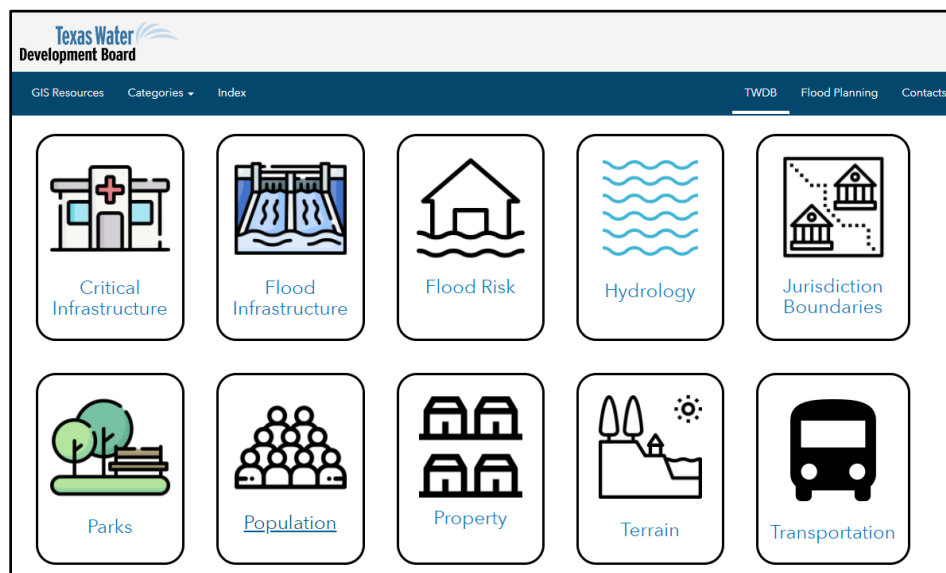
8. RFPs may request an exception (waiver) to certain requirements and selected study approaches of this guidance document. The requested approach must adhere to all statutory and rule requirements and will be subject to the approval of the Executive Administrator.

1.5 Documents and files that accompany and are integral to implementing this guidance

1. **Exhibit C Tables:** An excel template file called “Exhibit C Tables” accompanies this guidance document and includes the summary tables that are required to be included in the technical memo, the draft regional flood plan, and the final regional flood plan document. The excel spreadsheet must be filled in and submitted with the technical memo, draft flood plan and the final flood plan with associated information.
2. **Exhibit D Data Submittal Guidance Document:** This is a separate document that supports this guidance. To help link guidance found in this document to Exhibit D, references to specific datasets (which are described in detail in Exhibit D) will be made using curly brackets (“{ ... }”). The reference will point to the File # and Feature Class name listed in Exhibit D Table 1. For example, {7. ExFldHazard} points to File # 7, the feature class for Existing Flood Hazard.
3. **BCA Input Tool:** The TWDB funded and guided the development of a user-friendly benefit-cost analysis (BCA) input interface and analysis tool in the form of a spreadsheet document that works in conjunction with the FEMA BCA Toolkit. The BCA input tool is being provided alongside this guidance document.
4. **Data Hub:** To support the RFPs, the TWDB Flood Data team has assembled a wide array of flood-related data. The data, all of which come from publicly available sources, has been centralized into a single, easy-to-use Data Hub:

<https://twdb-flood-planning-resources-twdb.hub.arcgis.com/>

Figure 1: TWDB Flood Planning Data Hub



To download from the Hub, first navigate to the category by selecting the corresponding icon, and then select the data tile of interest. An index is also available [here](#).

Exhibit C: Technical Guidelines for Regional Flood Planning

1.6 General document cross-reference

Regional Flood Planning Contract Document References				2023 Regional Flood Plan Chapter, Associated TAC Sections, and Content		
TWDB Contract Reimbursement Accounting Number ('CAS')	Exhibit A – Scope of Work Task	Exhibit C – Technical Guidelines for Regional Flood Planning	Exhibit D – Data Submittal Guidelines for Regional Flood Planning (File # in Table 1): Required Spatial Data)	Regional Flood Plan Chapter Number	Primary TAC Section	General Content
1	1	1	1–6	1	361.30; 361.31; 361.32	Planning Area Description
2	2A	2	7–12	2	361.33	Existing Condition Flood Risk Analyses
3	2B		13–17		361.34	Future Condition Flood Risk Analyses
4	3A	3	--	3	361.35	Evaluation and Recommendations on Floodplain Management Practices
5	3B		18		361.36	Flood Mitigation and Floodplain Management Goals
6	4A	4	--	4	361.37	Flood Mitigation Needs Analysis
7	4C		1–18		Contract	Technical Memorandum
8	4B		19–22	5	361.38	Identification of Potential Flood Management Evaluations and Potentially Feasible Flood Management Strategies and Flood Mitigation Projects
9	5	5	23, 24		361.39	Evaluation and Recommendation of Flood Management Evaluations and Flood Management Strategies and Associated Flood Mitigation Projects
10	6A	6	--	6	361.40	Impacts of Regional Flood Plan
11	6B		--		361.41	Contributions to and Impacts on Water Supply Development and the State Water Plan
12	7	7	--	7	361.42	Flood Response Information and Activities
13	8	8	--	8	361.43	Administrative, Regulatory, and Legislative Recommendations
14	9	9	--	9	361.44	Flood Infrastructure Financing Analysis
15	10	10	--	10	361.21; 361.12(a)(4)	Public Participation and Plan Adoption

1.7 Definitions

Communities Served: the number of cities or other political divisions included in a flood project area or watershed.

Critical Facilities: Hospitals, schools (K through 12th), schools for children with special needs, fire stations, police stations, emergency shelters, water and wastewater treatment plants, power generating facilities, power transmitting facilities, assisted living facilities, nursing homes, and others as identified by RFPs. FEMA provides the following definition regarding critical facilities, described here in the FEMA glossary (www.fema.gov/glossary/critical-facility): "A critical facility provides services and functions essential to a community, especially during and after a disaster. Typical critical facilities include hospitals, fire stations, police stations, storage of critical records, and similar facilities. The State of Texas provides the following definition, as described here (statutes.capitol.texas.gov/Docs/GV/htm/GV.421.htm): "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 or the nation.

Flood Exposure: For the purposes of flood planning, flood exposure analyses will identify who and what might be harmed by flood including each structure located in flood hazard area within the region. FEMA defines 'exposure' as the people, property, systems, or functions that could be lost to a hazard. Generally, exposure includes what lies in the area the hazard could affect (FEMA, 2017).

Flood Hazard: For the purposes of flood planning, flood hazard analyses will determine the location, extent, magnitude, and frequency of flooding. FEMA defines a flood hazard as the potential for inundation that involves risk to life, health, property, and natural floodplain resources and functions. It is comprised of three elements: severity (magnitude, duration, and extent of flooding), probability of occurrence, and speed of onset of flooding (Wright, 2007).

Flood Readiness and Resilience: non-structural projects/programs aimed at improving flood preparedness and response to flood events including: plan activation, chain of command, emergency functions, evacuation procedures, flood early warning systems, and/or resilience measures to be implemented to reduce flood damage.

Flood Risk: Flood risk a component of hazard, exposure, and vulnerability. For the purposes of this regional flood planning effort, flood risk analyses will comprise a three-step process of flood hazard, flood exposure, and vulnerability analyses

Flood Vulnerability: For the purposes of flood planning, vulnerability analyses will identify vulnerabilities of communities and critical facilities located within the region. Social Vulnerability Index (SVI) is intended as the proxy for resilience for this planning cycle. FEMA defines vulnerability as the measure of the capacity to weather, resist, or recover from the impacts of a hazard in the long term as well as the short term. Vulnerability depends upon many factors such as land use, extent and type of construction, contents and use, the nature of populations (mobility, age, health), and warning of an impending hazardous event and willingness and ability to take responsive actions (Wright, 2007).

Level of Service of Asset (LOS): a measure of the level of protection a flood infrastructure asset provides in terms of annual exceedance probability.

Low Water Crossing (LWC): a roadway creek crossing that is subject to frequent inundation during storm events or subject to inundation during a 50 percent annual chance (2-year) storm event. During the first planning cycle, the RFPs have the flexibility to utilize the community's discretion to identify a roadway creek crossing as LWC.

Exhibit C: Technical Guidelines for Regional Flood Planning

Planning Level: Work performed for this study will generally be done at regional planning level. Planning level for an evaluation will support the decision to proceed with further study of the area. Planning level for a project will support the decision to proceed with design and funding of a project. Any required cost estimate will be at a planning level.

Population Served: estimate of population included in a flood project service area or watershed determined in GIS.

Project Service Area: limits of jurisdiction for a project (i.e., city, county, etc.). If project is multi-jurisdictional, it will include the sum of all jurisdictions included.

Remaining Life of Asset: the remaining time that a flood infrastructure asset is able to achieve an acceptable value of defined performance in terms of its serviceability function or structural strength with an assumed current and consistent level of O&M.

Repetitive Loss:² any insurable building for which two or more claims of more than \$1,000 were paid by the National Flood Insurance Program (NFIP) within any rolling 10-year period, since 1978.

Rural Project: Project that qualifies as rural per the definition provided in the “Prioritization” section of the [TWDB 2020 Flood Intended Use Plan](#) (FIUP) which is defined as a) all entities within the project benefit area are outside MSAs and have populations <10,000; or b) a district or municipality with a service area of 10,000 or less in population; or c) a county in which no urban area exceeds 50,000 in population.

Social Vulnerability Index (SVI): the U.S Centers for Disease Control and Prevention (CDC) SVI ranks each Census tract (subdivisions of counties) on 15 social factors, including poverty, lack of vehicle access, and crowded housing that influence a community’s ability to prepare for, respond to, and recover from a disaster.

² FEMA.gov definition

PART 2 – Scope of work task-specific general guidelines

This Part includes guidance sections specifically aligning with and addressing the following SOW tasks (corresponding agency rules are also shown for convenience and reference):

Task 1 – Planning area description (361.30, 361.31, 361.32)

Task 2 – Flood risk analyses

Task 2A – Existing condition flood risk analyses (361.33)

Task 2B – Future condition flood risk analyses (361.34)

Task 3 – Floodplain management practices and flood protection goals

Task 3A – Evaluation and recommendations on floodplain management practices (361.35)

Task 3B – Flood mitigation and floodplain management goals (361.36)

Task 4 – Assessment and identification of flood mitigation needs

Task 4A – Flood mitigation needs analysis (361.37)

Task 4B – Identification of potential flood management evaluations and potentially feasible flood management strategies and flood mitigation projects (361.38)

Task 4C – Prepare and submit technical memorandum

Task 5 – Evaluation and recommendation of flood management evaluations and flood management strategies and associated flood mitigation projects (361.39)

Task 6 – Impact and contribution of the regional flood plan

Task 6A – Impacts of regional flood plan (361.40)

Task 6B – Contributions to and impacts on water supply development and the state water plan (361.41)

Task 7 – Flood response information and activities (361.42)

Task 8 – Administrative, regulatory, and legislative recommendations (361.43)

Task 9 – Flood infrastructure financing analysis (361.44)

Task 10 – Public participation and plan adoption

Task 11 – Implementation and comparison to previous regional flood plan (361.45)

In general, each section of this Part 2 of the guidance document includes three parts:

1. A statement explaining the intended goal of each task.
2. An aggregation of largely verbatim excerpts from the most relevant agency rule sections and the SOW language associated with the work tasks, for convenience only. In some cases, rules and SOW were divided into multiple parts and slight modification occurred. All underlying agency rules and the SOW still apply to all work performed and supersedes the guidance document and should be referred back to regularly.
3. An 'Additional Guidance' section that may include:
 - a. Additional descriptions or background to assist in meeting the rule and SOW requirements and interpreting the intent of the rule and scope
 - b. Requirements that 'shall or must' be followed.
 - c. Suggested 'may or consider' language to assist RFPs in understanding ways to complete the work but that are not obligatory.
 - d. Examples presented to clearly illustrate what is expected and/or considered acceptable or preferable depending on the language used in the associated section.
 - e. References to "off-the-shelf" templates provided by the TWDB (MS Excel and GIS geodatabase template) so that regions and their consultants do not have to create them and to facilitate or organize the work effort and/or to ensure more consistent data presentation or submission across the state.
 - f. Data requirement references, including reference to Exhibit D, that must also be followed and met.

Exhibit C: Technical Guidelines for Regional Flood Planning

2.1 Task 1 – Planning area description (361.30, 361.31, 361.32)

This section is organized in several parts: goals, excerpts from relevant rules and scope of work, followed by additional guidance and submittal requirements.

Goals:

In general, the goal of this task is for RFPGs to describe the flood planning region, inventory and assess natural features and constructed major flood infrastructure, and describe proposed or ongoing flood mitigation projects in the region.

Information included in rules and scope of work:

Regional flood plans shall include brief, general descriptions of the following:

1. social and economic character of the region such as information on development, population, economic activity and economic sectors most at risk of flood impacts;
2. the areas in the FPR that are flood-prone and the types of major flood risks to life and property in the region;
3. key historical flood events within the region including associated fatalities and loss of property;
4. political subdivisions with flood-related authority and whether they are currently actively engaged in flood planning, floodplain management, and flood mitigation activities;
5. the general extent of local regulation and development codes relevant to existing and future flood risk;
6. agricultural and natural resources most impacted by flooding; and
7. existing local and regional flood plans within the FPR.

Regional flood plans shall include an **assessment of existing infrastructure**. Regional flood plans shall include a general description of the location, condition, and functionality of **natural features and constructed major infrastructure** within the FPR including, but not limited to:

1. rivers, tributaries, and functioning floodplains;
2. wetlands;
3. playa lakes;
4. sinkholes;
5. alluvial fans;
6. vegetated dunes;
7. levees;
8. sea barriers, walls, and revetments;
9. tidal barriers and gates;
10. stormwater tunnels;
11. stormwater canals;
12. dams that provide flood protection;
13. detention and retention ponds;
14. weirs;
15. storm drain systems; and
16. any other flood-related infrastructure.

For **non-functional or deficient** natural flood mitigation features or major flood infrastructure:

1. explain, in general, the reasons for the features or infrastructure being non-functional or deficient.

2. provide a description of the condition and functionality of the feature or infrastructure including whether and when the natural flood feature or major flood infrastructure may become fully functional, and
3. provide the name of the owner and operator of the major flood infrastructure.

Regional flood plans shall include a general description of the location, source of funding, and anticipated benefits of **proposed or ongoing flood mitigation projects in the FPR** including:

1. new structural flood mitigation projects currently under construction;
2. non-structural flood mitigation projects currently being implemented; and
3. structural and non-structural flood mitigation projects with dedicated funding to construct and the expected year of completion.

Regional flood plans shall include a tabulated list and GIS map of existing infrastructure and their conditions. Regional flood plans shall include a tabulated list and GIS map of proposed or ongoing flood mitigation projects currently under construction, being implemented; and with dedicated funding to construct and the expected year of completion.

Additional guidance:

The assessment of **existing major infrastructure and natural features** may be described in the form of overarching prose and general description of conditions along with the tabulated data of locations of types of infrastructure. The RFPs will have discretion in determining the scale of what constitutes “major” infrastructure to be included in the plan. For example, the inventory is not expected to include each small detention pond in a region, rather the major regional detention ponds. It should include all major public infrastructure.

A summary and location of all low water crossings (LWC) in the region identified by local communities must be included in Table 1.

For storm drain systems, identification of the existence, or not, of storm drainage systems and general location in each entity will suffice. For entities that do not have their drainage systems mapped, a general location and reference to the existence, or not, of storm drainage systems in each entity will suffice.

The summary of non-functional or deficient natural flood mitigation features or major flood infrastructure may be included in the same table and in a map format that includes general information on condition of infrastructure and owners.

Following are the definitions of functional, non-functional, and deficient infrastructure intended for this plan:

Functional: The infrastructure is serving its intended design level of service.

Non-functional: The infrastructure not providing its intended or design level of service

Deficient: The infrastructure or natural feature is in poor structural or non-structural condition and needs replacement, restoration, or rehabilitation.

While describing a deficient storm drain system or other infrastructure for an entity, RFPs shall include approximate percent deficiency of the storm drain system or the infrastructure in the description.

Regarding high hazard dams in the State, the RFPs must follow all state including the Texas Commission of Environmental Quality’s (TCEQ) confidentiality requirements associated with them.

Exhibit C: Technical Guidelines for Regional Flood Planning

Please refer to Exhibit D: Data Submittal Guidelines for GIS data and additional information requested for each infrastructure {3. ExFldInfraPol, 4. ExFldInfraLn, 5. ExFldInfraPt}.

RFPGs must submit information summarizing existing flood infrastructure and natural features utilizing Table 1 template provided below and the GIS geodatabase template provided by TWDB.

RFPGs must submit information summarizing proposed or ongoing flood mitigation projects {6. ExFldProjs} currently under construction, being implemented, or with dedicated funding to construct and the expected year of completion utilizing Table 2 template is provided below and the GIS geodatabase template will be provided by TWDB.

These are minimum reporting requirements however, an RFPG may present more information utilized in the development of their plan.

Table 1: Existing flood infrastructure summary table (with examples)

Existing Infrastructure ID	RFPG No.	RFPG Name	Counties	HUC8s	HUC12s ^B	Watersheds ^B	Feature Name	Infrastructure Type	Description	Natural or Constructed or Combination	Construction Date ^A	Infrastructure Dimensions ^A				
												Diameter (ft)	Height (ft)	Width (ft)	Length (ft)	Area (acre)
01000001	1	Canadian Upper Red	Flood	12090108	120901080403,120901080405	Catchment	City of Howdy Storm drain System	Storm drain systems	5,000ft of storm drainpipes of 1ft to 3ft diameter, 500 ft of constructed drainage ditches, 25 inlets.	Constructed	2005	1-3			5,000	
01000002	2	Canadian Upper Red	Flood	12090108	120901080403,120901080405	Basin	Lake Neal	Dam/ Reservoir	Regional flood control reservoir with 400,000 acre-ft of storage capacity.	Constructed	1965					15,000

A This field may be left blank during the 1st planning cycle. However, RFPGs are strongly encouraged to provide this information when applicable and available.

B Leave blank if too many for text field length (254 characters).

Information provided in this table are imaginary example datasets utilized to depict reporting structure. RFPGs are to assess and determine the existing infrastructure in their regions.

Existing flood infrastructure summary table (continued)

Existing Infrastructure ID	Level of Service (2-year, 10-year, 25-year, 50-year, 100-year, 500-year, Unknown)	Condition (Functional, Non-functional, Unknown)	Condition Description	Deficiency (Deficient, Non-deficient, Unknown)	Deficiency Description	Owning Entity	Operating Entity	Associated FMEs ^A	Associated FMSs ^A	Associated FMPs ^A
01000001	2-year	Non-functional	1200ft of the storm drain system does not meet the City requirement of 25-year LOS.	Deficient	500ft of pipes and approximately 12% of inlets are in poor condition.	City of Howdy	City of Howdy			
01000002	500-year	Functional		Unknown	NA	River Authority	River Authority			

^A This field may be left blank during the 1st planning cycle. However, RFPGs are strongly encouraged to provide this information when applicable and available.

Information provided in this table are imaginary example datasets utilized to depict reporting structure. RFPGs are to assess and determine the existing infrastructure in their regions.

Exhibit C: Technical Guidelines for Regional Flood Planning

Table 2: Summary of proposed or ongoing flood mitigation projects

Existing Project ID	RFPG No.	RFPG Name	Project Name	Description	Counties	HUC8s	HUC12s ^A	Watersheds ^A	Project Status	Project Cost	Dedicated Funding for Construction (Yes/No)	Source of Funding	Expected Year of Completion	Anticipated Benefit

^A Leave blank if too many for text field length (254 characters).

Summary of proposed or ongoing flood mitigation projects currently under construction, being implemented, and or with dedicated construction funding.

2.2 Task 2 – Flood risk analyses

This section is organized in several parts: goals, excerpts from relevant rules and scope of work, followed by additional guidance and submittal requirements.

Goals:

The goal of this section is for RFPGs to perform existing and future condition flood risk analyses for the region comprising:

1. flood hazard analyses that determine location, magnitude, and frequency of flooding;
2. flood exposure analyses to identify who and what might be harmed within the region; and
3. vulnerability analyses to identify vulnerabilities of communities and critical facilities.

Figure 2: Flood risk analyses

Perform existing and future condition **flood hazard analyses** to determine the location and magnitude of both 1.0% and 0.2% annual chance flood events



Develop existing & future condition **flood exposure analyses** to identify who and what might be harmed for both 1.0% and 0.2% annual chance flood events.

Perform existing & future condition **vulnerability analyses** to identify vulnerabilities of communities and critical facilities

2.2.A Task 2A – Existing condition flood risk analyses (361.33)

2.2.A.1 Existing condition flood hazard analysis

This task is intended to identify and compile a comprehensive outlook of existing condition flood hazards in the region including riverine flooding, urban flooding, coastal flooding, playa flooding and possible flood-prone areas of risks. This effort and the resulting map(s) are not regulatory in nature but are, instead, intended to gather and present a single, coherent, continuous set of best available information on actual flood risk throughout the region.

This task is primarily a data gathering and assessment task of all available flood hazard information, and determination of best available information for use in this first flood planning cycle. However, the RFPGs may choose to perform some limited modeling, as the available RFPG budget resources permit, to complete or improve the risk data coverage. The plan should incorporate findings from ongoing studies including but not limited to Texas General Land Office (GLO, www.glo.texas.gov) studies, other Flood Infrastructure Fund studies in the event that the study results become available in time for the RFPG to incorporate into the regional plan.

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Information included in rules and scope of work:

RFPGs shall perform existing condition flood hazard analyses to determine the location and magnitude of both 1% annual chance and 0.2% annual chance flood events as follows:

1. Collect data and conduct analyses sufficient to characterize the existing conditions for the planning area;
2. Identify areas within each FPR where hydrologic and hydraulic model results are already available and summarize the information including the age of the map and modeling information for each area;
3. Utilize best available data, hydrologic and hydraulic models for each area;
4. Prepare a map showing areas identified by the RFPG as having an annual likelihood of inundation of more than 1% and 0.2%, the areal extent of this inundation, and the sources of flooding for each area; and
5. Prepare a map showing gaps in inundation boundary mapping and identify known flood-prone areas based on location of hydrologic features, historic flooding and/ or local knowledge.

Additional guidance:

To assist the RFPGs in this effort, the TWDB has prepared a statewide, ArcGIS dataset that compiles the most recent flood hazard data of riverine and coastal flooding available in Texas, which we are referring to as the initial, statewide “floodplain quilt”. The RFPGs are expected to utilize this information just as a default starting point but will need to review and potentially re-prioritize the quilt data as appropriate by location and incorporate additional information available in their respective regions. Local regulatory floodplains located in any area will supersede the other less detailed floodplain coverages for the same location. The RFPG, with the support of their technical consultant, must assess the quality of the flood risk coverage data for each location and determine the best available information for use in the plan.

Please refer to Part 3 Technical Guidance of this document for more information regarding the initial riverine and coastal flooding risk data compilation by TWDB or the initial, statewide floodplain quilt to be utilized as a starting point for this task. Section 3.5 provides detail on modeling and mapping, including discussion of Atlas 14 data.

Please refer to the Section 3.5 of this document for the mapping and modeling guidance.

The following types of flooding hazard data must be considered and included as follows:

Riverine flooding:

Riverine flooding is caused by bank overtopping when the flow capacity of rivers is exceeded locally. The rising water levels generally originate from high-intensity rainfall creating soil saturation and large volumes of runoff either locally and/or in upstream watershed areas.

RFPGs will identify the best available riverine floodplain maps for each watershed in the region based on date, detail, and accuracy of modeling and mapping and include that in the existing condition flood hazard feature {7. ExFldHazard}.

Pluvial flooding including Urban flooding:

Urban flooding is caused when the inflow of stormwater in urban areas exceeds the capacity of drainage systems to infiltrate stormwater into the soil or to carry it away. The inflow of stormwater results from (a) heavy rainfall, which can collect on the landscape (pluvial flooding) or cause rivers and streams to overflow their banks and inundate surrounding areas; or (b) storm surge or high tides, which push water onto coastal cities. Floodwater inundation and movement are influenced by (a) land development, which disturbs natural drainage patterns and creates hardened, impervious surfaces that inhibit

infiltration of stormwater; and (b) stormwater systems that are undersized for current needs and thus increase exposure to drainage hazards. (National Academies of Sciences, Engineering, and Medicine, 2019).

RFPGs will identify known localized and urban flooding areas for each watershed in the region based on date of source data, detail and accuracy of modeling and mapping, and include that in the existing condition flood hazard feature {7. ExFldHazard}.

Note that the TWDB anticipates that the initial statewide floodplain quilt provided to the RFPGs will not include localized or urban flood risk information.

Coastal flooding:

Coastal flooding occurs when normally dry, low-lying land is flooded by seawater. RFPGs will identify the best available coastal floodplain maps for each watershed in the region based on date of source data, detail and accuracy of modeling and mapping, and include that in the existing condition flood hazard feature {7. ExFldHazard}.

Possible flood prone areas:

These are areas to be identified by the RFPG, that have not been previously identified as mapped flood hazard areas, and are identified, for example, by local knowledge of historic flooding. This would include areas identified via input received during public meetings.

Once the RFPGs have identified all available riverine, urban, coastal, and other flood-prone areas in the region, an initial, comprehensive region map must be created identifying all of these flood risk areas and made available for the public to view for their input.

Utilizing this initial flood hazard map, at least one public meeting must be held to identify additional flood hazards in the region that may not have been identified in the initial map(s) generated by the RFPG. It is recommended that the initial flood hazard map be posted on the RFPG webpage for public input as well. This public meeting should occur only after the RFPG and their consultant have already identified and summarized the initial existing flood risk information on a map. This initial, easily legible, and clearly identified flood risk map should be shared at these public meetings to allow members of the public to identify, and preferably in some manner mark or label, the locations of any flood risk (including the approximate date of occurrence) that may not have already been identified or otherwise captured in the initial map. This meeting can also be utilized for other purposes including, for example, to receive other relevant stakeholder feedback as well.

Another area for RFPG consideration is levee protected areas area subject to internal flooding or ponding due to lack of pumping capacity when there is not a gravity outfall available.

Using the initial risk map and considering the public feedback, RFPGs will identify the full extent of likely flood prone areas within each region, including with associated data source and event date information for identification of the flood risk, and include that in the existing condition flood hazard feature/map. {7. ExFldHazard}.

Gap analysis:

Once identification of flood hazard locations and flood prone areas is completed, RFPGs will prepare a map showing any remaining gaps in flood risk inundation boundary mapping and will identify known flood-prone areas based on the location of hydrologic features, historic flooding and/or local knowledge for areas that lack modeling and mapping. This gap analysis should identify areas with, for example, clearly outdated modeling and/or mapping, absence of modeling and/or mapping, and areas with modeling and/or mapping that requires update. These areas should be identified as polygon features. The RFPGs will need to review conflicting or overlapping datasets to determine which is considered

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“best available” for each area within the region. Gaps in mapping identified in this task can be later recommend as locations for potential Flood Management Evaluations in Task 4B.

RFPGs are to utilize their own discretion in deciding which flood risk information is outdated since this will depend on various factors including but not limited to date of existing hydrologic and hydraulic (H&H) models and mapping, change of land use and impervious cover in the area, change in rainfall pattern and availability of updated hydrology information.

Submittal requirements:

1. General description of and GIS coverage map of comprehensive existing condition flood risk in the region with identification of each type of flooding (e.g., riverine, coastal etc.).
2. Total land areas (square miles) of each flood risk by flood risk type, county, region, and frequency should be summarized.
3. All data identified in data submittal requirements. Please refer to the Exhibit D Data Submittal Guidelines for information required to be provided.
4. The TWDB will provide a GIS geodatabase template for the RFPGs to fill in with region-specific data. The geodatabase template will be pre-populated with all feature classes and fields but will not have any data.
5. One GIS data layer (Existing Condition Flood Hazard {7. ExFldHazard}) that shows boundaries of 1 percent and 0.2 percent annual chance riverine flood risk, urban flood risk, coastal flood risk and possible flood prone area. The boundaries should have attributes identifying flood risk type, frequency of flooding, source of data, owner of the source of data, date of analysis performed, date of mapping performed, whether data was collected via written or oral public input and date of public meeting or data collection. **The 0.2 percent annual chance flood risk layer should not incorporate the 1 percent annual chance flood risk area to avoid overlapping polygons** (the 0.2 percent annual chance floodplain layer will have donut holes for 1 percent annual chance floodplain).
6. One GIS data layer {8. Fld_Map_Gaps} that shows the gaps in inundation boundary mapping.
7. All maps must be submitted with underlying GIS data utilized to prepare them.

2.2.A.2 *Existing condition flood exposure analysis*

Once identification of flood hazard locations is completed, all structures located within the 1 percent, 0.2 percent annual chance flood risk areas and possible flood prone areas should be determined via GIS analyses (i.e., intersecting the flood hazard layer with GIS data features including but not limited to buildings, roadways, population estimate, agricultural areas, etc.). Determination of roadway crossings at risk of flooding will require consideration of water surface elevations during the storm events and the roadway deck elevation of the roadway crossing. RFPGs will identify the low water crossings (LWC) amongst all the roadway crossings in 1 percent annual chance flood risk. For the first planning cycle, it will suffice to include the LWCs identified in in Task 1.

This analysis should include determinations of day and night population estimates that are located within the flood hazard areas; with the higher of the day or night estimate to be utilized in estimating the population in the floodplain or in flood-prone area. **The RFPGs may request the TWDB to perform analysis to estimate population** in the floodplain or in flood prone areas. RFPGs will provide their existing condition flood hazard layer to the TWDB for computation of population estimate in flood hazard areas.

Please refer to the Section 3.4 of this document for additional guidance for determination of population estimate.

Information included in rules and scope of work:

The RFPGs shall develop high-level, region-wide and largely GIS-based, existing condition flood exposure analyses, using the information identified in the flood hazard analysis to identify who and what might be harmed within the region for, at a minimum, both 1% annual chance and 0.2% annual chance flood events as follows:

1. analyses of existing development within the existing condition floodplain and the associated flood hazard exposure;
2. for the floodplain as defined by FEMA or as defined by an alternative analysis if the FEMA-defined floodplain is not considered best available; and
3. may include only those flood mitigation projects with dedicated construction funding and scheduled for completion prior to adoption of the next state flood plan.
4. all existing condition flood exposure analyses shall consider the population and property located in areas where existing levees or dams do not meet FEMA accreditation as inundated by flooding without those structures in place. Provisionally accredited structures may be allowed to provide flood protection, unless best available information demonstrates otherwise.
5. The existing condition flood exposure analyses shall consider available datasets to estimate the potential flood hazard exposure including, but not limited to:
 - a. number of residential properties and associated population;
 - b. number of non-residential properties;
 - c. other public infrastructure;
 - d. major industrial and power generation facilities;
 - e. number and types of critical facilities;
 - f. number of roadway crossings;
 - g. length of roadway exposed; and
 - h. agricultural area and value of crops exposed.
6. The existing condition flood exposure analyses shall include a qualitative description of expected loss of function, which is the effect that a flood event could have on the function of inundated structures (residential, commercial, industrial, public, or others) and infrastructure, such as transportation, health and human services, water supply, wastewater treatment, utilities, energy generation, and emergency services.

Submittal requirements:

1. General description, summary, and GIS coverage map of buildings, roadway crossings, length of roadway segments, agricultural land and other identified items that are located within the flood hazard area identified in 'Existing condition flood hazard analysis'. This required information should be summarized by region, type of flood risk, county, Hydraulic Unit Code (HUC)-8, existing flood authority boundaries as applicable and other categories as determined by RFPGs.
2. All data identified in data submittal requirements. Please refer to the Exhibit D Data Submittal Guidelines for information required to be provided.
3. The TWDB will provide a GIS geodatabase template for the RFPGs to fill in with region-specific data. The geodatabase template will be pre-populated with all feature classes and fields but will not have any data.
4. GIS data layers {9. ExFldExpPol, 10. ExFldExpLn, 11. ExFldExpPt} that identify residential properties and associated population, non-residential properties, public infrastructure, major industrial and power generation facilities, critical facilities and with descriptions, roadway crossings, roadway segments and their respective lengths, and agricultural area and value of

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crops exposed that are at risk of, both 1 percent annual chance and 0.2 percent annual chance flood events.

5. Structures within the boundary of flood events occurring more frequently or less frequently than the 1 percent or 0.2 percent annual exceedance probability (e.g., 0.4, 2, 4, 10, or 50 percent) can be identified at the discretion of the RFPG.
6. All maps must be submitted with the underlying GIS data utilized to prepare them.

2.2.A.3 Existing condition vulnerability analysis

Once the existing flood exposure analysis is completed, the populations and structures exposed to flooding within the identified hazard layer should be analyzed to determine their vulnerability to flooding.

This task requires the RFPGs to identify the critical infrastructure amongst the items identified in the flood exposure analysis and compute Social Vulnerability Index (SVI) value for each structure identified in during the flood exposure analysis. The U.S Centers for Disease Control and Prevention calculates SVI using 15 U.S. census variables to help local officials identify communities that may need support before, during, or after disasters (www.atsdr.cdc.gov/placeandhealth/svi/index.html). SVI is intended as the proxy for resilience for this planning cycle. The higher the SVI, the higher the vulnerability; the lower the SVI, the higher the resilience.

TWDB will provide the RFPGs building data with SVI values identified for each building.

This flood planning guidance document is asking for minimal information pertaining to the vulnerability analysis for this planning cycle. The RFPGs may, at their discretion, incorporate more information for their region. For reference, FEMA's release of the National Risk Index provides a risk score at the census block level and takes into account resilience (www.fema.gov/flood-maps/products-tools/national-risk-index)

Information included in rules and scope of work:

1. RFPGs shall identify resilience of communities located in flood-prone areas identified as part of the existing condition flood exposure analyses, utilizing relevant data and tools.
2. RFPGs shall identify vulnerabilities of critical facilities to flooding by looking at factors such as proximity to a floodplain or other bodies of water, past flooding issues, emergency management plans, and location of critical systems like primary and back-up power.

All data produced as part of the existing condition flood exposure analysis and the existing condition vulnerability analysis shall include:

1. underlying flood event return frequency;
2. type of flood risk;
3. county;
4. HUC-8;
5. existing flood authority boundaries;
6. Social Vulnerability Indices for counties and census tracts; and
7. other categories as determined by RFPGs or to be designated by the EA.

The information developed by the RFPG under this section shall be used to assist the RFPG establish priorities in subsequent planning tasks, to identify areas that need FMEs, and to efficiently deploy its resources.

Additional guidance:

Specific information for some critical facilities may be subject to U.S. Homeland Security restrictions with regard to sharing data.

Computation of SVI:

The SVI will already be computed in the buildings data provided by TWDB. For any new buildings, use the following procedure:

1. Download the 2018 SVI shapefile for Texas, available through the TWDB Flood Planning Data Hub. The shapefile contains SVI information for each of the individual census tracts in Texas.
2. Overlay the exposure feature layer {12. ExFldExpAll} with the SVI shapefile. The SVI for each census tract is reported in the GIS field "RPL_themes". This field has values between 0 and 1, with a high score (closer to 1) denoting greater vulnerability.
3. Compute SVI value for all features (structure, low water crossings, critical infrastructure etc.) identified in the exposure feature layer.

Submittal requirements:

1. Summary and general description of critical infrastructure in the region, SVI average per County, and locations of high SVI areas (over 0.75) within the region.
2. GIS coverage map of all critical infrastructure in region.
3. GIS coverage map of all features (structure, low water crossings, critical infrastructure etc.) with high SVI (over 0.75) in the region.
4. Please refer to the Exhibit D: Data Submittal Guidelines for information requested.
5. GIS data layer {12. ExFldExpAll} that identifies critical facilities including any schools (K-12), hospitals, police stations, fire stations etc. located in region.
6. GIS data layer {12. ExFldExpAll} that identifies SVI for each item (structure, low water crossing, critical infrastructure etc.) identified in Existing Condition Flood Exposure Analysis.

Once Task 2A Existing Condition Flood Risk Analyses is complete, RFPGs must include a summary table with findings summarizing flood risk by county (template below).

These are minimum reporting requirements, however, an RFPG may present additional information utilized in the development of their plan.

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Table 3: Existing condition flood risk summary table (by county)

	County	Area in Flood Planning Region (sqmi)	1% annual chance flood risk								0.2% annual chance flood risk							
			Area in Floodplain (sqmi)	Number of Structures in Floodplain	Residential Structures in Floodplain	Population	Roadway Stream Crossings (#)	Roadways Segments (miles)	Agricultural Areas (sqmi)	Critical Facilities (#)	Area in Floodplain (sqmi)	Number of Structures in Floodplain	Residential Structures in Floodplain	Population	Roadway Stream Crossings (#)	Roadways Segments (miles)	Agricultural Areas (sqmi)	Critical Facilities (#)
1																		
2																		
3																		
4																		
5																		
	Total	0	0	0		0	0	0	0	0	0	0		0	0	0	0	0

Existing condition flood risk summary table (continued)

	County	Area in Flood Planning Region (sqmi)	Possible flood prone areas								Average SVI of features in floodplain or flood prone areas
			Area (sqmi)	Number of Structures in Flood-Prone Area	Residential Structures in Flood-Prone Area	Population	Roadway Stream Crossings (#)	Roadways Segments (miles)	Agricultural Areas (sqmi)	Critical Facilities (#)	
1											
2											
3											
4											
5											
	Total	0	0	0		0	0	0	0	0	

2.2.B Task 2B – Future condition flood risk analyses (361.34)

Information included in rules and scope of work:

RFPGs shall perform future condition flood risk analyses for the region comprising:

1. flood hazard analyses that determines location, magnitude and frequency of flooding;
2. flood exposure analyses to identify who and what might be harmed within the region; and
3. vulnerability analyses to identify vulnerabilities of communities and critical facilities.

Additional guidance:

The future condition flood risk analysis shall include two scenarios/components:

1. Increased Flood Hazard: Identification of the future condition flood hazard layer based on a projected increase in impervious cover, anticipated change in relative sea level and/or land subsidence, anticipated sedimentation in flood control structures, and other factors that may result in increased or altered flood hazards in the future. Flood exposure and vulnerability analyses will be performed based on that future condition flood hazard layer.
2. Additional Exposure/Vulnerability: Identification of areas of existing and known flood hazard and future flood hazard areas where development might occur within the next 30 years if the current land development practices in the region continues.

The RFPGs must perform a future condition flood risk analysis for the first scenario listed above. For the second scenario, the RFPGs shall consider future development within the planning region. This shall include a summary and qualitative description of the potential areas located within the existing flood hazard area that face an increase in future flood risk due to placement of new development in the area will suffice. However, it is up to the RFPGs discretion to determine further extent and depth of this analysis.

2.2.B.1 *Future condition flood hazard analysis*

This task is intended to identify and compile a comprehensive outlook of future condition flood hazards in the region including riverine flooding, urban flooding, coastal flooding, playa flooding and other possible flood-prone areas of risks including how they will change in extent and nature from the existing flood hazard.

First step of this task will be to identify areas within each FPR where future condition hydrologic and hydraulic model results and maps are already available, and to summarize the information; it is recognized that the future condition may vary from one watershed to another within a region. The Plan should document the source of flood hazard data, associated dates, timeframe of future condition (fully developed land use condition, 30-year., 50-year., etc.) and a brief description of each existing dataset compiled for the future condition flood hazard analysis.

The RFPGs are encouraged to consider future rainfall patterns including specific information provided by the State of Texas climatologist on future condition rainfall pattern (Nielsen-Gammon, 2020; Nielsen-Gammon and Jorgensen, 2021; available from climatexas.tamu.edu/products/texas-extreme-rainfall/index.html).

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For areas where future condition flood hazard data is not already available, future condition flood hazard analyses may be performed utilizing one of the following four methods³: The RPGs may request TWDB to do a desktop analysis to generate future condition flood hazard boundary where future condition information is not available.

1. Method 1: Increase water surface elevation based on projected percent population increase (as proxy for development of land areas)
2. Method 2: Utilize the existing condition 0.2 percent annual chance floodplain as a proxy for the future 1 percent level
3. Method 3: Combination of methods 1 and 2 or an RFPG-proposed method
4. Method 4: Request TWDB for a Desktop Analysis

Additional information on each of these methods are provided below.

Information included in rules and scope of work:

RFPGs shall perform a future condition flood hazard analysis to determine the location of both 1% annual chance and 0.2% annual chance flood events as follows:

1. collect data and conduct analyses sufficient to characterize the future conditions for the planning area based on a "no-action" scenario of approximately 30 years of continued development and population growth under current development trends and patterns, and existing flood regulations and policies based on:
 - a. current land use and development trends and practices and associated projected population based on the most recently adopted state water plan decade and population nearest the next Regional Flood Plan adoption date plus approximately 30 years or as available at the geographic area;
 - b. reasonable assumptions regarding locations of residential development and associated population growth;
 - c. anticipated relative sea level change and subsidence based on existing information;
 - d. anticipated changes to the functionality of the existing floodplain;
 - e. anticipated sedimentation in flood control structures and major geomorphic changes in riverine, playa, or coastal systems based on existing information;
 - f. assumed completion of flood mitigation projects currently under construction or that already have dedicated construction funding; and
 - g. other factors deemed relevant by the RFPG.
2. identify areas within each FPR where future condition hydrologic and hydraulic model results are already available and summarize the information;
3. utilize best available data, hydrologic and hydraulic models for each area;
4. where future condition results are not available, but existing condition hydrologic and hydraulic model results are already available, the RFPGs shall modify hydraulic models to identify future conditions flood risk for 1% and 0.2% annual chance storms based on simplified assumptions utilizing the information identified in paragraph (1)(A) item 1.a of this subsection.
5. prepare a map showing areas of 1% and 0.2% annual chance of inundation for future conditions, the areal extent of this inundation, and the sources of flooding for each area.

³ These estimated flood plain changes will be used solely for the purpose of recognizing the *general magnitude* of potential future increases in flood risk under the equivalent of a "do-nothing" or "no-action" alternative and within the regional flood planning context will not, in any way, be used for developing new flood extent maps for any regulatory purposes.

6. prepare a map showing gaps in inundation boundary mapping and identify known flood-prone areas based on location of hydrologic features, historic flooding, and/ or local knowledge.

Additional guidance:

For areas where future condition flood hazard data is not already available, future condition flood hazard analyses may be performed utilizing one of the following four methods:

Method 1: Increase water surface elevation based on projected percent population increase (as proxy for development of land areas)

Relate the increase in population in contributing draining area to stream segments and relate the percent increase in population growth to percent increase in impervious cover, resulting in an increase in water surface elevation (WSE). This relationship between population growth and resulting changes to flood event elevations will require certain assumptions about development and estimating correlations between impervious cover changes and changes to flood elevations and will vary based on topography, land use and soil type within a watershed. The RFPs are expected to establish this general relationship for their region or by watershed area and document the assumptions made for this approach (Brophy-Price and Rolband, 2010). It is also acknowledged that increase in population growth may not always result in increase in impervious cover. However, this is one of the simplified approaches that can be utilized for an approximation. The population projection information for the regions will be provided by the TWDB based on the most recently adopted state water plan. Table 4 shows an example relationship.

Table 4: Example relationship between 30-year population growth, impervious cover and increase in flood water surface elevation

Estimated Population increase within watershed	Estimated, corresponding Increase in Impervious Cover	Estimated, corresponding Increase in Water Surface Elevation for a 1% annual Chance Event (ft)	Estimated, corresponding Increase in Water Surface Elevation for a 0.2% annual Chance Event (ft)
1%	2%	0.1	0.05
5%	7%	0.25	0.1
10%	12%	0.5	0.25
15%	17%	0.75	0.5
25%	25%	1.0	0.75

This table is provided only as a conceptual example and does not reflect any recommended comparison based on any real data. The RFPs are expected to establish this, potentially non-linear, relationship for their region or multiple areas within their region.

Map the future condition 1 percent and 0.2 percent annual chance floodplain utilizing the increased water surface elevation. Provide data, justify, and document the correlation developed between increase in population to increase in impervious cover to increase in WSE.

The proposed approach must be well-documented.

Method 2: Utilize the existing condition 0.2 percent annual chance floodplain as a proxy for the future one percent level

As a simple proxy, the RFP may, for some areas, consider using the existing condition 0.2 percent annual change floodplain as the future condition 1 percent annual chance floodplain. This method has the benefit of having a reliable 0.2 percent annual chance floodplain backed by modeling and mapping. However, this method will not generate a future condition 0.2 percent annual chance floodplain.

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RFPGs will have to utilize an alternate approach to develop a proxy for the 0.2 percent annual chance future condition floodplain, such as adding freeboard (vertical) or buffer (horizontal) estimates. The decision on what specific approach or values to use, which may vary within the region (e.g., for urban vs rural areas), for these estimates will be up to the RFPGs, but technical justification should be provided to explain how the estimates were developed. This method cannot be applied to flood risk areas that do not already have a delineated existing condition 0.2 percent annual chance floodplain, (i.e., flood-prone areas).

This approach would generally be more appropriate for urban/suburban areas with high growth rates and may not be applicable for areas with minimal to no growth.

The proposed approach must be well-documented.

Method 3: Combination of methods 1 and 2 or an RFPG-proposed method

RFPGs may utilize a combination of the methods identified above or may propose an alternative method to determine comprehensive future condition flood risk for their region.

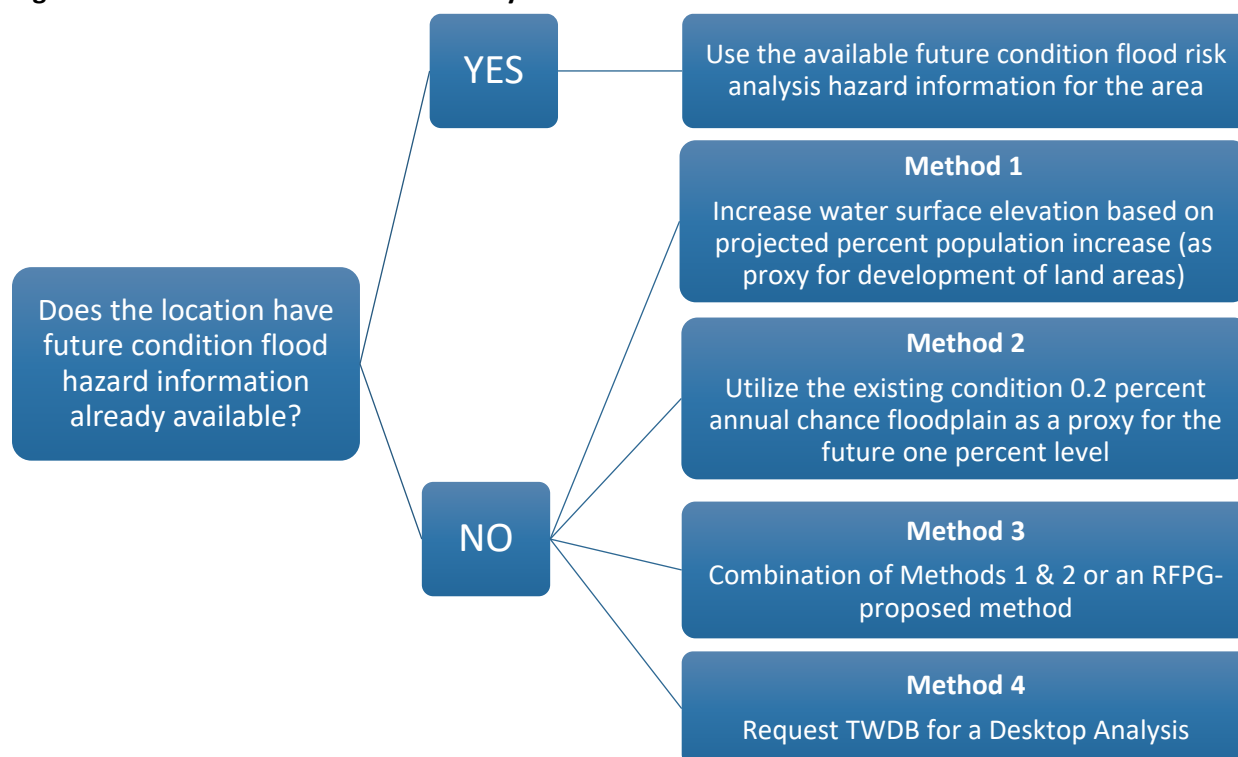
The proposed approach must be well-documented, and the approach or method requires preview and written approval by the EA (e.g., via email) of proposed assumptions, process, and justification prior to proceeding with carrying out such a proposed combination and/ or new method.

Method 4: Request TWDB for a Desktop Analysis

The RFPGs may request TWDB to do a desktop analysis to generate future condition flood hazard boundary where future condition information is not available. The RFPGs will provide TWDB with the existing condition flood hazard area boundary, and additional information to determine the preferred method for desktop analysis.

Please refer to the flowchart in Figure 3 for future condition flood risk analyses options.

Figure 3: Future condition flood risk analysis flowchart



Submittal requirements:

1. General description and GIS coverage map of comprehensive future condition flood risk in the region with identification of each type of flooding (e.g., riverine, coastal etc.).
2. A GIS coverage map showing the extent of increase if flood hazard compared to existing condition.
3. Total land areas (square miles) of flood risk by flood risk type, counties, regions, and frequency should be summarized in a table.
4. All data identified in the data submittal requirements. Please refer to the Exhibit D: Data Submittal Guidelines for information required to be provided.
5. The TWDB will provide a GIS geodatabase template for the RFPs to fill in with region-specific data. The geodatabase template will be pre-populated with all feature classes and fields but will not have any data.
6. GIS data layer that shows boundaries of future condition 1 percent and 0.2 percent annual chance riverine flood risk, urban flood risk, coastal flood risk and possible flood prone area {13. FutFldHazard}. The boundaries should have attributes identifying flood risk type, frequency of flooding, source of data, owner of the source of data, date of analysis performed, date of mapping performed, if data collected via public input, data of public meeting or data collection. The 0.2 percent annual chance flood risk layer should not incorporate the 1 percent annual chance flood risk area to avoid overlapping polygons (the 0.2 percent annual chance floodplain layer will have donut holes for 1 percent annual chance floodplain).
7. All maps should be submitted with underlying GIS data utilized to prepare them in accordance with the contract guidance documents.

2.2.B.2 Future condition flood exposure analysis

Once identification of future condition flood hazard locations is completed, all structures located within the 1 percent, 0.2 percent annual chance flood risk areas, and possible flood prone areas should be determined via GIS analyses (i.e., intersecting the flood hazard layer with GIS data features including but not limited to buildings, roadways, population estimate, agricultural areas, etc.). Determination of low water crossings at risk of flooding will require consideration of water surface elevations during the storm events and the roadway deck elevation of the roadway crossing. RFPs will identify the low water crossings (LWC) amongst all the roadway crossings in 1% annual chance flood risk. For the first planning cycle, it will suffice to include the LWCs identified in Task 1.

This analysis should include determinations of day and night population estimates that are located within the flood hazard areas; with the higher of the day or night estimate to be utilized in estimating the population in the floodplain or in flood-prone area. The procedure outlined in 2.2.A.2 for calculating exposed population also applies for future condition, except a future hazard layer should be used instead of the current condition.

Information included in rules and scope of work:

The RFPs shall use the information identified in the future condition flood hazard analysis to develop and perform high-level, region-wide, and largely GIS-based, future condition flood exposure analyses to identify who and what might be harmed within the region for, at a minimum, both future condition 1.0% annual chance and future condition 0.2% annual chance flood events as follows:

1. analyses of existing and future developments within the future condition floodplain and the associated flood hazard exposure; and

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|---|
| <ol style="list-style-type: none"> 2. to include only those flood mitigation projects with dedicated construction funding scheduled for completion prior to the next Regional Flood Plan adoption date plus 30 years or as determined in Task 1 – Planning area description. 3. Identification of flood prone areas associated with the hazard exposure analyses shall be based on analyses that rely primarily on the use and incorporation of existing and available: <ol style="list-style-type: none"> a. FIRMs or other flood inundation maps and GIS related data and analyses; b. available hydraulic flood modeling results; c. model-based or other types of geographic screening tools for identifying flood prone areas; and d. other best available data or relevant technical analyses that the RFPG determines to be the most updated or reliable. |
|---|

Submittal requirements:

1. General description, summary, and GIS map of buildings, roadway crossings, length of roadway segments, agricultural land and other identified items that are located within the flood hazard area identified in 'Future condition flood hazard analysis'. This required information should be summarized by region, type of flood risk, counties, HUC-8, existing flood authority boundaries, as applicable, and other categories as determined by RFPGs.
2. General description and GIS coverage map of additional total areas, structures, population, agricultural land etc. added to 1 percent and 0.2 percent annual chance flood risk in the 30 years based on future condition flood risk analyses.
3. All data identified in data submittal requirements. Please refer to the Exhibit D: Data Submittal Guidelines for information required to be provided.
4. The TWDB will provide an empty GIS geodatabase template for the RFPGs to fill in with region-specific data. The geodatabase will be pre-populated with all feature classes and fields.
5. GIS data layers that identify residential properties and associated population, non-residential properties, public infrastructure, major industrial and power generation facilities, critical facilities and what they are, roadway crossings, length of roadway segments and their respective lengths, and agricultural areas and value of crops exposed that are at risk of, both 1 percent annual chance and 0.2 percent annual chance flood events. {14. FutFldExpPol, 15. FutFldExpLn, 16. FutFldExpPt}
6. Structures at risk of storm frequency events other than future 100-year and 500-year (1 percent and 0.2 percent annual chance event) such as 2-year, 5-year, 10-year, 25-year, and 50-year storm events can be provided at the RFPGs discretion.
7. All maps must be submitted with the underlying GIS data utilized to prepare them.

2.2.B.3 Future condition vulnerability analysis

Once the future condition flood exposure analysis is completed, the populations and structures exposed to flooding within the identified hazard layer should be analyzed to determine their vulnerability to flooding.

This task requires the RFPGs to identify, describe, and summarize vulnerability of the critical infrastructure amongst the items identified in flood exposure analysis. Also, RFPGs shall compute the Social Vulnerability Index (SVI) value for each structure in the floodplain and flood-prone areas identified in during the flood exposure analysis. SVI is intended to serve as the proxy for resilience for this planning cycle. The higher the SVI, the higher the vulnerability; the lower the SVI, the higher the resilience.

TWDB will provide the RFPGs building data with CDC's SVI values identified for each building. This guidance document requires a rather minimal amount of information pertaining to the vulnerability

analysis for this first planning cycle. The RFPGs may, at their discretion, incorporate more information for their region.

Information included in rules and scope of work:

1. RFPGs shall identify resilience of communities located in flood-prone areas identified in the future condition flood exposure analysis utilizing relevant data and tools.
2. RFPGs shall identify vulnerabilities of critical facilities to flooding by looking at factors such as proximity to a floodplain, proximity to other bodies of water, past flooding issues, emergency management plans, and location of critical systems like primary and back-up power.

All data produced as part of the future condition flood hazard analysis and future condition flood exposure analysis shall be summarized in the Regional Flood Plan in accordance with guidance provided by the EA in this technical guidance document and shall include:

1. underlying flood event return frequency;
2. type of flood risk;
3. county;
4. HUC-8;
5. existing flood authority boundaries;
6. Social Vulnerability Indices for counties and census tracts; and
7. other categories to be designated by the EA.

The information developed by the RFPG under this section shall be used to assist the RFPG establish priorities in subsequent planning tasks, to identify areas that need FMEs, and to efficiently deploy its resources.

Additional guidance:

Computation of SVI:

1. Download the [2018 SVI shapefile for Texas](#), available through the TWDB Flood Planning [Data Hub](#). The shapefile contains SVI information for each of the individual census tracts in Texas.
2. Overlay the exposure feature layer with the SVI shapefile. The SVI for each census tract is reported in the GIS field "RPL_themes". This field has values between 0 and 1, with a high score (closer to 1) denoting greater vulnerability.
3. Compute SVI value for all features (structure, low water crossings, critical infrastructure etc.) identified in the exposure feature layer.

Submittal Requirements:

1. Summary and general description of critical infrastructure in the region and SVI average per County, and locations of high SVI areas within the region.
2. GIS coverage map of all critical infrastructure in region.
3. GIS coverage map of all features (structure, low water crossing, critical infrastructure etc.) with high SVI (over 0.75) in the region.
4. Please refer to the Exhibit D: Data Submittal Guidelines for information requested.
5. GIS data layer {17. FutFldExpAll} that identifies critical facilities including any schools, hospitals, police stations, fire stations etc. located in region.
6. GIS data layer {17. FutFldExpAll} that identifies SVI for each feature (structure, low water crossing, critical infrastructure etc.) identified in Future Condition Flood Exposure Analysis.

Once Task 2B Future Condition Flood Risk Analyses is complete, the plan must include a summary table with findings (template below).

Exhibit C: Technical Guidelines for Regional Flood Planning

These are minimum reporting requirements however, an RFPG may present additional information utilized in the development of their plan.

Table 5: Future condition flood risk summary table, by county.

	County	Area in Flood Planning Region (sqmi)	1% annual chance flood risk								0.2% annual chance flood risk							
			Area in Floodplain (sqmi)	Number of Structures in Floodplain	Residential Structures in Floodplain	Population	Roadway Stream Crossings (#)	Roadways Segments (miles)	Agricultural Areas (sqmi)	Critical Facilities (#)	Area in Floodplain (sqmi)	Number of Structures in Floodplain	Residential Structures in Floodplain	Population	Roadway Stream Crossings (#)	Roadways Segments (miles)	Agricultural Areas (sqmi)	Critical Facilities (#)
1																		
2																		
3																		
4																		
5																		
	Total	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0

Future condition flood risk summary table (continued)

	County	Area in Flood Planning Region (sqmi)	Possible flood prone areas							
			Area in Floodplain (sqmi)	Number of Structures in Flood-Prone Area	Residential Structures in Flood-Prone Area	Population	Roadway Stream Crossings (#)	Roadways Segments (miles)	Agricultural Areas (sqmi)	Critical Facilities (#)
1										
2										
3										
4										
5										
	Total	0	0	0	0	0	0	0	0	0

2.3 Task 3 – Floodplain management practices and flood protection goals

This section is organized in several parts: goals, excerpts from relevant rules and scope of work, followed by additional guidance and submittal requirements.

2.3.A Task 3A – Evaluation and recommendations on floodplain management practices (361.35)

Goals:

The goal of this task is for RFPGs to evaluate and make recommendations on floodplain management practices within the flood planning region. The intent of regional flood planning is twofold,

- 1. identify and reduce the risk and impact to life and property that already exists and, importantly,
- 2. avoid increasing or creating new flood risk by addressing future development within the areas known to have existing or future flood risk.

Floodplain management, land use, infrastructure design, and other practices play a key role in accomplishing both of these intents, specifically in preventing the creation of additional flood risk in the future.

Information included in rules and scope of work:

Recognizing the extent to which past development decisions may have increased flood risks, including residual risks, and considering broad floodplain management and land use approaches that will avoid increasing flood risks, and avoid negatively affecting neighboring areas, the RFPG shall:

- 1. consider the extent to which a lack of, insufficient, or ineffective current floodplain management and land use practices, regulations, policies, and trends related to land use, economic development, and population growth, allow, cause, or otherwise encourage increases to flood risks to both:
 - a. existing population and property, and
 - b. future population and property.
- 2. take into consideration the future flood hazard exposure analysis, consider the extent to which the 1% annual chance floodplain, along with associated flood risks, may change over time in response to anticipated development and associated population growth and other relevant man-made causes, and assess how to best address these potential changes.
- 3. based on the analyses in paragraphs (1) - (2) of this subsection, make recommendations regarding forward-looking floodplain management and land use recommendations, and economic development practices and strategies, that should be implemented by entities within the FPR. These region-specific recommendations may include minimum floodplain management and land use standards and should focus on how to best address the changes in paragraph (2) of this subsection for entities within the region. These recommendations shall inform recommended strategies for inclusion in the Regional Flood Plan.
- 4. RFPGs may also choose to adopt region-specific, minimum floodplain management or land use or other standards that impact flood-risk, that may vary geographically across the region, that each entity in the FPR must adopt prior to the RFPG including in the Regional Flood Plan any FMEs, FMSs, or FMPs that are sponsored by or that will otherwise be implemented by that entity.

5. Consider example floodplain management and infrastructure protection standards provided by TWDB.

Additional guidance:*Evaluation of floodplain management practices*

This task is intended as qualitative assessment of floodplain management, land use, infrastructure design, and other practices within and across the region. This task will identify areas with existing floodplain management practices, identify common and compare contrasting practices within the region, and acknowledge locations that may lack floodplain management. A GIS coverage map must be submitted depicting the areas with any established floodplain management practices and the entities that regulate and enforce those floodplain practices {18. ExFpMP}.

A summary of key floodplain management practices in the region summarized by their respective regulatory entities should be provided. The region may generally characterize and describe existing floodplain management practices as none (no floodplain management practices in place), low (regulations meet the minimum NFIP standards), moderate (some higher standards, such as freeboard, detention requirements, or fill restrictions), strong (e.g., significant regulations that exceed NFIP standard with enforcement, or community belongs to the Community Rating System) . TWDB's Flood Science and Community Assistance division is available to serve as a technical resource for this task and may be able to answer questions about a community's NFIP status or flood damage prevention ordinances/orders.

The RFPs must compile list of all cities, counties and political subdivision with flood-related authorities in the region and at a minimum identify whether the entity adopted any floodplain management regulations, adopted minimum regulations pursuant to Texas Water Code Section 16.3145 and/ or if the community is a NFIP participant, as depicted in Table 6.

Exhibit C: Technical Guidelines for Regional Flood Planning

Table 6: Existing floodplain management practices

Entity ^A	Floodplain management regulations (Yes/ No/ Unknown) ^A	Adopted minimum regulations pursuant to Texas Water Code Section 16.3145? (Yes/ No) ^A	NFIP Participant (Yes/ No) ^A	Higher Standards adopted (Yes/ No) ^B	Floodplain Management Practices (Strong/Moderate/Low/None) ^B	Level of enforcement of practices (High/ Moderate/ Low/ None) ^{B, C}	Existing Stormwater or Drainage Fee (Yes/ No) ^B	Web Link to entity regulations ^B
County 1								
County 2								
City 1								
City 2								
District								

^A At a minimum, the RFPGs must list all counties, cities and districts in the region with flood related authority in the region and identify whether entity they have any established floodplain management practices.

^B This field may be left blank during the 1s^t planning cycle. However, RFPGs are strongly encouraged to provide this information when applicable and available.

^C The following may serve as a guide for evaluating enforcement:

- high – actively enforces the entire ordinance, performs many inspections throughout construction process, issues fines, violations, and Section 1316s where appropriate, and enforces substantial damage and substantial improvement;
- moderate – enforces much of the ordinance, performs limited inspections and is limited in issuance of fines and violations;
- low – provides permitting of development in the floodplain, may not perform inspections, may not issue fines or violations;
- none – does not enforce floodplain management regulations.

RFPGs should identify the communities in the region that already have stormwater or drainage fees. RFPGs may consider recommending fees or revenue generation options as a means of implementing projects.

When providing a summary list, RFPGs shall distinguish between confirming that no floodplain regulations exist and stating the relevant regulations were not assessed for certain communities. RFPGs shall also characterize how many communities meet minimum Texas Water Code Section 16.3145 requirements, how many communities participate in the NFIP, and how many communities have any level of higher standards.

The RFPGs shall coordinate with these political subdivisions, to the extent possible, to gather information on floodplain management regulations and policies in the region and shall evaluate the regulations and policies for sufficiency and effectiveness. In cases where gathering regulations and policies from all entities in the region is infeasible, the RFPG may gather the information from a representative sample of political subdivisions with flood-related authority. RFPGs shall include a written summary of the regulations and policies gathered and a written summary of the findings from the RFPG's evaluation of sufficiency and effectiveness.

Beyond a general assessment, RFPGs may choose to associate the names of specific political subdivisions or areas with the floodplain management practices identified in this evaluation. The purpose is not to call out or admonish any entities, but rather to identify practices or lack thereof that can potentially permit or otherwise contribute to increasing flood risk, especially for those practices that have the potential to negatively affect neighboring areas. The purpose should be to identify improvements to floodplain management practices that could be implemented in the future.

Recommendations on floodplain management practices

Floodplain management is defined in Title 31 Texas Administrative Code §361.10 as, "**The operation of an overall program of corrective and preventative measures for reducing flood damage.**" These measures can take a variety of forms and generally include building, subdivision, zoning, land use, or other special-purpose ordinances such as flood damage prevention ordinances. Floodplain management can include the minimum requirements necessary to comply with the National Flood Insurance Program (NFIP) but may also include a variety of standards higher than NFIP minimums that local entities may choose to adopt. In Texas, authority for enforcing floodplain management regulations lies with local governments such as cities and counties. It is important to note that RFPGs themselves do not have the authority to enact or enforce floodplain management, land use, or other infrastructure design standards. Any standards considered, recommended, and adopted by the RFPG in this task would be aimed at encouraging implementation by local entities in the region with flood-related authority.

The RFPGs may choose to recommend and/ or adopt region-wide floodplain management standards, including those that will achieve more consistent approaches across the region either or both in the form of:

- a. general *recommendations* (2.3.A(3)) for consideration by entities in the region, or
- b. specific, *minimum standards* that should be adopted (2.3.A(4))

These recommendations should also consider the goals developed by the RFPG in Task 3B. The Plan must clearly state during its plan development process whether these RFPG standards are either:

- a. (2.3.1(3)) *recommendations* for consideration by local entities' floodplain management standards or
- b. they represent RFPG *adopted* region-specific, minimum standards that are required to be adopted by local entities prior to the RFPG including any FMEs, FMSs, or FMPs that are

Exhibit C: Technical Guidelines for Regional Flood Planning

sponsored by or that will otherwise be implemented by that entity in the regional flood plan (2.3.1(4)).

The TWDB encourages the RFPs to recommend or adopt region-specific minimum floodplain management standards.

In order to provide the RFPs some baseline information regarding floodplain management practices and infrastructure flood protection goals across Texas, the TWDB had a survey performed of 27 Texas communities in diverse geographic locations across the state to identify a range of typical minimum and most stringent floodplain management practices regarding flood mitigation, floodplain management, and infrastructure flood protection. Based on the stakeholder questionnaire responses, related research, and professional engineering experience, this section of the guidance document provides summaries of some minimum and some of the most stringent specifications of floodplain management and infrastructure flood protection standards *that are already being followed by various entities across Texas*. This section of the guidance document also includes examples of floodplain management and infrastructure standards for the planning regions to consider when developing their own.

Table 7 below summarizes examples of infrastructure flood protection standards for the RFPs to consider. These example recommendations should be coupled with no negative impact considerations.

Table 7: Example floodplain management and infrastructure flood protection standards

Infrastructure	Type / Condition	Example Flood Protection Standard
Residential and Commercial Buildings	New Construction	Finished floor elevations 1 foot above 100-year Water Surface Elevation (WSE)
	Pre-Existing (Retrofit)	
	Coastal New Construction	Finished floor elevations 1 foot above the highest elevation of either the riverine or coastal BFE including the combined riverine and coastal effects
	Coastal Pre-Existing (Retrofit)	
Critical Facilities ^A	New Construction	Finished floor elevations above the 500-year WSE
	Pre-Existing (Retrofit)	
	Coastal New Construction	Finished floor elevations 1 foot above the highest elevation of either the riverine 500-year or coastal 100-year WSE including the combined riverine and coastal effects
	Coastal Pre-Existing (Retrofit)	
Roadways	New Construction	5-year below top of curb and 100-year no more than 1 foot above the top of curb and contained within the right-of-way
	Pre-Existing (Retrofit)	
	Coastal New Construction	
	Coastal Pre-Existing (Retrofit)	
Culverts / Bridges	New Construction	Minor Roadways: Pass the 25-year and 100-year with no more than 1 foot of overtopping Major Roadways: Pass 100-year
	Pre-Existing (Retrofit)	
	Coastal New Construction	
	Coastal Pre-Existing (Retrofit)	
Storm Drainage Systems	New Construction	Convey 25-year flow underground and 100-year in the right-of-way
	Pre-Existing (Retrofit)	
	Coastal New Construction	
	Coastal Pre-Existing (Retrofit)	
Detention Facilities	New Construction	Detain proposed condition peak discharge for the 25-year and 100-year below or equal to the existing condition peak discharge
	Pre-Existing (Retrofit)	
	Coastal New Construction	
	Coastal Pre-Existing (Retrofit)	

Exhibit C: Technical Guidelines for Regional Flood Planning

Infrastructure	Type / Condition	Example Flood Protection Standard
Dams	Greater than 6 feet in height as well as other requirements based on hazard and size	TCEQ requirements ^B
Levees / Floodwalls	Earthen embankments and floodwalls compliant with FEMA 44 CFR 65.10	FEMA requirements ^C
Property acquisition		Property acquisition considered in the flood planning will conform to property acquisition and relocation for open space (44 C.F.R Part 80) requirements.

A FEMA provides additional regulations for reference regarding critical facilities (<https://www.fema.gov/glossary/critical-facility>):

“A critical facility provides services and functions essential to a community, especially during and after a disaster. Typical critical facilities include hospitals, fire stations, police stations, storage of critical records, and similar facilities. These facilities should be given special consideration when formulating regulatory alternatives and floodplain management plans. A critical facility should not be located in a floodplain if at all possible. If a critical facility must be located in a floodplain it should be provided a higher level of protection so that it can continue to function and provide services after the flood. Communities should develop emergency plans to continue to provide these services during the flood.”

“Under Executive Order (EO) 11988, Floodplain Management, Federal agencies funding and/or permitting critical facilities are required to avoid the 0.2 percent (500-year) floodplain or protect the facilities to the 0.2 percent chance flood level.”

B The TCEQ Dam Safety regulations as per [Texas Administrative Code Title 30 Chapter 299 Dams and Reservoirs](#).

C Federal requirements of FEMA in [44 CFR 65.10\(b\)](#):

“For levees to be recognized by FEMA, evidence that adequate design and operation and maintenance systems are in place to provide reasonable assurance that protection from the base flood exists must be provided. The following requirements must be met...(1) Freeboard...(2) Closures...(3) Embankment protection...(4) Embankment and foundation stability...(5) Stability...(6) Interior drainage...(7) Other design criteria...”

Further, EO 13990, signed Jan 2021, reinstated the Federal Flood Risk Management Standard (FFRMS) established by EO 13690 in 2015 that modified the original 1977 EO 11988 with increased requirements for federal funds and flood risk requirements.

Another good Texas source for higher standards is from the Texas Floodplain Managers Association (TFMA) who performs occasional surveys of Texas communities to assess higher freeboard standards, which can be accessed at www.tfma.org/page/TFMAReports. TFMA also publishes *A Guide for Higher Standards in Floodplain Management* (TFMA, 2018). FEMA also encourages communities to adopt higher standards and offers discounts for all flood insurance policies in the community that adopts those higher standards through the Community Rating System (CRS) program. More information is available at www.fema.gov/floodplain-management/community-rating-system.

Exhibit C: Technical Guidelines for Regional Flood Planning

Conducted by the National Institute of Building Sciences, the *Natural Hazard Mitigation Saves: 2019* report (Porter et al., 2019) provides estimates of mitigation savings from adopting current residential and building codes, exceeding those codes, and addressing retrofits. The summary of findings in the 2019 report are displayed in the figure below.

Figure 4: Natural hazard mitigation saves: 2019 (report summary)

	ADOPT CODE	ABOVE CODE	BUILDING RETROFIT	LIFELINE RETROFIT	FEDERAL GRANTS
Overall Benefit-Cost Ratio	11:1	4:1	4:1	4:1	6:1
Cost (\$ billion)	\$1/year	\$4/year	\$520	\$0.6	\$27
Benefit (\$ billion)	\$13/year	\$16/year	\$2200	\$2.5	\$160
 Riverine Flood	6:1	5:1	6:1	8:1	7:1
 Hurricane Surge	not applicable	7:1	not applicable	not applicable	not applicable
 Wind	10:1	5:1	6:1	7:1	5:1
 Earthquake	12:1	4:1	13:1	3:1	3:1
 Wildland-Urban Interface Fire	not applicable	4:1	2:1	not applicable	3:1

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With a riverine flood for example, if codes regulating floodplain development were adopted that did not previously exist within a certain community, those codes would create compliance costs (staff to administer the codes, higher construction costs, etc.). However, the benefits of reduced future flood damages are estimated to be significantly higher. So, beneficial savings estimated at 6:1 for adoption of residential and building codes and additional savings of 5:1 for adoption of higher building standards, it is recommended that higher building standards for infrastructure flood protection be considered.

An important consideration for the RFPs in this task will be how to recommend or adopt floodplain management standards in a manner that does not undermine or otherwise conflict with local control of establishing flood regulation or enforcement and otherwise conforms in line with existing legal frameworks and requirements. 31 TAC 361 rules do not grant the RFPs or political subdivisions any additional regulatory powers or authorities so the authority of existing regulatory entities/bodies may remain limited regardless of what a RFPG recommends as a standard. If RFPs find that there are legal, regulatory, or other barriers to implementation of standards, the RFPG may choose to make related legislative, regulatory, administrative, or other recommendations (in Chapter 8 of the plan) that they consider necessary to facilitate floodplain management and flood mitigation planning and implementation under Task 8.

Freeboard requirement or structural elevation (i.e., raising up) of newly constructed or substantially improved/damaged buildings in flood risk areas is one prominent example of a floodplain management practice. Using stakeholder questionnaire responses, research, and professional engineering experience in various geographic locations across Texas, the table below identifies examples of the minimum and most stringent specifications regarding structural elevation and freeboard requirements *that are already being followed by various entities across Texas*. Note that the coastal regulations below are only

applicable to those near the Gulf of Mexico. While non-coastal elevation requirements are for the top of the bottom floor, coastal elevation requirements are for the lowest horizontal structural member.

Table 8: Freeboard requirements or structural elevation standards used in Texas for buildings

Infrastructure	Type / Condition	Minimum	Most stringent
Residential Buildings	New Construction	Equal to BFE	500-year plus 2 feet
	Pre-Existing (Retrofit)	Equal to BFE	No Substantial Improvements allowed without 500-year plus 2 feet
	Coastal New Construction	Equal to BFE	500-year plus 3 feet
	Coastal Pre-Existing (Retrofit)	Equal to BFE	500-year plus 3 feet
Commercial Buildings	New Construction	Equal to BFE	500-year plus 2 feet
	Pre-Existing (Retrofit)	Equal to BFE	500-year plus 2 feet
	Coastal New Construction	Equal to BFE	500-year plus 3 feet
	Coastal Pre-Existing (Retrofit)	Equal to BFE	500-year plus 3 feet
Critical Facilities	New Construction	Equal to BFE	500-year plus 3 feet
	Pre-Existing (Retrofit)	Equal to BFE	500-year plus 3 feet
	Coastal New Construction	Equal to BFE	500-year plus 3 feet
	Coastal Pre-Existing (Retrofit)	Equal to BFE	500-year plus 3 feet

According to the stakeholder responses and research, the minimum standards for structural elevation (above) are based on federal requirements of the National Flood Insurance Program, included in the 44 CFR , example below:

“44 CFR [60.3\(c\)\(2\)](#) [Communities must] Require that all new construction and substantial improvements of residential structures within Zones A1-30, AE and AH zones on the community's FIRM have the lowest floor (including basement) elevated to or above the base flood level...”

FEMA provides additional regulations for reference regarding critical facilities, described here in the FEMA glossary (<https://www.fema.gov/glossary/critical-facility>):

“A critical facility provides services and functions essential to a community, especially during and after a disaster. Typical critical facilities include hospitals, fire stations, police stations, storage of critical records, and similar facilities. These facilities should be given special consideration when formulating regulatory alternatives and floodplain management plans. A critical facility should not be located in a floodplain if at all possible. If a critical facility must be located in a floodplain it should be provided a higher level of protection so that it can continue to function and provide services after the flood. Communities should develop emergency plans to continue to provide these services during the flood.

Under Executive Order (EO) 11988, Floodplain Management, Federal agencies funding and/or permitting critical facilities are required to avoid the 0.2 percent (500-year) floodplain or protect the facilities to the 0.2 percent chance flood level.”

Exhibit C: Technical Guidelines for Regional Flood Planning

Another example of standards that greatly impact future flood risk are public infrastructure design standards. The table below identifies examples of the minimum and most stringent specifications regarding infrastructure design standards requirements *that are already being followed by various entities across Texas*. As noted above, coastal regulations are only applicable to a few entities.

Table 9: Infrastructure design standards requirements used in Texas for public infrastructure

Infrastructure	Type / Condition	Minimum	Most stringent
Roadways	New Construction	2-year below top of curb	Ultimate condition 100-year with 1 foot of freeboard
	Pre-Existing (Retrofit)		
	Coastal New Construction		
	Coastal Pre-Existing (Retrofit)		
Storm Drainage Systems	New Construction	2-year capacity	Ultimate condition 100-year capacity
	Pre-Existing (Retrofit)		
	Coastal New Construction		
	Coastal Pre-Existing (Retrofit)		
Detention Facilities	New Construction	No increase in 25-year peak flow	No increase in peak flow for the 2-, 5-, 10-, 25-, 50-, and 100-year
	Pre-Existing (Retrofit)		
	Coastal New Construction		
	Coastal Pre-Existing (Retrofit)		
Dams	Greater than 6 feet in height as well as other requirements based on hazard and size	TCEQ requirements	Designed to convey 100 percent of the Probable Maximum Flood
Levees / Floodwalls	Earthen embankments and floodwalls compliant with FEMA 44 CFR 65.10	FEMA requirements	FEMA requirements plus 3 feet of freeboard

The minimum standards for dams are based on state requirements of the TCEQ Dam Safety regulations as per [Texas Administrative Code Title 30 Chapter 299 Dams and Reservoirs](#) while the minimum standards for levees are based on federal requirements of FEMA in [44 CFR 65.10\(b\)](#):

“For levees to be recognized by FEMA, evidence that adequate design and operation and maintenance systems are in place to provide reasonable assurance that protection from the base flood exists must be provided. The following requirements must be met...(1) Freeboard...(2) Closures...(3) Embankment protection...(4) Embankment and foundation stability...(5) Stability...(6) Interior drainage...(7) Other design criteria...”

The Texas Department of Transportation (TxDOT) has minimum roadway and transportation system standards that apply to state roads and other transportation facilities and some county/municipal roads that receive state funding. Their hydraulic and floodplain standards are located in the TxDOT Hydraulic Design Manual (Thomason, 2019).

The RFPs may also consider recommending that construction of infrastructure avoid high risk and sensitive areas such as floodways, floodplains, coastal dunes, and areas downstream of dams or levees or floodwalls, and/or, for example, that special care should be practiced in these areas to minimize risk to life and property.

Where possible, the RFPG should recommend and/or adopt floodplain management standards that apply consistently across the region, even if that means consistently based on defined variability, for example, tied to underlying sub-regional characteristics that are relevant to flood risk. Floodplain management recommendations or minimum standards may vary geographically across the flood

planning region if the RFPG concludes that unique characteristics of different areas necessitate unique recommended and/or required standards. For example, the RFPGs may wish to consider the unique needs of urban vs. rural areas, or areas with detailed vs. approximate floodplain mapping and modeling, or upstream vs. downstream areas. If the RFPG recommends standards that vary geographically or in some other way, the Plan must contain a clear description of how the specific sub-regional areas are defined (Example: source of data used to determine urban vs. rural status).

Floodplain management **recommendations** in the Plan may be fairly general (e.g., “The RFPG recommends that communities adopt and enforce specific freeboard requirements”) whereas **adopted** minimum standards that must be specific enough for local entities to be able to clearly understand and adopt nearly verbatim (e.g., “Communities must adopt and enforce a minimum of one foot of freeboard for all new residential and non-residential construction and substantially improved or damaged structures in the 1 percent annual chance floodplain as defined by FEMA”). If the RFPG requires them, minimum standards must be adopted by entities in order for FMEs, FMSs, or FMPs associated with them to be included in the plan.

Note that in the subsequent Task 3B, the RFPG will be responsible for setting overarching goals for the region. Tasks 3A and 3B will likely need to be discussed and executed in tandem due to the interrelated nature of these tasks. For example, if the RFPG sets an overarching goal of limiting floodplain encroachment or reducing any increases in future flood risk by regulating development in floodplains, the RFPG would need to consider standards in this task that would help the region progress towards those identified goals under Task 3B.

Submittal requirements:

1. General description and summary of existing floodplain management practices in the region.
2. A summary of key floodplain management practices in the region summarized by their respective regulatory entities.
3. Summary of **recommendations** and/or **adopted standards** on Floodplain Management Practices and Infrastructure protection standards for the entire region or by specific areas (HUC-8s) in the region, as applicable. Summarize the recommendations and/or adopted standards including the area where they apply and associated regulatory authority for each recommendation if applicable.
4. GIS coverage map depicting the areas with established floodplain management practices and the entities that regulate and enforce those floodplain practices and locations that lack floodplain management.
5. All maps must be submitted with the underlying GIS data utilized to prepare them.

These are minimum reporting requirements however, an RFPG may present additional information utilized in the development of their plan.

2.3.B Task 3B – Flood mitigation and floodplain management goals (361.36)

Goals:

The goal of this task is for RFPGs to define the overarching flood mitigation and floodplain management goals for their regional flood plans. These goals will guide the overall approach and recommendations in the plan and, to ensure the coherence of the entire plan, may also be used in developing the recommendations for floodplain management in the previous task.

The overarching goal of all regional flood plans must be “to protect against the loss of life and property”, as set forth in the Guidance Principles in 31 TAC §362.3. RFPGs must identify specific and achievable

Exhibit C: Technical Guidelines for Regional Flood Planning

flood mitigation and floodplain management goals that, when implemented, will demonstrate progress towards this overarching goal.

Information included in rules and scope of work:

Considering the Guidance Principles under Title 31 Texas Administrative Code §362.3, Tasks 1-3A, input from the public, and other relevant information and considerations, RFPGs shall:

1. identify specific and achievable flood mitigation and floodplain management goals along with target years by which to meet those goals for the FPR to include, at a minimum, goals specifically addressing risks to life and property.
2. recognize and clearly state the levels of residual risk that will remain in the FPR even after the stated flood mitigation goals in paragraph (1) of this section are fully met.
3. structure and present the goals and the residual risks in an easily understandable format for the public including in conformance with guidance provided below.
4. use these goals to guide the RFPG in carrying out the flood mitigation needs analysis and the identification, evaluation, and recommendation of FMEs, FMSs, and FMPs.
5. when appropriate, choose goals that apply to full single HUC8 watershed boundaries or coterminous groups of HUC8 boundaries within the FPR.
6. Identify both short-term goals (10 years) and long-term goals (30 years).

Additional guidance:

The RFPGs must utilize the Guidance Principles, the existing condition flood risk analyses, future condition flood risk analyses, and the consideration of current floodplain management and land use approaches, input from the public, and other relevant information and considerations in developing and defining the goals for the region.

RFPGs must, at a minimum, identify 10-year short-term goals and 30-year long-term goals. Groups may, at their discretion, identify additional goals for other timeframes as long as they follow the guidance herein regarding goal requirements and format.

In selecting the flood risk reduction and protection goals for the region, the RFPG will inherently also be determining the accepted 'residual' flood risk of the flood planning region since, conceptually, these two, together, comprise the totality of flood risk faced by the region. Any flood risk not avoided or reduced through meeting a goal will remain as a residual risk. It is not possible to protect against all potential flood risks.

The RFPGs must consider and identify residual risk for each goal identified. Simply put, if the goal, for example, is to protect all life and property from all 1 percent flood events, the residual risk being accepted would be the remaining risk to life and property resulting from all flood events that exceed a 1 percent likelihood.

The table below contains examples of specific and achievable short- and long-term plan goals.

Table 10: Examples of potential regional flood plan goals and means of presenting them

Short term (10 year)	Long term (30 year)
Reduce 5-year moving average of flood-related fatalities in the flood planning region by 50% by 2033.	Eliminate the occurrence of all flood-related fatalities in the flood planning region by 2053.
Reduce 5-year moving average of flood-related injuries in the flood planning region by 75% by 2033.	Eliminate the occurrence of flood-related injuries in the flood planning region by 2053.
Reduce exposure of existing structures in the current 1% annual chance floodplain by elevating, acquiring, relocating, or otherwise providing flood protection to 1,000 structures by 2033.	Reduce exposure of existing structures in the current 1% annual chance floodplain by elevating, acquiring, relocating, or otherwise providing flood protection to 10,000 structures by 2053.
Remove 50% of the existing structures from 1% annual chance floodplain in the region by 2033.	Remove 95% of the existing structures from 1% annual chance floodplain in the region by 2053.
Remove 50% of the low water crossings from 10% annual chance flood risk in the region by 2033.	Remove 90% of the low water crossings from 10% annual chance flood risk in the region by 2053.
By 2033, increase the coverage of flood hazard data across the region by completing studies in 50% of the areas identified as having current gaps in flood mapping.	By 2053, have complete coverage of flood hazard data across the region by completing studies in 100% of the areas identified as having current gaps in flood mapping and have an ongoing, funded maintenance plan for updates.
By 2033, enroll all current non-participating communities into the National Flood Insurance Program.	Maintain 100% community enrollment with no suspensions or sanctions.
By 2033, 25% of all communities have adopted higher than NFIP-minimum standards.	By 2053, 50% of all communities have adopted higher than NFIP-minimum standards.
By 2033, RFPGs will consider and incorporate nature-based practices in their flood risk reduction projects.	
By 2033, RFPG adopts minimum stormwater infrastructure design standards applicable across the region.	
By 2033, 50% of the region's population is part of a municipality that has a dedicated municipal drainage charge, drainage district fee, or other continuous funding mechanism.	By 2033, 90% of the region's population is part of a municipality that has a dedicated municipal drainage charge, drainage district fee, or other continuous funding mechanism.
By 2033, 50% of the communities have a documented, operational, and fully funded stormwater asset management plan and system.	By 2033, 75% of the communities have a documented, operational, and fully funded stormwater asset management plan and system.
Reduce flood-related loss of natural and cultural resources within the FPR by 2033.	Maximize safe economic development within flood prone areas.
Reduce any increases in future flood risk to life and property from development by regulating development in future conditions floodplains.	Eliminate any increases in future flood risk to life and property from development by regulating development in future conditions floodplains.

This table contains examples of regional flood mitigation and floodplain management goals for consideration only and does not reflect any TWDB-recommended goals. The RFPGs are expected to deliberate and gather data necessary to establish their own goals for their region.

Where possible, the regional flood planning groups should establish goals that apply to the full flood planning region. In cases where tailoring goals to specific geographic areas is necessary, the group must choose goals that apply to no less than an entire HUC-8 watershed or coterminous groups of HUC-8 watersheds within the region.

The regional flood plan must contain the group's overarching goals and must contain a written or other clear summary of the residual risk, including 'transformed' risk, that would remain in the region even

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after the stated goals are met. For example, if a goal is to restrict future development within the existing condition 1 percent annual chance floodplain, there will still be residual flood risk for existing structures. Transformed risk is defined by U.S. Army Corps of Engineers (USACE) as the change in the nature of flood risk for some area associated with the presence of flood hazard reduction infrastructure. Flood risk is often reduced by the construction of flood mitigation structures but, as a result, may also be ‘transformed’ into a different type of risk, for example, in the form of risk from structural failure of that mitigation infrastructure (e.g., a dam or levee).

As another example, if a goal is to reduce the flood risk to existing structures in the current 1 percent annual chance floodplain by elevating, acquiring, relocating, or otherwise providing flood protection to 1,000 structures, even after that goal is fully met, there will still be a residual flood risk to these structures from a larger, less frequent flood events and to the other structures that were not provided the same protection.

Regional flood planning groups are not required to establish both short-term and long-term goals for all goal categories. For example, if a group chooses a short-term goal of, “By 2033, enroll all current non-participating communities into the National Flood Insurance Program,” an associated long-term goal may not be needed. However, it is recommended that if regional flood planning groups identify long-term goals, where possible, the groups attempt to also establish short-term goals to reflect anticipated progress towards the long-term goal.

Submittal requirements:

1. General description, and summary table of flood mitigation and floodplain management goals.
2. All data identified in data submittal requirements. Please refer to the Exhibit D: Data Submittal Guidelines for information required to be provided {19. Goals}.
3. The TWDB will provide an empty GIS geodatabase template for the RFPGs to fill in with region-specific data. The geodatabase will be pre-populated with all feature classes and fields.

Once identification of floodplain management and flood mitigation goals is completed, the RFPG must include a summary table with goals (example template below), and description of residual risk associated with those goals, that is also easy for the public to understand and comment on. These are minimum requirements however, an RFPG may present additional information utilized in the development of their plan.

Table 11: Regional flood plan flood mitigation and floodplain management goals

Goal ID	Goal	Term of Goal	Target Year	Applicable To	Residual Risk	How will the Goal be Measured	Overarching Goal(s)	Associated Goal IDs
01000001	Remove 50% of the low water crossings from 1% annual chance flood risk in the region by 2023.	Short Term (10 year)	2023	HUC 8 Watershed #			Protect against the loss of life	01000002
01000002	Remove 90% of the low water crossings from 1% annual chance flood risk in the region by 2053.	Long Term (30 year)	2053	Entire RFPG			Protect against the loss of life	01000001
01000003								
01000004								
01000005								
01000006								

This table contains examples of regional flood mitigation and floodplain management goals and does not reflect any TWDB recommended goals based on real data. The goals are included to reflect reporting requirements. The RFPGs are expected to deliberate and gather data necessary to establish goals for their region.

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2.4 Task 4 - Assessment and identification of flood mitigation needs

This section is organized in several parts: goals, excerpts from relevant rules and scope of work, followed by additional guidance and submittal requirements.

2.4.A Task 4A – Flood mitigation needs analysis (361.37)

Goals:

The goal of this task is for RFPGs to conduct a two-piece, big picture analysis to guide the RFPG's subsequent efforts (under Task 4B) by identifying:

1. The region's flood prone areas where the greatest **flood risk knowledge gaps** exist and where the RFPG should consider identifying potentially feasible flood risk studies as **FMEs**. (See Task 4B), and,
2. The areas of greatest **known flood risk** and flood mitigation needs in the regions and resulting need of potential strategies and projects, as **FMSs and FMPs**, to reduce those known risks. See Task 4B).

Information included in rules and scope of work:

Based on the analyses and goals developed by the RFPG and any additional analyses or information developed using available screening-level models or methods, the RFPG shall identify locations within the FPR that the RFPG considers to have the greatest flood mitigation and flood risk study needs by considering:

1. the areas in the FPR that the RFPG identified as the most prone to flooding that threatens life and property;
2. the relative locations, extent, and performance of current floodplain management and land use policies and infrastructure located within the FPR, particularly within the locations described in paragraph (1) of this subsection;
3. areas identified by the RFPG as prone to flooding that don't have adequate inundation maps;
4. areas identified by the RFPG as prone to flooding that don't have hydrologic and hydraulic models;
5. areas with an emergency need;
6. existing modeling analyses and flood risk mitigation plans within the FPR;
7. flood mitigation projects already identified and evaluated by other flood mitigation plans and studies;
8. documentation of historic flooding events;
9. flood mitigation projects already being implemented; and
10. any other factors that the RFPG deems relevant to identifying the geographic locations where potential FMEs and potentially feasible FMSs and FMPs shall be identified and evaluated.

The RFPG shall conduct the analysis of this section in a manner that will ensure the most effective and efficient use of the resources available to the RFPG.

Additional guidance:

Relying partially on the region-wide flood risk analyses performed in Task 2B, the RFPGs must identify areas that do not currently have flood risk data of sufficient quality (e.g., outdated information) or at adequate resolution or detail to identify and compare alternatives that might mitigate the associated flood risks. This will be a screening level type determination since, by the nature of these areas being identified, many likely will not have any well-established flood risk information. The RFPGs must prepare

a summary characterizing the gaps in flood risk information in the region and will prepare and submit a map of those flood prone areas with poorly defined or inadequate flood risk information to the extent that it would prevent the RFPG from identifying potentially feasible FMSs and/or FMPs to mitigate flood risks. Areas with recent H&H models, for example, would not fall into this category.

The areas of greatest flood risk can be determined based on factors including, but not limited to, depth of flooding, velocity of flood flow as applicable, number of structures, population, historic events, and critical infrastructure in the floodplain. In determining the greatest mitigation needs, the RFPGs should consider ongoing and planned flood risk reduction projects with funding.

The RFPGs will prepare a summary of the greatest flood risk and mitigation needs in the region, identify, and document the assumptions and process utilized to identify the greatest flood risk and prepare and submit a map of areas with greatest flood risk in the region.

2.4.B Task 4B – Identification and evaluation of potential flood management evaluations and potentially feasible flood management strategies and flood mitigation projects (361.38)

Goals:

The goal of this task is for RFPGs to identify and evaluate potential Flood Management Evaluation (FME)s, and potentially feasible Flood Mitigation Project (FMP)s and Flood Management Strategy (FMS)s. While the evaluation of FMEs, FMSs and FMPs can be initiated in Task 4, they will be completed during Task 5.

A Flood Management Evaluation (FME) is a proposed flood study of a specific, flood-prone area that is needed in order to assess flood risk and/or determine whether there are potentially feasible FMSs or FMPs.

A Flood Mitigation Project (FMP) is a proposed project, either structural or non-structural, that has non-zero capital costs or other non-recurring cost and when implemented will reduce flood risk, mitigate flood hazards to life or property. The RFPGs are strongly encouraged to consider nature-based flood risk reduction solutions in their overall approach.

A Flood Management Strategy (FMS) is a proposed plan to reduce flood risk or mitigate flood hazards to life or property. The RFPG has some flexibility on how they choose to utilize FMSs in the regional flood planning process. For example, RFPGs could choose not to recommend any FMSs. At a minimum, RFPGs should include as FMSs any proposed action that the group would like to identify, evaluate, and recommend that does not qualify as either a FME or FMP.

To include a potential project as an FMP, the RFPGs must be able determine ‘no negative impact’ of that project as required by the statute. If the RFPG is unable to determine ‘no negative impact’ for a project, it is recommended that a potential project be included in the plan as an ‘FME’ for further study of the project area.

It is expected that a wide range of project types will be recommended by the RFPGs to the TWDB. The following list of **types** (also listed in section 3.2) is provided as guidance for use as FME, FMS, and FMPs, but other types identified by the RFPGs, that are not already listed, should be included by the RFPG.

1. Flood Management Evaluations
 - a. Watershed Planning
 - i. Hydrologic and Hydraulic Modeling
 - ii. Flood Mapping Updates
 - iii. Regional Watershed Studies

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- b. Engineering Project Planning
 - i. Feasibility Assessments
 - ii. Preliminary Engineering (alternative analysis and up to 30 percent design)
 - c. Studies on Flood Preparedness
 - d. Other
 - 2. Flood Mitigation Projects – Structural⁴
 - a. Low Water Crossings or Bridge Improvements
 - b. Infrastructure (channels, ditches, ponds, stormwater pipes, etc.)
 - c. Regional Detention
 - d. Regional Channel Improvements
 - e. Storm Drain Improvements
 - f. Reservoirs
 - g. Dam Improvements, Maintenance and Repair
 - h. Flood Walls / Levees
 - i. Coastal Protections
 - j. Natural Based Projects – living levees, increasing storage, increasing channel roughness, increasing losses, de-synchronizing peak flows, dune management, river restoration, riparian restoration, run-off pathway management, wetland restoration, Low Impact Development, Green Infrastructure
 - k. Comprehensive Regional Project – includes a combination of projects intended to work together
 - l. Other
 - 3. Flood Mitigation Projects – Non-Structural⁵
 - a. Property or easement acquisition
 - b. Elevation of Individual Structures
 - c. Flood Readiness and Resilience
 - d. Flood Early Warning Systems, including stream gauges and monitoring stations
 - e. Floodproofing
 - f. Regulatory Requirements for Reduction of Flood Risk
 - g. Other

Under Task 5, the RFPG makes its recommendations of FMEs, FMSs, and FMPs that were evaluated under Task 4B. Analyses under this section must also be performed in accordance with the technical guidance provided in Part 3 of this document.

Information included in rules and scope of work:

A Flood Management Evaluation (FME) is a proposed flood study of a specific, flood-prone area that is needed in order to assess flood risk and/or determine whether there are potentially feasible FMSs or FMPs. A Flood Mitigation Project (FMP) is a proposed project, either structural or non-structural, that has non-zero capital costs or other non-recurring cost and when implemented will reduce flood risk, mitigate flood hazards to life or property. A Flood Management Strategy (FMS) is a proposed plan to reduce flood risk or mitigate flood hazards to life or property. An FMS may or may not require associated FMPs to be implemented and one FMP may be associated with multiple FMSs.

The RFPG shall identify and evaluate potential FMEs and potentially feasible FMSs and FMPs, including nature-based solutions, some of which may have already been identified by previous evaluations and

⁴ FMPs will include permitting, detailed design, construction, and implementation phases of the project.

⁵ FMPs will include permitting, detailed design, construction, and implementation phases of the project.

analyses by others. If no potentially feasible FMSs are identified or recommended for an identified need, then the RFPG shall document the reason. An FME may eventually result in detailed hydrologic and hydraulic analyses and identification of projects or strategies that could be amended into an Regional Flood Plan as FMSs or FMPs.

When evaluating FMSs and FMPs the RFPG will, at a minimum, identify one solution that provides flood mitigation associated with a 1% annual chance flood event. In instances where mitigating for 1% annual chance events is not feasible, the RFPG shall document the reasons for its infeasibility, and at the discretion of the RFPG, other FMS and FMPs to mitigate more frequent events may also be identified and evaluated based on guidance to be provided by the EA.

A summary of the RFPG process for identifying potential FMEs and potentially feasible FMSs and FMPs shall be established and included in the draft and final adopted Regional Flood Plan.

The RFPG shall then identify potentially feasible FMSs and FMPs in accordance with the RFPG's established process.

For areas within the FPR that the RFPG does not yet have sufficient information or resources to identify potentially feasible FMSs and FMPs, the RFPG shall identify areas for potential FMEs that may eventually result in FMPs.

The RFPG shall evaluate potentially feasible FMSs and FMPs understanding that, upon evaluation and further inspection, some FMSs or FMPs initially identified as potentially feasible may, after further inspection, be reclassified as infeasible.

FMPs will be ranked in the state flood plan and

1. shall represent discrete, projects;
2. shall not entail an entire capital program or drainage masterplan; and
3. may rely on other flood-related projects.

Evaluations of potentially feasible FMSs and FMPs will require associated, detailed hydrologic and hydraulic modeling results that quantify the reduced impacts from flood and the associated benefits and costs. Information may be based on previously performed evaluations of projects and related information. Evaluations of potentially feasible FMS and FMPs shall include the following information and be based on the following analyses:

1. A reference to the specific flood mitigation or floodplain management goal addressed by the feasible FMS or FMP;
2. A determination of whether FMS or FMP meets an emergency need;
3. An indication regarding the potential use of federal funds, or other sources of funding, as a component of the total funding mechanism;
4. An equitable comparison between and consistent assessment of all FMSs and FMPs that the RFPGs determine to be potentially feasible;
5. A demonstration that the FMS or FMP will not negatively affect a neighboring area;
6. A quantitative reporting of the estimated benefits of the FMS or FMP, including reductions of flood impacts of the 1% annual chance flood event and other storm events identified and evaluated if the project mitigates to more frequent event, to include, but not limited to:
 - a. Associated flood events that must, at a minimum, include the 1% annual chance flood event and other storm events identified and evaluated;
 - b. Reduction in habitable, equivalent living units flood risk;
 - c. Reduction in residential population flood risk;

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- d. Reduction in critical facilities flood risk;
- e. Reduction in road closure occurrences;
- f. Reduction in acres of active farmland and rangeland flood risk;
- g. Estimated reduction in fatalities, when available;
- h. Estimated reduction in injuries, when available;
- i. Reduction in expected annual damages from residential, commercial, and public property; and
- j. Other benefits as deemed relevant by the RFPG including environmental benefits and other public benefits.

- 7. A quantitative reporting of the estimated capital cost of projects in accordance with guidance provided by the EA;
- 8. Calculated benefit-cost ratio for FMPs in accordance with guidance to be provided by the EA and based on current, observed conditions;
- 9. For projects that will contribute to water supply, all relevant evaluations, as determined by the EA based on the type of contribution, and a description of its consistency with the currently adopted State Water Plan;
- 10. A description of potential impacts and benefits from the FMS or FMP to the environment, agriculture, recreational resources, navigation, water quality, erosion, sedimentation, and impacts to any other resources deemed relevant by the RFPG;
- 11. A description of residual, post-project, and future risks associated with FMPs including the risk of potential catastrophic failure and the potential for future increases to these risks due to lack of maintenance;
- 12. Implementation issues including those related to rights-of-way, permitting, acquisitions, relocations, utilities and transportation; and
- 13. Funding sources and options that exist or will be developed to pay for development, operation, and maintenance of the FMS or FMP.

Evaluations of potential FMEs will be at a reconnaissance or screening-level, unsupported by associated detailed hydrologic and hydraulic analyses. These will be identified for areas that the RFPG considers a priority for flood risk evaluation but that do not yet have the required detailed hydrologic and hydraulic modeling or associated project evaluations available to evaluate specific FMSs or FMPs for recommendation in the Regional Flood Plan. These FMEs shall be based on recognition of the need to develop detailed hydrologic models or to perform associated hydraulic analyses and associated project evaluations in certain areas identified by the RFPG. Evaluations of potential FMEs shall include the following analyses:

- 1. A reference to the specific flood mitigation or floodplain management goal to be addressed by the potential FME.
- 2. A determination of whether FME may meet an emergency need.
- 3. An indication regarding the potential use of federal funds, or other sources of funding as a component of the total funding mechanism.
- 4. An equitable comparison between and consistent assessment of all FMEs.
- 5. An indication of whether hydrologic and or hydraulic models are already being developed or are anticipated in the near future and that could be used in the FME.
- 6. A quantitative reporting of the estimated benefits, including reductions of flood risks, to include:
 - a. Estimated habitable, living unit equivalent and associated population in FME area;
 - b. Estimated critical facilities in FME area;
 - c. Estimated number of roads closures occurrences in FME area;

d. Estimated acres of active farmland and ranchland in FME area; and e. A quantitative reporting of the estimated study cost of the FME and whether the cost includes use of existing or development of new hydrologic or hydraulic models.
7. For FMEs, RFPGs do not need to demonstrate that an FME will not negatively affect a neighboring area. 8. RFPGs shall evaluate and present potential FMEs and potentially feasible FMSs and FMPs with sufficient specificity to allow state agencies to make financial or regulatory decisions to determine consistency of the proposed action before the state agency with an approved Regional Flood Plan. 9. Analyses shall clearly designate a representative location of the FME and beneficiaries including a map and designation of HUC-8 and county location.

Additional guidance:

Flood management evaluations (FMEs)

Based on other work performed in Task 3 and 4, this task is intended to identify areas that require technical studies such as H&H modeling to better quantify flood risk or to update outdated flood risk information. FMEs may include hydrologic and hydraulic modeling and mapping for identification and/or update of flood risk. The FMEs, may also include feasibility studies and alternative analyses to consider potentially feasible solutions (e.g., FMSs or FMPs) that could be implemented and/or recommended in the next regional flood plan, for example.

Not every conceivable FME will be recommended. The RFPG and their technical consultant must decide which identified potential FMEs will be recommended in their regional plan in order to ensure that the recommended FMEs are sensible so that limited resources can be directed efficiently and accordingly to implement those studies.

FMEs will be identified under Task 4 and recommended under Task 5 in the regional plan but are not anticipated to actually be performed by the RFPG during the same regional flood planning cycle during which they are identified. FMEs are to be recommended in the regional plans to make clear what additional studies, and funds to support them, are needed to adequately evaluate all flood prone areas within a region. The step of identifying FMEs is a recognition that the regional flood planning process has significant financial, technical, and time constraints. However, that does not preclude performance of the FMEs by others, with other sources of funds for example, or incorporating the timely results of such evaluations into the final regional flood plan. If an equivalent FME is performed outside of the regional flood planning process, for example through efforts by the GLO's Combined River Basin Flood Studies, and the results incorporated into the plan, that particular FME would no longer be recommended as a FME in the plan since the results of it would already be reflected in the plan. The FMEs that are performed after adoption of the regional plan may then support recommendations of FMSs and FMPs in the next regional plan, for example.

Please refer to Part 3 of this document for guidance regarding cost estimates. A planning level cost estimate for each identified FME will suffice.

Submittal requirements for FMEs:

1. General description and GIS coverage map of identified FMEs in the region.
2. A GIS coverage map showing the extent of all identified FME study areas in the region with an indication whether the identified FME area is associated with a previously studied area that requires an update or if the identified study area does not have any existing or anticipated flood mapping, models, etc., and therefore requires an initial study.

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3. Total number of and study area extent (square miles) of each FME by flood risk type, counties, regions, and flood frequency should be summarized in a table.
4. A planning level cost estimate for each FME study.
5. Identify who will sponsor the FME including directly financing and implementing it. This may involve more than one entity and could rely on a variety of sources of the funds.
6. All data identified in the data submittal requirements as outlined in the Exhibit D: Data Submittal Guidelines.
7. The TWDB will provide a GIS geodatabase template for the RFPGs to fill in with region-specific data. The geodatabase template will be pre-populated with all feature classes and fields but will not have any data.
8. GIS data layer that shows boundaries of all identified FMEs and associated data {21. FME}.
9. All maps should be submitted with underlying GIS data utilized to prepare them.

The potential FMEs must be provided in a summary table with findings (template below) in the plan.

These are minimum reporting requirements however, a RFPG may present additional information utilized in the development of their plan.

Table 12: Potential flood management evaluations identified by RFPG

FME ID	FME Name	Description	Associated Goal No.	Counties	HUC8s	HUC12s ^A	Watersheds ^A	Study Type	FME Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	Potential Funding Sources and Amount	Estimated number of structures at flood risk	Residential structures at flood risk	Estimated Population at flood risk	Critical facilities at flood risk (#)	Number of low water crossings at flood risk (#)	Estimated number of road segment closures (#)	Estimated length of roads at flood risk (Miles)	Estimated farm & ranch land at flood risk (acres)	Existing or Anticipated Models (year)	Existing or Anticipated Maps (year)

^A Leave blank if too many for text field length (254 characters).

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Flood mitigation projects (FMPs)

(See associated rule and scope language at top of this guidance section)

This section focuses on flood mitigation projects with a contributing drainage area greater than or equal to 1.0 (one) square miles except in instances of flooding of critical facilities or transportation routes or for other reasons, including levels of risk or project size, determined by the RFPG.

Flood mitigation project is defined in Title 31 TAC §361.10(n) as, “A proposed project, both structural and non-structural, that has a non-zero capital costs or other non-recurring cost and that when implemented will reduce flood risk, mitigate flood hazards to life or property.” Mitigation is one phase out of the four phases of emergency management: mitigation, preparedness, response, and recovery. For a description of each of these phases and example projects, see Section 2.7 Task 7 – Flood Response Information and Activities.

The regional flood planning process will focus primarily on mitigation and may include preparedness with regard to identifying and recommending FMPs by the RFPG. Projects for which the primary purpose is addressing response and recovery needs will not be considered FMPs in this planning process.

H&H models required for evaluation of the FMPs must adhere to all Mapping and modeling guidelines and No Negative Impact requirements.

Please refer to Part 3 of this document for guidance regarding cost estimate, benefit-cost analysis (BCA), population estimate, and no negative impact. A planning level cost estimate for each identified FME will suffice.

FMPs that were previously identified and evaluated by others prior to and/or outside of the regional flood planning process and that are being considered by the RFPG for inclusion in the regional flood plan must be reassessed by the RFPGs prior to inclusion in the regional plan. These FMPs must meet or be updated to adhere to the requirements in this guidance and other relevant regional flood planning contract requirements.

The relationship and interdependencies between recommended FMS and the FMPs must be captured in the datasets provided to the TWDB. It is important that all these relationships and interdependencies are logical and clear in the data and in the regional plan so that readers understand what is required to successfully implement each piece of a regional flood plan.

For example, a single FMS, to “construct a network of largescale regional detention facilities to reduce urban flooding in Apple County” may, in turn, rely on constructing five recommended FMPs that are five separate detention facilities (‘A’ through ‘E’) in five different locations across the county. If, in turn, there is also one large ‘upstream’ drainage/collection channel FMP that must also be constructed to actually redirect flood water into the detention facility ‘E’ only, the dependance of that one detention facility E on that one collection channel FMP must be reflected in the geodatabase. If, in turn, there is an ASR facility being recommended and that relies on water held in detention facility ‘E’, that interdependence must also be reflected in the data provided to the TWDB so that it is clear that the ASR project shouldn’t be implemented unless both the channel and the detention facility E were also both constructed.

Figure 5: FMP flowchart

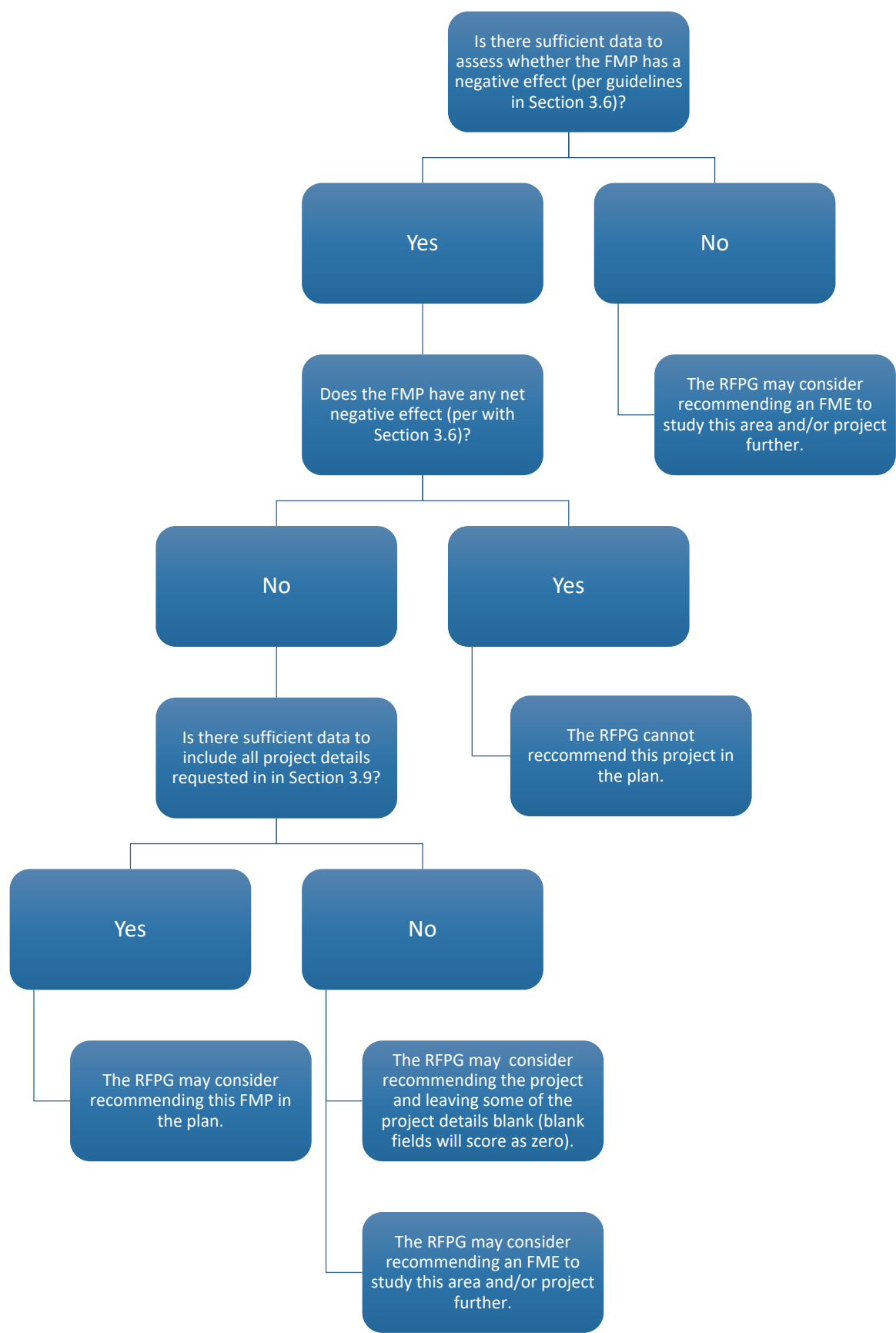


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Submittal requirements for FMPs:

1. General description and GIS coverage map of identified FMPs in the region.
2. A GIS coverage map showing the extent of all identified FMPs in the region with RFPG boundary, counties, HUC-12, major roadways, stream segments, contributing drainage area, relevant hydrologic and hydraulic features including but limited to detention ponds, storm drain system, dams etc.
3. Total number and project area (square miles) of FMPs by flood risk type, counties, and project type should be summarized in a table.
4. Planning level cost estimate for each FMP identified.
5. Identify who will sponsor and own the FMP including directly financing and implementing it. This may involve more than one entity and could rely on a variety of sources of the funds.
6. All data identified in the data submittal requirements. Please refer to the Exhibit D: Data Submittal Guidelines for information required to be provided.
7. The TWDB will provide a GIS geodatabase template for the RFPGs to fill in with region-specific data. The geodatabase template will be pre-populated with all feature classes and fields, but will not have any data. GIS data layer that shows boundaries of all identified FMPs and associated data. {22. FMP}
8. The GIS geodatabase must show all relationships/links between each recommended FMP and any FMSs that may rely on that FMP to be implemented and/or any other FMPs that the FMP relies on or that may rely on that FMP. A single FMP may support more than one FMS or FMP and a single FMS may rely on more than one FMP to implement.
9. All maps should be submitted with underlying GIS data utilized to prepare them.
10. Completed 'Exhibit_C_Tables' Excel workbook for FMPs

Once identification of potential FMPs is complete, please include a summary table with findings (template below).

These are minimum reporting requirements however, an RFPG may present additional information utilized in the development of their plan.

Table 13: Potentially feasible flood mitigation projects identified by RFPG

FMP ID	FMP Name	Description	Associated Goals (ID)	Counties	HUC12s ^B	Watersheds ^B	Project Type	Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Potential Funding Sources and Amount	Flood Risk									
															Area in 100-year (1% annual chance) Floodplain	Area in 500-year (0.2% annual chance) Floodplain	Estimated number of structures at 100-year flood risk ^A	Residential structures at 100-year flood risk ^C	Estimated Population at 100-year flood risk	Critical facilities at 100-year flood risk (#)	Number of low water crossings at flood risk (#)	Estimated number of road closures (#)	Estimate d length of roads at 100-year flood risk (Miles)	Estimated farm & ranch land at 100-year flood risk (acres) ^D

A Estimated number of structures at 100-year flood risk will require consideration WSE and estimated finished flood elevation of buildings.

B Leave blank if too many for text field length (254 characters).

C For planning purpose, residential structures at flood risk will include residential buildings at flood risk that are greater than 500 square feet unless the RFPGs have more specific information.

D Estimated farm & ranch land at 100-year flood risk (acres) should only include farm and ranch land that are negatively impacted by flooding events and should not include land that benefits from floodplains for example rice fields.

Potentially feasible flood mitigation projects identified by RFPG (continued)

FMP ID	Reduction in flood risk												Pre-Project Level-of-Service	Post-Project Level-of-Service	Cost/Structure removed	Percent Nature-based Solution (by cost)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Social Vulnerability Index (SVI)	Water Supply Benefit (Y/N)	Traffic Count for Low Water Crossings ^E	BCR
	Number of structures with reduced 100-year (1% annual chance) Flood risk	Number of structures removed from 100-year (1% annual chance) Flood risk	Number of structures removed from 500-year (0.2% annual chance) Flood risk	Residential structures removed from 100-year (1% annual chance) Flood risk	Estimated Population removed from 100-year (1% annual chance) Flood risk	Critical facilities removed from 100-year (1% annual chance) Flood risk (#)	Number of low water crossings removed from 100-year (1% annual chance) Flood risk (#)	Estimated reduction in road closure occurrences	Estimated length of roads removed from 100-year flood risk (Miles)	Estimated farm & ranch land removed from 100-year flood risk (acres) ^D	Estimated reduction in fatalities (if available) ^E	Estimated reduction in injuries (if available) ^E										

D Estimated farm & ranch land at 100-year flood risk (acres) should only include farm and ranch land that are negatively impacted by flooding events and should not include land that benefits from floodplains for example rice fields.

E This field may be left blank during the 1st planning cycle. However, RFPGs are strongly encouraged to provide this information when applicable and available.

Exhibit C: Technical Guidelines for Regional Flood Planning

Flood management strategies (FMSs)

(See associated rule and scope language at top of this guidance section)

Flood Management Strategy is defined in 31 TAC §361.10(m) as, “A proposed plan to reduce flood risk or mitigate flood hazards to life or property. A flood management strategy may or may not require associated Flood Mitigation Projects to be implemented.” The RFPG has some flexibility on how they choose to utilize FMSs in the regional flood planning process.

For example, RFPGs could choose not to recommend any FMSs. At a minimum, RFPGs should include as FMSs any proposed action that the group would like to identify, evaluate, and recommend that does not qualify as either a FME or FMP. For example, if the RFPG wanted to call attention to the need for increased public awareness of flood risk, the RFPG could identify, evaluate, and recommend increased public awareness efforts as an FMS in the regional flood plan. Due to the flexibility and varying nature of RFPG’s potential utilization of FMSs, Table 14 has many optional fields that may or may not be applicable to certain types of FMSs. These fields are only required to be populated as applicable.

This section focuses on flood management strategies with a contributing drainage area greater than or equal to 1.0 (one) square miles except in instances of flooding of critical facilities or transportation routes or for other reasons, including levels of risk or project size, determined by the RFPG.

If applicable, any H&H model required for evaluation of the FMSs must adhere to all mapping and modeling guidelines and No Negative Impact requirements.

FMSs that were previously identified and evaluated by others prior to and/or outside of the regional flood planning process and that are being considered by the RFPG for inclusion in the regional flood plan must be re-assessed by the RFPGs prior to inclusion in the regional plan. These FMSs must meet or be updated to adhere to the requirements in this guidance and other relevant regional flood planning contract requirements.

Please also refer to Part 3 of this document for guidance regarding strategy project types, cost estimates, population estimates and no negative impact.

Submittal requirements for FMSs:

1. General description and GIS coverage map of identified FMSs in the region.
2. A GIS coverage map showing the extent of all identified FMSs in the region, including applicable strategy area and areas that would benefit from the strategy, with RFPG boundary, counties, HUC-12s, major roadways, stream segments, contributing drainage areas, relevant stormwater features, including but limited to, streams, detention ponds, storm drain systems, dams, and levees.
3. Total number and strategy area (square miles) of FMSs by flood risk type, counties, and strategy type should be summarized in a table.
4. Planning level cost estimate for each FMS identified.
5. Identify who will sponsor the FMS including directly financing and implementing it. This may involve more than one entity and could rely on a variety of sources of the funds.
6. All data identified in the data submittal requirements as outlined in the Exhibit D: Data Submittal Guidelines. {25. FMS}
7. The TWDB will provide a GIS geodatabase template for the RFPGs to fill in with region-specific data. The geodatabase template will be pre-populated with all feature classes and fields but will not have any data. GIS data layer that shows boundaries of all identified FMSs and associated data.

Exhibit C: Technical Guidelines for Regional Flood Planning

8. The GIS geodatabase must show all associated relationships between a recommended FMS and any FMPs that may be required to support the implementation of that FMS. A FMP may support more than one FMS and one FMS may rely on more than one FMP to implement.
9. All maps should be submitted with underlying GIS data utilized to prepare them.
10. Completed, separate 'Exhibit_C_Tables' Excel workbook for FMSs.

The regional flood plan will include a summary table with findings (template below).

These are minimum reporting requirements however, an RFPG may present additional information utilized in the development of their plan.

Table 14: Potentially feasible flood management strategies identified by RFPG

FMS ID	FMS Name	Description	Associate d Goals (ID)	Counties	HUC10s ^c	Watersheds ^c	Strategy Type	Strategy Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor	Entities with Oversight	Emerg ency Need (Y/N)	Estimated Strategy Cost (\$)	Potential Funding Sources and Amount	Flood Risk ^A									
															Area in 100-year (1% annual chance) Floodplain	Area in 500-year (0.2% annual chance) Floodplain	Estimated number of structures at 100-year flood risk ^A	Residenti al structures at flood risk	Estimated Population at flood risk	Critical facilities at flood risk (#)	Number of low water crossings at flood risk (#)	Estimated number of road closures (#)	Estimate d length of roads at flood risk (Miles)	Estimated farm & ranch land at flood risk (acres) ^B
1	Flood County Acquisiti on	Property acquisition program in Flood County	Goal B	Flood	1234567890	Purple Creek, Blue Creek	Property Acquisitio n	250	Riverine, Urban	Flood County	Flood County	N	75,000,000	Federal, State, Local, Private	60	80	500	450	1,200	5	5	10	7	100
2	Public Awarene ss Campaig n	Public awareness of flood risk to the public	Goal C	All	All	All	Education	(Region area)	All	X River Authority	List of entities in region	N	1,000,000	Private, Local	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	Blue Creek Detentio n	Provide detention in Blue Creek Watershed	Goal A	Flood	1234567890	Purple Creek	Regional Detention	150	Riverine	Flood County	Flood County	Y	10,000,000	Federal, State, Local	12	20	350	250	700	3	5	10	7	100
4	Coastal Resilienc y	Improve resilience in Coastal County	Goal C	Salty	1234567891	Salty Bay	Coastal Protection s	125	Coastal	Island City	Island City	Y	15,000,000	Federal, State, Local, Private	80	125	10,000	25,000	70,000	12	2	50	400	25
5	Green River Diversio n	Diversion of flood flow from upper watershed to lower watershed in Green River Basin	Goal A	Red, Yellow	1234567888, 1234567889	Upper Red	Infrastruc ture	200	Urban, Riverine	Green River Authority	List of entities in Red and Yellow Counties	Y	50,000,000	Federal, State, Local, Private	20	30	100	95	300	1	8	12	25	25,000
6	Promoti on of Rainwat er Harvesti ng	Promotion of Rainwater Harvesting with Rain Forecast Based release	Goal D	All	All	All	Regulator y Incentive	(Region Area)	All	Council of Governme nts	List of entities in region	N	200,000	Federal, State, Local, Private	500	800	125,000	300,000	800,000	80	50	200	3,000	5,000

^A Estimated number of structures at 100-year flood risk will require consideration WSE and estimated finished flood elevation of buildings. If not available, the RFPGs may leave these columns blank.

^B Estimated farm & ranch land at 100-year flood risk (acres) should only include farm and ranch land that are negatively impacted by flooding events and should not include land that benefits from floodplains for example rice fields.

^C Leave blank if too many for text field length (254 characters).

Potentially Feasible Flood Management Strategies Identified by RFPG (continued)

FMS ID	Reduction in Flood Risk												Cost/ Structure removed	Consideration of Nature- based Solution (Y/N)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Water Supply Benefit (Y/N)
	Number of structures with reduced 100- year (1% annual chance) Flood risk	Number of structures removed from 100- year (1% annual chance) Flood risk	Number of structures removed from 500- year (0.2% annual chance) Flood risk	Habitable structures removed from 100- year (1% annual chance) Flood risk	Estimated Population removed from 100- year (1% annual chance) Flood risk	Critical facilities removed from 100- year (1% annual chance) Flood risk (#)	Number of low water crossings removed from 100-year (1% annual chance) Flood risk (#)	Estimated reduction in road closure occurrences	Estimated length of roads removed from 100- year flood risk (Miles)	Estimated active farm & ranch land removed from 100- year flood risk (acres)	Estimated reduction in fatalities (if available) ^D	Estimated reduction in injuries (if available) ^D					
1	0	375	0	375	1,000	0	0	0	0	0			200,000	Y	N	N	N
2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	150	100	125	100	280	2	3	4	3	2			44,444	Y	N	N	N
4	6,000	3,000	15,000	3,000	8,250	9	2	38	250	10			833	Y	N	N	N
5	10	85	5	85	255	1	5	9	20	20,000			555,556	Y	Y	Y	N
6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Y	N	N	Y

^D This field may be left blank during the 1st planning cycle. However, RFPGs are strongly encouraged to provide this information when applicable and available.

Exhibit C: Technical Guidelines for Regional Flood Planning

2.4.C Task 4C – Prepare and Submit Technical Memorandum**Goals:**

The goal for this task is for RFPGs to submit their mid-point deliverable, the Technical Memorandum.

Information included in rules and scope of work:**1. Prepare a concise Technical Memorandum to include:**

- a. A list of existing political subdivisions within the FPR that have flood-related authorities or responsibilities;
- b. A list of previous flood studies considered by the RFPG to be relevant to development of the RFP;
- c. A geodatabase and associated maps in accordance with TWDB Flood Planning guidance documents that the RFPG considers to be best representation of the region-wide 1.0% annual chance flood event and 0.2% annual chance flood event inundation boundaries, and the source of flooding for each area, for use in its risk analysis, including indications of locations where such boundaries remain undefined;
- d. A geodatabase and associated maps in accordance with TWDB Flood Planning guidance documents that identifies additional flood-prone areas not described in (c) based on location of hydrologic features, historic flooding, and/or local knowledge;
- e. A geodatabase and associated maps in accordance with TWDB Flood Planning guidance documents that identifies areas where existing hydrologic and hydraulic models needed to evaluate FMSs and FMPs are available;
- f. A list of available flood-related models that the RFPG considers of most value in developing its plan;
- g. The flood mitigation and floodplain management goals adopted by the RFPG per §361.36;
- h. The documented process used by the RFPG to identify potentially feasible FMSs and FMPs;
- i. A list of potential FMEs and potentially feasible FMSs and FMPs identified by the RFPG, if any; and
- j. A list of FMSs and FMPs that were identified but determined by the RFPG to be infeasible, including the primary reason for it being infeasible.

2. Approve submittal of the Technical Memorandum to TWDB at a RFPG meeting subject notice requirements in accordance with 31 TAC §361.21(h). The Technical Memorandum must be submitted to TWDB in accordance with Section I Article I of the contract.

Additional guidance:

For the lists and requested documentation described in (a) and (b), RFPGs must provide the information in written format and may provide a limited version of associated GIS data or deliverables. For the lists and requested documentation described in (f) through (j), RFPGs must provide the information in written format and are required to provide a limited version of associated GIS data or deliverables.

For the geodatabases described in (c), (d), and (e), RFPGs shall provide associated GIS data and feature layers identified in Exhibit D Table 1.

Exhibit C: Technical Guidelines for Regional Flood Planning

GIS dataset and feature layers submitted with the technical guidelines may be enhanced in draft flood plan.

2.5 Task 5 – Recommendation of flood management evaluations and flood management strategies and associated flood mitigation projects (361.39)

This section is organized in several parts: goals, excerpts from relevant rules and scope of work, followed by additional guidance and submittal requirements.

Goals:

The goal of this task is for RFPGs to recommend FMEs, FMSs, and FMPs for inclusion in the regional flood plan.

2.5.A Flood management evaluations (FMEs)

Information included in rules and scope of work:

RFPGs shall recommend FMEs that the RFPG determines are most likely to result in identification of potentially feasible FMSs and FMPs that would, at a minimum, identify and investigate one solution to mitigate for flood events associated with a 1% annual chance flood event and that support specific RFPG flood mitigation and/or floodplain management goals.

Additional guidance:

The RFPGs will identify and recommend specific FMEs for the region. FMEs will be identified under Task 4 and recommended under Task 5 in the regional plan **but are not generally anticipated to actually be performed by the RFPG during the same regional flood planning cycle during which they are identified.**

The RFPGs may, at their discretion and based on their limited resources, work to carry out a limited number of FMEs for immediate study during this planning cycle and explain the reason for doing so, based information compiled during Task 4. If completed by the RFPG or others during the current planning cycle, those (former) FMEs would no longer need to be recommended since their results would already be incorporated into the regional flood plan.

FMEs are to be recommended in the regional plans to make clear what additional studies, and funds to support them, are needed to adequately evaluate all flood prone areas within a region. The step of identifying FMEs is a recognition that the regional flood planning process has significant financial, technical, and time constraints. However, that does not preclude performance of the FMEs by others, with other sources of funds for example, or incorporating the timely results of such evaluations into the final regional water plan. If an equivalent FME is performed outside of the regional flood planning process, for example through GLO efforts, and the results incorporated into the plan, that particular FME would no longer be recommended as a FME in the plan since the results of it would already be reflected in the plan. The FMEs that are performed after adoption of the regional plan may then support recommendations of FMSs and FMPs in the next regional plan, for example.

RFPGs are encouraged to consider the results of the vulnerability analyses performed in Task 2 in recommending FMEs.

The recommended FMEs will be similarly eligible for future state funding alongside recommended FMPs. FMEs are the necessary studies that are required to identify and determine what FMPs can be recommended. This is based on a recognition that some local or regional areas of the state may begin the regional planning process with more flood risk, flood planning, and flood project information than others. The recommended FMEs of areas with less prior information will then serve to inform the next

planning cycle, and so forth. Note that during the inaugural cycle of the Flood Infrastructure Funding (FIF) program, FME-type studies were generally prioritized ahead of infrastructure construction projects and received significant grant funding shares.

Not every conceivable FME will be recommended in the regional plan. The RFPG and their technical consultant must decide which identified potential FMEs will be recommended in their regional plan in order to ensure that the recommended FMEs are sensible so that, subsequently, limited resources can be directed efficiently and accordingly to implement those flood studies and associated technical evaluations.

Submittal requirements for FMEs:

1. General description and summary of the RFPG approach in recommending FMEs
2. General description and summary of the FMEs recommended by RFPGs.
3. A GIS coverage map of recommended FMEs during this planning cycle depicting FME study area, RFPG boundary, counties, HUC-12s, streams, reservoirs, major roadways, and other features identified by RFPGs.
4. Complete the RFPG Recommendation fields in the blank {21. FME} GIS Geodatabase feature class provided by TWDB.
5. Please refer to the Exhibit D: Data Submittal Guidelines for information requested.
6. A table of FMEs recommended by the RFPG as per template provided below.

Exhibit C: Technical Guidelines for Regional Flood Planning

Table 15: Flood management evaluations recommended by RFPG

FME ID	FME Name	Description	Associated Goals	Counties	HUC8s	HUC12s ^A	Watershed Names ^A	FME Study Area (sqmi)	Flood Risk Type	Sponsor	Entities with Oversight	Emergency Need	Estimated Study Cost	RFPG Recommendation (Y/N)	Reason for Recommendation

^A Leave blank if too many for text field length (254 characters).

2.5.B Flood mitigation projects (FMPs)

Information included in rules and scope of work:

RFPGs shall recommend FMPs to reduce the potential impacts of flood and RFPG goals that must, at a minimum, mitigate for flood events associated with at 1 percent annual chance (100-year flood) where feasible. In instances where mitigating for 100-year events is not feasible, FMS and FMPs to mitigate more frequent events may be recommended based on guidance to be provided by the EA.

Recommendations shall be based upon the identification, analysis, and comparison of alternatives that the RFPG determines will provide measurable reductions in flood impacts in support of the RFPG's specific flood mitigation and/or floodplain management goals.

RFPGs shall provide additional information in conformance with guidance to be provided by the EA which will be used to rank recommended FMPs in the state flood plan.

Recommended FMPs may not negatively affect a neighboring area or an entity's water supply.

Recommended FMPs that will contribute to water supply may not result in an overallocation of a water source based on the water availability allocations in the most recently adopted State Water Plan.

Specific types of FMEs, FMSs, or FMPs that should or should not be included in regional flood plans must be in accordance with guidance to be provided by the EA.

Additional guidance:

The RFPGs will recommend specific FMPs in the regional flood plan. The primary function of each recommended FMP must be flood risk reduction and they must include quantifiable flood risk reduction benefits. The RFPGs will also identify the reason for their recommendation, based on evaluations initiated in Task 4 and completed Task 5.

This section of the regional flood plan should focus primarily on FMPs with a contributing drainage area greater than or equal to 1.0 (one) square miles except in instances of flooding of critical facilities or transportation routes or for other reasons, including levels of risk or project size, determined by the RFPG.

Any H&H model required for evaluation of the FMPs must adhere to all mapping and modeling guidelines and No Negative Impact requirements.

To the extent possible, FMPs that were previously identified and evaluated by others prior to and/or outside of the regional flood planning process and that are being considered by the RFPG for inclusion in the regional flood plan should be developed or updated in a manner that closely resembles the requirements in this guidance and other relevant regional flood planning contract requirements.

RFPGs are encouraged to consider the results of the vulnerability analyses performed in Task 2 in recommending FMPs.

Project details:

RFPGs will provide information for each recommended FMP requested in the project details section in Part 3 of this document. This task will be initiated in Task 4A and completed in Task 4. The general project data section will be completed in Task 4A.

If the RFPGs do not have pertinent information in this planning cycle, it is acceptable to leave it blank. However, those fields will score as zero. If a field is not applicable, please add NA or Not Applicable.

Submittal requirements:

1. General description and summary of the RFPG approach in recommending FMPs.

Exhibit C: Technical Guidelines for Regional Flood Planning

2. A GIS coverage map of recommended FMPs during this planning cycle depicting FMP project areas, RFPG boundary, counties, HUC-12s, streams, reservoirs, major roadways, and other features identified by RFPGs and proposed project features.
3. Completed project details spreadsheet for all recommended FMPs. A blank project details spreadsheet is provided by TWDB and the guidance on how to determine the project details is included in Part 3 of this guidance document {Project Details}.
4. Complete the RFPG Recommendation fields in the blank 'FMP' GIS Geodatabase feature class provided by TWDB.
5. Please refer to the Exhibit D: Data Submittal Guidelines for information requested.
6. A table of FMPs recommended by the RFPG as per template provided below.

Table 16: Potentially feasible flood mitigation projects recommended by RFPG

FMP ID	FMP Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s ^A	Watershed Name ^A	Project Type	Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Potential Funding Sources and Amount	Cost/ Structure removed	Percent Nature-based Solution (by cost)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Water Supply Benefit (Y/N)	BCR	Social Vulnerability Index (SVI)	RFPG Recommendation (Y/N)	Reason for Recommendation

^A Leave blank if too many for text field length (254 characters).

Exhibit C: Technical Guidelines for Regional Flood Planning

2.5.C Flood management strategies (FMSs)**Information included in rules and scope of work:**

RFPGs shall recommend FMSs to reduce the potential impacts of flood and RFPG goals that must, at a minimum, mitigate for flood events associated with at 1 percent annual chance (100-year flood) where feasible. In instances where mitigating for 100-year events is not feasible, FMS and FMPs to mitigate more frequent events may be recommended based on guidance to be provided by the EA.

Recommendations shall be based upon the identification, analysis, and comparison of alternatives that the RFPG determines will provide measurable reductions in flood impacts in support of the RFPG's specific flood mitigation and/or floodplain management goals.

Recommended FMSs or FMPs may not negatively affect a neighboring area or an entity's water supply.

Recommended FMSs or FMPs that will contribute to water supply may not result in an overallocation of a water source based on the water availability allocations in the most recently adopted State Water Plan.

Specific types of FMEs, FMSs, or FMPs that should or should not be included in regional flood plans must be in accordance with guidance to be provided by the EA.

Additional guidance:

This section of the regional flood plan should primarily focus on FMSs with a contributing drainage area greater than or equal to 1.0 (one) square miles except in instances of flooding of critical facilities or transportation routes or for other reasons, including levels of risk or project size, determined by the RFPG.

Any H&H model required for evaluation of the FMSs must adhere to all mapping and modeling guidelines and No Negative Impact requirements.

To the extent possible, FMSs that were previously identified and evaluated by others prior to and/or outside of the regional flood planning process and that are being considered by the RFPG for inclusion in the regional flood plan should be developed or updated in a manner that closely resembles the requirements in this guidance and other relevant regional flood planning contract requirements.

Please also refer to Part 3 of this document for guidance regarding strategy types, cost estimates, population estimates and no negative impact.

Submittal requirements for FMSs:

1. General description and summary of the RFPG approach in recommending FMSs.
2. A GIS coverage map of recommended FMSs during this planning cycle depicting FMS areas, RFPG boundary, counties, HUC-12s, streams, reservoirs, major roadways, and other features identified by RFPGs and proposed project features.
3. Complete the RFPG Recommendation fields in the blank 'FMS' GIS Geodatabase feature class provided by TWDB.
4. Please refer to the Exhibit D: Data Submittal Guidelines for information requested.
5. A table of FMSs recommended by the RFPG as per template provided below.

The regional flood plan will include a summary table with findings (template below).

These are minimum reporting requirements however, an RFPG may present additional information utilized in the development of their plan.

Table 17: Potentially feasible flood management strategies recommended by RFPG

FMS ID	FMS Name	Description	Associated Goals (ID)	Counties	HUC8s	HUC12s ^A	Watershed Name ^A	Project Type	Strategy Project Area (sqmi)	Flood Risk Type (Riverine, Coastal, Urban, Playa, Other)	Sponsor	Entities with Oversight	Emergency Need (Y/N)	Estimated Project Cost (\$)	Potential Funding Sources and Amount	Cost/ Structure removed	Consideration of Nature-based Solution (Y/N)	Negative Impact (Y/N)	Negative Impact Mitigation (Y/N)	Water Supply Benefit (Y/N)	RFPG Recommendation (Y/N)	Reason for Recommendation

^A Leave blank if too many for text field length (254 characters).

Exhibit C: Technical Guidelines for Regional Flood Planning

2.6 Task 6 – Impact and contribution of the regional flood plan

This section is organized in several parts: goals, excerpts from relevant rules and scope of work, followed by additional guidance and submittal requirements.

Goals:

The goal of this task is for RFPs to summarize the impacts of implementation of the regional flood plan.

2.6.A Task 6A – Impacts of regional flood plan (361.40)

Information included in rules and scope of work:

The regional flood plans must include:

1. A region-wide summary of the relative reduction in flood risk that implementation of the regional flood plan would achieve within the region including with regard to life, injuries, and property.
2. A statement that the FMPs in the plan, when implemented, will not negatively affect neighboring areas located within or outside of the FPR.
3. A general description of the types of potential positive and negative socioeconomic or recreational impacts of the recommended FMSs and FMPs within the FPR; and
4. A general description of the overall impacts of the recommended FMPs and FMSs in the Regional Flood Plan on the environment, agriculture, recreational resources, water quality, erosion, sedimentation, and navigation.

Additional guidance:

The presentation of information related to item 1 above should be based on two, before-and-after (regional flood plan implementation) comparisons of the same types of information provided under both the Task 2 Existing Flood Risk and Future Flood Risk Analyses. These two comparisons may, for example, also indicate a percent change in flood risk faced by various elements including critical infrastructure etc. These two comparisons (one comparison each for a 1 percent event and another for a 0.2 percent event) should illustrate both how much the region's existing flood risk will be reduced through implementation of the plan as well as how much additional, future flood risk (that might otherwise arise if no changes were made to floodplain policies etc.) will be avoided through implementation of the regional flood plan, including recommended changes/improvements to the region's floodplain management policies etc.

The RFPs must include a statement that the plan, when implemented, will not negatively affect neighboring areas located within or outside of the FPR. The plan content should speak, separately, to the anticipated overall impacts of the plan on each of the categories; environment, agriculture, recreational resources, water quality, erosion, sedimentation, and navigation.

The RFPs will identify and report the following information in this task:

1. Total area in need of flood risk identification or update vs. total area that will be evaluated via the completion of the FMEs recommended in this flood plan.
2. Total number of structures in the 1 percent and 0.2 percent annual chance floodplains before and after the implementation of the plan.
3. Total estimated population in 1 percent and 0.2 percent annual chance floodplains and in flood prone areas before and after the implementation of the flood plan.
4. Number of low water crossings removed from flood risk after the implementation of plan.

5. Impact on future flood risk by avoiding increase of existing flood risk after the implementation of plan.
6. Overall impact on water supply.
7. Overall impact on the environment, agriculture, recreational resources, water quality, erosion, sedimentation, and navigation.

2.6.B Task 6B – Contributions to and impacts on water supply development and the state water plan (361.41)

Information included in rules and scope of work:

Regional flood plans must include a region-wide summary and description of the contribution that the regional flood plan would have to water supply development including a list of the specific flood management strategies and/or flood mitigation projects that would contribute to water supply; and a description of any anticipated impacts, including to water supply or water availability or projects in the state water plan, that the regional flood plan FMSs and FMPs may have.

Additional guidance:

RFPGs must present and summarize positive and negative impacts of the flood plan on the state water plan. RFPGs shall coordinate with RWPGs regarding this task.

RFPGs must present a table listing all the recommended FMSs, or FMPs in the flood plan that, if implemented, would measurably contribute to water supply if implemented including fields in the table that indicate the associated annual volumes of water and whether each one:

1. Involves directly increasing ‘water supply’⁶ volume available during drought of record which requires both availability increase and directly connecting supply to specific water user group(s) with an identified water supply need
2. Directly benefits ‘water availability’ by, for example, injecting into aquifer but no one takes it as supply directly
3. Indirectly benefits ‘water availability’ (e.g., indirectly recharges aquifers naturally)
4. Has no anticipated impact on water supply

RFPGs must present a table listing every recommended FMS or FMP in the flood plan that, if implemented, would negatively impact and/or measurably reduce:

1. water availability volumes that are the basis for the most recently adopted state water plan and/or
2. water supply volumes if implemented.

For example, a FMS or FMP that involves reallocating a portion of reservoir storage that is currently designated for water supply purposes to be used, instead, for flood storage, would measurably reduce the water availability at that water source in the most recently adopted state water plan. The related potential impacts of this reduction must be also be described (e.g., less water available for water user groups under drought of record conditions; an increase in needs and or unmet needs). Water volumes should be discussed and presented in terms of acre-feet per year.

⁶ The meanings of terms ‘water supply’ and ‘water availability’ and ‘needs’, as referred to in this guidance, are to be understood and interpreted in the same manner as they are used in regional water planning.

2.7 Task 7 – Flood response information and activities (361.42)

This section is organized in several parts: goals, excerpts from relevant rules and scope of work, followed by additional guidance and submittal requirements.

Goals:

The goal of this task is for RFPGs to summarize existing flood response and recovery activities in the region.

Information included in rules and scope of work:

RFPGs are to summarize the nature and types of flood response preparations within the FPR including providing where more detailed information is available regarding recovery. RFPGs must not perform analyses or other activities related to planning for disaster response or recovery activities.

Additional guidance:

FEMA defines four phases of emergency management: Mitigation, Preparedness, Response, and Recovery, see figure below.

Figure 6: The four phases of emergency management (FEMA, 1998)

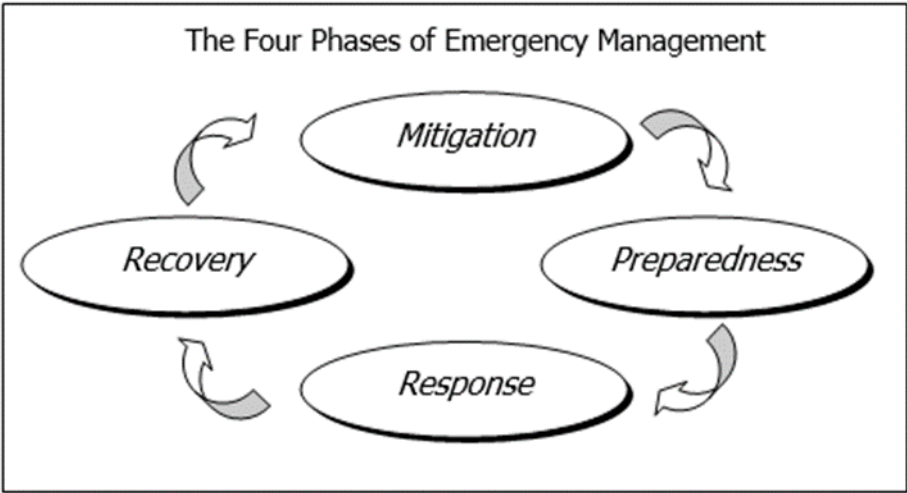


Table 18: Definition and examples of the four phases of emergency management ^A

	General definition	Example projects (not an exhaustive list)
Flood mitigation	“The implementation of actions, including both structural and non-structural solutions, to reduce flood risk to protect against the loss of life and property.” (Title 31 Texas Administrative Code §361.10(k))	See Section 3.2(2-3) examples of structural and non-structural Flood Mitigation Projects.
Flood preparedness	Actions, aside from mitigation, that are taken before flood events to prepare for flood response activities	Developing emergency management and evacuation plans, preparing staging areas, and building flood early warning systems
Flood response	Actions taken during and in the immediate aftermath of a flood event	Conducting evacuations, providing shelters, closing flooded roads, and operating flood warning systems

	General definition	Example projects (not an exhaustive list)
Flood recovery	Actions taken after a flood event involving repairs or other actions necessary to return to pre-event conditions	Repairs to damaged infrastructure, storm event debris removal

^A Table adapted from *Animals in Disaster, Module A, Awareness and Preparedness (FEMA, 1998)*

Flood mitigation is the primary focus of the regional flood planning process and plan development efforts with regard to identifying and recommending FMEs, FMSs and FMPs by the RFPG. The plan may include flood preparedness FMEs, FMSs and FMPs. Flood response, and recovery activities and efforts will not be included as FMSs or FMPs in the regional flood plans but the efforts related to flood preparedness, response, and recovery will be summarized in this chapter of the regional flood plan and the group can make general recommendations in Chapter 8 regarding additional efforts that should be put forth towards these types of activities if the RFPG considers current efforts inadequate.

In this task, the RFPG will consider and summarize the last three flood activity phases (above) and will need to coordinate with local, regional, state, and federal entities with flood preparedness, response, and recovery authority, including municipalities and counties, in the region. The Plan must contain a written summary of the current state of flood preparedness in the region to respond to future floods, including a summary of the roles and responsibilities of various entities. The Plan must also contain a written summary of entities involved and actions taken or planned for recovery from past flood disasters in the region.

The prior tasks in the development of the regional flood plans focus on recommending specific FMSs and FMPs that, if implemented prior to the onset of flood events, should directly reduce flood risk and thereby indirectly reduce the magnitude of flood response and recovery efforts that would be necessary during and following flood events.

The content of this section of the regional flood plans is focused on potential recommendations to include in Chapter 8 of the plan. The plan may discuss the intersection of some of the particular regional flood plan content including floodplain management recommendations, FMSs, FMPs, or other policy recommendations, where there may be direct links between those flood items in the plan that would be implemented prior to storm events and how they may directly or indirectly support reduce the need for or otherwise support preparation for and response to flood events.

Title 31 TAC §361.72(a)(4) states that the Board will not provide funds to the RFPGs for “analysis or other activities related to planning for disaster response or recovery activities...” Accordingly, this task is limited to a summary of existing preparations for flood response activities and existing recovery efforts and does not require RFPGs to propose new or modified flood preparedness, response, or recovery activities. At their discretion, the RFPG may also include policy recommendations related to this plan content, as appropriate in Chapter 8.

2.8 Task 8 – Administrative, regulatory, and legislative recommendations (361.43)

This section is organized in several parts: goals, excerpts from relevant rules and scope of work, followed by additional guidance and submittal requirements.

Goals:

The goal of this task is for RFPGs to develop legislative, regulatory, administrative, or other recommendations.

Exhibit C: Technical Guidelines for Regional Flood Planning

Information included in rules and scope of work:

RFPGs must develop and include in their flood plans:

1. legislative recommendations that they consider necessary to facilitate floodplain management and flood mitigation planning and implementation;
2. other regulatory or administrative recommendations that they consider necessary to facilitate floodplain management and flood mitigation planning and implementation;
3. any other recommendations that the RFPG believes are needed and desirable to achieve its regional flood mitigation and floodplain management goals; and
4. recommendations regarding potential, new revenue-raising opportunities, including potential new municipal drainage utilities or regional flood authorities, that could fund the development, operation, and maintenance of floodplain management or flood mitigation activities in the region.

Additional guidance:

These recommendations may address items that benefit and/or can be implemented at the local, regional, or state level. Recommendations, in general, are anticipated to be aimed at supporting flood risk reduction and supporting implementation of the regional flood plans, including exploring innovative ways of funding flood risk reduction activities. Recommendations may include suggested changes to the flood planning process for the TWDB to consider when implementing the next cycle of regional and state flood planning. The RFPGs may make policy recommendations for the legislature to consider.

2.9 Task 9 – Flood infrastructure financing analysis (361.44)

This section is organized in several parts: goals, excerpts from relevant rules and scope of work, followed by additional guidance and submittal requirements.

Goals:

The goal of this task is for RFPGs to indicate how sponsors will propose to finance recommended FMPs, and FMEs.

Information included in rules and scope of work:

RFPGs shall indicate how individual local governments, regional authorities, and other political subdivisions in their region that will sponsor flood risk mitigation efforts propose to finance the region's recommended FMSs, FMPs, and FMEs included in their flood plan. The assessment shall also describe what role that the RFPG proposes for the state in financing recommended FMSs, FMPs, and FMEs. As projects are implemented, those improvements and associated benefits shall be incorporated into and reflected in the subsequent RFPs.

Additional guidance:

This task requires obtaining the relevant information from sponsors of the recommended FMSs, FMPs, and FMEs that have capital costs, for example, in the form of a mailed survey or other means of collecting the required information. This information will provide an indication of potential funding needs, as they are needed over time, to implement the regional flood plans.

Below is a minimum set of information that must be submitted (in a template form that will be provided by TWDB to each region for their use) that can be used for performing the survey and aggregated and submitted to meet this requirement. Results should also include documentation of the effectiveness of survey methodology, percentage of survey completions, and whether an acceptable minimum percent survey completion was achieved.

Table 19: FMS, FMP, FME funding survey template format (with illustrative examples)

RFPG Number	Sponsor Entity Name	FMS or FMP or FME	FMS FMP FME - Name	Regional plan's unique FMS/FMP/FME identification number	Target year of full implementation	Estimated costs in plan			Estimated percent (share) of total FMS, FMP, or FME estimated cost			
						Non-construction costs	Construction-related costs	Total estimated cost	Sponsor Funding		Other Funding Needed (including state, federal and/ or other funding)	TOTAL (auto) sum must = 100%
									ANTICIPATED SOURCE of Sponsor funding (e.g., taxes; general revenue; dedicated revenue incl. fees)	FUNDING TO BE FINANCED BY SPONSOR (including local, county, or regional mechanisms available but not yet fully utilized)		
21	City of Howdy	FMP	Widen main downtown channel	2003	2028	\$3,484,000	\$8,129,000	\$11,613,000	stormwater fees	75%	25%	100%
21	Major River Authority	FMP	Levee improvements	3001	2030	\$37,544,000	\$212,754,000	\$250,298,000	fees	50%	50%	100%
21	James County	FME	Study southeast county flooding along Colorado River to identify solutions	4409	2024	\$722,000	\$0	\$722,000	taxes	50%	50%	100%
21	James County	FMS	Study to develop county-wide floodplain development policy	4409	2024	\$200,000	\$0	\$200,000	taxes	100%	0%	100%

These are minimum reporting requirements however, an RFPG may present more information gathered and/or utilized in the development of their plan. For example, this assessment could also include information about what existing funding mechanisms sponsors already have available or plan to implement to support the funding and implementation of recommended projects in the regional flood plan.

Exhibit C: Technical Guidelines for Regional Flood Planning

2.10 Task 10 – Adoption of plan and public participation

As required by 31 TAC §361 (in particular §361.21), the RFPs must conduct all business in meetings posted and held in accordance with the Texas Open Meetings Act, Texas Government Code Chapter 551, with a copy of all materials presented or discussed available for public inspection prior to and following public meetings. Additional notice requirements referenced in 31 TAC §361.21 must also be followed when applicable.

The plan must be developed and adopted in accordance with 31 TAC §361.50 and §361.60–.61 the flood planning guidance principles 31 TAC §361.20 (31 TAC §362.3) including an explanation of how the plan satisfies each of the guidance principles including that the plan will not negatively affect a neighboring area.

The RFPs must adopt RFPs and accommodate public participation including soliciting public input and considering and, when appropriate, addressing comments made by the public including indicating whether changes to the plan were made in response to public comments, during the Plan adoption process in accordance with all administrative rules, the Contract, statute and the RFP bylaws.

This work includes all work required to prepare for and hold meetings and include public input and public participation in development of the Plan, including but not limited to:

1. holding regular RFP meetings;
2. posting public notices;
3. holding public input meetings and public meeting on the draft plan as required by statute and rules;
4. solicit and consider public input;
5. technical work required to prepare for and participate in RFP meetings, workshops, and any other committee or other meetings during the development of the Plan;
6. coordination with and collection of information from entities involved with flood planning in the region;
7. assembling, producing, and submitting the Technical Memorandum, Draft regional flood plan and final regional flood plan and responding to comments and resubmitting as necessary to ensure the plan can be approved by the TWDB; and,
8. interregional cooperation and efforts required to resolve issues including potential negative effects on neighboring areas within regions and between regions.

2.10.A Public meetings

At least one meeting is needed to identify flood risk in the region. This should be done once the consultant has already identified existing information on flood risk and summarized this information on a map. The legible and clearly identified flood risk map should be shared at these public meeting to allow members of the public to identify any flood risk that are not captured. This meeting can also be utilized to receive preliminary feedback to gather general suggestions and recommendations from the public as to the issues, provisions, and types of FMSs, FMPs, and FMEs that should be considered or addressed, or provisions that should be considered and potentially included during that regional flood planning cycle

At least one additional meeting is required to receive feedback to gather general suggestions and recommendations from the public as to issues, provisions, and types of FMSs, FMPs, and FMEs that should be considered or addressed or provisions that should be considered and potentially included during that regional flood planning cycle.

2.11 Contents of draft and final Regional Flood Plan documents

In addition to the content requirements described in the previous sections, to be considered administratively complete both the draft RFPs and final adopted RFPs must include:

1. An executive summary documenting key findings and recommendations that does not exceed 20 pages;
2. A statement, as required in 31 TAC §361.20, that the plan conforms with the guidance principles in Title 31 TAC §362.3, including an explanation of how the Plan satisfies the requirements of each of the principles; and
3. A statement as to whether or not the planning group met all requirements under the Texas Open Meetings Act and Public Information Act.

PART 3 – Technical guidance

3.1 Guidance principles (31 TAC §362.3)

Development of the regional and state flood plans shall be guided by the following principles. The regional and state flood plans:

- (1) shall be a guide to state, regional, and local flood risk management policy;
- (2) shall be based on the best available science, data, models, and flood risk mapping;
- (3) shall focus on identifying both current and future flood risks, including hazard, exposure, vulnerability and residual risks; selecting achievable flood mitigation goals, as determined by each RFPG for their region; and incorporating strategies and projects to reduce the identified risks accordingly;
- (4) shall, at a minimum, evaluate flood hazard exposure to life and property associated with 0.2 percent annual chance flood event (the 500-year flood) and, in these efforts, shall not be limited to consideration of historic flood events;
- (5) shall, when possible and at a minimum, evaluate flood risk to life and property associated with 1.0 percent annual chance flood event (the 100-year flood) and address, through recommended strategies and projects, the flood mitigation goals of the RFPG (per item 2 above) to address flood events associated with a 1 percent annual chance flood event (the 100-year flood); and, in these efforts, shall not be limited to consideration of historic flood events;
- (6) shall consider the extent to which current floodplain management, land use regulations, and economic development practices increase future flood risks to life and property and consider recommending adoption of floodplain management, land use regulations, and economic development practices to reduce future flood risk;
- (7) shall consider future development within the planning region and its potential to impact the benefits of flood management strategies (and associated projects) recommended in the plan;
- (8) shall consider various types of flooding risks that pose a threat to life and property, including, but not limited to, riverine flooding, urban flooding, engineered structure failures, slow rise flooding, ponding, flash flooding, and coastal flooding, including relative sea level change and storm surge;
- (9) shall focus primarily on flood management strategies and projects with a contributing drainage area greater than or equal to 1.0 (one) square miles except in instances of flooding of critical facilities or transportation routes or for other reasons, including levels of risk or project size, determined by the RFPG;
- (10) shall consider the potential upstream and downstream effects, including environmental, of potential flood management strategies (and associated projects) on neighboring areas. In recommending strategies, RFPGs shall ensure that no neighboring area is negatively affected by the regional flood plan;
- (11) shall include an assessment of existing, major flood mitigation infrastructure and will recommend both new strategies and projects that will further reduce risk, beyond what existing flood strategies and projects were designed to provide, and make recommendations regarding required expenditures to address deferred maintenance on or repairs to existing flood infrastructure;
- (12) shall include the estimate of costs and benefits at a level of detail sufficient for RFPGs and sponsors of flood mitigation projects to understand project benefits and, when applicable, compare the relative benefits and costs, including environmental and social benefits and costs, between feasible options;

- (13) shall provide for the orderly preparation for and response to flood conditions to protect against the loss of life and property and reduce injuries and other flood-related human suffering;
- (14) shall provide for an achievable reduction in flood risk at a reasonable cost to protect against the loss of life and property from flooding;
- (15) shall be supported by state agencies, including the TWDB, General Land Office, Texas Commission on Environmental Quality, Texas State Soil and Water Conservation Board, Texas Parks and Wildlife Department, and the Texas Department of Agriculture, working cooperatively to avoid duplication of effort and to make the best and most efficient use of state and federal resources;
- (16) shall include recommended strategies and projects that minimize residual flood risk and provide effective and economical management of flood risk to people, properties, and communities, and associated environmental benefits;
- (17) shall include strategies and projects that provide for a balance of structural and nonstructural flood mitigation measures, including projects that use nature-based features, that lead to long-term mitigation of flood risk;
- (18) shall contribute to water supply development where possible;
- (19) shall also follow all regional and state water planning guidance principles (31 TAC §358.3) in instances where recommended flood projects also include a water supply component;
- (20) shall be based on decision-making that is open to, understandable for, and accountable to the public with full dissemination of planning results except for those matters made confidential by law;
- (21) shall be based on established terms of participation that shall be equitable and shall not unduly hinder participation;
- (22) shall include flood management strategies and projects recommended by the RFPs that are based upon identification, analysis, and comparison of all flood management strategies the RFPs determine to be potentially feasible to meet flood mitigation and floodplain management goals;
- (23) shall consider land-use and floodplain management policies and approaches that support short- and long-term flood mitigation and floodplain management goals;
- (24) shall consider natural systems and beneficial functions of floodplains, including flood peak attenuation and ecosystem services;
- (25) shall be consistent with the National Flood Insurance Program (NFIP) and shall not undermine participation in nor the incentives or benefits associated with the NFIP;
- (26) shall emphasize the fundamental importance of floodplain management policies that reduce flood risk;
- (27) shall encourage flood mitigation design approaches that work with, rather than against, natural patterns and conditions of floodplains;
- (28) shall not cause long-term impairment to the designated water quality as shown in the state water quality management plan as a result of a recommended flood management strategy or project;
- (29) shall be based on identifying common needs, issues, and challenges; achieving efficiencies; fostering cooperative planning with local, state, and federal partners; and resolving conflicts in a fair, equitable, and efficient manner;
- (30) shall include recommended strategies and projects that are described in sufficient detail to allow a state agency making a financial or regulatory decision to determine if a proposed action before the state agency is consistent with an approved regional flood plan;
- (31) shall include ongoing flood projects that are in the planning stage, have been permitted, or are under construction;

Exhibit C: Technical Guidelines for Regional Flood Planning

- (32) shall include legislative recommendations that are considered necessary and desirable to facilitate flood management planning and implementation to protect life and property;
- (33) shall be based on coordination of flood management planning, strategies, and mitigation projects with local, regional, state, and federal agencies projects and goals;
- (34) shall be in accordance with all existing water rights laws, including but not limited to, Texas statutes and rules, federal statutes and rules, interstate compacts, and international treaties;
- (35) shall consider protection of vulnerable populations;
- (36) shall consider benefits of flood management strategies to water quality, fish and wildlife, ecosystem function, and recreation, as appropriate;
- (37) shall minimize adverse environmental impacts and be in accordance with adopted environmental flow standards;
- (38) shall consider how long-term maintenance and operation of flood strategies will be conducted and funded; and
- (39) shall consider multi-use opportunities such as green space, parks, water quality, or recreation, portions of which could be funded, constructed, and or maintained by additional, third-party project participants.

3.2 Flood risk reduction project (FMEs, FMSs and FMPs) types

It is expected that a wide range of project types will be recommended by the RFPGs to the TWDB. The following list of **types** is provided as guidance for use in the FME, FMS, and FMP tables and GIS feature classes, but other types identified by the RFPGs, that are not already listed, should be included by the RFPG.

1. Flood Management Evaluations
 - a. Watershed Planning
 - i. Hydrologic and Hydraulic Modeling
 - ii. Flood Mapping Updates
 - iii. Regional Watershed Studies
 - b. Engineering Project Planning
 - i. Feasibility Assessments
 - c. Preliminary Engineering (alternative analysis and up to 30 percent design)
 - d. Studies on Flood Preparedness
 - e. Other
2. Flood Mitigation Projects – Structural⁷
 - a. Low Water Crossings or Bridge Improvements
 - b. Infrastructure (channels, ditches, ponds, stormwater pipes, etc.)
 - c. Regional Detention
 - d. Regional Channel Improvements
 - e. Storm Drain Improvements
 - f. Reservoirs
 - g. Dam Improvements, Maintenance and Repair
 - h. Flood Walls / Levees
 - i. Coastal Protections
 - j. Natural Based Projects – living levees, increasing storage, increasing channel roughness, increasing losses, de-synchronizing peak flows, dune management, river restoration,

⁷ FMPs will include permitting, detailed design, construction, and implementation phases of the project.

- riparian restoration, run-off pathway management, wetland restoration, low impact development, green Infrastructure
 - k. Comprehensive Regional Project – includes a combination of projects intended to work together
 - l. Other
3. Flood Mitigation Projects – Non-Structural⁸
- a. Property or easement acquisition
 - b. Elevation of Individual Structures
 - c. Flood Readiness and Resilience
 - d. Flood Early Warning Systems, including stream gauges and monitoring stations
 - e. Floodproofing
 - f. Regulatory Requirements for Reduction of Flood Risk
 - g. Other

⁸ FMPs will include permitting, detailed design, construction, and implementation phases of the project.

Exhibit C: Technical Guidelines for Regional Flood Planning

3.3 Compilation of flood risk data in Texas (floodplain quilt)

The floodplain quilt is prepared by TWDB to provide the RFPs with a common starting point for their own compilation of riverine and coastal flood risk data in their regions. The RFPs are expected to confirm, update, and otherwise enhance the initial floodplain quilt information as appropriate to prepare the deliverables required for their flood risk analyses tasks. The dataset in the floodplain quilt will be made available via the TWDB Flood Planning [Data Hub](#).

3.3.A Background

The 86th Texas Legislature tasked the TWDB with developing and updating flood risk maps in the state, using current data and technology standards, to support development of a statewide flood plan. Considering this new legislation and the need for improved flood risk mapping as well as the current [TNRIS Lidar Coverage](#) for the state being nearly complete, the TWDB chose Base Level Engineering (BLE) as a key path forward for mapping flood risk in Texas. The TWDB plans to complete statewide BLE coverage by 2024. In the meantime, the TWDB understands the immediate need to provide the communities of Texas the most up to date and comprehensive flood hazard information that is available right now. Compiling flood risk data from available sources into one location is what the TWDB is working to accomplish with the floodplain quilt.

3.3.B Purpose

The floodplain quilt consists of multiple layers of data from different sources available throughout the state to 'quilt' together a dataset that can more easily inform Texans of the flood risk information coverage and availability in their area by referring to the floodplain quilt rather than trying to piece together and search for the disparate data on their own.

3.3.C Floodplain Quilt data

The following data is included as a part of the Floodplain Quilt⁹ provided by the TWDB:

1. Source: FEMA Map Service Center (MSC) (<https://msc.fema.gov/portal/home>)
 - a. Effective Flood Hazard data
 - i. Map of flood risk during the 1 percent annual chance and 0.2 percent annual storm events. This data includes both detailed and approximate study data.
 - b. Pending Flood Hazard data
 - i. Map of flood risk during the 1 percent annual chance and 0.2 percent annual storm events. Data is finalized, assigned an effective date, and delivered to communities five to six months prior to effective date. This data includes both detailed and approximate study data.
 - c. Preliminary Flood Hazard data
 - i. Map of flood risk during the 1 percent annual chance and 0.2 percent annual storm events. Issued for public review and awareness of proposed change. Next steps to effective map include addressing public comments and finalization. This data includes both detailed and approximate study data.
2. Source: FEMA/USGS/TWDB Estimated Base Flood Elevation Viewer (<https://webapps.usgs.gov/infrm/estbfe/>)
 - a. Base Level Engineering data
 - i. Estimated map of flood risk during the 1 percent annual chance and 0.2 percent annual storm events. All of this data is considered approximate.

⁹ See the next section for how these datasets were ranked.

3. Source: First American Flood Data Services (FAFDS)
 - a. The database is derived from digitized effective paper Flood Insurance Rate Maps (FIRMs). The dataset covers portions of the state where no digital FIRM data has been created and is not available on the National Flood Hazard Layer (NFHL). This data is not publicly published nor regularly maintained, but still may be considered as best available 'digital' data in certain areas. This data includes both detailed and approximate study data.
4. Potential Source: Fathom
 - a. This flood risk data includes complete, but approximate, flood risk coverage for Texas developed from very large nationwide 2D hydrodynamic modeling data. A publicly available early derivative of this data, called Flood Factor, is published by First Street Foundation (<https://firststreet.org/flood-factor/>). TWDB is investigating the potential for developing a derivative data set that would utilize LiDAR topography for increased resolution in Texas, rather than the current national elevation data used. In either version, modeling of hydraulic structures such as dams, levees, and bridges/culverts are not included except for how those features are accounted for in the base topographic data. All of this data is considered approximate.
5. Potential Source: U.S. Army Corps of Engineers (USACE) or other federal sources
 - a. USACE manages many large hydraulic structures in Texas and is involved in proposed infrastructure project development as well. As part of USACE's existing asset management, proposed project designs, and flood study work there may be flood risk mapping available to incorporate into the Floodplain Quilt. Only fairly large data sets (definition of fairly large TBD) are likely to be incorporated into the statewide Floodplain Quilt, other smaller federal data sources may be incorporated as desired by Regional Flood Planning Groups (RFPGs).
6. Potential Source: Regional or Local Flood Risk Data *(not currently available to the TWDB and therefore not included in the initial floodplain quilt)*

There are many parts of Texas where regional or local entities have flood risk data that is of better quality than any other listed sources. The TWDB does not currently intend to incorporate these sources into this statewide data set but will encourage the RFPGs and their consultants to identify these sources and overlay them when appropriate in certain areas.

3.3.D Data hierarchy

The TWDB has included below an initial ranking of the different data sets considering them through a regional flood 'planning lens'. This planning lens ranking considered which data, in general, might more likely be considered best available (from both a quality and coverage standpoint and relative to the other available datasets listed) at a large scale. The TWDB is not anticipating developing any hierarchy to support, for example, regulatory activities and does not, at this time, recommend use of this broadly ranked quilt dataset for regulatory activities. After an initial flood quilt is developed and available for use by RFPGs for planning activities, the TWDB may consider making additional adjustments and use in supporting regulatory activities.

In the default flood quilt data set being provided by the TWDB, the highest ranked data is currently being used for the quilt across the state including in places where lower ranked data exists. This approach to selection of primary data occurs in all areas where there is coverage from a higher ranked dataset including everywhere that there are multiple, overlapping datasets in a single location. This approach of stepping through each next-ranked dataset to displace lower ranked datasets in each location was consistently applied in developing the initial statewide quilt.

Exhibit C: Technical Guidelines for Regional Flood Planning

When RFPs and their consultants perform more detailed assessments and investigations within each watershed in their region, they must document reasons for adjusting the current hierarchy layout and/or possibly make piecemeal adjustments for portions of the data sets, or even replace the quilt data with better, local data. Currently, for simplicity, no data set listed above (except for NFHL detail and approximate) is being broken into different components to be ranked separately, as explained below.

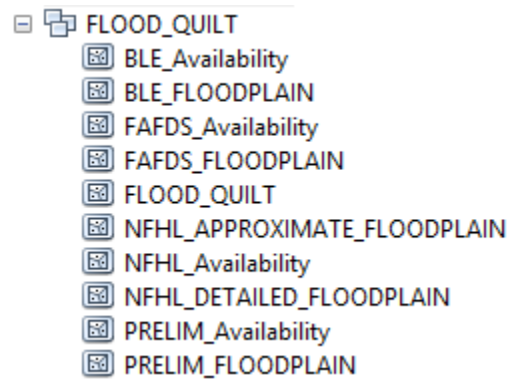
Below is the ranking order of the floodplain quilt data and a brief description of the reasoning behind it.

1. National Flood Hazard Layer (NFHL) Pending Data:
 - a. This data will have flood hazard information comprised of the most recent detailed and approximate studies (compared to the other datasets) and are pending release as an Effective Flood Insurance Rate Map (FIRM). This data is (in a very broad sense) considered the best available data of the compiled data sets.
2. Preliminary Flood Hazard data
 - a. Map of flood risk during the 1 percent annual chance and 0.2 percent annual storm events. Issued for public review and awareness of proposed change. Next steps to effective map include addressing public comments and finalization. This data includes both detailed and approximate study data.
3. National Flood Hazard Layer Effective Data (Detailed Study Areas only)
 - a. This data has flood hazard information that includes detailed studies (Flood Zones AE, AO, AH, and VE) and is the current Effective FIRM. This layer includes LOMR information that was effective when TWDB downloaded the data from FEMA (as reflected in the metadata), up to date effective FEMA floodplain and LOMR information can be viewed through FEMA's NFHL Viewer separately.
4. Estimated Base Flood Elevation Viewer
 - a. This data contains flood hazard information created by approximate base level engineering (BLE) data that can be used as best available information where approximate Zone A's on the effective FIRM exist, but they do not replace flood hazard data found in a detailed study area. Hence this data is ranked 3rd, in between detailed (rank 2) and approximate (rank 4) effective data.
 - b. In general, only the highest rank data was included in a given study area whether that data had wider or skinnier floodplains. However, BLE and detailed studied effective data is represented slightly differently. In study areas with both detailed NFHL and BLE data, areas that were designated in 1 percent or 0.2 percent annual storm events in the BLE data, but not designated as such in detailed studied area are designated as 1 percent or 0.2 percent annual storm events in the floodplain quilt. This incorporates streams that were captured in the BLE modeling, but not in the detailed study, and also incorporates wider BLE floodplains with skinnier detailed study floodplains, resulting in a more comprehensive and conservative floodplain.
5. National Flood Hazard Layer Effective Data (Approximate Study Areas only)
 - a. This data has flood hazard information that includes approximate studies (Flood Zone A) on the effective FIRM map. Where approximate Zone A's exist on the effective FIRM there is no effective detailed study information.
6. First American Flood Data Services (FAFDS)
 - a. This data contains digitized flood hazard information from previously published FIRMs and FISs and is not available on the NFHL. Even if certain areas in this data set include detailed study (such as AE zones), it is likely very old and thus it is anticipated that BLE data will be more accurate. This is one example where a conflict may occur between best available 'planning' data and best available 'regulatory' data.

7. Other Potential Data Sources

- a. Other sources are not yet available, so they are not yet ranked. Conceptually, how they could be ranked are described below.
 - i. Fathom – Depending on modeling and mapping resolutions (30m, 3m, etc.) of the Fathom product that may be utilized, this data is expected to rank somewhere between 4.5¹⁰ (behind BLE) to 6.5 (not better than other data, but better than nothing).
 - ii. USACE or other federal data – Dependent on level of detail, detailed federal data (say detailed flood risk modeling for a large reservoir or levee) could be better quality than any other data available. Rank is expected to range from 0.5 (best available) to 4.5 (behind BLE perhaps because its older data¹¹).
 - iii. Regional or Local flood risk data – Dependent on level of detail. Could range from 0.5 (best available) to 6.5 (not better than other data, but better than nothing).

Figure 7 : Geodatabase that constitute the floodplain quilt data package



¹⁰ Potential ranks provided here are assuming ranks 1-5 above are not re-numbered. Thus 3.5 is between 3 and 4. If new data sets are formally added, then ranks will be re-numbered.

¹¹ TWDB acknowledges there will be difficult choices between older, detailed data and newer, approximate data. TWDB is offering a high-level statewide opinion on ranks but will encourage RFPs to investigate those difficult choices at the regional or local level and adjust as needed, which may include piecemeal approaches where only portions of data sets are ranked above others. RFPs will be expected to clearly document those decisions and the logic for each.

Exhibit C: Technical Guidelines for Regional Flood Planning

Figures 8-12 shows the current (Apr 2021) status of this preliminary, and still under-development, flood quilt for Texas. TWDB is working to fill in the remaining white (blank) spaces with Fathom's (or other) mapping data and is projecting an update that will show 100 percent statewide coverage (no blank areas) by late Spring/early Summer 2021.

Figure 8: Digitized Paper FIRMs Availability

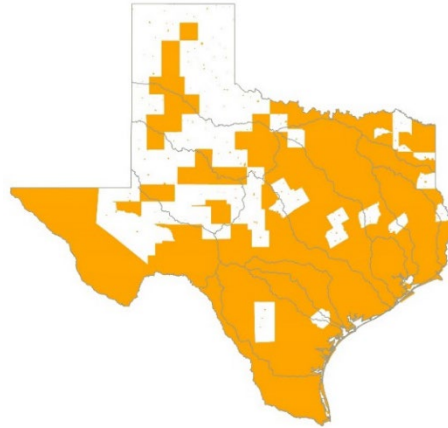


Figure 9: National Flood Hazard Layer Availability

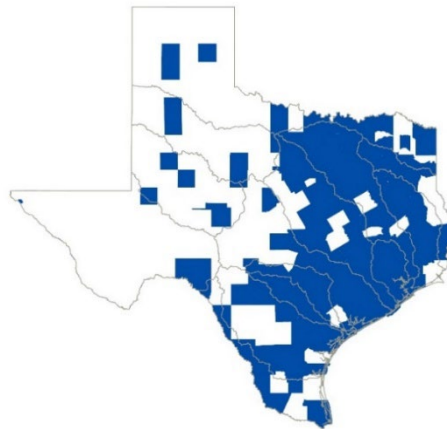


Figure 10: Base Level Engineering (BLE) Availability

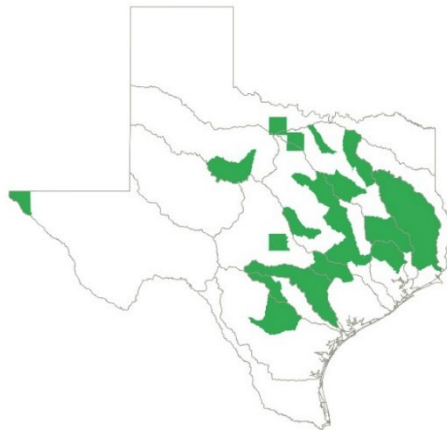


Figure 11: Flood Planning Data Availability Coverage

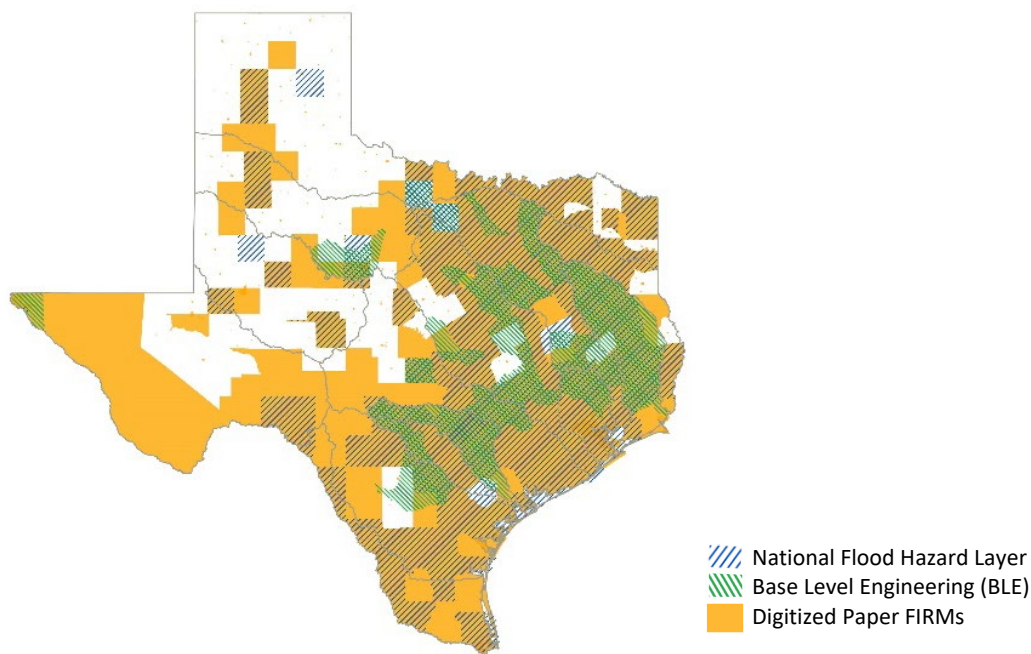


Figure 12: Flood Planning Data Quilt

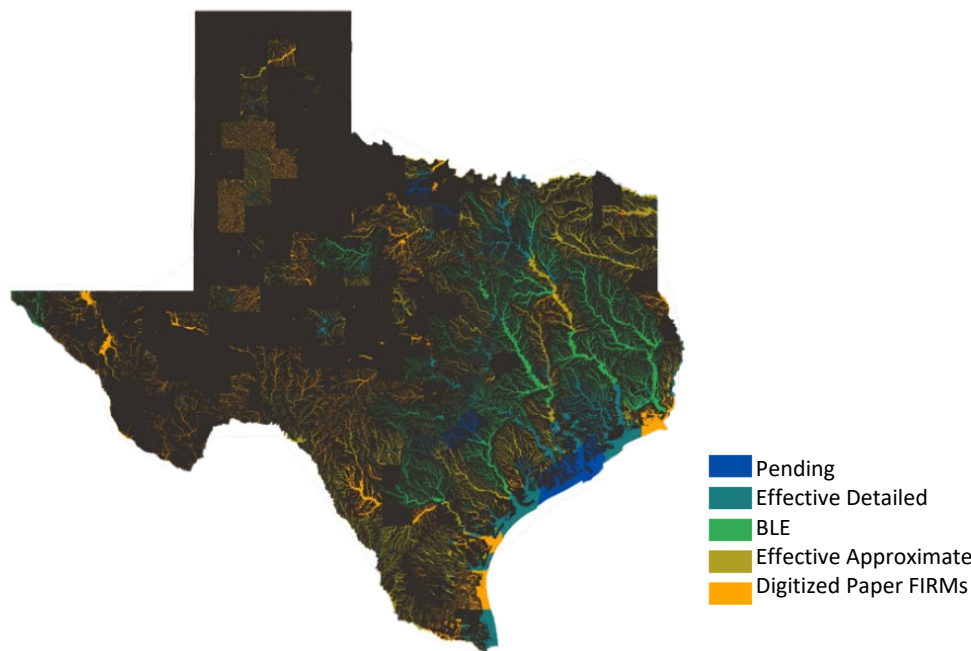


Exhibit C: Technical Guidelines for Regional Flood Planning

3.4 Estimation of population in floodplain and flood prone areas

The RFPGs will estimate regionwide population that fall within the specific floodplains and in flood prone areas and also for project specific determinations of flood risk and flood risk reduction benefits.

Estimated population in the floodplain or in flood prone areas may be computed by summing the population for all buildings found within the floodplain or in flood prone areas. These buildings are identified by intersecting the existing hazard layers {7. ExFldHazard} with building data to be provided by TWDB.

TWDB will provide the building dataset to the RFPGs. Building data will come with population data already compiled, with TWDB calculating populations using the [2019 LandScan USA population dataset](#). LandScan provides both night and daytime population, and both will be included in the building data provided by TWDB. Those buildings located within the floodplain or in flood prone areas are to be stored in the exposure datasets created during Task2A {9. ExFldExpPol, 12. ExFldExpAll}.

Regional population analysis should include determinations of day and night population estimates that are located within the flood hazard areas. Once both day and nighttime population are separately summed, the maximum of the two is computed as the estimated population in the floodplain or in flood prone areas. The maximum population for a given structure should not be considered prior to summarizing at regional or project level.

Please note that this planning level population estimate located within the floodplain or flood prone areas does not take finished flood elevation of buildings, ingress-egress, or reduction for population in higher stories of a multi-story building into account. RFPGs must document the assumptions regarding planning level population estimate in the plan.

Population estimates computed utilizing the method detailed above accounts for population located in every building touched by the floodplain or flood prone area. It is acknowledged that this method will tend to slightly overestimate the population located in the floodplain and flood prone areas.

The RFPGs may request the TWDB to estimate population in the floodplain of flood prone area.

For project population estimates, RFPGs may use alternate methods or sources of data should they choose to do so (see Section 3.4.A for an example); however, RFPGs must utilize a consistent approach for computation of population estimate for all FMSs and FMPs in the region and clearly identify and document the approach(es) used and the reason for selecting those certain approaches. RFPGs may request TWDB for further flexibility regarding project specific population estimate.

3.4.A Alternate approach: Population estimate based on building household size

If the RFPG would prefer not to use TWDB-provided building population estimates, they may intersect the project specific building and hazard layers to identify all buildings exposed to the given hazard. Multiply the household size for the census block group in which the project is located (or the areal weighted average if intersecting multiple block groups) by the total number of residential buildings over 500 square feet to calculate the exposed population.-The average household size by RFPG is listed below for reference if any of the RFPGs chooses to utilize those instead.

Note: All buildings under 500 square feet in area are omitted from this analysis, i.e., they should generally not have any population nor should their area contribute to the total building area in any given cell. This helps avoids attributing population to sheds, etc., that often accompany residential properties.

Table 20 Average household size by RFPG

RFPG Number	RFPG Name	Average household size ^A
1	Canadian-Upper Red	2.65
2	Lower Red-Sulphur-Cypress	2.59
3	Trinity	2.74
4	Sabine	2.66
5	Neches	2.63
6	San Jacinto	2.81
7	Upper Brazos	2.62
8	Lower Brazos	2.72
9	Upper Colorado	2.86
10	Lower Colorado-Lavaca	2.61
11	Guadalupe	2.77
12	San Antonio	2.87
13	Nueces	2.97
14	Upper Rio Grande	2.94
15	Lower Rio Grande	3.32

^A Household size data comes from the 2015-2019 American Community Survey 5-year estimate.

Exhibit C: Technical Guidelines for Regional Flood Planning

3.5 General mapping and modeling guidelines

The following section provides some general guidelines on flood risk modeling and mapping. Recommendations included in this section do not replace a thorough understanding of each model's abilities and limitations to perform hydrologic and hydraulic simulations in different physical environments. This technical guidance should not be interpreted as a detailed Drainage Criteria Manual. This document does not provide specific guidance on how to apply a specific model or methodology. Additionally, it is anticipated that the modeling and mapping guidelines will evolve over time as the state flood planning effort progresses and as new data becomes available.

TWDB gathered input from local jurisdictions, regional agencies and state agencies regarding flood modeling and mapping requirements. As one might expect, these requirements vary across organizations. The TWDB directed a survey of 27 entities across the State seeking input on current local regulations that relate to flood modeling and mapping practices. In total, 25 responses were received.

Based on feedback received through the TWDB questionnaire, this section provides recommendations aimed at the development of more consistent and improved flood modeling and mapping approaches within the state of Texas.

The flood planning process is to be based on best available science. For example, the Atlas 14 data should be utilized statewide for the flood planning process. However, given the recent nature of this available dataset, many local jurisdictions are still in the process of interpreting the data for local applicability and regulatory implementation. Even though certain municipalities may not have sorted out their particular regulatory implementation concerns, this best available rainfall data should still be used for regional flood planning. However, if prior watershed studies exist that do not include Atlas 14 and those studies are the best available for a certain area, that would be an example a reasonable decision to not use Atlas 14 initially, but perhaps listing an update of the study to Atlas 14 as a future need (FME). An explanation on why certain products were considered best available for regional flood planning is expected. The following section provides some guidance to the planning groups as to how to approach these datasets.

3.5.A Modeling software

In general, model selection depends on multiple factors, such as drainage standards, physical site conditions, data availability, and cost. Each modeler must choose a hydrologic or hydraulic (including coastal) model on a case-by-case basis. As a general recommendation, most questionnaire participants utilize and prefer the US Army Corps of Engineers' open-source Hydrologic Engineering Center – Hydrologic Modeling System (HEC-HMS) and Hydrologic Engineering Center – River Analysis System (HEC-RAS) programs. While HEC-HMS and HEC-RAS are the recommended programs for riverine flood modeling, other programs are permissible provided regional acceptance and justification of selection by the RFPG.

3.5.A.1 *Hydrologic analysis*

Hydrology involves the estimation of watershed runoff over a period of time or peak discharge for a given storm frequency or return period. Hydrologic analysis may include the quantification of peak discharge or runoff hydrographs. Common programs or methods used to quantify peak flow or discharge vary depending on local requirements, drainage area, and basin characteristics.

The most common hydrologic approaches include the Rational Method and Hydrograph methods. The Rational Method can be computed using tabular computations while hydrograph methods are typically performed using modeling software. The most common peak discharge methodologies include the Rational Method and Regional Regression. The recommended peak discharge methodology is the

Rational Method, but it should be limited for use of drainage areas less than 200 acres. Another important methodology that should be used, when applicable, is the statistical analysis of stream gage data. Other methods are parameter-based models, but statistical analysis of stream gages is modeling from directly observed data and should be used when applicable to a specific area. Further, comparing the results of several methods is often a useful tool to assess reasonableness of results.

The most common hydrologic analysis software is the USACE's HEC-HMS program. Other noted hydrograph approaches include those of the Modified Rational Method and a Rain-on-Mesh application using two-dimensional (2D) modeling software. Based on stakeholder feedback and research, the recommended hydrologic analysis software is HEC-HMS. While HEC-HMS is the recommended hydrologic program, other programs are permissible provided regional acceptance and justification of selection.

3.5.A.2 *Hydraulic analysis*

Hydraulic analysis involves estimation of runoff movement and extents. Hydraulic analysis may include the evaluation of water surface elevations, flood depth, velocities, and energy gradients. The most common hydraulic analysis software for riverine systems is the USACE's HEC-RAS program. HEC-RAS will likely remain as one of the preferred programs because the USACE distributes its models for free and because the model now includes 1D and 2D hydraulic capabilities. Other programs may be selected based on flow patterns. The recommendation of a specific hydraulic model should not be limited to a given model list; instead, the modeler must understand a model's strengths and weaknesses before proceeding. Today's computing power allows increased model resolution and accuracy (e.g., 1D vs. 2D or steady-state vs. dynamic simulations) at a relatively low cost. However, other circumstances justify the use of a simplified 1D, steady-state approach. As such, programs may be selected based on flow patterns, computing speed, and simulation capabilities.

The following are general recommendations regarding best default selection of models but the final decision in each case is ultimately up the RFPs and their technical consultants to make based on the specific circumstances.

1D Hydraulics:

One-dimensional (1D) hydraulic analysis involves the evaluation of flow with the assumption that the flow is moving in one direction. 1D hydraulic analysis is generally utilized for storm drainage networks and confined floodplains. Stakeholder feedback and research of drainage criteria manuals do not indicate a trend in preferred 1D storm drainage programs. Some of the more popular 1D hydraulic programs include Bentley's StormCAD, Geopak Drainage, and SUDA programs; Autodesk's Civil 3D; and Innovyze's XPSWMM program. All these programs are proprietary and include fees for use. The least expensive of the proprietary programs is Bentley's StormCAD program, ranging in cost from \$250-\$4,000 depending on the modeling needs, because it can be a standalone program that does not require licensure of MicroStation or AutoCAD. There are a few, non-proprietary options for 1D storm drainage analysis, such as tabular computational options, EPA-SWMM, TxDOT's WinStorm program (no longer provided or supported by TxDOT), and Houston's HouStorm program. The recommendation for 1D storm drainage hydraulic analysis is to utilize regionally accepted programs and to provide a justification for the selection.

For 1D hydraulic analysis of open channel and riverine systems, the HEC-RAS program is recommended.

2D Hydraulics:

Two-dimensional (2D) hydraulic analysis involves the evaluation of flow with the assumption that the flow is multi-directional. 2D hydraulic analysis is generally utilized in urban areas, areas with low-lying or flat terrain, and areas of overland flooding. The most common 2D hydraulic analysis software is the

Exhibit C: Technical Guidelines for Regional Flood Planning

USACE's HEC-RAS program. Other noted 2D programs include Innovyze's XPSWMM, InfoWorks ICM, Streamline Technologies' ICPR, US Bureau of Reclamation's (USBR) SRH-2D and FLO-2D. Of these programs, HEC-RAS is the only non-proprietary software. As such, it is the recommended 2D hydraulic analysis program. It should be noted that the HEC-RAS program does include 2D capabilities, but it does not currently include capabilities to simulate underground or closed conduit systems (storm drainage networks). For situations where 2D hydraulic analysis is required to be coupled with underground conveyance, the recommendation is to utilize regionally accepted programs and to provide justification of selection.

3.5.A.3 Coastal analysis

Based on the TWDB survey, the application of coastal hydraulics models appears to be limited in Texas. Only one entity described using FEMA's model to estimate wave heights—presumably to develop coastal letters of map revision—and another entity expressed a desire to use AdCIRC. Entities may not often use coastal models because they typically do not engage in coastal projects. However, the increased risks brought by a combination of sea level change, subsidence, and storm surge may require increased action by local entities to develop resilience and adaptation projects. The GLO, through their Community Development Block Grant Disaster Recovery Program, has funded the Texas Integrated Flooding Framework to develop guidelines and processes for a comprehensive, integrated framework to model, visualize, and plan for the risk of compound flooding in counties affected by Hurricane Harvey. This integrated framework will recommend a model coupling strategy to better understand coastal flooding hazards and associated risk for supporting Texas flood resiliency planning.

FEMA made a significant investment to apply state-of-the-art modeling approaches to quantify coastal flood risks. FEMA applied AdCIRC to simulate ocean circulation (water depths) for hundreds of storms in Texas. To account for wave breaking-induced water level changes (wave setup), FEMA couples AdCIRC with a wave model. For Texas, FEMA coupled AdCIRC with STWAVE, although recent storm surge studies use a combination of WAVE Model (for offshore waves) and Delft University of Technology's SWAN (for nearshore waves). Notably, FEMA applies WHAFIS 4.0, a 1D wave model, to determine overland wave heights, which determines whether a flood zone carries VE or AE designation.

Given the prior modeling provided by FEMA's latest coastal studies, and the fact that they are publicly available, AdCIRC and SWAN have become the preferred ocean circulation and wave models. These models, however, typically require Aquaveo's SMS software to develop the computational mesh. A common practice consists in leveraging FEMA's mesh and editing tools, as needed. Of note, WHAFIS 4.0 is also publicly available and does not have heavy computational requirements. In addition, MIKE 21 (part of DHI's MIKE Modeling System) represents what may be the most robust and reliable system in a single software package. However, the system is a more expensive alternative.

3.5.B Modeling data

This section generally describes the types and common sources of data required for hydrologic and hydraulic modeling. The Regional Flood Planning process is to be based on best available science and each RFPG will be responsible for determining that. To this end, the latest LiDAR, land cover data, and rainfall data (e.g., Atlas 14) should be utilized wherever possible to support a consistent statewide flood planning process.

3.5.B.1 Frequency events

The stakeholder questionnaire asked the participants which flood frequency events are required in their jurisdiction. Eighty-eight percent of the participants require evaluation of the 1 percent annual chance (100-year) event. Sixty-eight percent of the participants require evaluation of the 10 percent annual chance (10-year) event and/or the 4 percent annual chance (25-year) event.

In general, floodplain mapping is performed with an emphasis on the 1 percent annual chance (100-year) event, while drainage infrastructure design is generally performed with an emphasis on either the 10 percent (10-year) or the 4 percent (25-year) and 1 percent (100-year) events. Additionally, current FEMA standards for critical facilities require elevation outside of the 0.2 percent annual chance (500-year) event floodplain. Based on stakeholder survey and the infrastructure flood protection recommendations, evaluation of four frequency events: 10 percent (10-year), 4 percent (25-year), 1 percent (100-year), and 0.2 percent (500-year) annual chance events is recommended.

Specific flood control infrastructure such as dams and levees also require the evaluation of the Probable Maximum Flood and Standard Project Flood. The minimum standards for dams are based on state requirements of the TCEQ Dam Safety regulations as depicted by the Texas Administrative Code Title 30 Chapter 299 Dams and Reservoirs while the minimum standards for levees are based on federal requirements of FEMA as depicted by 44 Code of Federal Regulations 65.10. Modeling these more extreme events may not be a significant component of the planning process but may be performed to conceptually size certain facilities for planning-level estimates.

3.5.B.2 *Terrain*

Flood risk modeling is greatly enhanced when generated using accurate topography. LiDAR or Light Detection and Ranging (LiDAR) data is a necessary component of flood risk identification and, where available, should be the basis for flood modeling. LiDAR uses remote sensing technology to measure distance by illuminating a target with a laser and analyzing the reflected light. LiDAR availability is greatly increasing across Texas with a projected statewide coverage by 2021. Availability of LiDAR can be determined at the Texas Natural Resources Information System (TNRIS) website (<https://tnris.org/stratmap/elevation-lidar/>). With improvements in technology, the most current LiDAR dataset should be utilized. It may also be necessary to supplement the LiDAR with field survey or as-built construction plans to refine the terrain.

3.5.B.3 *Land cover*

Watershed runoff is greatly impacted by land cover conditions such as the development conditions and soil information. Soil properties influence the relationship between rainfall and runoff since soils have differing rates of infiltration. Soil information (hydrologic soil textures and types) can be obtained from the U.S. Natural Resources Conservation Service (NRCS), Soil Survey Geographic databases (SSURGO). While this is a common source of information, it is not a required source.

The TWDB survey asked participants what development (or land use) conditions are considered for identifying and evaluating flood protection projects in their jurisdiction. The results indicate a fairly even split between existing development (current land use) conditions and fully developed conditions (future land use); however, the responses generally indicated a preference for fully developed conditions.

Research also indicates current trends of cities using future condition or fully developed land use (future development) conditions while counties generally require existing condition land use (existing development) conditions. A general concern voiced by counties is the perception that counties do not have the authority to develop or regulate land planning or zoning maps; therefore, future or fully developed land coverage maps are typically not available beyond the extra-territorial jurisdiction (ETJ) of communities. Existing condition land use condition maps are available with statewide coverage by the National Land Cover Database (NLCD). While this is a common source of information, it is not a required source. Until future land use planning data covering entire river basins is available, **utilizing existing land use conditions is recommended for existing condition flood hazard analyses for flood planning.** Should a given region have future land use projections they prefer to use, they are welcome to do so.

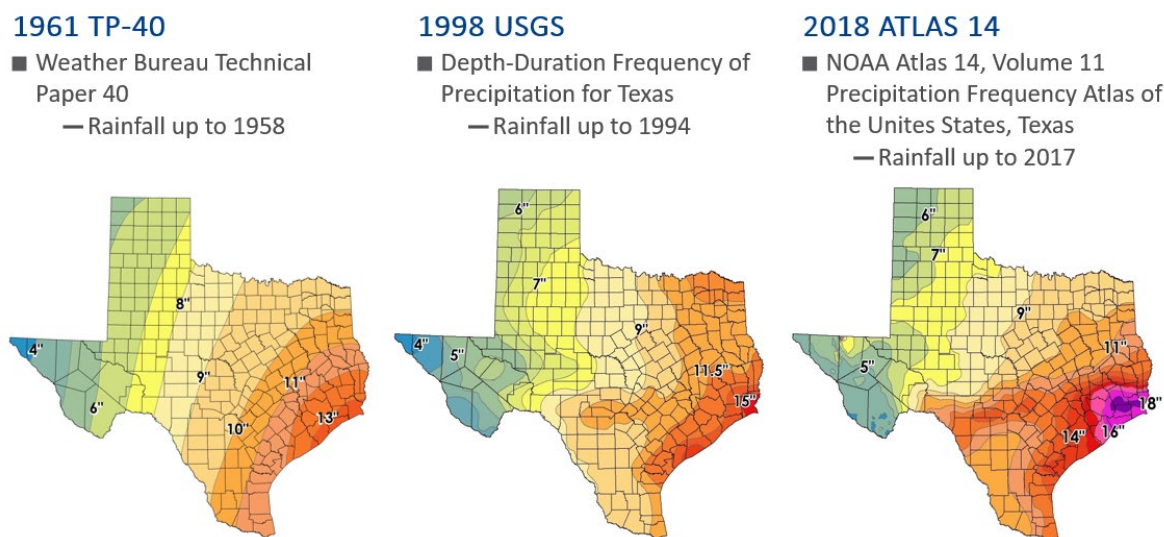
Exhibit C: Technical Guidelines for Regional Flood Planning

3.5.B.4 Rainfall

On September 27, 2018, the National Oceanic and Atmospheric Administration (NOAA) published new precipitation-frequency values for Texas. This new publication, *NOAA Atlas 14 Precipitation-Frequency Atlas of the United States, Volume 11 Version 2.0: Texas*, is a reassessment of historical rainfall data up to 2017, adding an additional twenty years of record to the USGS publications (Perica et al. 2018). Major events during this time period include Tropical Storm Hermine in 2010, Blanco River Memorial Day Flood in 2015, and Hurricane Harvey in 2017.

Rainfall data is commonly used to predict flood risk and as an input to analyze and design flood protection/mitigation infrastructure such as bridges, culverts, channels, storm drainage systems, detention facilities, and others. The Atlas 14 publication indicates that the 1 percent annual chance (100-year) 24-hour rain event may be greater than what we previously considered in many areas. The greatest rainfall changes occur in central Texas and along the Texas coast. Figure 13 below displays the evolution of rainfall depths in Texas for the 24-hour, 1 percent annual chance (100-year) rain event. It is important to emphasize that changes depicted in the 24-hour, 100-year are not identical to changes in different durations (6-hour, 12-hour, 3-day, etc.) and different frequencies (2-year, 10-year, 500-year, etc.). There are some depth-duration-frequency (DDF) relationships where Atlas 14 shows less rainfall than prior studies and others where it shows an even greater increase than depicted for the 24-hour, 100-year.

Figure 13: Evolution of Texas rainfall (24-hour, 100-year precipitation)



As supported by the majority of the questionnaire participants, it is recommended that the NOAA Atlas 14 rainfall data be used for flood modeling associated with the state flood planning efforts and various rainfall durations should be evaluated based on a consideration of watershed size.

Calibration/Validation

Hydrologic and hydraulic modeling should be tested for accuracy and reasonableness via a calibration or validation process. If the watershed has sufficient stream gage records, these gage records should be utilized to replicate historical event runoff and high-water marks, as well as evaluate alignment to gage statistics. If gage data is unavailable, hydrologic results may be compared to regional regression results or compared to nearby studies with similar watershed characteristics.

3.5.C Approach to incorporating existing modeling tools, previously developed site-specific models/maps, previous model results, and previously evaluated flood mitigation projects.

Given the tight timeline for the first regional planning efforts, collection, assessment, and reliance on modeling results and previously identified mitigation projects will be necessary. Based on the responses to the TWDB survey of stakeholders across Texas, the RFPs:

- may utilize most modeling sources if they consider them to be acceptable baseline models but
- the models and model results and projects identified and evaluated by those models should, to the extent practical within this cycle, meet these regional flood planning guidelines.

Potential baseline models may include but are not limited to FEMA models, FEMA CTP watershed studies, Base Level Engineering Studies (both 1D and 2D), USACE models, TWDB Flood Protection studies, local watershed studies (funded by the jurisdiction), land development studies (privately funded for permitting), Master Drainage Plans, Watershed Studies, and Mitigation Studies. It is likely that these available models utilize a variety modeling and mapping approaches; therefore, it is paramount that details of these models be provided in the data provided with the Plan and at least a preliminary assessment of how important a future update of these prior studies may be. It is recommended that model for incorporation include a listing of the development details as suggested by the recommended Modeling and Mapping Checklist.

3.5.D Modeling approach

While general in nature, the modeling approaches described below are intended to promote consistency among the regional flood plans. The following sections provide descriptions of flooding types and recommended modeling approaches to address them for various regions of Texas.

3.5.D.1 Riverine flooding

Riverine flooding occurs along rivers and streams when watershed runoff exceeds the capacity of the channel. This type of flooding may range from deep/confined floodplains to shallow/wide floodplains. Riverine flooding may be 1D or 2D depending on the watershed characteristics. Riverine flooding is very common and impacts the majority of the state flood planning regions. It should be noted, the FEMA FIRM maps primarily display floodplains resulting from riverine flooding. Additionally, flooding caused by flood control infrastructure such as dams and levees are often considered riverine flooding.

Hydrologic analysis for riverine flooding typically includes a hydrograph approach computed using HEC-HMS. A variety of unit hydrograph methodologies exist. The NRCS (previously SCS) Unit Hydrograph approach represents the most popular unit hydrograph methodology among respondents, followed by Snyder's and Clark's unit hydrograph approaches.

Hydraulic analysis for riverine flooding typically includes 1D, steady-state hydraulics. Varying physical site conditions such as riverine overflows or shallow channels with limited capacity may warrant enhanced hydraulic analysis such as unsteady analysis or 1D/2D model coupling.

3.5.D.2 Local/urban flooding

Local flooding (also referred to as urban flooding) occurs in the built environment when rainfall is either not adequately conveyed into a storm drainage system or the storm drainage system capacity is exceeded. Local drainage floodplains are not mapped on FEMA FIRM maps, but many communities have begun taking steps to better define and understand local flood risks. All urban areas in Texas are subject to local/urban flooding. Local/urban flooding generally includes evaluation of 1D storm drainage networks or 2D dynamic models that combine storm drainage networks with overland flooding.

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Analysis for local/urban 1D flooding typically includes peak discharge computed using the Rational Method and 1D, steady-state hydraulics using programs (such as Bentley's StormCAD, Geopak Drainage, HouStorm), or hydraulic grade line spreadsheets. Varying physical site conditions such as downstream constraints and timing concerns may warrant dynamic modeling.

Analysis for local/urban 2D flooding typically includes hydrograph approaches computed using HEC-HMS and 2D dynamic hydraulics of overland and underground conveyance using programs such as Innovyze's XPSWMM, InfoWorks ICM, Streamline Technologies' ICPR, or US Bureau of Reclamation's (USBR) SRH-2D.

3.5.D.3 Flat terrain ponding (includes playa flooding)

Flat terrain ponding occurs when watershed runoff exceeds the capacity of low-lying areas primarily experienced in the Texas' High and Coastal Plains. It is worth noting that communities in the Panhandle (such as Lubbock and Amarillo) experience a high frequency of flat terrain flooding. This is due to the presence of playa lakes in these communities, which create a unique flood risk challenge that requires a different approach to identify flood risk than riverine or local flooding. Also, worth noting are coastal areas with flat terrain (such as Harris County and the Lower Rio Grande Valley) experience widespread, multi-directional flooding that also requires a different approach from riverine or local flooding.

Hydrologic analysis for flat terrain flooding typically includes hydrograph approaches computed using HEC-HMS. Hydrographs in flat terrain tend to be more elongated in comparison to the rapid runoff observed in the Hill Country. Common flat terrain unit hydrograph approaches include Clark's unit hydrograph and NRCS (previously SCS) unit hydrograph with reduction of peaking factors.

Hydraulic analysis for flat terrain flooding typically includes 2D hydraulics. Preferences of modeling software vary. The Houston area prefers HEC-RAS 2D or XPSWMM while Lubbock prefers ICPR. Varying physical site conditions and modeling needs may warrant alternate analysis such as closed conduit simulation and/or 1D/2D model coupling.

3.5.D.4 Coastal flooding

Coastal flooding in Texas occurs when winds from tropical storms and hurricanes push water inland—a phenomenon called storm surge. In addition to increased water levels, the effects of coastal flooding amplify due to the presence of waves. FEMA designates coastal flood hazards in two main categories: Zone VE (where waves are larger than 3 feet) and Zone AE. Flood maps further subdivide the coastal Zone AEs using the Limit of Moderate Wave Action (LiMWA) line, which define areas with wave heights larger than 1.5 feet. Coastal flooding represents significant risk to public safety, particularly along low-lying, coastal communities. Because these areas may experience coastal, riverine, or local flooding, FEMA's breakdown of coastal flood hazards helps communities identify appropriate mitigation opportunities.

The RFPG will consider compound flood information, the cumulative impact of riverine or localized flooding and coastal flooding, where available.

Hydrologic analysis is not conducted for coastal surge. In alignment with FEMA's current coastal analysis the preferred ocean circulation and wave models are AdCIRC and SWAN. Coastal hazards include localized effects such as wave runup, wave overtopping, and dune erosion. To quantify these hazards, FEMA applies methodologies that range from numerical and empirical models to graphical methods. The application of these methodologies is available in FEMA's Combined Coastal Riverine Floodplain Guidance Document (Federal Emergency Management Agency, 2020).

It is recommended that the impacts of tides (and relative sea level rise) be considered as boundary conditions of hydraulic modeling efforts in coastal watersheds. TxDOT has a new chapter in their

Hydraulic Design Manual published in 2019 on Coastal Hydraulic Design that references the GLO's Texas Coastal Resiliency Master Plan and both of these documents are considered best available guidance for coastal flooding.

3.5.E Mapping approach

It is recommended that LiDAR accuracy and resolution standards continue to align with the standards and guidelines provided by the US Geological Survey (USGS) and American Society for Photogrammetry and Remote Sensing (ASPRS). These standards are currently defined in the LiDAR Base Specification 2020 rev. A, dated August 2020 (<https://www.usgs.gov/core-science-systems/ngp/ss/lidar-base-specification-online>).

All electronic geospatial data must have spatial reference information and be projection defined (have its coordinate system identified and embedded in or associated with the data file). All GIS data submitted to TWDB should be in the following projection:

NAD_1983_2011_Texas_Centric_Mapping_System_Lambert

Raster data, such as aerial photographs may be submitted in their native projection, and maps must be in the appropriate projection/coordinate system for the area depicted.

All CAD/GIS data must be in known real world coordinate space, ideally in geographic/decimal degrees/NAD83, and must NOT be in page space or a custom site-specific projection.

3.5.F Modeling and mapping checklist

An engineer's certification of all modeling and mapping analyses is strongly recommended. It is also recommended that the supporting engineering report include discussion of the following topics.

1. Date of Study
2. General Study Information
 - a. Model Software
 - b. Study Type
3. Terrain Data
 - a. Source/Date
 - b. Accuracy
4. Land Cover
 - a. Development Condition
 - b. Land Use Source/Date
 - c. Soils Source/Date
5. Rainfall
 - a. Source/Date
 - b. Storm Duration
 - c. Temporal Distribution
6. Hydrologic Methodologies
 - a. Basin Delineation
 - b. Hydrologic Parameters/Computation
 - i. Initial Loss
 - ii. Hydrograph Approach
 - iii. Routing
 - iv. Storage/Diversions
 - v. Areal Reduction
 - c. Results

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- d. Calibration/Validation
- 7. Hydraulic Methodologies
 - a. Data Collection
 - i. Field Conditions
 - ii. Field Survey
 - b. Parameter Estimation
 - i. Roughness Coefficients
 - ii. Boundary Conditions
 - iii. Geometry Data
 - iv. Flow Data
 - c. Results
 - d. Calibration/Validation
- 8. Mapping
 - a. Projection / Datum
 - i. Coordinate System
 - ii. Horizontal Datum
 - iii. Vertical Datum
 - iv. Geoid
 - v. Unit of Measurement
 - b. Methods of Delineation
 - c. Mapping Resolution

3.6 Definition of negative impact guidelines

One requirement placed on the Board in considering a Regional Flood Plan is whether the Plan affects a neighboring area. If the Board determines that an element of a Regional Flood Plan does negatively affect a neighboring area, the Board must coordinate with the affected area to adjust the plan to ensure that no neighboring area is negatively affected by the Plan as described in Texas Water Code 16.062(h) and (i). Additionally, the TWDB rules include a definition of Negative Effect to mean, “An increase in flood-related risks to life and property, either upstream or downstream of the proposed project. The RFPG may adopt a standard that is more restrictive than the standard provided in TWDB Technical Guidelines.” 31 TAC 361.10. Recognizing that “negative effect” or “negatively affect” are not terms commonly used among flood planning professionals, this Guidance document uses the term, “Negative Impact” to meet the intent and requirements of the Texas Water Code and TWDB rules.

In developing these guidelines, the TWDB had a survey performed of various entities across Texas on what they consider to constitute “no negative impact”. Based on the responses, research, and professional engineering experience the following information summarizes some examples of minimum and most stringent specifications regarding no negative impact that are already being used by entities in Texas. Although not specifically asked in the questionnaire, the specifications include considerations for one-dimensional (1D) and two-dimensional (2D) analysis. Many jurisdictions do not currently have regulations or standards regarding no negative impact. The table below excludes the jurisdictions that do not have regulations, and thus does not list ‘no minimum standards’ as a minimum.

Table 21: No negative impact Specifications already used by entities in Texas for the 100-year flood

Measurement	Minimum	Most Stringent
Water Surface Elevation – 1D Analysis	Maximum Increase of Water Surface Elevation = 1.0 foot at computation cross-sections	Maximum Increase of Water Surface Elevation = 0.0 feet at computation cross-sections
Water Surface Elevation – 2D Analysis	Maximum Increase of Water Surface Elevation = 0.5 feet in all computation cells	Maximum Increase of Water Surface Elevation = 0.0 feet in all computation cells
Discharge	Discharge increases are allowed as long as the water surface elevation increase does not exceed 1.0 feet	Maximum Increase in Discharge = 0.0 cubic feet/ second (cfs)
Velocity	Velocity increases are allowed as long as the water surface elevation increase does not exceed 1.0 feet	Maximum Increase in Velocity = 0.0 ft/second (fps)
Valley Storage / Flood Volume	Flood volume losses are allowed as long as the water surface elevation increase does not exceed 1.0 feet	Loss of Valley Storage / Flood Volume = 0.0 NCTCOG Corridor Development Certificate
Downstream Conveyance / Capacity	Must not exceed downstream conveyance or capacity	Downstream conveyance or capacity must have 1.0 feet of freeboard or no pressure flow in storm drainage systems

Using this information, the sections below provide recommended considerations to reduce the potential for negative impacts and meet the statutory requirement to: “...*not negatively affect a neighboring area*,” particularly as a result of structural flood mitigation projects.

Exhibit C: Technical Guidelines for Regional Flood Planning

3.6.A Definition

As stated by the Association of State Floodplain Managers in its white paper titled *NAI – No Adverse Impact Floodplain Management*, the minimum National Flood Insurance Program (NFIP) requirements standards, “were designed for the purposes of an insurance program and not necessarily to control escalating flooding” (Association of State Floodplain Managers, 2008). In accordance with the statutory requirement that a Regional Flood Plan not negatively affect a neighboring area, the recommended definition of No Negative Impact is as follows.

No Negative Impact means that a project will not increase flood risk of surrounding properties. Using best available data, the increase in flood risk must be measured by the 1 percent annual chance event water surface elevation and peak discharge. It is recommended that no rise in water surface elevation or discharge should be permissible and that the analysis extent must be vast enough to prove proposed project conditions are equal to or less than the existing conditions.

For the purposes of flood planning effort, a determination of **no negative impact** can be established if stormwater does not increase inundation of infrastructure such as residential and commercial buildings and structures.

Additionally, all of the following requirements should be met to establish **no negative impact**, as applicable:

1. Stormwater does not increase inundation in areas beyond the public right-of-way, project property, or easement.
2. Stormwater does not increase inundation of storm drainage networks, channels, and roadways beyond design capacity.
3. Maximum increase of 1D Water Surface Elevation must round to 0.0 feet (< 0.05ft) measured along the hydraulic cross-section.
4. Maximum increase of 2D Water Surface Elevations must round to 0.3 feet (< 0.35ft) measured at each computational cell.
5. Maximum increase in hydrologic peak discharge must be < 0.5 percent measured at computational nodes (sub-basins, junctions, reaches, reservoirs, etc.). This discharge restriction does not apply to a 2D overland analysis.

The RFPGs have flexibility to consider and accept additional ‘negative impact’ for requirements 1 through 5 listed above based on engineer’s professional judgement and analysis given any affected stakeholders are informed and accept the impacts. This should be well-documented and consistent across the entire region. Flexibility regarding negative impact remains subject to TWDB review.

The RFPGs must consider cumulative negative impacts of multiple projects if accepting any negative impact.

The no negative impact defined here is for the purpose of flood planning. This does not have any regulatory impact in relation to any FEMA, local or other regulatory requirements due to the approximate nature of planning.

The values in the table above reflect guidance for the 100-year flood, and flood planning efforts are generally focused on the 100-year assessment and mitigation. However, to ensure ‘no negative impact’ other storm frequencies analyzed during the planning process should also adhere to the maximum tolerances listed above. It is understood that models that assess impact at the planning level may subsequently undergo multiple revisions as specific mitigation actions proceed through preliminary design, final design, and even construction. At any of these future stages the modeling results may create more or less impact potential thus altering costs or designs, and in the most extreme cases

perhaps cause what was previously considered to be a feasible project during planning to no longer be feasible during design. RFPs are thus strongly encouraged to assess the reasonableness of impact assessments at the planning level and do their best to anticipate potential future issues related to flood impact.

3.6.B Impact analysis checklist

An engineer's certification of no negative impact is required. It is also recommended that the supporting engineering report should include discussion of the following topics.

1. Description of the Analysis – Specific data for the analysis is located in the Modeling and Mapping Recommendations Memorandum.
2. Description of the Proposed Improvements – Including maps of existing and proposed project flood/drainage components.
3. Impacts of the Proposed Improvements – Including a description of the conditions prior to mitigation and alternatives analysis to evaluate impacts.
4. Description of Mitigation Measures – Including graphics/tables quantifying the existing condition flood risk in relation to the proposed condition flood risk.
5. No Negative Impact Certification

3.6.C Mitigation measures

Mitigation measures including but not limited regional detention, drainage easement or right of way acquisition may be utilized to alleviate negative impact. Projects with design level mitigation measures may be included in the regional flood plans and could be finalized at a later stage to conform to the 'No Negative Impact' requirements prior to funding or execution of project. For example, if a proposed FMP has 0.08ft increase in 1D Water Surface Elevation (WSE) for a 1 percent annual chance storm event and identifies the proposed location, area and volume of a regional detention pond with supporting hydrologic analyses that shows the increase in WSE will be reduced to 0.0 ft with the incorporation of regional detention, the project can be included as FMP.

Exhibit C: Technical Guidelines for Regional Flood Planning

3.7 Estimated costs of FMSs, FMPs and FMEs in the plan

The RFPGS will prepare a planning level cost estimate for all FMEs, FMPs and FMSs. The planning level costs must be rounded to nearest thousands.

One-time capital, other non-recurring costs, and recurring planning level costs must be prepared and presented separately and discretely for each separate FMS, FMP, and FME and must not be aggregated and presented as a single capital cost representing multiple projects/strategies/evaluations that, for example, would actually be located in multiple locations and/or would be funded by separate sponsors. RFPGs must not, for example, aggregate multiple discrete flood projects into a single cost estimate and then allocate shares of the resulting total cost, for example, pro rata across several entities or locations.

Below is a summary of the key costs that must be included if applicable to a recommended FMS, FMP, or FME to ensure costs reflect all reasonably expected expenses to implement. Portions of these costs, as noted, will also be used in the BCA analysis described in Section 3.8.

Table 22: Potential costs generally associated with FMSs, FMPs, and FMEs ^A

			FMS	FMP	FME	
Non-recurring	Study costs and other (non-capital costs)	Non-engineering studies: (e.g., floodplain regulation development; flood authority or revenue raising studies; public awareness program)	x	x	x	
		Engineering/technical/feasibility studies: (e.g. Hydrologic & hydraulic modeling/mapping; identification of potential flood risk reduction solutions; BCA and alternative analyses; project design; construction engineering)		x	x	
		Surveying; geotechnical; testing		x	x	
	Total study costs		x	x	x	
	Construction-related (capital costs)	Design and Permitting		x		
	Construction-related (capital costs)	Environmental; archaeological & historical resources		x		
		Temporary and/or permanent easements; land acquisition		x		
		Mitigation; utility relocation		x		
		Legal assistance; fiscal services & costs (bond counsel); outreach		x		
		Direct construction costs of components/facilities		x		
		Buyouts; property elevations		x		
		Interest during construction		x		
		Project management (by engineer)		x		
		Inspection; pilot testing; warranty; manuals		x		
		(other special services or relevant costs)		x		
		Contingency(s)		x		
	Total construction costs			x		
	TOTAL PROJECT COSTS ^B			x	x	x
	Recurring	Debt service [interest rate & term (years)]			x	
		Operation & Maintenance			x	
		Other (i.e., public awareness campaign)		x		
TOTAL ANNUAL RECURRING COSTS			x	x		

^A These are minimum reporting requirements, however, an RFPG may present additional information utilized in the development of their plan.

^B To be listed as total project cost in the project database.

Exhibit C: Technical Guidelines for Regional Flood Planning

Capital costs include direct and indirect construction-related costs, as applicable, related to flood projects including, for example, but not limited to:

1. storm drain systems
2. detention ponds
3. diversion channels/ tunnels
4. flood walls
5. drainage ditches
6. upgrade of low water crossings
7. buyouts including relocation cost, demolition, abatement, etc.
8. structural elevation
9. dams/levees

Project cost estimates must be developed and presented as present costs in year 2020 dollars based on September 2020 price indices for commodities such as cement and steel as reported in the *Engineering News Record (ENR) Construction Cost Index* (<https://www.enr.com/economics>) and must include all reasonably anticipated construction-related costs, including expected construction bid prices for the flood-related infrastructure.

Note that if cost estimates are already available based on recently developed cost estimates outside of the flood planning process, those cost estimates must be updated to include all the required elements (see table above) and, as necessary, updated to 2020 year dollars by adjusting them based on the September 2020 price indices for commodities such as cement and steel as reported in the *Engineering News Record (ENR) Construction Cost Index*. For estimates developed in 2021 or later, this could include adjusting prices back to Sep 2020.

Interest during construction

To be based on total project costs drawn down at a constant rate per month during a construction period. Interest is the total interest accrued at the end of a construction period using a 3.5 percent annual interest rate less a 0.5 percent rate of return on investment of unspent funds.

Debt Service

Debt service cost to be based on financing of the total construction-related (capital) costs. The length of debt service should be assumed to be 20 years unless otherwise justified. For reservoirs, the period may be up to 40 years. Annual debt service should assume level debt service for all projects, and the annual interest rate for project financing is 3.5 percent. Terms of debt service must be reported in the summary of each project.

Annual Operating and Maintenance costs

Operations and maintenance unit costs must include labor and materials required to maintain projects such as regular repair and/or replacement of equipment.

Costs of flood projects that would also contribute to water supply

Flood project cost estimates for projects that would also contribute to water supply must include all flood project costs previously outlined (above) as well as any and all additional relevant costs and cost calculations that may be required specifically regarding the development of water projects as outlined in the most recently developed regional flood planning guidance document 'Exhibit C' and in accordance with 31 TAC 361.38(9). Additional costs may include items such as water rights permitting and water treatment; the additional cost calculations and considerations must include presenting the unit cost of water (i.e., dollars per acre-foot of water/year) that would be provided throughout a repeat of the drought-of-record.

3.8 Benefit-cost analysis

Benefit-Cost Analysis (BCA) is the method by which the future benefits of a hazard mitigation project are determined and compared to its costs. The end result is a Benefit-Cost Ratio (BCR), which is calculated by a project's total benefits divided by its total costs. The BCR is a numerical expression of the "cost-effectiveness" of a project. A project is generally considered to be cost effective when the BCR is 1.0 or greater, indicating the benefits of a prospective hazard mitigation project are sufficient to justify the costs (Federal Emergency Management Agency, 2009).

Guidance:

1. It is preferable that BCR of a project be greater than one. A BCR greater than one is frequently a requirement for state and federal financial assistance. RFPs may include projects with BCRs that are less than 1 with additional justification.
2. Acceptable and available methods:
 - a. FEMA BCA Toolkit (<https://www.fema.gov/grants/guidance-tools/benefit-cost-analysis>)
 - b. US Army Corps of Engineers Hydrologic Engineering Center Flood Impact Analysis (HEC-FIA) software, Version 3.0 (https://www.hec.usace.army.mil/software/hec-fia/3.0_default.aspx)
 - c. The TWDB funded and guided the development of a user-friendly benefitBCR input interface and analysis tool which is made available with this guidance document.
 - d. Any other BCR calculation with appropriate documentation and an engineer's certification. This may be subject to review and approval by the EA.
3. When possible, the RFPs may consider 'triple bottom line' in performing BCA. The triple bottom line approach considers the social, environmental (or ecological) and economic (financial) aspects of a project.

Exhibit C: Technical Guidelines for Regional Flood Planning

3.9 Project details

Texas Water Code Section 16.061 requires the state flood plan to include “A statewide, ranked list of ongoing and proposed flood control and mitigation projects and strategies necessary to protect against the loss of life and property...”

If the RFPGs do not have pertinent information in this planning cycle, it is acceptable to leave it blank. However, those fields will score as zero. If a field is not applicable, please add NA or Not Applicable.

The flood mitigation projects identified and recommended by each RFPG will be included in Texas’s first ever State Flood Plan as a single ranked list. In order to enable the ranking of all recommended projects in a single list, the RFPGs will provide projects details for each project identified. The specific criteria used and the and weight of each ranking criteria to be used in the state ranking will be determined during the State Flood Planning phase via a transparent process with public input.

Figure 14: Regional & State Flood Planning Long-Range Planning Process



Regional Flood Plans will identify flood risk and recommend FMEs, FMSs, and FMPs within regions.



State Flood Plan will rank recommended FMEs, FMSs, and FMPs statewide.



Future state financial assistance may be allocated using a to-be-determined prioritization criteria.*

*Funding to implement projects can also come from local, federal, or other sources.

The data associated with each recommended flood mitigation project must be provided by the RFPGs to the TWDB, including:

1. General Project Data Required; and
2. Other data for potential use in ranking projects in the state flood plan (to be determined based on final criteria and ranking guidelines selected during state flood planning process after stakeholder input).

The intent is that RFPGs will populate all required project data into an excel-based tool as depicted in Appendix 1 of this document. Upon completion of the Appendix 1 tool, the spreadsheet and associated GIS files required will be provided to the TWDB for their use in developing the single ranked list for the SFP. A checklist of all project data required to complete these efforts is provided in Appendix 2.

3.9.A General project data

General Project Data will need to be provided for each project including the Project Name, Region, Project Type, BCR, Estimated Cost, and other data listed in Sections 3.9.B and 3.9.C of this document.

To develop a single ranked list for the State Flood Plan, the TWDB must collect data by which to rank projects across the state. The intent of any eventual ranking is to reflect the State Flood Plan primary

objective of protecting against loss of life and property¹² while also accommodating a sufficiently wide range of project types and project geographies.

The following list includes data that may be used by the TWDB in the project ranking process. It is anticipated that a final set of ranking criteria will be developed by the TWDB for review and comment by TWDB stakeholders.

1. **Severity Level - Pre-Project Average Depth of Flooding (100-year):** indication of severity based on the baseline/pre-project average 100-year flood depth.
2. **Severity Level - Community Need (% Population):** indication of severity based on a community's need by percentage of project community affected by population.
3. **Flood Risk Reduction:** indication of reduced flood risk by percentage of structures removed from the 100-year floodplain in post-project condition.
4. **Flood Damage Reduction:** indication of flood risk reduction (property protection) by a percentage of 100-year damage reduction calculation.
5. **Critical Facilities Damage Reduction:** indication of reduced flood risk by percentage of critical facilities removed from the 100-year floodplain in post-project condition.
6. **Life and Safety (Injury/Loss of life):** indication of life/injury risk percentage using estimates of area hazard rating, area vulnerability rating, and historical loss of life injury data for project.
7. **Water Supply Benefit:** indication of a project's direct or indirect water supply benefits to a specific supply need identified in the most recently approved state or regional water plan.
8. **Social Vulnerability:** based on the Center for Disease Control SVI data for Texas, by calculating an average project SVI by census tract and classifying the vulnerability level.
9. **Nature-Based Solution:** Indication of the percentage of project cost that qualifies as nature based as reported by RFPG.
10. **Multiple Benefit:** indication of significant, measurable, expected benefits to: recreation, agriculture, transportation, social and quality of life, local economic impacts, meeting sustainability goals, and/or project resilience goals.
11. **Operations and Maintenance:** Indication of expected level of O&M needs and annual costs provided.
12. **Administrative, Regulatory, and other implementation obstacles/difficulty:** indication of project limitations and/or requirements in terms of administrative, regulatory, and other implementation obstacles.
13. **Environmental Benefit:** Indication of expected level of environmental benefits to be delivered by project to agricultural resources, water quality, cultural heritage, habitat, air quality, natural resources, and soils/erosion and sedimentation.
14. **Environmental Impact:** indication of expected level of adverse environmental impacts due to project affecting water quality, cultural heritage, habitat, air quality, natural resource protection, agricultural resources, and erosion and sedimentation.
15. **Mobility:** Indication of project improvement and protection of mobility during flood events, with particular emphasis on emergency service access and major access routes.

¹² Texas Water Code Section 16.061

Exhibit C: Technical Guidelines for Regional Flood Planning

3.9.B General project data required

The following listing includes the General Project Data Required for each project to provide the general background information needed for consideration.

Table 23: General project data required

General project data required	
Project ID:	FMP ID
Project Description:	Brief Project Description
Flood Region:	TWDB RFPG Region
Project Type:	Project Type based on Section 3.2 in this document
Project Watershed:	Project Watershed
Rural Project:	Project qualifies as a rural project per TWDB definition
Project Cost:	Total Estimated Project Cost
Benefit- Cost Ratio:	BCR value determined in Economic Analysis
Project Status:	Planning, Preliminary, Final, Bid-Ready
Population Served:	# Population within Project Service Area Boundary
Communities Served by Project:	Number of jurisdictions (Cities) within project service area
# Structures in 100-year (1% annual chance) Floodplain:	Pre-project 100-year structures count
# Structures with reduced 100-year (1% annual chance) Flood risk:	Post-project 100-year flood risk reduction
# Structures with removed from 100-year (1% annual chance) Floodplain:	Post-project 100-year structures count removed from floodplain extents
Cost/ Structure removed:	Project cost/# structures removed
GIS Shapefile for project:	GIS shapefile of project service area limits or location
Percentage Nature-based Solution (by cost)	Percentage cost of Nature Based solution
Water Supply Benefit	Yes/No; If Yes, provide Annual Yield in Acre-feet
Pre-Project Level-of-Service	Pre-Project LOS: 2-year through 100-year (50% ACE-1% ACE)
Post-Project Level-of-Service	Post-Project LOS: 2-year through 100-year (50% ACE-1% ACE)
Traffic Count for Low Water Crossings	Traffic Count (AADT) for low water crossing projects

3.9.C Proposed Project Scoring Guidelines, Data Required, and Approach Instructions

The following listings provide proposed scoring guidelines and data requirements for each TWDB ranking criteria, as well as approach instructions to develop the values required for the ranking tool.

A proposed scoring system with scores between 0-10 have been applied to each of the 16 criteria. With this approach it is recommended that only the specified scores are used to ensure objectivity. However, it is recognized that criteria for some projects may be hard to define and could fall between two score descriptions. In this instance, it is advised that the lower score be selected.

3.9.C.1 Severity level: pre-project average depth of flooding (100-year)

Table 24: Criteria, specific data required and level guidelines

Criteria	Severity: Pre-Project Average Depth of Flooding (100-year)
Data Requirements	▪ Pre-project 100-year floodplain shapefile with elevations; ▪ Structure shapefile; ▪ first floor structure elevations; ▪ streambed elevations; ▪ Project shapefile in GIS; ▪ land elevations (LiDAR or DEM); ▪ Traffic Count (AADT) for low water crossings;
Proposed Scoring Guidelines:	Proposed score (out of 10):
baseline average flood depth > 3.5ft	10
baseline average flood depth > 2ft	8
baseline average flood depth > 1ft	6
baseline average flood depth > 0.5ft	4
baseline average flood depth < 0.5ft	2
not available (leave blank)	0

Approach for non-low water crossing projects:

1. To determine the Pre-Project Average depth of 100-year flooding (ft) measured in GIS at structures or crossings in GIS, overlay:
 - a. baseline pre-project 100-year floodplain: digital format available from FEMA Map Service Center at <https://msc.fema.gov/portal/advanceSearch>;
 - b. project shapefile;
 - c. land elevations (LiDAR if available <https://tnris.org/stratmap/elevation-lidar/>); and
 - d. structure shapefile (see below)
 - i. TWDB is processing various data sources, including LiDAR, to create a state-wide building footprint dataset. This dataset will be made available in the [Property](#) category of the TWDB Flood Planning [Data Hub](#). Inspect structures in floodplain and document water elevation depths for each structure compared to the first-floor structure elevations (difference represents the flooding depth).
 - e. If first floor elevations are not available in the structures shapefile used, they may be available for purchase at this link: https://truefloodrisk.com/#/plans_n_pricing
 - f. If first floor elevations are not used, the land elevation adjacent to the structure plus 0.5 ft may be used instead.
 - i. Record the depths at each structure and calculate the average flooding depth for the project.
2. Report the value of the average flooding depth for the project and score the category accordingly.

Approach for low water crossing projects:

1. In GIS, overlay baseline pre-project 100-year floodplain, streambed elevation, dataset, and land elevation.
2. Generate a shapefile of a 300-foot buffer around the low water crossing location.
3. Within the buffer area, compare the water elevation to the streambed elevation dataset (calculate the difference which represents the flooding depth). In areas within the buffer where the streambed elevation data is not available, use the land elevation instead.

Exhibit C: Technical Guidelines for Regional Flood Planning

- a. Report the value of the average flooding depth within the buffer area of the project and score the category accordingly.

3.9.C.2 Severity level: community need**Table 25: Severity level: community need**

Criteria	Severity-Community need (% Population)
Data Requirements	▪ population of community within floodplain ▪ Pre-project 100-year floodplain ▪ total population of community
Proposed Scoring Guidelines:	Proposed score (out of 10):
>75% of project community affected	10
50%-75% of project community affected	7
25%-50% of project community affected	4
<25% of project community affected	1
not available (leave blank)	0

Approach:

1. This category is based on an estimate of the population in the floodplain relative to the total population of community.
2. The community will be defined as the jurisdiction (City, County, etc.). Information on spatial boundaries and population statistics is available from the Texas Demographic Center (<https://demographics.texas.gov/Data/TPEPP/Estimates/>), or from the United States Census Bureau (<https://www.census.gov/geographies/mapping-files.All.html>)
3. An estimate of the population within the floodplain can be made in GIS based on the proportion of structures within the floodplain and the use of LandScan USA population data. See section 3.4 for details on calculating population using LandScan USA (<https://landscan.ornl.gov/>). The maximum of the daytime and nighttime population is considered the population in the floodplain.
 - a. Calculate the percentage of the community affected, report the value, and score the category accordingly:

$$\% \text{ project community affected} = \frac{\text{population in pre project floodplain}}{\text{total community population}} \times 100$$

3.9.C.3 Flood risk reduction**Table 26: Flood risk reduction**

Criteria	Flood Risk Reduction
Data Requirements	▪ pre-project 100-year floodplain shapefile with elevations; ▪ post-project 100-year floodplain shapefile with elevations; ▪ # structures in pre-project 100-year floodplain; ▪ # structures in post-project floodplain; ▪ structure shapefile; ▪ land elevations (LiDAR)
Proposed Scoring Guidelines	Proposed score (out of 10):
Reduced risk to >75% of structures in floodplain	10
Reduced risk to <75% of structures in floodplain	7
Reduced risk to <50% of structures in floodplain	4
Reduced risk to <10% of structures in floodplain	1

Reduced risk to 0 structures in floodplain	0
not available (leave blank)	0

Approach:

1. This category will only be relevant and included in the scoring for projects which reduce risk to structures within the floodplain. For projects which do not reduce floodplain, for example low water crossing projects, the TWDB may elect to remove category from the scoring system and the weighted total score.
2. Count of structures should include all habitable structures.
3. In GIS, overlay baseline pre-project 100-year floodplain shapefile with post-project 100-year floodplain shapefile, along with the structure dataset (shapefile), and land elevations.
4. Calculate the percentage of structures removed from 100-year floodplain, report the value, and score accordingly:

$$\% \text{ removed} = \frac{(\# \text{ structures removed from floodplain})}{\# \text{ structures in floodplain pre project}} * 100$$

3.9.C.4 Flood damage reduction**Table 27: Flood damage reduction**

Criteria	Flood Damage Reduction (Property Protection)
Data Requirements	▪ pre-project average depth of 100-year flooding (from 3.10.C.1.); ▪ post-project 100-year flood shapefile, elevations, or average depth/reduction; ▪ Project shapefile (GIS); ▪ land elevations (LiDAR); ▪ structure shapefile; ▪ first floor structure elevations;
Proposed Scoring Guidelines:	Proposed score (out of 10):
flood damage reduction >95%	10
flood damage reduction > 75%	8
flood damage reduction > 50%	6
flood damage reduction > 25%	4
flood damage reduction < 25%	2
not available (leave blank)	0

Approach:

1. This category will use damage and benefit assessment data to determine flood risk reduction percentage of the project to assign a relative score. For ease of use, only direct flood damages relating to structures will be considered. This category will only be relevant and included in the scoring for projects which reduce risk to structures within the floodplain. For projects which do not reduce floodplain risk, for example low water crossing projects, the TWDB may elect to remove category from the scoring system and the weighted total score.
2. The Pre-Project Average Depth of Flooding (100-year, in feet) was calculated in 3.9.C.1.
3. Using the same methodology, calculate the Post-Project Average Depth of Flooding (100-year, in feet) using GIS at structures or crossings in GIS, by overlaying:
 - a. post-project 100-year floodplain shapefile;
 - b. project shapefile;
 - c. land elevations (LiDAR if available <https://tnris.org/stratmap/elevation-lidar/>); and
 - d. structure shapefile used in 3.9.C.1

Exhibit C: Technical Guidelines for Regional Flood Planning

4. Alternative to the GIS approach, if the average reduction in post-project 100-year flood depth is indicated by hydraulic modeling for the project reach and is available/reported, this depth reduction may be used for this criterion.
5. Using the Pre-Project Average Depth of Flooding (100-year) depth calculated for the project in 3.10.C.1., and property values of structures in the floodplain from the applicable County Appraisal District, use a USACE Damage Depth Function (DDF) to calculate total pre-project damages (100-year):
 - a. Refer to DDF for 1-story structures, and 2-story structures without basements on pages 6-7 of the *Economic Guidance Memorandum (EGM) 01-03, Generic Depth-Damage Relationships* (Johnson, 2000):
<https://planning.ercd.dren.mil/toolbox/library/EGMs/egm01-03.pdf>
 - b. Damages= % damages from DDF x property value
6. Using the Post-Project Average Depth of Flooding (100-year) depth calculated or determined above, repeat the calculation for the post-project average flood depth to calculate total post-project damages (100-year).
7. Calculate the flood damage reduction percentage, report the value, and score accordingly:

$$\frac{\text{total pre project damages} - \text{total post project damages}}{\text{total pre project damages}} \times 100$$

3.9.C.5 Critical facilities damage reduction

Table 28: Critical facilities damage reduction

Criteria	Flood Damage Reduction (Property Protection)
Data Requirements	▪ pre-project average depth of 100-year flooding (from 3.9.C.1); ▪ post-project 100-year flood shapefile, elevations, or average depth/reduction; ▪ # critical facilities in pre-project 100-year floodplain; ▪ # critical facilities in post-project floodplain;
Proposed Scoring Guidelines:	Proposed score (out of 10):
critical facilities reduction >95%	10
critical facilities reduction > 75%	8
critical facilities reduction > 50%	6
critical facilities reduction > 25%	4
critical facilities reduction < 25%	2
not available (leave blank)	0

Approach:

1. This category will only be relevant and included in the scoring for projects which reduce risk to critical facilities within the floodplain. For projects which do not reduce floodplain, for example low water crossing projects, the TWDB may elect to remove the category from the scoring system and the weighted total score.
2. In GIS, overlay the baseline pre-project 100-year floodplain shapefile with post-project 100-year floodplain shapefile, along with the critical facilities dataset ([Exist_Vuln]), and land elevations.
3. Calculate the percentage of critical facilities removed from the 100-year floodplain, report the value, and score accordingly:

$$\text{removed} = \frac{\# \text{ critical facilities in floodplain pre project} - \# \text{ critical facilities in flood plain post project}}{\# \text{ critical facilities in floodplain pre project}} \times 100$$

$$\% \text{ removed} = \times 100$$

3.9.C.6 Life and safety (injury / loss of life)**Table 29: Life and safety (injury / loss of life)**

Criteria	Life and Safety (Injury / Loss of life)
Data Requirements	- Structures shapefile; - land/stream elevations (LiDAR); - pre-project 100-year floodplain elevations; - pre-project 100-year velocity (model, if available); - flood-related death and injury data for affected county(ies) in past year: https://www.ncdc.noaa.gov/stormevents
Proposed Scoring Guidelines:	Proposed score (out of 10):
life/injury risk percentage >50%	10
life/injury risk percentage >40%	8
life/injury risk percentage >30%	6
life/injury risk percentage >20%	4
life/injury risk percentage <20%	2
not available (leave blank)	0

Approach:

- This category is based on the calculation of two parameters; a Hazard Rating and a Vulnerability Rating. The approach is based on principles used in the UK's DEFRA guidance for valuing the risk to life from flooding, which provides a simplified, less data intensive approach. It can be used for all types of projects, including low water crossings.
- Calculate the "area hazard rating" using the average flood depth, average flood velocity and debris factor:
 - Average flood depth: use the Severity (depth) approach to define the average flood depth at structures for non-low water crossing projects or within the buffer area of crossing for low water crossing projects.
 - Average flood velocity can be obtained from model results, if available. If model data is not available, it can be estimated based on the flooding depth or historic evidence (i.e., a source of typical flood velocities in Texas).
 - The debris factor is based on the flooding depth, velocity, and underlying land use. The lookup table provided below estimates the debris factor based on depth and land use:

Table 30: Debris factor lookup table

Debris factor lookup table ¹³			
Depths	Pasture / Arable	Woodland	Urban
0 to 0.25m (0 to 0.8ft)	0	0	0
0.25m to 0.75m (0.8ft to 2.5ft)	0	0.5	1
Depth > 0.75m (2.5ft) and/or Velocity >2m/s (6.6 ft/s)	0.5	1	1

- Area Hazard Rating is calculated as:

$$\text{Area Hazard Rating} = \text{depth}(\text{velocity} + 0.5) + \text{debris factor}$$

¹³ based on Table A.1 in Defra Flood and Coastal Defense Appraisal Guidance, Assessing the Valuing the Risk to Life from Flooding, UK

Exhibit C: Technical Guidelines for Regional Flood Planning

3. Calculate the “area vulnerability rating” using estimates of the speed of onset of flooding, the presence of a flood warning system, and the nature/development of the area. Each of these variables is scored between 1-3. The lookup table below provides estimated values of each variable. The vulnerability rating is the sum of each variable, calculated as:

- a. **Area Vulnerability Rating = (onset + flood warning + nature of area)**

Table 31: Area vulnerability lookup table

Area Vulnerability lookup table ¹⁴			
Parameter	Low risk area Score = 1	Medium risk area Score = 2	High risk area Score = 3
Speed on onset	Onset of flooding is very gradual (many hours)	Onset of flooding is gradual (an hour or so)	Rapid flooding
Nature of area	Multi-story apartments	Typical residential area, commercial and industrial properties	Bungalows, mobile homes, busy roads, parks, single story
Flood warning score	Flood warning system in place for all possible sources of flooding	Flood warning system in place for some of the possible sources of flooding	No flood warning system
Area vulnerability = sum of scores for ‘speed on onset’, ‘nature of area’ and ‘flood warning’			

1. Multiply the “Area Hazard Rating” by the “Area Vulnerability Rating” and convert to a life/injury risk percentage.
2. If the project area has a history of loss of life and/or injury caused by flooding, multiply the life/injury risk percentage by 1.5. If the area does not have an incident caused by flooding, multiply the life/injury risk percentage by 1.
3. Report the value and score accordingly.

3.9.C.7 Water supply benefit**Table 32: Water supply benefit**

Criteria	Water Supply benefit
Data Requirements	▪ Water Supply benefits to a specific need identified in the most recently approved state or regional water plan
Proposed Scoring Guidelines:	Proposed score (out of 10):
Involves directly increasing water supply which requires both availability increase and directly connecting supply to user.	10
Directly benefits ‘water availability’, but no water user directly benefits (e.g. by injecting into aquifer, creating new raw water storage)	7
Indirectly benefits ‘water availability’ (e.g., recharges aquifers through natural infiltration)	4
No impact on water supply	0
not available (leave blank)	0

¹⁴ based on Table A.2 in Defra Flood and Coastal Defense Appraisal Guidance, Assessing the Valuing the Risk to Life from Flooding, UK

Approach:

1. A project's Water Supply component will be provided in the broader Project Description and General Project Data.
 - a. If a project indicates a Water Supply Benefit, report the project specific water supply benefit provided, and score accordingly.
2. The estimated share of the cost associated with a project's Water Supply benefit components must be 5 percent or greater of the estimated total project cost.
3. Projects must reference the specific water supply need and water user group(s) in the most recently approved state or regional water plan.

3.9.C.8 Social vulnerability**Table 33: Social vulnerability**

Criteria	Social vulnerability
Data Requirements	▪ SVI GIS Shapefile from CDC download; ▪ Project shapefile
Proposed Scoring Guidelines:	Proposed score (out of 10):
SVI between 0.75-1.00 (high vulnerability)	10
SVI between 0.5-0.75 (moderate to high vulnerability)	7
SVI between 0.25-0.5 (low to moderate vulnerability)	4
SVI between 0.01-0.25 (low vulnerability)	1
not available (leave blank)	0

Approach:

1. Download the 2018 SVI shapefile for Texas, available on the [Flood Planning Data Hub](#). The shapefile contains SVI information for each of the individual census tracts in Texas.
2. Overlay the project shapefile with the SVI shapefile. The SVI for each census tract is reported in the GIS field "RPL_themes". This field has values between 0 and 1, with a high score (closer to 1) denoting greater vulnerability.
3. If the project shapefile intersects multiple census tracts, determine the SVI for all tracks and calculate the areal weighted-average SVI, report the value for the project, and score accordingly.

3.9.C.9 Nature-based solutions**Table 34: Nature-based solutions**

Criteria	Nature-based Solutions
Data Requirements	▪ Percentage of project based on nature-based solutions by cost provided in general project data
Proposed Scoring Guidelines:	Proposed score (out of 10):
>75% of the project cost is nature-based	10
> 50% of the project cost is nature-based	7
>25% of the project cost is nature-based	4
<25% of the project cost is nature-based	1
not available (leave blank)	0

Exhibit C: Technical Guidelines for Regional Flood Planning

Approach:

1. The RFPGs will have flexibility in determining what percent of the project is nature based. RFPGs must be consistent in their approach for the entire region and provide justification for the basis of their determination.
2. This category is based on the proportion of the project that is a nature-based solution. The proportion is defined in cost terms whereby percentage of the project being nature-based is estimated by dividing the cost of the nature-based aspects of the project by the total project costs. Examples of nature-based solutions include: reforestation, green embankments; coastal mangroves, wetlands; urban parks, restorations.
 - a. Using the reported Nature based infrastructure percentage calculation provided in the General Project Data, report the value and indicate score accordingly.

3.9.C.10 Multiple benefit**Table 35: Multiple benefit**

Criteria	Multiple Benefit
Data Requirements	▪ Reported benefits in project description
Proposed Scoring Guidelines:	Proposed score (out of 10):
Project delivers benefits in four or more wider benefit categories	10
Project delivers benefits in three wider benefit categories	7
Project delivers benefits in two wider benefit categories	4
Project delivers benefits in only one wider benefit category	1
Project does not deliver any wider benefits	0
not available (leave blank)	0

Approach:

1. The scoring of this category is based on the number of different wider benefit categories which can be delivered by the project included in the project description.
2. The wider benefit categories may include:
 - a. Recreation benefits such as trails, parks, or sports fields.
 - b. Agricultural benefits such as field preservation, irrigation opportunities, or other benefits to forestry or farming lands.
 - c. Transportation benefits such as improved roads, bike paths, navigation, or parking facilities.
 - d. Social and quality of life benefits such as community centers, hospitals, or education benefits.
 - e. Local economic impacts such as providing business continuity or job creation.
 - f. Project's ability to meet specific sustainability goals based on the U.S. National Statistics for the U.N. Sustainable Development Goals (<https://sdg.data.gov/>)
 - g. Project resilience goals that indicate that project is planned to withstand a long-term service life (i.e., >50-years) and is designed with increased resilience.
 - i. Report the value (0-4+) and score accordingly.

3.9.C.11 Operations and maintenance**Table 36: Operations and maintenance**

Criteria	Operations and Maintenance
Data Requirements	O&M needs/annual costs provided in Project description
Proposed Scoring Guidelines:	Proposed score (out of 10):
Project will not require any ongoing operation and maintenance (low);	10
Project requires regular, ongoing operation and maintenance; and/or O&M requirements are well defined (Regular);	7
Project will require ongoing operation and maintenance outside of the owner's regular maintenance practices; long-term O&M requirements are undefined; and/or high annual O&M cost > 1% of project (high);	4
Project will require extensive and/or specialist operations and maintenance outside of owner's regular maintenance practices; project O&M needs are uncertain; and/or high annual O&M cost > 5% of project (extensive);	1
not available (leave blank)	0

Approach:

1. This category is based on the reported expected level of O&M effort for the project infrastructure owner (City, County, River Authority, etc.), owner's experience/qualifications to operate, and/or overall proportion of annual O&M costs to the total project cost. Category also accounts for risk/uncertainty relating to O&M requirements.
2. O&M levels and/or annual costs should be included in the project description and general project data.
 - a. Report the value (low, regular, high, or extensive), and score accordingly.

3.9.C.12 Administrative, regulatory, and other implementation obstacles/difficulty**Table 37: Administrative, regulatory, and other implementation obstacles/difficulty**

Criteria	Administrative, Regulatory and other implementation obstacles/difficulty
Data Requirements	Anticipated project requirements; Administrative, Regulatory, and other implementation obstacles/difficulty
Proposed Scoring Guidelines:	Proposed score (out of 10):
Project has few administrative, regulatory and implementation limitations / requirements	10
Project has a typical number of administrative, regulatory and limitations / requirements	6
Project has a high number of administrative, regulatory and limitations / requirements	2
not available (leave blank)	0

Exhibit C: Technical Guidelines for Regional Flood Planning

Approach:

1. The scoring of this category is based on the reported anticipated number of administrative, regulatory, and environmental requirements a project must achieve to go ahead in the project description.
2. Most projects will fall into the “typical” category unless specific exceptions (for few), or additional regulation requirements (for high) are documented in the description.
3. Ranking Definitions:
 - a. Few: project requires 2 or less local permits (i.e., City, County)
 - b. Typical: project requires 2 or more local permits (i.e., City, County), and standard reviews by state (i.e., TCEQ), and/or 2 or less property acquisitions.
 - c. High: project requires 3 or more local permits, state reviews (i.e., TCEQ), Federal Permits (USACE, USFWS, etc.), and/or 3 or more property acquisitions.
 - i. Report the value (few, typical, high) and score accordingly.

3.9.C.13 Environmental benefit**Table 38: Environmental benefit**

Criteria	Environmental Benefit
Data Requirements	▪ Environmental benefits of project, included in project description
Proposed Scoring Guidelines:	Proposed score (out of 10):
Project will deliver a high level of environmental benefits (benefits in 4+ categories)	10
Project will deliver a moderate level of environmental benefits (benefits in 2-3 categories)	6
Project will deliver a low level of environmental benefits (benefits in only 1 category)	3
Project does not provide any environmental benefits	0
not available (leave blank)	0

Approach:

1. The scoring of this category is based on the level of environmental benefit that a project is anticipated to provide which must be documented in the broader project description.
2. An environmental benefit is defined as an improvement on the current environmental condition (the condition prior to the project).
3. The potential environmental benefit categories include:
 - a. water quality (i.e., project adds a new water quality pond, vegetated filter strips, rain garden(s), or flood level reduction reduces risk of wastewater overflows during storm events);
 - b. cultural heritage (i.e., project removes a Texas Historical Commission (THC) identified site with antiquities from floodplain);
 - c. habitat, biodiversity and ecology (i.e., project provides habitat protection, creates intertidal habitat, wetland areas, or wildlife corridors);
 - d. air quality (i.e., project creates open space, recreation areas, or parks; includes tree and/or vegetation plantings; utilizes sustainable construction techniques with planning to minimize air quality impacts);
 - e. natural resources (i.e., project includes protection measures for natural resources, creates habitat, coastal grazing marshes, wetlands, or woodlands);

- f. agricultural resources/properties (i.e., agricultural properties removed from floodplain or floodway);
 - g. soil quality, erosion and sedimentation (i.e., project provides reduced velocities, and/or stream armoring; project increases organic matter/soil health to support increased infiltration)
4. Report the value and score accordingly.

3.9.C.14 *Environmental impact*

Table 39: Environmental impact

	Environmental Impact
Data Requirements	Environmental impacts of project, included in project description
Proposed Scoring Guidelines:	Proposed score (out of 10):
Project has no adverse environmental impacts	10
Project will have adverse environmental impacts in 1 environmental category	6
Project will have adverse environmental impacts in 2-3 environmental categories	3
Project will have adverse environmental impacts in 4+ categories	0
not available (leave blank)	0

Approach:

1. The scoring of this category is based on the anticipated level of environmental impacts which must be documented in the broader project description.
2. An adverse environmental impact is defined as a negative change compared to the current environmental condition (the condition prior to the project), after appropriate mitigation has been implemented.
3. Environmental net impact categories include:
 - a. Impacts to water quality (i.e., project includes work in a watershed identified by TCEQ's Watershed Action Planning list of impaired or special interest areas; increases velocities; increases surface water run-off pollution, or requires relocation of wastewater discharge into sensitive area);
 - b. Impacts to cultural heritage (i.e., project work proposed in areas with Texas Historical Commission identified antiquities);
 - c. Impacts to habitat, biodiversity and ecology (i.e., proposed work in area with endangered, protected, or sensitive species);
 - d. Impacts to air quality (i.e., project requires tree and/or other vegetation removal; reduction of green spaces; increases air pollution during construction and/or operation);
 - e. Impacts to natural resources (i.e., project impacts designated coastal natural resource areas, or wetland);
 - f. Impacts to agricultural resources/properties (i.e., agricultural properties acquired for detention or channel improvements);
 - i. Impacts to soils/erosion and sedimentation (i.e., increased velocities during more frequent events such as the 2-year storm)
4. Report the impact level and score accordingly.

Exhibit C: Technical Guidelines for Regional Flood Planning

3.9.C.15 Mobility**Table 40: Mobility**

Data Requirements	▪ Project Shapefile ▪ TxDOT Functional Classification Shapefile ▪ pre-project 100-year floodplain shapefile with elevations; ▪ post-project 100-year floodplain shapefile with elevations;	
Proposed Scoring Guidelines:		Proposed score (out of 10):
Project will protect major and minor access routes in floodplain and emergency service access to EMS, police stations, and fire stations. Allows emergency services access to their entire administrative area.		10
Project will protect all major access routes in floodplain and all emergency service access. Minor access routes are still flooded or have restricted access in local areas.		7
Project will protect some major access routes in floodplain and the majority (>50%) of emergency service access. Some major and many minor access routes will remain flooded, and emergency services access may be restricted in some areas (i.e. >50% of floodplain by area inaccessible).		4
Project provides no change to major, minor, or emergency access routes in the project area.		0
not available (leave blank)		0

Approach:

1. The scoring of this category is based on improved mobility during flood events, with particular emphasis on emergency service access and major access routes.
2. Overlay the Project shapefile with the pre- and post-project 100-year floodplain shapefiles, and a download of the TxDOT Functional Classification Shapefile: <http://gis-txdot.opendata.arcgis.com/datasets/txdot-functional-classification>
3. Roadway classifications are included in the TxDOT shapefile variable "FC_DESC":
 - a. Major access routes: Major Collector, Principal Arterial, Interstate
 - b. Minor access routes: Minor Collector, Minor Arterial
 - i. Report the project value (no access change, minor access protection, major access protection, or major/emergency access protection) and score accordingly.

3.10 Project data submittal requirements

Please refer to the Exhibit D: Data Submittal Guidelines for flood planning data submittal requirements.

An excel template file “Exhibit C Tables” is attached with this guidance document that includes the summary tables that are required to be filled and submitted with the technical memo, draft flood plan and the final flood plan.

Map submittal requirements:

Following is a list the GIS coverage maps the RFPGs are required to submit with the flood plan. Each map should depict the RFPG boundary, counties, HUCs as applicable, major streams or rivers, major reservoirs as applicable, major watershed boundaries as applicable, major roadways, major cities or urban areas, and other features identified by the RFPG.

1. **Map 1:** Existing Flood Infrastructure (2.1 Task 1 – Planning Area Description)
2. **Map 2:** Proposed or Ongoing Flood Mitigation Projects (2.1 Task 1 – Planning Area Description)
3. **Map 3:** Non-Functional or Deficient Flood Mitigation Features or Infrastructure (2.1 Task 1 – Planning Area Description)
4. **Map 4:** Existing Condition Flood Hazard (2.2.A.1 Existing condition flood hazard analysis)
5. **Map 5:** Existing Condition Flood Hazard - Gaps in Inundation Boundary Mapping and Identify Known Flood-Prone Areas (2.2.A.1 Existing condition flood hazard analysis)
6. **Map 6:** Existing Condition Flood Exposure (2.2.A.2 Existing condition flood exposure analysis)
7. **Map 7:** Existing Condition Vulnerability and Critical Infrastructure (2.2.A.3 Existing condition vulnerability analysis)
8. **Map 8:** Future Condition Flood Hazard (2.2.B.1 Future condition flood hazard analysis)
9. **Map 9:** Future Condition Flood Hazard - Gaps in Inundation Boundary Mapping and Identify Known Flood-Prone Areas (2.2.B.1 Future condition flood hazard analysis)
10. **Map 10:** Extent of Increase of Flood Hazard Compared to Existing Condition (2.2.B.1 Future condition flood hazard analysis)
11. **Map 11:** Future Condition Flood Exposure (2.2.B.2 Future condition flood exposure analysis)
12. **Map 12:** Future Condition Vulnerability and Critical Infrastructure (2.2.B.3 Future condition vulnerability analysis)
13. **Map 13:** Floodplain Management (2.3.A Task 3A – Evaluation and Recommendations on Floodplain Management Practices)
14. **Map 14:** Greatest Gaps in Flood Risk Information (2.4.A Task 4A – Flood Mitigation Needs Analysis)
15. **Map 15:** Greatest Flood Risk (2.4.A Task 4A – Flood Mitigation Needs Analysis)
16. **Map 16:** Potential Flood Management Evaluations (2.4.B Task 4B – Identification and Evaluation of Potential Flood Management Evaluations and Potentially Feasible Flood Management Strategies and Flood Mitigation Projects)
17. **Map 17:** Extent of Potential Flood Management Evaluations and Existing Mapping Needs (2.4.B Task 4B)
18. **Map 18:** Potential Flood Mitigation Projects (2.4.B Task 4B)
19. **Map 19:** Extent of Potential Flood Mitigation Projects (2.4.B Task 4B)
20. **Map 20:** Recommended Flood Management Evaluations (2.5.A Flood Management Evaluations)
21. **Map 21:** Recommended Flood Mitigation Projects (2.5.C Flood Mitigation Projects)

All maps should be submitted with underlying GIS data layers and map documents, include a north arrow, a reference scale, appropriate assumptions and/ or disclaimers. These are minimum submittal requirements. The RFPGs may choose to provide additional maps at their discretion.

Exhibit C: Technical Guidelines for Regional Flood Planning

3.11 References

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Exhibit C: Technical Guidelines for Regional Flood Planning

3.12 Appendix 1

Figure 15: FMP data entry tool interface - example of general project data:

General Project Data													
Project Name	Project Description	Flood Region	Project Type	FIUP Project Category	Project Watershed	Rural Applicant	Project Cost	Benefit Cost Ratio	Cost per Structure Removed	Pre-Project Level-of-Service	Post-Project Level-of-Service	# of Structures in 1% Annual Chance FP (Pre-Project)	Project Status
Project 1	1 Channel Project in Henderson County	Trinity Region	Regional	Category 1	Walnut Creek (Trinity Trib)	N	\$20,000,000	5	200000	10-year	50-year	200	Planning
Project 2	2 Small Infrastructure Project in City of Lamesa, TX (Dawson County)	Colorado Upper Region	Local Rehab	Category 2	Sulfur Springs Draw	Y	\$ 800,000	3	80000	2-year	25-year	25	Design
Project 3	3 Low Water Crossing at San Marcos River & Plant Road (232) in Caldwell County	Guadalupe Region	Low water crossing	Category 2	San Marcos River	Y	\$500,000	2		2-year	25-year	4	Design

Figure 16: Example FMP data as shown in Section 4.3 (note that the scores are examples and are not representative of actual projects):

Project	Severity Ranking: Pre-Project Average Depth of Flooding (100-year)	Severity Ranking: Community Need (% Population)	Flood Risk Reduction	Flood Damage Reduction	Reduction in critical facilities flood risk	Life and Safety Ranking (Injury/Loss of life)	Water Supply Yield Ranking	Social Vulnerability Ranking	Green/Nature-Based Solutions Ranking	Multiple Benefit Ranking	Operations and Maintenance Ranking	Administrative, Regulatory and Other Obstacle Ranking	Environmental Benefit Ranking	Environmental Impact Ranking	Mobility Ranking	Total Score
Project 1 - Channel Project in Henderson County	4	4	4	8	4	4	10	4	4	7	4	2	6	3	10	78
Project 2 - Small Infrastructure Project in City of Lamesa, TX (Dawson County)	10	7	7	8	4	4	4	4	7	4	7	6	3	3	4	82
Project 3 - Low Water Crossing at San Marcos River & Plant Road (232) in Caldwell County	10	7	1	4	7	10	0	7	4	1	7	10	10	10	4	92

3.13 Appendix 2

Project Data Requirement Checklist

☐	1	Project ID: Project name provided by the Regional Flood Planning Group (RFPG)
☐	2	Project Description: Brief project description
☐	3	Flood Region: TWDB RFPG Flood Planning Region
☐	4	Project Type: Project type based on Section 1 guidance in this document
☐	5	Flood Intended Use Plan (FIUP) Project Category: FIUP Category 1, 2, or 4
☐	6	Project Watershed: Project watershed defined by TWDB
☐	7	Rural Project: Project qualifies as a rural project per TWDB definition
☐	8	Project Cost: Total estimated project cost
☐	9	Benefit- Cost Ratio: BCR value determined in Economic Analysis
☐	10	Project Status: Planning, Preliminary Design, Final Design, Bid-Ready
☐	11	Population Served: Population within Project Service Area Boundary
☐	12	Communities Served by Project: Number of jurisdictions (Cities) within project service area
☐	13	Number of Structures in 100-year (1% annual chance) Floodplain: Pre-project 100-year structures count
☐	14	Number of structures with reduced 100-year (1% annual chance flood risk: Post-project 100-year flood risk reduction
☐	15	Number of structures removed from 100-year (1% annual chance) floodplain: Post-project 100-year count of structures removed from floodplain extents
☐	16	Cost per structure removed: Project cost/number of structures removed
☐	17	Project shapefile in GIS: GIS shapefile of project service area limits and/or point location
☐	18	Percentage of Nature-based solution (by cost): Percent cost of nature-based solution
☐	19	Water Supply Benefit: (Yes/No); If Yes, list type of benefit: water availability, water supply, or both
☐	20	Pre-Project Level-of-Service (LOS): 2-year through 100-year (50% ACE-1% ACE)

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☐	21	Post-Project Level-of-Service (LOS): 2-year through 100-year (50% ACE-1% ACE)
☐	22	Pre-project 100-year floodplain (1% annual chance) shapefile with elevations
☐	23	Structure shapefile (parcels shapefile if structures not available)
☐	24	First floor structure elevations
☐	25	Streambed elevations (LiDAR, DEM, or Hydraulic Model)
☐	26	Land elevations (LiDAR or DEM)
☐	27	Population of community within floodplain
☐	28	Post-project 100-year (1% annual chance) floodplain shapefile with elevations
☐	29	Pre-project average depth of 100-year flooding (calculated in Criteria 1- 4.2.1)
☐	30	Post-project 100-year flood shapefile, elevations, or average depth/reduction
☐	31	Pre-project 100-year velocity (from Hydraulic model, if available)
☐	32	Flood-related death and injury data for affected county(s) in past year: https://www.ncdc.noaa.gov/stormevents
☐	33	Social Vulnerability Index (SVI) GIS Shapefile from CDC download
☐	34	Percent of project nature-based solutions by cost provided in general project data
☐	35	Environmental Benefits to water quality, cultural heritage, habitat, air quality, natural resources, agricultural resources, and soils/erosion and sedimentation.
☐	36	Environmental Impacts of project to water quality, cultural heritage, habitat, air quality, natural resource protection, and erosion and sedimentation.
☐	37	Reported Benefits (Multiple):
☐	37-a	Recreation benefits such as trails, parks, or sports fields.
☐	37-b	Agricultural benefits such as field preservation, irrigation opportunities, or other benefits to forestry or farming lands.
☐	37-c	Transportation benefits such as improved roads, bike paths, navigation, or parking facilities.
☐	37-d	Social and quality of life benefits such as community centers, hospitals, or education benefits.
☐	37-e	Local economic impacts such as providing business continuity or job creation.
☐	37-f	Project's ability to meet specific sustainability goals based on https://sdg.data.gov/

☐	37-g	Project resilience goals that indicate that project has a long-term service life (i.e. >50-years) and is designed with increased resilience
☐	38	Report of anticipated project requirements; Administrative, Regulatory, and other implementation obstacles/difficulty Ranking (permits: local, state, federal)
☐	39	Estimated project design, modeling, constructability requirements (standard, challenging, highly complex)
☐	40	TxDOT Functional Classification Shapefile
☐	41	Traffic Count for Low Water Crossing Projects (AADT)
☐	42	Optional Items:
☐	42-a	Narrative of how the project is going to change the community and/or how the project relates to other projects or ongoing progress.
☐	42-b	Photos of flooding that may not be captured by modeling.

CITY OF SAN ANGELO, TEXAS
STANDARD PROFESSIONAL SERVICES CONTRACT TERMS AND CONDITIONS
Effective April 16, 2018

1. SCOPE OF SERVICE:

A. Provider agrees to provide the basic Services described under the projected "Scope of Work" in City's Request for Qualifications to which Provider has responded, and any Task Orders issued pursuant to the Contract and other Contract Documents (collectively the "Contract") with the professional qualifications as described by Provider's response to the RFQ. Services will be detailed in duly executed written Task Orders for each Specific Project in a format approved by the City and if for compensation of \$50,000 or more, are subject to approval of City Council pursuant to City policy or as required by law. Each Task Order will indicate the specific services to be performed and deliverables to be provided and be executed by authorized representatives of each party.

B. Provider agrees that the Contract is not a commitment by City to Provider to issue any Task Order not issued on or before the Effective Date of the Contract or to provide any scope of service for acceptance by Provider under the Contract.

C. City and Provider shall agree on the scope, time for performance, and basis of compensation for each Task Order. Each duly executed Task Order shall be subject to the terms and conditions of the Contract. Provider shall not be obligated to perform any prospective Task Order unless and until City and Provider agree as to the particulars of the Specific Project, including the scope of Provider's services, time for performance, Provider's compensation, and all other appropriate matters.

D. Provider represents and warrants to City that throughout the term of the contract and the performance of any work pursuant to Task Order issued under this contract that: (i) it possesses all qualifications, licenses and expertise required for the performance of Services; (ii) it is not delinquent in the payment of any sums due City, including but not limited to payment of permit fees or occupational licenses, nor in the performance of any obligations to City; (iii) all personnel assigned to perform Services are and shall be, at all times during the term hereof, fully qualified and trained to perform the tasks assigned to each; (iv) Services will be performed in the manner described in Contract Documents; (v) services provided under the Contract shall be performed with the professional skill and care ordinarily provided by members of the same profession practicing under the same or similar circumstances and professional license; and (vi) services provided under the Contract shall be performed as expeditiously as is prudent considering the ordinary professional skill and care of a competent member of the same profession.

2. COMPENSATION:

A. The amount of compensation payable by City to Provider shall be based on the price, rates, time for performance, and schedules described by **Task Order** incorporated into the Contract for all purposes.

B. Unless otherwise specifically provided by the Task Order, payment shall be made within thirty (30) days after receipt of Provider's invoice, which shall be accompanied by sufficient supporting

documentation and contain sufficient detail, to allow a proper audit of expenditures, should City require one to be performed.

3. **COMPLIANCE WITH FEDERAL, STATE, AND LOCAL LAWS:** The Contract is expressly made subject to all applicable federal, state, county and City laws, statutes, ordinances, rules, codes and regulations as set forth now or hereinafter adopted, enacted or amended (collectively referred to as "Regulations"), including but not limited to: Regulations specifically applicable to Services provided and Work performed under this Contract. All of the Regulations are hereby made a part of this Contract and incorporated herein by reference as if fully set out herein. Provider agrees that all Services provided and Work to be performed under this Contract shall be performed in strict compliance with such Regulations as they may be amended from time to time which may apply to Services provided and Work performed.

4. **OWNERSHIP OF DOCUMENTS:** Provider understands and agrees that any information, document, report or any other material whatsoever which is given by City to Provider or which is otherwise obtained or prepared by Provider pursuant to or under the terms of the Contract is, and shall at all times remain, the property of City. Provider agrees not to use any such information, document, report or material for any other purpose whatsoever without the written consent of City, which may be withheld or conditioned by City in its sole discretion. If City modifies and/or uses the documents for any reason other than their intended use without Provider's authorization, Provider shall be released from any liability associated with that use.

5. **AUDIT AND INSPECTION RIGHTS:**

A. City may, at reasonable times, and for a period of up to three (3) years following the date of final payment by City to Provider under the Contract, audit, or cause to be audited, those books and records of Provider which are related to Provider's performance under this Contract. Provider agrees to maintain all such books and records at its principal place of business for a period of three (3) years after final payment is made under this Contract.

B. City may, at reasonable times during the term hereof, inspect Provider's Work and perform such tests, as City deems reasonably necessary, to determine whether the Services required to be provided by Provider under the Contract conform to the terms of the Contract Documents and applicable codes and regulations. Provider shall make available to City all reasonable access and assistance to facilitate the performance of such inspections and/or tests.

6. **AWARD OF CONTRACT:** Provider represents and warrants to City that it has not employed or retained any person or company employed by City to solicit or secure the Contract and that it has not offered to pay, paid, or agreed to pay any person any fee, commission, percentage of cost, brokerage fee, or gift of any kind contingent upon or in connection with the award of the Contract.

7. **PUBLIC RECORDS:** Provider understands that the public shall have access at all reasonable times, subject to applicable exceptions and restrictions on copying, to all documents and information pertaining to City contracts, and agrees to allow access by City and the public to all documents subject to disclosure under applicable law. Provider's failure or refusal to comply with the provisions of this section shall be

considered a material breach of the Contract and may result in the immediate termination of the Contract by City.

8. DEFAULT:

A. If Provider fails to comply with any term or condition of the Contract, or fails to perform any of its obligations hereunder, then Provider shall be in default. Upon the occurrence of a default, City, in addition to all remedies available to it by law, may ~~immediately~~ ^{material} upon written notice to Provider, terminate the Contract whereupon all unpaid contract funds shall be available to City to complete the work and/or remedy any defective performance by Provider. Should Provider default, any advances for work to be performed or related costs which have been paid by City to Provider shall be immediately returned to City. Should the costs to complete the work and/or remedy any defective performance by Provider exceed the remaining Contract balance, Provider shall be liable to City for all costs and expenses to complete the work and/or remedy any defective performance, to include any cost associated with re-procurement, and for any ~~consequential and incidental~~ ^{after 7 days notice to cure such default} damages suffered by City. Provider understands and agrees that termination of the Contract under this section shall not release Provider from any obligation accruing prior to the effective date of termination.

B. Before City shall be liable to Provider or any of its successors or assigns for any alleged breach of the Contract, notice must first be given City no later than ninety-one (91) days of the date Provider alleges the breach occurred. Such notice shall be given in accordance with Contract provisions for service of notice and shall state the date, time, and circumstances of the alleged breach.

9. TERMINATION RIGHTS OF CITY:

A. City shall have the right to terminate the Contract, in its sole discretion, at any time, for any reason, by giving written notice to Provider at least five (5) business days prior to the effective date of such termination. In such event, City shall pay to Provider compensation for Work rendered and expenses incurred prior to the effective date of termination. In no event shall City be liable to Provider for any additional compensation, other than that provided in the Contract, or for any consequential or incidental damages.

B. City shall have the right to terminate the Contract, without notice or liability to Provider, upon the occurrence of an event of default under the Contract. In such event, City shall not be obligated to pay any amounts to Provider and Provider shall reimburse to City all amounts received while Provider was in default under the Contract.

10. RESOLUTION OF CONTRACT DISPUTES:

A. Provider understands and agrees that all disputes between Provider and City concerning or relating to the work shall be held for resolution until the Project has been substantially completed. Provider shall make a written request for resolution of the dispute (the "Request") to City's designated official (the City Manager or his designee) for determination of the matter in dispute. The Request shall clearly state the disputed issue and include or incorporate by specific reference all information or documents that Provider wants the official to consider in reaching a determination. The official shall issue a written notice of decision upon Provider's Request within the thirty (30) days of receipt of Provider's Request. If the official cannot issue a decision within

thirty (30) days of the receipt of Provider's Request, the official shall notify Provider the date upon which a decision shall be issued. Submission of a Provider's Request for determination of the dispute is a condition precedent to Provider's ability to engage in litigation against City. If a decision is not issued by the date indicated by the official or within ninety (90) days after the submission of Provider's written Request for determination, whichever occurs first, Provider will be deemed to have met the condition precedent required by this provision. Should the dispute be resolved through the submission of Provider's Request, the resolution of the dispute will be documented, if necessary, through a change to the Contract in accordance with the provisions contained in the Contract. Should the dispute fail to reach resolution through the submission by Provider's Request, the dispute may be submitted to mediation at the sole discretion of City. City agrees that it shall make an election within no later than sixty (60) days after the issuance of a determination by the official in response to a Provider's Request, final completion of the work, abandonment or termination of the Project, whichever is later. Such mediation shall be conducted by and between the parties in accordance with the AAA Rules of Mediation for Construction Cases then in effect. Provider understands and agrees that it shall continue to perform Work under the Contract unless further performance has been excused by termination of Provider or stopping Work is specifically allowed under the laws of the State of Texas. Provider understands that should a settlement be reached at mediation it is subject to the approval of the City Council. If either mediation is unsuccessful or City elects not to proceed to mediation, then the dispute may be submitted to litigation in keeping with the terms of the Contract and the laws of the State of Texas.

B. Provider understands and agrees that any and all other disputes arising between Provider and City not related to changes, change orders or extra work, may be submitted to mediation at the sole discretion of City. City agrees that it shall make such an election within no later than sixty (60) days from the date of final completion of work, abandonment or termination, whichever is later. Such mediation shall be conducted by and between the parties in accordance with the AAA Rules of Mediation for Construction Cases then in effect. Provider understands and agrees that it shall continue to perform Work under the Contract unless further performance has been excused by termination of Provider or abandonment is specifically allowed under the laws of the State of Texas. Provider understands that should a settlement be reached at mediation it is subject to the approval of the City Council. If either mediation is unsuccessful or City elects not to proceed to mediation, then the dispute shall be submitted to litigation in keeping with the terms of the Contract and the laws of the State of Texas.

11. INSURANCE:

A. Provider shall, at all times during the term of the Contract, maintain such insurance coverage as may be required by City of the types and in the amounts specified in the Special Insurance Rider and with insurers licensed to do business in Texas. All insurance required under the Contract shall be drawn in the name of Provider, with City, its council members, board and commission members, officials, agents, guests, invitees, consultants and employees named as additional

insureds, except on coverage for Workers' Compensation and Errors and Omissions/Professional Liability. Every policy required above shall be primary insurance. Any insurance or self-insurance benefits carried by City, its officers, or its employees, shall be excess and not contributory to that provided by Provider. All such insurance, including renewals, shall be subject to the approval of City for adequacy of protection and evidence of such coverage shall be furnished to City on Certificates of Insurance indicating such insurance to be in force and effect and providing that it will not be canceled during the performance of Services under the Contract without thirty (30) calendar days prior written notice to City. Completed Certificates of Insurance shall be filed with City's Risk Manager at City Hall, 72 W. College Avenue, San Angelo, Texas 76903 prior to the performance of Services hereunder, provided, however, that Provider shall at any time upon request file duplicate copies of the policies of such insurance with City.

B. The procurement of insurance coverage by Provider shall not be construed to be a limitation upon Provider's liability or as a full performance on its part of Provider's indemnification requirements under the Contract. Provider's obligations are, notwithstanding any policy of insurance, for the full and total amount of any damage, injury or loss caused by or attributable to performance of the work under the contract and its activities conducted at or upon the premises. Failure of Provider to maintain adequate coverage or coverage in excess of that required under the Contract shall not relieve Provider of any contractual responsibility or obligation.

C. Provider shall require its insurance carrier(s), with respect to all insurance policies, to waive all rights of subrogation against City, its council members, board and commission members, officials, agents, guests, invitees, consultants and employees.

D. Provider shall cause each subcontractor and sub-subcontractor of Provider to purchase and maintain insurance of the types and in the amounts specified in the Special Insurance Rider hereto. Provider shall require subcontractors and sub-subcontractors to furnish copies of certificates of insurance to Provider's Risk Manager evidencing coverage for each subprovider and sub-subprovider.

E. If, in the judgment of City, prevailing conditions reasonably warrant the provision by Provider of additional liability insurance coverage or coverage which is different in kind, City reserves the right to require the provision by Provider of an amount of coverage different from the amounts or kind previously required and shall afford written notice of such change in requirements thirty (30) days prior to the date on which the requirements shall take effect. Should Provider fail or refuse to satisfy the requirement of changed coverage within thirty (30) days following City's written notice, the Contract shall be considered terminated on the date that the required change in policy coverage would otherwise take effect.

12. INDEMNIFICATION. CITY shall not be liable for any loss, damage, or injury of any kind or character to any person or property arising from the services of PROVIDER pursuant to the contract to which these Standard Professional Services Contract

Terms and Conditions apply. PROVIDER hereby waives all claims against CITY, its officers, boards, commissions, agents, representatives and employees (collectively referred to in this section as "CITY") for damage to any property or injury to, or death of, any person arising at any time and from any cause other than the negligence or willful misconduct of CITY or breach of CITY's obligations hereunder. To the extent permitted by law, PROVIDER agrees to indemnify and save CITY harmless from damages (including court costs and reasonable attorneys' fees in proportion to the PROVIDER's liability) and actions of any kind by reason of injury to or death of any person or damage to or loss of property to the extent caused by or that results from an act of negligence, intentional tort, intellectual property infringement, or failure to pay a subcontractor or supplier committed by PROVIDER or PROVIDER's agent, consultant under contract, or another entity over which the PROVIDER exercises control. PROVIDER's obligations under this section shall not be limited to the limits of coverage of insurance maintained or required to be maintained by PROVIDER under the contract to which these Standard Professional Services Contract Terms and Conditions apply. This Section 12 INDEMNIFICATION provision shall survive the termination of the subject contract to which these Standard Professional Services Contract Terms and Conditions apply.

13. **INDEPENDENT CONTRACTOR:** Nothing contained in the Contract is intended to, or shall be construed in any manner, as creating or establishing the relationship of employer/employee between the parties. Provider shall at all times remain an independent contractor with respect to Work to be performed under the Contract. City shall be exempt from payment of all unemployment compensation, FICA, retirement, life and/or medical insurance and workers' compensation insurance on Provider's employees.

14. **NONDISCRIMINATION:** Provider represents and warrants to City that Provider does not and will not engage in discriminatory practices and that there shall be no discrimination in connection with Provider's performance under the Contract on account of race, color, sex, religion, age, handicap, marital status or national origin. Provider further covenants that no otherwise qualified individual shall, solely by reason of his/her race, color, sex, religion, age, handicap, marital status or national origin, be excluded from participation in, be denied services, or be subject to discrimination under any provision of the Contract.

15. **VERIFICATION OF EMPLOYMENT ELIGIBILITY:** Provider must comply with the Immigration Reform and Control Act (IRCA) and may not knowingly obtain labor or services of an unauthorized alien. Provider, not City, must verify eligibility for employment as required by IRCA.

16. **AMENDMENTS:** City and Provider may amend the Contract at any time provided that such amendment makes specific reference to the Contract, and is executed in writing, signed by a duly authorized representative of contracting parties, and approved by City Council when required pursuant to law or City policy. Such amendments shall only address the

items or issues dealt with in the amendment and shall not invalidate any other portion or provision of the Contract, nor relieve or release City or Provider from their respective obligations under the Contract except as may be specifically set forth in the amendment.

17. ASSIGNMENT: No assignment by a party hereto of any rights under or interest in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically, but without limitation, moneys that may become due, and moneys that are due, may not be assigned without such prior consent (except to the extent that this restriction may be limited by law), and 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 the Contract Documents.

18. SUCCESSORS AND ASSIGNS: This Contract shall be binding upon the parties hereto, their heirs, executors, legal representatives, successors, or assigns.

19. NOTICES: Communications and details concerning the Contract shall be directed in writing to the authorized agent of the party as set forth on the face of the Contract. Designation of authorized agent or address for notice may be changed by written notice to the other party. Any notice required or permitted to be given to a party under the Contract shall be in writing and shall be deemed given (i) on the day it is delivered personally (with receipt); or (ii) the day after it is deposited with a nationally recognized courier service for next-day delivery; or (iii) three (3) days after it is deposited in the U.S. certified mail, postage prepaid, return receipt requested, addressed to the party's authorized agent.

20. MISCELLANEOUS PROVISIONS:

A. Remedies: In the event of default by Provider under the Contract Documents, City shall have all rights and remedies afforded to it at law or in equity to enforce the terms of the Contract. City's exercise of any one right or remedy shall be without prejudice to the enforcement of any other right or remedy allowed at law or in equity that may be available to City against either Provider or its Surety.

B. Attorneys' Fees: If any action at law or in equity is necessary by either City or Provider to enforce or interpret the terms of the Contract Documents, the party prevailing on the majority of issues shall be entitled to reasonable attorneys' fees and costs and any necessary disbursements in addition to any other relief to which the prevailing party is entitled.

C. Conflicts: The Contract, the documents required to be provided, and the Contract Documents, are governed by the laws of the State of Texas. Venue for any suit or claim or cause of action arising out of or related to Work covered by the Contract shall be in Tom Green County, Texas.

D. Counterparts: This Contract may be executed in two or more counterparts, each of which shall constitute an original but all of which, when taken together, shall constitute one and the same Contract. By affixing their signature to the Contract, each individual is representing that he or she has the authority to sign the Contract and to bind the party that they represent to the Contract.

E. Enforcement: This Contract shall be construed and enforced according to the laws of the State of Texas.

F. Headings: Titles and paragraphs are for convenient reference and are not a part of the Contract.

G. No Waiver: No waiver or breach of any provision of the Contract shall constitute a waiver of any subsequent breach of the same or any other provision hereof, and no waiver shall be effective unless made in writing.

H. Governing Laws: Should any provision, paragraph, sentence, word or phrase contained in the Contract be determined by a court of competent jurisdiction to be invalid, illegal or otherwise unenforceable under the laws of the State of Texas or the City of San Angelo, such provision, paragraph, sentence, word or phrase shall be deemed modified to the extent necessary in order to conform with such laws, or if not modifiable, then same shall be deemed severable, and in either event, the remaining terms and provisions of the Contract shall remain unmodified and in full force and effect or limitation of its use.

I. Applicable Law: This Contract and the Contract Documents are subject to all applicable federal and state laws, statutes, codes, rules and regulations and local ordinances, rules and regulations.

21. CONTINGENCY CLAUSE: Funding for the Contract is contingent on the availability of funds and continued authorization for program activities and the Contract is subject to amendment or termination for convenience due to lack of funds, reduction of funds and/or change in regulations, upon thirty (30) days' notice.

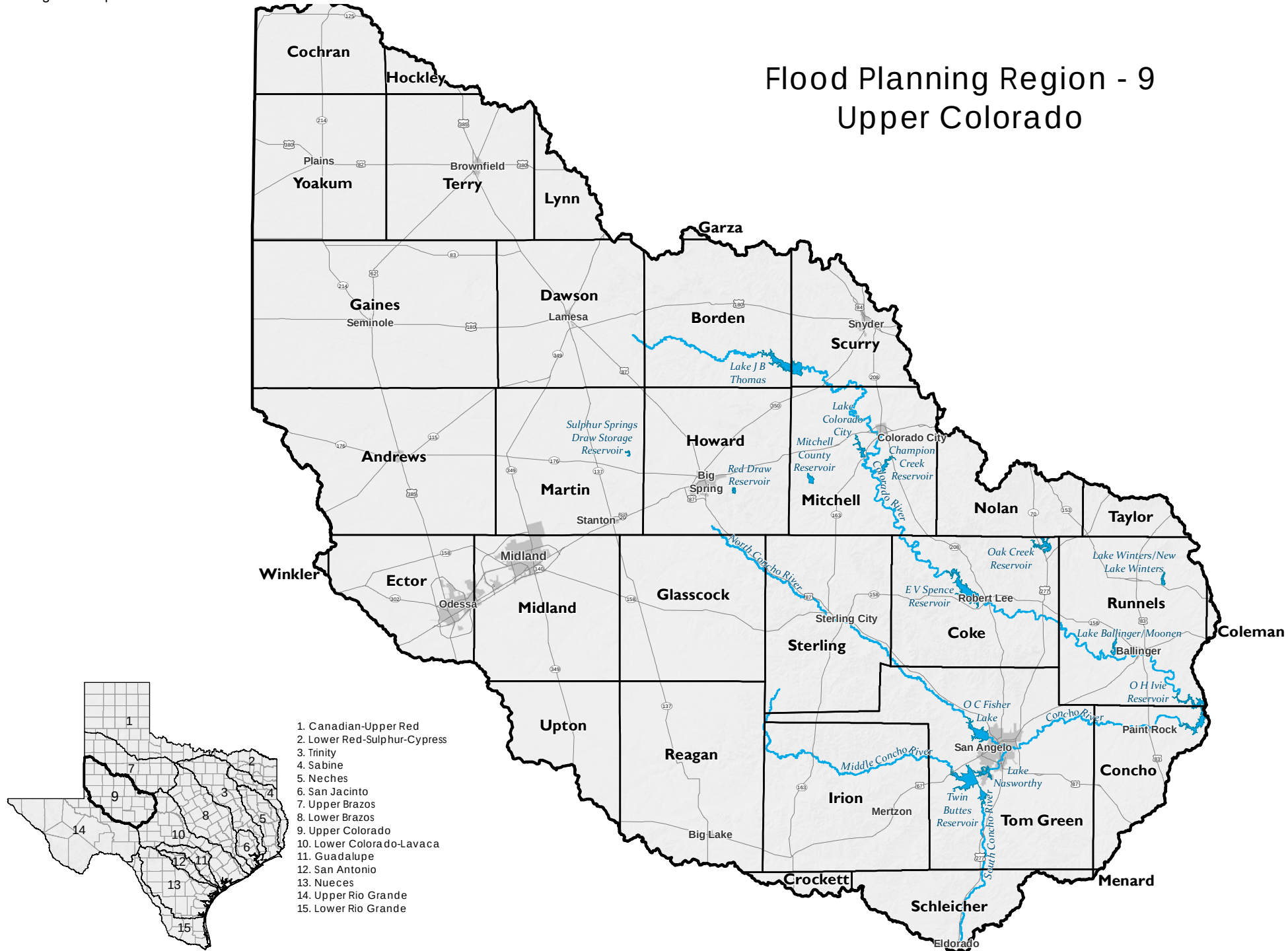
22. ENTIRE CONTRACT: The Contract, inclusive of the Contract Documents identified therein or adopted by written task order, change order or other document duly executed by the respective parties, constitute the sole and entire agreement between the parties. No modification or amendment of the Contract shall be valid unless in writing and executed by properly authorized representatives of the parties hereto.

23. REAFFIRMATION OF REPRESENTATIONS/WARRANTY OF AUTHORITY: By the execution of the Contract, Provider reaffirms all of the representations contained in Contract Documents. Each person executing the Contract on behalf of Provider by the execution thereof warrants that he or she has the authority of the governing body of Provider to lawfully bind Provider to the Contract. At the time of execution of the Contract, Provider shall execute and provide to City/Owner such disclosures as required by law and the verified certification in a form provided by City in compliance with Chapter 2270 of the Texas Government Code and Subchapter "F" of Chapter 2252 of the Texas Government Code.

CITY AND PROVIDER HAVE EVALUATED THE RISKS AND REWARDS ASSOCIATED WITH THIS PROJECT, INCLUDING PROVIDER'S FEE RELATIVE TO THE RISKS ASSUMED, AND AGREE TO ALLOCATE CERTAIN OF THE RISKS, SO, TO THE FULLEST EXTENT PERMITTED BY LAW, THE TOTAL AGGREGATE LIABILITY OF PROVIDER (AND ITS RELATED CORPORATIONS, SUBCONSULTANTS AND EMPLOYEES) TO CITY AND THIRD PARTIES GRANTED RELIANCE IS LIMITED TO THE LESSER OF 1,000,000 OR ITS FEE, FOR ANY AND ALL INJURIES, DAMAGES, CLAIMS, LOSSES, OR EXPENSES (INCLUDING ATTORNEY AND EXPERT FEES) ARISING OUT OF PROVIDER'S SERVICES OR THIS AGREEMENT REGARDLESS OF CAUSE(S) OR THE THEORY OF LIABILITY, INCLUDING NEGLIGENCE, INDEMNITY, OR OTHER RECOVERY.

In the event Provider is required to respond to a subpoena, government inquiry or other legal process related to the services in connection with a legal or dispute resolution proceeding to which Provider is not a party, City shall reimburse Provider for reasonable costs in responding and compensate Provider at its then standard rates for engineering services when gathering information and documents and shall pay Provider its standard rates for providing expert witness services when attending depositions, hearings, and trial. If Provider is made a party to any litigation concerning City's flood control structures, City shall reimburse Provider for all costs of defense pending a final determination of Provider's professional liability. If Provider is found by a court of competent jurisdiction to have been negligent, Provider shall reimburse City the costs of defense paid by City, and shall satisfy any judgment up to Provider's limitation of liability.

Flood Planning Region - 9 Upper Colorado



DISCLAIMER: This map was generated by the Texas Water Development Board using GIS (Geographical Information System) software. No claims are made to the accuracy or completeness of the information shown herein nor to its suitability for a particular use. The scale and location of all mapped data are approximate. Map date: 05/01/2020

County boundaries
Major roads
Major reservoirs

Major rivers
County seats

0 20
Miles

Texas Water Development Board
1700 North Congress Avenue, Austin, TX 78701
www.twdb.texas.gov - @twdb - facebook.com/twdbboard

Texas Water
Development Board

Region 9 Upper Colorado Flood Planning
Group
Task and Expense Budgets

June 3, 2021

**First Cycle of Regional Flood Plan Development
(2020–2023)**

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2 Contractor Expense Budget 5

1 Subcontractor Task Budget

	TASK		AMOUNT
CAS Item No.	Regional Flood Planning Task No.	Description	
1	1	Planning Area Description	\$47,310.00
2	2A	Existing Condition Flood Risk Analysis	\$127,737.00
3	2B	Future Condition Flood Risk Analysis	\$61,503.00
4	3A	Evaluation and Recommendations on Floodplain Management Practices	\$18,924.00
5	3B	Flood Mitigation and Floodplain Management Goals	\$9,462.00
6	4A	Flood Mitigation Needs Analysis	\$28,386.00
7	4B	Identification and Evaluation of Potential Flood Management Evaluations and Potentially Feasible Flood Management Strategies and Flood Mitigations Projects	\$141,930.00
8	4C	Prepare and Submit Technical Memorandum	\$18,924.00
9	5	Recommendation of Flood Management Evaluations and Flood Management Strategies and Associated Flood Mitigation Projects	\$189,240.00
10	6A	Impacts of Regional Flood Plan	\$37,848.00
11	6B	Contributions to and Impacts on Water Supply Development and the State Water Plan	\$9,462.00
12	7	Flood Response Information and Activities	9,462.00
13	8	Administrative, Regulatory, and Legislative Recommendations	\$9,462.00
14	9	Flood Infrastructure Financing Analysis	\$18,924.00
15	10	Public Participation and Plan Adoption	\$128,164.00
		Total Committed Funds₆	\$856,738.00

2 Subcontractor Expense Budget

CATEGORY	AMOUNT
Salaries & Wages ₁	\$121,953.90
Fringe ₂	\$59,172.03
Overhead ₃	\$166,442.68
Profit	\$57,414.71
Travel ₄	\$7,933.90
Other Expenses ₅	\$4,544.86
Sub-subcontractor Services ₆	\$439,275.92
Total Committed Funds₇	\$856,738.00

1. Salaries and Wages is defined as the cost of salaries of engineers, draftsmen, stenographers, surveyors, clerks, laborers, etc., for time directly chargeable to this CONTRACT.

2. Fringe is defined as the cost of social security contributions, unemployment, excise, and payroll taxes, workers' compensation insurance, retirement benefits, medical and insurance benefits, sick leave, vacation, and holiday pay applicable thereto.

3. Overhead is defined as the costs incurred in maintaining a place of business and performing professional services similar to those specified in this CONTRACT. NOTE; Overhead/Indirect will not be reimbursed when a CONTRACT is awarded in a non-competitive process.

4. Travel is limited to the maximum amounts authorized for state employees by the General Appropriations Act, Tex. Leg. Regular Session, 2019, Article IX, Part 5, as amended or superseded

5. Other Expenses is defined to include expendable supplies, communications, reproduction, postage, and costs of public meetings directly chargeable to this CONTRACT.

6. Sub-subcontractor Services should include the total amount for all sub-subcontractors, if applicable.

7. Total Committed Funds should be consistent with the amounts listed for Subcontractor Services in the Regional Flood Planning Grant Contract between the Planning Group Sponsor and the TWDB. The total committed funds amount should match in both the Subcontractor Task Budget and Subcontractor Expense Budget .

Ineligible Expenses include, but are not limited to:

- a) Activities for which the Board determines existing information, data, or analyses are sufficient for the planning effort;
- b) Activities directly related to the preparation of applications for state or federal permits or other approvals, activities associated with administrative or legal proceedings by regulatory agencies, and preparation of engineering plans and specifications;
- c) Compensation for the time or expenses of RFPGs members' service on or for the RFPG;
- d) Costs for training;

- e) Costs of developing an application for funding or reviewing materials developed due to this grant;
- f) Costs of administering the regional flood planning grant and associated contracts;
- g) Analysis or other activities related to planning for disaster response or recovery activities; and
- h) Analyses of benefits and costs of FMSs beyond the scope of such analyses that is specifically allowed or required by regional flood planning guidance to be provided by the EA unless the RFPG demonstrates to the satisfaction of the EA that these analyses are needed to determine the selection of the FMS or FMP.
- i) Labor, reproduction, or distribution of newsletters;
- j) Food, drink, or lodging for Regional Flood Planning Group members (including tips and alcoholic beverages);
- k) Purchase, rental, or depreciation of equipment (e.g., computers, copiers, fax machines);
- l) General purchases of office supplies not documented as consumed directly for the planning process; and
- m) Costs associated with social events or tours.



Exhibit

Certification of Procurement of
Professional Services

**First Cycle of Regional Flood Plan Development
(2020–2023)**

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Certification of Procurement of Professional Services – 2023 Regional Flood Plan

Each of the following subcontractor(s) was procured through a Request for Qualifications in accordance with the procurement requirements applicable to [City of San Angelo], as required in 31 TAC 361.12 (a)(2) and 361.72 (c).

Subcontractor Name	Date Procured
Subcontractor Name	Date Procured
Subcontractor Name	Date Procured
Subcontractor Name	Date Procured
Subcontractor Name	Date Procured
Subcontractor Name	Date Procured
Subcontractor Name	Date Procured
Subcontractor Name	Date Procured

Certification:

I, _____ the authorized representative for Region _____, do hereby certify that each of the subcontractor(s) listed above were procured through a Request for Qualifications which was either published or sent to more than one professional inviting their response, and that the subcontractor(s) listed above were selected from such responses based on their demonstrated competence and qualifications.

Signature of Authorized Representative	Date
---	-----------------

31 TAC 361.12 (a)(2). General Regional Flood Planning Group Responsibilities and Procedures. The following activities are required of each RFPG every planning cycle: Select a technical consultant(s) to be procured by the Planning Group Sponsor in accordance with the procurement requirements that apply to that political subdivision and Texas Government Code Chapter 2254.

31 TAC 361.72(c). A RFPG through the Planning Group Sponsor’s contractor or subcontractor may obtain professional services, including the services of a planner, land surveyor, licensed engineer, or attorney, for development or revision of a regional flood plan only if such services are procured on the basis of demonstrated competence and qualifications through a request for qualifications process in accordance with Texas government Code Chapter 2254 including Qualifications Based Selection of an Architect, Engineer, or Land Surveyor.



STATEMENT OF QUALIFICATIONS

Professional Services Consultant for Development of a Regional Flood Plan

RFQ No. WU-05-21

March 30, 2021



with





March 30, 2021

Nolan Sosa/Allison Strube
City of San Angelo
Purchasing Division
72 W. College Avenue
San Angelo, Texas 76903

RE: Professional Services RFQ No. WU-05-21 – Consultant for Development of a Regional Flood Plan

Dear Mr. Sosa and Ms. Strube,

Developing a community-based Regional Flood Plan for the Upper Colorado watershed will require a combination of deep understanding of TWDB's processes, experienced resources to develop a plan within the required time frame, and an effective public outreach and input process. HDR brings extensive knowledge of TWDB planning processes as well as an understanding of the Upper Colorado watershed challenges, having recently delivered a master plan in the basin. We have partnered with **Freese and Nichols, Inc. (FNI)**, **Halff Associates, Inc. (Halff)** and **Susan Roth Consulting, LLC** to form a team that aligns with each key element in the scope of work.

Selecting the HDR Team assures the Region 9 Flood Planning Group will receive:

A Proven Team with the Technical Expertise & Resources to Meet Schedule: The project schedule is fast-paced and will require a committed team to complete deliverables at each milestone. We assembled our team with a focus on key items in the scope of work, providing a deep bench of resources with the requisite skill sets to assure the project stays on track. Our team has committed the resources to meet the TWDB's schedule, with capability demonstrated recently by the simultaneous delivery of the 2021 Region F, O and G Water Plans and Master Drainage Plans for San Angelo, Abilene, Amarillo, Lubbock and Wichita Falls.

A Streamlined, TWDB Experience-Based Approach to Fill Data Gaps: Large data gaps and outdated flood risk data create challenges with regional planning efforts. We have a solid approach to enhance the TWDB's floodplain quilt to develop watershed-wide existing and future flood risk data, as well as refining the TWDB's structure database. We will work with stakeholders to validate problem areas based on their experience. We have addressed these challenges previously for Abilene's Master Drainage Plan and several TWDB Regional Water Plans.

A Comprehensive Outreach Strategy to Gain Stakeholder Input & Acceptance: Regional planning efforts require input and acceptance from multiple stakeholders spread across a large geography, with different needs and concerns. In addition to TWDB-required public meetings, we propose developing an interactive website linked to the Region 9 website to collect their flood stories, allow stakeholders to review draft flood risk data, and to present the Draft Plan for public comment. The outcome is a plan that incorporates input from all stakeholders in managed, documented way. We recently used these strategies to successfully collect public input for San Angelo's Master Drainage Plan.

Next Steps to Maximize Mitigation of Most Significant Flood Risk Within Available Funding: Available funding is always a question that ultimately drives the need to prioritize projects. With team members that recently worked for TWDB helping communities maximize their funding, we will set the course for next steps in the process with understanding of funding processes and how they may shape the plan.

Ramon Miguez, PE, is HDR's Area Manager for North Texas and is a Vice President authorized to bind our firm in all matters. Please feel free to contact us if you have any questions (Ramon: 972-960-4425 and Curtis: 817-333-2817). We look forward to the next step in the consultant selection process, and we are committed to a long-term, successful partnership with the Region 9 Flood Planning Group.

Sincerely,

HDR Engineering, Inc.

Ramon Miguez, PE
Vice President

Curtis Beitel, PE, CFM, ENV SP
Project Manager

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TEAM CAPABILITY

HDR Engineering, Inc. (HDR). Since 1917, HDR has partnered with clients to shape communities and solve complex engineering challenges with a vision for the future. With more than 10,000 employees in more than 200 locations worldwide, we bring global expertise through our experienced local delivery teams with a client-for-life philosophy. HDR has been serving clients in Texas for nearly 60 years since opening our Dallas office in 1964. Today, we employ 800 professionals in 17 Texas offices in Austin, Dallas, Fort Worth, Round Rock, San Antonio, Houston, and Corpus Christi.

Consistently ranked among the nation’s Top 10 Water Design firms, HDR professionals combine the latest technical innovations with practical solutions. Our water consulting services are comprehensive and range from source water development, master planning, and regulatory compliance services to water treatment, infrastructure design, management, and sustainable operation.

Flood Planning & Risk Management Expertise

Flood planning and risk management is a core practice at HDR. Our experience includes: flood and erosion risk reduction and water quality enhancement experience gained on projects for local municipalities, local/state flood protection agencies, FEMA, and the U.S. Army Corps of Engineers (USACE).

As a leading water resources firm in Texas, we offer the following services:

- ✓ Stormwater Management
- ✓ H&H Modeling
- ✓ Floodplain Modeling/Mapping
- ✓ Structural/Non-structural Flood Mitigation
- ✓ Hydraulic Structure Design
- ✓ Economic Analyses
- ✓ Environmental Studies
- ✓ Assessments & Permitting
- ✓ Water Resources & Supply
- ✓ Strategic Communications
- ✓ Public Outreach

Our staff come from various Texas regions and have a local understanding of issues and water resources in the area.

Our full range of flood risk reduction experience includes flood protection planning and program management, and design of structural flood risk reduction solutions including:

- ✓ Regional Detention
- ✓ Channel Modifications
- ✓ Culvert & Bridge Upgrades
- ✓ Storm Sewers
- ✓ Flood Diversions
- ✓ Floodplain Evacuation (buy-outs)
- ✓ Flood Early Warning Systems
- ✓ Regulatory Measures

We work closely with our clients to develop short and long term region-wide water planning solutions and funding strategies. Our team is well-versed in both flood protection planning and regional water planning processes and approaches.

Capacity to Perform

Our team has strong track record meeting client schedules and project deadlines while maintaining technical excellence with quality deliverables. Specifically, regarding TWDB-funded projects, we have demonstrated the ability to successfully deliver previous regional water planning and flood projects funded by the TWDB, as well as the TWDB Statewide ASR assessment and the development of the Unified Cost Model evaluation tool.

Our team includes three subconsultants that we have successfully teamed with in the past. Each was chosen for their expertise and proven performance on similar projects, strong reputation for excellence, and the ability to complement HDR’s capabilities, providing a deep bench of engineers, planners and modelers with expertise specific to delivering this scope of work. Our collective team provides assurance that we can allocate the right resources to overcome unexpected challenges and deliver on schedule. The table below provides additional information pertaining to our subconsultant team members and the benefits each brings to the Upper Colorado Regional Flood Planning Group (UCRFPFG).

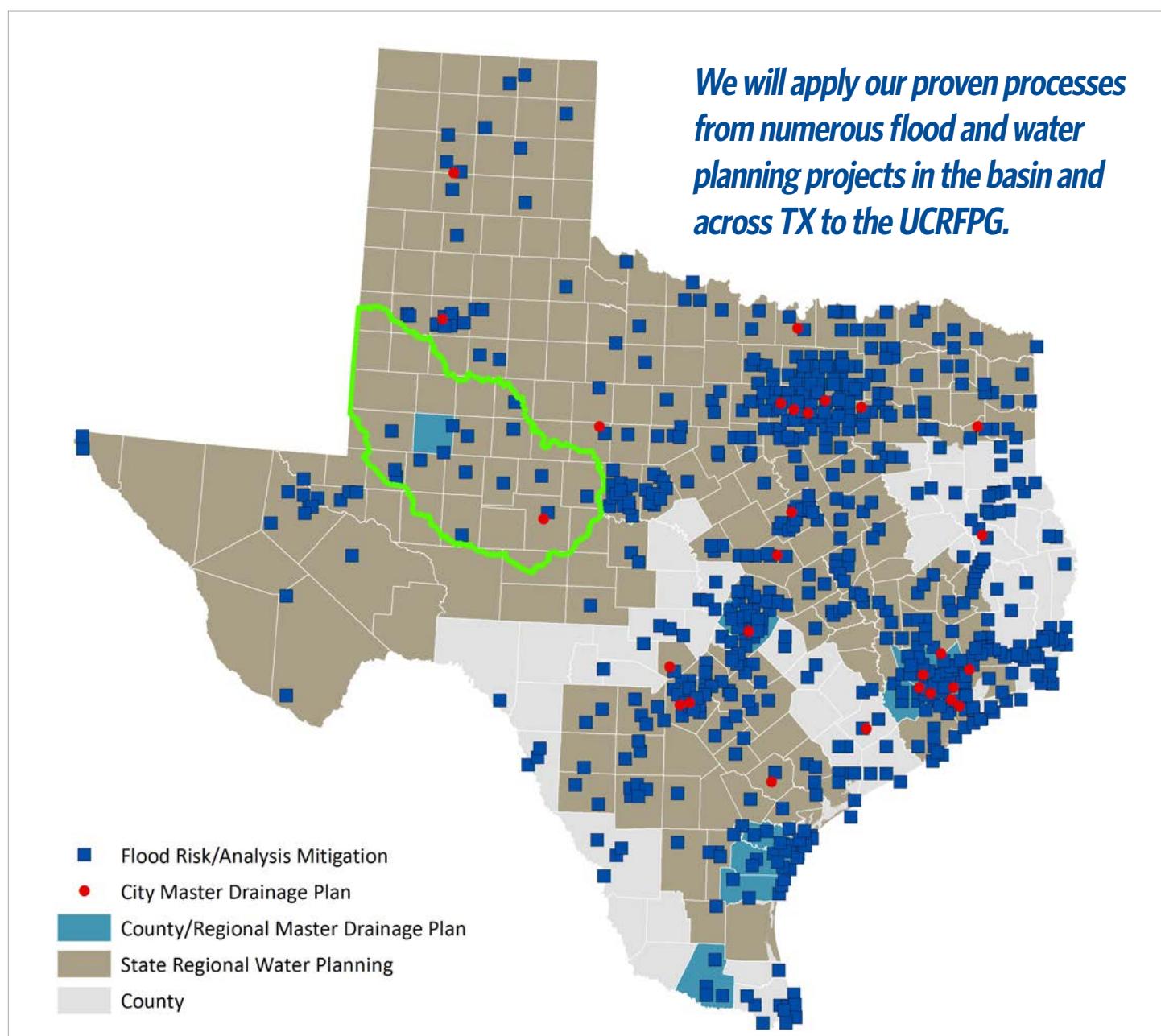
FIRM NAME	SELECTED AS OUR PARTNERS FOR THEIR SPECIALIZED EXPERTISE
Freese & Nichols, Inc.	FNI multidisciplinary teams use integrated planning to help communities meet water challenges with customized solutions. They apply more than a century of experience in building resilience through economically, environmentally and socially viable programs. They recently completed comprehensive planning projects for Odessa, Big Spring and Andrews, as well as watershed studies for Midland.
Halff Associates, Inc.	Halff is an employee-owned, full-service engineering firm comprised of over 1,000 engineers, architects, planners, scientists, and surveyors located in 21 offices in Texas, Oklahoma, Louisiana, and Arkansas. Halff has been a FEMA Region VI study contractor since the 1970s preparing flood risk products across Texas. Halff’s experience is demonstrated by their analysis of more than 50 major basins in Texas encompassing approximately 70% of the State’s population.
Susan Roth Consulting, LLC	Susan Roth is the sole owner and employee of SRC, a woman owned consulting firm located in Austin, Texas. SRC specializes in developing regional water solutions for communities, preparing water conservation and drought contingency plans, negotiating contracts, preparing grant and funding applications for public infrastructure, and facilitating group discussions. HDR has partnered with SRC to provide stakeholder outreach on regional water planning for over two planning cycles.

Scope-Specific Team Capability

The HDR Team is comprised of professionals who have dedicated their careers to reducing flood risk in Texas. Our team has worked with over 100 communities across our state on flood protection planning studies resulting in implementation of a wide variety of flood mitigation solutions including:

- TWDB flood protection planning grant studies
- County and city-wide drainage master plans
- Multi-objective watershed master plans involving both flood and erosion risk reduction and water quality enhancement opportunities
- Watershed-wide flood detention dam assessments and prioritization studies
- Watershed-wide water quality BMP planning studies

As shown on the figure below, our flood protection planning experience stretches across our state.

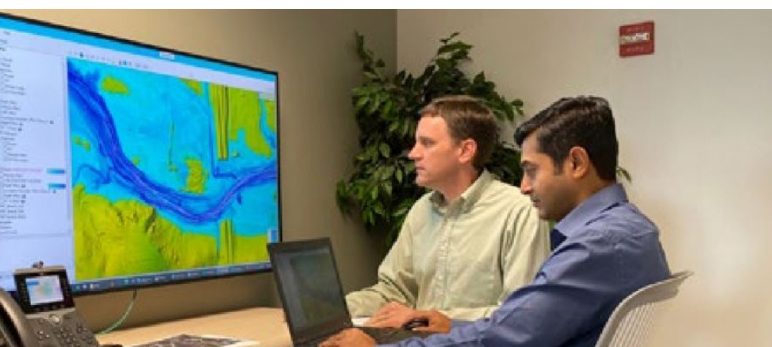


Existing/Future Flood Risk & Needs Analysis

HDR's flood resilience modeling experience comes in many forms, including flood and erosion master planning, watershed- wide floodplain modeling and mapping, flood risk and vulnerability modeling of transportation infrastructure, and modeling and design of new flood infrastructure for future flood hazards. Although our team can leverage our national resources to support your project, our approach is focused on a locally driven team of key individuals.

Our team demonstrates expertise in a wide range of hydrology and hydraulic modeling platforms, from StormCAD® to ICPR, HEC-HMS and HEC-RAS, XPSWMM, InfoWorks ICM, and others. Our modelers are proficient in steady-state and unsteady- state, as well as 1D/2D applications. We have completed modeling ranging from simple models for culvert design to advanced 2D models that recreate historical rain events and simulate the interactions between overland flow, storm drain systems, and creeks. Our team has modeled flood risk for Playa Lake Systems in the highland plains to riverine flood risk in the lower basin's rolling plains. We've modeled and designed major flood risk reduction infrastructure systems in the urban areas to major culverts and bridges in the rural areas.

Our experience allows you to be confident in evaluating and communicating flood risks and developing solutions that will not negatively impact adjoining properties. We have over 40 H&H modeling and GIS experts in Texas alone and have many other resources available across the U.S.



HDR has over 60 water resources professionals across Texas committed to working with you to deliver success. Our team includes strategic local teaming partners who bring additional resources, local knowledge, and experience. Freese & Nichols and Halff Associates also have a longstanding history large presence in the basin. They know the issues and the stakeholders, which will further enable us to expedite tasks to meet the aggressive schedule. Susan Roth Consulting, LLC. proven partners to HDR on recent projects, providing stakeholder and public outreach.

When a flood disaster event occurs, the number one priority is public safety. A resilient flood protection plan identifies critical lifeline infrastructure that must remain operational for the disaster event's duration. Our team has **developed a resiliency model for stormwater management focusing on lifeline systems and enhancing community protection by incorporating green infrastructure** where possible to provide co-benefits and improved community resiliency. Critical infrastructure is the most important lifeline system and supports the systems required for public safety, such as:

- Hospitals
- Emergency management
- Transportation Infrastructure
- Public Safety
- Disaster Prevention Capabilities

These systems must remain in service throughout a flood disaster occurrence regardless if the design flood event is exceeded. Inherent to our approach is identifying each critical infrastructure system's interdependencies and determining the weakest links in the system for priority protection. Using this process for the City and meeting— and often exceeding—project objectives provide a resilient and defensible plan for reducing flood risk

Mitigation Evaluations, Projects, & Strategy Development

HDR is a demonstrated leader in the Texas regional water planning process, with regional and state water planning experience dating back to the early 1980s. **HDR has led the preparation of multiple regional water plans for each of the previous five-year planning cycles (2001, 2006, 2011, 2016, and 2021).** For these regional water planning cycles, HDR served as lead technical consultant for the Brazos G (Region G) and Coastal Bend (Region N). We were the lead consultant for South Central Texas (Region L) RWPGs in 2001, 2006, 2011, 2016. We were the lead technical consultant for Region O for 2001, 2006, 2011, and 2021 planning cycles.

Well-versed in flood protection planning processes and approaches, we recognize the importance of developing community-based flood mitigation solutions that can be effectively implemented, including:

Structural Flood Mitigation Solutions

- Channel improvements including natural channel design
- Bridge and culvert improvements
- Storm sewer improvements
- Regional stormwater detention
- Stormwater diversion
- Levees/floodwalls

Non-structural Flood Mitigation Solutions

- Updates to drainage/floodplain management regulations
- Flood early warning systems
- Floodplain evacuation (buy-outs)
- Emergency action plans

One of the most effective resilience strategies is robust development criteria and floodplain management guidelines/strategies. For example, development is concentrated in areas safe from flooding, development in flood prone areas are protected and does not cause adverse impact.

There is no better “project” than to minimize the risk in the first place with good floodplain management strategies.

Impacts, Response, & Financing

In addition to HDR’s experience, FNI serves as the lead consultant for Region F, a 32-county region in West Texas. Region F encompasses most of the Upper Colorado River basin and parts of two adjoining river basins. Together HDR and FNI have performed regional water planning for the majority of Texas, and we are uniquely qualified to assess the impact of the proposed projects and strategies on the State Water Plan.

The Texas Division of Emergency Management (TDEM) maintains the State of Texas Hazard Mitigation Plan as a set of statewide priorities for flood mitigation funding. When a federal disaster is declared, TDEM uses these priorities to guide the development of the official statewide list of Hazard Mitigation Grant Program projects they submit to FEMA. Since 2017 Curtis Beitel has served on TDEM’s State Hazard Mitigation Team to provide professional input. During the recent update of the West Central Texas COG’s Hazard Mitigation Plan in 2018, Curtis attended several of the stakeholder workshops to represent the City of Abilene to make sure their flood mitigation projects were incorporated.

HDR works closely with our clients to develop and fund long-term flooding solutions. Identifying funding sources is a key component to any flood protection plan. In addition to traditional tax-based/general revenue funding or capital improvement bonds, the HDR Team has extensive experience with state and federal agency hazard mitigation funding sources including:

- TWDB Flood Protection Planning Grants
- FEMA Hazard Mitigation Grants
- CDBG-Disaster Recovery/Mitigation Grants
- USACE Flood Damage Reduction Program
- FEMA High Hazard Potential Dam Grants

Directly related to State and Regional Water Planning, the **TWDB entrusted HDR as the prime consultant in developing a semi- automated planning level costing tool** that the TWDB stipulated be used by all RWPGs for the development of the 2016 and 2021 Regional Water Plans. The Unified Cost Model allows users to quickly develop and compare planning level cost estimates for water management strategies using costs based on empirical costing data.

The UCM provides planning level cost estimates that can be used for criteria ranking while providing a good baseline for developing more detailed cost estimates during preliminary design. We can leverage our development of this statewide tool and adapt it for costing out regional flood mitigation strategies and projects.

Stakeholder Input & Public Outreach

Our team includes a full range of stakeholder outreach services to assist the UCRFPG’s plan administrator, the City of San Angelo, in the preparation of applications for financial assistance and the implementation of public involvement activities, including conducting public meetings, reviewing and responding to public comments, and developing educational materials related to regional flood planning issues for presentations to both technical and non-technical audiences in the region. We will work with the UCRFPG to develop a communications plan at the start of the project which identifies the processes and outreach methods that best align with your region. This will be used to guide our efforts throughout the project.

In addition to traditional outreach techniques, our team also includes a group of GIS programmers who are well versed in developing ArcGIS Online enabled interactive websites to efficiently collect public comments.

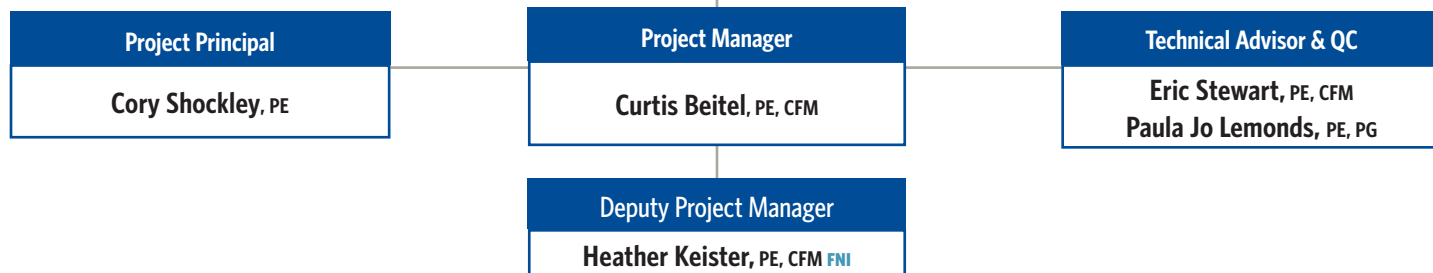
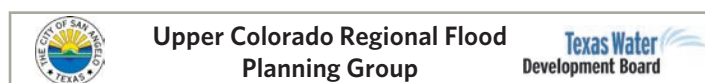


The following table demonstrates the HDR Team's capability to deliver on a wide range of projects similar to the Regional Flood Plan, including projects with TWDB involvement, stakeholder engagement with diverse groups, grant application and management and large GIS mapping and database efforts.

HDR TEAM KEY PROJECTS	UCRFPG REQUIRED EXPERIENCE													
	Flood planning and flood risk analyses	Regional and state water planning	TWDB involvement	Interactions with diverse interest groups and stakeholders	Diverse stakeholder consensus-building/ conflict resolution	Future conditions forecasting (population and future land use)	Watershed-wide data collection and management	Flood planning grant administration/ invoicing	Statutory and regulatory floodplain management/mitigation policies	Flood infrastructure financing analysis	Texas Water Law related issues	Management and reporting of project subcontractors	Geographic Information System (GIS) database and mapping deliverables	Flood mitigation strategies to address future needs
San Angelo Master Drainage Plan	●			●	●	●	●	●	●	●		●	●	●
Abilene Master Drainage Plan	●			●	●	●	●	●	●	●		●	●	●
South Central Texas Regional Water Plans (2001, 2006, 2011, and 2016)		●	●	●	●	●	●				●	●	●	
Llano Estacado Regional Water Plans (2001, 2006, 2011, and 2021)		●	●	●	●	●	●				●	●	●	
Coastal Bend Regional Water Plans (2001, 2006, 2011, 2016 and 2021)		●	●	●	●	●	●				●	●	●	
Brazos G Regional Water Plans (2001, 2006, 2011, 2016 and 2021)		●	●	●	●	●	●				●	●	●	
Modeling, Assessment, and Awareness Project (MAAPnext)	●		●	●	●		●					●	●	●
2015 & 2019 City of Austin Flood Hazard Mitigation Rotation Lists	●		●	●	●	●	●		●			●	●	●
Lake Leon Dam FEMA HMGP Project, Eastland County Water Supply District	●			●	●	●	●	●	●	●		●	●	●
TWDB Flood Protection Planning Study and CIP Program	●		●	●	●	●	●	●	●	●		●	●	●
Martin Road Lake Drainage Improvements	●			●	●	●	●	●	●	●		●	●	●
John T. Montford Dam and Jim Bertram Lake 6 Flood Analyses and Safety Inspections	●						●		●		●		●	●
City of Gainesville Stormwater Master Plan	●		●	●	●	●	●	●	●	●			●	●
City of Waco Stormwater Master Plan	●		●	●	●	●	●	●	●	●			●	●
City of San Antonio Drainage Master Plan	●			●		●	●		●	●			●	●
City of Temple Drainage Master Plan	●			●		●	●		●	●				●
Upper Brushy WCID Watershed-wide Dam Risk Assessment and Prioritization	●			●		●	●		●				●	●
City of Boerne Master Drainage Plan	●			●		●	●			●			●	●

KEY PERSONNEL

The individuals below were selected for their specialized expertise and deep understanding of the Texas Water Development Board's (TWDB) and the UCRFPG's mission and program needs. **The HDR Team brings experience throughout the basin, from San Angelo to Midland, and points in between.** Our team includes key individuals who were an integral part of developing the State's first Regional Water Plans, and understand the challenges you face in getting started. To set the bar high right out of the gate, you need a team who has done this before who will hit the ground running. Our plan will be derived using a "bottom-up" approach driven by the stakeholders on the UCRFPG. **The approach will benefit the region by capturing available flood risk data and leveraging existing flood-related data, flood mitigation plans, and strategies from the local communities in the basin.**



Data Collection & Analysis (Tasks 1-3)	Flood Mitigation Evaluations, Strategies, & Projects (Tasks 4-5)	Impacts, Response, Financing & Stakeholders (Tasks 6-10)
Task 1 Planning Description David Dunn, PE* Jim Carillo, AICP HAI	Task 4A Needs Analysis Rodrigo Vizcaino, PE, CFM* Scott Rushing, PE, CFM HAI	Task 6 - Impacts of Regional Flood Plan Jenna Rao, PE, PG* David Dunn, PE
Task 2 Existing/Future Flood Risk Analysis Sunit Deo, PE, CFM* Krista Melnar, PE, CFM FNI Ivy Xiong, PE, CFM	Task 4B Potential Evaluations Strategies & Projects Rodrigo Vizcaino, PE, CFM* Wade Barnes, PE FNI Angela Davidson, PE, CFM HAI	Task 7 Flood Response Info & Activities Wade Barnes, PE, CFM* FNI
Task 3 Current Practices & Goals Scott Rushing, PE, CFM* HAI Susan Roth, PE, PMP SRC Lissa Gregg, PE, CFM FNI	Task 4C Technical Memorandum Jenna Rao, PE, PG*	Task 8 Administrative, Regulatory, & Legislative Wes Birdwell, PE, CFM* HAI
	Task 5 Recommended Evaluations, Strategies, & Projects Rodrigo Vizcaino, PE, CFM* Wade Barnes, PE, CFM FNI Angela Davidson, PE, CFM HAI	Task 9 Financing Analysis Mark Evans* FNI Grady Reed
		Task 10 Stakeholders & Public Involvement Susan Roth, PE, PMP* SRC Gwen Jurisich Lissa Gregg, PE, CFM FNI
Support Team		
GIS Brian McNamara, GISP HAI Thomas Brown Erin Atkinson, PE, CFM GISP HAI	Meteorology Nate Clements	Environmental Brandon Tate
		Dam Risk Analysis Cris Parker, PE, CFM

The following key personnel have been selected to lead the HDR Team because of their proven experience on similar projects and their understanding of the Upper Colorado Region. Complete resumes for the HDR Team members are included in the Appendix.



Curtis Beitel, PE, CFM, ENV SP Project Manager

Curtis has over 27 years of experience managing large GIS-oriented planning projects similar to this project, such as the San Antonio River Authority's Bexar County Flood Warning System, the City of Fort Worth's Stormwater GIS Inventory and 13 County-wide DFIRM updates for FEMA Region VI as part of their Map Modernization program. Curtis is currently completing the City of San Angelo's Master Drainage Plan update, to develop and prioritize both localized and riverine flood mitigation improvements. As evidence of his reputation, integrity, and competence, **Curtis was recently selected by the TWDB as one of five consultant members for their Flood Technical Advisory Group (FTAG), to provide regular input to TWDB staff as they continue to develop the state flood planning process.** Other FTAG members on the HDR Team are Krista Melnar (FNI) and Cindy Engelhardt (Halff).



Cory Shockley, PE Project Principal

Cory has over 21 years of experience in hydrology and water supply planning, bringing in-depth knowledge of the TWDB's processes. He manages HDR's Austin office, and as project principal he will assure adequate resources are available to meet the TWDB's deadlines, while bringing extensive regional planning expertise to the team. Cory works each day to solve complex water supply issues for his clients across Texas. His background includes integrated water planning, river basin modeling, and water rights analysis, water availability modeling, and permitting. Cory was involved in the original efforts to develop the Brazos, Nueces, and Guadalupe-San Antonio WAMs. He keenly pursues progress on his projects to deliver great client service. He especially enjoys the challenges that come with permitting new projects and successfully obtaining permits where both applicants and regulators are satisfied with the results. Cory successfully led the effort to develop the Dallas Long Range Water Supply Plan to 2070 and beyond for the City of Dallas, Texas, and assisted the Palo Pinto County MWD No. 1 in obtaining a water right and a 404 permit for a new, large on-channel reservoir project.



Heather Keister, PE, CFM | Deputy Project Manager

Heather is a water resources engineer in the Lubbock office of Freese & Nichols with over 17 years of experience in civil planning, design and construction. Heather recently studied the Midland and Jal Draw watersheds in Midland and helped the City implement a stormwater utility fee. She also helped San Angelo with the Bell Street Roadway and Utility Improvements, along with design of the Avenue P detention basin under the On-Call Stormwater Engineering Services. **Throughout her career Heather has assisted communities with TWDB Clean Water and Drinking Water State Revolving Fund (CWSRF and DWSRF) applications and implementation.**



Eric Stewart, PE, CFM | Quality Control Lead

Eric has over 20 years of experience in all phases of project development from conceptual planning through design, bid, and construction, which adds additional valuable insight when reviewing planning for flood protection measures. **Eric is well-versed in best practice criteria and methods related to flood mitigation planning, analysis, and design, which will help develop strategies for integration into state flood planning.**



Paula Jo Lemonds, PE, PG | Planning Lead

Paula Jo is a professional geologist and engineer experienced in water resource evaluations and water supply planning, including Texas Water Development Board Regional Water Planning. She brings over 20 years of TWDB project management experience, including the 2021 Llano Estacado (Region O) Regional Water Plan, and the 2006, 2011, 2016, and 2021 Brazos G Regional Water Plans. **Paula Jo is fluent in TWDB's planning process, data delivery, and communication methods.**



Scott Rushing, PE, CFM | Floodplain Management Lead

Scott is a water resources engineer with Halff Associates with 12 years of experience in drainage analysis and design. **Scott was recently part of the TWDB's State Flood Assessment team, which set the stage for the state flood plan with two statewide surveys, eight regional workshops, and nine state/federal agency meetings.** Scott prepared technical memoranda to summarize stakeholder engagement, assessed stakeholder feedback, analyzed financial aspects, and provided stakeholder recommendations for key initiatives involving flood risk, mitigation, and future planning.



Rodrigo Vizcaino, PE, PG, CFM | Flood Mitigation Lead

Rodrigo has over 21 years of experience preparing storm water master plans, floodplain management studies, urban hydrology and hydraulics analysis and designs and bio-engineered channel designs. He has experience with storm water master plans, floodplain management studies, urban hydrology and hydraulics analysis and design, bio-engineered channel design, cross drainage structures for transportation projects, detention basin design, stream and bank restoration, sediment transport analysis, CLOMR and LOMR report preparation, and CIP ranking and prioritization. Rodrigo has also been involved in various projects that require a 404 Nationwide and Individual CWA Permit from the USACE. He has strategized flood control solutions with projects such as Tony's Creek in Fort Worth and Ricketts Branch in Dallas. Rodrigo also has worked on various master drainage plans such as with the Cities of Waco and Abilene identifying watershed challenges and prioritizing future CIP projects. His modeling experience include steady and unsteady 1D/2D HEC-RAS modeling, HEC-HMS, and reviews of more sophisticated models such as XPSWMM.



Wes Birdwell, PE, CFM | Legislative Lead

Since retiring from the Lower Colorado River Authority in July 2003, Wes has worked for Halff Associates assisting Texas municipalities with flood mitigation projects. **While at LCRA, he was responsible for the operation, planning, and design of reservoir systems, floodplain management, water rights, and dam safety.** He coordinated TFMA's "Day at the Capital" in 2017 and 2019, as well as the FloodED grassroots effort that built support for SB7 and SB8 for regional flood planning and funding. **Wes currently serves as the Executive Director of the Texas Floodplain Management Association.**



Mark Evans | Financial Lead

Mark has over 20 years of experience with mapping out traditional and disaster response emergency relief funding strategies that involves both grant (principal forgiveness) and low-to-zero-interest loans to assist clients with building needed infrastructure projects as quickly as possible. **While working at TWDB, Mark managed the 2019 intended use plan process for the CWSRF program, including developing solicitation packages and preparing the draft intended use plan for the EPA and TWDB approval, and prior to that he led TWDB's statewide outreach programs**



Susan Roth, PE, PMP | Stakeholder Outreach Lead

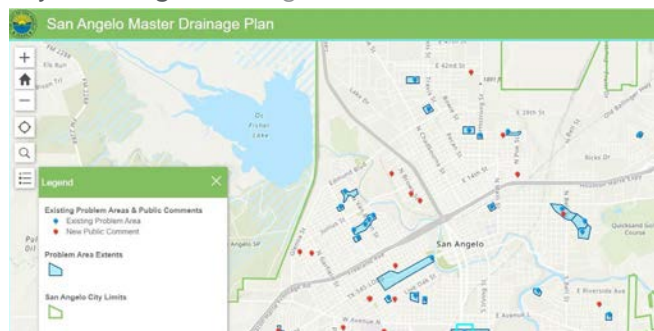
Susan has over 25 years of experience working with multiple entities across Texas towards regional water planning solutions. She has developed regional water and wastewater facility plans for communities, managed projects, prepared water conservation and drought contingency plans, negotiated contracts, secured and managed grant funding for water infrastructure, and facilitated group discussions. **Recently, Susan worked as part of HDR's team on the 2021 Brazos G Regional Water Plan, providing valuable outreach to engage rural stakeholders. She also provided stakeholder outreach for the TWDB's State Flood Assessment.**

QUALITY OF SIMILAR PROJECTS

RECENT PROJECTS		
PROJECT	MET BUDGET	MET SCHEDULE
City of San Angelo, San Angelo Master Drainage Plan	✓	✓
Colorado River Municipal Water District, 2021 Region F Water Plan	✓	✓
TWDB Region G & O Regional Water Plans	✓	✓
Harris County Flood Control District, Modeling, Assessment & Awareness Project	✓	✓
City of Austin, 2015 & 2019 City of Austin Flood Hazard Mitigation Rotation Lists	✓	✓
City of Abilene, Master Drainage Plan	✓	✓
Travis County, TWDB Flood Protection Planning Study & CIP Program	✓	✓
City of Amarillo, Martin Road Lake Drainage Improvements	✓	✓
City of Lubbock, John T. Montford Dam & Jim Bertram Lake 6 Flood Analyses & Safety Inspections	✓	✓

San Angelo Master Drainage Plan

City of San Angelo, San Angelo, TX



Using the ranking system and public input, we are prioritizing and rank the 10 FMPs in the Drainage CIP plan, laying out a 20-year Road Map in the MPD report.

PROJECT DETAILS

Members of the Project Team: Curtis Betel, Cris Parker, Rodrigo Vizcaino

Project Start and End Dates: October 2016 - June 2021

Client: City of San Angelo, Texas

Contact: Charles Michalewicz

P: 325.657.4206 **C:** 325.657.4206

E: charles.michalewicz@cosatx.us

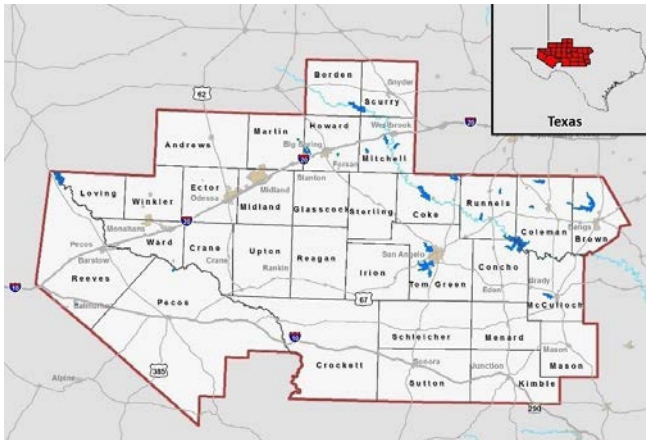
We are currently helping the City of San Angelo update their master drainage plan to develop and prioritize both localized and riverine flood mitigation CIP improvements. Development of the plan included data collection (effective H&H models from the USACE, 2018 LiDAR, GIS inventory), an initial field visit to the creeks, workshops with City staff to select 35 problem areas to evaluate and develop the ranking system, site reconnaissance surveys to each problem area, and development of flood mitigation strategies and conceptual flood mitigation CIP projects for the top 10 problem areas, including potential enhancements. Public input along the way was obtained through an ArcGIS website of the City showing a map of the FEMA floodplains and the 35 known flooding locations and allowing citizens to drop a pin and fill out a form to describe their drainage problem, hosted on the City's website over the course of two weeks. We will also make two Council presentations.

To provide input on the possible flood mitigation as part of the College Hills Boulevard design, we prepared the Red Arroyo Plan within 90 days of NTP, as required by the City. We evaluated various combinations of three regional detention ponds in the North Fork Red Arroyo and three ponds in the South Fork Red Arroyo to reduce the over-topping of College Hills Boulevard.

We assisted the City abridged applications for two of the flood mitigation projects in June 2019. The San Angelo Master Drainage Plan is scheduled to be completed in June of 2021.

2021 Region F Regional Water Plan

Colorado River Municipal Water District, Big Spring, TX



PROJECT DETAILS

Members of the Project Team: Lissa Gregg, Heather Keister
Project Start and End Dates, Month/Year: March 2017 - January 2021
Client: Colorado River Municipal Water District
Contact: John Grant
P: 432.267.6341
E: jgrant@crmwd.org

FNI serves as the lead consultant for Region F, a 32-county region in West Texas. The region encompasses the Upper Colorado River Basin and parts of two adjoining river basins. Challenges in this region include ongoing drought, dynamic population growth, limited water supplies and poor water quality. FNI has provided long-range water planning to a region known for drought and changing conditions since the first round of regional water planning. This area is prone to periodic drought and rapidly changing populations associated with oil and gas development.

A major component of the Region F Water Plan is evaluating available water supplies. Most of the municipal water supplies in Region F come from surface water sources, mainly reservoirs. In 2011, the region experienced a significant drought that resulted in very low lake levels and priority calls within the Colorado River Basin. To better capture the impact of this drought on water supplies, FNI evaluated the yields of the water supplies using an updated Colorado River WAM. For almost every reservoir in the region, a new critical drought had occurred since the original yield analyses.

This project was successfully completed on schedule and adopted and approved by the Texas Water Development Board.

Brazos Region G and O Regional Water Plans (2001, 2006, 2011, 2016 and 2021)

Region G (Brazos River Authority/TWDB), Region O (South Plains Association of Governments/TWDB), Various Counties, TX



Regional water plan for 37 counties in the Brazos River Basin that involved collaboration with the regional planning group, technical and non-technical stakeholders. This plan included innovative strategies including aquifer storage and recovery, conjunctive use, and reuse.



Regional water plan for 21 counties in Southern High Plains that involved collaboration with the regional planning group, technical and non-technical stakeholders. This plan had innovative strategies including aquifer storage and recovery, conjunctive use, and reuse.

REGION G PROJECT DETAILS

Members of the Project Team: David Dunn, Zach Stein, Jenna Rao, Eric Stewart, Paula Jo Lemonds, Grady Reed, Cory Shockley
Project Start and End Dates, Month/Year: October 2016 - March 2021
Client: Brazos River Authority/TWDB
Contact: Wayne Wilson
P: 254.761.3168
E: wlvilsoncattlecompany@gmail.com

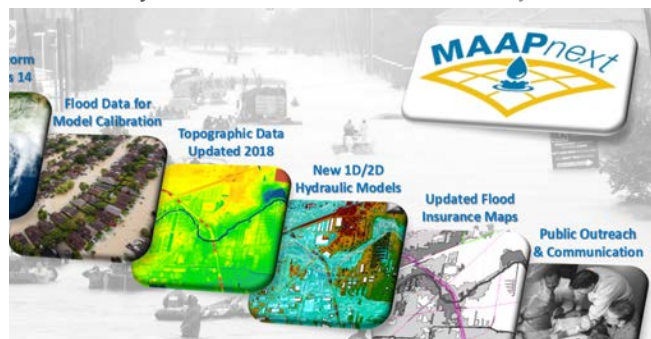
REGION O PROJECT DETAILS

Members of the Project Team: Paula Jo Lemonds, Jenna Rao, Zach Stein, Grady Reed, David Dunn, Cory Shockley
Project Start and End Dates, Month/Year: October 2016 - March 2021
Client: South Plains Association of Governments/TWDB
Contact: Aubrey A. Spear, PE
P: 806.775.2585
E: aspear@mail.ci.lubbock.tx.us

We serve as a technical consultant for the Region O and Brazos G Regional Water Planning Groups, which covers the Upper Brazos Regional Flood Planning Area's in their entirety. Overall, we have provided technical services for four of the 16 regional water plans statewide, serving as lead technical consultant to the Region O, Brazos G, Region N, and Region L Regional Water Planning Groups and have developed regional water plans during the 2001, 2006, 2011, 2016 and 2021 planning cycles. Our services included developing or reviewing population and water demand projections for hundreds of water utilities, evaluating current and future surface water and groundwater supplies available, evaluating water supply options to meet future needs, and compiling this information into the regional water plans. We participated in numerous public meetings where the results of our evaluations were publicly vetted by the planning groups and the general public. In addition, we have assisted several clients in coordinating with other regional water planning groups to verify that their projects were included appropriately in the applicable regional water plans in order to increase their potential for competitive state funding.

Modeling, Assessment, and Awareness Project (MAAPnext)

Harris County Flood Control District, Harris County, TX



Developing FEMA Risk MAP products and updating Flood Insurance Rate Maps for 22 counties and over 1,500 miles of channels, creeks, and bayous. Flood information presented to the community in an online portal.

PROJECT DETAILS

Members of the Project Team: Duane Barrett, Curtis Beitel, Sunit Deo, Eric Stewart, Thomas Brown

Project Start and End Dates, Month/Year: February 2018 - *Ongoing

Client: Harris County Flood Control District

Contact: Brian Edmondson, PE, CFM

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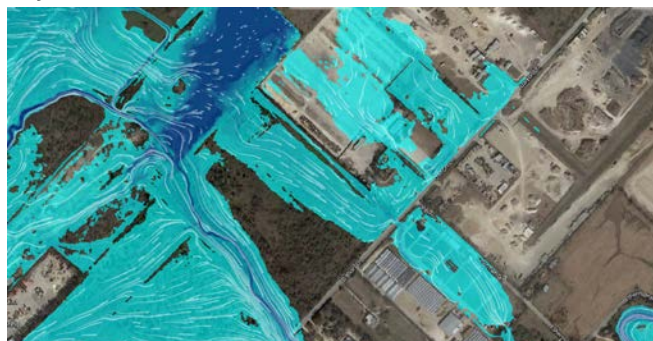
*Tasks will be completed by the end of this year.

As co-prime, HDR leads the Modeling, Assessment, and Awareness Project (MAAPnext), re-studying all 22 major Harris County watersheds and over 1,500 miles of channels, creeks, and bayous. We are developing FEMA Risk MAP products and updating Flood Insurance Rate Maps (FIRMs) for Harris County and all 34 incorporated communities within the County. Additionally, we are developing non-regulatory Risk MAP products to provide flood risk information to Harris County residents via online portal(s) created by the HCFCD. We began the project by leading a QuickStart Team to establish project controls, information management, and modeling and mapping criteria for all consultants. This phase included developing preliminary H&H models and white papers on topics such as the incorporation of Atlas 14 rainfall, standardization of H&H methods for 1D/2D coupled models, naming conventions, Manning's, floodway determinations, and post-processing guidelines to develop FEMA Risk Map products.

Our team is leading the communication effort for 34 NFIP communities impacted by the Atlas 14 mapping study. We developed an integrated media communication plan, including social media, videos, and the project website www.maapnext.org. These platforms allow for quick access to resources, project status, data libraries, and educational resources. The communication plan educates County residents about flood risks, helping them make key decisions about protecting life and property during heavy rainfall events. In addition to program management duties, our team is responsible for HEC-HMS and HEC-RAS modeling, mapping, and development of Risk MAP products for several watersheds with base data from the 2018 LiDAR survey and field reconnaissance.

2015 & 2019 City of Austin Flood Hazard Mitigation Rotation Lists

City of Austin, Austin, TX



Flood hazard analysis of Carson Creek including 2D hydraulic modeling to identify more accurate flood risk needing mitigation.

PROJECT DETAILS

Members of the Project Team: Cris Parker, Eric Stewart, Sunit Deo

Project Start and End Dates, Month/Year: December 2015 - *Ongoing

Client: City of Austin, Texas

Contact: Pam Kearfott, PE

P: 512.974.7819

E: Pam.Kearfott@austintexas.gov

*All task orders listed below are complete.

Our team was selected for the 2015 & 2019 Flood Hazard Mitigation Rotation List for projects that identify, evaluate, and reduce flood risk. The project work included watershed-wide data collection, including effective FEMA and local flood risk data, GIS data, and field reconnaissance; public and stakeholder outreach, floodplain modeling and mapping; development of structural and non-structural flood risk reduction solutions, capital cost estimates, and environmental permitting constraints; real estate acquisition needs; and design, bidding and construction of flood risk reduction improvements.

Carson Creek Flood Risk Reduction Phase 1 Feasibility Study 2020: Updated regulatory floodplain H&H models with Atlas 14 rainfall, 2017 LiDAR topographic data, land-use changes, and upgraded to HEC-RAS 2D modeling of complex flow bifurcations and shallow flooding prevalent within the study area. The hydrodynamic 2D model results provided a better understanding of flow patterns, causes, and sources of flooding within identified problem areas. Our team utilized the 2015 "Halloween Flood" rainfall data and other flood complaint data to validate the revised model and mapping. We also evaluated nine structural flood risk reduction alternatives, including culvert/bridge upgrades, channel improvements, regional detention, and compliance with the City of Austin drainage and environmental criteria.

Williamson Creek Flood Risk Reduction Feasibility Study 2020: The goal of this flood study was to update previous flood risk modeling and mapping information and identify viable flood risk reduction solutions for Williamson Creek incorporating Atlas 14 rainfall data, 2017 LiDAR topographic data, HEC-RAS unsteady 2D modeling, and calibration to historical events. The updated modeling and mapping better quantified the extent of habitable structure flooding and flood inundation area. The 1D/2D combined hydraulic model helped inform the regulatory 1D HEC-RAS model and floodplain mapping.

Abilene Master Drainage Plan

City of Abilene, Abilene, TX



Prioritized local and riverine flood mitigation projects and facilitated stakeholder engagement.

PROJECT DETAILS

Members of the Project Team: Curtis Beitel, Paula Jo Lemonds, Grady Reed

Project Start and End Dates, Month/Year: October 2016 - August 2020

Client: City of Abilene, Texas

Contact: Michael Rice, PE

P: 325.676.6386

E: michael.rice@abilenetx.com

In 2017, HDR partnered with Parkhill and eHT to develop and prioritize local and riverine flood mitigation improvements, as a part of the City of Abilene's Master Drainage Plan. Development of the plan included data collection (effective H&H models, 2014 LiDAR, GIS inventory), an initial field visit to the creeks, workshops with City staff to select 20 problem areas to evaluate and develop the ranking system, site reconnaissance surveys to each problem area, and development of conceptual flood mitigation improvements for the top 10 problem areas, including potential water quality enhancements. We also secured the effective HEC-1 hydrologic and HEC-2 hydraulic models from the Fort Worth District USACE for the City and facilitated a meeting with the USACE to discuss the Elm Creek Feasibility Study. Public input along the way was obtained during three stakeholders' meetings and two Council presentations. The West Central Texas COG was updating their Hazard Mitigation Plan, and we attended several of the stakeholder meetings to represent the City. The local TV station, KTAB, described each one of the proposed projects as a feature on the local news. The Draft Master Drainage Plan Report was prepared within six months from NTP, as the City required.

We finalized the Master Drainage Plan in 2019 by combining the Drainage plan with the City's current Phase 1 MS4 and operations and maintenance programs and updating their Stormwater Utility Fee financial plan, laying out a 25-year road map in the Master Drainage Plan report.

TWDB Flood Protection Planning Study and CIP Program

Travis County, Travis County, TX



Developed county-wide flood protection plan and implemented five flood mitigation projects.

PROJECT DETAILS

Members of the Project Team: Curtis Beitel, Cris Parker, Sunit Deo, Eric Stewart

Project Start and End Dates, Month/Year: February 2007 - Ongoing

Client: Travis County, Texas

Contact: Steve Schiewe, PE

P: 512.854.7580

E: steve.schiewe@traviscountytexas.gov

We completed a flood protection planning grant study for the unincorporated areas of Travis County, investigating over 90 flood problem areas, and have completed the design of five high priority flood mitigation projects identified in the plan. Four projects have been successfully constructed; a fifth project will start construction this year. Flood risk areas included primarily low water crossings and flooding within developments located within the county's older unregulated areas. HDR employed a proven approach to flood protection planning, including flood and GIS data collection and assessment, public outreach, H&H analysis, and flood risk area ranking, development of structural and non-structural solutions, economic analyses, and development of preliminary design and capital cost estimates for implementation in a risk-informed prioritized CIP. The data collection phase incorporated field reconnaissance, public and County staff input, survey, GIS, previous studies, and FEMA data. H&H models were developed to analyze and rank the identified flood risk areas for both the existing and fully developed conditions. We developed a pair-wise comparison process based on ranking criteria that measured the severity of the threat to public safety, including flooding of habitable structures, road over-topping depth, and impacts to emergency access, as well as O&M and environmental considerations. We performed final design and bidding, and construction phase services for high priority flood mitigation CIP projects from the Flood Protection Plan.

Martin Road Lake Drainage Improvements

City of Amarillo, Amarillo, TX



Playa Lake project improvement design using a 2D hydraulic model to mitigate flood in the Martin Lake drainage area.

PROJECT DETAILS

Members of the Project Team: Curtis Beitel, Eric Stewart

Project Start and End Dates, Month/Year: April 2019 - August 2020 Phase 2 (Dale Street Emergency Repair) - Remainder is scheduled for completion December 2021

Client: City of Amarillo, Texas

Contact: Kyle Schniederjan

P: 806.378.9336

E: kyle.schniederjan@amarillo.gov

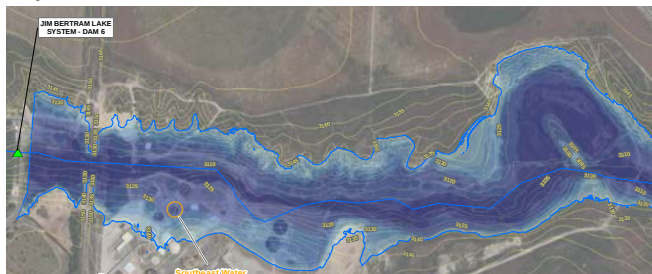
Martin Road Lake is an existing playa lake in northeast Amarillo (Playa No. 24). The lake has two distinct sections, separated by Martin Road and connected by several box culverts. The watershed contributing to Martin Road Lake drains a total of 1,658 acres. In the 1993 Stormwater Master Plan, an ASAPP model was developed for the lake, which identified a primary damage elevation of 3,624.6 feet, which is reached by the five-year flood event. The 100-year flood event reaches an elevation of 3,629.7 feet, 5.1 feet above the primary damage elevation. A 2013 ASAPP model indicated that 145 structures were in the floodplain of Martin Road Lake.

The Parks Department recently completed a master plan for Gene Howe Park that includes providing access to the lake for a fishing amenity, the design of which needed to accommodate the highly variable water surface of the playa lake. Our team held a series of workshops with residents to develop consensus on a smaller separate fishing pond, allowing the playa to function as a pure flood control facility.

Since erosion was starting to threaten Dale Street's roadway, a set of emergency repair plans was developed in July 2020, and construction is complete. Since the project includes additional social benefits (fishing amenity will restore a flood source for an underprivileged Section 8A housing complex across the street), the City of Amarillo is considering pursuing an ISI Envision certification for the project. Construction of the remaining improvements is scheduled for Fall 2021.

John T. Montford Dam and Jim Bertram Lake 6 Flood Analyses and Safety Inspections

City of Lubbock, Lubbock TX



We provided dam safety engineering services for the City of Lubbock for the John T. Montford Dam impounding Lake Alan Henry and Jim Bertram Lakes since 2005, including performing probable maximum flood (PMF) and dam breach analyses and technical dam inspections in accordance with TCEQ Dam Safety Program guidelines.

PROJECT DETAILS

Members of the Project Team: Cris Parker, Jenna Rao, David Dunn, Sunit Deo

Project Start and End Dates, Month/Year: 1st Montford Dam inspection - 2005, 2nd inspection and break analysis - 2011, 3rd inspection and Lake 6 breach analysis - 2020

Client: City of Lubbock, Texas

Contact: Aubrey Spear, PE

P: 806.775.2585

E: aspear@mylubbock.us

We completed a PMF analysis, including developing a flood hydrology HEC-HMS model for the Double Mountain Fork watershed area within the Brazos River basin contributing to the dam using probable maximum precipitation derived from NOAA HMR 51/52 and computed the PMF inflow hydrograph to the lake. A HEC-RAS model was developed to perform the PMF and sunny day dam breach scenario modeling and inundation mapping downstream of the dam. These analyses and flood inundation maps were incorporated into the City's EAP for the dam. We performed the previous three dam safety technical inspections in 2005, 2010, and recently in December of 2020. Our team provided overall project management, existing data collection and review, and QA/QC reviews. We are currently preparing a final report for the 2020 dam inspection, which includes prioritized recommendations for dam modifications, operations, and maintenance activities. We will present the findings to the Lubbock Water Advisory Commission.

PROJECT APPROACH

Developing a Regional Flood Plan for the Upper Colorado watershed is a great opportunity to help cities and counties reduce flood risk, protect the public from the hazards of flash flooding, and create a more resilient future for our communities. With an arid climate that only receives an average 15 to 20 inches of rainfall each year, it is often difficult for cities and counties to justify funding capital improvements to prevent flooding when it does rain. Low water crossings are common, posing a serious flood risk to both residents and visitors. The oil and gas industry brings in a lot of workers from other parts of the state who are not as familiar with these West Texas flood risks.

Project Understanding

Flood damages in the Upper Colorado watershed are not limited to structural flooding in urban areas. Widespread flooding can affect the many ranches and irrigated crops throughout the watershed. Flooding can also damage local roadways, interrupting oil and gas operations. To be successful, the Upper Colorado Regional Flood Plan needs to address all of the flood risk needs in the watershed.

We will deliver a community-based Upper Colorado Regional Flood Plan on time and within budget that meets the 39 State Flood Planning Guidance Principles.



Our team has **identified the following primary project challenges, solutions, and benefits** to convey our project understanding and approach. This summary and the associated Project Approach describes the **applied innovation, process transparency, and the broad perspective of our proven team.**

CHALLENGES		EXPERIENCE-BASED SOLUTIONS	BENEFITS TO UCRFPG
1	Aggressive Schedule	• Apply lessons learned and best practices from decades of experience, delivering past regional water plans and multi-jurisdictional flood plans in Texas. • Implement strategies to expedite critical path items during the regional flood planning process. • Provide bench depth and available capacity, leveraging local flood risk, mitigation, and management experts. • Execute a detailed work plan with clearly outlined responsibilities and expectations for team members. • Deliver a final flood plan that will establish future success for Basin stakeholders.	Proven team with the technical expertise and resources to meet schedule.
2	Large Data Gaps & Outdated Flood Risk Data	• Implement strategies to streamline data collection, stakeholder outreach and public input, and research. • Identify areas in greatest need of updated data based on historic flood events and vulnerability.	Streamlined, TWDB experience based approach to fill data gaps.
3	Diverse Stakeholder Interests	• Use proven strategies from our regional water planning experience to address concerns from urban areas to rural communities. • Communicate a range of diverse technical challenges and solutions to meet basin needs across varying geographies. • Deploy digital outreach strategy to reach diverse Upper Colorado audiences.	Comprehensive outreach strategy to gain stakeholder input and acceptance.

A Proven Team with the Technical Expertise & Resources to Meet Schedule

Challenge 1

Aggressive Schedule

HDR EXPERIENCE-BASED SOLUTIONS

- Apply best practices from decades of experience, delivering past regional water plans and multi-jurisdictional flood plans in Texas.
- Innovative strategies to expedite critical path items during the regional flood planning process.
- Provide bench depth and available capacity, leveraging local flood risk, mitigation, and management experts.
- Execute a detailed work plan with clearly outlined responsibilities and expectations for team members.
- Deliver a final flood plan that will establish future success for Basin stakeholders.

With the state-mandated deadline for the first-ever regional flood plans less than twenty-four months away, we understand the importance of achieving timely delivery without sacrificing quality. An achievable regional plan goes beyond meeting the mandate's check boxes and provides community-based solutions that can ultimately be implemented. For the last three decades, we have done this by delivering multiple Regional Water Plans and flood protection plans across the state. Developing a basin-wide flood plan requires an understanding of the process and technical expertise, HDR brings both.

Many of our staff were around for the first round of regional water planning and will tell you how intense that process was. That breadth of experience coupled with our flood mitigation experience will produce a successful plan for the UCRFP.

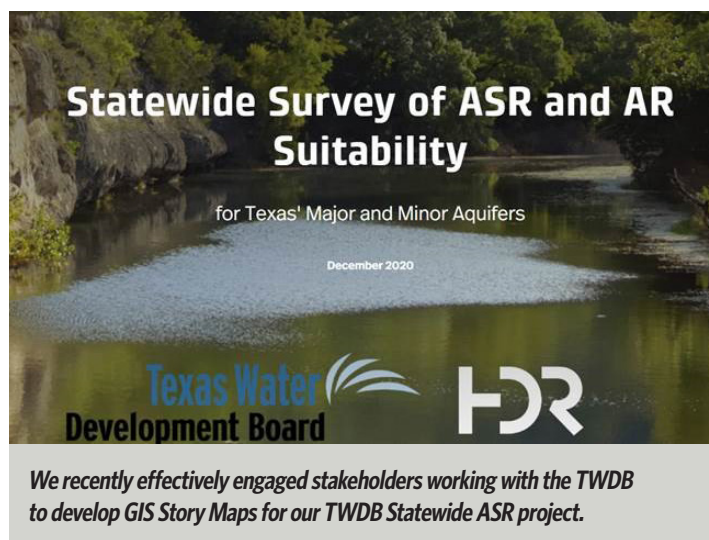
Apply Best Practices from Regional Water Plans

Regional planning has been the foundation of HDR's Texas water resource practice for over 50 years. **We have completed 18 regional water plans over the last 20 years, including Regions L, O, N, and G.** Our approach for the state flood planning process relies heavily on our vast experience with flood risk analysis and flood mitigation planning and implementation, while modeled after our proven processes on the regional water plans that we have successfully delivered. **We have developed well over 100 flood risk reduction studies, and drainage master plans across the state, including multiple TWDB flood protection planning grant studies.** These local and regional watershed plans contain many of the same objectives and goals as the TWDB directed regional flood planning efforts. Flood risk analysis and development of flood mitigation strategies and projects required for the regional flood plans are different than the demands, supplies, and needs analysis found in the regional water plans. However, we have always treated these issues as being two sides of the same coin. The hydrology that drives firm reservoir yield is the same hydrology that drives flood risk for the citizens that rely on that supply. The two are different but inseparable, and the TWDB has chosen to pattern the regional flood planning process after the regional water plans. As such, we are uniquely suited to facilitate this process for you.

Strategies to Expedite Critical Path Items

Focusing time and effort on the Upper Colorado River Basin chronic flood problem areas with the most severe consequences – potential life loss and economic damages – is where we will rely on our ability to find and utilize existing information. Our highly effective community outreach team will identify this data. Life loss consequences are paramount. Chronic flood problem areas in the Upper Colorado Basin are often understood most by local public works maintenance personnel and emergency responders. These are the people who know where to set the barricades and where to evacuate at-risk populations when flooding is imminent. They are also the ones who receive the flood complaints after floods have occurred. Getting feedback from these professionals early in the process will expedite the identification of the flood hazard areas that need the most attention. We have the right team members to execute this plan and have done it successfully on multiple projects with tremendous results.

We will rely on our previously developed GIS databases and mapping platforms to organize and map flood risk in accordance with the TWDB framework. This will help proactively expedite flood data collection and organization efforts.



Draw on Bench Depth and Capacity

Our local team has the bench depth and expertise in Texas, to meet the accelerated project schedule. Our approach includes **deploying multiple teams with flood and regional planning experience** to the UCRFPG tasks simultaneously in multiple counties and municipalities. Our partnership with Freese & Nichols, Halff, Susan Roth Consulting brings additional resources, local knowledge and experience, and local community relationships.

Freese and Nichols is a 700-person, Texas-based engineering firm, with 13 offices in Texas. To support this project they will draw from a pool of 120 Stormwater Engineering, Resiliency Design, Water Resources Planning and Water Resources Design staff.

Halff Associates is a full-service engineering firm with over 1,000 engineers, architects, planners, scientists, and surveyors throughout Texas and the surrounding states. Their GIS professionals support FEMA Region VI as part of the Compass JV for FEMA's RiskMAP program, and they have completed projects for every Cooperating Technical Partner (CTP) in the state, making them uniquely qualified to support the existing and future flood risk mapping tasks on this project.

Susan Roth is part of HDR's Brazos G Regional Water Planning team. During the development of the 2021 BGRWP, Susan's responsibilities included community outreach to many of the smaller water user groups in the McClennan, Hill, and Limestone County areas to receive their input. This effort was hugely successful, resulting in many of these groups being represented in the plan allowing them to pursue funding from the TWDB for their identified projects.

Execute a Detailed Work Plan

Rarely do projects afford you the chance to complete one task before moving on to another, and developing the Upper Colorado Flood Plan will be no exception. However, we have identified three parallel tracts that will be ongoing in the push to meet the January 7, 2022, deadline for the Task 4C Technical Memo, shown on the next page. Tasks 1-4 are planned to run concurrently with convergence opportunities to allow for the team to check in with each other. This is necessary as each task, while interdependent to some extent, still has overlap and will inform the other tasks moving forward. We have used this process successfully many times throughout the development of over 20 years of regional water plans.

Understanding the intricacies of the process is just as important as understanding the data itself. Our approach provides you with the information you need when you need it to act on during the process, not bogging you down in data that do not seem to match up. Our workplan shows how we will break down the tasks and align with the schedule, understanding that data we need to react to and be ready to decide on will be required well before the planning group meetings.

Deliver a Final Flood Plan to Establish Future Success

Execution time for this first planning cycle has been cut short for various reasons beyond our control. Where others see a challenge, we see an opportunity to apply our trusted knowledge and experience in delivering a plan that matches the TWDB scope and sets you and the Upper Colorado Basin you represent up for success on future planning cycles.

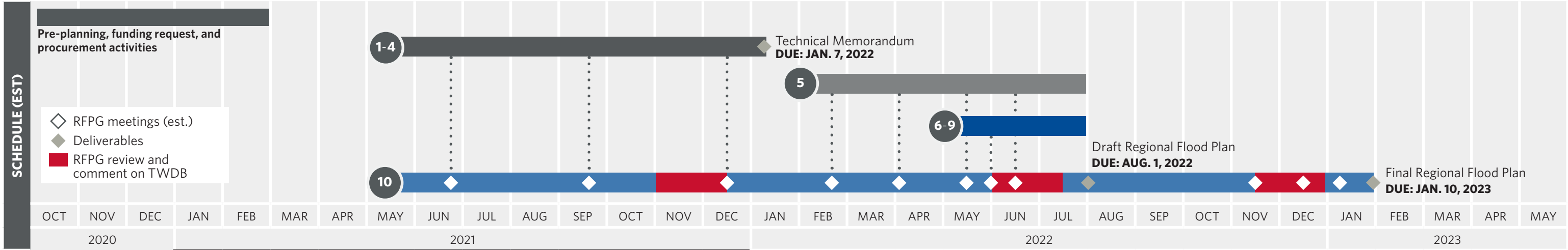
Strategies for successful plan integration and implementation include:

- A comprehensive and clear definition of baseline conditions included in the technical memorandum for task 4C.
- Highlighting the community-based Flood Mitigation Evaluations, Strategies, and Projects previously identified within the basin for inclusion in Task 5.
- Appropriate evaluation of the contributions and impacts to water supply development in the State Water Plan.
- Including key team members with significant flood financing analysis in their background to support the future implementation of projects.
- Active and open public outreach to hear from the Upper Colorado basin citizens that have their own flood story to tell. We want to hear them and capture their concerns in the planning document.

Our Team includes three of the five consultant members of the TWDB's Flood Technical Advisory Group. Curtis Beitel (HDR), Krista Melnar (FNI) and Cindy Engelhardt (Halff) recently provided comments on the TWDB's Guidelines to develop the regional flood plans.

TWDB REGIONAL FLOOD PLAN
Process Efficiencies to Deliver Project On-Budget and Schedule

	Data Collection & Analysis Tasks 1 - 3	Flood Management Evaluations, Strategies & Projects Task 4-6	Impacts, Response, Recommendations, and Financing Tasks 7-9	Stakeholder Outreach and Public Participations Task 10
 Scope of Work	- Planning Area Description - Existing and Future Flood Risk Analyses (hazard - exposure - vulnerabilities) - Evaluation and Recommendations on Floodplain Management Practices - Flood Mitigation/Management Goals - Identification and Evaluation of FMEs, FMSs, and FMPs	- Evaluate and recommend Evaluations, Strategies, and Projects Including: - Strategy/project description - Discussion of associated facilities - Project map - Technical evaluations addressing all considerations and factors - Document process of selecting all recommended FMSs	- Impacts of flood plan - Contributions to and impacts on water supply development and the State Water Plan - Flood response information and activities - Administrative, regulatory, and legislative recommendations - Flood infrastructure financing analysis	- Outreach to stakeholder communities - Public participation - Plan adoption
Deliverables	Technical Memorandum and Initial Geodatabase	Prioritization Workshop	Draft Plan and Updated Geodatabase	Final Plan and Final Geodatabase
 Key Decisions/ Actions	- Confirm flood mitigation and management goals, priorities, areas most prone to flooding, locations for potential FMEs, and allocation of efforts - Adopt process for identifying and selecting FMEs and potentially feasible FMSs and FMPs- public comment - Consider minimum floodplain management standards, that may vary geographically across region (as needed) - Consider evaluated FMSs and FMPs and confirm one solution, minimum, for flood mitigation or document variance accordingly - Confirm list of potential feasible FMSs and associated FMPs, also those identified and considered infeasible - Feedback on technical memo, chapters for draft and final report - Additional region-specific recommendations, as needed	- Review, confirm, and approve submittal of scope and budget of FMEs, FMSs, and FMPs to evaluate in Plan - Confirm process for selecting recommended FMSs, including FMSs evaluation matrices or other tools - Confirm list of recommended FMEs, FMSs, and associated FMPs - Review technical memo; chapters for draft and final report	- Consider administrative, legislative, and regulatory recommendations for the region - Consider recommendations regarding flood infrastructure project financing - Review technical memo chapters for draft and final report	- Consider subcommittees for special topics to prepare recommendations for RFPG - Consider comments and draft responses to comments on draft plan - Review technical memo chapters for draft and final report
 HDR Team Benefits to Ucrfpg	- Depth of knowledge and understanding of existing flood risk, flood infrastructure, and floodplain management in the Upper Brazos River Basin - Proven tools and understanding of basin-specific issues - Bench strength to juggle multiple tasks efficiently - Extensive experience with TWDB regional planning processes and protocols - Strong community relationships local presence in the basin to expedite outreach and data collection	- Non-structural strategies including floodplain acquisition programs, flood warning systems, and regulatory measures - Significant flood mitigation experience in the Upper Brazos River Basin - Expertise in flood mitigation planning, design, and construction - Understanding of regulatory drivers relevant to flood mitigation - Agricultural best management practices	- Experience with flood risk reduction benefit-cost analyses - Flood emergency response and emergency action planning experience - Leverages 20+ years water supply planning in the basin - Experience with multiple state and federal funding programs - Proven process to support development of legislative recommendations	- Relationships with agencies/stakeholders to expedite outreach process - Strategic communications experts in-house to streamline outreach process - Experience engaging planning group in interim decisions needed to develop plan - Experience simplifying technical info at non-technical level and local presence



A Streamlined, TWDB Experience-Based Approach to Fill Data Gaps.

Challenge 2

A Large Data Gaps & Outdated Flood Risk Data

HDR EXPERIENCE-BASED SOLUTIONS

- Key strategies to streamline data collection, stakeholder outreach and public input, and research.
- Identify areas in greatest need of updated data based on historic flood events and vulnerability.

For the inaugural Upper Colorado Flood Plan, understanding the existing data and establishing a baseline will be critical. We will employ our knowledge of the existing flood risk data, flood infrastructure, and current flood risk reduction strategies and projects in San Angelo, Midland, Odessa and Big Spring, and throughout the basin to organize and map available existing flood risk data and define the current state of basin-wide flood mitigation. A successful plan depends on executing this first step expeditiously yet thoroughly, and we have a proven track record of doing just that. Our team has already collected and mapped available FEMA Special Flood Hazard Area (SFHA) data and base level engineering (BLE) data as well as planned new BLE data within the basin as shown on the map graphic below. Outside the urban areas of San Angelo and Midland, readily available flood risk data is generally not available. To help fill those gaps, we will employ our knowledge of the state and county hazard mitigation plans throughout the basin.

Streamline Data Collection & Stakeholder Outreach

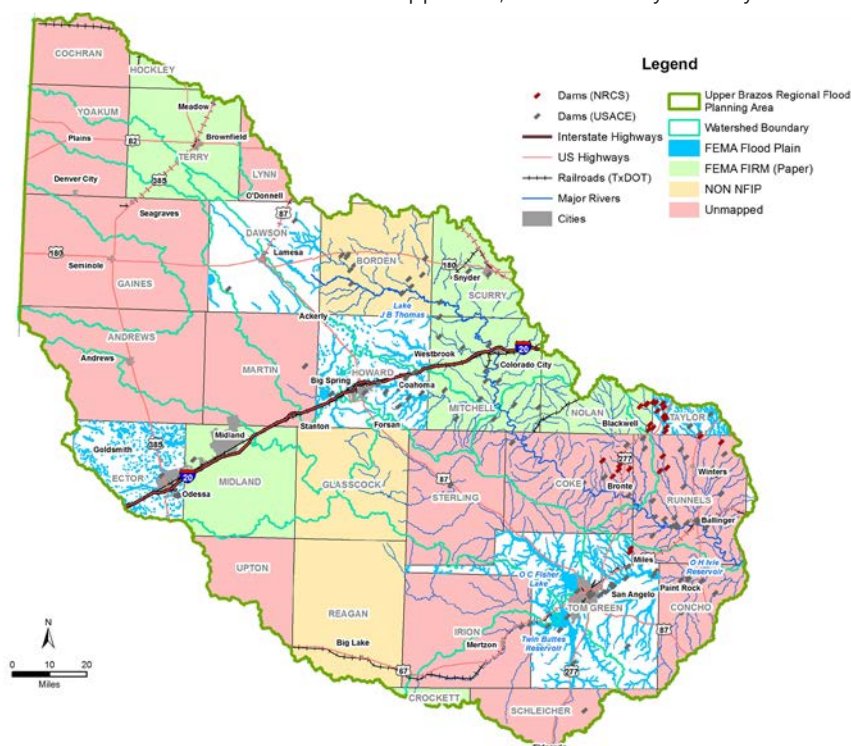
In addition to available FEMA flood hazard data, our team will collectively reference flood risk and flood mitigation data already in house from our decades of flood protection planning and mitigation experience with communities in the basin. Where data gaps exist, we will leverage our knowledge of

state and county Hazard Mitigation Plans for additional flood hazard and flood mitigation project data. Our team will hold workshops with local floodplain administrators, emergency responders, and other community officials to glean additional information on unmapped and unstudied flood hazard areas, previous flood mitigation efforts, and local floodplain management policies.

These workshops will also inform and update community officials on the RFP status and ongoing efforts. Finally, our team will use a combination of online public forums and “hot spot” mapping as well as public open houses to obtain public input on flood problem areas and to educate them on the RFP program.

Identify Areas in Greatest Need of Update

One of the key outcomes of the flood risk data collection effort will be the identification and prioritization of high-risk flood problem areas that lack analysis. These are areas that are known to flood frequently with high populations or critical infrastructure at risk that are not on the FEMA radar nor included in local flood mitigation plans. Our team’s local knowledge of flood problem areas in the basin, coupled with our planned community stakeholder outreach and public input approach, will efficiently identify these data gap areas.



Comprehensive Outreach Strategy to Gain Stakeholder Input & Acceptance

Challenge 3

Diverse Stakeholder Interests

HDR EXPERIENCE-BASED SOLUTIONS

- Use proven strategies from our regional water planning experience to address concerns from urban areas to rural communities.
- Communicate a range of diverse technical challenges and solutions to meet flood needs across varying geographies.
- Innovative digital outreach strategy to reach diverse Upper Colorado audiences.

Proven Strategies to Address Stakeholder Concerns

The urban versus rural challenge is not unique to flood-planning as it comes up routinely in the regional water planning process. Keys to successfully navigating this challenge include: establishing the baseline and letting the data drive decisions, developing a process that communicates risk and consequence, and allowing a significant opportunity for community input to inform the data and processes. We will work with you, the UCRFPG stakeholders, to identify the processes and outreach opportunities that best align with your region. This will occur at the beginning of the project and used throughout the project.

Communicate Challenges and Solutions Across Varying Geographies

Region 9's 32 counties represent a large area within Texas. Listening to the stakeholders and working toward consensus-based strategies for the Upper Colorado Regional Flood Plan is necessary. As part of the public involvement activities, we will facilitate consensus building among stakeholders with diverse interests.

Using our experience in the region, our team will facilitate coordination with small municipalities in the region by conducting a few public meetings in rural areas to heighten the engagement in areas where data gaps are identified if desired. Working with the UCRFPG, our team proposes that sub-regional workshops and public meetings could be organized to engage stakeholders across the diverse Upper Colorado Flood Planning Region. HDR and Susan Roth Consulting have specific experience organizing and executing sub-regional meetings through the five Brazos G Regional Water Plans we have developed.

Innovative Digital Outreach Strategy to Reach Diverse Audiences

Informing the public through websites and social media will be one of our first steps in the outreach process. Our strategic communication team recently collected public input for the City of San Angelo's Master Drainage Plan through an ArcGIS enabled website of the City showing a map of the FEMA floodplains and the 35 known flooding locations (shown in the screen capture below). The website allowed citizens to drop a pin and fill out a form to describe their drainage problem. **San Angelo hosted the website over the course of three weeks, receiving new public comments every day it was open.**



Our strategic communications group utilizes GIS tapestry to tailor our communication and outreach plans to clients needs. Below is an example of a recent pull of data from the Upper Colorado Basin. It gives you a sampling of basin demographics.

POPULATION

Population:	627,420	Median Age:	35.1
Households:	225,099	Age Distribution:	Children 18 and under 25% Adults 18 to 64 61% Seniors 65+ 14%
Gender:	Men 50% Women 50%		

INCOME & EMPLOYMENT

Median Household Income: \$63,880

Employment Sector:

White Collar **55%**
Blue Collar **31%**
Services **13%**

Employment Status:

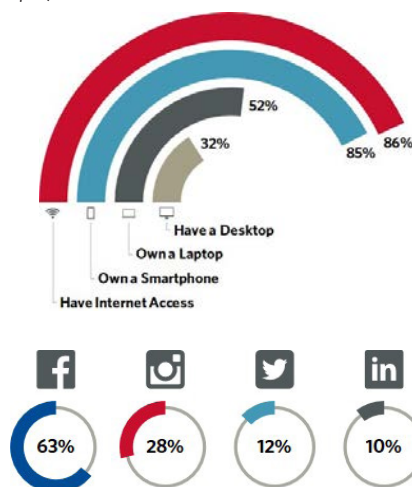
Employed **91%**
Unemployed **9%**

Education:

No High School Diploma **19%**
High School Diploma **30%**
Some College **30%**
Bachelors+ **21%**

At Risk:

12% of households live below the poverty line



Staff Allocation

As described in the Key Personnel section, we have assembled a strong leadership team to develop the Upper Colorado Regional Flood Plan. Region 9 is the only watershed that our Project Manager will be leading, and it will be his primary focus. Although the percentage of time required to meet TWDB's deadlines may be higher than those listed below at times during the two-year project schedule, such as final preparation of the Technical Memo and Draft Plan, each leader on the HDR Team has committed to do what it takes to deliver on time and within budget.

ROLE	NAME	TIME COMMITMENT
Project Principal	Cory Shockley, PE	20%
Project Manager	Curtis Beitel, PE, CFM	75%
Deputy Project Manager	Heather Keister, PE, CFM	50%
Quality Control Lead	Eric Stewart, PE, CFM	25%
Planning Lead	Paula Jo Lemonds, PE, PG	50%
Floodplain Management Lead	Scott Rushing, PE, CFM	80%
Flood Mitigation Lead	Rodrigo Vizcaino, PE, CFM	80%
Legislative Lead	Wes Birdwell, PE, CFM	20%
Financial Lead	Mark Evans	20%
Stakeholder Outreach Lead	Susan Roth, PE, PMP	25%

Deliverables

As described in the contract with the TWDB, the UCRFPG is required to deliver three major deliverables: the Technical Memorandum by January 7, 2022, the Draft Plan by August 1, 2022 and the Final Plan by January 10, 2023. We have also established intermediate deliverables to keep the UCRFPG up to date on the latest progress.

We will begin Task 1 – Planning Area Description and Data Collection and Task 3A – Existing Floodplain Management Practices immediately upon NTP. The results of these tasks will be described in sections of the draft Technical Memorandum.

For the initial flood risk data, the TWDB will provide their floodplain quilt (100-year existing) and structure database including associated population data. In Task 2A and 2B the HDR team will develop the 500-year existing, 100-year future and 500-year future floodplains, and we will overlay aerial photos with the structure database to confirm structures and identify any new structures.



Intermediate Deliverable: Updated Flood Risk Geodatabase - July 31, 2021

Once the initial flood risk data is available, it will be uploaded to ArcGIS Online to be used as the base map for the interactive website for review and comment. As required by TWDB, we will hold the first of the two required public meetings in August, which will be a hybrid in-person and online meeting that will also serve as the kickoff and training for the interactive website.



Intermediate Deliverable: Public Meeting #1 – by August 15, 2021

Once the initial flood risk data is available, it will be uploaded to ArcGIS Online to be used as the base map for the interactive website for review and comment. As required by TWDB, we will hold the first of the two required public meetings in August, which will be a hybrid in-person and online meeting that will also serve as the kickoff and training for the interactive website.



Intermediate Deliverable: Summary of public input from interactive website – 1 week prior to each meeting

After the first public meeting, we will start Task 3B to work with the UCRFPG to establish flood mitigation and floodplain management goals. Using the results of Task 2 and Task 3, we will start Task 4A to establish the Flood Mitigation Needs, to identify a range of potential solutions to meet each need. TWDB requires at least one solution to mitigate the 100-year flood event. Some of the solutions will be existing flood mitigation projects from master drainage plans in various stages of development.



Intermediate Deliverable: Draft Technical Memorandum – by December 15, 2021

Once the Draft Technical Memorandum is available, we will lead a workshop with the UCRFPG to review and collect comments, to finalize it for submittal to the TWDB by January 7, 2022.



Major Deliverable: Technical Memorandum – by January 7, 2022

Immediately after the Technical Memorandum is delivered to the TCEQ we will start evaluating the flood mitigation evaluations, projects and strategies. Since the projects will be mostly existing flood mitigation projects in various stages of development, we will work with the sponsor of each project to collect the details required for inclusion in the plan and populate TWDB's geodatabase.



Intermediate Deliverable: Summary of evaluations, projects, and strategies - 1 week prior to each meeting

Once the initial set of existing projects is complete, we will upload it to ArcGIS Online to develop an updated base map for the interactive website. As required by TWDB, we will hold the second of the two required public meetings in August, which will be a hybrid in-person and online meeting that will also serve as the kickoff and training for the interactive website.



Intermediate Deliverable: Public Meeting #2 - by March 15, 2022

We will utilize a social media campaign and a series of follow up phone calls to drive participants to the website to comment on the evaluations, projects and strategies. Updated reports from the website will be provided prior to each UCRFPG meeting.



Intermediate Deliverable: Summary of evaluations, projects and strategies – 1 week prior to each meeting

Concurrently with the collection of public input, In Task 6A and 6B we will evaluate the impacts of each project on downstream flooding conditions and the State Water Plan, and Mark Evans will work with each entity responsible for implementing a project to define their likely financing in Task 9. We will also compile hazard mitigation plans and summarize flood response actions in Task 7. Wes Birdwell will develop administrative, regulatory and legislative recommendations in Task 8. The results of Tasks 6 through 9 will be summarized in sections of the Draft Plan.



Intermediate Deliverable: Draft Plan – by June 15, 2022

Once the Draft Plan is available, we will lead a workshop in early July 2022 with the UCRFPG to review and collect comments, to finalize it for submittal to the TWDB by August 1, 2022.



Major Deliverable: Draft Plan – by August 1, 2022

Once the Draft Plan is complete, we will upload it to ArcGIS Online and update the base map for the interactive website. We will utilize a third social media campaign and a series of follow up phone calls to drive participants to the website to comment on the Draft Plan.



Intermediate Deliverable: Summary of public input from interactive website – 1 week prior to each meeting

We will combine the public comments received from the interactive website with TWDB's review comments and address each comment to develop the Final Plan.



Intermediate Deliverable: Draft Final Plan – by November 15, 2022

Once the Draft Final Plan is available, we will lead a workshop in early December 2022 with the UCRFPG to review and collect comments, to finalize it for submittal to the TWDB by January 10, 2023.



Major Deliverable: Final Plan – by January 10, 2023



Curtis Beitel, PE, CFM, ENVSP

PROJECT MANAGER

FIRM

HDR Engineering, Inc.

INDUSTRY TENURE

27 years

EDUCATION

ME, Water Resources, University of Texas Arlington

BS, Civil Engineering, Texas A&M University College Station

REGISTRATIONS/CERTIFICATIONS

Professional Engineer, TX, No. 83213

Certified Floodplain Manager, No. 0497-03N

Envision Sustainability Professional

BENEFIT TO UCRFPG:

- 27 years of experience designing drainage improvements, conducting flood risk mitigation studies, and coordinating drainage and stream corridor master plans.
- Recently led the successful delivery of the Abilene Master Drainage Plan.
- Served for eight years as an Assistant Project Manager for the CF3R Joint Venture with Michael Baker, led 13 County-wide Digital Flood Insurance Rate Map (DFIRM) updates for FEMA Region VI as part of Map Modernization.
- Served as ASCE's representative on the Texas Division of Emergency Management's State Hazard Mitigation Team.
- Currently serving as one of eight members of the TWDB's Flood Technical Advisory Group.
- Serving as Project Manager for the San Angelo Master Drainage Plan, where he has implemented an innovative process for public input through an interactive ArcGIS website.

Relevant Experience

San Angelo Master Drainage Plan, City of San Angelo, TX. Project Manager. Curtis is leading this project to update the City's Master Drainage Plan (MDP) to develop and prioritize both localized and riverine flood mitigation CIP improvements. Development of the plan included data collection (effective H&H models from the USACE, 2018 LiDAR, GIS inventory), an initial field visit to the creeks, workshops with City staff to select 35 problem areas to evaluate and develop the ranking system, site reconnaissance surveys to each problem area, and development of Flood Mitigation strategies and conceptual Flood Mitigation CIP Projects for the top 10 problem areas, including potential WQ enhancements. Public input was obtained through an ArcGIS website of the City showing a map of the FEMA floodplains and the 35 known flooding locations. The website allowed citizens to drop a pin and fill out a form to describe their drainage problem. The City hosted the website over the course of two weeks. Curtis also assisted the City with abridged applications for two of the Flood Mitigation Projects (FMPs) in June 2019. Using the ranking system and public input, we will prioritize and rank the 10 FMPs in the drainage CIP plan, laying out a 20-year Road Map in the MDP report.

Abilene Master Drainage Plan, City of Abilene, TX. Project Manager. Curtis developed and prioritized local and riverine flood mitigation CIP improvements. He led workshops with City staff to select 20 problem areas, site reconnaissance visits to each problem area, and developed conceptual improvements for the top 10 problem areas, including potential WQ enhancements. The Drainage CIP plan will be combined with the City's current Phase 1 MS4 and operations and maintenance programs to update their Stormwater Utility financial plan and lay out a roadmap to reduce flood risk over the next ten years.

Stormwater Master Plan, City of Waco, TX. Project Manager. Curtis assisted the City in securing a TWDB grant for the Flat Creek Flood Protection Plan. The project includes a new Drainage Design Criteria Manual, the establishment of new Post Construction Stormwater Criteria, development and prioritization of 18 flood mitigation CIP projects, establishing a stormwater utility fee, and LOMR submittals for 55-miles coordinated with FEMA's RiskMAP Mid-Brazos Watershed project.

Martin Road Lake Repairs, City of Amarillo, TX. Technical Lead. After the City increased the playas' flood storage volume, several rainfall events during and after construction eroded significant rills in the slopes of both the west and east playas and undermined the segmental concrete block flumes at several locations. We designed a long-term solution to stabilize the slopes around Martin Road Lake and protect City-owned infrastructure built within the central channel areas. Curtis led a series of public meetings to refine the fishing amenity and developed an XPSWMM 2D hydraulic model to size future improvements. Since erosion was threatening a street, we prepared emergency plans and specifications in three weeks to advance the repairs in that area.

Modeling, Assessment, and Awareness Project (MAAPnext), Harris County Flood Control District, Harris County, TX. Task 3 - FEMA Products Lead.

The HCFCD selected us to lead the Program Management team to complete an update to Harris County's Flood Insurance Rate Maps. The project included studies of 22 major watersheds with updated hydrologic analyses, 1D/2D hydraulic models, and the development of detailed flood maps and risk products to improve residents' understanding of flood risks. Over 1,000 miles of improved and natural streams will be studied in detail. MAAPnext also includes an important communication and public outreach program. We provided the technical basis for the study effort in 2018 and the project will be completed in 2023.

Bexar County Flood Warning System, San Antonio River Authority, TX. Project Manager. For the San Antonio River Authority, led the development of an Innovyze FloodWorks system to use the raw NEXRAD feed and 182 miles of InfoWorks RS to forecast flood elevations at 142 locations in the Salado Creek, Upper San Antonio River, Leon Creek, Cibolo Creek and Medina River basins. The results are served to a website at the City/County EOC.



Heather Keister, PE, CFM

DEPUTY PROJECT MANAGER

FIRM

Freese & Nichols, Inc.

INDUSTRY TENURE

17 years

EDUCATION

MS, Civil Engineering, Texas Tech University

BS, Civil Engineering, Texas Tech University

REGISTRATIONS/CERTIFICATIONS

Professional Engineer, TX, No. 100095

Certified Floodplain Manager, No. 2052-11N

BENEFIT TO UCRFPG

- Background includes drainage analysis and design, transportation, infrastructure, and public works projects, with a focus in stormwater management and management of multi-discipline teams
- Her specialty includes analysis of west Texas basins and her background includes extensive H&H modeling using the Interconnected Channel and Pond Routing (ICPR) model, and HEC-HMS and HEC-RAS.
- Proven experience reviewing and developing criteria and Capital Improvements Plans and working with project stakeholders as well as the public.
- Assists communities with Texas Water Development Board Clean Water State Revolving Fund (CWSRF) and Drinking Water State Revolving Fund (DWSRF) funding applications and implementation processes.

Relevant Experience

Midland and Jal Draw Watershed Study, City of Midland. Project Manager. The City of Midland was experiencing rapid population and development growth due to a recent surge in oil and natural gas development activity. With the increased population and demand for developable land, the City requested assistance from FNI in determining development impacts on existing and future stormwater infrastructure facilities in this watershed. FNI performed a detailed hydrologic study of the Jal Draw (204.4 square-miles) and Midland Draw (135.2 square-miles) watersheds for existing and fully developed land use conditions. The FNI team also performed a detailed hydraulic analysis of the Jal Draw (7 miles) and Midland Draw (7 miles) streams. Existing and fully developed discharge 100-year floodplains were delineated to identify existing flood-prone areas and a future channel corridor planned to guide future development within these areas. Through coordination with City staff and affected landowners and developers, FNI formulated proposed channel and crossing alignments and sizes. These proposed dimensions will be utilized for planning purposes by City staff and landowners in regulating future development.

Stormwater Utility Fee, City of Midland, TX. Client Representative. FNI worked with the City to implement a stormwater utility. FNI worked closely with the City through a process-based approach to appropriately assign stormwater utility charges for developed properties to associated utility accounts, factoring in properties with multiple utility accounts, properties with no utility accounts, properties with multiple tenants, and other non-standard circumstances on an impervious area basis. FNI prepared public outreach materials in support of this new program.

Bell Street Roadway and Utility Improvements, City of San Angelo, TX. Project Manager. FNI designed roadway and utility improvements for Bell Street, from Rio Concho Drive to US 277. The design included a four-lane, curb-and-gutter section with sidewalks and signals for approximately 2 miles, as well as significant water (16") and sewer (12") utility lines and crossing of a jurisdictional stream at Angelo Draw. FNI prepared three plan sets to facilitate phasing of the project. During design, FNI coordinated with franchise utilities and the City's ROW department to minimize impacts during construction and to acquire needed ROW and easements. FNI coordinated with franchise utilities that needed to be relocated for the construction of the road, water and wastewater improvements.

Infrastructure Master Plan, Andrews Economic Development Corporation, Andrews Economic Development Corporation, TX. Project Manager. FNI is providing an Infrastructure Master Plan (IMP) to support the City's Comprehensive Plan developed in 2013. The goal of the master plan is to create more vibrant, healthy and complete neighborhoods across the municipality while creating long-term affordability for both the City government and residents. Efficient management, responsible operation and judiciously targeted growth of water, wastewater, and stormwater infrastructure play a major role in the pursuit of these goals. The IMP supports the City's Comprehensive Plan by verifying that there is enough infrastructure capacity in the right areas of the municipality at the right service levels at the right time to accommodate development and redevelopment to address the City's expected growth over the next 10-20 years. The scope of work includes a water storage and distribution plan, and a drainage and stormwater management plan.

On-Call Stormwater Engineering Services, City of San Angelo, TX. Project Manager. As part of FNI's On-Call Stormwater Services contract, FNI completed a hydrologic analysis of the 640+ acre Avenue P watershed, a historically flood-prone area. FNI designed conceptual improvements to reduce the peak flows down Avenue P, prepared an OPCC for recommended improvements, and worked with the City to acquire land for the proposed improvements. FNI carried these conceptual improvements forward with design of a detention basin to improve flooding conditions adjacent to Avenue P.

Northwest Lubbock Drainage Improvements Project (Phases 1-3), City of Lubbock, TX. Project Manager. Heather created the ICPR model of the system; evaluated feasibility of potential routes; worked with the City to select the optimum route; coordinated with Texas Tech and private landowners to secure necessary easements; coordinated with regulatory agencies, such as the U.S. Army Corps of Engineers (USACE), TxDOT, and TWDB; prepared design documents; assisted with bid phase services.



Cory Shockley, PE

PROJECT PRINCIPAL

FIRM

HDR Engineering, Inc.

INDUSTRY TENURE

21 years

EDUCATION

BS, Hydrology & Water Resources Engineering, Tarleton State University

REGISTRATIONS/CERTIFICATIONS

Professional Engineer, TX, No. 94761

BENEFIT TO UCRFPG:

- Proven experience with complex projects providing keen insight for successful delivery
- Recently developed flood risk reduction plans for the City of Taylor, City of Gainesville, City of Austin, and Travis County.
- Significant project experience with water resources, surface water, regional planning, and cumulative impact experience resulting in a strong technical understanding.
- Understanding HDR's quality program and how to implement and oversee this program on a large project providing confidence in HDR's deliverables.

Relevant Experience

Lake Palo Pinto County Storage Restoration & Turkey Peak Dam, Palo Pinto County Municipal Water District, TX. Sr. Project Manager. HDR is the preferred engineering consultant for the District and has been since the 1980s. Cory's current role on the project is Sr. Project Manager for the final design and project implementation support tasks. The project includes the construction of the on-channel Turkey Peak Dam, which will facilitate a 22,500 acre-feet expansion of the District's existing Lake Palo Pinto. This project will supply the District with an additional 6,000 acre-feet per year of firm supply to meet future needs. Cory leads a multi-office, multi-discipline design team through the final design effort. In this role Cory developed a detailed quality management plan and coordinated with task leads on quality documentation and facilitating quality assurance checks throughout the process. HDR's services included technical analysis of water availability and system optimization, assistance in negotiations with contesting parties, 404 and related environmental permitting support, and coordination of permit special conditions.

Water Supply Planning Analysis & Cedar Ridge Reservoir Water Right Application Support, City of Abilene. Sr. Water Resource Engineer.

Cory assisted the City of Abilene in determining the need for future supply sources and determining the preferred supply to pursue meeting future needs. Several water supply options were evaluated from a supply, cost, and environmental impacts standpoint. The preferred project considering these criteria was the Cedar Ridge Reservoir. Project work shifted to several aspects of evaluating this project for potential permitting by the City for use as a future water supply. Cory provided significant amounts of yield analysis using the Brazos WAM and an updated version of the Brazos WAM, referred to as the Brazos Mini-WAM that extended the period of record through June 2008 for the Clear Fork of the Brazos Basin down through Possum Kingdom Reservoir. Cory participated in the development of the water right application, the supporting technical memorandum, and authored the section on the water availability analysis. Cory provided water right permitting support to the City in the successful attempt at securing a water right to allow the City to divert effluent from its water reclamation facility at several points throughout its system, including Fort Phantom Hill Reservoir resulting in an increase in system yield from this reuse supply.

Brazos Water Availability Model Update, Texas Commission on Environmental Quality, TX. Project Principal.

Cory served as the Project Manager for the development of the 2014 Long Range Water Supply Plan (LRWSP) for the City of Dallas, Texas. The purpose of the plan is to identify a feasible plan of action that will allow Dallas to meet its water supply demands and meet the needs of its customers through 2070 and beyond. This objective was met through forecasting demands, quantifying available supplies, determining needs, identifying and evaluating strategies, and developing a sustainable, yet flexible, integration plan. Climate variability was incorporated into the supply analysis by considering the effects of increased air temperature on evaporation at Dallas' seven supply reservoirs. Cory led the effort to identify, evaluate, and rank over 300 potential water management strategies using a criteria based scoring system. This task led to six recommended strategies and eight alternatives strategies that comprise the 50-year water supply plans for the City of Dallas. The development of the plan included a numerous meetings with Dallas staff, customers and other interested stakeholders where Cory lead the technical discussion and presentations to facilitate meaningful feedback for inclusion in the plan. A significant focus of the Dallas LRWSP is on implementation and the next steps necessary to develop the recommended strategies identified in the plan. HDR, under Cory's leadership, provided detailed implementation steps and guidelines for the City to incorporate into their annual capital budgeting process. The resulting final report details many of the next steps necessary for Dallas to consider, such as additional feasibility studies, permitting, design and construction, as strategy implementation occurs in the future.

Nueces Basin Bay & Estuary Stakeholder Committee Technical Consultant, TWDB, TX. Project Manager. Served as the Nueces Basin Bay and stakeholder committee technical consultant performing analysis and evaluations of the proposed Senate Bill 3 environmental flow standards in the Nueces Basin. Worked with a wide variety of basin stakeholders to receive and present information on the potential effects of the proposed environmental flow standards on water supply projects and streamflows in the Nueces Basin and Estuary. Coordinated with TWDB and other state staff throughout the performance of the project.

City of Amarillo Comprehensive Water Master Plan, Amarillo, TX. Water Production Task Lead. HDR, led by Cory Shockley performed the following services. Provided estimates of the reliability of supplies from the City's existing sources throughout the 50-year planning horizon. Compared estimates of reliable supplies to projected demands to determine future water supply needs through 2070. Evaluated alternatives for connecting future groundwater supplies in Roberts County including participation in the CRMWA II pipeline project and an independent connection to the future well field.



Eric Stewart, PE, CFM

TECHNICAL ADVISOR/QC

FIRM

HDR Engineering, Inc.

INDUSTRY TENURE

21 years

EDUCATION

MS, Environmental Engineering (Water Resources), Rice University

BS, Civil Engineering, Rice University

BA, Environmental Science & Engineering, Rice University

REGISTRATIONS/CERTIFICATIONS

Professional Engineer, TX, No. 95907

Certified Floodplain Management ,No. 1215-07N

BENEFIT TO UCRFPG:

- 21 years of experience in all phases of project development from conceptual planning through design, bid, and construction, which adds additional valuable insight when planning for food protection measures.
- Well-versed in best practice criteria and methods related to FPP, analysis, and design, which will help UCRFPG develop strategies for integration into state food planning.
- Experienced in working across Texas, which will benefit the UCRFPG through lessons learned from engaging stakeholders with diverse interests.

Relevant Experience

City of San Antonio Drainage Master Plan, San Antonio River Authority. Project Engineer. Watershed master planning to assess potential drainage projects within three City of San Antonio council districts in order to identify candidates for the upcoming 2017 bond program. Project assessment for tasks included establishing existing conditions, developing project alternatives and cost estimates, evaluating project impacts, and calculating cost/benefit ratios to be used for project ranking.

Travis County Drainage Basin Study & CIP Program, Travis County, TX. Project Engineer. County-wide H&H CIP assessment of riverine flooding, creek crossings, and subdivision storm drain flooding. Developed flood mitigation solutions and a prioritized CIP project list and associated costs. Project partially funded by TWDB grant which HDR facilitated for the Owner. To date, HDR has developed PS&E for four of the highest ranked flood mitigation projects.

Waco Drainage Master Plan, City of Waco, TX. QC Engineer. QC Engineer for City of Waco's Drainage Master Plan update which includes TWDB grant funding, CIP project identification and ranking, and watershed scale H&H modeling and floodplain mapping.

Fort Branch Creek Watershed Integrated Solutions Master Plan, City of Austin, TX. Project Manager. Holistic watershed planning study evaluating multi-mission solutions to flood hazard risk, erosion mitigation and water quality enhancement. Developed a quantitative ranking system to prioritize each reach. HDR was retained to implement final design, bid phase, and construction phase services for the two highest priority reaches totaling over 8,000LF of stream.

Pecan Creek Flood Damage Reduction, City of Gainesville, TX. Project Engineer. Following the Storm Master Plan completed by HDR, PS&E were completed for the highest priority flood reduction project which included \$12M of improvements for 7,860 LF of stream, five new bridges, significant utility relocations, and over 22 acres of ecological mitigation. Eric also provided FEMA coordination, floodplain mapping and modeling, and LOMR support.

Jamestown Tributary Rehabilitation Project, City of Austin, TX. Project Manager. Project Manager for the design, bid, and construction phase services for over 2,000LF of storm drain improvements, culvert and bridge upgrades, evaluation of green infrastructure solutions, over 2,800 LF of bank stabilization and riparian enhancement, and floodplain modeling and remapping with Atlas 14 updates.

Tanglewood Forest Regional Detention Facility Improvements, City of Austin, TX. Project Engineer. Final design and construction administration of drainage improvements to an existing regional detention facility. Eric developed H&H models, final design of modifications to the pond embankments, emergency spillway channel, outlet works, and replacement of downstream culverts providing regional flood mitigation and flood safety improvements for the neighborhood.

Fort Branch Creek Reach 6&7 Channel Restoration, City of Austin, TX. Project Manager. Eric was Project Manager on a study, PS&E, and construction administration project to address erosion, flooding, and riparian enhancement along 1,700 LF of urban channel.

Bexar County Flood Warning System, San Antonio River Authority, TX. Project Engineer. Final design and construction administration of drainage improvements to an existing regional detention facility. Eric developed H&H models, final design of modifications to the pond embankments, emergency spillway channel, outlet works, and replacement of downstream culverts providing regional flood mitigation and flood safety improvements for the neighborhood.

KellyUSA Flood Protection Services, San Antonio, TX. Project Engineer. Project Engineer for project to mitigate flood problems related to interior drainage deficiencies and floodplain issues related to Leon Creek at facility.



Paula Jo Lemonds, PE, PG

TECHNICAL ADVISOR/QC

FIRM

HDR Engineering, Inc.

INDUSTRY TENURE

20 years

EDUCATION

MS, Geological Engineering, Colorado School of Mines
BS, Geology, Texas A&M University

REGISTRATIONS/CERTIFICATIONS

Professional Engineer, TX, No. 99449
Professional Geoscientist, TX, No. 10173

BENEFIT TO UCRFPG

- TWDB project management experience, including the 2021 Llano Estacado (Region O) Regional Water Plan, resulting in zero learning curve, enabling the team to focus on the task at hand.
- Experienced in seeking consensus among stakeholders and presenting technical results to a wide range of audiences, including the general public.
- Experience with screening potential methodologies and determining technical approaches to progress projects forward.

Relevant Experience

2021 Llano Estacado (Region O) Regional Water Plan, TWDB, TX. Project Manager. As the Technical Consultant Project Manager for the development of the 2021 Llano Estacado (Region O) Regional Water Plan, Paula Jo led and participated in the development of water management strategies to meet identified water needs in the region, including: brackish groundwater desalination, groundwater development, blended water options, interregional strategies, reuse, and water conservation. Her efforts have included evaluating the cumulative impacts of water management strategies and managing TWDB project budgets, deliverables and deadlines.

Developed Stormwater Water Rights Permitting Support, City of Lubbock, TX. Project Engineer. The City has begun securing additional water rights and bed-and-banks transfer permits to augment the city's existing water supplies and filed a permit application with the state to utilize "developed" water that is available as a result of the city's storm water system creating flows in the North Fork of the Double Mountain Fork of the Brazos River (North Fork) that would have otherwise been captured by playa lakes and lost through evaporation or percolation into the ground. Ms. Lemonds developed relationships between storm event runoff volumes and rainfall depth for 26 storm water outfalls and associated regression equations and used the regression equations to estimate monthly volumes of storm runoff from the "contributing" and "noncontributing" watershed areas of the Lubbock storm water system. Using the Brazos Water Availability Model (WAM), Ms. Lemonds determined the contribution to the reservoir firm yields from unappropriated flows available at junior priority, unappropriated flows available assuming subordination of a specific water right, current and future reclaimed water discharged to the North Fork at a proposed reservoir, and "developed" water from the City's storm water system. Ms. Lemonds also determined the effects of the proposed permits on the Brazos River Authority's system reservoirs.

TPDES Major Permit Amendment, City of Midland, TX. Project Manager. Paula Jo assisted the City of Midland with a major amendment of TPDES Permit No. WQ0010223001. She served as Project Manager to transition the City from land application of treated effluent to their first-ever stream discharge permit.

TPDES Permit Compliance & Reporting, City of Midland, TX. Project Manager. Paula Jo served as the Project Manager for completing and receiving TCEQ approval of the Groundwater Monitoring Plan and Nitrate Study Plan for two City-owned land application sites to comply with requirements set forth in the City's TPDES permit. HDR has produced annual groundwater monitoring reports since 2016 and continued to coordinate with TCEQ related to TPDES permit compliance.

Fort Phantom Hill Reservoir Operations, City of Abilene, TX. Project Engineer. Completed numerous Water Availability Model (WAM) scenarios to assess Fort Phantom Hill Reservoir evaporation and corresponding lake elevations beginning the simulations at full capacity and present capacity for various diversion amounts at both drought and average hydrologic conditions.

Cedar Ridge Reservoir Evaluation of Alternatives, City of Abilene, TX. Project Engineer. Project engineer for evaluation of all previously recommended water supply strategies for the City of Abilene. Strategies included alternative reservoirs, scalping operations, ground-water development, aquifer storage and recovery (ASR), reuse, and expansion of water treatment plants. Reservoir yields were determined using TCEQ water availability models. Costs for all strategies were updated using similar assumptions and indexed to a common year. The project also included an evaluation of water quality, energy intensity and environmental impacts for all strategies.



David Dunn, PE

TASK 1 - PLANNING DESCRIPTION

TASK 6 - IMPACTS OF REGIONAL FLOOD PLAN

FIRM

HDR Engineering, Inc.

INDUSTRY TENURE

31 years

EDUCATION

MS, Civil Engineering, Texas A&M University

BS, Civil Engineering, University of Nevada

REGISTRATIONS/CERTIFICATIONS

Professional Engineer, TX, No. 82630

BENEFIT TO UCRFPG:

- 31-year old career with a specific emphasis on water issues in Texas.
- Over 20 years of experience with the TWDB's regional water planning process resulting in unique knowledge of the TWDB's processes.
- Experience with both flood mitigation and water supply planning processes and technical evaluation of flooding solutions.

Relevant Experience

Brazos G Regional Water Plans (2006, 2011, 2016, and 2021), Brazos River Authority/TWDB, TX. Project Manager. Project Manager, supervised the development of the 2006, 2011, 2016 and 2021 Brazos G Regional Water Plans. Responsible for directing staff in analyses of surface and ground water availability using the Brazos River Basin WAM, and the Northern Edwards (BFZ), Trinity, Edwards-Trinity (Plateau) and Dockum, and Carrizo-Wilcox Aquifer GAMs. Supervised and personally performed evaluations of various water management strategies involving both surface and ground water, and conjunctive use of both sources. Responsible for presenting technical information to the Regional Water Planning Group at public meetings and in final reports presenting the 2006, 2011, 2016 and 2021 Plans.

Lubbock Dam Safety Evaluations, City of Lubbock, TX. Project Manager. David supervised a dam safety analysis of McMillan Dam (Buffalo Springs Lake) and Lake Ransom Canyon. Project scope included hydrologic and hydraulic evaluation (Probable Maximum Flood) of the dam spillways and coordination with the reservoir owners concerning findings.

Williamson Creek Flood Control Alternatives, City of Austin, TX. Project Manager. David supervised the analyses of alternative flood control modifications to Williamson Creek. Work included coordination of alternative/conflicting hydraulic models and modeling methodologies proposed by various entities involved with the project. Project sponsors, included the City of Austin, U.S. Army Corps of Engineers, Texas Water Development Board, Lower Colorado River Authority, Travis County and City of Sunset Valley.

Crystal Brook Flood Control Project, City of Austin, TX. Project Engineer. Performed hydraulic modeling and sediment transport analyses to determine the optimum weir geometry (height and width) controlling overflow into a flood bypass channel at the Crystalbrook Flood Control Project, Phase II. Weir geometry was optimized so as to maintain sediment continuity through the bypassed reach. Work included flow-duration analysis of 15-minute streamgage data and computation of the expected balance of sediment loads entering and passing through the bypassed reach. Recommended transition geometry for the confluence of the bypass channel and main channel at the downstream end of the bypassed reach. Supervised design review of bank protection features along portions of the main channel adjacent to a proposed floodwall.

Water System Evaluation, Confidential Client, TX/NM. Project Manager. As Project Manager, David summarized groundwater, surface water and reclaimed water sources in a 51-county area in west Texas and southeastern New Mexico for a client evaluating the development of a water system to serve oil and gas development activities in west Texas and eastern New Mexico.

Stream Gage Ratings, Lower Colorado River Authority, TX. Project Manager. David performed hydraulic and standard rating curve analyses to develop full-range stage-discharge ratings at 22 new streamflow gaging stations to be operated by the LCRA. Analysis included development of three complex weir ratings and a two-parameter slope rating. Developed a spreadsheet analysis tool to develop and analyze ratings, and compute expanded rating tables using standard USGS methodologies. Supervised development of computer program to plot USGS-style rating curves within CADD program. Performed six indirect discharge measurements (slope-area and flow-over-dam methods) at five sites following substantial flood peaks.

Wastewater Discharge Site Evaluations, City of Lubbock, TX. Project Manager. David participated on a project team with other consultants investigating alternative wastewater discharge locations and volumes from the City's wastewater treatment plant into the North Fork of the Brazos River. Evaluated various water supply benefits of the discharges, and completed a hydraulic evaluation of the effects of increased base flows on low water crossings downstream from the City.

Detention Basin Design Alternatives Analysis, City of Austin, TX. Project Manager. Developed the scope of work and analysis methodology, and supervised the analyses of alternative detention basin design methodologies from the perspective of mitigating downstream erosion of receiving channels. Work included long term continuous simulation modeling using the SWMM model, and the design of alternative flood control ponds using TR-20.



Jim Carillo, AICP

TASK 1 - PLANNING DESCRIPTION

FIRM

Halff Associates, Inc..

INDUSTRY TENURE

35 years

EDUCATION

BS, Landscape Architecture, Texas A&M University

REGISTRATIONS/CERTIFICATIONS

Professional Landscape Architect, TX, No. 1377

American Institute of Certified Planners No. 009875

BENEFIT TO UCRFPG:

- More than 35 years of experience in planning & design, with a specific focus on planning for local & regional entities.
- Unique point of view from both planning & design perspective to communities & regions
- Held a leadership role in the development of more than 100 planning processes, including citywide comprehensive planning, active transportation, bicycle/ trail planning, downtown/special area planning & park/recreation master plans.
- All of his efforts have highlighted drainage corridors & riparian areas as key form-givers, amenity features and ways to connect natural areas/resources to the regions around them.

Relevant Experience

Chadbourne Street Streetscape Master Plan, City of San Angelo, TX. Planner. Planner for the 2017 development of concepts for a mile-long section of Chadbourne Street, the central “main” street of downtown San Angelo. The plan envisions the provision of a new median and landscaping along Chadbourne Street, extensive intersection bulb-outs to enhance pedestrian connectivity, on-street bicycle facilities via shared land markings, new “nodal” third places along the street. Cost estimates for the proposed improvements were prepared, and a companion grant request for enhancement funding was also developed as part of the master plan.

2015 Midland Trails Master Plan, City of Midland, TX. Lead Planner & Project Manager. Lead Planner and Project Manager for the first trail and bicycle plan for the City of Midland. Adopted in March of 2015, the trails master plan analyzes the potential draws and drainage corridors within the city of Midland to establish a network of off-street trails. The plan also makes recommendations to improve the city’s designated bike routes by creating safer and more appealing on-street protected and buffered bike lanes.

Odessa Parks Master Plan, City of Odessa, TX. Project Manager. Project Manager for updating master plan from previous plan. This effort establishes a long-term framework or goals and objectives for the city’s effort to revitalize parks. The plan also paid special attention to the opportunity for greenway corridors and trails throughout the city and the emerging “Medical Corridor” in the downtown area. Opinions of probable cost for citywide improvements and operations/maintenance were provided for assistance in realizing future improvements and in prioritizing for bond elections. The master plan received a Region 1, 8 and 9 Excellence in Planning award from the Texas Recreation and Parks Society.

2014 Odessa Parks & Recreation Master Plan, City of Odessa, TX. Project Manager. Project Manager for update of the city’s 2004 Parks and Recreation Master Plan, also prepared by Halff Associates, Inc. This master plan update focuses on bring the existing parks up to standard with specific improvements and recommendations needed for each park. Long term recommendations include future aquatic facilities, development of parkland in the northern and eastern sectors of the city, and the development of more athletic fields for softball, baseball and soccer

Odessa Parks, Recreation, Open Space and Urban Landscapes Master Plan, Odessa, TX. Project Manager/Principal-in-Charge. Project manager and Principal-in-Charge for the development of a 10-year update of the City’s Parks and Recreation Master Plan. Facing high growth spurred by the oil and gas boom in the Permian Basin, the plan will help guide the need for new athletic facilities, as well as indoor recreation, trails, basic park facility needs, and overall urban visual quality enhancements.

Sweetwater Parks Master Plan, City of Sweetwater, TX. Principal-in-Charge. Principal in charge responsible for the City’s first park master plan (which also included the creation of a trails plan). The City’s desire was to develop a parks master plan to identify key contributions to improve the community’s quality of life standards. The plan focused on developing a park system that promotes proximity, variety, and quality in the City’s park facilities and recreational offerings. The plan identified a series of capital projects that would contribute both to adding and upgrading amenities to benefit residents as well as attracting visitors to the area.

Snyder Comprehensive Plan, City of Snyder, TX. Principal-in-Charge. This new Comprehensive Plan replaces the city’s previous plan which was completed in the 1980s and lays out a new course for Snyder over the next two decades. The plan focuses on the revitalization of the downtown area, creating new transportation solutions, redeveloping older areas of the city, and enhancing park and trail opportunities citywide.



Sunit Deo, PE, CFM

TASK 2 - EXISTING / FUTURE FLOOD RISK ANALYSIS

FIRM

HDR Engineering, Inc.

INDUSTRY TENURE

20 years

EDUCATION

MS, Environmental Engineering, Texas A&M University

BE, Chemical Engineering, University of Mumbai

REGISTRATIONS/CERTIFICATIONS

Professional Engineer, TX, No. 104943

Certified Floodplain Management ,No. 1794-10N

BENEFIT TO UCRFPG:

- Over 20 years of experience in water resources engineering including hydrology & hydraulics, floodplain management, and FEMA floodplain analysis & mapping
- Expert in 1D/2D hydraulic software, especially HEC-RAS 2D, where complex hydraulic solutions were needed, and innovative techniques such as rain-on-grid were used.
- Adept in GIS and its applications for water resources engineering to use it systematically and efficiently for the project

Relevant Experience

Williamson Creek Flood Risk Reduction Project, City of Austin, TX. Project Manager. Sunit is managing this feasibility study to update previous flood risk modeling and mapping and identify viable risk reduction solutions for Middle Williamson Creek. HEC-RAS 1D/2D combined model is used to accurately model complex flooding scenarios and map inundation extents.

Annual Bridge Replacement Program for Souther Regions, UPRR, TX. Project Manager. HDR provides services for UPRR's annual bridge replacement program throughout Texas and Louisiana including in Upper Rio Grande Basin Region. Sunit has worked on this program initially as H&H Task Leader and later as a Project Manager from year 2012 onwards on over 60 bridge structures. Currently as a Project Manager, his responsibilities include managing budget and schedule, managing survey crew for H&H field survey, oversee H&H analysis for existing structures and proposed alternatives, and preparing recommendation form for UPRR to reduce flooding risk for the proposed structure.

Red Bluff Dam Breach Analysis Inundation Mapping, Dam Safety Update and Emergency Flood Response, TX. Task Lead. Red Bluff Dam is a 106-foot high dam on the Pecos River used to supply seven irrigation districts. Sunit was a Project Engineer for a dam safety update evaluation as required by TCEQ for this high-hazard dam, and subsequent spillway capacity improvements design. He was responsible for H&H spillway analyses, including a PMF analysis, and development of an Emergency Action Plan, including a full breach analysis, inundation mapping, and developing various alternatives for proposed spillway configurations. He assisted in emergency flood responses and EAP implementation during 2014 storm event.

Texas State Soil & Water Conservation Board (TSSWCB) Watershed Rehabilitation Projects, TX. Project Manager. The TSSWCB awarded HDR an IDIQ contract for rehabilitation of aging NRCS flood control dams. Sunit started as a lead H&H Engineer and currently manages this project to assess high hazard dams for NRCS to identify high priority watershed rehabilitation projects to aid in identifying short term needs requiring action. Since 2016, he has worked on 78 structures for site inspection, hydrologic/ hydraulic analyses, dam breach inundation analysis and mapping, alternative evaluations, development of repair and maintenance actions, and risk assessments.

Carson Creek Flood Risk Reduction Project, City of Austin, TX. Assistant PM/Lead Engineer. The goal of this project was to update previous flood risk modeling and mapping and identify viable risk reduction solutions for Lower Carson Creek. Sunit was Assistant PM and a lead engineer. His responsibilities included updating hydrologic modeling and developing & validating a new HEC-RAS 2D model, floodplain mapping, and evaluating risk reduction alternatives.

Pecan Creek Flood Damage Reduction Project & LOMR Submittal, USACE Fort Worth, Gainesville, TX. Project Engineer. This project provides flood conveyance improvements to a 1.5-mile reach of the Pecan Creek, including replacement of six roadway bridges. Sunit assisted in developing hydraulic models using HEC-RAS for proposed bridges. He also assisted in preparation and submittal of LOMR application to FEMA.

Cedar Ridge Reservoir, City of Abilene, TX. Project Engineer. Sunit served as Project Engineer for the hydrologic and hydraulic modeling and inundation mapping for the feasibility study of a proposed 227,000 ac-ft large, high hazard water supply reservoir. Mr. Deo's duties included the development of the design storm and PMF hydrology for the 2,728 sq. mi. watershed including model verification using historical events. He also developed the reservoir model, establish dam heights, and size principal and emergency spillways.

San Antonio Drainage Master Plan, City of San Antonio, TX. Project Engineer. This project included development of a drainage master plan by performing complete assessment of identified areas within Council Districts 1, 3 & 5 and developing recommendation for each. As a Project Engineer, Sunit's role was to identify and assess problems within the project area and performing complex H&H analysis for existing conditions and proposed alternatives.

Harris County MAAPnext, Harris County Flood Control District, TX. Project Engineer. This project is to support HCFCD and FEMA to develop detailed flood risk and hazard maps for the county. Sunit serves as Project Engineer leading the hydraulic modeling task for the Hunting Bayou watershed study. He is assisting in the development of a complex 1D/2D HEC-RAS model for 21 stream miles.



Krista Melnar, PE, CFM, PMP

TASK 2 - EXISTING / FUTURE FLOOD RISK ANALYSIS

FIRM

Freese & Nichols

INDUSTRY TENURE

21 years

EDUCATION

BS, Biological Resources Engineering, University of Maryland

REGISTRATIONS/CERTIFICATIONS

Professional Engineer, TX, No. 95596

Certified Floodplain Management, No. 0832-05N

Project Management Professional, No. 2857090

BENEFIT TO UCRFPG:

- Focused career on pursuing flood disaster resilience for FEMA and communities in Texas.
- Expert knowledge of FEMA's programs, policies/standards, and has earned trusted relationships across FEMA within Region VI and Headquarters.
- Proven leader - able to deliver innovative solutions on time and budget, while coordinating with a broad stakeholder group to achieve results.
- More than 20 years of experience addressing today's water resources challenges in stream restoration, stormwater management, and flood disaster resilience.

Relevant Experience

San Jacinto Regional Watershed Master Drainage Plan, Harris County Flood Control District, TX. Senior Advisor. FNI is conducting a comprehensive flood mitigation master drainage plan of the San Jacinto River Basin's major streams, which will identify vulnerability to flooding hazards that result in loss of life and property, develop approaches to enhance public information and flood level assessment capabilities during a disaster, and evaluate flood mitigation strategies that can be implemented both near-term and over the long-term to improve community resilience.

Brooks Development Stormwater Placement Manual and Technical Support, San Antonio River Authority, TX. Group Manager. FNI is providing the development of the design guidelines for the San Antonio River Authority (SARA), Brooks Development Authority and its consultant team as a guidance document to the implementation of green and gray infrastructure sustainable solutions in the specific context of the Brooks Development site. FNI's efforts will inform and support Brooks Development Authority goals for sustainability, SARA's goals for low impact development, and the City of San Antonio's (SA) Tomorrow Plan recommendations.

Professional CTP Services, San Antonio River Authority, TX. Project Manager. Implemented the Mapping Activity Statement for the Medina Watershed, including performing discovery, LiDAR processing, H&H analysis, floodplain mapping. Developed the suite non-regulatory datasets. The project also included supporting San Antonio River Authority as a Letter of Map Revision delegate by performing MT-2 case reviews and processing MT-2 cases.

Region VI IDIQ Contract, FEMA, TX. Project Director. Responsible for business and technical proposal development, contract negotiations, project management, budget and schedule tracking, subcontractor management, invoicing, MIP performance, and quality assurance for contract valued at more than \$20 million. Managed more than 25 county-wide flood insurance studies from scoping to effective. Met with FEMA Region VI quarterly to discuss overall program management and contract performance. Successfully turned contract performance around for Watershed Concepts.

Flood Insurance and DFIRM Production, FEMA Region VI - Texas, Oklahoma, New Mexico, Louisiana, FEMA, TX. Project Manager. Responsible for all projects assigned under this contract including, managing team of engineers, GIS specialists and sub-contractors to execute \$17M of H&H analysis, floodplain mapping and DFIRM development projects from 2007-2011. Responsible for proposal development, contract negotiations, scope/budget monitoring (using EVMS), subcontractor coordination, client communication/ coordination, reporting (including updating the MIP), kickoff meeting facilitation, outreach, training, schedule development/ monitoring, risk management, change management, and QC. Primary point of contact for FEMA engineers for issue management and resolution. Worked closely with the RMC and FEMA on all phases of production; from scoping, production, and post preliminary processing.

Production and Technical Services for the Risk MAP, HMTAP, and Building Sciences Program, FEMA, TX. Deputy Project Director/Acting Project Director. Responsible for the nationwide \$600 million FEMA contract that provides flood hazard and risk products and response and recovery services following presidentially declared flood disasters.



Ivy Xiong, PE, CFM

TASK 2 - EXISTING / FUTURE FLOOD RISK ANALYSIS

FIRM

HDR Engineering, Inc.

INDUSTRY TENURE

8 years

EDUCATION

MS, Civil Engineering, North Dakota State University

BS, Civil and Environmental Engineering, Beijing University of Civil Engineering/Architecture

REGISTRATIONS/CERTIFICATIONS

Professional Engineer, TX, No. 132112

Certified Floodplain Management, No. 3397-17N

Project Management Professional, No. 2596850

BENEFIT TO UCRFPG:

- 8 years of experience in water resource management specialized in hydrologic and hydraulic modeling.
- Recently led LOMRs efforts including 1D & 2D modeling, floodplain, and floodway mapping on storm water master plan for the City of Waco.
- Recently developed 1D & 2d XPSWMM on urban flooding mitigation for the City of Dallas and City of Amarillo.

Relevant Experience

City of Waco, Storm Water Master Plan, TX. Project Engineer. This project includes eight streams. Ms. Xiong has served as the lead project engineer for City of Waco Storm Water Master Plan continuously for four year, and worked on six of eight streams using HEC-HMS and HEC-RAS models, including approximately 8 miles Flat Creek with north and south tributaries, 8 miles Cottonwood Creek, 3 miles Barron's Branch, 6 miles Waco Creek with north and south tributaries, 3 miles Marlin's Branch, and Delano Avenue Ditch. She is experienced in developing several complex models on those streams applying splits flows, rating curves for long tunnels, non-standard culverts crossings, coincidental peak, and modified pulse methods. Ivy performed floodplain and floodway models on those streams, as well as the CheckRAS, RASPlot, MT-2 forms, certified topographic maps, annotated FIRM maps, impacted parcels notification letters as a part of FEMA LOMRs. She performed benefit-cost analysis to identify problem areas and proposed alternatives for future CIP projects. Ivy also developed complex HEC-RAS 2D model for Waco Creek with multiple scenarios for impact analysis and future channel re-construction feasibility study, including multiple culvert/bridge crossings, diversion structure, long tunnels and channel re-grading as a part of TxDOT Preliminary Engineering Report.

Mercado Channel Improvement and Tony's Creek Open Channel Study, City of Fort Worth, TX. Project Engineer. Ivy performed certified topographic maps and RASPlot for Mercado Channel and Tony's Creek as a part of FEMA LOMRs

Pensive Drive Channel & Walnut Hill Stormdrain Relief, City of Dallas, TX. Project Engineer. Ivy is the lead H&H modeler to develop XPSWMM 1D & 2D hydraulic evaluation and simulation of the existing channel and storm drain system. She also developed multiple alternatives using XPSWMM 1D/2D to provide flood protection and storm drain relief for the Pensive Drive Channel and Walnut Hill Lane storm drain systems. It includes detention pond, diversion structure and bypass storm drains.

Martin Road Lake Improvements, City of Amarillo, TX. Project Engineer. Ivy is the lead H&H modeler to develop XPSWMM 1D & 2D model for several existing storm drain systems to the Martin Road playas, as well as including the playas storage and pump station as a part of the hydraulic evaluation. The model also provides flooding inundation relief due to recent repair work.

Dudley Branch Improvements, City of Carrollton, TX. Project Engineer. Ivy performed existing pond hydrology analysis and HEC-HMS model development, as well as alternatives channel design to remove the pond. She also developed HEC-RAS 2D model for proposed channel, weir structure and culvert replacement design to analyze impacts during low flow and high flow conditions.

TSSWCD Dam Assessment and Dam Rehabilitation, TX. Project Engineer. Ivy has worked as the lead project engineer on NRCS dam assessment projects continuously for four years, and has developed HEC-RAS 2D and SITES models for numerous dams, as well as risk analysis, cost estimates, and draft reports.

UBCWCID Dam Assessment, TX. Project Engineer. Ivy worked on Upper Brushy Creek dam assessment using TCEQ full breach method and potential failure mode analysis (PFMA), including sunny-day breach, probable maximum flood breach (PMF), and PMF no breach, as well as consequence analysis on multiple dams.

FY18 Bond Contract B, City of Dallas, TX. Project Engineer. Ivy has performed H&H analysis on Nandina HEC-HMS and HEC-RAS diversion analysis, Greenspan culvert improvements HEC-RAS, Kings Branch multiple culvert crossings HEC-RAS.

Erosion Control Group 10, City of Dallas, TX. Project Engineer. Ivy assisted in preparing construction package (plans, specifications and estimates) to stabilize streambanks at six locations. She also assisted with calculation calculations on methods of restoring the eroded streambed condition which included protection against high velocity flows with a stilling basin design.

Westwood Park Drainage Improvement, City of McKinney, TX. Project Engineer. Ivy performed hydrologic and hydraulic analysis, and assisted in grade control structure design, rock riprap sizing for channel bed and slope protection, energy dissipaters for storm drain outfall protection, and adequate protection for existing stepped concrete retaining wall.



Scott Rushing, PE, CFM

TASK 3 - CURRENT PRACTICES & GOALS

TASK 4A - NEEDS ANALYSIS

FIRM

Halff Associates, Inc.

INDUSTRY TENURE

12 years

EDUCATION

BS, Civil Engineering, Texas A&M University

REGISTRATIONS/CERTIFICATIONS

Professional Engineer, TX, No. 114519

Certified Floodplain Management, No. 1775-09N

BENEFIT TO UCRFPG:

- 12 years of experience performing drainage analysis and design across the state for municipal, state, and federal clients including the TWDB, TxDOT, FEMA, and USACE.
- Performed 15 master drainage plans throughout Texas including evaluation of playa lakes working with the Cities of Amarillo and Lubbock.
- Helped clients secure funding for drainage planning and capital improvement projects through various grant programs and storm water utility rate studies.
- His public outreach and engagement through master drainage planning has helped mitigate risk and secure public support.

Relevant Experience

Drainage Master Plan, City of Amarillo, TX. Deputy Project Manager. Halff provided services to develop a drainage master plan, including a high-level 2D hydraulic analysis to identify hot spot locations, reviewing and updating to current city CIP projects, and personnel and equipment recommendations. The study included a public outreach survey, software evaluation for future playa lake studies, stormwater criteria manual evaluation, and graphic executive summary roadmap document.

Tee Anchor Lake Master Drainage Plan, City of Amarillo TX. Project Engineer. Halff provided services to analyze the existing conditions of the playa lake and surrounding storm drain systems and to develop conceptual alternatives. The plan included development of conceptual alternatives, detailed H&H modeling, and analysis/modeling of 60,000 LF of storm drains and 200 inlets.

Stormwater Master Plan and Support Services, City of Lubbock, TX. Project Engineer. The City of Lubbock Stormwater Master Plan included support services and would prioritize efforts, execute recommendations and provide a framework for the maintenance of stormwater data, assessments and studies. As part of this project, Halff provided H&H modeling, stormwater mitigation, flood vulnerability assessments through data driven prioritization for the implementation plan.

State Flood Assessment, TX. Project Engineer. Project Engineer in support of the State Flood Assessment for Texas through a contract with TWDB (State NFIP Coordinator). Provided the first statewide overview of flood risk, planning, and stakeholder views on flood mitigation in Texas. Developed two statewide surveys, eight regional workshops, and nine state/federal agency meetings. Prepared technical memoranda to summarize stakeholder engagement, assess stakeholder feedback, analyze financial aspects, and provide stakeholder recommendations for key initiatives involving flood risk, mitigation, and future planning.

Risk Map Program, FEMA, TX. Study Manager for Regional Task Orders (RTO). Halff is a Joint Venture (JV) partner of the Compass Production and Technical Services (PTS) team for the national, five-year FEMA Risk Map Program contract. As part of this contract Halff provided H&H modeling, flood vulnerability assessments, project prioritization, transportation resiliency, as well as many other services on a national basis.

TxDOT Drainage Study, US-183 Roadway Improvements, TX. Project Manager. Project Manager overseeing H&H model development to analyze the hydraulic capacity of the existing culvert crossing located at Stream BK-1 along US 183 to determine what, if any, proposed improvements should be considered. Halff worked as a subconsultant through a contract with the TxDOT. Project included coordination with the local floodplain administrator, HEC-HMS and HEC-RAS model development, comparison to effective FEMA data and proposed cross drainage analysis.

Storm Drain Master Plan Detail Study, Cottonwood and Lakeview Watershed, TX. Project Engineer. The goal of this storm drain master plan was to understand the limitations and deficiencies of the drainage system for portions of the Cottonwood Creek watershed through the use of detailed H&H analysis and to provide improvement recommendations that are effective both functionally and financially. A total of over 200,000 LF of storm drain trunk lines (24 inch or larger) were analyzed for the 2-year, 10-year and 100-year events using StormCAD v8i modeling package. Drainage areas were delineated for each modeled inlet and rational method discharges were computed for each modeled storm event. Improvement alternatives were developed with coordination from the City of Grand Prairie to address flooding problems caused by existing inadequate drainage systems.



Susan Roth, PE, PMP

TASK 3 - CURRENT PRACTICES & GOALS

TASK 10 - STAKEHOLDERS/PUBLIC INVOLVEMENT

FIRM

Susan Roth Consulting, LLC

INDUSTRY TENURE

25 years

EDUCATION

MS, Civil Engineering, University of Texas

BS, Civil Engineering, Texas A&M University

REGISTRATIONS/CERTIFICATIONS

Professional Engineer, TX, No. 92276

Professional Management Professional, No. 425093

BENEFIT TO UCRFPG:

- Familiar with local and regional water planning projects throughout the state.
- Expert in working with multiple entities towards a regional water planning solution.
- Exceptionally well-positioned to understand the engineering complexities of a project and the aspects of effective public communication.
- Experience with both private and government entities including Lower Colorado River Authority, CH2M Hill, Carollo Engineers, and the City of Brenham

Relevant Experience

TWDB Nueces Basin Regional Drainage Master Plan Study, TX. Project Manager. Halff provided services to develop a drainage master plan, including a high-level 2D hydraulic analysis to identify hot spot locations, reviewing and updating to current city CIP projects, and personnel and equipment recommendations. The study included a public outreach survey, software evaluation for future playa lake studies, stormwater criteria manual evaluation, and graphic executive summary roadmap document.

TWDB Region G Water Planning Group, TX. Project Engineer. Project Engineer and member of HDR team for Brazos G to develop the 2021 Regional Water Plan for 37 counties in the jurisdictional area; responsible for population and water demand projections, assessing drought contingency plans, emergency supply alternatives, providing outreach to county judges, GCDs, agricultural/mining industries and water user groups.

TWDB State Flood Assessment Study, TX. Project Engineer. Project Engineer and member of Halff Associates team; served as Regional Champion for East Texas; participated in three statewide regional stakeholder workshops in Central Texas, East Texas and the Coastal Bend. Responsibilities also included outreach, collecting flood risk information and identifying federal/state programs for flood mitigation funding.

Neches River Basin Water Availability Model Update, Texas Commission on Environmental Quality, TX. Project Engineer. Currently serving as Project Engineer and member of HDR team; conducting stakeholder outreach to large municipalities, water districts, river authorities regarding reservoir management, historical water use/diversion data and wastewater return flows for the Neches River Basin Water Availability Model Update.

Riverbend Regional Water Master Plan Study, Riverbend Water Resources District. Prime Engineer. Recently served as Prime Engineer for the Riverbend Regional Water Master Plan Study, which involved developing a regional water infrastructure plan to serve existing and future growth in 15 member cities and a regional industrial park through 2070. Also secured \$200M TWDB funding (grant and loan interest loan) for the design/construction phases of the regional water system identified in study.

2017 Infrastructure Report Card Update, American Society of Civil Engineers, TX. Lead Consultant. Lead consultant with developing the 2017 Infrastructure Report Card Update for the State of Texas; coordinated with key agencies to evaluate 13 primary categories; previously developed the 2012 IRC for the state.

Integrated Water Resource Plan, City of Austin, TX. Project Engineer. Recently served as Project Engineer on the city's Integrated Water Resource Plan; project involved identifying water conservation, demand and supply strategies for Austin to serve existing and future growth for the next 100 years; member of the CDM Smith team.

TWDB Regional Flood Protection Planning Study, City of Marble Falls, TX. Prime Engineer. Served as Prime Engineer on the TWDB Regional Flood Protection Planning Study; teamed with Halff Associates to conduct hydraulic modeling of the Backbone Creek and Whitman Branch Watershed and develop flood reduction alternatives for the study area.

TWDB-FHLM Counties Regional Water Facility Study. Prime Engineer. Served as Prime Engineer for the TWDB-FHLM Counties Regional Water Facility Study; signed up 27 WSCs/water entities, secured TWDB grant funding, developed a regional water infrastructure plan to serve existing and future growth in four counties, as well as arsenic treatment alternatives.

TWDB Brazoria County Regional Water Facility Study, Brazosport Water Authority Project Engineer. Served as Project Engineer and Stakeholder Manager for TWDB Brazoria County Regional Water Facility Study; signed up 18 cities and industries, secured TWDB grant funding, member of the CDM Smith team; responsible for developing population/water demand projections for study area. Assisted BWA with the amendment process of the 2012 State Water Plan and secured TWDB SWIFT funding.



Lissa Gregg, PE, CFM, ENV SP

TASK 3 - CURRENT PRACTICES & GOALS

TASK 10 - STAKEHOLDERS/PUBLIC INVOLVEMENT

FIRM

Freese & Nichols

INDUSTRY TENURE

7 years

EDUCATION

BS, Civil Engineering, University of Alabama

REGISTRATIONS/CERTIFICATIONS

Professional Engineer, TX, No. 126454

Certified Floodplain Management, No. 3753-19N

Envision Sustainability Professional

BENEFIT TO UCRFPG:

- Extensive involvement in water supply evaluation and assistance, conservation planning and Senate Bill 1 regional water planning.
- Part of the development of the 2016 Region F Regional Water Plan addressing the long-term water needs for Midland and San Angelo.
- Prepared technical data in support of the alternatives analysis for the Lower Bois d'Arc Creek EIS and has experience with several major integrated water supply plans, including the cities of Irving and Cleburne.

Relevant Experience

Region F Regional Water Plan, Colorado River Municipal Water District, TX. Assistant Project Manager/Project Engineer. FNI was responsible for the development of the Region F Regional Water Plan, a 32-county region in West Texas. Lissa developed both the 2016 and the 2021 plans, including coordinating with the Texas Water Development Board (TWDB), the Region F Regional Water Planning Group (RFRWPG), local entities, various stakeholders, and the political subdivision; She performed technical analyses; prepared the final plan; entered all data into the TWDB statewide database, and made presentations at public meetings and hearings.

Region B Regional Water Supply Plan, Biggs & Mathews, Inc., Region B. Project Engineer. Lissa helped develop the 2016 Region B Water Plan for Region B in north Texas. Project included development of water supply estimates for reservoirs and aquifers within the 10-county region, identification of water supply needs and local issues, and the development of water management strategies.

Region C Regional Water Plan, NTMWD/TRA, TX. Project Engineer. Lissa was an integral team member in developing the 2016 and 2021 regional water plans covering the Dallas/Fort Worth Metroplex and surrounding counties. Her work included the development of population and water use projections, analysis of existing supplies and development of long-range water supply plans. She worked closely with various planning group members and stakeholders.

Panhandle Water Plan, Panhandle Regional Planning Commission, TX. Project Engineer. Lissa worked on the Panhandle Regional Water Plans both the 2016 and 2021 planning cycles. The project included working with the Texas Water Development Board, the political subdivision, stakeholders, planning group members, and water suppliers to develop a plan to meet the Region's water needs through 2070. Lissa performed technical analysis, including the use of the TWDB statewide database.

Floodplain Management Plan, City of Fort Worth, TX. Project Engineer. FNI prepared a city-wide floodplain management plan, which involved leading the City through a 10-step planning process and included significant public outreach. FNI prepared a flood risk assessment for the entire City using HAZUS-MH, which helped to identify vulnerabilities to buildings, infrastructure and populations. FNI then reviewed possible mitigation actions and formed a prioritized mitigation action plan. This effort will help the City obtain Community Rating System points from the National Flood Insurance Program, leading to reduced flood insurance premiums for eligible policies.

Stream VC(A)-1 Watershed Study, City of Arlington, TX. Project Engineer. Comprehensive watershed assessment that provided a detailed understanding of the hydrologic, hydraulic and geomorphic behavior of the study watersheds

Hurricane Harvey Disaster Recovery, Harris County Flood Control District, TX. Project Engineer. FNI is serving as an extension of Harris County Flood Control District (HCFCD) staff, supporting recovery efforts for the flooding disaster associated with Hurricane Harvey. Recovery efforts include field damage assessments, desktop analysis of high-resolution aerial imagery, coordination with Federal Emergency Management Agency (FEMA), U.S. Army Corps of Engineers (USACE), and Natural Resources Conservation Service (NRCS) in support of pursuing federal funding reimbursement for recovery efforts and program management activities.



Rodrigo Vizcaino, PE, CFM

TASK 4A - NEEDS ANALYSIS

TASK 4B - POTENTIAL EVALUATIONS, STRATEGIES, & PROJECTS

TASK 5 - RECOMMENDED EVALUATIONS, STRATEGIES, & PROJECTS

FIRM

HDR Engineering, Inc.

INDUSTRY TENURE

21 years

EDUCATION

BS, Civil Engineering, University of Texas - El Paso

REGISTRATIONS/CERTIFICATIONS

Professional Engineer, TX, No. 95949

Certified Floodplain Management ,No. 0666-04

BENEFIT TO UCRFPG:

- 21 years of experience managing risks and conducting mapping and modeling studies in TX
- Recently developed flood risk reduction plans for City of Waco, City of Abilene, City of Grand Prairie, and City of Fort Worth.
- Recently prioritized CIP projects for City of San Angelo, City of Waco, and City of Fort Worth.

Relevant Experience

Stormwater Master Plan, City of Waco, TX. Task Leader. As a sub to Walker Partners, secured a TWDB grant for the Flat Creek Flood Protection Plan and updated the floodplain mapping for four other priority watersheds, including the development and prioritization of flood mitigation CIP projects. Rodrigo led his team to perform the hydrology and hydraulic models of the six streams analyzed and assisted in determining the key problem areas and determining solutions for them. He assisted in identifying and prioritizing the CIP projects for the City.

Drainage Master Plan, City of San Angelo, TX. Task Leader. Rodrigo assisted his team with the development of the Master Drainage Plan to develop and prioritize both local and riverine flood mitigation CIP improvements, including development of conceptual flood mitigation CIP improvements. Rodrigo's team helped identify the CIP projects for the top 10 problem areas including water quality enhancement.

Drainage Master Plan, City of Abilene, TX. Task Leader. Rodrigo assisted with evaluation of key flooding locations throughout the City and recommending floodplain mitigation solutions as well as identifying construction costs for each. Each projects was prioritized and ranked.

Cottonwood Creek Drainage Master Plan, City of Grand Prairie, TX. Task Leader. The goal of this master plan was to understand the limitations and deficiencies of the drainage system for portions of the Cottonwood Creek watershed. He led his team in the implementation of improvements such as storm drain upsizing detention (in areas of clear open space) street improvements and buyouts were considered. His other duties included directing team in performing hydrologic and hydraulic evaluation of hot spot areas. Developed four CIP projects alternatives which included improvements such as storm drain upsizing and detention.

Tony's Creek Open Channel Study, City of Forth Worth, TX. Project Manager. The purpose of this study was to assess the existing channel and flooding conditions and to develop a master plan for improvements as needed. Rodrigo's specific duties included managing the engineering team and assist in modeling and calculations to assess the existing channel and flooding conditions. He helped develop a master plan for improvements as needed and helped develop a detailed hydrologic and hydraulic model to evaluations probable sources and causes of flooding areas

Rickett's Branch Flood Control Project, City of Dallas, TX. Project Manager. Project included final design of a 3,200 LF flood mitigation and channel design project. Mr. Vizcaino managed the preparation of all plans, specifications, details, 404 USACE Permits, Tree Mitigation, utility relocation, cost estimates, and post-project hydraulic modeling. He assisted in the development of a LOMR request to FEMA for the removal of 30 plus homes out of the floodplain. He also assisted in preparation and submittal of LOMR application to FEMA.

Texas State Soil & Water Conservation Board (TSSWCB) Watershed Rehabilitation Projects, TX. Project Engineer. The TSSWCB awarded HDR an IDIQ contract for rehabilitation of aging NRCS flood control dams. Rodrigo assists as a H&H Engineer and is involved in field related assessments for high hazard dams for NRCS. He has also assisted in dam breach inundation analysis, alternative evaluations, and repairs.



Wade Barnes, PHD, PE, CFM

TASK 4B - POTENTIAL EVALUATIONS, STRATEGIES, & PROJECTS

TASK 5 - RECOMMENDED EVALUATIONS, STRATEGIES, & PROJECTS

TASK 7 - FLOOD RESPONSE INFO & ACTIVITIES

FIRM

Freese & Nichols

INDUSTRY TENURE

11 years

EDUCATION

PhD, Civil Engineering, Texas Tech University

BS, Civil Engineering, University of Houston

REGISTRATIONS/CERTIFICATIONS

Professional Engineer, TX, No. 120012

Certified Floodplain Management, No. 2046-11N

BENEFIT TO UCRFPG:

- Brings more than 11 years of experience in designing and modeling storm sewer systems.
- Strong background in transportation drainage, having applied his stormwater expertise to transportation projects locally as well as across the state.
- Specializes in both 1-D and 2-D modeling for drainage analyses and transportation drainage and site development design.
- Completed FEMA-related work, LOMR studies, and floodplain mapping.

Relevant Experience

114th Street, City of Lubbock, TX. Drainage Task Lead. FNI is providing modeling and design services for improvements to 114th Street, between Indiana Avenue and Quaker Avenue. Wade is leading the modeling task, collaborating with the roadway team for design of the improvements. The proposed roadway bisects an overflow playa and lies in a rapidly developing area of the City. FNI worked with the adjacent developers to identify mutually beneficial solutions. Design included longitudinal drainage along the roadway and in a parallel channel, as well as cross-drainage at the playa lake. The system was modeled using ICPR.

Northwest Lubbock Drainage Improvements - Phase 3, City of Lubbock. Project Engineer. Wade helped with modeling of one of the five proposed inlets, in an effort to accommodate a future City project. His modeling effort will allow the City to prevent having to remove or modify new drainage infrastructure to accommodate playa excavation. The modeling was performed to maintain the performance of the existing 4-mile large diameter trunk main and 4-miles of small diameter laterals.

Master Drainage Plan, City of Abilene, TX. Project Manager. Developed the scope of work and analysis methodology, and supervised the analyses of alternative detention basin design methodologies from the perspective of mitigating downstream erosion of receiving channels. Work included long term continuous simulation modeling using the SWWM model, and the design of alternative flood control ponds using TR-20.

Stormwater Services - Review STM WTR Hazard Plan Update, City of Midland, TX. Mitigation Lead. Developed the scope of work and analysis methodology, and supervised the analyses of alternative detention basin design methodologies from the perspective of mitigating downstream erosion of receiving channels. Work included long term continuous simulation modeling using the SWWM model, and the design of alternative flood control ponds using TR-20.

Hall County Flood Response Review - FEMA Memphos Culvert Replacement, City of Memphis, TN. Mitigation Lead. Developed the scope of work and analysis methodology, and supervised the analyses of alternative detention basin design methodologies from the perspective of mitigating downstream erosion of receiving channels. Work included long term continuous simulation modeling using the SWWM model, and the design of alternative flood control ponds using TR-20.

SL 88 Segment 3 Schematic/PS&E, TxDOT Lubbock District, TX. Modeling Lead. Developed the scope of work and analysis methodology, and supervised the analyses of alternative detention basin design methodologies from the perspective of mitigating downstream erosion of receiving channels. Work included long term continuous simulation modeling using the SWWM model, and the design of alternative flood control ponds using TR-20.

Ambler Corridor FEA Study, Abilene Christian University. Project Manager. Developed the scope of work and analysis methodology, and supervised the analyses of alternative detention basin design methodologies from the perspective of mitigating downstream erosion of receiving channels. Work included long term continuous simulation modeling using the SWWM model, and the design of alternative flood control ponds using TR-20.

Urban Master Plan for SW Interior Loop 250 (2D Model), City of Midland, TX. Modeling Lead. Developed the scope of work and analysis methodology, and supervised the analyses of alternative detention basin design methodologies from the perspective of mitigating downstream erosion of receiving channels. Work included long term continuous simulation modeling using the SWWM model, and the design of alternative flood control ponds using TR-20.

Business Park Master Plan, City of Plainview, TX. Drainage Task Lead. Developed the scope of work and analysis methodology, and supervised the analyses of alternative detention basin design methodologies from the perspective of mitigating downstream erosion of receiving channels. Work included long term continuous simulation modeling using the SWWM model, and the design of alternative flood control ponds using TR-20.

Railport Master Plan Update, Lubbock Economic Development Agency, TX. Drainage Task Lead. Developed the scope of work and analysis methodology, and supervised the analyses of alternative detention basin design methodologies from the perspective of mitigating downstream erosion of receiving channels. Work included long term continuous simulation modeling using the SWWM model, and the design of alternative flood control ponds using TR-20.



Angela Davidson, PE, CFM

TASK 4B - POTENTIAL EVALUATIONS, STRATEGIES & PROJECTS

TASK 5 - RECOMMENDED EVALUATIONS, STRATEGIES, & PROJECTS

FIRM

Halff Associates, Inc.

INDUSTRY TENURE

16 years

EDUCATION

ME, Environmental Engineering, Texas Tech University

BS, Environmental Engineering, Texas Tech University

REGISTRATIONS/CERTIFICATIONS

Professional Engineer, TX, No. 10339

Certified Floodplain Management, No. 0896-05N

BENEFIT TO UCRFPG:

- 16 years of experience participating in the Brazos River Flood Protection Planning Study including the development of a basin wide hydrology model, unsteady hydraulic model, floodplain development, and flood reduction alternatives.
- Participated in the TRA Mid-Basin Flood Mitigation Study to collect available data and resources in the Mid-Basin of the Trinity River.
- Obtained formal training in HEC-HMS, HEC-GeoHMS, HEC-RAS, HEC-GeoRAS and has had extensive hands-on experience using HEC-HMS, HEC-1, HEC-2, HEC-DSS, HEC-ResSIM, HEC-FDA and other hydrologic-hydraulic programs

Relevant Experience

Stormwater Master Plan & Support Services, City of Lubbock, TX. Project Engineer. The City of Lubbock Stormwater Master Plan included support services and would prioritize efforts, execute recommendations and provide a framework for the maintenance of stormwater data, assessments and studies. As part of this project, Halff provided H&H modeling, stormwater mitigation, flood vulnerability assessments through data driven prioritization for the implementation plan.

LCRA/USACE Flood Damage Evaluation Project (FDEP), LCRA/USACE Fort Worth District, TX. Project Engineer. Halff performed a basin-wide hydrologic and hydraulic study for the Colorado River including the development of HEC-HMS and HEC-RAS models and using HEC-ResSim to determine impacts and benefits of operational plan changes to existing reservoirs. The flood control alternative analysis also included evaluation of strategic locations for new multi-purpose reservoirs.

FEMA Risk MAP Revision, Region VI FY15 Phase 2, Guadalupe Blanco River Basins, TX. Quality Control Manager. Quality Control Manager for the development of 350 miles of detailed study. 26 multiple profile and floodway hydraulic models were reviewed including revised FEMA floodplains based on the hydraulic models. The hydraulic models were developed with HEC-RAS version 4.1.0 software. The models were checked utilizing the Halff Quality Assurance checklists and Check-RAS software to verify that the models meet FEMA Standards.

Lower Brazos Flood Protection Planning Study, Brazos River Authority, TX. Project Manager. Project Manager responsible for conducting drainage studies of the Lower Brazos River. Managed development of a detailed hydrologic model for the Lower Brazos River below reservoirs encompassing approximately 10,000 square miles through 18 counties in Central Texas. Managed the development of limited detailed hydraulic models of major connecting streams for routing purposes. Managed calibration to nine historical storm events at 19 USGS gauge locations. Managed development of a detailed unsteady hydraulic model for the Brazos River from the Grimes/Waller County Line to the Gulf of Mexico.

Interim Feasibility Study Phase 1, GBRA, San Marcos & Blanco Rivers, TX. Quality Control Manager. Quality Control Manager for the development of an unsteady HEC-RAS model of the San Marcos and Blanco River. The hydraulic model was developed to more accurately model the complex flow interaction between the Blanco and San Marcos Rivers.

Flood Protection Planning Study Phase 3, GBRA, Guadalupe River Basin, TX. Quality Control Manager. Quality Control Manager for the development of detailed and limited study hydrologic and hydraulic modeling for the Guadalupe River Basin. The hydraulic models were developed with HEC-RAS version 4.1.0 software. The models were checked utilizing the Halff Quality Assurance checklists and Check-RAS software to verify that the models meet FEMA Standards. Limited detailed studies were reviewed for the hydrology, hydraulics and floodplains based on the Halff Quality Assurance checklists and FEMA standards.

Texas Master Drainage Study, Brushy Creek Tributary A, City of Bowie, TX. Project Manager. Project Manager for a flood study to develop a master plan for the Brushy Creek Tributary A watershed in Bowie, Texas. The purpose of this study was to assess the existing conditions of Brushy Creek Tributary A and to develop a master plan of improvements aimed at mitigating flood damages to roadways in the upper Brushy Creek Tributary A floodplain. The study consisted of the following tasks: performing a stream condition assessment, preparing detailed hydrologic and hydraulic analysis of Brushy Creek Tributary A to determine probable flooding areas and developing a master plan of improvements to mitigate damages to existing structures and roadway inundation caused by flooding. Potential flood mitigation alternatives were evaluated to determine their effectiveness and gauge approximate costs. Recommendations for mitigation improvements were also included as part of this report.



Jenna Rao, PE, PG

TASK 4C - TECHNICAL MEMORANDUM

TASK 6 - IMPACTS OF REGIONAL FLOOD PLAN

FIRM

HDR Engineering, Inc.

INDUSTRY TENURE

8 years

EDUCATION

MS, Geosciences (Hydrogeology), University of Texas at Austin

BS, Civil Engineering, Water Resources, Texas A&M University

REGISTRATIONS/CERTIFICATIONS

Professional Engineer, TX, No. 132248

Professional Geoscientist, TX, No. 12014

BENEFIT TO UCRFPG

- Proven experience in TWDB regional planning and management processes to deliver a successful plan, having served in developing the 2016 & 2021 Brazos G Regional Water Plans and the 2021 Llano Estacado (Region O) plan.
- Mitigates flood potential and manages floodplains using HEC-HMS and HEC-RAS.
- Skilled at presenting technical information to the public in an understandable manner.
- Excels in client relations and consistently exceeds client expectations.

Relevant Experience

Brazos G 2016 & 2021 Regional Water Plans, Brazos River Authority/TWDB, Various Counties, TX. Deputy Project Manager. Jenna led several tasks in the regional planning process and worked with our team to develop the Region G Regional Water Plans for the Brazos G Area that includes 37 counties in north-central Texas. Multiple innovative analyses were utilized to develop the plans, including conjunctive use of groundwater and surface water at Lake Granger, ASR in a variety of settings across the region, analysis of wastewater reuse potential, analysis of supplies that could be developed by the pending Brazos River Authority System Operations Permit, and assessment of the impacts of future demands on existing groundwater supply wells in the Trinity Aquifer. The TWDB agreed to multiple changes to population and water demand projections, resulting in the Plans accurately following actual growth patterns in the Brazos G Area. This innovative approach achieved wider acceptance than projected by stakeholders in Brazos G.

Llano Estacado (Region O) 2021 Regional Water Plan, SPAG/TWDB, Various Counties, TX. Water Resources Engineer. Jenna worked with the team to develop the Region O Regional Water Plan for the High Plains Area. She analyzed water management strategies (WMS) for Plainview ASR and reuse projects. She also researched water usage, crops, and livestock use in the High Plains Area. Jenna presented the water management strategies to the Region O Planning Group.

Coastal Bend (Region N) 2021 Regional Water Plan, TWDB, Various Counties, TX. Water Resources Engineer. Jenna helped develop the Region N Regional Water Plan for the Coastal Bend Area. She developed and analyzed WMS, including brackish groundwater desalination, seawater desalination, ASR, and assessment of the impacts of future demands on existing groundwater supply wells. She presented WMS to the Regional Planning group.

H&H Models, Union Pacific Railroad (UPRR), Various Cities, TX. Task Lead. As the Task Leader, Jenna developed H&H models to determine what bridge type or culvert was needed based on 50- and 100-year storms. She developed the hydrologic conditions by assessing the 50- and 100-year flows using multiple methods to determine the greatest flows. These flows were utilized in developing a hydraulic model in HEC-RAS to simulate the 50- and 100-year flows with the current and proposed bridge. These analyses assisted UPRR in determining the most effective replacement structure. For each structure, she worked with the county or city floodplain manager to develop and submit the floodplain permits.

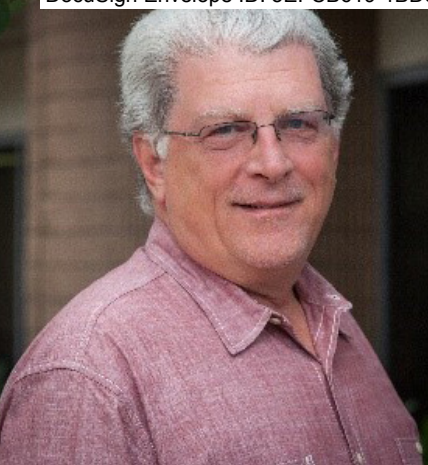
Lake Alan Henry Dam Inspection and Report, City of Lubbock, TX. Deputy Project Manager. Jenna led the dam inspection of the Lake Alan Henry Dam. She worked with the team to develop an inspection report that prioritized recommendations for rehabilitation and provided guidance on monitoring and instrumentation.

Lake Alan Henry Watershed Management Plan, City of Lubbock, TX. Water Resources Engineer. Jenna worked with the City to develop a watershed protection plan for Lake Alan Henry Watershed. She analyzed surface water flows and water quality to determine which strategies would be the most effective at improving the watershed. The plan prioritized strategies that would be most impactful on the watershed while minimizing cost.

Red Bluff Dam Inspection, Report, and EAP, Red Bluff Water Power and Control District, Orla, TX. Deputy Project Manager. Jenna serves as the Deputy Project Manager and is in the process of updating the Dam EAP and conducting a tabletop exercise. She conducted a dam inspection with our team, which included an UROV inspection of outlet gates. The dam inspection report will be prepared and prioritizes the rehabilitation structures at the dam.

Red Bluff Filter and Drain Design, Red Bluff Water Power and Control District, Orla, TX. Water Resources Engineer. Jenna used GeoStudio to analyze five cross-sections at the Red Bluff dam to determine seepage through the earthen dam. Two scenarios were run, one during flooding and the other during normal pool conditions. These scenarios were used to determine if preferential pathways of seepage occurred during flooding.

Upper Brushy Creek WCID (UBCWCID) - WA #4 Phase 2 Dam Assessment, UBCWCID, Round Rock, TX. Stormwater Engineer. Jenna conducted dam assessments and updated hydrologic and PMP/PMF models for UBCWCID. The team prioritized dams based on the risk for the 23 existing NRCS flood detention dams, including inspections and data collection, PMP/PMF and dam breach analysis updates, potential failure mode analyses, risk assessments, and development of a prioritized capital improvements plan. We also updated the Emergency Action Plan (EAP) and provided risk communication support.


Wes Birdwell, PE, CFM

TASK 8 - ADMINISTRATIVE, REGULATORY & LEGISLATIVE
FIRM

Half Associates, Inc.

INDUSTRY TENURE

41 years

EDUCATION

 MS, Geosciences (Hydrogeology), University of Texas at Austin
 BS, Civil Engineering, Water Resources, Texas A&M University

REGISTRATIONS/CERTIFICATIONS

 Professional Engineer, TX, No. 132248
 Professional Geoscientist, TX, No. 12014

BENEFIT TO CITY OF SAN ANGELO

- 22 Years of experience at Lower Colorado River Authority dealing with water supply and flood control.
- Worked with numerous communities to develop local and regional drainage studies and projects.
- Provides team with invaluable insights and experience on flood damage assessment, water management, reservoir operation policies and criteria, liability, and public coordination.
- Actively involved with Texas Floodplain Management Association's Governmental Relations Committee for many years.

Relevant Experience

Senate Bill 1436. Chairman. Texas has ranked in the top three states in flood related damages for the last twenty-five years. As Chairman of the Texas Floodplain Management Association Governmental Relations Committee, he successfully coordinated the passage of this bill. In 2007, SB 1436 significantly increases state funding for floodplain management programs and opens the door for Texas to partner with the federal government and local communities to reduce flood damages in Texas.

Levee Issues Alliance. Coordinator. Mr. Birdwell worked with Texas' coastal levee systems to establish a framework for levee owners to work together to meet Corps of Engineers and FEMA operations, maintenance, and certification criteria. Members of the Alliance travel to Washington DC annually to meet with the Texas delegation, the Corps, and FEMA to better understand levee policies and to communicate Texas' levee owner issues.

Lower Colorado River Authority Daily River Operations Model. Resident Expert. The Lower Colorado River Authority manages the Highland Lakes and lower Colorado River as a system to meet water demands for municipal, irrigation, and industry. Water requested and released from the lakes must travel up to seven days in the river before it is diverted. A tool was needed to better manage the supply of water in the lakes according to water right, and efficiently utilize water stored in the Highland Lakes and originating in the lower basin. Mr. Birdwell managed a team of experts from across the country to link state-of-the-art hydrologic and hydraulic modeling with water supply management.

Corps of Engineers GBRA Interim Feasibility Study and Flood Protection Planning Study Grant. Project Coordinator. Project coordinator for preparation of a Flood Protection Planning Grant application, and supporting documentation, to the TWDB and development of a basin wide study. Phase 1 of the study includes a detail hydrologic and hydraulic analysis of Guadalupe, Blanco, and San Marcos Rivers as well as tributaries in the cities of Luling and Woodcreek. The study includes the analysis of a 4,500 sm basin and about 500 miles of stream. Phase 2 of the study involves additional tributary and dam safety studies for twelve communities including the cities of San Marcos, Seguin, Kyle, Lockhart, and Waelder, the counties of Hays, Caldwell, Comal, Gonzales, and Victoria, and the Plum Creek Conservation District and York Creek Improvement Districts. The Phase 2 study includes hydrology, hydraulics, dam breach analysis and alternatives analysis for about 270 miles of stream.



Mark Evans

TASK 9 - FINANCING ANALYSIS

FIRM

Freese & Nichols, Inc.

EDUCATION

BBA, Finance, University of Texas

INDUSTRY TENURE

20 years

BENEFIT TO UCRFPG:

- Serves as FNI's Funding Specialist, providing technical assistance to FNI staff and clients on multiple funding alternatives, including low interest loans grants, disaster relief and hazard mitigation type funding programs for water, wastewater and stormwater opportunities.
- Extensive experience with mapping out traditional and disaster response emergency relief funding strategies that involves both grant and low-to-zero interest loans to assist clients with building needed infrastructure projects as quickly as possible.
- Customizes strategies for each client based on constraints and long-term development goals.

Relevant Experience

Clean Water State Revolving Fund, TWDB, TX. Program Coordinator. Mark provided technical assistance on federal State Revolving Fund statutes, EPA regulations and guidelines, and TWDB rules pertaining to the administration of the CWSRF financing program to TWDB staff and outside entities seeking financial assistance from this program. He managed the intended use plan process for the CWSRF program, including developing solicitation packages and preparing the draft intended use plan for the EPA and TWDB approval. He reviewed the CWSRF Project Information Forms (PIFs) and applications received for eligibility, rating criteria and funding determinations. Mark also managed the invitation process for the CWSRF program. He identified, developed, and implemented policy and process improvements to the CWSRF program, in conjunction with other staff members. He prepared and made presentations to internal and external groups on the CWSRF program, including the Intended Use Plan process. He provided consultative services as a member of the Texas Water Infrastructure Coordination Committee (TWICC) to assist water and sewer service providers identify financing opportunities and to develop recommendations for Committee consideration.

Clean Water State Revolving Fund, TWDB, TX. Project Engineer. Mark planned, developed, implemented and led efforts of multidisciplinary project work groups processing loan applications to fund multi-million-dollar major wastewater facilities for public borrowers. He provided highly advanced consultative services and technical assistance as the main Clean Water State Revolving Fund (CWSRF) point of contact. He produced and presented presentations to the Board for funding commitment and oversaw a CWSRF portfolio (more than 150 projects) from funding commitment through loan payout, including construction. He assisted with overall program development and provided reporting to all levels of management. Mark also represented TWDB at public and interagency meetings.

Statewide Outreach, TWDB, TX. Team Lead. Mark performed highly advanced, senior-level outreach work. He was responsible for the coordination and facilitation of marketing and outreach of TWDB programs to various types of entities, including but not limited to local communities, cities, counties, districts, authorities and water supply corporations. He served as a liaison between external stakeholders and the TWDB, communicating directly with internal and external stakeholders, including other state or federal agency personnel, the general public, and elected or appointed officials. He represented the Board and its programs to a myriad of stakeholders, including citizen groups, professional associations, consulting firms, and other governmental entities. He was responsible for the training and coordination of outreach staff duties and served as point of contact/intake for outreach opportunities. He also participated in, coordinated, and facilitated TWDB financial assistance workshops, assisting with site identification and logistics. Mark oversaw and/or participated in special projects or programs as assigned by the Director of the Regional Water Project Development (RWPDP), such as acting as ad hoc Team Lead for the team scoring the Clean Water State Revolving Fund (CWSRF) Project Information Forms for the SFY 2019 CWSRF Intended Use Plan.



Grady Reed

TASK 9 - FINANCING ANALYSIS

FIRM

HDR Engineering, Inc.

INDUSTRY TENURE

22 years

EDUCATION

MS, Applied Geography, Environmental and Natural Resources Management, Texas State University, TX

BS, Hydrology/Water Resources, Tarleton State University

BENEFIT TO UCRFPG:

- In-depth knowledge of financing mechanisms for stormwater in Texas.
- Able to present complex information in an easy-to-understand manner
- Expert in TWDB Regional Planning Process with extensive experience in the Upper Brazos basin.
- Customizes strategies for each client based on constraints and long-term development goals.

Relevant Experience

Brazos G Regional Water Plans (2001, 2006, 2011, 2016) Brazos River Authority, . Financial Analyst. Assisted in the development of water supply elements for the Regional Water Plan for the 37-county Brazos G Region. Assisted in the review and revision of population and water demand projections for the region, assessing supplies available to entities within the region, and developing specific water supply plans to meet projected needs. Incorporated data from the Texas Water Development Board into a model to predict future populations and water use for the counties within Region G. Managed or performed input of all planning data into the Texas Water Development Board (TWDB) regional water planning database.

Water Supply Plan, City of Lubbock TX. Financial Analyst. Developed several water demand projections based upon different assumptions of growth and water conservation assumptions. These demand projections were compared to existing supplies to determine the need and timing for various water management strategies. In addition, the Net Present Value of each "package" of strategies was calculated.

Llano Estacado Regional Water Plans (2001, 2006, and 2021), High Plains Underground Water Conservation District, TX. Financial Analyst. Assisted in the development of the 21-county Llano Estacado Regional Water Plan. Responsibilities included drafting an area description, analyzing population and water demand projections, analyzing the current water supplies available in the region, and evaluating water needs in the region, and writing these sections of the final regional water plans. Also participated in developing a water supply plan for each entity with an identified need. Managed or performed input of all planning data into the TWDB regional water planning database.

Stormwater Utility Rate Model, City of Abilene, TX. Financial Analyst. Created a new stormwater utility rate model for the City of Abilene. This model was used to determine various rates for three different levels of CIP development.

Stormwater Utility Study, City of Casper, WY. Financial Analyst. Assisted in the development of a stormwater utility feasibility report for the City. This report contained discussions concerning alternative billing methods as well as alternative rate methodologies. Also, as part of this project, Grady developed a stormwater rate model for the City and using impervious cover data developed by the client, provided the client with a set of draft stormwater rates.

Stormwater Utility Study, City of Tucson, AZ. Financial Analyst. Assisted in the development of a stormwater utility feasibility presentation to the City. This presentation contained discussions concerning alternative billing methods as well as alternative rate methodologies. Grady summarized the steps needed to create a stormwater utility and addressed the key decisions that would need to be made as part of utility development.



Gwen Jurisich

TASK 10 - STAKEHOLDERS/PUBLIC INVOLVEMENT

FIRM

HDR Engineering, Inc.

EDUCATION

BS, Communications, Asbury University

INDUSTRY TENURE

19 years

BENEFIT TO UCRFPG

- Recently developed interactive comment map for City of San Angelo Master Drainage Plan public comment period.
- Experienced with successfully facilitating public/stakeholder meetings and extracting public/stakeholder feedback for the decision making process.
- Experienced with creating materials for limited English proficiency communities.

Relevant Experience

Master Drainage Plan, City of San Angelo. Public Involvement lead. Coordinated materials for public comment period for City Master Drainage Plan utilizing an interactive comment map. Worked with City staff to build project landing page and outreach to community members.

Dudley Branch Hike and Bike Trail, City of Carrollton, TX. Public Involvement Lead. Led public involvement outreach for 2.1 mile extension of city hike and bike trail through residential area. Coordinated presentation materials for city council, stakeholder meetings, and public meetings, as well as prepare meeting documentation

US 380 Feasibility Study, TxDOT Denton County, TX. Public Involvement Lead. Public involvement lead tasked with creating strategic communications for stakeholder and community outreach. Materials include white papers, interactive maps, written correspondence, innovative presentations and graphics. Includes developing virtual public meeting materials and public meeting summary.

I-27 Schematic and Environmental, TxDOT Amarillo, TX. Public Involvement Lead. Lead coordination of stakeholder, public, and affected property owner meetings. Developed meeting content and graphics for in-person and virtual meetings. Compiled meeting summary documentation.

Northwest Highway Feasibility Study, TxDOT Dallas, TX. Public Involvement . Public involvement lead tasked with creating strategic communications for all stakeholder and community outreach. Materials include, but are not limited to, interactive maps, project logo, written correspondence, talking points, innovative presentations and graphics. Includes developing virtual public meeting materials and public meeting summary.

I-10 Corridor Schematic and Environmental (Segment 2 - Downtown 10), TxDOT El Paso, TX. Public Involvement. Cris is providing executive oversight and executive-level coordination with the City on flood risk reduction planning studies developing structural and non-structural solutions for high priority flood problem areas throughout the City's watersheds. He oversees project development, serves as a Technical Advisor, and is responsible for managing project resources and implementing our Quality Management System policy and procedures.

2045 Transit System Plan, DART General Planning, TX. Public Involvement. Supported stakeholder and public outreach for plan development. Coordinated graphics on report and related presentation materials. Developed virtual meeting outreach plan and managed logistics of virtual public meetings.

Dallas CBD Second Light Rail Alignment (D2 Subway), DART General Planning, TX. Public Involvement. Supported public meeting outreach at key stakeholder and public meetings. Provided meeting documentation and coordinated comment and response documentation. Supported design development of the Environmental Impact Statement (EIS).

Cotton Belt Corridor Regional Rail Project, DFW International Airport to Plano, TX. Public Involvement. Supported public meeting outreach at key stakeholder and public meetings. Provided meeting documentation and supported comment and response documentation. Supported design development of the Environmental Impact Statement (EIS) as well as managed the printing and distribution of EIS document.

West 7th Street Alternatives, City of Fort Worth, TX. Public Involvement. Led logistics and meeting support for public-facing, week-long design workshop for 7th street in Fort Worth. Met with key city leaders, business owners, and the public for feedback on transportation along a rapidly growing retail and residential corridor. Coordinated public mail out, meeting logistics and language translation support staff.

Transportation Border MasterPlan, TxDOT El Paso, TX. Public Involvement. Led online support for virtual meetings for binational stakeholder outreach. Coordinated logistics and meeting materials for in-person public meeting outreach in both U.S. and Mexico. Supported development of communication strategies for binational engagement efforts focused on improving the overall awareness of cross-border mobility, trade, and transportation issues.



Brian McNamara, GISP

GIS SUPPORT

FIRM

Half Associates, Inc.

INDUSTRY TENURE

10 years

EDUCATION

BS, Geography, Texas A&M University

REGISTRATIONS/CERTIFICATIONS

Geographic Information Systems Professional, No. 99324

BENEFIT TO UCRFPG

- Played an increasing role in integrate GIS usage and support throughout multiple engineering disciplines.
- Experience includes GIS support, data analysis, scripting, web development, data management, and project coordination.
- Technical expertise includes ESRI software (ArcMap, Pro), Autodesk Civil3D, and Python.
- Currently leading Task 1 for the Lower Colorado region.

Relevant Experience

TWDB CTP Risk Map Projects, TX. GIS Analyst. Provided GIS analysis for the TWDB CTP Discovery and Flood Risk Identification (modeling and mapping), and Mapping Updates across multiple Texas watersheds to identify flood risk and engage in prioritization efforts on a statewide basis. Some of these projects include: San Bernard Watershed Study, Lower Colorado-Cummins Study, TWDB Prioritization Tool & Update, Lampasas ID BLE, Plum Creek Study, and the 2D State BLE.

Tres Palacios Creek Flood Improvement Project, City of El Campo, TX. GIS Analyst. Developed and supported the field collection methods using GIS Mobile Devices and Web Maps for City of El Campo easement acquisition and documentation. Responsible for data integration of survey, engineering designs, and GIS data.

TWDB/Bastrop County Flood Protection Planning Studies, TX. GIS Analyst. Provided GIS support to deliver H&H models, the identification of flood damages, evaluation of alternatives to reduce damages, and recommendation of flood damage reduction improvements, which meet state and federal criteria, and flood monitoring recommendations for the watershed. In addition to the H&H documentation and damage reduction alternatives, the final FPP reports include environmental constraints and benefit-cost analysis for all flood reduction alternatives.

Flood Monitoring System, Hays County, TX. GIS Analyst. Provided support for inundation mapping, and development of a secured web-based mapping site for Hays County. The Flood Monitoring System displays real-time inundation boundaries associated with flood gage readings, radar rainfall, NWS rainfall, and live gage readings.

City of Pflugerville Drainage Master Plan, TX. GIS Analyst. Provided support for a master plan that included Wilbarger Creek and Gilleland Creek updated to NOAA Atlas 14 rainfall. Local flooding will be determine based on a 2D rapid assessment of the City verified with flooding complaints. Flood problem areas will be determined, and flood mitigation solutions developed to develop drainage CIP projects. Solutions may include creek crossing upgrades, channel improvements, or detention facilities. Drainage CIP projects will be scored and prioritized for City planning.



Erin Atkinson, PE, CFM, GISP

GIS SUPPORT

FIRM

Halff Associates, Inc.

INDUSTRY TENURE

25 years

EDUCATION

MS, Civil Engineering, Texas Tech University

MS, Environmental Technology Management, Texas Tech University

BS, Wildlife Management, Texas Tech University

REGISTRATIONS/CERTIFICATIONS

Professional Engineer, TX, No. 97353

Certified Floodplain Manager, No. 0481-03N

Geographic Information Systems Professional, No. 48766

BENEFIT TO UCRFPG

- Participated and managed a wide variety of water resources studies including 25 county-wide FEMA restudies, 3 large basin flood evaluations, 5 drainage/stormwater master plans, and 8 NWS flood severity inundation mapping projects.
- Experience modeling with HEC-HMS, HEC-RAS, and HEC-SSP.
- Extensive experience with automating the study process with GIS.
- Developed custom GIS applications for base level engineering analysis, storm centering, aerial reduction and survey integration with terrain surfaces.

Relevant Experience

TWDB FEMA Region VI CTP Risk MAP Projects, TX. GIS Lead. Halff performed the Lower Colorado Cummins Watershed CTP as part of the TWDB CTP Projects Contract. In this task order, Halff updated 165 stream miles of leveraged studies and an additional six stream miles of new analysis, as well as community outreach, H&H model development and a mapping activity statement for the watershed.

FEMA Risk MAP Production and Technical Services (PTS) A&E, TX. GIS Lead. Halff is a Joint Venture (JV) partner of the Compass Production and Technical Services (PTS) team for the national, five-year FEMA Risk Map Program contract. As part of this contract Halff provided H&H modeling, flood vulnerability assessments, project prioritization, transportation resiliency, as well as many other services on a national basis.

LCRA, Colorado River Flood Evaluation Study, TX. GIS Lead. Prepared GIS data layers using ArcInfo for hydraulic modeling with HEC-GeoRAS. To represent the topography of the lower Colorado River basin, spot elevations, detailed 2-foot contour lines, USGS digital elevation models (DEM), and river bathymetry surveys were used to generate a triangulated irregular network (TIN). Coordinated river centerline revisions, using ArcInfo and ArcView, to realign and simplify the geo-spatial description of the river. The simplification of the river required the development of a utility to reduce the number of vertices and combine the arc segments defining the line. Developed a methodology and software utility for intersecting water surface and ground surface TINS for the delineation of flood inundation surfaces. Developed a software utility to generate interpolated channel bathymetry based on surveyed cross-sections. Created and calibrated HEC-RAS steady and unsteady state hydraulic models. Generated floodplain polygons based on the results of the unsteady hydraulic models.



Thomas Brown GIS support

FIRM

HDR Engineering, Inc.

EDUCATION

BS, Urban & Regional Planning, Texas State University

INDUSTRY TENURE

27 years

BENEFIT TO UCRFPG

- 27 years of experience providing GIS services, data management, and application development.
- Recently provided application development and GIS support to TWDB's ASR/AR Statewide Assessment.
- Experienced with implementing GIS best practices.

Relevant Experience

TWDB Texas Statewide AR/AR Assessment, TX. GIS Lead. Thomas provided support in the development of the data schema, analysis and lead the application development activities. The assessment concluded with a web based interactive application which provides the step by step processes performed for the assessment and an interactive map to view the analysis which resulted from the project.

GIS On-Call Services, City of Taylor, TX. Project Manager. The purpose of this project was to get the city's GIS data into a reliable and usable format. This project involved updating the city's GIS data (i.e. water/wastewater, flood plains, street centerlines, etc.), configuring web applications for city and public use, and on-going GIS data maintenance to keep the data current.

Lands Records Management Project, El Paso Electric, TX. Project Manager. Thomas leads this digital transformation project which is taking the existing hard copy land record documents and creating GIS data for each record then linking to the clients document management system (DMS). This project includes cataloging all land records, digitizing, DMS entry, GIS data creation and application development that integrates with the source document.

Capital Metro Transportation Authority, Program Management Owner Representative, Austin, TX. GIS Lead. Thomas oversaw the web-based application development and maintenance of the community engagement reporting. This application used GIS to display where community engagements were occurring and where feedback was coming in from. Using this spatial analysis allowed for expanding engagement opportunities with the community.

TxDOT Grade Separation Analysis, Fort Worth, TX. GIS Lead. The purpose of this statewide railroad crossing assessment was to identify crossing which might be good candidates for grade separation. GIS spatial analysis was performed on various crossing factors, such as frequency of trains through each crossing, train speeds, type of trains, crossing type, etc. After the initial analysis was performed the results were shared in a GIS interactive web application with the crossing owners to obtain feedback which was incorporated into the final analysis and report.



Nathan Clements

METEOROLOGY SUPPORT

FIRM

HDR Engineering, Inc.

INDUSTRY TENURE

15 years

EDUCATION

MS, Atmospheric Sciences, Texas A&M University

BS, Atmospheric Sciences, Texas A&M University

BENEFIT TO UCRFPG

- Offers unique understanding of conditions and drainage challenges as a West Texas native.
- 15 years of experience as a Hydro-Meteorologist and Senior GIS Analyst.
- Expert in diverse hydro-meteorological applications such as a gauge-adjusted radar rainfall, extreme precipitation, and flood.
- Highly skilled in forecasting, site-specific probable maximum precipitation studies, and H&H analyses.
- Provides multi-faceted GIS support for a wide-range of projects and programs.

Relevant Experience

Flood Warning System, SARA-Bexar County, TX. Project Meteorologist/Senior GIS Analyst. HDR developed a flood warning system for the San Antonio River Authority, which provided a near-real time flood forecasting system using 2D FloodWorks modeling for Bexar County. The system ingests QPF, real-time NEXRAD and available telemetry data and runs the necessary hydrologic and hydraulic models at 15 minute intervals to produce floodplain mapping, expected stage and hydrograph information to initiate flood response for Bexar County emergency response agencies.

Salado Creek Floodplain Remapping Study, Bexar County, TX. Meteorologist/Senior GIS Analyst. As a sub to Atkins, HDR performed H&H DFIRM model update and overall floodplain remapping study for the Salado Creek Watershed in Bexar County, TX. The 223 sq mi Salado Creek watershed includes 265 miles of studied streams with effective flood mapping published by FEMA. This study includes updating existing mapping, incorporating new Atlas 14 rainfall data and recently acquired LiDAR, landuse, and karst terrain datasets. Mr Clements performed GARR (gauge adjusted radar rainfall) analyses on six rainfall events in the greater San Antonio area as input to the H&H initiative.

Sanitary Overflow (SSO) Consent Decree, San Antonio Water System (SAWS), TX. Project Meteorologist/Senior GIS Analyst. SAWS came under the auspices of an EPA consent decree for recurring SSO issues within the city. System re-operation planning, early-warning monitoring, and inflow and infiltration analysis enabled decision makers to better understand the solutions to their issues before high dollar value infrastructure decisions were made. Multiple storm GARR (1km X 1km) analyses were performed over the course of a four-year period to calibrate and run the 2D H & H model for the city. Every storm required a precise spatial and temporal analysis to determine depth duration frequency (DDF) of each event in comparison to design criteria.

Dam Operation Analysis, San Jacinto River Authority, TX. Project Meteorologist/Senior GIS Analyst. This ongoing court case involves a class action suit against the SJRA as a result of dam operations during the flood related to Hurricane Harvey in south central Texas. Analysis has included a large scale gauge-adjusted radar rainfall analysis (GARR) for hydrologic model input and a synoptic discussion of the events and magnitude for Hurricane Harvey and Tropical Storm Imelda

Integrated Water Master Plan, City of Tucson, TX. Project Meteorologist/Senior GIS Analyst. As part of the city's IWMP, Tucson Water requested an extensive analysis of the potential impacts to system operation associated with climate change. This analysis includes historic trend analyses and future projections for both the Colorado River Basin and the Lower Santa Cruz River region for 2035, 2050, 2100. Investigation includes impacts to groundwater recharge, Central Arizona Project flows, storm water capture, behavioral water use, local surface water, and long-term flood and drought cycles.

Wastewater Utility Master Plan, City of Boulder, CO. Project Meteorologist/GIS Analyst. The Wastewater Utility Master Plan (WUMP) will address the collection system master plan component of the utilities planning process and incorporates key findings from the ongoing WWTP Master Plan and the Water Quality Master Plan. The master plan uses GIS as the project backbone to delineate sewersheds; develop and distribute wastewater loads; identify and prioritize collection system data gaps; and develop the hydraulic model data. The meteorology task on this project involved re-creating past storm events with gauge-adjusted radar rainfall (GARR) for model input.

Little Dry Creek & Big Dry Creek Sewer Collection System Rehabilitation, City of Westminster, COs. Project Meteorologist/GIS Analyst. HDR implemented a program to evaluate the rehabilitation/replacement of interceptors within the Little Dry Creek and Big Dry Creek system. The project team will define sanitary flows through flow monitoring and projections to determine wet and dry weather flows, evaluate the condition of the pipes using existing inspection data, define sources of salinity and inflow/infiltration, and make recommendations for prioritized improvements.



Brandon Tate Environmental Support

FIRM

HDR Engineering, Inc.

EDUCATION

BS, Environmental Sciences/Studies, Stephen F. Austin State University

INDUSTRY TENURE

10 years

BENEFIT TO UCRFPG:

- 10 years of experience in state and federal permit coordination focused on Clean Water Act Section 404 permit coordination and 401 Water Quality Certification.
- Significant ecological assessment experience threatened/endangered species evaluations and assessments of wildlife and vegetative communities.
- Author in the development of the Texas Rapid Assessment Method (TXRAM) Manual used by the Fort Worth District, US Army Corps of Engineers.
- Provided environmental support on major energy, infrastructure, and municipal projects with a wide variety of environmental requirements.

Relevant Experience

Statewide On-Call Wetlands and Stream Mitigation and Biological Services, State of Oklahoma, OK. Environmental Support. HDR was selected for the wetland and stream evaluations on this statewide on-call contract. Task assignments have included Section 404 regulatory assessments of wetland and streams conceptual mitigation planning threatened & endangered species surveys Migratory Bird Treaty Act evaluations / surveys and biological evaluation in advance of NEPA documentation. Brandon assisted in the wetland and stream assessment for multiple task orders. The task order assignments included Section 404 regulatory assessments of wetland and streams, and development of conceptual mitigation planning services.

Texas Rapid Assessment Method Manual Update and Biotic Assessment, USACE-Fort Worth District, TX. Environmental Support. HDR is performing a detailed assessment of the Draft TXRAM Model including both the wetland and stream modules evaluating comments received to date on use of the Model soliciting additional agency comments and clarifying agency concerns. Based on the input received the objective is to prepare a revised TXRAM Model field test the revised TXRAM Model make any necessary revisions then prepare a Final version TXRAM.

Able Storm Water Pump Station, City of Dallas, TX. Environmental Support. HDR designed a new storm water pump station for the City which will replace two existing pump stations. The new Able Stormwater Pump Station will have a capacity of 410000 gpm (580 mgd) and utilize 3000 HP concrete volute pumps as the pumping units. The station will have dual primary electric service and dual transformers to provide reliable service and the station will be integrated into the new communications system used by the City's Flood Control staff. Mr. Tate assisted in the Clean Water Act Section 404 permit coordination

Ten Mile Creek TM-1 Relief Interceptor, Trinity River Authority, TX. Project Manager. This project includes 16800 lf of existing gravity sewer line and 12000 lf of 14-inch and 16-inch diameter force main to determine if a new relief sewer and new force main piping are needed. An evaluation of existing aerial crossings to consider replacement with inverted siphon structures review of 2040 flow projections and extrapolate to 2060 design of a low water crossing and access improvements for the Lancaster Meter Station and permit documentation and application are included. Brandon assisted in the Clean Water Act Section 404 permit coordination and Phase I ESA.



Cris Parker, PE, CFM

DAM RISK ANALYSIS

FIRM

HDR Engineering, Inc.

INDUSTRY TENURE

25 years

EDUCATION

BS, Civil Engineering, Iowa State University

REGISTRATIONS/CERTIFICATIONS

Professional Engineer, TX, No. 88602

Certified Floodplain Manager, No. 1007-06N

BENEFIT TO UCRFPG

- Extensive experience on TWDB Flood Protection Planning grant studies and other local and regional watershed master planning studies in Texas involving flood risk identification, prioritization, and development of structural and non-structural flood mitigation projects and funding sources.
- Experience with existing flood risk and flood infrastructure in the Upper Brazos River Basin from the unique characteristics of the Playa Lake systems in the highland plains to the flash flood hydrology of the rolling plains in the lower part of the basin.
- Extensive water resources project and program management experience involving multiple diverse stakeholders, major public outreach efforts, grant funding administration, and large subconsultant teams.

Relevant Experience

TWDB Flood Protection Planning Study and Capital Improvement Plan (CIP) Program, TWDB, Travis County, TX. Project Manager. Cris managed a county-wide TWDB FPP grant study involving over 90 flood problem areas, including low water crossings and flood problems in older developments within flood hazard areas. As the Project Manager, Cris evaluated and ranked problem areas, analyzed drainage alternatives, performed and prioritized conceptual designs and cost estimates, and developed a prioritized drainage CIP. Cris oversaw all project activities, lead flood risk data collection and analyses, development and prioritization of structural and non-structural flood mitigation strategies and projects, capital costing and funding strategies. Cris led the implementation of five high-priority projects.

John T. Montford Dam and Jim Bertram Lake 6 Flood Analyses and Safety Inspections, City of Lubbock, TX. Deputy Project Manager/Sr. Project Engineer.

Cris helped manage and lead the dam breach analyses and breach flood inundation mapping studies of the North Fork Double Mountain Fork Brazos River and the current technical dam safety inspection for the John T. Montford Dam. He also assisted with the previous inspections in 2010. Cris performed project oversight and quality reviews of the PMF and dam breach flood analyses and mapping, and led the on-site visual dam inspection and report, and will present findings to the Lubbock Water Advisory Commission.

Lake Leon FEMA HMGP Flood Reduction Project, Eastland County WSD, Eastland County, TX. Project Manager. Cris managed this flood mitigation and dam safety upgrade program for the large, high-hazard water supply reservoir, including planning, design, construction, emergency response, and multi-agency grant support services for \$4.5M in grants. Upgrades included flood risk reduction of habitable structures around the reservoir, TCEQ Dam Safety Program hydraulic compliance, and remediation of recurring slope failures. He also managed the emergency response and repair services for a large slide failure in March 2018.

Williamson Dam Risk Reduction Evaluation, City of Cisco, TX. Project Principal. Cris is overseeing a FEMA high hazard potential dam (HHPD) grant study to evaluate and reduce dam safety risk for Williamson Dam impounding Lake Cisco. He worked with Langford Community Management to obtain the grant and is providing executive oversight of the project overseeing existing data collection and assessment, dam inspection, H&H and structural engineering analyses, potential failure modes analysis and risk analyses workshops, and development of prioritized risk reduction actions for the City. The evaluation will be completed following FEMA's Federal Guidelines for Dam Safety Risk Management.

Stormwater Master Plan, City of Waco, TX. Senior Project Engineer. Cris served as Senior Project Engineer for the City of Waco's stormwater master plan including TWDB FPP grant funding. The project includes a new Drainage Design Criteria Manual, the establishment of new Post Construction Stormwater Criteria, development and prioritization of 18 flood mitigation CIP projects, establishing a stormwater utility fee, and LOMR submittals for 55-miles coordinated with FEMA's RiskMAP Mid-Brazos Watershed project. He developed the project scope of work, managed H&H staff, and performed quality control reviews.

2015 & 2019 Flood Hazard Mitigation Rotation Lists, City of Austin, TX. Project Principal/Project Manager. Cris is providing executive oversight and executive-level coordination with the City on flood risk reduction planning studies developing structural and non-structural solutions for high priority flood problem areas throughout the City's watersheds. He oversees project development, serves as a Technical Advisor, and is responsible for managing project resources and implementing our Quality Management System policy and procedures.

San Antonio Drainage Master Plan, San Antonio River Authority, Bexar County, TX. Senior Project Engineer. Cris managed H&H staff and performed QC reviews for the drainage master plan to assess potential drainage projects within three City of San Antonio council districts to identify priority projects for the 2017 bond program. The project included establishing existing flood risk, developing project alternatives and cost estimates, and evaluating project impacts.

Mose Hood & Stumpy Hamilton Park Drainage Improvements, City of Lubbock, TX. Project Manager. Cris managed all project activities for the preliminary engineering, final design, and construction phases of this playa lake drainage improvements project ICPR H&H modeling, storm sewer improvements, and verification of no adverse impact to effective FEMA base flood elevations. Cris was also the point of contact for client communication, progress reports, and invoicing.



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We practice increased use of sustainable
materials and reduction of material use.

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Texas Water Development Board

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Austin, TX 78711-3231, www.twdb.texas.gov
Phone (512) 463-7847, Fax (512) 475-2053

Allison Strube
City of San Angelo
72 W. College Ave.
San Angelo, Texas 76903

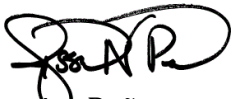
RE: TWDB Contract No. 2101792494 – Subcontract between City of San Angelo and HDR Engineering, Inc.

Dear Ms. Strube:

The Texas Water Development Board (TWDB) has received the above-referenced Subcontract. The referenced document has been reviewed and found to be consistent with the scope of work and budget in Contract No. 2101792494. The subcontract is, therefore, acceptable to TWDB.

If you have questions or need any further information, please feel free to contact Morgan White at (512) 475-3754 or morgan.white@twdb.texas.gov.

Sincerely,



Jessica Peña
Deputy Executive Administrator
Water Supply and Infrastructure

Date: 7/7/2021

c w/o enc: Morgan White, Flood Planning

Our Mission

Leading the state's efforts in ensuring a secure water future for Texas and its citizens

Board Members

Brooke T. Paup, Chairwoman | Kathleen Jackson, Board Member

Jeff Walker, Executive Administrator



STATE OF TEXAS

TWDB Contract No. 2401792835

COUNTY OF TRAVIS

Floodplain Management Account

Regional Flood Planning

THIS Contract, (hereinafter "CONTRACT"), is between the Texas Water Development Board (hereinafter "TWDB") and City of San Angelo, the political subdivision designated by the REGIONAL FLOOD PLANNING GROUP as its representative (hereinafter "CONTRACTOR").

ARTICLE I. DEFINITIONS: For the purposes of this CONTRACT, the following terms or phrases are defined as follows:

- A. TWDB – The Texas Water Development Board, or its designated representative.
- B. TWDB APPROVAL DATE – November 9, 2023
- C. COMMITTED FUNDS – \$2,324,000.00 is currently available to CONTRACTOR pursuant to the terms of this CONTRACT for the development of the TECHNICAL MEMORANDUM and the REGIONAL FLOOD PLAN. The COMMITTED FUNDS include necessary and direct costs incurred on or after CONTRACT INITIATION DATE, and certain eligible costs related to Task 10 incurred on or after, and prior to CONTRACT INITIATION DATE.
- D. CONTRACT VALUE – Same as the committed funds amount.
- E. CONTRACT INITIATION DATE – 4/17/2024
- F. CONTRACTOR – City of San Angelo
- G. DEADLINE FOR CONTRACT EXECUTION – June 30, 2024.
- H. EXECUTIVE ADMINISTRATOR – The Executive Administrator of TWDB or a designated representative.
- I. TECHNICAL MEMORANDUM – A memorandum to be prepared by CONTRACTOR and submitted to the EXECUTIVE ADMINISTRATOR summarizing the findings and all work performed under the Scope of Work and any future amended Scope of Work (i.e., through the identification of the region's flood risks and identification of potential flood management evaluations and potentially feasible flood management strategies and flood mitigation projects).

Updated April 2024

- J. TECHNICAL MEMORANDUM DEADLINE – September 19, 2025
- K. DRAFT FLOOD MANAGEMENT EVALUATION (FME) LIST – The Flood Management Evaluation (FME) List to be prepared by CONTRACTOR and submitted to the EXECUTIVE ADMINISTRATOR pursuant to Scope of Work Task 5B.
- L. DRAFT FLOOD MANAGEMENT EVALUATION (FME) LIST DEADLINE – JANUARY 26, 2026
- M. DRAFT REGIONAL FLOOD PLAN – The Regional Flood Plan to be initially prepared by CONTRACTOR and submitted to the EXECUTIVE ADMINISTRATOR for comments pursuant to the CONTRACT.
- N. DRAFT REGIONAL FLOOD PLAN DEADLINE – February 26, 2027
- O. REGIONAL FLOOD PLAN – A plan including any amendments that have been adopted by the REGIONAL FLOOD PLANNING GROUP and that meets the requirements contained in Texas Water Code § 16.062 and 31 Texas Administrative Code Chapters 361 and 362 and is submitted to TWDB for approval.
- P. REGIONAL FLOOD PLAN DEADLINE – January 10, 2028
- Q. FIRST REIMBURSEABLE EXPENSE DATE – The first day that work performed under this CONTRACT is eligible for reimbursement will be November 09, 2023 for limited administrative costs associated with public notices. TWDB will not reimburse expenses associated with Exhibit A, Scope of Work, until after CONTRACT INITIATION DATE.
- R. FINAL REIMBURSEABLE EXPENSE DATE – The last day that work performed under this CONTRACT is eligible for reimbursement will be July 31 2028.
- S. CONTRACT EXPIRATION DATE – This CONTRACT expires on July 31, 2028 . The last day that any budget amendment requests may be submitted under the CONTRACT will be May 29, 2028.
- T. FINAL PAYMENT REQUEST DEADLINE – The latest day that the final payment request may be submitted for reimbursement will be October 30, 2028.
- U. FLOOD PLANNING REGION – Region 9 designated under Texas Water Code § 16.062(a)(1) and 31 Texas Administrative Code § 361.11.
- V. REGIONAL FLOOD PLANNING GROUP – Region 9 Upper Colorado Regional Flood Planning Group, designated under and in compliance with Texas Water Code §16.062(c) and 31 Texas Administrative Code §361.11 to develop regional flood plans.

Updated April 2024

W. STATE FLOOD PLANNING DATASET – A data platform to be developed and maintained by TWDB that stores data related to flood planning. It is used to display and disseminate regional and statewide flood planning data.

X. PAYMENT REQUEST SUBMISSION SCHEDULE – A minimum of quarterly.

ARTICLE II. CONDITIONS AND EXCEPTIONS TO STANDARD AGREEMENT OF THIS CONTRACT.

A. TWDB will not be liable for any expenses incurred in excess of COMMITTED FUNDS.

This CONTRACT does not require CONTRACTOR to incur costs beyond those that can be paid with COMMITTED FUNDS. However, this provision does not relieve the REGIONAL FLOOD PLANNING GROUP from its duty under Texas Water Code § 16.062 to prepare a regional flood plan.

B. Other provisions specific to each region: None.

ARTICLE III. RECITALS

Whereas, CONTRACTOR has been designated by the REGIONAL FLOOD PLANNING GROUP as its representative to enter into Contracts with TWDB for financial assistance to develop a REGIONAL FLOOD PLAN for the FLOOD PLANNING REGION;

Whereas, CONTRACTOR applied to TWDB for a planning grant to develop a REGIONAL FLOOD PLAN;

Whereas, CONTRACTOR is the entity that will act as administrator of TWDB's planning grant and will be responsible for the execution of this CONTRACT; and

Whereas, on TWDB APPROVAL DATE, TWDB approved CONTRACTOR's application for financial assistance.

Now, therefore, TWDB and CONTRACTOR, agree as follows:

ARTICLE IV. PROJECT DESCRIPTION AND SERVICES TO BE PERFORMED

A. CONTRACTOR will develop a TECHNICAL MEMORANDUM and REGIONAL FLOOD PLAN for the FLOOD PLANNING REGION according to:

- (1) Exhibit A – Scope of Work
- (2) Exhibit B – Task and Expense Budgets

Updated April 2024

- (3) Exhibit C – Technical Guidelines for Regional Flood Planning⁹
 - (4) Exhibit D – Data Submittal Guidelines for Regional Flood Planning¹
 - (5) Exhibit E – Original Application (cover pages as a reference to the full, original grant application)
 - (6) Exhibit F – Certification of Procurement of Professional Services and in accordance with the requirements of Texas Water Code Chapter 16 and with 31 Texas Administrative Code Chapters 361 and 362.
- B. The EXECUTIVE ADMINISTRATOR will provide technical assistance within available resources to CONTRACTOR if such assistance is requested for performing regional flood planning activities; and, as necessary, will facilitate resolution of conflicts within the FLOOD PLANNING REGION or between regions.
 - C. CONTRACTOR will provide for public participation in the planning process as specified in Texas Water Code § 16.062 and 31 Texas Administrative Code § 361.21.
 - D. CONTRACTOR must provide its best efforts as determined by the EXECUTIVE ADMINISTRATOR to produce a REGIONAL FLOOD PLAN that has been adopted by the REGIONAL FLOOD PLANNING GROUP and that was developed in accordance with the statutory and rule requirements identified in this CONTRACT.
 - E. CONTRACTOR must obtain prior approval of the REGIONAL FLOOD PLANNING GROUP for all potential flood management evaluations and potentially feasible flood mitigation projects and flood management strategies to be evaluated as part of the REGIONAL FLOOD PLAN development.

ARTICLE V. SCHEDULE, REPORTS, RESPONSIBILITIES, AND OTHER DELIVERABLES

- A. CONTRACTOR must execute this CONTRACT on or before the DEADLINE FOR CONTRACT EXECUTION or TWDB's commitment to pay COMMITTED FUNDS will be rescinded.
- B. This CONTRACT begins on the CONTRACT INITIATION DATE and expires on the CONTRACT EXPIRATION DATE.
- C. PAYMENT REQUEST SUBMISSION. CONTRACTOR must provide written progress reports according to the PAYMENT REQUEST SUBMISSION SCHEDULE with each payment reimbursement request or release of advance funds. The progress reports must include:
 - (1) a brief statement of the overall progress made since the last progress report for each task budget item;

⁹ The 'Exhibit C - Technical Guidelines for Regional Flood Planning' and 'Exhibit D -Data Submittal Guidelines for Regional Flood Planning' will be posted on the TWDB website at: <https://www.twdb.texas.gov/flood/planning/planningdocu/2028/index.asp>. The RFPs must utilize the latest version posted on the website up to July 31st of 2025.

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- (2) a brief description of any problems that have been encountered during the previous reporting period that may affect the study, delay the timely completion of any portion of this CONTRACT, or inhibit the completion of or cause a change in any of the study's products or objects; and
- (3) a description of any action CONTRACTOR plans to take to correct any problems that have been encountered or identified.

D. TECHNICAL MEMORANDUM. CONTRACTOR must complete the TECHNICAL MEMORANDUM according to Article II, Paragraph A of this Section. CONTRACTOR must submit the TECHNICAL MEMORANDUM to the REGIONAL FLOOD PLANNING GROUP for approval at a regular REGIONAL FLOOD PLANNING GROUP meeting. After such approval, CONTRACTOR must submit the TECHNICAL MEMORANDUM to the EXECUTIVE ADMINISTRATOR. CONTRACTOR must deliver two electronic copies of the TECHNICAL MEMORANDUM, one (1) in searchable Portable Document Format (PDF) and one (1) in Microsoft Word (MSWord) Format, to the EXECUTIVE ADMINISTRATOR no later than the TECHNICAL MEMORANDUM DEADLINE.

- 1. CONTRACTOR will populate TWDB's state flood planning database with associated data, prior to submission of the TECHNICAL MEMORANDUM in accordance with this CONTRACT. TWDB will not accept a TECHNICAL MEMORANDUM or consider it administratively complete until the associated data in TWDB's state flood planning data submittal is complete and accurate, and the required summary tables are included in the TECHNICAL MEMORANDUM in accordance with this CONTRACT.
- 2. The TECHNICAL MEMORANDUM DEADLINE may be extended at the discretion of the EXECUTIVE ADMINISTRATOR either on the EXECUTIVE ADMINISTRATOR's initiative or upon a written request received from CONTRACTOR, at least thirty (30) days prior to the deadline, stating good cause for the extension.
- 3. After a 30-day review period, the EXECUTIVE ADMINISTRATOR will either accept or reject the TECHNICAL MEMORANDUM based on administrative completeness. If the TECHNICAL MEMORANDUM is rejected, the rejection letter sent to CONTRACTOR will state the reasons for rejection and the steps CONTRACTOR needs to take to have the TECHNICAL MEMORANDUM accepted.
- 4. In the event CONTRACTOR has produced a TECHNICAL MEMORANDUM that, despite CONTRACTOR'S best efforts, has not been authorized for submittal by the REGIONAL FLOOD PLANNING GROUP, CONTRACTOR must provide all data, material, reports, and work accomplished under the CONTRACT to TWDB.

E. CONTRACTOR or CONTRACTOR's representative (e.g., Subcontractor) must attend at least one state flood planning data submittal training session provided by TWDB staff at times and locations to be determined by TWDB.

Updated April 2024

- F. DRAFT FLOOD MANAGEMENT EVALUATION LIST. CONTRACTOR must submit a list of FMEs that were identified and recommended but not performed. The list must include those FMEs that the RFPG would like the TWDB to perform. Subject to Executive Administrator approval and TWDB financial and other resources, the Executive Administrator may perform the FMEs on behalf of the RFPG based on the list provided.
- G. DRAFT REGIONAL FLOOD PLAN. CONTRACTOR must complete the DRAFT REGIONAL FLOOD PLAN according to Article II, Paragraph A of this Section. CONTRACTOR must submit the DRAFT REGIONAL FLOOD PLAN to the REGIONAL FLOOD PLANNING GROUP and allow the REGIONAL FLOOD PLANNING GROUP to conduct a public meeting in a central location in the FPR to receive and consider comments on the DRAFT REGIONAL FLOOD PLAN. CONTRACTOR must submit the DRAFT REGIONAL FLOOD PLAN to the EXECUTIVE ADMINISTRATOR after the REGIONAL FLOOD PLANNING GROUP authorizes such submittal.

The EXECUTIVE ADMINISTRATOR will provide any written comments to CONTRACTOR within 120 calendar days.

- (1) CONTRACTOR MUST provide the pertinent TWDB state flood planning dataset, including appropriate documentation and quality check, by February 26, 2027, in accordance with this CONTRACT.
- (2) The DRAFT REGIONAL FLOOD PLAN DEADLINE may be extended at the discretion of the EXECUTIVE ADMINISTRATOR either on their own initiative or upon a written request received from CONTRACTOR at least thirty (30) days prior to the deadline, stating good cause for the extension.
- (3) CONTRACTOR must include a copy of the EXECUTIVE ADMINISTRATOR'S comments on the DRAFT REGIONAL FLOOD PLAN in the adopted REGIONAL FLOOD PLAN, with a summary of all other comments received on the DRAFT REGIONAL FLOOD PLAN, including written explanations of how the REGIONAL FLOOD PLAN was revised in response to comments or why changes recommended in a comment were not warranted.
- (4) CONTRACTOR will deliver two electronic copies of a DRAFT REGIONAL FLOOD PLAN, to the EXECUTIVE ADMINISTRATOR no later than the DRAFT REGIONAL FLOOD PLAN DEADLINE. CONTRACTOR must submit:
 - one (1) electronic copy of all files on which the plan is based (e.g. spreadsheets, maps);
 - two (2) electronic copies of the entire REGIONAL FLOOD PLAN, one (1) in searchable Portable Document Format (PDF) and one (1) in Microsoft Word (MSWord) Format.
 - In compliance with Texas Administrative Code Chapters 206 and 213 (related to Accessibility and Usability of State Web Sites, Web Content Accessibility Guidelines (WCAG) 2.0 Level AA Standard – Web Content

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Accessibility Guidelines (WCAG) 2.1 Level AA Standard – WCAG 2.1 Quick Reference can be found at: <https://www.w3.org/WAI/WCAG21/quickref/>.

- Complying with this clause will require demonstrated proof of compliance utilizing TWDB's checklists. For the deliverable in .pdf format, use the checklist and verification form found at https://www.twdb.texas.gov/about/contract_admin/doc/Accessibility-Checklist-and-Certification-with-Instructions.pdf to demonstrate compliance and submit the completed form with the deliverable. Acceptance of the final report(s) or other deliverable(s) is contingent upon compliance with this clause. The electronic copy of the REGIONAL FLOOD PLAN will comply with the requirements and standards specified in statute; and
 - one (1) bound, double-sided copies of the REGIONAL FLOOD PLAN to the EXECUTIVE ADMINISTRATOR no later than the REGIONAL FLOOD PLAN DEADLINE.
- H. REGIONAL FLOOD PLAN. CONTRACTOR must make corrections, updates, or modifications, to the TWDB state flood planning dataset, as necessary, prior to REGIONAL FLOOD PLAN DEADLINE in accordance with this CONTRACT. TWDB will not accept a REGIONAL FLOOD PLAN or consider it administratively complete until the associated data in TWDB's state flood planning dataset is complete and accurate and the relevant flood planning data and maps are included in the REGIONAL FLOOD PLAN. CONTRACTOR also must transfer copies of all data and reports generated by the planning process and used in developing the REGIONAL FLOOD PLAN to the EXECUTIVE ADMINISTRATOR no later than the REGIONAL FLOOD PLAN DEADLINE. The REGIONAL FLOOD PLAN and the data collected and transmitted for the REGIONAL FLOOD PLAN must be prepared in the format and according to specifications prescribed in Flood Planning Guidance Documents contained in Exhibits C and D to this CONTRACT. In the event CONTRACTOR has produced a REGIONAL FLOOD PLAN, that despite CONTRACTOR'S best efforts has not been adopted by the REGIONAL FLOOD PLANNING GROUP, CONTRACTOR must provide all data, material, reports, and work accomplished under the CONTRACT to TWDB.
- (1) Delivery of a REGIONAL FLOOD PLAN that meets statutory and rule requirements and all associated data and reports generated through the planning process and used in developing the REGIONAL FLOOD PLAN. as determined by the EXECUTIVE ADMINISTRATOR on or before the REGIONAL FLOOD PLAN DEADLINE constitutes completion of the terms of this CONTRACT by CONTRACTOR.
- (2) After a 90-day review period, the EXECUTIVE ADMINISTRATOR will either accept or reject the REGIONAL FLOOD PLAN. If the final plan is rejected, the rejection letter sent to CONTRACTOR will state the reasons for rejection and the steps CONTRACTOR must take to have the REGIONAL FLOOD PLAN accepted and the retainage released.
- I. ANNUAL AUDIT. During the term of this CONTRACT, TWDB reserves the right to request the CONTRACTOR to submit an annual audit of the general purpose financial statements prepared in accordance with generally accepted auditing standards by a

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certified public accountant or licensed public accountant. Audits must be submitted to TWDB no later than 120 days following the close of CONTRACTOR's fiscal year.

- J. FINANCIAL ACCOUNTING. CONTRACTOR and its subcontractors must maintain satisfactory financial accounting documents and records, including copies of invoices, receipts, time and attendance records, supporting salaries and wages, in accordance with generally accepted accounting principles for a term of three years after completion of this CONTRACT and must make them available for examination and audit by TWDB at any time upon 24 hours' notice from the EXECUTIVE ADMINISTRATOR or the EXECUTIVE ADMINISTRATOR's designee. Accounting by CONTRACTOR and its subcontractors must be in a manner consistent with generally accepted accounting principles.
- K. CONTRACTOR must provide information to an entity or person who is independent of CONTRACTOR and who is selected by the REGIONAL FLOOD PLANNING GROUP sufficient to allow that person or entity to routinely provide reports of expenses and use of planning funds to the REGIONAL FLOOD PLANNING GROUP. The person to whom the information is provided may be a member of the REGIONAL FLOOD PLANNING GROUP. CONTRACTOR must allow such person or entity full access to all records relating to this CONTRACT, including all financial records.

ARTICLE VI. COMPENSATION AND REIMBURSEMENT

- A. PAYMENT REQUEST SUBMISSION. CONTRACTOR must provide written progress reports according to the PAYMENT REQUEST SUBMISSION SCHEDULE with each payment reimbursement request or release of advance funds. The progress reports must include:
 - (1) brief statement of the overall progress made since the last progress report for each task budget item;
 - (2) a brief description of any problems that have been encountered during the previous reporting period that may affect the study, delay the timely completion of any portion of this CONTRACT, or inhibit the completion of or cause a change in any of the study's products or objects; and
 - (3) a description of any action CONTRACTOR plans to take to correct any problems that have been encountered or identified.
- B. TWDB agrees to compensate and reimburse CONTRACTOR a total amount not to exceed the COMMITTED FUNDS for costs incurred and paid by CONTRACTOR pursuant to performance of this CONTRACT, as specified in Article I.
- C. Eligible expenses incurred by CONTRACTOR from the FIRST REIMBURSEABLE EXPENSE DATE through FINAL REIMBURSEABLE EXPENSE DATE will be eligible for reimbursement by TWDB. CONTRACTOR will be eligible for reimbursement only for the categories set forth in the budget for this CONTRACT. All requests for

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reimbursement must be accompanied by copies of invoices and receipts. TWDB will reimburse the actual expenses allowed herein during the term of the CONTRACT.

- D. Requests for advance or reimbursement for subcontractor expenses will only be considered where such subcontracts or agreements have been determined by the EXECUTIVE ADMINISTRATOR to be consistent with the terms of this CONTRACT. CONTRACTOR understands that CONTRACTOR should obtain its own legal review of subcontracts and agreements that CONTRACTOR enters into. CONTRACTOR must provide proof of work performed and incurred expenses by subcontractors prior to reimbursement by TWDB. CONTRACTOR is fully responsible for paying all charges by subcontractors.
- E. CONTRACTOR must adhere to all requirements in state law and TWDB rules pertaining to the procurement of professional services, including 31 TAC § 361.72(c). Prior to associated reimbursements, CONTRACTOR must submit a Certification of Procurement of Professional Services in accordance with Exhibit F to this CONTRACT, evidencing that the Region's subcontractors were properly and competitively procured for this planning cycle. Expenses incurred under subcontracts or agreements that have not been approved by the EXECUTIVE ADMINISTRATOR or do not otherwise comply with the terms of this CONTRACT are not eligible for reimbursement.
- F. At the sole discretion of the EXECUTIVE ADMINISTRATOR, CONTRACTOR may modify task and expense budget categories to the extent that the resulting change in amount in any one task or expense category does not exceed 35% of the total authorized amount by this CONTRACT for that task or category. Larger deviations require submission of a written request that is approved by the Regional Flood Planning Group and approved by the EXECUTIVE ADMINISTRATOR or designee that will be documented through an Approved Budget Memorandum to the TWDB CONTRACT file. CONTRACTOR will be required to provide written explanation for the overage and reallocation of the task and expense amount. Associated shifts in amounts between budget task and expense categories authorized under this paragraph will not change the COMMITTED FUNDS amount.
- G. Within thirty (30) days after the execution of this CONTRACT, the EXECUTIVE ADMINISTRATOR will advance to CONTRACTOR twenty percent of the COMMITTED FUNDS, unless CONTRACTOR requests and the EXECUTIVE ADMINISTRATOR approves advances of less than twenty percent.
- H. All advanced funds received must be deposited into an interest-bearing account by CONTRACTOR and proportionate share of the interest earned must be allocated to the grant to be used to reimburse the SUBCONTRACTOR(S).
- I. After CONTRACTOR has received the initial advance, the TWDB will then begin reimbursing the CONTRACTOR based on reimbursement request amounts, in addition to and aside from the initial twenty percent advance, so that after the first

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TWDB reimbursement is received by CONTRACTOR, CONTRACTOR will have retained the full amount of the initial advance funds to be available to pay its SUBCONTRACTOR prior to the CONTRACTOR'S second reimbursement request to the TWDB.

- J. The TWDB will reimburse CONTRACTOR up to 95 percent of the COMMITTED FUNDS available for costs incurred and paid by CONTRACTOR pursuant to performance of this CONTRACT. Once ninety-five percent of the COMMITTED FUNDS has been reimbursed, including the initial advance amount and subsequent reimbursements, the CONTRACTOR will then submit reimbursement requests that will apply to reconciling the initial advance amount. The five percent retainage will be withheld until CONTRACTOR submits a FINAL REGIONAL FLOOD PLAN, as described in Article III, Paragraphs G and H of this section. If the EXECUTIVE ADMINISTRATOR determines that CONTRACTOR has utilized its best efforts to have a FINAL REGIONAL FLOOD PLAN adopted by the REGIONAL FLOOD PLANNING GROUP for submittal to TWDB, but has been unable, despite those best efforts, to do so, the EXECUTIVE ADMINISTRATOR may release the five percent retainage solely within the EXECUTIVE ADMINISTRATOR's discretion.
- K. CONTRACTOR must submit payment requests and documentation for reimbursement in accordance with the approved task and expense budgets contained in Exhibit B to this CONTRACT. For all eligible reimbursement billings, including any subcontractor's expenses, the EXECUTIVE ADMINISTRATOR must have provided written approval of all CONTRACTS or agreements between CONTRACTOR and the subcontractor. CONTRACTOR is fully responsible for paying all charges by subcontractors prior to reimbursement by TWDB.
- M. The written progress report required by Article III, Paragraph C of this Section, and the following documentation which documents the COMMITTED FUNDS, must be submitted by CONTRACTOR to the EXECUTIVE ADMINISTRATOR in support of its requests for reimbursement. CONTRACTOR must submit a progress report and the following documentation which documents the COMMITTED FUNDS for the reporting period even if the COMMITTED FUNDS for the period is ZERO:
1. Completed and Signed Payment Request Checklist that includes the following:
 - (a) TWDB CONTRACT Number;
 - (b) Total expenses for the billing period; beginning (date) to ending (date);
 - (c) Total Services for this billing period;
 - (d) Total In-kind services;
 - (e) Less Local Share of the COMMITTED FUNDS for the billing period;
 - (f) Total of TWDB's share of the COMMITTED FUNDS for the billing period;
 - (g) Amount of retainage to be withheld for the billing period;
 - (h) Total costs to be reimbursed by TWDB for the billing period; and
 - (i) Certification, signed by CONTRACTOR's authorized representative, that the expenses submitted for the billing period are a true and correct representation of amounts paid for work performed directly related to this CONTRACT.

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2. For direct expenses incurred by CONTRACTOR other than subcontracted work:
 - (a) A spreadsheet showing the tasks that were performed; the percent and cost of each task completed; a total cost figure for each direct expense category including labor, fringe, overhead, travel, and other expenses such as communication and postage, technical and computer services, expendable supplies, printing and reproduction; and
 - (b) Copies of invoices for other expenses
 3. For direct expenses incurred by CONTRACTOR for subcontracted work:
 - (a) Copies of invoices from the subcontractors to CONTRACTOR
 - (b) A spreadsheet showing the tasks that were performed; the percent and cost of each task completed; a total cost figure for each direct expense category including labor, fringe, overhead, travel, and other expenses such as communication and postage, technical and computer services, expendable supplies, printing and reproduction; and the total dollar amount due to the Subcontractor; and
 - (c) Copies of invoices for other expenses
 4. For travel expenses for CONTRACTOR and/or subcontractor(s):
 - (a) Names, dates, work locations, time periods at work locations, itemization of subsistence expenses of each employee, which will be reimbursed at rates authorized for state employees by the General Appropriations Act, Tex. Leg. Regular Session, 2013, Article IX, Part 5, as amended or superseded. Receipts required for lodging. Any eligible travel expenses related to a subcontract may be reimbursed at the current rate for State of Texas employees which can be found at: <https://fmx.cpa.state.tx.us/fmx/travel/texttravel/trans/personal.php>
 - (b) Copies of invoices or tickets for transportation costs or, if not available, names, dates, and points of travel of individuals; and
 - (c) All other reimbursable travel expenses -- invoices or purchase vouchers showing reason for expense with receipts to evidence the amount incurred.
 5. Incomplete requests will be returned to CONTRACTOR if deficiencies are not resolved within ten (10) business days.
 6. If the reimbursement request cannot be processed due to the need for an amendment to the CONTRACT, CONTRACTOR will be required to resubmit the Payment Request Checklist dated after the execution of the amendment.
- N. In accordance with Section I, Article I, CONTRACTOR will provide a final reconciliation of expended amounts under the CONTRACT. Within thirty (30) days of the EXECUTIVE ADMINISTRATOR'S final accounting of the amounts expended by CONTRACTOR and the amounts reimbursed by TWDB to CONTRACTOR, the EXECUTIVE ADMINISTRATOR will reimburse the difference provided the reimbursement does not exceed the COMMITTED FUNDS.

ARTICLE VII. INTELLECTUAL PROPERTY: OWNERSHIP, PUBLICATION, AND ACKNOWLEDGEMENT

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- A. "Use" of a work product, whether a Contractor Work, a Subcontractor Work or otherwise, means and includes, without limitation, any lawful use, copying or dissemination of the work product, or any lawful development, use, copying or dissemination of derivative works of the work product, in any media or forms, whether now known or later existing.
- B. "No Compensation Obligation" means there is no obligation on the part of one co-owner or licensee of a work, whether a Contractor Work, a Subcontractor Work or otherwise, to compensate other co-owners, licensees or licensors of the work for any use of the work by the using co-owner or licensee, including but not limited to compensation for or in the form of: royalties; co-owner or licensee accounting; sharing of revenues or profits among co-owners, licensees or licensors; or any other form of compensation to the other co-owners, licensees or licensors on account of any use of the work.
- C. "Dissemination" includes, without limitation, any and all manner of: physical distribution; publication; broadcast; electronic transmission; Internet streaming; posting on the Internet or world wide web; or any other form of communication, transmission, distribution, sending or providing, in any forms or formats, and in or using any media, whether now known or later existing.
- D. TWDB has an unlimited, unrestricted, perpetual, irrevocable, non-exclusive royalty-free right to access and receive in usable form and format, and to use all technical or other data or information developed by CONTRACTOR and SUBCONTRACTOR in, or otherwise resulting from, the performance of services under this CONTRACT.
- E. For purposes of this Article, "Contractor Works" are work products developed by CONTRACTOR and Subcontractor(s) using funds provided under this CONTRACT or otherwise rendered in or related to the performance in whole or in part of this CONTRACT, including but not limited to reports, drafts of reports, or other material, data, drawings, studies, analyses, notes, plans, computer programs and codes, or other work products, whether final or intermediate.
 - 1. It is agreed that all Contractor Works will be the joint property of TWDB and CONTRACTOR.
 - 2. The parties hereby agree that, if recognized as such by applicable law, the Contractor Works are intended to and will be works-made-for-hire with joint ownership between TWDB and CONTRACTOR as such works are created in whole or in part.
 - 3. If the Contractor Works do not qualify as works-made-for-hire under applicable law, CONTRACTOR hereby conveys co-ownership interest in such works to TWDB as they are created in whole or in part. If present conveyance is ineffective under applicable law, CONTRACTOR agrees to convey a co-ownership interest in the Contractor Works to TWDB after creation in whole or in part of such works, and to provide written documentation of such conveyance upon request by TWDB.

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4. TWDB and CONTRACTOR acknowledge that the copyright in and to a copyrightable Contractor Work exists upon creation of the Contractor Work and its fixing in any tangible medium. CONTRACTOR or TWDB may register the copyrights to such Works jointly in the names of CONTRACTOR and TWDB.
 5. TWDB and CONTRACTOR each have full and unrestricted rights to use a Contractor Work with No Compensation Obligation.
- F. For purposes of this Article, "Subcontractor Works" include all work product developed in whole or in part by or on behalf of Subcontractors engaged by CONTRACTOR to perform work for or on behalf of CONTRACTOR under this CONTRACT (or by the Subcontractor's Subcontractors hereunder, and so on). CONTRACTOR must secure in writing from any Subcontractors so engaged:
1. unlimited, unrestricted, perpetual, irrevocable, royalty-free rights of TWDB (and, if desired, of CONTRACTOR) to access and receive, and to use, any and all technical or other data or information developed in or resulting from the performance of services under such engagement, with No Compensation Obligation; and either:
 2. assignment by the Subcontractor to TWDB (and, if desired by them, jointly to CONTRACTOR) of ownership (or joint ownership with CONTRACTOR) of all Subcontractor Works, with No Compensation Obligation; or
 3. grant by Subcontractor of a non-exclusive, unrestricted, unlimited, perpetual, irrevocable, world-wide, royalty-free license to TWDB (and, if desired by them, CONTRACTOR) to use any and all Subcontractor Works, including the right to sublicense use to third parties, with No Compensation Obligation.
- G. No unauthorized patents. Contractor Works and Subcontractor Works or other work product developed or created in the performance of this CONTRACT or otherwise using funds provided hereunder will not be patented by CONTRACTOR or their Subcontractor(s) unless the Executive Administrator consents in writing to submission of an application for patent on such works; and provided that, unless otherwise agreed in writing:
1. any application made for patent must include and name TWDB (and, as applicable and desired by them, both CONTRACTOR and the Subcontractor) as co-owners of the patented work;
 2. no patent granted will in any way limit, or be used by CONTRACTOR or Subcontractor to limit or bar TWDB's rights hereunder to access and receive in useable form and format, and right to use, any and all technical or other data or information developed in or resulting from performance pursuant to this CONTRACT or Subcontract or the use of funds provided hereunder; and
 3. TWDB (and, if applicable, CONTRACTOR) will have No Compensation Obligation to any other co-owners or licensees of any such patented work.
- H. CONTRACTOR must include terms and conditions in all CONTRACTS or other engagement agreements with any Subcontractors as are necessary to secure these rights and protections for TWDB; and must require that their Subcontractors include

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similar such terms and conditions in any CONTRACTS or other engagements with their Subcontractors. For the purposes of this section, "Subcontractors" includes independent contractors (including consultants) and also employees working outside the course and scope of employment.

- I. Any work products subject to a TWDB copyright or joint copyright and produced or developed by CONTRACTOR or their Subcontractor pursuant to this CONTRACT or Subcontract or using any funding provided by TWDB may be reproduced in any media, forms or formats by TWDB or CONTRACTOR at their own cost, and be disseminated in any medium, format or form by any party at its sole cost and in its sole discretion. CONTRACTOR may utilize such work products as they may deem appropriate, including Dissemination of such work products or parts thereof under their own name, provided that any TWDB copyright is noted on the materials.
- J. CONTRACTOR agrees to acknowledge TWDB in any news releases or other publications relating to the work performed under this CONTRACT.

ARTICLE VIII. SUBCONTRACTS

- A. Requests for advance or reimbursement for subcontractor expenses will only be considered where such subcontracts or agreements have been determined by the EXECUTIVE ADMINISTRATOR to be consistent with the terms of this CONTRACT. The purpose of this review is solely to ensure that the subcontracts and agreements are consistent with this CONTRACT and that the rights of TWDB, particularly in regard to ownership of data, are protected. CONTRACTOR understands that CONTRACTOR should obtain its own legal review of subcontracts and agreements that CONTRACTOR enters into. CONTRACTOR agrees that TWDB assumes no legal obligations under its subcontracts or agreements and is merely a third-party beneficiary of the same.
- B. CONTRACTOR must provide a Certification of Procurement of Professional Services, attached as Exhibit F, to the EXECUTIVE ADMINISTRATOR. CONTRACTOR must also provide a list of all subcontractors. Exhibit F and the list of all subcontractors may be updated periodically to maintain accuracy.
- C. The subcontracts and agreements must provide that in the event of any conflict with the provisions of this CONTRACT the provisions of this CONTRACT will prevail.
- D. Each Subcontract entered into to perform required work under this CONTRACT must contain the following information and provisions:
 - (1) A clause stating the following- "Subcontractor agrees and acknowledges that it is subject to all applicable requirements of the master contract between (Name of Contractor) and the Texas Water Development Board, TWDB Contract No. xxxxxxxxxxxx. Subcontractor adopts by reference the requirements of Article VIII, Section 11, of TWDB Contract No. xxxxxxxxxxxx for this Subcontract."

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- (2) **Contract Dates** – There should be a starting date and expiration date for work under the Subcontract.
- (3) **Contract Amount** – The subcontract should list the total dollar value.
- (4) **Terms of Reimbursement** – Subcontracts must be cost reimbursable. Lump sum agreements are not permitted for services. Please also note that TWDB does not reimburse “handling costs” (mark-ups) on any expenses. Any eligible travel expenses related to a subcontract may be reimbursed at the current rate for State of Texas employees which can be found at: <https://fmx.cpa.texas.gov/fmx/travel/texttravel/>
- (5) **Scope of Work** – The terms of the scope of work must be consistent with the scope of the CONTRACT and Exhibit A.
- (6) **Task Budget and Expense Budget** – As appropriate. The Task Budget and Expense Budget must be provided in a format similar to Exhibit B of this CONTRACT, with specific cost details for each task or specific item of work to be performed by the subcontractor and for each category of reimbursable expenses.
- (7) **Signatures** – Each subcontract must be executed appropriately by signature, by each party to the agreement.
- (8) **State Auditor’s Right to Audit** - The state auditor may conduct an audit or investigation of any entity receiving funds from the state directly under the CONTRACT or indirectly through a Subcontract under the CONTRACT. The acceptance of funds directly under the CONTRACT or indirectly through a Subcontract under the CONTRACT acts as acceptance of the authority of the state auditor, under the direction of the legislative audit committee, to conduct an audit or investigation in connection with those funds. Under the direction of the legislative audit committee, an entity that is the subject of an audit or investigation by the state auditor must provide the state auditor with access to any information the state auditor considers relevant to the investigation or audit.
- (9) **Financial Records**- SUBCONTRACTOR(s) and any contracted parties must maintain satisfactory financial accounting documents and records, including copies of invoices and receipts, and must make them available for examination and audit by the EXECUTIVE ADMINISTRATOR of TWDB. Accounting by the SUBCONTRACTOR(s) and any contracted parties must be in a manner consistent with generally accepted accounting principles
- (10) **Excess Obligations Prohibited/No Debt Against the State**- This SUBCONTRACT and Agreement shall not be construed as creating any debt by or on behalf of the State of Texas and the TWDB, and all obligations of the State of Texas are subject to the availability of funds. To the extent the performance of this SUBCONTRACT transcends the biennium in which this SUBCONTRACT is entered into, this SUBCONTRACT is specifically contingent upon the continued authority of the TWDB and appropriations therefore.

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- (11)**License, Permits, and Insurance-** For the purpose of this CONTRACT, the SUBCONTRACTOR(s) will be considered an independent contractor and therefore solely responsible for liability resulting from negligent acts or omissions. SUBCONTRACTOR(s) must obtain all necessary insurance, in the judgment of the SUBCONTRACTOR(s), to protect itself, CONTRACTOR, TWDB, and employees and officials of TWDB from liability arising out of this CONTRACT. SUBCONTRACTOR(s) must indemnify and hold TWDB and the State of Texas harmless, to the extent the SUBCONTRACTOR(s) may do so in accordance with state law, from any and all losses, damages, liability, or claims therefore, on account of personal injury, death, or property damage of any nature whatsoever caused by the SUBCONTRACTOR(s), arising out of the activities under this CONTRACT. SUBCONTRACTOR(s) must be solely and entirely responsible for procuring all necessary licenses and permits which may be required for the SUBCONTRACTOR(s) to perform the subject work.
- (12)**Ownership-** It is agreed that all reports, drafts of reports, or other material, data, drawings, computer programs and codes associated with this CONTRACT and developed by the SUBCONTRACTOR pursuant to this CONTRACT will become the joint property of the REGIONAL FLOOD PLANNING GROUP, CONTRACTOR, SUBCONTRACTOR, and the Texas Water Development Board. These materials must not be copyrighted or patented by the SUBCONTRACTOR. SUBCONTRACTOR agrees that neither the Regional Flood Planning Group nor the Texas Water Development Board are parties to this CONTRACT and agrees that that these entities have no liability under the terms of this CONTRACT. The Texas Water Development Board is solely a third-party beneficiary under this CONTRACT.
- (13)**Compliance with TWDB rules and state law-** The SUBCONTRACTOR(s) must comply with TWDB rules and adhere to all requirements in state law pertaining to the procurement of professional services.
- (14)**Subaward Monitoring-** SUBCONTRACTOR represents and warrants that it will monitor the activities of any subrecipient as necessary to ensure that subawards are used for authorized purposes, in compliance with applicable statutes, regulations, and the terms and conditions of the subaward, and that subaward performance goals are achieved.

ARTICLE IX. AMENDMENT, TERMINATION, AND STOP ORDERS

- A. This CONTRACT may be altered or amended by mutual written consent or terminated by the EXECUTIVE ADMINISTRATOR at any time by written notice to CONTRACTOR. The EXECUTIVE ADMINISTRATOR may terminate this CONTRACT if the REGIONAL FLOOD PLANNING GROUP withdraws its designation of CONTRACTOR as the CONTRACT representative of the REGIONAL FLOOD PLANNING GROUP. Upon receipt of such termination notice, CONTRACTOR must, unless the notice directs otherwise, immediately discontinue all work in connection with the performance of this CONTRACT and cancel all existing orders insofar as such orders are chargeable to this CONTRACT. CONTRACTOR must submit a statement showing in detail the work

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performed under this CONTRACT up to the date of termination. TWDB, at its discretion, will pay CONTRACTOR for the work, actually performed under this CONTRACT, less all payments that have been previously made and any approved by the EXECUTIVE ADMINISTRATOR to conclude the CONTRACT. Thereupon, copies of all work accomplished under this CONTRACT must be delivered promptly to TWDB.

- B. Any request to amend the CONTRACT Scope of Work (Exhibit A) must be submitted in writing by CONTRACTOR to TWDB following approval by the REGIONAL FLOOD PLANNING GROUP [31 TAC § 361.12(a)(5)].
- C. The EXECUTIVE ADMINISTRATOR may issue a Stop Work Order to CONTRACTOR at any time. Upon receipt of such order, CONTRACTOR must discontinue all work and cancel all orders under to this CONTRACT, unless the Stop Work Order directs otherwise. If the EXECUTIVE ADMINISTRATOR does not issue a Restart Order within 60 days after receipt by CONTRACTOR of the Stop Work Order, this CONTRACT terminated in accordance with the foregoing provisions.

ARTICLE X. LICENSES, PERMIT, AND INSURANCE

- A. For the purpose of this CONTRACT, CONTRACTOR will be considered an independent contractor and therefore solely responsible for liability resulting from negligent acts or omissions.
- B. CONTRACTOR will be solely and entirely responsible for procuring all necessary licenses and permits which may be required for CONTRACTOR to perform the subject work.

ARTICLE XI. SEVERANCE PROVISION

Should any one or more provisions of this CONTRACT be held to be null, void, voidable, or for any reason whatsoever of no force and effect, such provision(s) will be construed as severable from the remainder of this CONTRACT and will not affect the validity of all other provisions of this CONTRACT, which will remain of full force and effect.

ARTICLE XII. GENERAL TERMS AND CONDITIONS

1. GENERAL TERMS

- A. **Disaster Recovery Plan.** Upon request of TWDB, CONTRACTOR must provide descriptions or copies of its business continuity and disaster recovery plans.
- B. **Dispute Resolution.** The dispute resolution process provided for in Texas Government Code Chapter 2260 must be used to attempt to resolve any dispute arising under this CONTRACT.

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- C. **Excess Obligations Prohibited/No Debt Against the State.** This Contract is subject to termination or cancellation without penalty to TWDB, either in whole or in part, subject to the availability of state funds.
- D. **False Statements.** If CONTRACTOR signs its application with a false statement or it is subsequently determined that CONTRACTOR has violated any of the representations, guarantees, warranties, certifications or affirmations included in its application, CONTRACTOR will be in default under the CONTRACT and TWDB may terminate or void the CONTRACT.
- E. **Force Majeure.** Neither CONTRACTOR nor TWDB will be liable to the other for any delay in or failure of performance of any requirement contained in this CONTRACT caused by force majeure. The existence of such causes of delay or failure will extend the period of performance until after the causes of delay or failure have been removed, provided the non-performing party exercises all reasonable due diligence to perform. Force majeure is defined as acts of God, war, fires, explosions, hurricanes, floods, failure of transportation or other causes that are beyond the reasonable control of either party and that by exercise of due foresight such party could not reasonably have been expected to avoid, and which, by the exercise of all reasonable due diligence, such party is unable to overcome.
- F. **Governing Law and Venue.** This CONTRACT is governed by and construed in accordance with the laws of the State of Texas, without regard to the conflicts of law provisions. The venue of any suit arising under this CONTRACT is fixed in any court of competent jurisdiction in Travis County, Texas, unless the specific venue is otherwise identified in a statute which directly names or otherwise identifies its applicability to TWDB.
- G. **Indemnification.** CONTRACTOR AGREES TO DEFEND, INDEMNIFY AND HOLD HARMLESS THE STATE OF TEXAS AND TWDB, AND/OR THEIR OFFICERS, AGENTS, EMPLOYEES, REPRESENTATIVES, CONTRACTORS, ASSIGNEES, AND/OR DESIGNEES FROM ANY AND ALL LIABILITY, ACTIONS, CLAIMS, DEMANDS, OR SUITS, AND ALL RELATED COSTS, ATTORNEY FEES, AND EXPENSES ARISING OUT OF, OR RESULTING FROM ANY ACTS OR OMISSIONS OF CONTRACTOR OR ITS AGENTS, EMPLOYEES, SUBCONTRACTORS, ORDER FULFILLERS, OR SUPPLIERS OF SUBCONTRACTORS IN THE EXECUTION OR PERFORMANCE OF THE CONTRACT AND ANY PURCHASE ORDERS ISSUED UNDER THE CONTRACT. THE DEFENSE MUST BE COORDINATED BY CONTRACTOR WITH THE OFFICE OF THE TEXAS ATTORNEY GENERAL WHEN TEXAS STATE AGENCIES ARE NAMED DEFENDANTS IN ANY LAWSUIT, AND CONTRACTOR MAY NOT AGREE TO ANY SETTLEMENT WITHOUT FIRST OBTAINING THE CONCURRENCE FROM THE OFFICE OF THE TEXAS ATTORNEY GENERAL. CONTRACTOR AND TWDB AGREE TO FURNISH TIMELY WRITTEN NOTICE TO EACH OTHER OF ANY SUCH CLAIM. ALTERNATE LANGUAGE FOR CITIES, COUNTIES AND ENTITIES THAT CANNOT INDEMNIFY:

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Liability. CONTRACTOR agrees to be fully responsible for its negligent acts or omissions or tortious acts. Nothing herein will be construed as consent by the State of Texas, TWDB or any state agency or entity as consent to be sued in any matter arising out of this CONTRACT.

- H. **Public Information Act.** CONTRACTOR understands that TWDB will comply with the Texas Public Information Act, Texas Government Code Chapter 552, as interpreted by judicial rulings and opinions of the Attorney General of the State of Texas. Information, documentation and other material in connection with this CONTRACT may be subject to public disclosure pursuant to the Texas Public Information Act. In accordance with Texas Government Code § 2252.907, CONTRACTOR is required to make any information created or exchanged with the State pursuant to this CONTRACT, and not otherwise excepted from disclosure under the Texas Public Information Act, available in a format that is accessible by the public at no additional charge to the State.
- I. **State Auditor's Right to Audit.** The state auditor may conduct an audit or investigation of any entity receiving funds from the state directly under the contract or indirectly through a subcontract under the contract. The acceptance of funds directly under the contract or indirectly through a subcontract under the contract acts as acceptance of the authority of the state auditor, under the direction of the legislative audit committee, to conduct an audit or investigation in connection with those funds. Under the direction of the legislative audit committee, an entity that is the subject of an audit or investigation by the state auditor must provide the state auditor with access to any information the state auditor considers relevant to the investigation or audit.
- J. **Uniform Grant Management Standards.** CONTRACTOR is required to follow the Texas Comptroller of Public Account's Uniform Grant Management Standards in accordance with Chapter 783 of the Texas Government Code, as applicable.
- K. **No Waiver of Sovereign Immunity.** The Parties expressly agree that no provision of the grant or contract is in any way intended to constitute a waiver by TWDB or the State of Texas of any immunities from suit or from liability that TWDB or the State of Texas may have by operation of law.
- L. **Records Retention.** CONTRACTOR must maintain and retain all records relating to the performance of the grant, including supporting fiscal documents adequate to ensure that claims for grant funds are in accordance with applicable State of Texas requirements. These records must be maintained and retained by CONTRACTOR for a period of four (4) years after the grant expiration date or until all audit, claim, and litigation matters are resolved, whichever is later. TWDB reserves the right to direct CONTRACTOR to retain documents for a longer period of time or transfer certain records to TWDB custody when it is determined the records possess longer term

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retention value. CONTRACTOR must include the substance of this clause in all subawards and subcontracts.

2. STANDARDS OF PERFORMANCE

- A. **Personnel.** CONTRACTOR must assign only qualified personnel to perform the services required under this CONTRACT. CONTRACTOR is responsible for ensuring that any Subcontractor utilized also assigns only qualified personnel. Qualified personnel are persons who are properly licensed to perform the work and who have sufficient knowledge, skill and ability to perform the tasks and services required herein according to the standards of performance and care for their trade or profession.
- B. **Professional Standards.** CONTRACTOR must provide the services and deliverables in accordance with applicable professional standards. CONTRACTOR represents and warrants that it is authorized to acquire Subcontractors with the requisite qualifications, experience, personnel and other resources to perform in the manner required by this CONTRACT.
- C. **Procurement Laws.** CONTRACTOR must comply with applicable State of Texas procurement laws, rules and policies, including but not limited to competitive bidding and the Professional Services Procurement Act, Texas Government Code, Chapter 2254, relating to contracting with persons whose services are within the scope of practice of: accountants, architects, landscape architects, land surveyors, medical doctors, optometrists, professional engineers, real estate appraisers, professional nurses, and certified public accountants.
- D. **Independent Contractor.** Both parties hereto, in the performance of this CONTRACT, act in an individual capacity and not as agents, employees, partners, joint ventures or associates of one another. The employees or agents of one party will not be deemed or construed to be the employees or agents of the other party for any purposes whatsoever.
- E. **Proprietary and Confidential Information.** CONTRACTOR warrants and represents that any information that is proprietary or confidential and is received by CONTRACTOR from TWDB or any governmental entity will not be disclosed to third parties without the written consent of TWDB or applicable governmental entity, whose consent will not be unreasonably withheld.
- F. **Contract Administration.** TWDB will designate a project manager for this CONTRACT. The project manager will serve as the point of contact between TWDB and CONTRACTOR. TWDB's project manager will supervise TWDB's review of CONTRACTOR's technical work, deliverables, draft reports, the FINAL REPORT, payment requests, schedules, financial and budget administration, and similar matters. The project manager does not have any

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express or implied authority to vary the terms of the CONTRACT, amend the CONTRACT in any way or waive strict performance of the terms or conditions of the CONTRACT.

- G. **Nepotism.** CONTRACTOR must comply with Texas Government Code Chapter 573 by ensuring that no officer, employee or member of CONTRACTOR's governing body votes or confirm the employment of any person related within the second degree of affinity or the third degree of consanguinity to any member of the governing body or to any other officer or employee authorized to employ or supervise such person. This prohibition does not prohibit the employment of a person who has been continuously employed for a period of two years prior to the election or appointment of the officer, employee or governing body member related to such person in the prohibited degree.
- H. **Open Meetings.** CONTRACTOR must comply with Texas Government Code Chapter 551, which requires all regular, special or called meetings of governmental bodies to be open to the public, except as otherwise provided by law.

3. **AFFIRMATIONS AND CERTIFICATIONS**

- A. **Antitrust Affirmation.** CONTRACTOR represents and warrants that, in accordance with Texas Government Code § 2155.005, neither CONTRACTOR nor any firm, corporation, partnership, or institution represented by CONTRACTOR, or anyone acting for such a firm, corporation, partnership, or institution has (1) violated any provision of the Texas Free Enterprise and Antitrust Act of 1983, Chapter 15 of the Texas Business & Commerce Code, or the federal antitrust laws; or (2) communicated directly or indirectly the contents of the proposal resulting in this CONTRACT to any competitor or any other person engaged in the same line of business as CONTRACTOR.
- B. **Child Support Obligation Affirmation.** Under Texas Family Code § 231.006, CONTRACTOR certifies that the individual or business entity named in this CONTRACT is not ineligible to receive the specified grant, loan or payment, and acknowledges that this CONTRACT may be terminated and payment may be withheld if this certification is inaccurate.
- C. **Dealings With Public Servants.** Pursuant to Texas Government Code § 2155.003, CONTRACTOR represents and warrants that it has not given, offered to give, nor intends to give at any time hereafter any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a public servant in connection with the goods or services being supplied.
- D. **Debts and Delinquencies Affirmation.** CONTRACTOR agrees that any payments due under the CONTRACT will be applied towards any debt or delinquency that is owed to the State of Texas.

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- E. **E-Verify Program.** CONTRACTOR certifies that for contracts for services, CONTRACTOR will utilize the U.S. Department of Homeland Security's E-Verify system during the term of the CONTRACT to determine the eligibility of: 1) all persons employed by CONTRACTOR to perform duties within Texas; and 2) all persons, including Subcontractors, assigned by CONTRACTOR to perform work pursuant to the CONTRACT within the United States of America
- F. **Entities that Boycott Israel.** Pursuant to Texas Government Code § 2271.002, CONTRACTOR certifies that either (i) it meets one of the exemption criteria under § 2271.002; or (ii) it does not boycott Israel and will not boycott Israel during the term of the contract resulting from this solicitation. CONTRACTOR must state any facts that make it exempt from the boycott certification.
- G. **Excluded Parties.** CONTRACTOR certifies that it is not listed on the federal government's terrorism watch list as described in Executive Order 13224.
- H. **Executive Head of a State Agency Affirmation.** In accordance with Texas Government Code § 669.003, relating to contracting with the executive head of a state agency, CONTRACTOR certifies that it is not: 1) the executive head of TWDB; 2) a person who at any time during the four years before the date of this CONTRACT was the executive head of TWDB; or 3) a person who employs a current or former executive head of TWDB.

If Section 669.003 applies, CONTRACTOR must provide the following information:

Name of Former Executive: _____

Name of State Agency: _____

Date of Separation from State Agency: _____

Position with Contractor: _____

Date of Employment with Contractor: _____

- I. **Financial Participation Prohibited.** Pursuant to Texas Government Code § 2155.004(a), CONTRACTOR certifies that neither CONTRACTOR nor any person or entity represented by CONTRACTOR has received compensation from TWDB or any agency of the State of Texas for participation in the preparation of the specifications or solicitation on which this CONTRACT is based. Under Texas Government Code § 2155.004(b), CONTRACTOR certifies that the individual or business entity named in this CONTRACT is not ineligible to receive the specified contract and acknowledges that this CONTRACT may be terminated and payment withheld if this certification is inaccurate.
- J. **Foreign Terrorist Organizations.** CONTRACTOR represents and warrants that it is not engaged in business with Iran, Sudan, or a foreign terrorist organization, as prohibited by Texas Government Code § 2252.152.
- K. **Human Trafficking Prohibition.** Under Texas Government Code § 2155.0061, CONTRACTOR certifies that the individual or business entity

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named in this CONTRACT is not ineligible to receive the specified contract and acknowledges that this Contract may be terminated and payment withheld if this certification is inaccurate.

- L. **Lobbying Prohibition.** CONTRACTOR represents and warrants that TWDB's payments to CONTRACTOR and CONTRACTOR's receipt of appropriated or other funds under the contract are not prohibited by Texas Government Code §§ 556.005 or 556.0055, related to the prohibition on payment of state funds to a lobbyist or for lobbying activities.
- M. **No Conflict of Interest.** CONTRACTOR represents and warrants that the provision of goods and services or other performance under this CONTRACT will not constitute an actual or potential conflict of interest or reasonably create an appearance of impropriety. CONTRACTOR also represents and warrants that, during the term of this CONTRACT, CONTRACTOR will immediately notify TWDB, in writing, of any existing or potential conflict of interest relative to the performance of the CONTRACT.
- N. **Prior Disaster Relief Declaration.** Texas Government Code §§ 2155.006 and 2261.053 prohibit state agencies from accepting a response or awarding a contract that includes proposed financial participation by a person who, in the past five years, has been convicted of violating a federal law or assessed a penalty in connection with a contract involving relief for Hurricane Rita, Hurricane Katrina, or any other disaster, as defined by Texas Government Code § 418.004, occurring after September 24, 2005. Under Texas Government Code §§ 2155.006 and 2261.053, CONTRACTOR certifies that the individual or business entity named in this CONTRACT is not ineligible to receive the specified contract and acknowledges that this CONTRACT may be terminated and payment withheld if this certification is inaccurate.
- O. **Suspension and Debarment.** Contractor certifies that it and its principals are not suspended or debarred from doing business with the state or federal government as listed on the State of Texas Debarred Vendor List maintained by the Texas Comptroller of Public Accounts and the System for Award Management (SAM) maintained by the General Services Administration
- P. **Enforcement of Certain Federal Laws Regulating Firearms, Firearm Accessories, and Firearm Ammunition.** CONTRACTOR certifies that it is not prohibited from receiving state funds under Texas Penal Code § 1.10(d) (related to federal laws regulating firearms, firearm accessories, and firearm ammunition). CONTRACTOR also agrees that, during the term of this CONTRACT, CONTRACTOR will immediately notify TWDB, in writing, of any suit against it by the Attorney General of Texas under Texas Penal Code § 1.10(f).

THE FOLLOWING CLAUSE APPLIES TO CONTRACTS FOR STATE GRANT FUNDS GIVEN TO CITIES AND COUNTIES:

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Enforcement of Public Camping Bans. CONTRACTOR certifies that it is not prohibited from receiving state grant funds under Texas Local Government Code § 364.004 (related to public camping bans). CONTRACTOR also agrees that, during the term of this CONTRACT, CONTRACTOR will immediately notify TWDB, in writing, of any suit against it by the Attorney General of Texas under Texas Local Government Code § 354.003.

THE FOLLOWING CLAUSE APPLIES TO CONTRACTS FOR STATE GRANT FUNDS GIVEN TO STATE AGENCIES (INCLUDING UNIVERSITY SYSTEMS OR SYSTEMS OF HIGHER EDUCATION), CITIES, COUNTIES AND SPECIAL DISTRICTS AND AUTHORITIES (not defined):

Firearm Suppressor Regulation. CONTRACTOR certifies that it is not prohibited from receiving state grant funds under Texas Government Code § 2.103 (related to the regulation of firearm suppressors). CONTRACTOR also agrees that, during the term of this CONTRACT, CONTRACTOR will immediately notify TWDB, in writing, of any suit against it by the Attorney General of Texas under Texas Government Code § 2.104.

Legal Authority. CONTRACTOR represents that it possesses legal authority to apply for the grant. A resolution, motion or similar action has been duly adopted or passed as an official act of CONTRACTOR's governing body, authorizing the filing of the application or response, including all understandings and assurances contained therein, and directing and authorizing the person identified as the official representative, or the designee of CONTRACTOR to act in connection with the application or response and to provide such additional information as may be required.

Political Polling Prohibition. CONTRACTOR represents and warrants that it does not perform political polling and acknowledges that appropriated funds may not be granted to, or expended by, any entity which performs political polling.

APPLICABLE TO GRANT AGREEMENTS/CONTRACTS FOR CONSULTING SERVICES:

Disclosure of Prior State Employment. In accordance with Texas Government Code § 2254.033, relating to consulting services, CONTRACTOR certifies that it does not employ an individual who has been employed by TWDB or another agency at any time during the two years preceding the submission of its bid or response, or, in the alternative, CONTRACTOR has disclosed in its bid or response the following: (i) the nature of the previous employment with TWDB or another state agency; (ii) the date the employment was terminated; and (iii) the annual rate of compensation for the employment at the time of its termination.

APPLICABLE TO GRANT AGREEMENTS/CONTRACTS FOR CONSULTING SERVICES:

Former Agency Employees. CONTRACTOR represents and warrants that none of its employees, including but not limited to those authorized to provide services under the CONTRACT, were former employees of TWDB during the twelve (12) month period immediately prior to the date of execution of this CONTRACT.

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APPLICABLE TO GRANT AGREEMENTS/CONTRACTS FINANCED FROM APPROPRIATED FUNDS. (Note: The term “unit of local government” is defined in General Appropriations Act, Art IX, § 4.04 (2020-2021 Biennium) to be: (1) a council of governments, a region planning commission, or a similar regional planning agency created under Chapter 391 of the Local Government Code; (2) a local workforce development board; or (3) a community center as defined by Health and Safety Code § 534.001(b).

Limitations on Grants to Units of Local Government. CONTRACTOR acknowledges and agrees that appropriated funds may not be expended in the form of a grant to, or contract with, a unit of local government unless the terms of the grant or contract require that the funds received under the grant or contract will be expended subject to the limitations and reporting requirements similar to those provided by the following:

- Texas General Appropriations Act, Art. IX, Parts 2 and 3, except there is no requirement for increased salaries for local government employees;
- Texas Government Code §§ 556.004-556.006; and
- Texas Government Code §§ 2113.012 and 2113.101.

ARTICLE XIII. CORRESPONDENCE

All correspondence between the parties must be made to the following addresses:

For TWDB:

Contract Issues:

Texas Water Development Board
Attention: Regional Flood Planner
P.O. Box 13231
Austin, Texas 78711-3231
Email: FloodPlanning@twdb.texas.gov

Payment Request Submission:

Texas Water Development Board
Attention: Accounts Payable
P.O. Box 13231
Austin, Texas 78711-3231
Email: invoice@twdb.texas.gov

Physical Address:

Stephen F. Austin Building
1700 N. Congress Avenue, 6th Floor
Austin, Texas 78701

For City of San Angelo:

Contract Issues:

Shane Kelton
City of San Angelo
301 West Beauregard Avenue
San Angelo, TX 76903
shane.kelton@cosatx.us

Payment Request Submission:

Pete Madrid Jr.
City of San Angelo
301 West Beauregard Avenue
San Angelo, TX 76903
pete.madrid2@cosatx.us

Physical Address:

City of San Angelo
301 West Beauregard Avenue
San Angelo, TX 76903

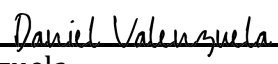
IN WITNESS WHEREOF, the parties have caused this CONTRACT to be duly executed.

TEXAS WATER DEVELOPMENT BOARD

CITY OF SAN ANGELO



Bryan McMath
Interim Executive Administrator



Daniel Valenzuela
City Manager

Date: 6/7/2024

Date: 6/7/2024





Texas Water Development Board
Requisition

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Report ID: TXCPO002X

Business Unit 58000 **Origin** PLN **Requestor** Anita Machiavello **BCM Status** Valid

Requisition ID 0000002310 **Status** Approved **Requestor Phone** **Req Approval Date** 03/07/2024

Requisition Date 03/05/2024 **Description** RFP Cycle 2

HEADER COMMENTS:
November 9, 2023 Board Memo

Line	Description	UOM	Qty	Price	Amount	Line Status
1	Region 1 Canadian Upper Red	LOT	1	2,305,100.00	2,305,100.00	Approved

Vendor ID	Vendor Loc	Vendor Name	Supplier Item ID	Manufacturer's Item ID	Class	Item	Buyer
					950	40	Stephen Ross

Schedule 1	Schedule Amount	2,305,100.00
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Dist Ln	Account	Fund	Dept ID	Program	PCA	Appn. Yr.	Project	Activity	Agy CF1	Agy CF2	Amount	Location
1	7613	0179	N920	89	31179	2024	FL2601			7613	2,305,100.00	Texas Water Development Board

Line	Description	UOM	Qty	Price	Amount	Line Status
2	Region 2 Lower Red Sulphur Cypress	LOT	1	2,078,400.00	2,078,400.00	Approved

Vendor ID	Vendor Loc	Vendor Name	Supplier Item ID	Manufacturer's Item ID	Class	Item	Buyer
					950	40	Stephen Ross

Schedule 1	Schedule Amount	2,078,400.00
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Dist Ln	Account	Fund	Dept ID	Program	PCA	Appn. Yr.	Project	Activity	Agy CF1	Agy CF2	Amount	Location
1	7613	0179	N920	89	31179	2024	FL2601			7613	2,078,400.00	Texas Water Development Board



Texas Water Development Board
Requisition

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Business Unit 58000 **Origin** PLN **Requestor** Anita Machiavello **BCM Status** Valid

Requisition ID 0000002310 **Status** Approved **Requestor Phone** **Req Approval Date** 03/07/2024

Requisition Date 03/05/2024 **Description** RFP Cycle 2

Line		Description		UOM	Qty	Price	Amount	Line Status	
3		Region 3 Trinity		LOT	1	2,857,800.00	2,857,800.00	Approved	

Vendor ID	Vendor Loc	Vendor Name	Supplier Item ID	Manufacturer's Item ID	Class	Item	Buyer
					950	40	Stephen Ross

Schedule 1	Schedule Amount	2,857,800.00
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Dist Ln	Account	Fund	Dept ID	Program	PCA	Appn. Yr.	Project	Activity	Agy CF1	Agy CF2	Amount	Location
1	7613	0179	N920	89	31179	2024	FL2601			7613	2,857,800.00	Texas Water Development Board

Line	Description	UOM	Qty	Price	Amount	Line Status
4	Region 4 Sabine	LOT	1	2,151,300.00	2,151,300.00	Approved

Vendor ID	Vendor Loc	Vendor Name	Supplier Item ID	Manufacturer's Item ID	Class	Item	Buyer
					950	40	Stephen Ross

Schedule 1	Schedule Amount	2,151,300.00
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Dist Ln	Account	Fund	Dept ID	Program	PCA	Appn. Yr.	Project	Activity	Agy CF1	Agy CF2	Amount	Location
1	7613	0179	N920	89	31179	2024	FL2601			7613	2,151,300.00	Texas Water Development Board



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Business Unit 58000 **Origin** PLN **Requestor** Anita Machiavello **BCM Status** Valid

Requisition ID 0000002310 **Status** Approved **Requestor Phone** **Req Approval Date** 03/07/2024

Requisition Date 03/05/2024 **Description** RFP Cycle 2

Line	Description	UOM	Qty	Price	Amount	Line Status
5	Region 5 Neches	LOT	1	2,394,700.00	2,394,700.00	Approved

Vendor ID	Vendor Loc	Vendor Name	Supplier Item ID	Manufacturer's Item ID	Class	Item	Buyer
					950	40	Stephen Ross

Schedule 1	Schedule Amount	2,394,700.00
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Dist Ln	Account	Fund	Dept ID	Program	PCA	Appn. Yr.	Project	Activity	Agy CF1	Agy CF2	Amount	Location
1	7613	0179	N920	89	31179	2024	FL2601			7613	2,394,700.00	Texas Water Development Board

Line	Description	UOM	Qty	Price	Amount	Line Status
6	Region 6 San Jacinto	LOT	1	3,770,000.00	3,770,000.00	Approved

Vendor ID	Vendor Loc	Vendor Name	Supplier Item ID	Manufacturer's Item ID	Class	Item	Buyer
					950	40	Stephen Ross

Schedule 1 Schedule Amount 3,770,000.00

Dist Ln	Account	Fund	Dept ID	Program	PCA	Appn. Yr.	Project	Activity	Agy CF1	Agy CF2	Amount	Location
1	7613	0179	N920	89	31179	2024	FL2601			7613	3,770,000.00	Texas Water Development Board



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Requisition ID 0000002310 **Status** Approved **Requestor Phone** **Req Approval Date** 03/07/2024

Requisition Date 03/05/2024 **Description** RFP Cycle 2

Line 7	Description Region 7 Upper Brazos	UOM LOT	Qty 1	Price 2,345,100.00	Amount 2,345,100.00	Line Status Approved	
Vendor ID	Vendor Loc	Vendor Name	Supplier Item ID	Manufacturer's Item ID	Class 950	Item 40	Buyer Stephen Ross
Schedule 1		Schedule Amount 2,345,100.00					

Dist Ln	Account	Fund	Dept ID	Program	PCA	Appn. Yr.	Project	Activity	Agy CF1	Agy CF2	Amount	Location
1	7613	0179	N920	89	31179	2024	FL2601			7613	2,345,100.00	Texas Water Development Board

Line 8	Description Region 8 Lower Brazos	UOM LOT	Qty 1	Price 2,520,600.00	Amount 2,520,600.00	Line Status Approved	
Vendor ID	Vendor Loc	Vendor Name	Supplier Item ID	Manufacturer's Item ID	Class 950	Item 40	Buyer Stephen Ross
Schedule 1		Schedule Amount 2,520,600.00					

Dist Ln	Account	Fund	Dept ID	Program	PCA	Appn. Yr.	Project	Activity	Agy CF1	Agy CF2	Amount	Location
1	7613	0179	N920	89	31179	2024	FL2601			7613	2,520,600.00	Texas Water Development Board



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Business Unit 58000 **Origin** PLN **Requestor** Anita Machiavello **BCM Status** Valid

Requisition ID 0000002310 **Status** Approved **Requestor Phone** **Req Approval Date** 03/07/2024

Requisition Date 03/05/2024 **Description** RFP Cycle 2

Line 9	Description Region 9 Upper Colorado			UOM LOT	Qty 1	Price 2,324,000.00	Amount 2,324,000.00	Line Status Approved				
Vendor ID	Vendor Loc	Vendor Name			Supplier Item ID		Manufacturer's Item ID		Class 950	Item 40	Buyer Stephen Ross	
Schedule 1 Schedule Amount 2,324,000.00												
Dist Ln	Account	Fund	Dept ID	Program	PCA	Appn. Yr.	Project	Activity	Agy CF1	Agy CF2	Amount	Location
1	7613	0179	N920	89	31179	2024	FL2601			7613	2,324,000.00	Texas Water Development Board

Line 10	Description Region 10 Lower Colorado-Lavaca			UOM LOT	Qty 1	Price 2,612,500.00	Amount 2,612,500.00	Line Status Approved				
Vendor ID	Vendor Loc	Vendor Name			Supplier Item ID		Manufacturer's Item ID		Class 950	Item 40	Buyer Stephen Ross	
Schedule 1 Schedule Amount 2,612,500.00												
Dist Ln	Account	Fund	Dept ID	Program	PCA	Appn. Yr.	Project	Activity	Agy CF1	Agy CF2	Amount	Location
1	7613	0179	N920	89	31179	2024	FL2601			7613	2,612,500.00	Texas Water Development Board



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Business Unit 58000 **Origin** PLN **Requestor** Anita Machiavello **BCM Status** Valid

Requisition ID 0000002310 **Status** Approved **Requestor Phone** **Req Approval Date** 03/07/2024

Requisition Date 03/05/2024 **Description** RFP Cycle 2

Line	Description	UOM	Qty	Price	Amount	Line Status
11	Region 11 Guadalupe	LOT	1	2,144,600.00	2,144,600.00	Approved

Vendor ID	Vendor Loc	Vendor Name	Supplier Item ID	Manufacturer's Item ID	Class	Item	Buyer
					950	40	Stephen Ross

Schedule	1	Schedule Amount	2,144,600.00
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Dist Ln	Account	Fund	Dept ID	Program	PCA	Appn. Yr.	Project	Activity	Agy CF1	Agy CF2	Amount	Location
1	7613	0179	N920	89	31179	2024	FL2601			7613	2,144,600.00	Texas Water Development Board

Line	Description	UOM	Qty	Price	Amount	Line Status
12	Region 12 San Antonio	LOT	1	2,146,300.00	2,146,300.00	Approved

Vendor ID	Vendor Loc	Vendor Name	Supplier Item ID	Manufacturer's Item ID	Class	Item	Buyer
					950	40	Stephen Ross

Schedule 1	Schedule Amount	2,146,300.00
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Dist Ln	Account	Fund	Dept ID	Program	PCA	Appn. Yr.	Project	Activity	Agy CF1	Agy CF2	Amount	Location
1	7613	0179	N920	89	31179	2024	FL2601			7613	2,146,300.00	Texas Water Development Board



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Business Unit 58000 **Origin** PLN **Requestor** Anita Machiavello **BCM Status** Valid

Requisition ID 0000002310 **Status** Approved **Requestor Phone** **Req Approval Date** 03/07/2024

Requisition Date 03/05/2024 **Description** RFP Cycle 2

Line 13	Description Region 13 Nueces	UOM LOT	Qty 1	Price 2,653,900.00	Amount 2,653,900.00	Line Status Approved						
Vendor ID	Vendor Loc	Vendor Name	Supplier Item ID	Manufacturer's Item ID	Class 950	Item 40	Buyer Stephen Ross					
Schedule 1		Schedule Amount 2,653,900.00										
Dist Ln	Account	Fund	Dept ID	Program	PCA	Appn. Yr.	Project	Activity	Agy CF1	Agy CF2	Amount	Location
1	7613	0179	N920	89	31179	2024	FL2601			7613	2,653,900.00	Texas Water Development Board

Line 14	Description Region 14 Upper Rio Grande	UOM LOT	Qty 1	Price 2,591,800.00	Amount 2,591,800.00	Line Status Approved						
Vendor ID	Vendor Loc	Vendor Name	Supplier Item ID	Manufacturer's Item ID	Class 950	Item 40	Buyer Stephen Ross					
Schedule 1		Schedule Amount 2,591,800.00										
Dist Ln	Account	Fund	Dept ID	Program	PCA	Appn. Yr.	Project	Activity	Agy CF1	Agy CF2	Amount	Location
1	7613	0179	N920	89	31179	2024	FL2601			7613	2,591,800.00	Texas Water Development Board



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Run Time: 01:26:40 PM
Report ID: TXCPO002X

Business Unit 58000 **Origin** PLN **Requestor** Anita Machiavello **BCM Status** Valid

Requisition ID 0000002310 **Status** Approved **Requestor Phone** **Req Approval Date** 03/07/2024

Requisition Date 03/05/2024 **Description** RFP Cycle 2

Line	Description	UOM	Qty	Price	Amount	Line Status
15	Region 15 Lower Rio Grande	LOT	1	3,103,900.00	3,103,900.00	Approved

Vendor ID	Vendor Loc	Vendor Name	Supplier Item ID	Manufacturer's Item ID	Class	Item	Buyer
					950	40	Stephen Ross

Schedule 1	Schedule Amount	3,103,900.00
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Dist Ln	Account	Fund	Dept ID	Program	PCA	Appn. Yr.	Project	Activity	Agy CF1	Agy CF2	Amount	Location
1	7613	0179	N920	89	31179	2024	FL2601			7613	3,103,900.00	Texas Water Development Board

Total Requisition: \$38,000,000.00



Texas Water Development Board
Requisition

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Run Date: 4/22/2024
Run Time: 01:26:40 PM
Report ID: TXCPO002X

Business Unit	58000	Origin	PLN	Requestor	Anita Machiavello	BCM Status	Valid
Requisition ID	0000002310	Status	Approved	Requestor Phone		Req Approval Date	03/07/2024
Requisition Date	03/05/2024	Description	RFP Cycle 2				

Stage ID	Path ID	Step ID	Step Descr	Status	Approver Name	Approved Date & Time
10	1	1	Level 1 - Div Dir/Mgr	Approved	Reem J Zoun	2024-03-05T15:05:18-0600
10	1	10	Level 10 - GL	Approved	Chin-Lin K Wen	2024-03-07T14:24:57-0600
10	1	2	Level 2 - DEA and special	Approved	Matthew Neil Nelson	2024-03-06T13:19:12-0600
10	1	4	Level 4 - Budget	Approved	Laura Teller	2024-03-06T14:14:24-0600
10	1	4.01	Level 4 - Budget	Approved	Bryan Ward McMath	2024-03-06T15:09:59-0600
10	1	9	Level 9 - Fin Ops	Approved	Eldrisha L Eubanks	2024-03-07T13:49:30-0600

Additional Approver

Exhibit A

TWDB Regional Flood Planning Grant Scope of Work

May 2024

Disclaimer: This document includes the standard Scope of Work developed for Regional Flood Planning Grant Contracts by the Texas Water Development Board. The Scope of Work for certain grant contracts may contain revised language to reflect requested edits from Regional Flood Planning Groups and Planning Group Sponsors

**Second Cycle of Regional Flood Plan Development
(2024–2028)**

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Task 1 – Planning Area Description

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 Texas Administrative Code (TAC) Chapters 361 and 362, this portion of work must specifically include all work necessary to meet all the requirements of 31 TAC §§ 361.30, 361.31, and 361.32.

The objective of this task is to prepare a standalone chapter to be included in the 2028 Regional Flood Plan that describes the Flood Planning Region (FPR).

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to prepare a chapter that includes:

1. Brief, general descriptions of the following:
 - a. social and economic character of the region such as information on development, population, and economic activity.
 - b. the areas in the FPR that are flood-prone and the types of major flood risks to life and property in the region.
 - c. key historical flood events within the region including associated fatalities and loss of property when the information is available.
 - d. key political subdivisions with flood-related regulatory authority or political subdivisions that perform flood planning, floodplain management, or flood mitigation activities.
 - e. the general extent of local regulation and development codes relevant to existing and future flood risk.
 - f. agricultural and natural resources most impacted by flooding; and
 - g. existing local and regional flood plans within the FPR.
2. A general description of the location, condition, and functionality of existing natural flood mitigation features and constructed major flood infrastructure within the FPR as identified in the rules and guidance document.
3. Include a tabulated summary and GIS map of existing infrastructure.
4. Include an inventory and feature class of low water crossings.
5. Include a specific levee and dam inventory including the location, designated owner of every major levee and dam located within the regional planning area, and an indication of whether levees have FEMA accreditation or not.
6. Include an assessment of condition and functionality for existing major flood risk reduction infrastructure.
7. Please provide a general description by general geographic location (e.g., within political subdivisions) of the condition and functionality of key natural flood mitigation features or major flood infrastructure by feature type and provide the name of the owner and operator of the flood infrastructure. For non-functional or deficient natural flood mitigation features or major flood infrastructure, explain, in general, the reasons for the features or infrastructure being non-functional or deficient by feature type.
8. A general description of the location, source of funding, and anticipated benefits of proposed or ongoing major infrastructure and flood mitigation projects in the FPR, including:
 - a. new structural flood mitigation projects currently under construction.
 - b. non-structural flood mitigation projects currently being implemented; and

- c. structural and non-structural flood mitigation projects with dedicated funding to construct and the expected year of completion.
9. A review and summary of relevant existing planning documents in the FPR. Documents to be summarized include those referenced under 31 TAC § 361.22.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the Regional Flood Plan chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: A complete Chapter 1 describing the FPR, existing natural flood mitigation features, constructed major flood infrastructure, and major infrastructure and flood mitigation projects currently under development. A tabulated summary and GIS map of existing infrastructure including condition and functionality. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 2A – Existing Condition Flood Risk Analyses

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must specifically include all work necessary to meet all the requirements of 31 TAC § 361.33.

The objective of this task is to prepare a chapter to be combined with Task 2B and included in the 2028 Regional Flood Plan that describes the existing and future condition flood risk in the FPR.

The RFPGs must perform existing condition flood risk analyses for the region comprising: (1) flood hazard analyses that determine the location, magnitude, and frequency of flooding; (2) flood exposure analyses to identify who and what might be harmed within the region; and (3) vulnerability analyses to identify vulnerabilities of communities and critical facilities.

The information developed must be used to assist the RFPG to establish priorities in subsequent planning tasks, to identify areas that need Flood Management Evaluations (FMEs), and to efficiently deploy its resources.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Perform existing condition flood hazard analyses to determine the location and magnitude of 10% annual chance, 1% annual chance and 0.2% annual chance flood events as follows:
 - a. collect data and conduct analyses sufficient to characterize the existing conditions for the planning area.
 - b. identify areas within each FPR where hydrologic and hydraulic model results are already available and summarize the information.
 - c. utilize best available data, including hydrologic and hydraulic models for each area.

- d. identification of known flood-prone areas based on location of hydrologic features, historic flooding, and local knowledge obtained from outreach activities and public meetings.
 - e. existing condition flood hazard analyses may consider and include only those flood mitigation projects with dedicated construction funding and scheduled for completion prior to adoption of the next state flood plan
 - f. all analyses shall consider the location of existing levees that do not meet FEMA accreditation as inundated by flooding without those structures in place. Provisionally accredited levees may be allowed to provide flood protection, unless the best available information demonstrates otherwise.
 - g. the analyses shall consider existing dams when data is available.
 - h. prepare a map showing areas identified by the RFPG as having an annual likelihood of inundation of greater than or equal to 10%, 1%, and 0.2%; the areal extent of this inundation; and the sources of flooding for each area; and
 - i. prepare a map showing gaps in inundation boundary mapping and identify known flood-prone areas based on location of hydrologic features, historic flooding and/or local knowledge.
2. Develop existing condition flood exposure analyses, using the information identified in the flood hazard analyses to identify who and what might be harmed within the region for, at a minimum, 10% annual chance, 1% annual chance, and 0.2% annual chance flood events as follows:
 - a. analyses of existing development within the existing condition floodplain and the associated flood hazard exposure.
 - b. must consider the population and property located in areas where existing levees do not meet FEMA accreditation as inundated by flooding without the levees in place. Provisionally accredited structures may be allowed to provide flood protection, unless the best available information demonstrates otherwise.
 - c. must consider available datasets to estimate the potential flood hazard exposure including, but not limited to:
 - i. number of residential properties and associated population
 - ii. number of non-residential properties
 - iii. other public infrastructure
 - iv. major industrial and power generation facilities
 - v. number and types of critical facilities
 - vi. number of roadway crossings
 - vii. length of roadway segments; and
 - viii. agricultural area and value of crops exposed
 - d. must include a qualitative description of expected loss of function, which is the effect that a flood event could have on the function of inundated structures (residential, commercial, industrial, public, or others) and infrastructure, such as transportation, health and human services, water supply, wastewater treatment, utilities, energy generation, and emergency services.
3. Perform existing condition vulnerability analyses as follows:
 - a. use relevant data and tools to identify resilience of communities located in flood-prone areas.

- b. consider and identify factors such as proximity to a floodplain to identify vulnerability of critical facilities, in accordance with EA guidance.
4. All data produced as part of the existing condition flood exposure analysis and the existing condition vulnerability analysis must include:
 - a. underlying flood event return frequency
 - b. type of flood risk
 - c. county
 - d. existing flood authority boundaries
 - e. social vulnerability indices for counties and census tracts; and
 - f. other categories as determined by RFPGs or in TWDB Flood Planning guidance documents

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone Chapter 2 (including work from both Tasks 2A & 2B) to be included in the 2028 Regional Flood Plan.
- Prepare maps according to 1(g) and 1(h).
- A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 2B – Future Condition Flood Risk Analyses

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC § 361.34.

The objective of this task is to prepare a chapter to be combined with Task 2A and included in the 2028 Regional Flood Plan that describes the existing and future condition flood risk in the FPR.

RFPGs must perform future condition flood risk analyses for the region comprising: (1) flood hazard analyses that determine the location, magnitude, and frequency of flooding; (2) flood exposure analyses to identify who and what might be harmed within the region; and (3) vulnerability analyses to identify vulnerabilities of communities and critical facilities.

The information developed must be used to assist the RFPG to establish priorities in subsequent planning tasks, to identify areas that need FMEs, and to efficiently deploy its resources.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Perform future condition flood hazard analyses to determine the location and magnitude of 10% annual chance, 1% annual chance, and 0.2% annual chance flood events as follows:
 - a. collect data and conduct analyses sufficient to characterize the future conditions for the planning area based on a "no-action" scenario of approximately 30 years of continued development and population growth under current development trends and patterns, and existing flood regulations and policies. RFPGs shall consider the following as available and pertinent in the FPR:
 - i. current land use and development trends and practices and associated projected population based on the most recently adopted State Water Plan decade and population nearest the next regional flood plan adoption date plus approximately 30 years or as provided for in TWDB Flood Planning guidance documents.
 - ii. reasonable assumptions regarding locations of residential development and associated population growth.
 - iii. anticipated relative sea level change and subsidence based on existing information.
 - iv. anticipated changes to the functionality of the existing floodplain.
 - v. anticipated sedimentation in flood control structures and major geomorphic changes in riverine, playa, or coastal systems based on existing information.
 - vi. assumed completion of flood mitigation projects currently under construction or that already have dedicated construction funding; and
 - vii. other factors deemed relevant by the RFPG.
 - b. identify areas within each FPR where future condition hydrologic and hydraulic model results are already available and summarize the information.
 - c. utilize best available data, including hydrologic and hydraulic models for each area.
 - d. where future condition results are not available, but existing condition hydrologic and hydraulic model results are already available, the RFPGs may modify hydraulic models or existing condition flood hazard boundary to identify future conditions flood risk for 1% and 0.2% annual chance storms based on simplified assumptions in accordance with EA guidance.
 - e. prepare a map showing areas of 10%, 1% and 0.2% annual chance of inundation for future conditions, the areal extent of this inundation, and the types of flooding for each area.
 - f. prepare a map showing gaps in inundation boundary mapping and identify known flood-prone areas based on location of hydrologic features, historic flooding, and/ or local knowledge.
2. Perform future condition flood exposure analyses using the information identified in the potential future condition flood hazard analysis to identify who and what might be harmed within the region for the potential future condition 10% annual chance, future condition 1% annual chance and future condition 0.2% annual chance flood events. At the RFPGs' discretion, the future condition flood exposure analysis may include an analysis of existing and future developments within the future condition floodplain and the associated flood hazard exposure.

3. Perform future condition vulnerability analyses as follows:
 - a. identify resilience of communities located in flood-prone areas identified as part of the future condition flood exposure analyses, utilizing relevant data and tools.
 - b. identify vulnerabilities of critical facilities to flooding by looking at factors such as proximity to a floodplain and other factors as included in the EA guidance.
4. All data produced as part of the future condition flood exposure analysis and the future condition flood hazard analysis must include:
 - a. underlying flood event return frequency
 - b. type of flood risk
 - c. county
 - d. existing flood authority boundaries
 - e. social vulnerability indices for counties and census tracts; and
 - f. other categories as determined in TWDB Flood Planning guidance document.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone Chapter 2 (including work from both Tasks 2A & 2B) to be included in the 2028 Regional Flood Plan.
- Prepare maps according to 1(e) and 1(f). A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 3A – Evaluation and Recommendations on Floodplain Management Practices

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC § 361.35.

Recognizing the extent that previous and current practices may have increased flood risks, including residual risks, and considering broad floodplain management and land use approaches that will avoid increasing flood risks, and avoid negatively affecting neighboring areas, the RFPG must accomplish the following tasks.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Consider the extent to which a lack of, insufficient, or ineffective current floodplain management and land use practices, regulations, policies, and trends related to land use,

economic development, and population growth, allow, cause, or otherwise encourage increases to flood risks to both:

- a. existing population and property, and
 - b. future population and property.
2. Take into consideration the future flood hazard exposure analyses performed under Task 2B, consider the extent to which the 1% annual chance floodplain, along with associated flood risks, may change over time in response to anticipated development and associated population growth and other relevant man-made causes, and assess how to best address these potential changes.
3. Based on the analyses in (1) and (2), make recommendations regarding forward-looking floodplain management and land use recommendations, and economic development practices and strategies, that should be implemented by entities within the FPR. These region-specific recommendations may include floodplain management and land use standards and should focus on how to best address the changes in (2) for entities within the region. These recommendations will inform recommended strategies for inclusion in the Regional Flood Plan.
4. RFPGs may also choose to adopt region-specific, floodplain management or land use or other standards that impact flood-risk, that may vary geographically across the region, that each entity in the FPR must adopt prior to the RFPG including in the Regional Flood Plan any Flood Management Evaluations, Flood Mitigation Projects, or Flood Management Strategies that are sponsored by or that will otherwise be implemented by that entity.
5. Consider example floodplain management and infrastructure protection standards provided by TWDB.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone Chapter 3 (including work from Tasks 3A,3B, & 3C) to be included in the 2028 Regional Flood Plan.
- List region-specific recommendations regarding forward-looking floodplain management and land use, which may include minimum floodplain management and land use standards.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 3B – Flood Mitigation Needs Analysis

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC § 361.36.

The RFPG must conduct the analysis in a manner that will ensure the most effective and efficient use of the resources available to the RFPG.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Based on the analyses developed by the RFPG under Tasks 2A through 3B and any additional analyses or information developed using available screening-level models or methods, the RFPG must identify locations within the FPR that the RFPG considers having the greatest flood mitigation and flood risk study needs by considering:
 - a. the areas in the FPR that the RFPG identified as the most prone to flooding that threatens life and property.
 - b. the relative locations, extent, and performance of current floodplain management and land use policies and infrastructure located within the FPR, particularly within the locations described in (a).
 - c. areas identified by the RFPG as prone to flooding that don't have adequate inundation maps.
 - d. areas identified by the RFPG as prone to flooding that don't have hydrologic and hydraulic models.
 - e. areas with an emergency need.
 - f. existing modeling analyses and flood risk mitigation plans within the FPR.
 - g. flood mitigation projects already identified and evaluated by other flood mitigation plans and studies.
 - h. documentation of historic flooding events.
 - i. flood mitigation projects already being implemented; and
 - j. any other factors that the RFPG deems relevant to identifying the geographic locations where potential FMEs and potentially feasible FMPs and FMSs must be identified and evaluated under § 361.38.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone Chapter 3 (including work from Tasks 3A, & 3B and 3C) to be included in the 2028 Regional Flood Plan.
- A map identifying the geographic locations within the FPR considered to have the greatest flood mitigation and flood risk study needs where potential FMEs and potentially feasible FMPs and FMSs must be evaluated.
- A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 3C – Flood Mitigation and Floodplain Management Goals

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC § 361.37.

In this task, the RFPG must consider the Guidance Principles under 31 TAC § 362.3, Tasks 1-3B, input from the public, and other relevant information and considerations.

The RFPG must use these goals to guide the RFPG in carrying out the following Tasks 4A – 5.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Identify specific and achievable flood mitigation and floodplain management goals along with target years by which to meet those goals for the FPR to include, at a minimum, goals specifically addressing risks to life and property.
2. Recognize and clearly state the levels of residual risk that will remain in the FPR even after the stated flood mitigation goals are fully met.
3. Structure and present the goals and the residual risks in an easily understandable format for the public including in conformance with TWDB Flood Planning guidance documents.
4. When appropriate, choose goals that apply to full single HUC8 watershed boundaries or coterminous groups of HUC8 boundaries within the FPR.
5. Identify both short-term goals (10 years) and long-term goals (30 years).

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone Chapter 3 (including work from Tasks 3A, 3B and 3C) to be included in the 2028 Regional Flood Plan.
- Identify flood mitigation and floodplain management goals considering minimum recommended flood protection goal provided by TWDB.
- Identify specific and achievable flood mitigation and floodplain management goals (10 year and 30 year) in an easily understandable format for the public.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 4A – Identification and Evaluation of Potential Flood Management Evaluations and Potentially Feasible Flood Mitigation Projects and Flood Management Strategies

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC § 361.38.

Based on analyses and decisions under Tasks 2A through 4A the RFPG must identify and evaluate potential FMEs, and identify and evaluate potentially feasible FMPs and FMSs, including nature-based solutions, some of which may have already been identified by previous evaluations and analyses by others.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Receive public comments on a proposed process to be used by the RFPG to identify and select FMEs, FMPs, and FMSs for the 2028 Regional Flood Plan.
2. Summarize the RFPG process for identifying potential FMEs and potentially feasible FMPs and FMSs and include a description of the process in the draft and in the final adopted Regional Flood Plan.
3. Identify potentially feasible FMPs and FMSs in accordance with the RFPG established process.
4. When evaluating FMPs and FMSs the RFPG must, at a minimum, identify one solution that provides flood mitigation associated with a 1% annual chance flood event. In instances where mitigating for 1% annual chance events is not feasible, the RFPG must document the reasons for its infeasibility, and at the discretion of the RFPG, other FMPs and FMSs to mitigate more frequent events may also be identified and evaluated based on TWDB Flood Planning guidance documents.
5. For areas within the FPR that the RFPG does not yet have sufficient information or resources to identify potentially feasible FMPs and FMSs, the RFPG must identify areas for potential FMEs that may eventually result in FMPs and/or FMSs.
6. The RFPG must evaluate potentially feasible FMPs and FMSs understanding that, upon evaluation and further inspection, some FMPs or FMSs initially identified as potentially feasible may be reclassified as infeasible.
7. FMPs will be ranked in the state flood plan and
 - a. must represent discrete projects.
 - b. must not entail an entire capital program or drainage masterplan; and
 - c. may rely on other flood-related projects.
8. Evaluations of potentially feasible FMPs and FMSs, as applicable, will require associated, detailed hydrologic and hydraulic modeling results that quantify the reduced impacts from flood events and the associated benefits and costs. Information may be based on previously performed evaluations of projects and related information. Evaluations of potentially feasible FMPs and FMSs must include the following information and be based on the following analyses:
 - a. A reference to the specific flood mitigation or floodplain management goal addressed by the feasible FMP or FMS.
 - b. A determination of whether FMP or FMS meets an emergency need.

- c. An indication regarding the potential use of federal funds, or other sources of funding, as a component of the total funding mechanism.
- d. An indication of any water supply benefits.
- e. An equitable comparison, as appropriate, and assessment among all FMSs and an equitable comparison and assessment among all FMPs that the RFPG determines to be potentially feasible.
- f. A demonstration that the FMS or FMP will not negatively affect a neighboring area.
- g. A quantitative report of the estimated benefits of the FMP or FMS, as applicable. This includes reductions of flood impacts of the 1% annual chance flood event and other storm events identified and evaluated if the project mitigates to a more frequent event to include, but not limited to:
 - (1) associated flood events that must, at a minimum, include the 1% annual chance flood event and other storm events identified and evaluated.
 - (2) reduction in habitable, equivalent living units flood risk.
 - (3) reduction in residential population flood risk.
 - (4) reduction in critical facilities flood risk.
 - (5) reduction in road closure occurrences.
 - (6) reduction in acres of active farmland and ranchland flood risk.
 - (7) estimated reduction in fatalities, when available.
 - (8) estimated reduction in injuries, when available.
 - (9) reduction in expected annual damages from residential, commercial, and public property; and
 - (10) other benefits as deemed relevant by the RFPG including environmental benefits and other public benefits.
 - (11) avoidance of future flood risk; and
 - (12) prevention of creation of future flood risk.
- h. A quantitative reporting of the estimated capital cost of FMPs in accordance with TWDB Flood Planning guidance documents.
- i. For projects that will contribute to water supply, all relevant evaluations required under § 357.34(e) (relating to Identification and Evaluation of Potentially Feasible Water Management Strategies and Water Management Strategy Projects), as determined by the EA based on the type of contribution, and a description of its consistency with the currently adopted State Water Plan.
- j. A description of potential impacts and benefits from the FMS or FMP to the environment, agriculture, recreational resources, navigation, water quality, erosion, sedimentation, and impacts to any other resources deemed relevant by the RFPG.
- k. A description of residual, post-project, flood risk and future risks associated with FMPs including the risk of potential catastrophic failure and the potential for future increases to these risks due to lack of maintenance.
- l. Implementation issues including those related to rights-of-way, permitting, acquisitions, relocations, utilities, and transportation; and
- m. Funding sources and options that exist or will be developed to pay for development, operation, and maintenance of the FMS or FMP.

9. Flood Management Evaluation (FME) is a proposed study to identify, assess, and quantify flood risk or identify, evaluate, and recommend flood risk reduction solutions. Evaluations of potential FMEs may be at a reconnaissance or screening-level, unsupported by associated detailed hydrologic and hydraulic analyses. These must be identified for areas that the RFPG considers a priority for flood risk evaluation but that do not yet have the required detailed hydrologic and hydraulic modeling or associated project evaluations available to evaluate specific FMPs or FMSs for recommendation in the Regional Flood Plan. Evaluations of potential FMEs must include the following analyses:
 - a. A reference to the specific flood mitigation or floodplain management goal to be addressed by the potential FME.
 - b. An indication of whether FME may meet an emergency need.
 - c. An indication regarding the potential use of federal funds, or other sources of funding as a component of the total funding mechanism.
 - d. An equitable comparison and assessment among all FMEs.
 - e. An indication of whether hydrologic and or hydraulic models are already being developed or are anticipated in the near future and that could be used in the FME.
 - f. A quantitative reporting of the estimated flood risk within the FME area, to include, as applicable:
 - (1) Estimated habitable, living unit equivalent and associated population in FME area.
 - (2) Estimated critical facilities in FME area.
 - (3) Estimated number of roads closures occurrences in FME area.
 - (4) Estimated acres of active farmland and ranchland in FME area; and
 - (5) A quantitative reporting of the estimated study cost of the FME and whether the cost includes use of existing or development of new hydrologic or hydraulic models.
 - g. For FMEs, RFPGs do not need to demonstrate that an FME will not negatively affect a neighboring area.
10. RFPGs must evaluate and present potential FMEs and potentially feasible FMPs and FMSs with sufficient specificity to allow state agencies to make financial or regulatory decisions to determine consistency of the proposed action before the state agency with an approved Regional Flood Plan.
11. Analyses must clearly designate a representative location of the FME and beneficiaries including a map and designation of HUC12 and county location.
12. The RFPG may also use funding under this Task to perform a portion of the identified Flood Management Evaluations and, in doing so, identify and evaluate additional Flood Mitigation Projects that could be recommended under Task 5A. This task includes performing work to carry out FMEs that may include work to perform hydrologic and hydraulic modeling, for example, evaluating flood risks in areas with currently limited flood risk data, and evaluating potential flood risk reduction solutions, including performing feasibility studies and preliminary engineering needed to identify, evaluate, and recommend additional potentially feasible FMPs. Note that RFPGs must approve the list of FMEs to be performed under this Task prior to expending grant funds for this purpose. Additional FMPs that are identified and evaluated under

this Task may be recommended under Task 5A. FMEs that are performed under this Task would not also be recommended as FMEs under Task 5B.

13. Analyses must be performed in accordance with TWDB Flood Planning guidance documents.
14. All data produced as part of the analyses under this task must be organized and summarized in the Regional Flood Plan in accordance with TWDB Flood Planning guidance documents.
15. Rules to be considered in developing this chapter include relevant rules referenced under 31 TAC § 361.22.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. RFPG approval of the list of identified FMEs to also be performed under this Task.
2. Review of the chapter documents and related information by RFPG members.
3. Modifications to the chapter document based on RFPG, public, and/or agency comments.
4. Submittal of chapter document to TWDB for review and approval.
5. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone Chapter 4 (including work from Tasks 4A, and 4C) to include analyses and assessments used to identify potential FMEs, FMSs, and FMPs and all technical analyses of all evaluated FMPs and FMSs to be included in the 2028 Regional Flood Plan.
- A list of the potentially feasible FMSs and associated FMPs that were identified by the RFPG.
- The TWDB Flood Planning guidance documents will include minimum data submittal requirements and deliverable format.
- A map identifying the geographic locations within the FPR considered to have the greatest flood mitigation and flood risk study needs where potential FMEs and potentially feasible FMPs and FMSs must be evaluated. TWDB Flood Planning guidance documents will include minimum data submittal requirements and deliverable format.
- Data must be organized and summarized in the Regional Flood Plan in accordance with TWDB Flood Planning guidance documents.
- A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 4B – Preparation and Submission Technical Memorandum

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC § 361.13(e).

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Prepare a concise Technical Memorandum to include:

- a. A list of existing political subdivisions within the FPR that have flood-related authorities or responsibilities.
 - b. A list of previous and ongoing flood studies considered by the RFPG to be relevant to development of the Regional Flood Plan.
 - c. A geodatabase and associated maps in accordance with TWDB Flood Planning guidance documents that the RFPG considers to be best representation of the region-wide 1% annual chance flood event and 0.2% annual chance flood event inundation boundaries, and the type of flooding for each area, for use in its risk analysis, including indications of locations where such boundaries remain undefined.
 - d. A geodatabase and associated maps in accordance with TWDB Flood Planning guidance documents that identifies additional flood-prone areas not described in (c) based on location of hydrologic features, historic flooding, and/or local knowledge.
 - e. A list of available flood-related models that the RFPG considers of most value in developing its plan.
 - f. A summary and associated maps of locations within the FPR that the RFPG considers having the greatest flood risk and flood risk reduction needs.
 - g. The flood mitigation and floodplain management goals adopted by the RFPG per § 361.37.
 - h. The documented process used by the RFPG to identify potentially feasible FMPs and FMSs.
 - i. A list of potential FMEs and potentially feasible FMPs and FMSs identified by the RFPG, if any; and
 - j. A list of FMSs and FMPs that were identified but determined by the RFPG to be infeasible, including the primary reason for it being infeasible.
2. Approve submittal of the Technical Memorandum to TWDB at a RFPG meeting subject notice requirements in accordance with 31 TAC § 361.21(h). The Technical Memorandum must be submitted to TWDB in accordance with Section I, Article I of the contract.

Task 4C – Performance of Flood Management Evaluations

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC § 361.38.

The RFPG shall utilize this task to perform a portion of the identified Flood Management Evaluations identified in Task 4A and, in doing so, identify and evaluate additional Flood Mitigation Projects that could be recommended under Task 5A. This list of FMEs that are to be performed under this subtask must be approved by the RFPG.

The objective of this task is to perform identified potential FMEs to, for example, evaluate flood risks in areas with currently limited flood risk data, and evaluate potential flood risk reduction solutions, including performing hydrologic and hydraulic modeling, feasibility studies and preliminary engineering needed to identify, evaluate, and recommend additional potentially feasible FMPs. Additional FMPs that are identified and evaluated under this Task may be recommended under Task 5A. FMEs that are performed under this Task would not also be recommended as FMEs under Task 5B.

RFPGs must adhere to the requirements for identification, evaluation, and recommendation of FMEs and FMPs in Tasks 4A and 5, as well as applicable requirements in the TWDB Flood Planning guidance documents.

RFPGs must submit all data deliverables, including required GIS files, maps, and project details worksheet, to reflect work performed under this task in accordance with the requirements in Tasks 4A and 5 and the TWDB Flood Planning guidance documents.

Deliverables:

- Prepare a stand-alone Chapter 4 (including work from Tasks 4A and 4C) to be included in the 2028 Regional Flood Plan.
- A list of the FMEs, as approved by the RFPG, that were performed to identify potential FMPs and/or FMSs under Task 4C.
- Outcomes of FMEs that were performed to identify potential FMPs and/or FMSs under Task 4C.
- List of FMPs and FMSs that are identified as a result of performing FMEs under Task 4C.
- All data produced as part of the analyses under this task must be organized and summarized in the Regional Flood Plan in accordance with TWDB Flood Planning guidance documents.
- The TWDB Flood Planning guidance documents will include minimum data submittal requirements and deliverable format.

Task 5A – Recommendation of Flood Management Evaluations, Flood Mitigation Projects, and Flood Management Strategies

Performing any work associated with any Task 5 subtasks is contingent upon a written notice-to-proceed.

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet associated requirements of 31 TAC § 361.39.

The objective of this task is to consider and recommend Flood Management Evaluations (FMEs), Flood Management Strategies (FMSs), and their associated Flood Mitigation Projects (FMPs) to be included in the 2028 Regional Flood Plan that describes the work completed, presents the potential FMEs, potentially feasible FMPs and FMSs, recommended and alternative FMPs and FMSs, including all the technical evaluations, and presents which entities will benefit from the recommended FMPs and FMSs.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Recommend FMEs that the RFPG determines are most likely to result in identification of potentially feasible FMPs and FMSs that would, at a minimum, identify and investigate one solution to mitigate for flood events associated with a 1% annual chance flood event and that support specific RFPG flood mitigation and/or floodplain management goals.
2. Recommend FMPs and FMSs to reduce the potential impacts of flood based on the evaluations under § 361.38 and RFPG goals and that must, at a minimum, mitigate for flood events

associated with at 1% annual chance (100-yr flood) where feasible. In instances where mitigating for 100-year events is not feasible, FMS and FMPs to mitigate more frequent events may be recommended based on TWDB Flood Planning guidance documents. Recommendations must be based upon the identification, analysis, and comparison of alternatives that the RFPG determines will provide measurable reductions in flood impacts in support of the RFPG's specific flood mitigation and/or floodplain management goals.

3. Provide additional information in conformance with TWDB Flood Planning guidance documents which may be used to rank recommended FMEs, FMPs, and FMSs with non-recurring, non-capital costs in the state flood plan.
4. RFPGs shall provide the benefit-cost ratio for recommended FMPs in accordance with guidance provided by the EA.
5. Recommended FMSs or FMPs may not negatively affect a neighboring area or an entity's water supply.
6. Recommended FMSs or FMPs that will contribute to water supply may not result in an overallocation of a water source based on the water availability allocations in the most recently adopted State Water Plan.
7. Specific types of FMEs, FMSs, or FMPs that should be included and that should not be included in Regional Flood Plans must be in accordance with TWDB Flood Planning guidance documents.
8. FMS and FMP documentation must include a strategy or project description, discussion of associated facilities, project map, and technical evaluations addressing all considerations and factors required under 31 TAC § 361.38(i).
9. Coordinate and communicate with the sponsors of FME, FMS, and FMP including individual local governments, regional authorities, and other political subdivisions.
10. Production of process documentation used in selecting all recommended FMSs and associated FMPs including development of FMS evaluations matrices and other tools required to assist the RFPG in comparing and selecting recommended FMPs and FMSs.
11. Document the evaluation and selection of all recommended FMS and FMPs, including an explanation for why certain types of strategies may not have been recommended.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone Chapter 5 (including work from Tasks 5A and 5B) to be included in the 2028 Regional Flood Plan
- A list of the recommended FMEs, FMSs, and associated FMPs that were approved by the RFPG. TWDB Flood Planning guidance documents will include minimum data submittal requirements and deliverable format.
- Data must be organized and summarized in the Regional Flood Plan in accordance with TWDB Flood Planning guidance documents.

- A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 5B – Recommend a List of Flood Management Evaluations to be Performed by TWDB

Must generally meet all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362.

The objective of this task is for the RFPG to submit a list to TWDB that is a subset of the FMEs that were identified by the RFPG under Task 4A, and not performed under Task 4C, along with a request to TWDB to perform those FMEs on behalf of the RFPG, subject to TWDB's available resources. This Task relies on completed work under Tasks 2A through 4A. To the extent possible, TWDB will complete performance of these FMEs with the intention of generating additional FMPs that will be in consideration for RFPGs for recommendation during the current or the following planning cycle.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Consider the identified FMEs from Task 4A that the RFPG determines are most likely to result in identification of potentially feasible FMPs and FMSs that would, at a minimum, identify and investigate one solution to mitigate for flood events associated with a 1% annual chance flood event and that support specific RFPG flood mitigation and/or floodplain management goals.
2. Once Tasks 2A through 4A are completed, develop, and obtain RFPG approval of a list of identified FMEs that comprises a subset of all the FMEs the RFPG had identified under Task 4A, and not performed under 4C to submit to TWDB to be performed by TWDB on behalf of the RFPG. The FME list developed and submitted by the RFPG to TWDB shall be developed in accordance with guidance be provided by the EA and, at a minimum, shall take into consideration:
 - a. The FMEs that the RFPG is already intending to perform, itself, via its Technical Consultant, under Task 4C using a portion of the RFPG's existing grant funding.
 - b. The nature of the sponsor/beneficiary of the identified FME study including whether, for example, the community is a smaller community without appropriate staff and resource, located in a rural area, and/or whether that entity might otherwise have difficulty in funding and overseeing the FME study itself.
 - c. The amount of estimated capacity that TWDB allocates to each planning region for performing FMEs on behalf of the region
 - d. The potential length of time that might be required for TWDB to perform the FME and the likelihood that it will result in potential FMPs being identified in time to incorporate into the regional flood plan currently under development or if the results may become available during the next flood planning cycle.
 - e. The extent of existing flood risk information available in the area of the recommended FME, and
 - f. And any other guidance or criteria provided by the EA prior to submission of the RFPG FME list to TWDB.

3. The FME list should provide a relative order of timing in which the RFPGs prefer the FMEs to be performed and resourced by TWDB, based on the TWDB FME program funding and other resources allocated towards supporting each region. Note that as TWDB resources allow, more than a single FME may be performed simultaneously on behalf of each RFPG.
4. Obtain RFPG authorization to submit, in writing, a request to TWDB to perform the FMEs on the list above, subject to available TWDB resources. This will include TWDB performing recommended FMEs to, for example, evaluate flood risks in areas with currently limited flood risk data, and to evaluate flood risk reduction solutions, including feasibility studies and preliminary engineering needed to identify, evaluate, and recommend additional potentially feasible FMPs.
5. Work, as necessary, to coordinate with TWDB on refining or modifying the submitted FME list, if required by TWDB, for example, due to limited resources or other factors determined by the EA.
6. Develop an initial scope of work for each FME to be submitted along with or soon after submitting the FME list to TWDB and coordinate with TWDB staff in refining the scopes of the FMEs on the list, as necessary, including sharing information, communicating and being responsive to the benefiting communities and potential sponsors of the FMEs, TWDB staff, and any TWDB Contractors.
7. Receive and consider the results of the FME work performed by TWDB on behalf of the RFPG including information regarding additional, potentially feasible FMPs and incorporate that information into the regional plan, as appropriate.
8. Consider the FMPs identified through the FMEs performed by TWDB on behalf of the RFPG, as appropriate.
9. Coordinate and communicate with the potential sponsors of FMPs identified through the performance of the FMEs by TWDB, including individual local governments, regional authorities, and other political subdivisions regarding their potential inclusion in the regional flood plan, as appropriate.
10. As appropriate, incorporate in accordance with Task 5A, by recommendation, additional FMPs resulting from the FME studies performed by TWDB on behalf of the RFPGs.
11. Summarize all work associated with this Task and incorporate it into the regional flood plan.
12. This effort will require a highly coordinated chain of events that will involve RFPGs, communities, TWDB, and TWDB contractors.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. RFPG approval of the FME list to be submitted to TWDB for TWDB to perform.
2. Facilitate development of, and reviews by impacted/benefitting communities, as appropriate, of initial FME scopes of work to support TWDB performance of FMEs and any resulting FMPs from the FMEs performed by TWDB.
3. Review of the chapter documents and related information by RFPG members.
4. Modifications to the chapter document based on RFPG, public, and/or agency comments.
5. Submittal of chapter document to TWDB for review and approval.
6. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone Chapter 5 (including work from Tasks 5A and 5B) to be included in the 2028 Regional Flood Plan
- A list of FMEs recommended and approved by the RFPGs to be performed by TWDB to identify FMPs to be included in the current or the following cycle of the regional flood plans.

Task 6A – Impacts of Regional Flood Plan

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC § 361.40.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to include:

1. a region-wide summary of the relative reduction in flood risk that implementation of the RFP would achieve with regard to life, injuries, property, and other factors such as environment and agriculture.
2. a statement that the FMPs in the plan, when implemented, will not negatively affect neighboring areas located within or outside of the FPR.
3. a statement that the plan adequately provides for the preservation of life and property and the development of water supply sources, where applicable.
4. a general description of the types of potential positive and negative socioeconomic or recreational impacts of the recommended FMPs and FMSs within the FPR.
5. a general description of the overall impacts of the recommended FMPs and FMSs in the Regional Flood Plan on the environment, agriculture, recreational resources, water quality, erosion, sedimentation, and navigation; and
6. a summary describing how RFPG recommendations in the RFP meet the needs identified during the needs analysis task as well as adopted goals.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: Prepare a stand-alone Chapter 6 (including work from both Tasks 6A & 6B) to be included in the 2028 Regional Flood Plan. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 6B – Contributions to and Impacts on Water Supply Development and the State Water Plan

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC § 361.41.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Include a region-wide summary and description of the contribution that the regional flood plan would have to water supply development including a list of the specific FMPs and FMSs that would contribute to water supply.
2. Include a description of any anticipated impacts, including to water supply or water availability or projects in the State Water Plan, that the regional flood plan FMPs and FMSs may have.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: Prepare a stand-alone Chapter 6 (including work from both Tasks 6A & 6B) to be included in the 2028 Regional Flood Plan. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 7 – Flood Response Information and Activities

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC § 361.42.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Summarize the nature and types of flood response preparations within the FPR including providing where more detailed information is available regarding recovery.
2. Coordinate and communicate, as necessary, with entities in the region to gather information.
3. RFPGs may not perform analyses or other activities related to planning for disaster response or recovery activities.
4. Plans to be considered in developing this chapter include relevant plans referenced under 31 TAC § 361.22.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.

2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: Prepare a stand-alone Chapter 7 to be included in the 2028 Regional Flood Plan. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 8 – Administrative, Regulatory, and Legislative Recommendations

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC § 361.43.

The objective of this task is to prepare a separate chapter to be included in the 2028 Regional Flood Plan that presents the RFPG’s administrative, legislative, and regulatory recommendations.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to develop:

1. Legislative recommendations that they consider necessary to facilitate floodplain management and flood mitigation planning and implementation.
2. Other regulatory or administrative recommendations that they consider necessary to facilitate floodplain management and flood mitigation planning and implementation.
3. Any other recommendations that the RFPG believes are needed and desirable to achieve its regional flood mitigation and floodplain management goals.
4. Recommendations regarding potential new revenue-raising opportunities including potential new municipal drainage utilities or regional flood authorities that could fund the development, operation, and maintenance of floodplain management or flood mitigation activities in the region.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: Prepare a stand-alone Chapter 8 to be included in the 2028 Regional Flood Plan. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 9 – Flood Infrastructure Financing Analysis

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC §361.44.

The objective of this task is to report on how sponsors of recommended FMPs propose to finance projects.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Coordinate and communicate with individual local governments, regional authorities, and other political subdivisions.
2. Perform a survey, including the following work:
 - a. Contacting FME, FMP and FMS with NRNC cost sponsors.
 - b. Collection and collation of data.
 - c. Documentation of the effectiveness of survey methodology, providing percent survey completions, and whether an acceptable minimum percent survey completion was achieved.
 - d. Submission of data.
3. Coordinate with FME and FMP sponsors as necessary to ensure detailed needs and costs associated with their anticipated evaluations and projects are sufficiently represented in the Regional Flood Plan for future funding determinations.
4. Indicate how individual local governments, regional authorities, and other political subdivisions in their region propose to finance the region's recommended FMPs and FMEs included in their flood plan. The assessment must also describe what role the RFPG proposes for the state in financing recommended FMPs and FMEs. As projects are implemented, those improvements and associated benefits must be incorporated into and reflected in the subsequent Regional Flood Plans.
5. Summarize the survey results.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: A completed Chapter 9 must be delivered in the 2028 Regional Flood Plan to include a summary of reported financing approaches for all recommended FMPs and FMEs. Data must be submitted in accordance with TWDB guidance documents. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 10 – Public Participation and Plan Adoption

The objective of this task is to address public participation, public meetings, eligible administrative and technical support activities, and other requirements and activities eligible for reimbursement. Objectives also include activities necessary to complete and submit a draft and final Regional Flood Plan, obtain TWDB approval of the Regional Flood Plan, and submit limited plan amendments to 2023 Amended Regional Flood Plans.

In this task, the RFPG must evaluate and ensure that the draft and final Regional Flood Plan satisfies the requirements for regional flood plans in the guidance principles adopted in Title 31 TAC § 362.3 and must include a statement in the draft and final Regional Flood Plan explaining how the Regional Flood Plan satisfies the requirements of each of the guidance principles in accordance with Title 31 TAC § 361.20.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. In addition to generally meeting all applicable statute requirements governing regional and state flood planning this portion of work must, in particular, include all technical and administrative support activities necessary to meet all the requirements of 31 TAC Chapters 361 and 362 that are not already addressed under the scope of work associated with other contract Tasks but that are necessary and or required to complete and deliver a draft Regional Flood Plan and final, adopted Regional Flood Plan to TWDB and obtain approval of the adopted Regional Flood Plan by TWDB.
2. Organization, support, facilitation, and documentation of all meetings associated with preplanning meeting; consideration of a substitution of alternative flood management strategies; public meeting after adoption of the draft Regional Flood Plan and prior to adoption of the final Regional Flood Plan; and consideration of Regional Flood Plan amendments, alternative FMS substitutions, or Board-directed revisions.
3. At the discretion of the RFPG, the grant funding may be used to amend the Board-approved, most recent 2023 amended regional flood plans. Per 31 TAC Texas Administrative Code (TAC) 361.51. Amendments to Regional Flood Plans:

A request for an amendment may be initiated by the RFPG or an entity (Political Subdivision) may request an amendment if there have been changed conditions or new information since the RFP was adopted. An RFPG must formally consider an amendment request from a political subdivision in the FPR within 180 days after its receipt to determine whether an amendment is warranted. All amendments to an RFP must meet all the requirements related to development of an RFP.

Allowances for amendments to the most recent 2023 regional flood plans are permitted as follows:

- a. Perform up to two amendments during the current planning cycle.
- b. Direct Technical Consultants to perform and submit the data required in Exhibit C for consideration of a new or revised FMX per Task 4A.
- c. No amendments may occur between the time of submitting the draft 2028 regional plans and adoption of the final 2028 regional plans.
- d. Amendments should be timed to coincide with anticipated TWDB amendments to the State Flood Plan that, in turn, will be aligned with TWDB flood funding program application periods, as determined by EA and to be noticed at a future date.

Technical Support and Administrative Activities

1. RFPGs must support and accommodate periodic presentations by the TWDB for the purpose of orientation, training, and retraining as determined and provided by the TWDB during regular RFPG meetings.
2. Attendance and participation of technical consultants at RFPG, subgroup, subcommittees, special and or other meetings including preparation and follow-up activities.
3. Developing technical and other presentations and handout materials for regular and special meetings to provide technical and explanatory data to the RFPG and its subcommittees, including follow-up activities.
4. Administrative and technical support and participation in RFPG activities, and documentation of any RFPG workshops, work groups, subgroup, and/or subcommittee activities.
5. Technical support and administrative activities associated with periodic and special meetings of the RFPG including developing agendas and coordinating activities for the RFPG.
6. Provision of progress reports to TWDB for work performed under this Contract, including any tasks related to amendment of regional flood plans by RFPG. Any work performed by Technical Consultant to produce Exhibit C technical documents for an amendment shall be included under description of Task 4A deliverables and billed to Task 4A.
7. Development of draft and final responses for RFPG approval to public questions or comments as well as approval of the final responses to comments on Regional Flood Plan documents.
8. Intraregional and interregional coordination, communication, and/or facilitation required within the FPR and with other RFPGs to develop a Regional Flood Plan.
9. Incorporation of all required data and reports into Regional Flood Plan document.
10. Modifications to the Regional Flood Plan documents based on RFPG, public, and/or agency comments.
11. Preparation of a Regional Flood Plan chapter summarizing Task 10 activities including review by RFPG and modification of document as necessary.
12. Development and inclusion of Executive Summaries in both draft Regional Flood Plan and final Regional Flood Plan.
13. Production, distribution, and submittal of all draft and final Regional Flood Plan-related planning documents for RFPG, public and agency review, including in hard-copy format when required.
14. Assembling, compiling, and production of the completed draft Regional Flood Plan and Final Regional Flood Plan document(s) that meet all requirements of statute, 31 TAC Chapters 361 and 362, Contract and associated guidance documents.
15. Submittal of the Regional Flood Plan documents in both hard copy and electronic formats to TWDB for review and approval; and all effort required to obtain final approval of the Regional Flood Plan by TWDB.

Other Activities

1. Review of all Regional Flood Plan-related documents by RFPG members.
2. Development and maintenance of a RFPG website or RFPG-dedicated webpage on the RFPG administrator's website for posting planning group meeting notices, agendas, materials, and plan information.
3. Limited non-labor, direct costs associated with maintenance of the RFPG website.

4. Development of agendas, presentations, and handout materials for the public meetings to provide to the public.
5. Documentation of meetings to include recorded minutes and/or audio recordings as required by the RFPG bylaws and archiving and provision of minutes to public.
6. Preparation and transmission of correspondence, for example, directly related to public comments on Regional Flood Plan documents.
7. Promoting consensus decisions through conflict resolution efforts including monitoring and facilitation required to resolve issues between and among RFPG members and stakeholders in the event that issues arise during the process of developing the Regional Flood Plan, including mediation between RFPG members, if necessary.
8. RFPG membership solicitation activities.
9. Meeting all posting, meeting, and other public notice requirements in accordance with the open meetings act, statute, and 31 TAC § 361.21 and any other applicable public notice requirements.
10. Solicitation, review, and dissemination of public input, as necessary.
11. Any efforts required, but not otherwise addressed in other SOW tasks that may be required to complete a Regional Flood Plan in accordance with all statute and rule requirements.
12. Administration of regional flood plan amendments, including review and approval by RFPG, and electronic submittal to TWDB EA for approval.

Deliverables:

- A completed Chapter 10 summarizing public participation activities and appendices with public comments and RFPG responses to comments.
- Complete draft Regional Flood Plan and final, adopted Regional Flood Plan documents.
- For out of cycle regional flood plan amendments, submittal of all technical guidance documentation per Exhibit C.
- Summary of all amendments to 2023 RFP approved by RFPG.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 11 – Implementation and Comparison to Previous Regional Flood Plan

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must specifically include all work necessary to meet all the requirements of 31 TAC § 361.45.

The objective of this task is to assess the major differences between the previous and current cycles of regional flood plans and provide a description of flood risk reduction solutions that have been implemented since the publication of the 2023 Plan.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Collect information from local sponsors of FMEs, FMSs, and FMPs regarding implementation of previously recommended FMEs, FMSs, and FMPs and provide to the EA; and

2. Include a general description of how the new RFP differs from the previous plan including with regards to the status of existing flood infrastructure, flood mitigation achieved, goals, and changes to the recommended FMEs, FMSs, and FMPs.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: A completed Chapter 11 must be delivered in the 2028 Regional Flood Plan to include information regarding differences between the plans. Data must be submitted in accordance with TWDB guidance documents. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

RFPGs must submit all data deliverables, related regional flood plan chapters, and related documents, as applicable, in the FINAL REGIONAL FLOOD PLAN, including required GIS files, maps, etc., to reflect work performed. Data must be organized and summarized in the Regional Flood Plan in accordance with TWDB Flood Planning guidance documents.



Exhibit B

Region 9 Upper Colorado Flood
Planning Group
Task and Expense Budgets

January 2024

**Second Cycle of Regional Flood Plan Development (2024–
2028)**

This document is subject to future revision based upon any future Legislative actions.

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Draft-Exhibit B (2024–2028)

1 Contractor Task Budget

CAS Item No.	Regional Flood Planning Task No.	Task Description	AMOUNT
1	1	Planning Area Description	\$116,200.00
2	2A	Existing Condition Flood Risk Analysis	\$162,680.00
3	2B	Future Condition Flood Risk Analysis	\$162,680.00
4	3A	Evaluation and Recommendations on Floodplain Management Practices	\$23,240.00
5	3B	Flood Mitigation Needs Analysis	\$46,480.00
6	3C	Floodplain Mitigation and Floodplain Management Goals	\$23,240.00
7	4A	Identification and Evaluation of Potential Flood Management Evaluations and Potentially Feasible Flood Management Projects and Flood Mitigation Strategies	\$232,400.00
8	4B	Preparation and Submission of Technical Memorandum	\$46,480.00
9	4C	Performance of Flood Management Evaluations	\$581,000.00
10	5A	Recommendation of Flood Management Evaluations, Flood Management Projects and Flood Mitigation Strategies	\$232,400.00
11	5B	Recommend a List of Flood Management Evaluations to be Performed by TWDB	\$23,240.00
12	6A	Impacts of Regional Flood Plan	\$69,720.00
13	6B	Contributions to and Impacts on Water Supply Development and the State Water Plan	\$23,240.00
14	7	Flood Response Information and Activities	\$23,240.00
15	8	Administrative, Regulatory, and Legislative Recommendations	\$23,240.00
16	9	Flood Infrastructure Financing Analysis	\$46,480.00
17	10	Public Participation and Plan Adoption	\$464,800.00
18	11	Implementation and Comparison to Previous	\$23,240.00

Draft-Exhibit B (2024–2028)

		Regional Flood Plan	
		Total Committed Funds	\$2,324,000.00

Draft-Exhibit B (2024–2028)

2 Contractor Expense Budget

CATEGORY	AMOUNT
Other Expenses ¹	\$25,000.00
Contractor Salaries and Wages ²	\$100,000.00
Subcontract Services #1	\$2,194,000.00
Subcontract Services #2	\$0.00
Subcontract Services #3	\$0.00
Voting Planning Member Travel ³	\$5,000.00
Total Committed Funds ⁴	\$2,324,000.00

¹Eligible Other Expenses as described in 31 TAC § 361.72(b) include the following administrative costs if the RFPG or its chairperson certifies that the expenses are eligible for reimbursement and are correct and necessary:

- a) Travel expenses as authorized by the General Appropriations Act are available only for attendance at a posted meeting of the RFPG, unless the travel is specifically authorized by the RFPG and EA;
- b) Costs associated with providing translators and accommodations for persons with disabilities for public meetings when required by law or deemed necessary by the RFPGs and certified by the chairperson;
- c) Direct costs, of the Planning Group Sponsor, for placing public notices for the legally required public meetings and of providing copies of information for the public and for members of the RFPGs as needed for the efficient performance of planning work:
 1. expendable supplies actually consumed in direct support of the planning process;
 2. direct communication charges;
 3. limited direct costs/fees of maintaining RFPG website domain, website hosting, and/or website;
 4. reproduction of materials directly associated with notification or planning activities (the actual non-labor direct costs as documented by the Contractor);
 5. direct postage (e.g., postage for mailed notification of funding applications or meetings); and
 6. other direct costs of public meetings, all of which must be directly related to planning (e.g., newspaper and other public notice posting costs).
- d) The cost of public notice postings including a website and for postage for mailing notices of public meetings; and
- e) The reasonable cost of purchase or rental of audio-visual equipment that is necessary to comply with Texas Government Code Chapter 551 related to Open Meetings; and
- f) The reasonable cost of rental space to hold RFPG meetings.

² Contractor Salaries and Wages as described in 31 TAC§ 361.72(b) include the following administrative costs if the RFPG or its chairperson certifies, that the expenses are eligible for reimbursement and are correct and necessary: the Planning Group Sponsor's personnel costs, for the staff hours that are directly spent providing, preparing for, and posting public notice for RFPG meetings, including time and direct expenses for their support of and attendance at such RFPG meetings in accordance with, and as specifically limited by, the flood planning grant contract with the Board. This may not exceed: \$5,000 per regular RFPG meeting nor a total of \$100,000 over the second planning cycle.

³Voting Planning Member Travel Expenses is defined as eligible mileage expenses incurred by regional flood planning members that cannot be reimbursed by any other entity, planning group sponsor, etc. as certified by the voting member. Travel expenses are available only for attendance at a posted meeting of the RFPG unless the travel is specifically authorized by the RFPG and EA. Liaison RFPG member travel is allowed under this as well with the same constraints. The reimbursed amount is limited to the maximum amounts authorized for state employees by the General Appropriations Act, Tex. Leg. Regular Session, 2019, Article IX, Part 5, as amended or superseded.

⁴ Ineligible Expenses as described in 31 TAC § 361.72(a) include, but are not limited to:

- a) Activities for which the EA determines existing information, data, or analyses are sufficient for the planning effort;
- b) Activities directly related to the preparation of applications for state or federal permits or other approvals, activities associated with administrative or legal proceedings by regulatory agencies, and preparation of engineering plans and specifications;
- c) Compensation for the time or expenses of RFPGs members' service on or for the RFPG;
- d) Costs of administering the RFPGs, other than those explicitly allowed under 31 TAC § 361.72(b);
- e) Costs for training;
- f) Costs of developing an application for funding or reviewing materials developed due to this grant;
- g) Analysis or other activities related to planning for disaster response or recovery activities;
- h) Analyses of benefits and costs of FMSs beyond the scope of such analyses that is specifically allowed or required by regional flood planning guidance to be provided by the EA unless the RFPG demonstrates to the satisfaction of the EA that these analyses are needed to determine the selection of the FMS or FMP.
- i) Labor, reproduction, or distribution of newsletters;
- j) Except as provided by 31 TAC § 361.72(b)(1) for certain travel expenses (see footnote #1 above), food, drink, or lodging for Regional Flood Planning Group

Draft-Exhibit B (2024–2028)

- members (including tips and alcoholic beverages);
- k) Except as provided by 31 TAC § 361.72(b)(6) for certain audio-visual equipment (see footnote #1 above), purchase, rental, or depreciation of equipment (e.g., computers, copiers, fax machines);
- l) General purchases of office supplies not documented as consumed directly for the planning process; and
- m) Costs associated with social events or tours.



Exhibit C

Technical Guidelines for Regional Flood Planning

When available, the document will be posted at

<https://www.twdb.texas.gov/flood/planning/planningdocu/2028/index.asp>

**First Cycle of Regional Flood Plan Development
(2024–2028)**

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Exhibit D

Data Submittal Guidelines for Regional Flood Planning

When available, the document will be posted at

<https://www.twdb.texas.gov/flood/planning/planningdocu/2028/index.asp>

**First Cycle of Regional Flood Plan Development
(2024–2028)**

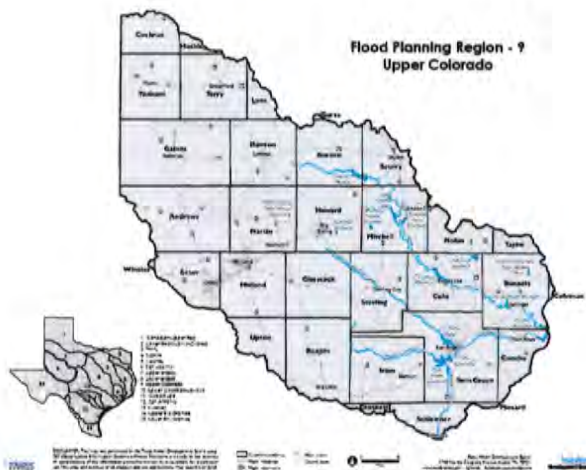
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Exhibit E

Cover Page
(Original Application)

**Second Cycle of Regional Flood Plan Development
(2024–2028)**



RESPONSE TO RFA

580-23-RFA-0015

Region 9 Upper Colorado Flood Planning Region

ABSTRACT

Request for Application (RFA) to develop a regional flood plan that adequately provides for the protection of life and property without negatively affecting neighboring areas

Shane Kelton

City of San Angelo Executive Director of Public Works

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Total Proposed Planning Cost Estimate

The total proposed planning cost estimate is \$2,324,000.00

Total Grant Funds Requested from Texas Water Development Board

The total grant funds being requested from the Texas Water Development Board is \$2,324,000.00

Statement on Use of Requested Money

The City of San Angelo, on behalf of the Region 9 Upper Colorado Regional Flood Planning Group, will utilize the funds to initiate and develop the 2nd cycle regional flood plan that adequately provides for the protection of life and property without negatively affecting neighboring areas in efforts with the passage of Senate Bill 8 of the 86th Texas Legislature. The Scope of Work in Attachment D will provide the detailed tasks where funds will be utilized to develop a regional plan.

State Funding Assistance & Written Assurances

The City of San Angelo, on behalf of the Region 9 Upper Colorado Regional Flood Planning Group, is requesting state funding to pay eligible expenses and a subcontracted consultant to perform the Scope of Work in Attachment D. The City of San Angelo is not receiving or allocating funding that would duplicate the tasks and scope of work that is to be performed by the Region 9 Upper Colorado Regional Flood Planning Group (*Written Assurance*). In addition, Senate Bill 500 of the 86th Texas Legislature provided funding for both regional flood planning activities and flood science initiatives, including base-level engineering, which will support development of the regional and state flood plans.



Administrative Documentation

Written Designation from the RFPG naming Planning Group Sponsor

Regional Flood Planning Group Sponsor Designation Form

DocuSign Envelope ID: C73D28E3-1A71-4DE0-809E-3E935F588932



Regional Flood Planning Group Sponsor Designation Form

Each five-year planning cycle, each Regional Flood Planning Group (RFPG) must designate a political subdivision to act as their Planning Group Sponsor to apply for and receive financial assistance from the TWDB to develop or revise a regional flood plan pursuant to 31 Texas Administrative Code (TAC) Chapters 361 and 362. RFPGs are required to provide written designation naming their authorized Planning Group Sponsor to the TWDB. This form may be used by an RFPG to satisfy this requirement.

I, Allison Strube (Chairperson Name), the Chairperson of the Region 9 Upper Colorado (Region Name) Regional Flood Planning Group, hereby certify that the Region 9 Upper Colorado (Region Name) Regional Flood Planning Group has designated the political subdivision listed on this form as the group's Planning Group Sponsor pursuant to 31 Texas Administrative Code Chapters 361 and 362.

Signature: Allison Strube Date: 2/1/2024 | 10:54 AM CST

I, Daniel Valenzuela (Authorized Representative of Sponsor Political Subdivision Name), an authorized representative of the City of San Angelo (Sponsor Political Subdivision Name), attest that the City of San Angelo (Sponsor Political Subdivision Name) has the legal authority to conduct the procurement of professional services and enter into the contracts necessary for regional flood planning. I hereby accept the Regional Flood Planning Group's sponsorship designation on behalf of the City of San Angelo (Sponsor Political Subdivision Name) and agree to fulfill the sponsorship responsibilities as outlined in 31 Texas Administrative Code Chapters 361 and 362.

Signature: Daniel Valenzuela City Manager Date: 2/1/2024 | 1:52 PM CST

Approved as to Form: Theresa James
Theresa James, County Attorney

RFPG's Adopted By-Laws

See Attachment B – Adopted October 29, 2020

RFPG's Consideration of Additional, Region-Specific, Public Notice Requirements

See Attachment C – Meeting Agenda from September 13, 2023, Region 9 Upper Colorado RFPG Meeting
(See item 12, specifically)

Region 9 Upper Colorado RFPG will adopt the minutes at their upcoming meeting

Planning Information

Scope of Work

See Attachment D – Draft Region Flood Planning (RFP) Scope of Work

Scope of Work Task Budget

Scope of Work Task Budget below is not modified from TWDB's proposed task budget

TASK		AMOUNT
1	Planning Area Description	\$ 116,200.00
2A	Existing Condition Flood Risk Analyses	\$ 162,680.00
2B	Future Condition Flood Risk Analyses	\$ 162,680.00
3A	Evaluation and Recommendations on Floodplain Management Practices	\$ 23,240.00
3B	Flood Mitigation Needs Analysis	\$ 46,480.00
3C	Flood Mitigation and Floodplain Management Goals	\$ 23,240.00
4A	Identification and Evaluation of Potential Flood Management Evaluations and Potentially Feasible Flood Management Strategies and Flood Mitigation Projects	\$ 232,400.00
4B	Prepare and Submit Technical Memorandum	\$ 46,480.00
4C	Performance of Identified Flood Management Evaluations	\$ 581,000.00
5A	Recommendation of Flood Management Evaluations, Flood Mitigation Projects, and Flood Management Strategies	\$ 232,400.00
5B	Recommend a list of Flood Management Evaluations to be performed by TWDB	\$ 23,240.00
6A	Impacts of Regional Flood Plan	\$ 69,720.00
6B	Contributions to and Impacts on Water Supply Development and the State Water Plan	\$ 23,240.00
7	Floor Response Information and Activities	\$ 23,240.00
8	Administrative, Regulatory, and Legislative Recommendations	\$ 23,240.00
9	Flood Infrastructure Financing Analysis	\$ 46,480.00
10	Public Participation and Plan Adoption	\$ 464,800.00
11	Implementation and Comparison to Previous Regional Flood Plan	\$ 23,240.00
TOTAL		\$ 2,324,000.00

Sponsor Expense Budget

CATEGORY	TOTAL AMOUNT
Other Expenses	\$25,000.00
Subcontract Services	\$916,200.00
Voting Member Travel	\$5,000.00
TOTAL STUDY COST	\$946,200.00

Time Schedule

See Attachment E for the proposed schedule.

Deliverables

See Attachment D – Draft Region Flood Planning (RFP) Scope of Work

Study Progress Monitoring

The method for monitoring the study progress will be by the City of San Angelo's official representative. The City of San Angelo is familiar with and has experience in monitoring large projects. Progress reports will be made available to the Region 9 Upper Colorado Planning Group as well as the Texas Water Development Board.

Qualifications and Experience of Project Staff

Shane Kelton

Shane Kelton is the Executive Director of Public Works for the City of San Angelo. He oversees all City of San Angelo Public Works Departments including the Operations Department, Water Department, and Engineering. Shane graduated with a Bachelor's and a Master of Science from Angelo State University. He began working for the City of San Angelo as an Assistant Superintendent for the Parks Department in 2000, became the Director of Operations in 2012, and at the beginning of 2020 he was promoted to the Executive Director of Public Works. Shane served as President of Bronte ISD – Board of Trustees, and President of the Coke County Livestock Association Board.

Tina Dierschke

Certified Public Accountant Tina Dierschke serves as the City of San Angelo's finance director to oversee the Finance Department's four divisions and the City's \$160+ million budget.

She previously was a senior accountant at Eckert and Co., a local accounting firm, where she managed an audit team that performs audits of municipalities, counties, and school districts. She has performed audits of local governments, ensuring their compliance with applicable laws, regulations, and grant compliance requirements, and prepared and completed financial statements and reports as part of the auditing process. Before working for Eckert & Co., Tina worked as an Audit Associate for KPMG LLP where she performed audits of public companies and nonprofit organizations.

Tina also previously worked as an Internal Review Accountant and Budget Technician for the Department of the Army. Dierschke earned a bachelor's degree in accounting from Lamar University in Beaumont, graduating with a 4.0 grade-point average and earning Lamar's Plummer Award for the graduate with the highest GPA. She has been licensed as a CPA in three states, including Texas, and is also licensed as a Certified Government Finance Official in Texas.

The Finance Department consists of four divisions: Budget, Accounting, Billing and Receipts, and Purchasing. Of the City of San Angelo's total annual budget, the general fund, which is supported chiefly by property and sales taxes, accounts for approximately \$77 million. Federal grant awards monitored and/or received by the City of San Angelo exceeded \$4 million in fiscal year 2019.

Part of Tina's official duties include serving as Treasurer for the San Angelo Firefighters Retirement and Relief Fund and as Treasurer for the City of San Angelo's Economic Development Corporation. Tina has also volunteered to serve as Treasurer for the San Angelo Federal Credit Union since February 2014. She is a member of the American Institute of Certified Public Accountants, the Texas Society of Certified Public Accountants, the Government Finance Officers Association, and Beta Gamma Sigma.

Jeffrey Tomlinson

Jeffrey Tomlinson directs the City of San Angelo's Purchasing and Contract Administration functions to procure the most cost-effective supplies, materials, equipment, and services from qualified vendors. Jeffrey ensures that procurement and contract administration functions comply with Federal, State, and City rules and regulations. He also provides advice and counsel to City Council, City Management, Department Directors, and other City Personnel on procurement and contracting matters.

Attachment A – Checklist



**Texas Water Development Board
Regional Flood Planning Grant
Application Checklist**

November 2023

All applications **must be complete** when submitted to the TWDB. A list of required items with check boxes has been provided in the following pages to assist you in completing the application. **Please check the boxes after you have included the respective items in the application and return the completed checklist with the application.**

I. GENERAL INFORMATION

- ☒ 1. Legal name of applicant(s).
- ☒ 2. Regional Flood Planning Group.
- ☒ 3. Authority of law under which the applicant was created.
- ☒ 4. Applicant's official representative, Name, Title, Mailing address, Phone number, Fax number, if available, E-mail Address, and Vendor ID Number.
- ☒ 5. DUNS Number. If you do not have a DUNS number, visit:
<https://iupdate.dnb.com/iUpdate/viewiUpdateHome.htm>
- ☒ 6. Total proposed planning cost estimate (see Table 1 for total cost by region).
- ☒ 7. Total grant funds requested from the Texas Water Development Board.

II. ADMINISTRATIVE DOCUMENTATION

- ☒ 8. Written designation from the RFPG naming the Planning Group Sponsor that is authorized to apply for these grant funds on behalf of the RFPG (as required in 31 TAC §361.70(b)).
- ☒ 9. A copy of or website link to the RFPG's adopted by-laws (as required in 31 TAC §361.70(a)).
- ☒ 10. Written documentation that the RFPG considered additional, region-specific, public notice requirements at a meeting in accordance with 31 TAC 361.12(3) prior to taking action regarding its application for funding (as required in 31TAC §361.70(c)).

III. PLANNING INFORMATION

- ☒ 11. A detailed scope of work for proposed planning. Include the *Scope of Work for the Second Cycle of Regional Flood Planning* document prepared by TWDB located at <http://www.twdb.texas.gov/flood/planning/doc/2023DraftSOW.pdf>
- ☒ 12. A task budget for detailed scope of work by task.
- ☒ 13. Is the RFPG suggesting modifications to the TWDB's proposed task budget?
Yes ☐ No ☒
- ☒ 14. If yes to No. 13 above, provide written justification for the changes.
- ☒ 15. An expense budget for scope of work by expense category. *Example is included.*

- ☒ 16. A time schedule for completing detailed Scope of Work by task (see Scope of Work document referenced above).
- ☒ 17. Specific deliverables for each task in Scope of Work (see Scope of Work document referenced above).
- ☒ 18. Method of monitoring study progress.

The following information that will also be needed to finalize and approve the Regional Flood Planning Grant Contract:

- ☒ 19. Requested Revisions to the Draft Contract Language: The Sponsors should review the Draft Contract Language posted on the TWDB website and provide any suggested revisions or questions with their RFA submission.
- ☒ 20. Vendor Set-Up Form: Even if the Sponsor is an existing Contractor with the TWDB, it is suggested that they complete a new Vendor Set-Up Form to ensure that we have the correct banking information on file for this project. RFP Manager is responsible for obtaining the most up to date template from TWDB's Finance department.
- ☒ 21. DocuSign Instructions: The names of individual that will sign the Contract in DocuSign, along with the individual's email address.
- ☒ 22. Correspondence Information: (used to populate the Correspondence section of the Regional Flood Planning Grant Contract).

For CONTRACTOR:

Contract Issues:

Name **Shane Kelton**
 Company **City of San Angelo**
 Address **301 West Beauregard Avenue**
 City, State ZIP **San Angelo, Texas 76903**
 Email: **shane.kelton@cosatx.us**

Payment Request Submission:

Name **Pete Madrid Jr.**
 Company **City of San Angelo**
 Address **301 West Beauregard Avenue**
 City, State ZIP **San Angelo, Texas 76903**

Physical Address: **301 West Beauregard Avenue**
 Building Name **City Hall Annex**
 Street Address **301 West Beauregard Avenue**
 City, State ZIP **San Angelo, Texas 76903**

IV. WRITTEN ASSURANCES

Written assurance of the following items:

- ☒ Proposed planning does not duplicate existing projects.

Please check the boxes after you have included the respective items in the application and return the completed checklist with the application.

Attachment B – Region 9 Upper Colorado By-Laws

Region 9 Upper Colorado

Regional Flood Planning Group

Bylaws

Adopted October 29, 2020

Region 9 Upper Colorado Regional Flood Planning Group Bylaws

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Adopted October 29, 2020

ii

Region 9 Upper Colorado Regional Flood Planning Group Bylaws

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Region 9 Upper Colorado Regional Flood Planning Group Bylaws

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Region 9 Upper Colorado Regional Flood Planning Group Bylaws

ARTICLE I. Names

Section 1 Organization

The official name of this organization shall be the "Region 9 Upper Colorado Regional Flood Planning Group" (hereinafter "Region 9 Upper Colorado RFPG").

Section 2 Flood Planning Region

The official name and boundaries of the flood planning region designated by the Texas Water Development Board (hereinafter "TWDB") in accordance with Senate Bill 8 of the 86th Regular Texas Legislature on April 9, 2020, shall be the "Region 9 Upper Colorado Flood Planning Region" (hereinafter "Region 9 Upper Colorado FPR").

ARTICLE II. Establishment and Purpose

The Region 9 Upper Colorado RFPG was established by the TWDB on October 1, 2020, through the designation of initial flood planning group members. The purpose of the Region 9 Upper Colorado RFPG is to carry out the responsibilities placed on regional flood planning groups as required by Texas Water Code Chapter 16 and TWDB rules, including 31 Texas Administrative Code (TAC) Chapters 361 and 362.

ARTICLE III. Principal Administrative Office

The principal administrative office of the Region 9 Upper Colorado RFPG shall be the principal business offices of the planning group sponsor. The administrative officer of the Region 9 Upper Colorado RFPG for purposes of the Texas Open Records Act shall be an individual designated by the planning group sponsor. The Chair of the Region 9 Upper Colorado RFPG shall ensure that the mailing address and physical address of the principal office and administrative officer are provided to all members of the Region 9 Upper Colorado RFPG and the Executive Administrator of the TWDB.

ARTICLE IV. Responsibilities

The Region 9 Upper Colorado RFPG shall have the responsibility for performing the functions defined in Texas Water Code, Chapter 16 and in 31 TAC Chapters 361 and 362 related to regional flood planning for the Region 9 Upper Colorado FPR. Foremost among those responsibilities shall be the development of a regional flood plan for the Region 9 Upper Colorado FPR that identifies flood risks, establishes flood mitigation and floodplain management goals, and recommends evaluations, strategies, and projects to reduce flood risks.

ARTICLE V. Voting Membership

Section 1 Composition

The initial voting members of the Region 9 Upper Colorado RFPG shall be comprised of the initial flood planning group members as designated by the

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TWDB on October 1, 2020. The Region 9 Upper Colorado RFPG may subsequently add additional voting members through a process in conformance with these bylaws, specifically Section 4 of this Article.

The Region 9 Upper Colorado RFPGs shall at all times, maintain each of the required voting positions listed in 31 TAC §361.11(e). However, if the Region 9 Upper Colorado FPR does not have an interest in one of the categories, then the Region 9 Upper Colorado RFPG shall so advise the Executive Administrator of the TWDB and an individual member designation may not be required.

The Region 9 Upper Colorado RFPG shall provide a current list of its voting and non-voting positions and the individual member name that fills each position to the TWDB.

The voting membership of the Region 9 Upper Colorado RFPG shall not exceed 18 members.

Section 2 Terms of Office

The terms of all initial voting members shall expire on July 10, 2023. Upon the expiration of the initial terms, all voting members shall draw lots for additional terms of five years or two years, such that half of the voting members' terms will expire in two additional years and the other half in five additional years. If there is an odd number of voting members at the time that lots are drawn, one more than half shall draw lots for the two-year terms.

Except for the initial terms of the initial voting members and the two-year terms described above, all subsequent terms of office for voting members shall be five years, the goal of staggering the terms of office having been accomplished. There are no limits to the number of terms a member may serve. Upon the expiration of a member's term, a majority vote of the total voting membership shall be required for the member to continue to serve for a subsequent term. If a member fails to be affirmed for a subsequent term, then the voting members shall initiate procedures to appoint a successor utilizing the process set forth under Section 4 of this Article.

Section 3 Conditions of Membership

In order to be eligible for voting membership on the Region 9 Upper Colorado RFPG, a person must be capable of adequately representing the interest for which a member is sought, be willing to participate in the regional flood planning process, attend meetings, and abide by these bylaws.

Section 4 Selections of Members

4.1 Filling Vacancies

No later than ninety calendar days prior to the expiration of a voting member's term, or within forty-five calendar days after the removal of or unanticipated resignation of a voting member, the Region 9 Upper Colorado RFPG shall post public notice on its website and any other relevant websites and notify via email the county clerk in each county located in whole or in part in the Region 9 Upper Colorado FPR soliciting nominations for a successor, identifying the particular interest for which the nomination is sought, stating the conditions of

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membership, delineating the method for submitting nominations, and establishing a deadline for submission of nominations between thirty and forty-five calendar days from the date that public notice was posted. Members of the Region 9 Upper Colorado RFPG may also submit nominations in the manner prescribed in the public notice.

The Region 9 Upper Colorado RFPG Executive Committee shall receive and process the nominations and, no sooner than ten calendar days after the deadline for submitting nominations, shall recommend a nominee to the voting membership as a whole, giving strong consideration to a consensus nominee from those individuals and entities that collectively represent that interest. The Executive Committee shall not be bound by the nominations received and may consider any person who meets the conditions of membership as a nominee. The voting membership as a whole shall not be bound by the recommendation of the Executive Committee and may consider any person who meets the conditions of membership as a nominee.

The voting members shall attempt to select a successor by consensus. If efforts to reach consensus fail, the Chair shall call for a vote on a nominee. A majority vote of the voting members present shall be required to appoint a successor. If the voting members fail to select a successor, the voting members shall consider other nominations until a successor can be selected by consensus or majority vote of the voting members present.

4.2 Adding and Removing New Voting Positions

In addition to selecting successor voting members to fill vacancies caused by removal or the expiration of a term, the Region 9 Upper Colorado RFPG may, at any time, add additional voting positions including in any new interest categories or additional representatives of the required interest categories in Texas Water Code §16.062(c) and 31 TAC §361.11(e), that the RFPG considers appropriate for development of its RFP. The Region 9 Upper Colorado RFPG must use the selection process set forth in this section for filling vacancies.

Adding any new voting position that increases the total number of voting positions may only occur upon a two-thirds vote of all existing voting positions (31 TAC §361.11(i)).

If a new voting position is created, the existing voting members shall select a nominee to fill the new position by majority vote of the voting members present and shall determine by consensus, but not less than agreement of a majority of the voting members present, the exact applicability of the membership term provisions and restrictions to the new member at the time of the new members selection.

The Region 9 Upper Colorado RFPG may, at any time, remove a voting position as long as the Region 9 Upper Colorado RFPGs maintains each of the required voting positions listed in 31 TAC §361.11(e). Removal of a voting position requires a majority vote of all existing voting positions. If there is currently a member serving in the voting position to be removed, that member will be removed from their position and the Region 9 Upper Colorado RFPG is not

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required to remove the voting member by the process set forth in Section 7 of this Article.

If upon the designation of initial flood planning group members by the TWDB on October 1, 2020, there is a vacant voting position for one or more of the required interest categories in 31 TAC §361.11(e), the Region 9 Upper Colorado RFPG shall solicit nominations by generally utilizing the selection process set forth in this section. A nominee may be selected to fill the vacant voting position upon a majority vote of the voting members present.

In both the consideration of nominees and the selection of new voting positions and members, the Executive Committee and other voting members shall strive to achieve geographic, ethnic, and gender diversity.

4.3 Outgoing Members

Outgoing voting members shall be given the opportunity to fully participate in the selection process for their successors and shall serve until their successors take office. However, no member shall participate in a vote in which he or she is a nominee.

Because initial members continue to serve for additional terms of either two or five years at the end of their initial terms as set forth under Section 2 of this Article, this Section 4 shall not apply to the regular expiration of the initial terms of the initial members; however, this section shall apply to the selection of a successor for a removed voting member during the initial terms.

Section 5 Attendance

All members shall make a good faith effort to attend all Region 9 Upper Colorado RFPG meetings. Records of attendance shall be kept by the Secretary at all Region 9 Upper Colorado RFPG meetings and hearings and presented as part of the minutes. Voting members of the Region 9 Upper Colorado RFPG that have recorded absences from three consecutive meetings and/or hearings, or at least one-half of the sum of all meetings and hearings in the preceding twelve months, shall be considered to have engaged in excessive absenteeism and shall be subject to removal from membership under Section 7 of this Article.

Section 6 Code of Conduct

Members and designated alternates of the Region 9 Upper Colorado RFPG shall conduct the business of the Region 9 Upper Colorado RFPG in an ethical manner and shall avoid any form or appearance of a conflict of interest, real or apparent, by observing the following:

(a) No member or designated alternate of the Region 9 Upper Colorado RFPG shall:

- (1) Solicit or accept gratuities, favors, or anything of monetary value from suppliers or potential suppliers of services, materials, or equipment, including subcontractors under recipient contracts; or
- (2) Participate in the selection, award, or administration of a procurement where the member or designated alternate has a financial or other substantive interest in the organization being considered for award. Such

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conflict may be due to any of the following having a financial or familial relationship with the organization:

- (i) the member or designated alternate;
- (ii) the member's or designated alternate's family;
- (iii) the member's or designated alternate's business partner(s); or
- (iv) a person or organization that employs, or is about to employ, any of the persons listed in (i)-(iii), above.

(3) Participate in any deliberation, decision, or vote that would constitute a conflict of interest under federal, state, or local law.

(b) Potential conflicts of interest shall be clearly stated by the voting member or designated alternate prior to any deliberation or action on an agenda item with which the voting member or designated alternate may be in conflict. Where the potential conflict is restricted to a divisible portion of an agenda item, the Chair may divide the agenda item into parts, at the Chair's discretion, for deliberation and voting purposes. An abstention from participation in deliberations, decisions, or voting and the reasons therefor shall be noted in the minutes.

Section 7 Removal of Voting Members

(a) Grounds for Removal of Voting Members. The following shall constitute grounds for removal of a voting member:

- (1) engaging in excessive absenteeism as defined under Section 5 of this Article
- (2) any violation or attempted violation of the Public Information Act (Government Code Chapter 552) or the Open Meetings Act (Government Code Chapter 551);
- (3) failure to abide by the code of conduct provisions set forth under Section 6 of this Article;
- (4) change in status so that the member no longer represents the interest he or she was selected to represent;
- (5) falsifying documents;
- (6) any other serious violation of these bylaws as may be determined by the voting members; or
- (7) the voting member's designated alternate engages in any acts described in subdivisions (2), (3), (5) or (6) of this subsection.

(b) Process for Removing Voting Members. Voting members may be removed at any time for any of the grounds for removal of voting members set forth in subsection (a) of this section. Any member with knowledge or suspicion that a voting member or designated alternate has engaged in acts or that events have occurred constituting a ground for removal under subsection (a) of this section shall report such information or suspicion to the Chair. The Chair, upon discovering or receiving such information, shall make a written request to that member to verify or refute the alleged acts or events. The member shall provide a written response to the Chair within fifteen calendar days from the date of receipt of the Chair's request. Within five calendar days of receipt of the member's response, the Chair shall forward copies of the response to the voting members. If the Chair believes that a ground for removal may exist or if the member fails to provide a timely response to the Chair's request, the Chair shall confer with the Executive Committee regarding the matter. The Executive

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Committee may vote to place an item on the next subsequent agenda addressing the possible removal of the member. If the Chair does not believe that a ground for removal exists and indicates that he or she will not place an item on the next agenda addressing the possible removal, then a written request from five voting members will be required to place an item on a subsequent meeting agenda addressing the possible removal of the member. At the meeting, all discussion and debate with regard to the possible removal shall take place in a closed, executive session, but the final vote on removal shall take place in an open meeting. During the executive session, the Chair shall lay out all of the correspondence and information that has been received related to the possible removal and the member subject to the possible removal may present evidence refuting or verifying the information presented. The voting members may remove the member by a majority vote of the voting members present. The member subject to the removal action shall not participate in any way in the removal vote, nor shall his or her membership count as part of the voting members present of calculating a majority vote.

ARTICLE VI. Non-Voting Membership

Section 1 Mandatory Members

The non-voting members of the Region 9 Upper Colorado RFPG shall include the non-voting members set forth in 31 TAC §361.11(f)(1)-(7). As necessary, the Region 9 Upper Colorado RFPG shall include members designated by upstream or downstream RFPGs or members from neighboring RFPGs touching the Gulf Coast, as set forth in 31 TAC §361.11(f)(8)-(9). Such designees shall have no terms of office and shall serve until replaced by the designating entity. However, if the voting members decide by a majority vote of the voting members present, that a particular designee is hindering the regional flood planning efforts of the Region 9 Upper Colorado RFPG, the Chair shall make a written request to the entity requesting the designation of another person to serve as the entity's designee.

In accordance with 31 TAC 361.11(f)(8), if there is an upstream or downstream FPR that is located within the same river basin as the Region 9 Upper Colorado FPR, the Region 9 Upper Colorado RFPG must designate a non-voting member liaison to coordinate with the upstream or downstream RFPG.

In accordance with 31 TAC 361.11(f)(9), if Region 9 Upper Colorado RFPG touches the Gulf Coast, the Region 9 Upper Colorado RFPG must designate a non-voting member liaison to coordinate with neighboring RFPGs that also touch the Gulf Coast.

Section 2 Discretionary Members

The voting members of the Region 9 Upper Colorado RFPG may choose to create a new non-voting position to represent a specific entity by a two-thirds vote of the voting members present. The Chair shall make a written request within ten calendar days to the entity requesting the designation of a person to serve as the entity's designee. Such designees shall have no terms of office and shall serve until replaced by the designating entity or until the entity is removed as a

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non-voting member. However, if the voting members determine by a majority vote of the voting members present vote that a particular designee is hindering the regional flood planning efforts of the Region 9 Upper Colorado RFPG and that the entity should remain as a non-voting member, the Chair shall make a written request within ten calendar days to the entity requesting the designation of another person to serve as the entity's designee.

In addition to creating new non-voting positions for specific entities, the Region 9 Upper Colorado RFPG may, at any time, create non-voting positions for specific interest categories that the RFPG considers appropriate for development of its RFP by a two-thirds vote of voting members present. The Region 9 Upper Colorado RFPG must use the selection process set forth in Article V, Section 4.

Section 3 Code of Conduct

All non-voting members shall comply with the code of conduct provisions under Section 6 of Article V of these bylaws.

ARTICLE VII. Designated Alternates

Each member shall designate an alternate to represent him/her when he/she is unable to attend a meeting. Each member must notify the Chair in writing of the name and appropriate contact information of the member's designated alternate at least forty-eight hours prior to the first meeting at which the designated alternate will appear on behalf of the member. If the member fails to provide such notice, the Chair may forbid the participation of the designated alternate at the meeting or hearing. The Chair shall not recognize the designation of more than one alternate per member at any given time. The Chair shall not recognize more than two alternate designations of any kind per member per calendar year unless the Region 9 Upper Colorado RFPG expressly decides to waive this provision.

The designated alternate shall enjoy the same voting privileges, or lack thereof, and shall be bound by the same duties, terms, and conditions as the member they represent, except as otherwise provided in these bylaws. However, a designated alternate for a voting member who serves as an officer shall not be allowed to serve in the capacity as an officer in the member's absence.

The Chair shall provide each member with a current list of all members and their designated alternates.

ARTICLE VIII. Officers

Section 1 Officers, Restrictions, and Terms of Office

Voting members of the Region 9 Upper Colorado RFPG shall select from the voting membership a Chair, Vice Chair, and Secretary to serve as officers. Each officer shall serve a term of one calendar year. However, the terms of the initial officers selected under Section 2 of this Article shall expire when the regular officers take office as provided under this Article. Except as provided under Section 4 of this Article, an officer shall serve until his or her successor takes office. No two voting members representing the same interest shall serve as

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officers at the same time. Elections shall be held annually, with no restrictions on the number of consecutive terms an individual may serve as an officer other than those that apply because of his or her status as a voting member under these bylaws.

Section 2 Selection

(a) Initial Officers. Within 90 days after the adoption of these bylaws, the voting members shall select initial officers. Nominations shall be made from the floor by voting members. The voting members shall select officers from among the nominees by consensus if possible, but not less than agreement of a majority of the voting members present.

(b) Regular Officers. Regular officers shall be selected at the first meeting of each calendar year after the calendar year in which these bylaws were adopted. Written notice of the meeting to select officers shall be sent to all members of the Region 9 Upper Colorado RFPG by the current Secretary thirty calendar days prior to the meeting. Nominations shall be made from the floor by voting members. The voting members shall select officers from among the nominees by consensus, but not less than agreement of a majority of the voting members present.

Section 3 Removal of Officers

Any officer may be removed from office for any of the grounds for removal of voting members set forth under Article V of these bylaws, or for repeated failure to carry out the duties of the office. Removal of an officer shall be decided by a majority vote of the voting members present. Removal of an officer shall be set as an agenda item at the next scheduled meeting upon written request signed by five voting members to the Chair or Secretary. The Chair or Secretary receiving the request shall notify the officer in writing that he or she shall be subject to a removal action at the next scheduled meeting. At the meeting, all discussion and debate with regard to the possible removal shall take place in a closed, executive session, but the final vote on removal shall take place in an open meeting. During the executive session, the presiding officer shall lay out the information that has been received related to the possible removal, and the officer subject to the possible removal action may present evidence refuting or verifying the information presented. If the Chair is the subject of the possible removal action, the Vice-Chair shall preside over the meeting during the agenda item concerning the Chair's removal. The officer subject to the removal action shall not participate in any way in the removal decision, nor shall his or her membership count as part of the total membership for purposes of calculating a majority vote. The notice of the meeting shall be posted in accordance with the Open Meetings Act and shall state that the issue of possibly removing the officer will be on the agenda. Any vacancy caused by the removal shall be filled as provided under Section 4 of this Article. Removing an officer from their office under this section does not remove the member from their voting position on the Region 9 Upper Colorado RFPG. To remove a voting member from their voting position, the Region 9 Upper Colorado RFPG must follow to the removal process under Article V, Section 7.

Region 9 Upper Colorado Regional Flood Planning Group Bylaws**Section 4 Vacancies of Officers**

Whenever an officer vacancy exists because of death, resignation, or removal, the vacancy shall be filled within thirty days of the event causing the vacancy. Nominations shall be made from the floor by voting members. The voting members shall select a replacement officer from among the nominees by a majority vote of the voting members present. The next highest-ranking officer shall serve in the vacant position until a successor takes office, unless the office of the Secretary becomes vacant, in which case the Chair shall appoint a willing voting member to serve as Secretary until the successor to the Secretary takes office. The person selected to fill a vacancy for an officer shall serve for the unexpired term of his or her predecessor in office.

Section 5 Duties of Each Officer

(a) Chair. The Chair shall be the executive officer of the Region 9 Upper Colorado RFPG. The Chair will preside at all meetings of the Region 9 Upper Colorado RFPG and perform all duties provided by these bylaws. If the Chair is unable to carry out his/her duties, the Vice Chair shall assume the duties of the Chair.

(b) Vice Chair. The Vice Chair shall assist the Chair in the discharge of his/her duties and, in the absence of the Chair, shall assume the Chair's full responsibilities and duties. In the event the Chair is unable to carry out his/her duties, the Vice Chair shall serve as Chair until the Region 9 Upper Colorado RFPG elects a new Chair under Section 4 of this Article. The Vice-Chair shall perform other duties as assigned by the Chair, or these bylaws.

(c) Secretary. The Secretary shall maintain the minutes and take attendance of the Region 9 Upper Colorado RFPG meetings. The minutes and attendance shall be kept as part of the Region 9 Upper Colorado RFPG official records. The Secretary shall ensure that all notices are properly posted as provided in the bylaws, as required by law, and as required by the Texas Open Meetings Act. The Secretary shall perform other duties as assigned by the Chair or these bylaws. If the both the Chair and Vice Chair are unable to carry out the duties of the Chair, the Secretary shall assume the duties of the Chair.

Section 6 Executive Committee

The Executive Committee shall be composed of five Region 9 Upper Colorado RFPG members, including the Chair, Vice Chair, Secretary, and two voting members-at-large. No two voting members representing the same interest shall serve as members of the Executive Committee at the same time. The two members-at-large shall be selected annually in the same manner and with the same terms as set forth for the selection of officers under this Article. Members-at-large shall be removed and their vacancies filled in the manner prescribed for officers under this Article.

The Executive Committee shall be responsible for carrying out the duties imposed on it in these bylaws. The voting members of the Region 9 Upper Colorado RFPG may delegate administrative decisions to the Executive Committee unless provided otherwise in these bylaws.

All meetings of the Executive Committee shall comply with the provisions related to meetings generally as set forth in Article IX of these bylaws.

Region 9 Upper Colorado Regional Flood Planning Group Bylaws**Section 7 Designated Alternates**

A designated alternate of a member serving as an officer shall not serve in the member's capacity as an officer in lieu of the member. When an officer is absent or otherwise unable to serve, the next highest-ranking officer shall serve for the officer. If no lower ranking officer exists or can serve, then a member designated by the Chair or acting Chair shall serve for the officer.

ARTICLE IX. Meetings**Section 1 Open Meetings and Notice**

All meetings of the Region 9 Upper Colorado RFGP, its committees and/or sub-groups, shall be posted and open to the public in the manner of a governmental body under the Texas Open Meetings Act and as set forth in the TWDB rules. All actions of the Region 9 Upper Colorado RFGP shall be deliberated and undertaken in open meeting, unless otherwise authorized by the Texas Open Meetings Act. The time and place of meetings shall be set to facilitate, to the greatest extent possible, the participation of the public in the regional flood planning process. In accordance with TWDB rules, specifically, 31 TAC 361.21, copies of all materials presented or discussed shall be made available for public inspection prior to and following any meeting of the Region 9 Upper Colorado RFGP.

Section 2 Regular Meetings

At least one regular meeting of the Region 9 Upper Colorado RFGP shall be held in each quarter or more frequently. At the first meeting after the adoption of these bylaws and the first meeting of each calendar year thereafter, the Region 9 Upper Colorado RFGP shall establish and adopt a regular meeting schedule for the ensuing year. The Secretary shall ensure that an advance notice and an agenda for regular meetings will be provided to the full membership of the Region 9 Upper Colorado RFGP as set forth in TWDB rules. Supporting information and member-requested materials shall be distributed to the full membership with the notice and agenda or at the meeting, as deemed appropriate by the Chair.

Section 3 Called (Special) Meetings

The Chair or a majority of the voting members of the Region 9 Upper Colorado RFGP may call special meetings of the Region 9 Upper Colorado RFGP. The Secretary shall ensure that advance notice and an agenda for the called meeting is provided to the full membership of the Region 9 Upper Colorado RFGP as set forth in TWDB rules and the Texas Open Meetings Act. Supporting information and member-requested materials shall be distributed to the full membership with the notice and agenda or at the meeting, as deemed appropriate by the Chair.

Section 4 Agenda

The Secretary of the Region 9 Upper Colorado RFGP shall ensure that an agenda is prepared and distributed for all meetings, in accordance with Sections 2 and 3

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of this Article. Items shall be placed on the agenda by the request of the Chair or by the request of at least two voting members of the Region 9 Upper Colorado RFPG. Consideration for approval of the previous meeting's minutes, as applicable, shall always be among the first items on the agenda. Copies of the agenda and all supporting information shall be made available for public inspection prior to and following any meeting of the Region 9 Upper Colorado RFPG, in accordance with TWDB rules.

Section 5 Quorum

A quorum of the Region 9 Upper Colorado RFPG shall be a simple majority of the voting members or their designated alternates excluding vacancies. At least a quorum shall be necessary to conduct any business of the Region 9 Upper Colorado RFPG.

Section 6 Applicability of Robert's Rules of Order

Except as otherwise provided in these bylaws, meetings of the Region 9 Upper Colorado RFPG shall be conducted under the provisions of the most current edition of *Robert's Rules of Order*. However, failure to follow *Robert's Rules of Order* shall not constitute grounds for appeal of an action or a decision of the Region 9 Upper Colorado RFPG.

Section 7 Public Meetings Required By Law

The Region 9 Upper Colorado RFPG shall post notice and conduct public meetings that are specifically required by statute and TWDB rule, including those set forth for draft regional flood plan presentation, adoption of amendments to the regional flood plan, and final regional flood plan adoption, in accordance with the requirements of Texas Water Code Chapter 16 and TWDB rules, including 31 Texas Administrative Code (TAC) Chapters 361 and 362. Notification requirements may be different than those specified in Section 1 of this Article and are specifically delineated in Texas Water Code §16.062 and 31 TAC §361.21.

Section 8 Minutes

(a) The Secretary shall ensure that minutes of all meetings of the Region 9 Upper Colorado RFPG are prepared. The minutes shall:

- (1) state the subject of each deliberation;
- (2) indicate each vote, order, decision, or other action taken;
- (3) indicate those members in attendance, noting the presence of a quorum, and noting the presence of those members of the public who participate in the course of the meeting;
- (4) represent an accurate summary of the meeting's record; and state any other information required by these bylaws to be included in the minutes.

(b) The Secretary shall ensure that true copies of the minutes are provided to the full membership as soon as possible following the meeting, but no later than ten calendar days prior to the next regular meeting of the Region 9 Upper Colorado RFPG.

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ARTICLE X. Making Decisions**Section 1 Applicability; No Written Proxies**

(a) Unless the method for making a particular decision is set forth in these bylaws, the Region 9 Upper Colorado RFPG, its committees, and subgroups shall make all decisions utilizing the process set forth in Section 2 of this Article.

(b) Written proxies shall not be allowed in any decision-making by the Region 9 Upper Colorado RFPG, its committees, or its subgroups. However, designated alternates shall be allowed to participate in decision making as set forth in these bylaws. Because it is important in achieving consensus for all members to participate actively, keep up-to-date on the progress of the group, and develop a common base of information, members shall in good faith attempt to minimize the number of times they are absent from meetings or are represented by their designated alternates.

Section 2 Decision-Making Process

(a) **Use of Consensus.** The Region 9 Upper Colorado RFPG shall attempt to make decisions using a consensus decision-making process. Consensus is an acknowledgement of agreement built by identifying and exploring all members' interests and by agreeing to a solution that satisfies these interests to the greatest extent possible. A consensus is reached when all voting members agree that their major interests have been taken into consideration and addressed in a satisfactory manner so that they can support the decision of the group, or at least not object. The process of building consensus involves the development of alternatives and the assessment of the impacts of those alternatives.

Consensus does not necessarily mean unanimity. Some members may strongly endorse a particular solution while others may accept it as a workable solution. A member can participate in the consensus without embracing each element of the solution with the same fervor as other members, or necessarily having each of his or her interests satisfied to the fullest extent. In a consensus, the members recognize that, given the combination of gains and trade-offs in the decision package and given the current circumstances and alternative options, the resulting solution is the best one the voting members can make at this time.

(b) **Failure to Reach Consensus.** If after good faith negotiations it appears likely to the Chair that the voting members will be unable to reach consensus, the Chair shall entertain a motion to put the issue to a vote to be conclusively decided by a majority vote of the voting members present.

Section 3 Approving Recommended Flood Management Evaluations (FME), Flood Management Strategies (FMS), and Flood Mitigation Projects (FMP)

The voting members of the Region 9 Upper Colorado RFPG shall finally approve each recommended FME, FMS, and FMP by a separate vote by consensus, but not less than a majority vote of the voting members present.

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Section 4 Final Adoption of Regional Flood Plan; Amendments

The voting members of the Region 9 Upper Colorado RFGP shall finally adopt the regional flood plan for the Region 9 Upper Colorado FPR, and any amendments thereto by consensus, but not less than a majority vote of the voting members present.

ARTICLE XI. Books and Records

Section 1 Required Documents and Retainment

Records of the Region 9 Upper Colorado RFGP, including: a current membership list with addresses, affiliations, and phone numbers, if not unlisted; the current roster of officers; a copy of the written record of designation of the planning group sponsor political subdivision of the Region 9 Upper Colorado RFGP; minutes; agendas; notices; contracts, subcontracts, annual financial statements, and any and all financial records and supporting information; bylaws; records of public hearing; correspondence; memoranda; phone logs; committee or subgroup recommendations or findings; draft and final plans; studies; data of any sort; computer records or models; executive summaries; other work products; and any other pertinent information of a public nature shall be kept at the principal office of the Region 9 Upper Colorado RFGP for a period of at least five years or the period of time required of the political subdivision serving as the planning group sponsor, whichever is longer.

The storage and dissemination of all Region 9 Upper Colorado RFGP records must comply with TAC §361.21(d) and Texas Government Code, Chapter 552 (Public Information Act) regarding the handling of confidential materials.

Section 2 Inspection and Copying

Records of the Region 9 Upper Colorado RFGP shall be available for inspection and copying at the principal place of business of the planning group sponsor political subdivision during normal business hours. Procedures and fees for copying and inspection shall be the same as those used by the planning group sponsor political subdivision housing the principal office of the Region 9 Upper Colorado RFGP for inspection and copying of its own public records, or as prescribed in the Texas Public Information Act.

Section 3 Availability of Reports

All reports, planning documents, and work products resulting from the regional flood planning grant funding provided by the TWDB and all supporting documentation for the development the regional flood plan shall be made available to the TWDB, the Texas Division of Emergency Management, the Texas Parks and Wildlife Department, the Texas Department of Agriculture, the Texas State Soil and Water Conservation Board, General Land Office and the Texas Commission on Environmental Quality or their successor agencies. Electronic versions of the regional flood plan will be posted on the flood planning group website and the TWDB website.

Region 9 Upper Colorado Regional Flood Planning Group Bylaws**ARTICLE XII. Committees****Section 1 Establishment**

The Region 9 Upper Colorado RFGP may by a majority vote of the voting members present establish committees, subcommittees, and subgroups to assist and advise the Region 9 Upper Colorado RFGP in the development of the regional flood plan, as set forth in 31 TAC §361.12(c). The committee, subcommittee, or subgroup may be formed to address specific issues assigned by the Region 9 Upper Colorado RFGP and may have a specified term of membership.

Section 2 Membership

Membership in the committees, subcommittees, and subgroups shall follow the requirements and procedures of Article V of these bylaws and 31 TAC §361.12(c). Appointment to committees, subcommittees, or subgroups shall be made by consensus, but not less than agreement of a majority of the voting members present. The terms of office for all members of committees, subcommittees, and subgroups shall be either upon the expiration of the term, if any, specified by the Region 9 Upper Colorado RFGP in the establishing motion for the committee, subcommittee, or subgroup, or upon the expiration of the persons membership in the Region 9 Upper Colorado RFGP.

If a RFGP creates a sub-regional committee, subcommittee, or subgroup to address issues related to a specific geographic area smaller than the full FPR, it shall, to the extent practical, define such sub-regional geographic areas based on boundaries that are conterminous with full HUC 8 watersheds located within the FPR. Sub-regional committees, subcommittees, or subgroups formed to address issues related to a specific geographic area smaller than the full FPR must include one voting member representing each of the interest categories listed in 31 TAC §361.11(e).

Section 3 Officers

The Chair, Vice-chair, and Secretary of a committee, subcommittee, or subgroup established by the Region 9 Upper Colorado RFGP shall be selected from the duly-elected members of the respective committee, subcommittee, or subgroup. The Chair, Vice Chair, and Secretary of the committee, subcommittee, or subgroup established by the Region 9 Upper Colorado RFGP shall be elected to their respective offices by a majority vote of the members of the committee, subcommittee, or subgroup. Additional committee, subcommittee, or subgroup officers with associated responsibilities may be created as necessary by a majority vote of the members of the committee, subcommittee, or subgroup. The additional officers shall be elected by a majority affirmative vote of the members of the committee, subcommittee, or subgroup.

Section 4 Meetings

Requirements and procedures for committee, subcommittee, or subgroup meetings shall follow those established in Article IX of these bylaws, including requirements for notice. Committees, subcommittees, or subgroups may adopt

Region 9 Upper Colorado Regional Flood Planning Group Bylaws

their own rules of procedure, if authorized by the Region 9 Upper Colorado RFPG and the rules are not in conflict with state law, TWDB rules, or these bylaws.

Section 5 Books and Records

Requirements and procedures for committee, subcommittee, or subgroup books and records shall follow those established for the Region 9 Upper Colorado RFPG in Article XI of these bylaws.

Section 6 Code of Conduct

Members of a committee, subcommittee, or subgroup are subject to the requirements of Article V, Section 6 of these bylaws.

ARTICLE XIII. Compensation/Reimbursement

Members of the Region 9 Upper Colorado RFPG are able to be reimbursed for eligible travel expenses, as authorized by the General Appropriations Act, and as limited by the TWDB regional flood planning grant contract for attendance at a posted meeting of the RFPG. All travel expenses must be documented by the members and submitted to the Chair and the planning group sponsor political subdivision designated by the Region 9 Upper Colorado RFPG to apply to TWDB for funding. The Chair of the RFPG must certify, in a public meeting, that the travel expenses are eligible for reimbursement and are correct and necessary before the planning group sponsor political subdivision contracting with the TWDB for the Region 9 Upper Colorado RFPG can compile the travel information from the members and submit reimbursement requests to the TWDB.

ARTICLE XIV. Contractual Services

The voting members of the Region 9 Upper Colorado RFPG shall approve, by a majority vote of the voting members present, persons or entities to provide contractual services for the Region 9 Upper Colorado RFPG, including all services related to preparation, development, or revisions of the regional flood plan for the Region 9 Upper Colorado FPR. However, the voting members may delegate to the Executive Committee the authority to make all administrative decisions concerning amendments to TWDB grant contracts for services related to regional flood planning, except those decisions concerning amendments related to scopes of work and budgets.

ARTICLE XV. Adopting and Amending the Bylaws

These bylaws shall have full force and effect upon approval and adoption by the voting members of the Region 9 Upper Colorado RFPG, acting on behalf of the interests comprising the Region 9 Upper Colorado FPR, and upon submission to the TWDB in compliance with 31 TAC §361.11(d). The voting members shall adopt and/or amend these bylaws by a two-thirds vote of the voting members present.

Region 9 Upper Colorado Regional Flood Planning Group Bylaws

ARTICLE XVI. Resolution Adopting Bylaws

WHEREAS, no bylaws have been adopted governing the conduct of the internal affairs of the Region 9 Upper Colorado RFPG; and

WHEREAS, the set of bylaws presented to and as otherwise modified by agreement during this meeting are suitable for the purpose and their adoption is in the best interests of the Region 9 Upper Colorado RFPG; it is, therefore,

RESOLVED, that the members of the Region 9 Upper Colorado RFPG this 29 day of October, approve and adopt the bylaws presented to this meeting of members as the bylaws of the Region 9 Upper Colorado RFPG; and it is

FURTHER RESOLVED, that the bylaws be authenticated as such by the Secretary of the Region 9 Upper Colorado RFPG and placed in its minute book, and that a full and true copy of the bylaws, certified by the Secretary, be kept at the principal office of the Region 9 Upper Colorado RFPG for inspection by members or the public at all reasonable times during business hours.

12-30-2020

(date)

Allison Stule

(Signature of Secretary)

Attachment C – Meeting Agenda from September 13, 2023 Region 9
Upper Colorado RFPG Meeting

Public Meeting Notice

Region 9 – Upper Colorado Regional Flood Planning Group

September 13, 2023

10:00 AM CST

Notice is hereby given of a regular meeting of the Region 9 – Upper Colorado Regional Flood Planning Group to be held September 13, 2023 at 10:00 AM at the City Hall Annex– Board Room – 1st Floor, 301 W. Beauregard Ave., San Angelo, Texas, for the purpose of considering the following agenda items.

*Phone participation is available for public and non-voting representatives by the conference call information:
Call In: (774) 450-9900 Passcode / ID: 818-6755*

*The Meeting Agenda and the Agenda Packet are posted online at
<https://www.cosatx.us/departments-services/water-utilities/region-9-upper-colorado-flood-planning-region>*

A recording of the meeting will be available to the public in accordance with the Open Meetings Act upon written request.

Members of the public may also submit Public Comment on agenda items by sending their written comments via email to astrube@crmwd.org or scottm@ucratx.org by noon September 12, 2023. The subject line must be in the following format: "Public Comment, [item number] – September 13, 2023." All emails must include your name and address. Please note all Public Comment emails relevant to posted agenda items received by the deadline will be published as part of the agenda packet prior to the meeting and are therefore public record.

Agenda:

1. Call to Order
2. Welcome
3. Public comments – limit 3 minutes per person
4. Approval of minutes from the previous meeting
5. Texas Water Development Board (TWDB) Update
6. Sponsoring agency update from City of San Angelo for First Cycle
7. Technical consultant update for First Cycle
8. Discussion and action from the group on voting membership for open positions
9. Consider selecting a RFPG sponsor to act on behalf of the regional flood planning group for the second cycle of planning
10. Consider authorizing the RFPG sponsor to apply for grant funds and enter into a contract with TWDB on behalf of the RFPG
11. Consider authorizing the RFPG sponsor to begin the procurement process for a technical consultant after TWDB development of the Scope of Work and funding allocations and in accordance with state procurement laws and the sponsor's procurement requirements on behalf of the RFPG for Cycle 2 regional flood planning
12. Discussion and potential action to consider additional, region-specific public notice requirements, if any, that might be necessary to ensure adequate public notice in Region 9 per Texas Administrative Code §361.12(a)(3)
13. Public comments – limit 3 minutes per person
14. Consider date and agenda items for next meeting
15. Adjourn

Additional information may be obtained from:

Allison Strube

astrube@crmwd.org

400 E. 24th Street

Big Spring, Texas 79721

Attachment D – Draft Region Flood Planning Scope of Work

Exhibit A-DRAFT

TWDB Regional Flood Planning Grant Scope of Work

January 2024

Disclaimer: This document includes the standard Scope of Work developed for Regional Flood Planning Grant Contracts by the Texas Water Development Board. The Scope of Work for certain grant contracts may contain revised language to reflect requested edits from Regional Flood Planning Groups and Planning Group Sponsors

Second Cycle of Regional Flood Plan Development (2024–2028)

Scope of Work

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January 2024

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- Task 1** – Planning area description (361.30, 361.31, 361.32)
- Task 2** – Flood risk analyses
 - Task 2A – Existing condition flood risk analyses (361.33)
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- Task 3** – Floodplain management practices, needs analysis and flood protection goals
 - Task 3A – Evaluation and recommendations on floodplain management practices (361.35)
 - Task 3B – Flood Mitigation Needs Analysis (361.36)
 - Task 3C – Flood mitigation and floodplain management goals (361.37)
- Task 4** – Identification, assessment, and evaluations of flood FMEs, FMPs, and FMSs
 - Task 4A – Identification and evaluation of potential flood management evaluations and potentially feasible flood mitigation projects and flood management strategies (361.38)
 - Task 4B – Preparation and submission of technical memorandum
 - Task 4C – Performance of Identified flood management evaluations
- Task 5** – Recommendation of flood management evaluations, flood mitigation projects and flood management strategies (361.39)
 - Task 5A – Recommendation of flood management evaluations, flood mitigation projects and flood management strategies (361.39)
 - Task 5B – Recommend a list of flood management evaluations to be performed by TWDB.
- Task 6** – Plan impacts and contribution to water supply of the regional flood plan
 - Task 6A – Impacts of regional flood plan (361.40)
 - Task 6B – Contributions to and impacts on water supply development and the state water plan (361.41)
- Task 7** – Flood response information and activities (361.42)
- Task 8** – Administrative, regulatory, and legislative recommendations (361.43)
- Task 9** – Flood infrastructure financing analysis (361.44)
- Task 10** – Public participation and plan adoption
- Task 11** – Implementation and comparison to previous regional flood plan (361.45)

Task 1 – Planning Area Description

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 Texas Administrative Code (TAC) Chapters 361 and 362, this portion of work must specifically include all work necessary to meet all the requirements of 31 TAC §§ 361.30, 361.31, and 361.32.

The objective of this task is to prepare a standalone chapter to be included in the 2028 Regional Flood Plan that describes the Flood Planning Region (FPR).

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to prepare a chapter that includes:

1. Brief, general descriptions of the following:
 - a. social and economic character of the region such as information on development, population, and economic activity.
 - b. the areas in the FPR that are flood-prone and the types of major flood risks to life and property in the region.
 - c. key historical flood events within the region including associated fatalities and loss of property when the information is available.
 - d. key political subdivisions with flood-related regulatory authority or political subdivisions that perform flood planning, floodplain management, or flood mitigation activities.
 - e. the general extent of local regulation and development codes relevant to existing and future flood risk.
 - f. agricultural and natural resources most impacted by flooding; and
 - g. existing local and regional flood plans within the FPR.
2. A general description of the location, condition, and functionality of existing natural flood mitigation features and constructed major flood infrastructure within the FPR as identified in the rules and guidance document.
3. Include a tabulated summary and GIS map of existing infrastructure.
4. Include an inventory and feature class of low water crossings.
5. Include a specific levee and dam inventory including the location, designated owner of every major levee and dam located within the regional planning area, and an indication of whether levees have FEMA accreditation or not.
6. Include an assessment of condition and functionality for existing major flood risk reduction infrastructure.
7. Please provide a general description by general geographic location (e.g., within political subdivisions) of the condition and functionality of key natural flood mitigation features or major flood infrastructure by feature type and provide the name of the owner and operator of the flood infrastructure. For non-functional or deficient natural flood mitigation features or major flood infrastructure, explain, in general, the reasons for the features or infrastructure being non-functional or deficient by feature type.
8. A general description of the location, source of funding, and anticipated benefits of proposed or ongoing major infrastructure and flood mitigation projects in the FPR, including:
 - a. new structural flood mitigation projects currently under construction.
 - b. non-structural flood mitigation projects currently being implemented; and

- c. structural and non-structural flood mitigation projects with dedicated funding to construct and the expected year of completion.
- 9. A review and summary of relevant existing planning documents in the FPR. Documents to be summarized include those referenced under 31 TAC § 361.22.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

- 1. Review of the Regional Flood Plan chapter documents and related information by RFPG members.
- 2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
- 3. Submittal of chapter document to TWDB for review and approval.
- 4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: A complete Chapter 1 describing the FPR, existing natural flood mitigation features, constructed major flood infrastructure, and major infrastructure and flood mitigation projects currently under development. A tabulated summary and GIS map of existing infrastructure including condition and functionality. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 2A – Existing Condition Flood Risk Analyses

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must specifically include all work necessary to meet all the requirements of 31 TAC § 361.33.

The objective of this task is to prepare a chapter to be combined with Task 2B and included in the 2028 Regional Flood Plan that describes the existing and future condition flood risk in the FPR.

The RFPGs must perform existing condition flood risk analyses for the region comprising: (1) flood hazard analyses that determine the location, magnitude, and frequency of flooding; (2) flood exposure analyses to identify who and what might be harmed within the region; and (3) vulnerability analyses to identify vulnerabilities of communities and critical facilities.

The information developed must be used to assist the RFPG to establish priorities in subsequent planning tasks, to identify areas that need Flood Management Evaluations (FMEs), and to efficiently deploy its resources.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

- 1. Perform existing condition flood hazard analyses to determine the location and magnitude of 10% annual chance, 1% annual chance and 0.2% annual chance flood events as follows:
 - a. collect data and conduct analyses sufficient to characterize the existing conditions for the planning area.
 - b. identify areas within each FPR where hydrologic and hydraulic model results are already available and summarize the information.
 - c. utilize best available data, including hydrologic and hydraulic models for each area.

- d. identification of known flood-prone areas based on location of hydrologic features, historic flooding, and local knowledge obtained from outreach activities and public meetings.
 - e. existing condition flood hazard analyses may consider and include only those flood mitigation projects with dedicated construction funding and scheduled for completion prior to adoption of the next state flood plan
 - f. all analyses shall consider the location of existing levees that do not meet FEMA accreditation as inundated by flooding without those structures in place. Provisionally accredited levees may be allowed to provide flood protection, unless the best available information demonstrates otherwise.
 - g. the analyses shall consider existing dams when data is available.
 - h. prepare a map showing areas identified by the RFPG as having an annual likelihood of inundation of greater than or equal to 10%, 1%, and 0.2%; the areal extent of this inundation; and the sources of flooding for each area; and
 - i. prepare a map showing gaps in inundation boundary mapping and identify known flood-prone areas based on location of hydrologic features, historic flooding and/or local knowledge.
2. Develop existing condition flood exposure analyses, using the information identified in the flood hazard analyses to identify who and what might be harmed within the region for, at a minimum, 10% annual chance, 1% annual chance, and 0.2% annual chance flood events as follows:
- a. analyses of existing development within the existing condition floodplain and the associated flood hazard exposure.
 - b.
 - c. must consider the population and property located in areas where existing levees do not meet FEMA accreditation as inundated by flooding without the levees in place. Provisionally accredited structures may be allowed to provide flood protection, unless the best available information demonstrates otherwise.
 - d. must consider available datasets to estimate the potential flood hazard exposure including, but not limited to:
 - i. number of residential properties and associated population
 - ii. number of non-residential properties
 - iii. other public infrastructure
 - iv. major industrial and power generation facilities
 - v. number and types of critical facilities
 - vi. number of roadway crossings
 - vii. length of roadway segments; and
 - viii. agricultural area and value of crops exposed
 - e. must include a qualitative description of expected loss of function, which is the effect that a flood event could have on the function of inundated structures (residential, commercial, industrial, public, or others) and infrastructure, such as transportation, health and human services, water supply, wastewater treatment, utilities, energy generation, and emergency services.
3. Perform existing condition vulnerability analyses as follows:
- a. use relevant data and tools to identify resilience of communities located in flood-prone areas.

- b. consider and identify factors such as proximity to a floodplain to identify vulnerability of critical facilities, in accordance with EA guidance.
4. All data produced as part of the existing condition flood exposure analysis and the existing condition vulnerability analysis must include:
 - a. underlying flood event return frequency
 - b. type of flood risk
 - c. county
 - d. existing flood authority boundaries
 - e. social vulnerability indices for counties and census tracts; and
 - f. other categories as determined by RFPGs or in TWDB Flood Planning guidance documents

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone Chapter 2 (including work from both Tasks 2A & 2B) to be included in the 2028 Regional Flood Plan.
- Prepare maps according to 1(g) and 1(h).
- A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 2B – Future Condition Flood Risk Analyses

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC § 361.34.

The objective of this task is to prepare a chapter to be combined with Task 2A and included in the 2028 Regional Flood Plan that describes the existing and future condition flood risk in the FPR.

RFPGs must perform future condition flood risk analyses for the region comprising: (1) flood hazard analyses that determine the location, magnitude, and frequency of flooding; (2) flood exposure analyses to identify who and what might be harmed within the region; and (3) vulnerability analyses to identify vulnerabilities of communities and critical facilities.

The information developed must be used to assist the RFPG to establish priorities in subsequent planning tasks, to identify areas that need FMEs, and to efficiently deploy its resources.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Perform future condition flood hazard analyses to determine the location and magnitude of 10% annual chance, 1% annual chance, and 0.2% annual chance flood events as follows:
 - a. collect data and conduct analyses sufficient to characterize the future conditions for the planning area based on a "no-action" scenario of approximately 30 years of continued development and population growth under current development trends and patterns, and existing flood regulations and policies. RFPGs shall consider the following as available and pertinent in the FPR:
 - i. current land use and development trends and practices and associated projected population based on the most recently adopted State Water Plan decade and population nearest the next regional flood plan adoption date plus approximately 30 years or as provided for in TWDB Flood Planning guidance documents.
 - ii. reasonable assumptions regarding locations of residential development and associated population growth.
 - iii. anticipated relative sea level change and subsidence based on existing information.
 - iv. anticipated changes to the functionality of the existing floodplain.
 - v. anticipated sedimentation in flood control structures and major geomorphic changes in riverine, playa, or coastal systems based on existing information.
 - vi. assumed completion of flood mitigation projects currently under construction or that already have dedicated construction funding; and
 - vii. other factors deemed relevant by the RFPG.
 - b. identify areas within each FPR where future condition hydrologic and hydraulic model results are already available and summarize the information.
 - c. utilize best available data, including hydrologic and hydraulic models for each area.
 - d. where future condition results are not available, but existing condition hydrologic and hydraulic model results are already available, the RFPGs may modify hydraulic models or existing condition flood hazard boundary to identify future conditions flood risk for 1% and 0.2% annual chance storms based on simplified assumptions in accordance with EA guidance.
 - e. prepare a map showing areas of 10%, 1% and 0.2% annual chance of inundation for future conditions, the areal extent of this inundation, and the types of flooding for each area.
 - f. prepare a map showing gaps in inundation boundary mapping and identify known flood-prone areas based on location of hydrologic features, historic flooding, and/ or local knowledge.
2. Perform future condition flood exposure analyses using the information identified in the potential future condition flood hazard analysis to identify who and what might be harmed within the region for the potential future condition 10% annual chance, future condition 1% annual chance and future condition 0.2% annual chance flood events. At the RFPGs' discretion, the future condition flood exposure analysis may include an analysis of existing and future developments within the future condition floodplain and the associated flood hazard exposure.

3. Perform future condition vulnerability analyses as follows:
 - a. identify resilience of communities located in flood-prone areas identified as part of the future condition flood exposure analyses, utilizing relevant data and tools.
 - b. identify vulnerabilities of critical facilities to flooding by looking at factors such as proximity to a floodplain and other factors as included in the EA guidance.
4. All data produced as part of the future condition flood exposure analysis and the future condition flood hazard analysis must include:
 - a. underlying flood event return frequency
 - b. type of flood risk
 - c. county
 - d. existing flood authority boundaries
 - e. social vulnerability indices for counties and census tracts; and
 - f. other categories as determined in TWDB Flood Planning guidance document.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone Chapter 2 (including work from both Tasks 2A & 2B) to be included in the 2028 Regional Flood Plan.
- Prepare maps according to 1(e) and 1(f). A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 3A – Evaluation and Recommendations on Floodplain Management Practices

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC § 361.35.

Recognizing the extent that previous and current practices may have increased flood risks, including residual risks, and considering broad floodplain management and land use approaches that will avoid increasing flood risks, and avoid negatively affecting neighboring areas, the RFPG must accomplish the following tasks.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Consider the extent to which a lack of, insufficient, or ineffective current floodplain management and land use practices, regulations, policies, and trends related to land use,

economic development, and population growth, allow, cause, or otherwise encourage increases to flood risks to both:

- a. existing population and property, and
 - b. future population and property.
2. Take into consideration the future flood hazard exposure analyses performed under Task 2B, consider the extent to which the 1% annual chance floodplain, along with associated flood risks, may change over time in response to anticipated development and associated population growth and other relevant man-made causes, and assess how to best address these potential changes.
3. Based on the analyses in (1) and (2), make recommendations regarding forward-looking floodplain management and land use recommendations, and economic development practices and strategies, that should be implemented by entities within the FPR. These region-specific recommendations may include floodplain management and land use standards and should focus on how to best address the changes in (2) for entities within the region. These recommendations will inform recommended strategies for inclusion in the Regional Flood Plan.
4. RFPGs may also choose to adopt region-specific, floodplain management or land use or other standards that impact flood-risk, that may vary geographically across the region, that each entity in the FPR must adopt prior to the RFPG including in the Regional Flood Plan any Flood Management Evaluations, Flood Mitigation Projects, or Flood Management Strategies that are sponsored by or that will otherwise be implemented by that entity.
5. Consider example floodplain management and infrastructure protection standards provided by TWDB.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone Chapter 3 (including work from Tasks 3A, 3B, & 3C) to be included in the 2028 Regional Flood Plan.
- List region-specific recommendations regarding forward-looking floodplain management and land use, which may include minimum floodplain management and land use standards.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 3B – Flood Mitigation Needs Analysis

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC § 361.36.

The RFPG must conduct the analysis in a manner that will ensure the most effective and efficient use of the resources available to the RFPG.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Based on the analyses developed by the RFPG under Tasks 2A through 3B and any additional analyses or information developed using available screening-level models or methods, the RFPG must identify locations within the FPR that the RFPG considers having the greatest flood mitigation and flood risk study needs by considering:
 - a. the areas in the FPR that the RFPG identified as the most prone to flooding that threatens life and property.
 - b. the relative locations, extent, and performance of current floodplain management and land use policies and infrastructure located within the FPR, particularly within the locations described in (a).
 - c. areas identified by the RFPG as prone to flooding that don't have adequate inundation maps.
 - d. areas identified by the RFPG as prone to flooding that don't have hydrologic and hydraulic models.
 - e. areas with an emergency need.
 - f. existing modeling analyses and flood risk mitigation plans within the FPR.
 - g. flood mitigation projects already identified and evaluated by other flood mitigation plans and studies.
 - h. documentation of historic flooding events.
 - i. flood mitigation projects already being implemented; and
 - j. any other factors that the RFPG deems relevant to identifying the geographic locations where potential FMEs and potentially feasible FMPs and FMSs must be identified and evaluated under § 361.38.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone Chapter 3 (including work from Tasks 3A, & 3B and 3C) to be included in the 2028 Regional Flood Plan.
- A map identifying the geographic locations within the FPR considered to have the greatest flood mitigation and flood risk study needs where potential FMEs and potentially feasible FMPs and FMSs must be evaluated.
- A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 3C – Flood Mitigation and Floodplain Management Goals

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC § 361.37.

In this task, the RFPG must consider the Guidance Principles under 31 TAC § 362.3, Tasks 1-3B, input from the public, and other relevant information and considerations.

The RFPG must use these goals to guide the RFPG in carrying out the following Tasks 4A – 5.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Identify specific and achievable flood mitigation and floodplain management goals along with target years by which to meet those goals for the FPR to include, at a minimum, goals specifically addressing risks to life and property.
2. Recognize and clearly state the levels of residual risk that will remain in the FPR even after the stated flood mitigation goals are fully met.
3. Structure and present the goals and the residual risks in an easily understandable format for the public including in conformance with TWDB Flood Planning guidance documents.
4. When appropriate, choose goals that apply to full single HUC8 watershed boundaries or coterminous groups of HUC8 boundaries within the FPR.
5. Identify both short-term goals (10 years) and long-term goals (30 years).

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone Chapter 3 (including work from Tasks 3A, 3B and 3C) to be included in the 2028 Regional Flood Plan.
- Identify flood mitigation and floodplain management goals considering minimum recommended flood protection goal provided by TWDB.
- Identify specific and achievable flood mitigation and floodplain management goals (10 year and 30 year) in an easily understandable format for the public.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 4A – Identification and Evaluation of Potential Flood Management Evaluations and Potentially Feasible Flood Mitigation Projects and Flood Management Strategies

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC § 361.38.

Based on analyses and decisions under Tasks 2A through 4A the RFPG must identify and evaluate potential FMEs, and identify and evaluate potentially feasible FMPs and FMSs, including nature-based solutions, some of which may have already been identified by previous evaluations and analyses by others.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Receive public comments on a proposed process to be used by the RFPG to identify and select FMEs, FMPs, and FMSs for the 2028 Regional Flood Plan.
2. Summarize the RFPG process for identifying potential FMEs and potentially feasible FMPs and FMSs and include a description of the process in the draft and in the final adopted Regional Flood Plan.
3. Identify potentially feasible FMPs and FMSs in accordance with the RFPG established process.
4. When evaluating FMPs and FMSs the RFPG must, at a minimum, identify one solution that provides flood mitigation associated with a 1% annual chance flood event. In instances where mitigating for 1% annual chance events is not feasible, the RFPG must document the reasons for its infeasibility, and at the discretion of the RFPG, other FMPs and FMSs to mitigate more frequent events may also be identified and evaluated based on TWDB Flood Planning guidance documents.
5. For areas within the FPR that the RFPG does not yet have sufficient information or resources to identify potentially feasible FMPs and FMSs, the RFPG must identify areas for potential FMEs that may eventually result in FMPs and/or FMSs.
6. The RFPG must evaluate potentially feasible FMPs and FMSs understanding that, upon evaluation and further inspection, some FMPs or FMSs initially identified as potentially feasible may be reclassified as infeasible.
7. FMPs will be ranked in the state flood plan and
 - a. must represent discrete projects.
 - b. must not entail an entire capital program or drainage masterplan; and
 - c. may rely on other flood-related projects.
8. Evaluations of potentially feasible FMPs and FMSs, as applicable, will require associated, detailed hydrologic and hydraulic modeling results that quantify the reduced impacts from flood events and the associated benefits and costs. Information may be based on previously performed evaluations of projects and related information. Evaluations of potentially feasible FMPs and FMSs must include the following information and be based on the following analyses:
 - a. A reference to the specific flood mitigation or floodplain management goal addressed by the feasible FMP or FMS.
 - b. A determination of whether FMP or FMS meets an emergency need.

- c. An indication regarding the potential use of federal funds, or other sources of funding, as a component of the total funding mechanism.
- d. An indication of any water supply benefits.
- e. An equitable comparison, as appropriate, and assessment among all FMSs and an equitable comparison and assessment among all FMPs that the RFPG determines to be potentially feasible.
- f. A demonstration that the FMS or FMP will not negatively affect a neighboring area.
- g. A quantitative report of the estimated benefits of the FMP or FMS, as applicable. This includes reductions of flood impacts of the 1% annual chance flood event and other storm events identified and evaluated if the project mitigates to a more frequent event to include, but not limited to:
 - (1) associated flood events that must, at a minimum, include the 1% annual chance flood event and other storm events identified and evaluated.
 - (2) reduction in habitable, equivalent living units flood risk.
 - (3) reduction in residential population flood risk.
 - (4) reduction in critical facilities flood risk.
 - (5) reduction in road closure occurrences.
 - (6) reduction in acres of active farmland and ranchland flood risk.
 - (7) estimated reduction in fatalities, when available.
 - (8) estimated reduction in injuries, when available.
 - (9) reduction in expected annual damages from residential, commercial, and public property; and
 - (10) other benefits as deemed relevant by the RFPG including environmental benefits and other public benefits.
 - (11) avoidance of future flood risk; and
 - (12) prevention of creation of future flood risk.
- h. A quantitative reporting of the estimated capital cost of FMPs in accordance with TWDB Flood Planning guidance documents.
- i. For projects that will contribute to water supply, all relevant evaluations required under § 357.34(e) (relating to Identification and Evaluation of Potentially Feasible Water Management Strategies and Water Management Strategy Projects), as determined by the EA based on the type of contribution, and a description of its consistency with the currently adopted State Water Plan.
- j. A description of potential impacts and benefits from the FMS or FMP to the environment, agriculture, recreational resources, navigation, water quality, erosion, sedimentation, and impacts to any other resources deemed relevant by the RFPG.
- k. A description of residual, post-project, flood risk and future risks associated with FMPs including the risk of potential catastrophic failure and the potential for future increases to these risks due to lack of maintenance.
- l. Implementation issues including those related to rights-of-way, permitting, acquisitions, relocations, utilities, and transportation; and
- m. Funding sources and options that exist or will be developed to pay for development, operation, and maintenance of the FMS or FMP.

9. Flood Management Evaluation (FME) is a proposed study to identify, assess, and quantify flood risk or identify, evaluate, and recommend flood risk reduction solutions. Evaluations of potential FMEs may be at a reconnaissance or screening-level, unsupported by associated detailed hydrologic and hydraulic analyses. These must be identified for areas that the RFPG considers a priority for flood risk evaluation but that do not yet have the required detailed hydrologic and hydraulic modeling or associated project evaluations available to evaluate specific FMPs or FMSs for recommendation in the Regional Flood Plan. Evaluations of potential FMEs must include the following analyses:
 - a. A reference to the specific flood mitigation or floodplain management goal to be addressed by the potential FME.
 - b. An indication of whether FME may meet an emergency need.
 - c. An indication regarding the potential use of federal funds, or other sources of funding as a component of the total funding mechanism.
 - d. An equitable comparison and assessment among all FMEs.
 - e. An indication of whether hydrologic and or hydraulic models are already being developed or are anticipated in the near future and that could be used in the FME.
 - f. A quantitative reporting of the estimated flood risk within the FME area, to include, as applicable:
 - (1) Estimated habitable, living unit equivalent and associated population in FME area.
 - (2) Estimated critical facilities in FME area.
 - (3) Estimated number of roads closures occurrences in FME area.
 - (4) Estimated acres of active farmland and ranchland in FME area; and
 - (5) A quantitative reporting of the estimated study cost of the FME and whether the cost includes use of existing or development of new hydrologic or hydraulic models.
 - g. For FMEs, RFPGs do not need to demonstrate that an FME will not negatively affect a neighboring area.
10. RFPGs must evaluate and present potential FMEs and potentially feasible FMPs and FMSs with sufficient specificity to allow state agencies to make financial or regulatory decisions to determine consistency of the proposed action before the state agency with an approved Regional Flood Plan.
11. Analyses must clearly designate a representative location of the FME and beneficiaries including a map and designation of HUC12 and county location.
12. The RFPG may also use funding under this Task to perform a portion of the identified Flood Management Evaluations and, in doing so, identify and evaluate additional Flood Mitigation Projects that could be recommended under Task 5A. This task includes performing work to carry out FMEs that may include work to perform hydrologic and hydraulic modeling, for example, evaluating flood risks in areas with currently limited flood risk data, and evaluating potential flood risk reduction solutions, including performing feasibility studies and preliminary engineering needed to identify, evaluate, and recommend additional potentially feasible FMPs. Note that RFPGs must approve the list of FMEs to be performed under this Task prior to expending grant funds for this purpose. Additional FMPs that are identified and evaluated under

this Task may be recommended under Task 5A. FMEs that are performed under this Task would not also be recommended as FMEs under Task 5B.

13. Analyses must be performed in accordance with TWDB Flood Planning guidance documents.
14. All data produced as part of the analyses under this task must be organized and summarized in the Regional Flood Plan in accordance with TWDB Flood Planning guidance documents.
15. Rules to be considered in developing this chapter include relevant rules referenced under 31 TAC § 361.22.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. RFPG approval of the list of identified FMEs to also be performed under this Task.
2. Review of the chapter documents and related information by RFPG members.
3. Modifications to the chapter document based on RFPG, public, and/or agency comments.
4. Submittal of chapter document to TWDB for review and approval.
5. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone Chapter 4 (including work from Tasks 4A, and 4C) to include analyses and assessments used to identify potential FMEs, FMSs, and FMPs and all technical analyses of all evaluated FMPs and FMSs to be included in the 2028 Regional Flood Plan.
- A list of the potentially feasible FMSs and associated FMPs that were identified by the RFPG.
- The TWDB Flood Planning guidance documents will include minimum data submittal requirements and deliverable format.
- A map identifying the geographic locations within the FPR considered to have the greatest flood mitigation and flood risk study needs where potential FMEs and potentially feasible FMPs and FMSs must be evaluated. TWDB Flood Planning guidance documents will include minimum data submittal requirements and deliverable format.
- Data must be organized and summarized in the Regional Flood Plan in accordance with TWDB Flood Planning guidance documents.
- A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 4B – Preparation and Submission Technical Memorandum

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC § 361.13(e).

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Prepare a concise Technical Memorandum to include:

- a. A list of existing political subdivisions within the FPR that have flood-related authorities or responsibilities.
 - b. A list of previous and ongoing flood studies considered by the RFPG to be relevant to development of the Regional Flood Plan.
 - c. A geodatabase and associated maps in accordance with TWDB Flood Planning guidance documents that the RFPG considers to be best representation of the region-wide 1% annual chance flood event and 0.2% annual chance flood event inundation boundaries, and the type of flooding for each area, for use in its risk analysis, including indications of locations where such boundaries remain undefined.
 - d. A geodatabase and associated maps in accordance with TWDB Flood Planning guidance documents that identifies additional flood-prone areas not described in (c) based on location of hydrologic features, historic flooding, and/or local knowledge.
 - e. A list of available flood-related models that the RFPG considers of most value in developing its plan.
 - f. A summary and associated maps of locations within the FPR that the RFPG considers having the greatest flood risk and flood risk reduction needs.
 - g. The flood mitigation and floodplain management goals adopted by the RFPG per § 361.37.
 - h. The documented process used by the RFPG to identify potentially feasible FMPs and FMSs.
 - i. A list of potential FMEs and potentially feasible FMPs and FMSs identified by the RFPG, if any; and
 - j. A list of FMSs and FMPs that were identified but determined by the RFPG to be infeasible, including the primary reason for it being infeasible.
2. Approve submittal of the Technical Memorandum to TWDB at a RFPG meeting subject notice requirements in accordance with 31 TAC § 361.21(h). The Technical Memorandum must be submitted to TWDB in accordance with Section I, Article I of the contract.

Task 4C – Performance of Flood Management Evaluations

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC § 361.38.

The RFPG shall utilize this task to perform a portion of the identified Flood Management Evaluations identified in Task 4A and, in doing so, identify and evaluate additional Flood Mitigation Projects that could be recommended under Task 5A. This list of FMEs that are to be performed under this subtask must be approved by the RFPG.

The objective of this task is to perform identified potential FMEs to, for example, evaluate flood risks in areas with currently limited flood risk data, and evaluate potential flood risk reduction solutions, including performing hydrologic and hydraulic modeling, feasibility studies and preliminary engineering needed to identify, evaluate, and recommend additional potentially feasible FMPs. Additional FMPs that are identified and evaluated under this Task may be recommended under Task 5A. FMEs that are performed under this Task would not also be recommended as FMEs under Task 5B.

RFPGs must adhere to the requirements for identification, evaluation, and recommendation of FMEs and FMPs in Tasks 4A and 5, as well as applicable requirements in the TWDB Flood Planning guidance documents.

RFPGs must submit all data deliverables, including required GIS files, maps, and project details worksheet, to reflect work performed under this task in accordance with the requirements in Tasks 4A and 5 and the TWDB Flood Planning guidance documents.

Deliverables:

- Prepare a stand-alone Chapter 4 (including work from Tasks 4A and 4C) to be included in the 2028 Regional Flood Plan.
- A list of the FMEs, as approved by the RFPG, that were performed to identify potential FMPs and/or FMSs under Task 4C.
- Outcomes of FMEs that were performed to identify potential FMPs and/or FMSs under Task 4C.
- List of FMPs and FMSs that are identified as a result of performing FMEs under Task 4C.
- All data produced as part of the analyses under this task must be organized and summarized in the Regional Flood Plan in accordance with TWDB Flood Planning guidance documents.
- The TWDB Flood Planning guidance documents will include minimum data submittal requirements and deliverable format.

Task 5A – Recommendation of Flood Management Evaluations, Flood Mitigation Projects, and Flood Management Strategies

Performing any work associated with any Task 5 subtasks is contingent upon a written notice-to-proceed.

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet associated requirements of 31 TAC § 361.39.

The objective of this task is to consider and recommend Flood Management Evaluations (FMEs), Flood Management Strategies (FMSs), and their associated Flood Mitigation Projects (FMPs) to be included in the 2028 Regional Flood Plan that describes the work completed, presents the potential FMEs, potentially feasible FMPs and FMSs, recommended and alternative FMPs and FMSs, including all the technical evaluations, and presents which entities will benefit from the recommended FMPs and FMSs.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Recommend FMEs that the RFPG determines are most likely to result in identification of potentially feasible FMPs and FMSs that would, at a minimum, identify and investigate one solution to mitigate for flood events associated with a 1% annual chance flood event and that support specific RFPG flood mitigation and/or floodplain management goals.
2. Recommend FMPs and FMSs to reduce the potential impacts of flood based on the evaluations under § 361.38 and RFPG goals and that must, at a minimum, mitigate for flood events

associated with at 1% annual chance (100-yr flood) where feasible. In instances where mitigating for 100-year events is not feasible, FMS and FMPs to mitigate more frequent events may be recommended based on TWDB Flood Planning guidance documents. Recommendations must be based upon the identification, analysis, and comparison of alternatives that the RFPG determines will provide measurable reductions in flood impacts in support of the RFPG's specific flood mitigation and/or floodplain management goals.

3. Provide additional information in conformance with TWDB Flood Planning guidance documents which may be used to rank recommended FMEs, FMPs, and FMSs with non-recurring, non-capital costs in the state flood plan.
4. RFPGs shall provide the benefit-cost ratio for recommended FMPs in accordance with guidance provided by the EA.
5. Recommended FMSs or FMPs may not negatively affect a neighboring area or an entity's water supply.
6. Recommended FMSs or FMPs that will contribute to water supply may not result in an overallocation of a water source based on the water availability allocations in the most recently adopted State Water Plan.
7. Specific types of FMEs, FMSs, or FMPs that should be included and that should not be included in Regional Flood Plans must be in accordance with TWDB Flood Planning guidance documents.
8. FMS and FMP documentation must include a strategy or project description, discussion of associated facilities, project map, and technical evaluations addressing all considerations and factors required under 31 TAC § 361.38(h).
9. Coordinate and communicate with the sponsors of FME, FMS, and FMP including individual local governments, regional authorities, and other political subdivisions.
10. Production of process documentation used in selecting all recommended FMSs and associated FMPs including development of FMS evaluations matrices and other tools required to assist the RFPG in comparing and selecting recommended FMPs and FMSs.
11. Document the evaluation and selection of all recommended FMS and FMPs, including an explanation for why certain types of strategies may not have been recommended.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone Chapter 5 (including work from Tasks 5A and 5B) to be included in the 2028 Regional Flood Plan
- A list of the recommended FMEs, FMSs, and associated FMPs that were approved by the RFPG. TWDB Flood Planning guidance documents will include minimum data submittal requirements and deliverable format.
- Data must be organized and summarized in the Regional Flood Plan in accordance with TWDB Flood Planning guidance documents.

- A tabulated list and GIS map of all pertinent information. All maps should be submitted with underlying GIS data utilized to prepare them.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 5B – Recommend a List of Flood Management Evaluations to be Performed by TWDB

Must generally meet all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362.

The objective of this task is for the RFPG to submit a list to TWDB that is a subset of the FMEs that were identified by the RFPG under Task 4A, and not performed under Task 4C, along with a request to TWDB to perform those FMEs on behalf of the RFPG, subject to TWDB's available resources. This Task relies on completed work under Tasks 2A through 4A. To the extent possible, TWDB will complete performance of these FMEs with the intention of generating additional FMPs that will be in consideration for RFPGs for recommendation during the current or the following planning cycle.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Consider the identified FMEs from Task 4A that the RFPG determines are most likely to result in identification of potentially feasible FMPs and FMSs that would, at a minimum, identify and investigate one solution to mitigate for flood events associated with a 1% annual chance flood event and that support specific RFPG flood mitigation and/or floodplain management goals.
2. Once Tasks 2A through 4A are completed, develop, and obtain RFPG approval of a list of identified FMEs that comprises a subset of all the FMEs the RFPG had identified under Task 4A, and not performed under 4C to submit to TWDB to be performed by TWDB on behalf of the RFPG. The FME list developed and submitted by the RFPG to TWDB shall be developed in accordance with guidance be provided by the EA and, at a minimum, shall take into consideration:
 - a. The FMEs that the RFPG is already intending to perform, itself, via its Technical Consultant, under Task 4C using a portion of the RFPG's existing grant funding.
 - b. The nature of the sponsor/beneficiary of the identified FME study including whether, for example, the community is a smaller community without appropriate staff and resource, located in a rural area, and/or whether that entity might otherwise have difficulty in funding and overseeing the FME study itself.
 - c. The amount of estimated capacity that TWDB allocates to each planning region for performing FMEs on behalf of the region
 - d. The potential length of time that might be required for TWDB to perform the FME and the likelihood that it will result in potential FMPs being identified in time to incorporate into the regional flood plan currently under development or if the results may become available during the next flood planning cycle.
 - e. The extent of existing flood risk information available in the area of the recommended FME, and
 - f. And any other guidance or criteria provided by the EA prior to submission of the RFPG FME list to TWDB.

Scope of Work

3. The FME list should provide a relative order of timing in which the RFPGs prefer the FMEs to be performed and resourced by TWDB, based on the TWDB FME program funding and other resources allocated towards supporting each region. Note that as TWDB resources allow, more than a single FME may be performed simultaneously on behalf of each RFPG.
4. Obtain RFPG authorization to submit, in writing, a request to TWDB to perform the FMEs on the list above, subject to available TWDB resources. This will include TWDB performing recommended FMEs to, for example, evaluate flood risks in areas with currently limited flood risk data, and to evaluate flood risk reduction solutions, including feasibility studies and preliminary engineering needed to identify, evaluate, and recommend additional potentially feasible FMPs.
5. Work, as necessary, to coordinate with TWDB on refining or modifying the submitted FME list, if required by TWDB, for example, due to limited resources or other factors determined by the EA.
6. Develop an initial scope of work for each FME to be submitted along with or soon after submitting the FME list to TWDB and coordinate with TWDB staff in refining the scopes of the FMEs on the list, as necessary, including sharing information, communicating and being responsive to the benefiting communities and potential sponsors of the FMEs, TWDB staff, and any TWDB Contractors.
7. Receive and consider the results of the FME work performed by TWDB on behalf of the RFPG including information regarding additional, potentially feasible FMPs and incorporate that information into the regional plan, as appropriate.
8. Consider the FMPs identified through the FMEs performed by TWDB on behalf of the RFPG, as appropriate.
9. Coordinate and communicate with the potential sponsors of FMPs identified through the performance of the FMEs by TWDB, including individual local governments, regional authorities, and other political subdivisions regarding their potential inclusion in the regional flood plan, as appropriate.
10. As appropriate, incorporate in accordance with Task 5A, by recommendation, additional FMPs resulting from the FME studies performed by TWDB on behalf of the RFPGs.
11. Summarize all work associated with this Task and incorporate it into the regional flood plan.
12. This effort will require a highly coordinated chain of events that will involve RFPGs, communities, TWDB, and TWDB contractors.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. RFPG approval of the FME list to be submitted to TWDB for TWDB to perform.
2. Facilitate development of, and reviews by impacted/benefitting communities, as appropriate, of initial FME scopes of work to support TWDB performance of FMEs and any resulting FMPs from the FMEs performed by TWDB.
3. Review of the chapter documents and related information by RFPG members.
4. Modifications to the chapter document based on RFPG, public, and/or agency comments.
5. Submittal of chapter document to TWDB for review and approval.
6. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables:

- Prepare a stand-alone Chapter 5 (including work from Tasks 5A and 5B) to be included in the 2028 Regional Flood Plan
- A list of FMEs recommended and approved by the RFPGs to be performed by TWDB to identify FMPs to be included in the current or the following cycle of the regional flood plans.

Task 6A – Impacts of Regional Flood Plan

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC § 361.40.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to include:

1. a region-wide summary of the relative reduction in flood risk that implementation of the RFP would achieve with regard to life, injuries, property, and other factors such as environment and agriculture.
2. a statement that the FMPs in the plan, when implemented, will not negatively affect neighboring areas located within or outside of the FPR.
3. a statement that the plan adequately provides for the preservation of life and property and the development of water supply sources, where applicable.
4. a general description of the types of potential positive and negative socioeconomic or recreational impacts of the recommended FMPs and FMSs within the FPR.
5. a general description of the overall impacts of the recommended FMPs and FMSs in the Regional Flood Plan on the environment, agriculture, recreational resources, water quality, erosion, sedimentation, and navigation; and
6. a summary describing how RFPG recommendations in the RFP meet the needs identified during the needs analysis task as well as adopted goals.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: Prepare a stand-alone Chapter 6 (including work from both Tasks 6A & 6B) to be included in the 2028 Regional Flood Plan. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 6B – Contributions to and Impacts on Water Supply Development and the State Water Plan

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC § 361.41.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Include a region-wide summary and description of the contribution that the regional flood plan would have to water supply development including a list of the specific FMPs and FMSs that would contribute to water supply.
2. Include a description of any anticipated impacts, including to water supply or water availability or projects in the State Water Plan, that the regional flood plan FMPs and FMSs may have.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: Prepare a stand-alone Chapter 6 (including work from both Tasks 6A & 6B) to be included in the 2028 Regional Flood Plan. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 7 – Flood Response Information and Activities

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC § 361.42.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Summarize the nature and types of flood response preparations within the FPR including providing where more detailed information is available regarding recovery.
2. Coordinate and communicate, as necessary, with entities in the region to gather information.
3. RFPGs may not perform analyses or other activities related to planning for disaster response or recovery activities.
4. Plans to be considered in developing this chapter include relevant plans referenced under 31 TAC § 361.22.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.

2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: Prepare a stand-alone Chapter 7 to be included in the 2028 Regional Flood Plan. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 8 – Administrative, Regulatory, and Legislative Recommendations

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC § 361.43.

The objective of this task is to prepare a separate chapter to be included in the 2028 Regional Flood Plan that presents the RFPG's administrative, legislative, and regulatory recommendations.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to develop:

1. Legislative recommendations that they consider necessary to facilitate floodplain management and flood mitigation planning and implementation.
2. Other regulatory or administrative recommendations that they consider necessary to facilitate floodplain management and flood mitigation planning and implementation.
3. Any other recommendations that the RFPG believes are needed and desirable to achieve its regional flood mitigation and floodplain management goals.
4. Recommendations regarding potential new revenue-raising opportunities including potential new municipal drainage utilities or regional flood authorities that could fund the development, operation, and maintenance of floodplain management or flood mitigation activities in the region.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: Prepare a stand-alone Chapter 8 to be included in the 2028 Regional Flood Plan. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 9 – Flood Infrastructure Financing Analysis

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must include all work necessary to meet all the requirements of 31 TAC §361.44.

The objective of this task is to report on how sponsors of recommended FMPs propose to finance projects.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Coordinate and communicate with individual local governments, regional authorities, and other political subdivisions.
2. Perform a survey, including the following work:
 - a. Contacting FME, FMP and FMS with NRNC cost sponsors.
 - b. Collection and collation of data.
 - c. Documentation of the effectiveness of survey methodology, providing percent survey completions, and whether an acceptable minimum percent survey completion was achieved.
 - d. Submission of data.
3. Coordinate with FME and FMP sponsors as necessary to ensure detailed needs and costs associated with their anticipated evaluations and projects are sufficiently represented in the Regional Flood Plan for future funding determinations.
4. Indicate how individual local governments, regional authorities, and other political subdivisions in their region propose to finance the region's recommended FMPs and FMEs included in their flood plan. The assessment must also describe what role the RFPG proposes for the state in financing recommended FMPs and FMEs. As projects are implemented, those improvements and associated benefits must be incorporated into and reflected in the subsequent Regional Flood Plans.
5. Summarize the survey results.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: A completed Chapter 9 must be delivered in the 2028 Regional Flood Plan to include a summary of reported financing approaches for all recommended FMPs and FMEs. Data must be submitted in accordance with TWDB guidance documents. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 10 – Public Participation and Plan Adoption

The objective of this task is to address public participation, public meetings, eligible administrative and technical support activities, and other requirements and activities eligible for reimbursement. Objectives also include activities necessary to complete and submit a draft and final Regional Flood Plan and obtain TWDB approval of the Regional Flood Plan.

Scope of Work

In this task, the RFPG must evaluate and ensure that the draft and final Regional Flood Plan satisfies the requirements for regional flood plans in the guidance principles adopted in Title 31 TAC § 362.3 and must include a statement in the draft and final Regional Flood Plan explaining how the Regional Flood Plan satisfies the requirements of each of the guidance principles in accordance with Title 31 TAC § 361.20.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. In addition to generally meeting all applicable statute requirements governing regional and state flood planning this portion of work must, in particular, include all technical and administrative support activities necessary to meet all the requirements of 31 TAC Chapters 361 and 362 that are not already addressed under the scope of work associated with other contract Tasks but that are necessary and or required to complete and deliver a draft Regional Flood Plan and final, adopted Regional Flood Plan to TWDB and obtain approval of the adopted Regional Flood Plan by TWDB.
2. Organization, support, facilitation, and documentation of all meetings associated with preplanning meeting; consideration of a substitution of alternative flood management strategies; public meeting after adoption of the draft Regional Flood Plan and prior to adoption of the final Regional Flood Plan; and consideration of Regional Flood Plan amendments, alternative FMS substitutions, or Board-directed revisions.

Technical Support and Administrative Activities

1. RFPGs must support and accommodate periodic presentations by the TWDB for the purpose of orientation, training, and retraining as determined and provided by the TWDB during regular RFPG meetings.
2. Attendance and participation of technical consultants at RFPG, subgroup, subcommittees, special and or other meetings including preparation and follow-up activities.
3. Developing technical and other presentations and handout materials for regular and special meetings to provide technical and explanatory data to the RFPG and its subcommittees, including follow-up activities.
4. Administrative and technical support and participation in RFPG activities, and documentation of any RFPG workshops, work groups, subgroup, and/or subcommittee activities.
5. Technical support and administrative activities associated with periodic and special meetings of the RFPG including developing agendas and coordinating activities for the RFPG.
6. Provision of progress reports to TWDB for work performed under this Contract.
7. Development of draft and final responses for RFPG approval to public questions or comments as well as approval of the final responses to comments on Regional Flood Plan documents.
8. Intraregional and interregional coordination, communication, and/or facilitation required within the FPR and with other RFPGs to develop a Regional Flood Plan.
9. Incorporation of all required data and reports into Regional Flood Plan document.
10. Modifications to the Regional Flood Plan documents based on RFPG, public, and/or agency comments.
11. Preparation of a Regional Flood Plan chapter summarizing Task 10 activities including review by RFPG and modification of document as necessary.

Scope of Work

12. Development and inclusion of Executive Summaries in both draft Regional Flood Plan and final Regional Flood Plan.
13. Production, distribution, and submittal of all draft and final Regional Flood Plan-related planning documents for RFPG, public and agency review, including in hard-copy format when required.
14. Assembling, compiling, and production of the completed draft Regional Flood Plan and Final Regional Flood Plan document(s) that meet all requirements of statute, 31 TAC Chapters 361 and 362, Contract and associated guidance documents.
15. Submittal of the Regional Flood Plan documents in both hard copy and electronic formats to TWDB for review and approval; and all effort required to obtain final approval of the Regional Flood Plan by TWDB.

Other Activities

1. Review of all Regional Flood Plan-related documents by RFPG members.
2. Development and maintenance of a RFPG website or RFPG-dedicated webpage on the RFPG administrator's website for posting planning group meeting notices, agendas, materials, and plan information.
3. Limited non-labor, direct costs associated with maintenance of the RFPG website.
4. Development of agendas, presentations, and handout materials for the public meetings to provide to the public.
5. Documentation of meetings to include recorded minutes and/or audio recordings as required by the RFPG bylaws and archiving and provision of minutes to public.
6. Preparation and transmission of correspondence, for example, directly related to public comments on Regional Flood Plan documents.
7. Promoting consensus decisions through conflict resolution efforts including monitoring and facilitation required to resolve issues between and among RFPG members and stakeholders in the event that issues arise during the process of developing the Regional Flood Plan, including mediation between RFPG members, if necessary.
8. RFPG membership solicitation activities.
9. Meeting all posting, meeting, and other public notice requirements in accordance with the open meetings act, statute, and 31 TAC § 361.21 and any other applicable public notice requirements.
10. Solicitation, review, and dissemination of public input, as necessary.
11. Any efforts required, but not otherwise addressed in other SOW tasks that may be required to complete a Regional Flood Plan in accordance with all statute and rule requirements.

Deliverables:

- A completed Chapter 10 summarizing public participation activities and appendices with public comments and RFPG responses to comments.
- Complete draft Regional Flood Plan and final, adopted Regional Flood Plan documents.
- Any additional deliverables identified in the TWDB Flood Planning guidance documents.

Task 11 – Implementation and Comparison to Previous Regional Flood Plan

In addition to generally meeting all applicable rules and statute requirements governing regional and state flood planning under 31 TAC Chapters 361 and 362, this portion of work must specifically include all work necessary to meet all the requirements of 31 TAC § 361.45.

The objective of this task is to.

This Task includes, but is not limited to, performing all work in accordance with TWDB rules and guidance required to:

1. Collect information from local sponsors of FMEs, FMSs, and FMPs regarding implementation of previously recommended FMEs, FMSs, and FMPs and provide to the EA; and
2. Include a general description of how the new RFP differs from the previous plan including with regards to the status of existing flood infrastructure, flood mitigation achieved, goals, and changes to the recommended FMEs, FMSs, and FMPs.

The information gathered and developed in preparation of this chapter must be subject to the following review process prior to submission of any deliverables:

1. Review of the chapter documents and related information by RFPG members.
2. Modifications to the chapter document based on RFPG, public, and/or agency comments.
3. Submittal of chapter document to TWDB for review and approval.
4. All effort required to obtain final approval of the Regional Flood Plan chapter by TWDB.

Deliverables: A completed Chapter 11 must be delivered in the 2028 Regional Flood Plan to include information regarding differences between the plans. Data must be submitted in accordance with TWDB guidance documents. Any additional deliverables identified in the TWDB Flood Planning guidance documents.

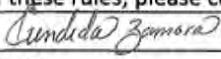
RFPGs must submit all data deliverables, related regional flood plan chapters, and related documents, as applicable, in the FINAL REGIONAL FLOOD PLAN, including required GIS files, maps, etc., to reflect work performed. Data must be organized and summarized in the Regional Flood Plan in accordance with TWDB Flood Planning guidance documents.

2014 February 2024



Item	Notes
Regional Flood Plan Regional Flood Planning Group Local Management Authorities Local Management Society Flood Mitigation Project	This conceptual schedule contains approximate timelines for high-level planning activities for the purpose of illustrating the anticipated order of and interrelationships of the activities. Each RPA & Spans will develop their own working schedule and will direct its administrative effort which will vary by region. Milestone dates shown are required deadlines contained in the Regional Flood Planning Grant Contracts. Details of work associated with each task can be found in the Draft Scope of Work: https://www.hud.gov/nip/floodplanning/planningmgt/2022/index.asp

Attachment F – Vendor Set-Up Form

		TWDB Vendor Set-up and Direct Deposit Form		Acceptable Payment Types ☐ Purchase Order ☐ Credit Card	
Box 1	Legal Name (as shown on your tax return):		CITY OF SAN ANGELO		
Box 2	DBA: CITY OF SAN ANGELO				
Box 3	Tax Information Mailing Address:		Box 4 Payment Address (if different from Tax Address):		
72 W. COLLEGE AVE					
City: SAN ANGELO		State: TEXAS	Zip: 76903	City:	State:
Phone: 325-657-4206		Fax:		Email: pete.madrid2@cosatx.us	
Box 5	Federal Taxpayer Identification Number: Note: Enter the same number used filing your tax return		75-6000659		☐ Social Security Number (SSN) ☒ Employer Identification Number (EIN) ☐ Individual Taxpayer ID Number (ITIN) ☐ Texas Taxpayer ID Number (TTIN)
Box 6	Federal Tax Classification: (Ownership Type: Out of State = Not in Texas)		☐ T=Texas Corporation ☐ L=TX Limited Partnership ☐ E=State Employee ☐ O=Out-of-State Corporation ☐ P=Partnership ☐ U=State Agency/University ☐ C=Professional Corporation ☐ S=Sole Owner ☐ A=Professional Association ☐ R=Foreign Corporation ☐ I=Individual Recipient ☐ F=Financial Institution ☒ G=Government Entity ☐ N=Other (Please Explain):		
Box 7	Profit Status:		☐ Profit ☐ Non-Profit		
Box 8	Corporation Information:		State of Jurisdiction: (Required if T,L,C,A checked above)		File or Charter Number (Required if T,L,C,A checked above)
Box 9	Sole Ownership Info:		Sole Owner Name and SSN:		
Box 10	General Partnership Information:		Partner 1 Name and SSN/EIN: Partner 2 Name and SSN/EIN:		
Box 11	Backup Withholding: Please see IRS Website		☐ Exempt from Backup Withholding		
Box 12	Certification: *Required*		Under penalties of perjury, I certify that:		
1) I have provided my correct taxpayer identification number and that 2) I am not subject to backup withholding as specified on the instruction page for this form and that 3) I am a US citizen or other US person					
Signature: 					
Print Preparer's Name: ERENDIDA ZAMORA					
			Phone Number: 325-657-4310		Date: 02/12/2024
Box 13	Direct Deposit Information (Response & Signature Required)				
☒ I am currently on Direct Deposit with TWDB and wish to continue. ☐ I decline Direct Deposit at this time.					
☐ New Set-up		☐ Change in Direct Deposit Information		☐ Cancel My Direct Deposit	
Financial Institution Name: FIRST FINANCIAL BANK		Type: ☒ Checking ☐ Savings		Mail Code:	
Financial Institution Routing Number: 111301122		Account Number: 63000315570			
Will these payments be forwarded to a financial institution outside the United States? (Required) ☐ Yes ☒ No					
If yes, please also fill out the ACH Payment Destination Confirmation (Form 74-227)					
I authorize the Texas Comptroller of Public Accounts to deposit my payments from the State of Texas to my financial institution electronically. I understand that the Texas Comptroller of Public Accounts will reverse any payments to my account in error.					
I further understand that the Texas Comptroller of Public Accounts will comply at all times with the National Automated Clearing House Association's rules. For further information on these rules, please contact your financial institution.					
Authorized Signature Required: 					
Printed Name Required: ERENDIDA ZAMORA					Date: 02/12/2024

Attachment G – DocuSign Instructions

1. Daniel Valenzuela (City Manager)
 - a. daniel.valenzuela@cosatx.us
2. Shane Kelton (Executive Director of Public Works)
 - a. shane.kelton@cosatx.us
3. Theresa James (City Attorney)
 - a. theresa.james@cosatx.us
4. Tina Dierschke (Finance Director)
 - a. tina.dierschke@cosatx.us
5. Jeffrey Tomlinson (Purchasing Manager)
 - a. jeffrey.tomlinson@cosatx.us



Exhibit F

Certification of Procurement of
Professional Services

**Second Cycle of Regional Flood Plan Development
(2024–2028)**

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Certification of Procurement of Professional Services – 2028 Regional Flood Plan

Each of the following subcontractor(s) was procured through a Request for Qualifications in accordance with the procurement requirements applicable to City of San Angelo, as required in 31 TAC §§ 361.12 (a)(2) and 361.72(c).

Subcontractor Name	Date Procured
Subcontractor Name	Date Procured
Subcontractor Name	Date Procured
Subcontractor Name	Date Procured
Subcontractor Name	Date Procured
Subcontractor Name	Date Procured
Subcontractor Name	Date Procured
Subcontractor Name	Date Procured

Certification:

I, _____ the authorized representative for Region _____, do hereby certify that each of the subcontractor(s) listed above were procured through a Request for Qualifications that was either published or sent to more than one professional inviting their response, and that the subcontractor(s) listed above were selected from such responses based on their demonstrated competence and qualifications.

Signature of Authorized Representative	Date
---	-----------------

31 TAC § 361.12 (a)(2). General Regional Flood Planning Group Responsibilities and Procedures. The following activities are required of each RFPG every planning cycle: Select a technical consultant(s) to be procured by the Planning Group Sponsor in accordance with the procurement requirements that apply to that political subdivision and Texas Government Code Chapter 2254.

31 TAC § 361.72(c). A RFPG through the Planning Group Sponsor’s contractor or subcontractor may obtain professional services, including the services of a planner, land surveyor, licensed engineer, or attorney, for development or revision of a regional flood plan only if such services are procured on the

basis of demonstrated competence and qualifications through a request for qualifications process in accordance with Texas government Code Chapter 2254 including Qualifications Based Selection of an Architect, Engineer, or Land Surveyor.

No.	Risk Attribute	Description of Risk Factor	Description of Resulting Impact	Likelihood	Consequence	Risk Score	Solution as to How to Mitigate the Risk
Cause/Effect Method: If <u>(Risk Event)</u> happens, then <u>(Impact)</u> might occur, but <u>(Solution)</u> will mitigate risk.				** see "HOWTO" tab **			
1	Risk of fraud, waste, or abuse	Fraud prevention controls that are either lacking or inadequate, vendor not informing that fraud, waste or abuse took place in a timely manner	Lack of transparency in public process, inadequate funds to complete plan	1	3	LOW	Contract requires quarterly progress reports. Contract manager will increase communication if progress reports are not provided or if they don't show appropriate progress. Maintain good communication.
2	Cost, duration, and scope of the contract	Longer contract duration than first cycle, new scope items	May cause confusion with increased new scope items	1	2	LOW	Progress reports and payment requests are required quarterly in contract. Contract manager will inquire with contractor if progress reports and payment requests indicate slow progress. Maintain good communication. Contractor cannot ask to extend
3	Responsibilities and accountability of agency and vendor staff	Vendor does not have adequate staff to perform contracting functions	Slow or inferior performance not identified early enough to effectively address.	2	3	LOW	Contract requires quarterly progress reports. Contract manager will increase communication if progress reports are not provided or if they don't show appropriate progress. Maintain good communication.
4	Vendor experience and past performance	Same vendor as first cycle, experienced with contract and processes	Slow deliverable completion. Inferior quality of deliverable.	1	3	LOW	Same vendor as first cycle, experienced with contract and processes
5	Data security protocols	Insufficient security plan, the occurrence of data breaches, not safeguarding personal or IRS information	Can cause delays to project and deliverables.	1	3	LOW	Monthly meetings with Sponsor to address any administrative issues
6	Legislative or statutory requirements, potential impact on agency operations or programs, and external stakeholder impacts	Federal and state laws and regulations such as, FEMA and EPA, which may impose limitations on vendor operations or on any management-initiated efforts to implement control measures	Can cause delays to project and deliverables.	1	3	LOW	Regular communication with sponsors to address needs that may require contract amendments
OVERALL						LOW	

Contract Number: 2401792835

X Mike Kelly
Contract Manager

Contractor: City of San Angelo

X Reem Zohri 5/23/2024
Director

Date Completed: 5/22/2024

X Matt Nelson 5/28/2024
Deputy Executive Administrator

Enhanced contract monitoring is required for high risk contracts, as defined in 31 Texas Administrative Code § 353.140, in accordance with Texas Government Code § 2261.253 and § 2261.256, for contracts governed by Texas Government Code § 2155.

[https://texreg.sos.state.tx.us/public/readtac\\$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=31&pt=10&ch=353&rl=140](https://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=31&pt=10&ch=353&rl=140)

<https://statutes.capitol.texas.gov/Docs/GV/htm/GV.2261.htm#2261.253>

<https://statutes.capitol.texas.gov/Docs/GV/htm/GV.2155.htm>

Final Score Tabulation for Solicitation No. 580-23-RFA-0015- REGIONAL FLOOD PLANNING			
Vendor	APPROVED	NEED CORRECTIONS	APPROVED AFTER SUGGESTED CORRECTIONS
REGION 9 City of San Angelo	No	Yes	Yes
MK 3/15/24			
Mike Kelly 3/15/24			
Review Team Chair			
5/22/2024			
Procurement Director			

SECOND CYCLE REGIONAL FLOOD PLANNING CONTRACTS – TWDB INTERNAL PRE-DOCUSIGN APPROVALS
Please enter vendor contact info and other special instructions in the README.txt for each contract in the shared drive review directory.

REGION / SPONSOR	PCS	LEGAL	CONTRACT MANAGER	PROGRAM MANAGER	BUDGET OFFICER	BUDGET DIRECTOR	DIVISION DIRECTOR	DEPUTY EXEC ADMINISTRATOR	ACCOUNTS PAYABLE	FINOPS DIRECTOR
2401792835 Region 9 Upper Colorado Sponsor: City of San Angelo	 5/22/2024	rah 5/17/2024	MK 4/24/24.	MK 5/8/24	 5/22/2024	 5/23/2024	RZ 05/20/24	MN 5/28/2024	EE 4/25/24	 5/24/2024

Certificate Of Completion

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Status: Completed

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Source Envelope:

Document Pages: 157

Signatures: 15

Envelope Originator:

Certificate Pages: 8

Initials: 12

Stephen Ross

AutoNav: Enabled

Stephen.Ross@twdb.texas.gov

Envelopel Stamping: Enabled

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Time Zone: (UTC-06:00) Central Time (US & Canada)

Record Tracking

Status: Original

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Location: DocuSign

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Stephen.Ross@twdb.texas.gov

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Pool: FedRamp

Storage Appliance Status: Connected

Pool: Texas Water Development Board

Location: DocuSign

Signer Events**Signature****Timestamp**

Cameron Turner



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cameron.turner@twdb.texas.gov

Viewed: 5/22/2024 2:29:05 PM

Director

Signed: 5/22/2024 2:29:16 PM

TWDB

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Using IP Address: 208.87.239.201**Electronic Record and Signature Disclosure:**

Not Offered via DocuSign

Laura Teller



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Laura.Teller@twdb.texas.gov

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(None)

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Eldrisha Eubanks



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Eldrisha.Eubanks@twdb.texas.gov

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TWDB

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Ashley Harden



Sent: 5/22/2024 2:29:23 PM

Ashley.Harden@twdb.texas.gov

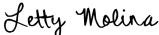
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General Counsel

Signed: 5/23/2024 1:20:22 PM

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Perry Ball Perry.Ball@twdb.texas.gov Budget Director Texas Water Development Board Security Level: Email, Account Authentication (None)	 Signature Adoption: Pre-selected Style Using IP Address: 208.87.239.201	Sent: 5/23/2024 1:31:26 PM Viewed: 5/23/2024 2:54:54 PM Signed: 5/23/2024 2:55:13 PM
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Letty Molina Letty.Molina@TWDB.texas.gov Finance Manager TWDB Security Level: Email, Account Authentication (None)	 Signature Adoption: Pre-selected Style Using IP Address: 208.87.239.201	Sent: 5/23/2024 1:31:27 PM Viewed: 5/24/2024 8:57:56 AM Signed: 5/24/2024 8:58:08 AM
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Matt Nelson Matt.Nelson@twdb.texas.gov Security Level: Email, Account Authentication (None)	 Signature Adoption: Pre-selected Style Using IP Address: 208.87.239.201	Sent: 5/24/2024 8:58:13 AM Viewed: 5/26/2024 10:27:13 AM Signed: 5/28/2024 10:46:09 AM
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Certified Delivery Events	Status	Timestamp
Carbon Copy Events	Status	Timestamp
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Envelope Updated	Security Checked	6/7/2024 8:39:53 AM
Certified Delivered	Security Checked	6/7/2024 12:44:41 PM
Signing Complete	Security Checked	6/7/2024 12:45:07 PM
Completed	Security Checked	6/7/2024 12:45:21 PM

Payment Events	Status	Timestamps
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Electronic Record and Signature Disclosure
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ELECTRONIC RECORD AND SIGNATURE DISCLOSURE

From time to time, Texas Water Development Board (we, us or Company) may be required by law to provide to you certain written notices or disclosures. Described below are the terms and conditions for providing to you such notices and disclosures electronically through the DocuSign system. Please read the information below carefully and thoroughly, and if you can access this information electronically to your satisfaction and agree to this Electronic Record and Signature Disclosure (ERSD), please confirm your agreement by selecting the check-box next to 'I agree to use electronic records and signatures' before clicking 'CONTINUE' within the DocuSign system.

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Withdrawing your consent

If you decide to receive notices and disclosures from us electronically, you may at any time change your mind and tell us that thereafter you want to receive required notices and disclosures only in paper format. How you must inform us of your decision to receive future notices and disclosure in paper format and withdraw your consent to receive notices and disclosures electronically is described below.

Consequences of changing your mind

If you elect to receive required notices and disclosures only in paper format, it will slow the speed at which we can complete certain steps in transactions with you and delivering services to you because we will need first to send the required notices or disclosures to you in paper format, and then wait until we receive back from you your acknowledgment of your receipt of such paper notices or disclosures. Further, you will no longer be able to use the DocuSign system to receive required notices and consents electronically from us or to sign electronically documents from us.

All notices and disclosures will be sent to you electronically

Unless you tell us otherwise in accordance with the procedures described herein, we will provide electronically to you through the DocuSign system all required notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to you during the course of our relationship with you. To reduce the chance of you inadvertently not receiving any notice or disclosure, we prefer to provide all of the required notices and disclosures to you by the same method and to the same address that you have given us. Thus, you can receive all the disclosures and notices electronically or in paper format through the paper mail delivery system. If you do not agree with this process, please let us know as described below. Please also see the paragraph immediately above that describes the consequences of your electing not to receive delivery of the notices and disclosures electronically from us.

How to contact Texas Water Development Board:

You may contact us to let us know of your changes as to how we may contact you electronically, to request paper copies of certain information from us, and to withdraw your prior consent to receive notices and disclosures electronically as follows:

To contact us by email send messages to: darrell.tompkins@twdb.texas.gov

To advise Texas Water Development Board of your new email address

To let us know of a change in your email address where we should send notices and disclosures electronically to you, you must send an email message to us at darrell.tompkins@twdb.texas.gov and in the body of such request you must state: your previous email address, your new email address. We do not require any other information from you to change your email address.

If you created a DocuSign account, you may update it with your new email address through your account preferences.

To request paper copies from Texas Water Development Board

To request delivery from us of paper copies of the notices and disclosures previously provided by us to you electronically, you must send us an email to darrell.tompkins@twdb.texas.gov and in the body of such request you must state your email address, full name, mailing address, and telephone number. We will bill you for any fees at that time, if any.

To withdraw your consent with Texas Water Development Board

To inform us that you no longer wish to receive future notices and disclosures in electronic format you may:

- i. decline to sign a document from within your signing session, and on the subsequent page, select the check-box indicating you wish to withdraw your consent, or you may;
- ii. send us an email to darrell.tompkins@twdb.texas.gov and in the body of such request you must state your email, full name, mailing address, and telephone number. We do not need any other information from you to withdraw consent.. The consequences of your withdrawing consent for online documents will be that transactions may take a longer time to process..

Required hardware and software

The minimum system requirements for using the DocuSign system may change over time. The current system requirements are found here: <https://support.docusign.com/guides/signer-guide-signing-system-requirements>.

Acknowledging your access and consent to receive and sign documents electronically

To confirm to us that you can access this information electronically, which will be similar to other electronic notices and disclosures that we will provide to you, please confirm that you have read this ERSD, and (i) that you are able to print on paper or electronically save this ERSD for your future reference and access; or (ii) that you are able to email this ERSD to an email address where you will be able to print on paper or save it for your future reference and access. Further, if you consent to receiving notices and disclosures exclusively in electronic format as described herein, then select the check-box next to ‘I agree to use electronic records and signatures’ before clicking ‘CONTINUE’ within the DocuSign system.

By selecting the check-box next to ‘I agree to use electronic records and signatures’, you confirm that:

- You can access and read this Electronic Record and Signature Disclosure; and
- You can print on paper this Electronic Record and Signature Disclosure, or save or send this Electronic Record and Disclosure to a location where you can print it, for future reference and access; and
- Until or unless you notify Texas Water Development Board as described above, you consent to receive exclusively through electronic means all notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to you by Texas Water Development Board during the course of your relationship with Texas Water Development Board.

2 Contractor Expense Budget

CATEGORY	AMOUNT
Other Expenses ¹	\$25,000.00
Contractor Salaries and Wages ²	\$100,000.00
Subcontract Services #1	\$2,194,000.00
Subcontract Services #2	\$0.00
Subcontract Services #3	\$0.00
Voting Planning Member Travel ³	\$5,000.00
Total Committed Funds ⁴	\$2,324,000.00

REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Alfonso Torres, Construction Manager, Construction Management

Meeting Date: September 17, 2024

Item type: Consent Item

Caption:

Consider awarding Buyboard Contract #660-21 for the Youth Sports Practice Area project to Basic IDIQ Inc. in the amount of \$1,460,605.64 and authorizing the City Manager to negotiate and execute all related documents (Alfonso Torres)

Staff Recommendation:

Approve

Summary/History:

The 29th Street Sports Complex is an existing group of ball fields and open land that since the 1970's has been home to SAGFPA and Northern Little League. In 2010, a ½ cent sales tax referendum allocated funds for a "youth sports facility". A design was obtained, but the project was never constructed.

The original proposal focused on rehabilitation of the three existing baseball fields, including restrooms and batting cages. With the construction of the Texas Bank Sports complex, the need for baseball fields is not as critical as it was originally, but the need for more youth sports practice areas continues to be a critical need in San Angelo.

The current design consists of rehabilitation of the main baseball field, a prefabricated restroom, development of practice fields alongside the river, and a walking trail.

Construction services will include the following:

- Demolish existing hill and structures between the existing fields
- Upgrade existing ball field, including irrigation and field materials.
- New bleachers
- New 6' wide concrete walking trail
- Grade new practice field and provide irrigation
- New handicapped parking spaces
- Prefabricated bathrooms with Septic field

Staff recommends approving this proposal for Construction Services.

Funding Source(s):

Financial Impact:

The project is budgeted from account 502-6107-800.07-30.

Other Information/Recommendation:**Attachments:**

- | | | |
|----|--|--|
| 1. | San Angelo_29th Youth Field Reno_RCV
sign_OzarkII_8.16.23 | San Angelo_29th Youth Field Reno_RCV
sign_OzarkII_8.16.23.pdf |
| 2. | Work Order Package (48) | Work Order Package (48).pdf |

Presentation:

Alfonso Torres

Approvals/Reviews:

Alfonso Torres	Created/Initiated
Theresa James	Approved
Jeffrey Tomlinson	Approved
Tina Dierschke	Approved
Theresa James	Approved
Heather Stastny	Final Approval



CXT® Precast Concrete Products manufactures restroom, shower and concession buildings in multiple designs, textures and colors. The roof and walls are fabricated with high strength precast concrete to meet all local building codes and textured to match local architectural details. All CXT buildings are designed to meet A.D.A. and to withstand heavy snow, high wind and category E seismic loads. All concrete construction also makes the buildings easy to maintain and withstand the rigors of vandalism. The buildings are prefabricated and delivered complete and ready-to-use, including plumbing and electrical where applicable. With thousands of satisfied customers nationwide, CXT is the leader in prefabricated concrete restrooms.

1. ORDERING ADDRESS(ES): CXT Precast Concrete Products, 606 N. Pines Road, Suite 202, Spokane Valley, WA 99206

2. ORDERING PROCEDURES: Fax 509-928-8270

3. PAYMENT ADDRESS(ES):

Remitting by check:

CXT, Inc., PO Box 676208, Dallas, TX 75267-6208

Remitting by ACH or wire transfer:

Beneficiary: CXT, Inc.

Beneficiary Bank: PNC Bank, Pittsburgh, PA

Account: 1077766885 ABA/Routing: 043000096

Email remittance details to AR@lbfoster.com

4. WARRANTY PROVISIONS: CXT provides a one (1) year warranty. The warranty is valid only when concrete is used within the specified loadings. Furthermore, said warranty includes only the related material necessary for the construction and fabrication of said concrete components. All other non-concrete components will carry a one (1) year warranty. CXT warrants that all goods sold pursuant hereto will, when delivered, conform to specifications set forth above. Goods shall be deemed accepted and meeting specifications unless notice identifying the nature of any non-conformity is provided to CXT in writing within the specified warranty. CXT, at its option, will repair or replace the goods or issue credit for the customer provided CXT is first given the opportunity to inspect such goods. It is specifically understood that CXT's obligation hereunder is for credit, repair or replacement only, F.O.B. CXT's manufacturing plants, and does not include shipping, handling, installation or other incidental or consequential costs unless otherwise agreed to in writing by CXT.

This warranty shall not apply to:

1. Any goods which have been repaired or altered without CXT's express written consent, in such a way as in the reasonable judgment of CXT, to adversely affect the stability or reliability thereof;

2. To any goods which have been subject to misuse, negligence, acts of God or accidents; or

3. To any goods which have not been installed to manufacturer's specifications and guidelines, improperly maintained, or used outside of the specifications for which such goods were designed.

5. TERMS AND CONDITIONS OF INSTALLATION (IF APPLICABLE): All prices subject to the "Conditions of Sale" listed on the CXT quotation form.

Customers are responsible for marking exact location building is to be set; providing clear and level site, free of overhead and/or underground obstructions; and providing site accessible to normal highway trucks and sufficient area for the crane to install and other equipment to perform the contract requirements. Site must allow for the crane to be within three feet of the building location and the truck to be within three feet of the crane. Customer shall provide notice in writing of low bridges, roadway width or grade, unimproved roads or any other possible obstacles to access. CXT reserves the right to charge the customer for additional costs incurred for

special equipment required to perform delivery and installation. Customers will negotiate installation on a project-by-project basis, which shall be priced as separate line items. For more information regarding installation and truck turning radius guidelines please see our website at <http://www.cxtinc.com>.

In the event delivery of the building/s ordered is/are not completed within 30 days of the agreed to schedule through no fault of CXT, an invoice for the full contract value (excluding shipping and installation costs) will be submitted for payment. Delivery and installation charges will be invoiced at the time of delivery and installation.

Should the delivery and installation costs increase due to changes in the delivery period, this increase will be added to the price originally quoted, and will be subject to the contract payment terms.

In the event that the delivery is delayed more than 90 days after the agreed to schedule and through no fault of CXT, then in addition to the remedies above, a storage fee of 1-1/2% of contract price per month or any part of any month will be charged.

****Customer is responsible for all local permits and fees.**

6. DELIVERY CHARGE: All prices F.O.B. origin prepaid and added to invoice. CXT operates three (3) manufacturing plants in the United States and will deliver from the closest location on our carriers.

7. PAYMENT TERMS: All orders are cash in advance. At CXT's discretion, credit may be given after approval of credit application. Payment to CXT by the purchaser of any approved credit amount is net 30 days after submission of invoice to purchaser. Interest at a rate equal to the lower of (i) the highest rate permitted by law; or (ii) 1.5% per month will be charged monthly on all unpaid invoices beginning with the 35th day (includes five (5) day grace period) from the date of the invoice. Under no circumstance can retention be taken. If CXT initiates legal proceeding to collect any unpaid amount, purchaser shall be liable for all of CXT's costs, expenses and attorneys' fees and costs of any appeal.

8. LIMITATION OF REMEDIES: In the event of any breach of any obligations hereunder; breach of any warranty regarding the goods, or any negligent act or omission of any party, the parties agree to submit all claims to binding arbitration. Any settlement reached shall include all reasonable costs including attorney fees. In no event shall CXT be subject to or liable for any incidental or consequential damages. Without limitation on the foregoing, in no event shall CXT be liable for damages in excess of the purchase price of the goods herein offered.

9. DELIVERY INFORMATION: All prices F.O.B. origin prepaid and added to invoice. CXT operates three (3) manufacturing plants in the United States and will deliver from the closest location on our carriers. Use the information below to determine the origin:

- F.O.B. 6701 E. Flamingo Avenue, Building 300, Nampa, ID 83687 applies to: AK, CA, HI, ID, MT, ND, NV, OR, SD, UT, WA, WY.

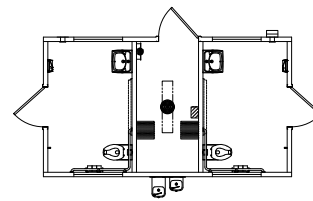
- F.O.B. 901 North Highway 77, Hillsboro, TX 76645 applies to AR, AZ, CO, IA, KS, LA, MN, MO, MS, NE, NM, OK, TX.

- F.O.B. 362 Waverly Road, Williamstown, WV 26183 applies to AL, CT, DE, FL, GA, IL, IN, KY, MA, MD, ME, MI, NC, NH, NJ, NY, OH, PA, PR, RI, SC, TN, VA, VT, WI, WV.

- Prices exclude all federal/state/local taxes. Tax will be charged where applicable if customer is unable to provide proof of exemption.

OZARK II – 10' 6" x 18' 8"

Ozark II with chase has two single user fully accessible flush restrooms. Standard features include simulated barnwood textured walls, simulated cedar shake textured roof, vitreous china fixtures, 4-gallon water heater, interior and exterior lights, off loaded, and set up at site.



CXT
800.696.5766
cxtinc.com

Price Per Unit			
Base Price	\$ 82,770.00		\$ 82,770.00
Added Cost Options	Click to Select		
Final Connection to Utilities	\$ 5,000.00	☒	5,000.00
Optional Wall Texture- choose one	☐ Split Face Block (\$5,500) ☐ Stone (\$7,000) Reset Wall Texture		
Optional Roof Texture	☐ Ribbed Metal	\$ 5,500.00	0.00
Insulation and Heater		\$ 19,500.00	☐ 0.00
Vitreous China Urinal (each)	Qty: 1	\$ 750.00	☐ 0.00
Stainless Steel Water Closet (each)	Qty: 2	\$ 1,750.00	☒ 3,500.00
Stainless Steel Lavatory (each)	Qty: 2	\$ 1,500.00	☒ 3,000.00
Stainless Steel Urinal (each)	Qty: 1	\$ 1,500.00	☒ 1,500.00
Electric Hand Dryer (each)	Qty: 2	\$ 700.00	☒ 1,400.00
Electronic Flush Valve (each)	Qty: 2	\$ 1,500.00	☐ 0.00
Electronic Lavatory Faucet (each)	Qty: 2	\$ 1,500.00	☐ 0.00
Electronic Urinal Flush Valve (each)	Qty: 1	\$ 1,500.00	☐ 0.00
Paper Towel Dispenser (each)	Qty: 2	\$ 350.00	☐ 0.00
Toilet Seat Cover Dispenser (each)	Qty: 2	\$ 350.00	☐ 0.00
Sanitary Napkin Disposal Receptacle (each)	Qty: 2	\$ 100.00	☐ 0.00
Baby Changing Table (each)	Qty: 2	\$ 750.00	☒ 1,500.00
Skylight in Restroom (each)	Qty: 2	\$ 1,600.00	☐ 0.00
Marine Grade Skylight in Restroom (each)	Qty: 2	\$ 2,450.00	☐ 0.00
Marine Package (excluding fiberglass doors and frames)		\$ 2,350.00	☒ 2,350.00
Exterior Mounted ADA Drinking Fountain w/Cane Skirt (each)	Qty: 1	\$ 5,600.00	☐ 0.00
2K Anti-Graffiti Coating		\$ 4,000.00	☒ 4,000.00
Optional Door Closure (each)	Qty: 2	\$ 700.00	☐ 0.00
Fiberglass Entry and Chase Doors and Frames (each)	Qty: 3	\$ 3,300.00	☒ 9,900.00
Timed Electric Lock System (2 doors- does not include chase door) (each)		\$ 1,350.00	☒ 2,700.00
Exterior Frostproof Hose Bib with Box (each)	Qty: 1	\$ 1,200.00	☒ 1,200.00
Total for Added Cost Options:			\$ 36,050.00
Custom Options: Installation Surcharge (7,250), Battery Op Trilogy Lock System Included			\$ 7,250.00
Engineering and State Fees:			\$ 4,000.00
Estimated One-Way Transportation Costs to Site (quote):			\$ 8,150.00
Estimated Tax:			\$
Total Cost per Unit Placed at Job Site:			\$ 138,220.00

Estimated monthly payment on 5 year lease **\$2,778.22**

This price quote is good for 60 days from date below, and is accurate and complete.

Robert C. Veals, Jr.

CXT Sales Representative

Digitally signed by
Robert C. Veals, Jr.
Date: 2023.08.16
16:15:17 -07'00'

Date

I accept this quote. Please process this order.

Company Name

Company Representative

Date

OPTIONS

Exterior Color(s) (For single color mark an X. For two-tone combinations use W = Walls and R = Roof.)

☐ Amber Rose	☐ Berry Mauve	☐ Buckskin	☐ Cappuccino Cream
☐ Charcoal Grey	☐ Coca Milk	☐ Evergreen	☐ Georgia Brick
☐ Golden Beige	☐ Granite Rock	☐ Hunter Green	☐ Java Brown
☐ Liberty Tan	☐ R Malibu Taupe	☐ Mocha Caramel	☐ W Natural Honey
☐ Nuss Brown	☐ Oatmeal Buff	☐ Pueblo Gold	☐ Raven Black
☐ Rich Earth	☐ Rosewood	☐ Sage Green	☐ Salsa Red
☐ Sand Beige	☐ Sun Bronze	☐ Toasted Almond	☐ Western Wheat

Special roof color # _____ Special wall color # _____

Special trim color # _____

Stone Color (Mark option with an X.) *If option is not available, verify stone option is selected on previous page.

☐ Basalt*	☐ Mountain Blend*	☐ Natural Grey*	☐ Romana*
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Roof Texture *If option is not available, verify roof texture option is selected on previous page.

☐ Ribbed Metal*

Wall Texture(s) (For single texture mark an X. For top and bottom textures use T = Top and B = Bottom.)
*If option is not available, verify wall texture option is selected on previous page.

☐ Split Face Block*	☐ Horizontal Lap*	☐ Board & Batt*	☐ Stucco**
☐ Brick**	☐ Distressed Wood**		

Stone Wall Texture (bottom texture only) *If option is not available, verify stone option is selected on previous page.

☐ Napa Valley**	☐ River Rock**	☐ Flagstone**	☐ Stacked Rock**
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#Textures not included in CXT's quote are additional cost.

Door Opener

☐ Non-locking ADA Handle	☒ Privacy ADA Latch	☐ Pull Handle/Push Plate
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Deadbolt ☐

Accessible Signage

☒ Men	☒ Women	☐ Unisex
---	---	---------------------------------

Toilet Paper Holder

☐ 2-Roll Stainless Steel	☒ 3-Roll Stainless Steel
---	--

Notes: Barnwood Walls, Cedar Shake Roof

cxtinc.com
800.696.5766



Work Order Signature Document

ezIQC Buy Board Contract No.: 660-21

☒

New Work Order



Modify an Existing Work Order

Work Order Number.: 121119.00

Work Order Date: 08/27/2024

Work Order Title: City of San Angelo- Youth Sports Complex Renovation

Owner Name: BUY BOARD - City of San Angelo

Contractor Name: Basic IDIQ Inc.

Contact: Alfonso Torres

Contact: Terrell Harris

Phone: 325-657-4239

Phone:

Work to be Performed

Work to be performed as per the Final Detailed Scope of Work Attached and as per the terms and conditions of ezIQC Buy Board Contract No 660-21.

Brief Work Order Description:

Renovation of the 29th st Youth Sports Practice Area

Time of Performance

Estimated Start Date:

Estimated Completion Date:

Liquidated Damages

Will apply:



Will not apply:

**Work Order Firm Fixed Price: \$1,460,605.64**

Owner Purchase Order Number:

Approvals

Owner

Date

Contractor

Date



Detailed Scope of Work

To:

Terrell Harris
Basic IDIQ Inc.
1100 Montana Ave Ste 213
El Paso, TX 79902
No Data Input

From:

Alfonso Torres
BUY BOARD - City of San Angelo
72 W College Ave.
San Angelo, TX 76903
325-657-4239

Date Printed:

August 27, 2024

Work Order Number:

121119.00

Work Order Title:

City of San Angelo- Youth Sports Complex Renovation

Brief Scope:

Renovation of the 29th st Youth Sports Practice Area

☐

Preliminary

☐

Revised

☒

Final

The following items detail the scope of work as discussed at the site. All requirements necessary to accomplish the items set forth below shall be considered part of this scope of work.

Grading of park area for use as additional sports practice fields, removal of softball concession building and grading of concession area, installation of irrigation system for existing baseball field, installation of on-site sanitary sewer facilities, grading and site preparation for pedestrian bridge across the Concho River. Scoped attached

Subject to the terms and conditions of JOC Contract **660-21**.

Contractor

Date

Owner

Date

Contractor's Price Proposal - Summary

Date:	August 27, 2024	
Re:	IQC Master Contract #:	660-21
	Work Order #:	121119.00
	Owner PO #:	
	Title:	City of San Angelo- Youth Sports Complex Renovation
	Contractor:	Basic IDIQ Inc.
	Proposal Value:	\$1,460,605.64

Section - 01	\$130,214.83
Section - 02	\$69,529.91
Section - 03	\$71,899.57
Section - 05	\$33,972.47
Section - 09	\$350.81
Section - 10	\$551.78
Section - 13	\$196,072.20
Section - 26	\$3,380.95
Section - 31	\$193,028.82
Section - 32	\$619,141.06
Section - 33	\$142,463.24
Proposal Total	\$1,460,605.64

This total represents the correct total for the proposal. Any discrepancy between line totals, sub-totals and the proposal total is due to rounding.

The Percentage of NPP on this Proposal: 10.88%

Contractor's Price Proposal - Detail

Date: August 27, 2024

Re: IQC Master Contract #: 660-21
 Work Order #: 121119.00
 Owner PO #:
 Title: City of San Angelo- Youth Sports Complex Renovation
 Contractor: Basic IDIQ Inc.
 Proposal Value: \$1,460,605.64

Sect.	Item	Mod.	UOM	Description	Line Total
Labor	Equip.	Material	(Excludes)		
Section - 01					
1	01 22 23 00 0284		MO	2,000 To 2,400 LB Capacity, 72" Wide, Skid-Steer Loader With Full-Time Operator	\$28,470.23
				Quantity Installation 2.00 x Unit Price 10,264.72 x Factor 1.3868 = Total 28,470.23 1-skid steer for moving soils and debris by landscaping crew 1-skid steer for grading sidewalk path by concrete crew	
2	01 22 23 00 0292		WK	Hydraulic Hammer Attachment For Skid-Steer Loaders	\$2,743.42
				Quantity Installation 2.00 x Unit Price 989.12 x Factor 1.3868 = Total 2,743.42 Hammer attachment for demolition	
3	01 22 23 00 0307		WK	Auger Attachment (Excludes Bits And Extensions) For Skid-Steer Loaders	\$932.35
				Quantity Installation 2.00 x Unit Price 336.15 x Factor 1.3868 = Total 932.35 auger attachment for digging post holes	
4	01 22 23 00 0434		WK	1-3/4 CY, 30" Bucket, 18'-0" Deep, 112 HP, Loader-Backhoe With Full-Time Operator	\$11,037.49
				Quantity Installation 2.00 x Unit Price 3,979.48 x Factor 1.3868 = Total 11,037.49 Backhoe for loading and grading elevations	
5	01 22 23 00 0450		WK	7-1/3 CY, 330 HP, Heavy Duty Construction Loader With Full-Time Operator	\$30,304.35
				Quantity Installation 2.00 x Unit Price 10,926.00 x Factor 1.3868 = Total 30,304.35 Front end loader for loading soils to be relocated	
6	01 22 23 00 0983		DAY	60 To 65 Ton Lift, Truck Mounted Hydraulic Crane With Full-Time Operator	\$2,895.14
				Quantity Installation 1.00 x Unit Price 2,087.64 x Factor 1.3868 = Total 2,895.14 Crane for setting prefab restroom	
7	01 22 23 00 1043		WK	10,000 LB Telescopic Boom, Hi-Reach, Rough Terrain Construction Forklift With Full-Time Operator	\$10,642.39
				Quantity Installation 2.00 x Unit Price 3,837.03 x Factor 1.3868 = Total 10,642.39 Skytrak for unloading materials and setting material in place	
8	01 22 23 00 1043 0033		MOD	For Equipment Without Operator, Deduct	-\$4,480.36
				Quantity Installation 2.00 x Unit Price -1,615.36 x Factor 1.3868 = Total -4,480.36	
9	01 22 23 00 1428		WK	13 CY Rear Dump Truck With Full-Time Truck Driver	\$15,726.87
				Quantity Installation 2.00 x Unit Price 5,670.20 x Factor 1.3868 = Total 15,726.87 Trucks for moving dirt and soils	
10	01 56 26 00 0007		LF	Temporary 10' High Chain Link Fence And Posts, Up To 6 Months	\$2,598.86
				Quantity Installation 100.00 x Unit Price 18.74 x Factor 1.3868 = Total 2,598.86 temporary fencing for staging	

Contractor's Price Proposal - Detail Continues..

Work Order Number: 121119.00

Work Order Title: City of San Angelo- Youth Sports Complex Renovation

Section - 01

11	01 56 26 00 0051	EA	20' Wide, 10' High, Temporary Chain Link Fence Gate, Up To 6 Months						\$2,227.15
			Installation	Quantity		Unit Price		Factor	Total
				2.00	x	802.98	x	1.3868	= 2,227.15
			temporary fencing for staging						
12	01 56 26 00 0160	LF	48" High With Posts At 8' On Center, Plastic Mesh Temporary Safety Fence						\$3,894.13
			Installation	Quantity		Unit Price		Factor	Total
				1,200.00	x	2.34	x	1.3868	= 3,894.13
			Safety fencing						
13	01 71 13 00 0002	EA	Equipment Delivery, Pickup, Mobilization And Demobilization Using A Rollback Flatbed TruckIncludes loading, tie-down of equipment, delivery of equipment, off loading on site, rigging, dismantling, loading for return and transporting away. For equipment such as trenchers, skid-steer loaders (bobcats), industrial warehouse forklifts, sweepers, scissor platform lifts, telescoping and articulating boom man lifts with up to 40' boom lengths, etc.						\$1,302.50
			Installation	Quantity		Unit Price		Factor	Total
				3.00	x	313.07	x	1.3868	= 1,302.50
			Mobilization Trencher, hydraulic hammer, and auger						
14	01 71 13 00 0003	EA	Equipment Delivery, Pickup, Mobilization And Demobilization Using A Tractor Trailer With Up To 53' BedIncludes loading, tie-down of equipment, delivery of equipment, off loading on site, rigging, dismantling, loading for return and transporting away. For equipment such as bulldozers, motor scrapers, hydraulic excavators, gradalls, road graders, loader-backhoes, heavy duty construction loaders, tractors, pavers, rollers, bridge finishers, straight mast construction forklifts, telescoping boom rough terrain construction forklifts, telescoping and articulating boom man lifts with >40' boom lengths, etc.						\$8,848.75
			Installation	Quantity		Unit Price		Factor	Total
				5.00	x	1,276.14	x	1.3868	= 8,848.75
			mobilization of skid steers (2), backhoe, and front end loader, skytrak						
15	01 71 23 16 0003	ACR	Conventional Topographic Survey Of Clear Area With Medium Height Vegetation, Few Trees (<5% Buildings)						\$6,123.69
			Installation	Quantity		Unit Price		Factor	Total
				3.00	x	1,471.90	x	1.3868	= 6,123.69
			Survey to verify elevations before, during and after, survey required to ensure proper elevations for ADA, and stormwater drainage						
16	01 74 19 00 0016	EA	40 CY Dumpster (6 Ton) "Construction Debris"Includes delivery of dumpster, rental cost, pick-up cost, hauling, and disposal fee. Non-hazardous material.						\$6,947.87
			Installation	Quantity		Unit Price		Factor	Total
				6.00	x	835.00	x	1.3868	= 6,947.87
			dumpster for debris						

Subtotal for Section - 01

\$130,214.83

Section - 02

17	02 41 13 13 0021	SY	>6" To 9" By Machine, Break-up And Remove Bituminous Paving						\$4,783.84
			Installation	Quantity		Unit Price		Factor	Total
				183.00	x	18.85	x	1.3868	= 4,783.84
			demo of existing paving to accommodate new ADA parking lot						
18	02 41 13 13 0044	SF	>6" To 9" By Hand, Break-up And Remove Concrete Paving						\$1,034.55
			Installation	Quantity		Unit Price		Factor	Total
				200.00	x	3.73	x	1.3868	= 1,034.55
			demo of existing paving by hand to accommodate new ADA parking lot						

Contractor's Price Proposal - Detail Continues..

Work Order Number: 121119.00

Work Order Title: City of San Angelo- Youth Sports Complex Renovation

Section - 02

19	02	41	16	13	0003	GSF	Up To 2,000 SF Commercial Building Interior Demolition, Gutting And Placing Into Dumpster Or Truck								\$11,679.07
						Installation	Quantity		Unit Price		Factor	=	Total		
							1,320.00	x	6.38	x	1.3868	=	11,679.07		
							demo interior of existing structures and haul off								
20	02	41	16	13	0008	CCF	By Pneumatic Tools/Hand, Steel Framed Building Demolition								\$4,476.42
						Installation	Quantity		Unit Price		Factor	=	Total		
							74.00	x	43.62	x	1.3868	=	4,476.42		
							demo existing steel structures								
21	02	41	16	13	0008 0004	MOD	For Up To 500, Add								\$1,343.34
						Installation	Quantity		Unit Price		Factor	=	Total		
							74.00	x	13.09	x	1.3868	=	1,343.34		
22	02	41	16	13	0014	CCF	By Pneumatic Tools/Hand, Masonry Construction Building Demolition								\$5,120.29
						Installation	Quantity		Unit Price		Factor	=	Total		
							96.00	x	38.46	x	1.3868	=	5,120.29		
							demo existing CMU structures								
23	02	41	16	13	0014 0004	MOD	For Up To 500, Add								\$1,536.35
						Installation	Quantity		Unit Price		Factor	=	Total		
							96.00	x	11.54	x	1.3868	=	1,536.35		
24	02	41	16	13	0024	CF	Reinforced Concrete Foundation Demolition								\$3,595.21
						Installation	Quantity		Unit Price		Factor	=	Total		
							315.00	x	8.23	x	1.3868	=	3,595.21		
							demo existing structure foundation								
25	02	41	16	13	0024 0075	MOD	For >405 To 810, Deduct								-\$629.05
						Installation	Quantity		Unit Price		Factor	=	Total		
							315.00	x	-1.44	x	1.3868	=	-629.05		
26	02	41	19	13	0351	SF	4" Thick Reinforced Concrete Slab On Grade Cutouts, <24 SF								\$36,589.89
						Installation	Quantity		Unit Price		Factor	=	Total		
							1,260.00	x	20.94	x	1.3868	=	36,589.89		
							demo of existing concrete								

Subtotal for Section - 02

\$69,529.91

Section - 03

27	03	21	11	00	0128	LF	#4, Grade 60, Slab On Grade, Steel Reinforcement Bar								\$1,934.59
						Installation	Quantity		Unit Price		Factor	=	Total		
							1,860.00	x	0.75	x	1.3868	=	1,934.59		
							rebar for ada parking lot								
28	03	22	11	00	0005	SF	6" x 6" x #4, 58 LB/CSF, Plain Welded Wire Fabric Reinforcing Placed In Floors Or Slabs (W4.0 x W4.0)								\$35,743.66
						Installation	Quantity		Unit Price		Factor	=	Total		
							23,220.00	x	1.11	x	1.3868	=	35,743.66		
							wire mesh for concrete sidewalks								
29	03	31	13	00	0037	CY	Up To 6", By Concrete Pump, Place 3,000 PSI Concrete Slab On GradeExcludes pumping equipment.								\$7,812.40
						Installation	Quantity		Unit Price		Factor	=	Total		
							30.00	x	187.78	x	1.3868	=	7,812.40		
							pumping concrete in locations that can not be accessed by trucks								

Contractor's Price Proposal - Detail Continues..

Work Order Number: 121119.00

Work Order Title: City of San Angelo- Youth Sports Complex Renovation

Section - 03

30	03	31	13	00	0037	0039	MOD	For >20 To 50, Add									\$96.94
							Installation	Quantity	Unit Price	Factor	=	Total					
								30.00	2.33	1.3868		96.94					
								x	x								
31	03	31	13	00	0081		CY	150' Haul, Non-Motorized, Concrete Buggy									\$1,194.81
							Installation	Quantity	Unit Price	Factor	=	Total					
								68.00	12.67	1.3868		1,194.81					
								x	x								
								Concrete buggy for hauling concrete in locations truck and pump can not reach									
32	03	35	13	00	0005		SF	Final Float, Concrete Floor Finish									\$28,015.30
							Installation	Quantity	Unit Price	Factor	=	Total					
								23,220.00	0.87	1.3868		28,015.30					
								x	x								
								concrete finish on sidewalks									
33	03	35	13	00	0005	0052	MOD	For >10,000, Deduct									-\$2,898.13
							Installation	Quantity	Unit Price	Factor	=	Total					
								23,220.00	-0.09	1.3868		-2,898.13					
								x	x								

Subtotal for Section - 03

\$71,899.57

Section - 05

34	05	12	23	00	0051		LB	Column Base Plates, >150 LB / Each, A36 Miscellaneous Steel Items									\$926.17
							Installation	Quantity	Unit Price	Factor	=	Total					
								185.00	3.61	1.3868		926.17					
								x	x								
								base plates for new dugout structures									
35	05	12	23	00	0079		TON	4" x 4" Weight Range 10-22 LB/LF Structural Tubing - Square									\$23,819.37
							Installation	Quantity	Unit Price	Factor	=	Total					
								2.00	8,111.26	1.3868		22,497.39					
								x	x								
							Demolition	Quantity	Unit Price	Factor	=	Total					
								2.00	476.63	1.3868		1,321.98					
								x	x								
								4"x4" tubing for dugout framing									
36	05	12	23	00	0539		LF	C4 x 7.25 - 4" Wide Channel									\$7,525.05
							Installation	Quantity	Unit Price	Factor	=	Total					
								260.00	16.70	1.3868		6,021.49					
								x	x								
							Demolition	Quantity	Unit Price	Factor	=	Total					
								260.00	4.17	1.3868		1,503.57					
								x	x								
								C channel for dugout roof framing									
37	05	36	00	00	0004		SF	1-1/2" Deep, 18 Gauge Composite Open Ribbed Galvanized Steel Deck									\$1,471.12
							Installation	Quantity	Unit Price	Factor	=	Total					
								260.00	4.08	1.3868		1,471.12					
								x	x								
								Metal sheeting for dugout roofing									
38	05	36	00	00	0004	0158	MOD	For >100 To 500, Add									\$230.76
							Installation	Quantity	Unit Price	Factor	=	Total					
								260.00	0.64	1.3868		230.76					
								x	x								

Subtotal for Section - 05

\$33,972.47

Section - 09

39	09	91	13	00	0312		SF	1 Field Coat Primer, Brush/Roller Work, Paint Exterior Structural Steel									\$165.08
							Installation	Quantity	Unit Price	Factor	=	Total					
								248.00	0.48	1.3868		165.08					
								x	x								
40	09	91	13	00	0312	0235	MOD	For >250 To 500, Add									\$17.20
							Installation	Quantity	Unit Price	Factor	=	Total					
								248.00	0.05	1.3868		17.20					
								x	x								

Contractor's Price Proposal - Detail Continues..

Work Order Number: 121119.00

Work Order Title: City of San Angelo- Youth Sports Complex Renovation

Section - 09

41	09	91	13	00	0313	SF	1 Field Coat Paint, Brush/Roller Work, Paint Exterior Structural Steel									\$151.33
						Installation	Quantity		Unit Price		Factor	=	Total			
							248.00	x	0.44	x	1.3868		151.33			
42	09	91	13	00	0313	0235	MOD	For >250 To 500, Add								\$17.20
						Installation	Quantity		Unit Price		Factor	=	Total			
							248.00	x	0.05	x	1.3868		17.20			

Subtotal for Section - 09

\$350.81

Section - 10

43	10	14	53	11	0142	EA	12" x 18" Aluminum Non-Reflectorized Traffic Sign									\$194.21
						Installation	Quantity		Unit Price		Factor	=	Total			
							4.00	x	35.01	x	1.3868		194.21			
							handicap signs for parking									
44	10	14	53	11	0225	EA	6', 2-3/8" Diameter, Galvanized Steel Tubular Sign Post									\$357.57
						Installation	Quantity		Unit Price		Factor	=	Total			
							4.00	x	64.46	x	1.3868		357.57			
							post for handicap signage									

Subtotal for Section - 10

\$551.78

Section - 13

45	13	00	00	00	0123	1	Prefabricated Restroom									\$158,953.00
						NPP	Installation	Quantity	Unit Price		Factor	=	Total			
								1.00	138,220.00	x	1.1500		158,953.00			
46	13	34	16	13	0003	SEA	3-15 Tier Permanent Grandstand Price Per Seat									\$37,119.20
						Installation	Quantity		Unit Price		Factor	=	Total			
							412.00	x	61.84	x	1.3868		35,333.00			
						Demolition	350.00	x	3.68	x	1.3868	=	1,786.20			
							New bleacher seating required for ADA									

Subtotal for Section - 13

\$196,072.20

Section - 26

47	26	05	19	16	0034	MLF	4/0 AWG, XLP (XHHW-2), 600 Volt Copper, Single Stranded, Power Cable, Installed In Conduit									\$2,704.32
						Installation	Quantity		Unit Price		Factor	=	Total			
							0.20	x	9,750.22	x	1.3868		2,704.32			
							Cable for connecting Electrical Service to Restroom building									
48	26	05	19	16	0282	MLF	#6 AWG, Type THHN-THWN, 600 Volt, Copper, Single Stranded Cable, Installed In Conduit									\$393.17
						Installation	Quantity		Unit Price		Factor	=	Total			
							0.20	x	1,417.55	x	1.3868		393.17			
							Cable for connecting Electrical Service to Restroom building									
49	26	05	26	00	0100	EA	3/4" Diameter x 10' Long Copper-Clad Ground Rods									\$283.46
						Installation	Quantity		Unit Price		Factor	=	Total			
							2.00	x	102.20	x	1.3868		283.46			
							Electrical grounding rods									

Subtotal for Section - 26

\$3,380.95

Section - 31

Contractor's Price Proposal - Detail Continues..

Work Order Number: 121119.00

Work Order Title: City of San Angelo- Youth Sports Complex Renovation

Section - 31

50	31 05 13 00 0002	CY	Bank Run/Fill Sand							\$3,662.84
			Quantity	Unit Price	Factor	=	Total			
		Installation	82.00 x	32.21 x	1.3868	=	3,662.84			
			backfill sand for septic system							
51	31 05 16 00 0021	CY	3" To 7" Surge Stone Graded Aggregate Fill							\$12,873.83
			Quantity	Unit Price	Factor	=	Total			
		Installation	154.00 x	60.28 x	1.3868	=	12,873.83			
			Aggregate for construction entrance							
52	31 05 16 00 0021 0057	MOD	For >96, Deduct							-\$2,069.47
			Quantity	Unit Price	Factor	=	Total			
		Installation	154.00 x	-9.69 x	1.3868	=	-2,069.47			
53	31 23 16 13 0002	CY	12" Wide or Less, Excavation for Trenching by Machine in Soil							\$7,366.68
			Quantity	Unit Price	Factor	=	Total			
		Installation	830.00 x	6.40 x	1.3868	=	7,366.68			
			trenching for irrigation lines							
54	31 23 16 13 0007	CY	Excavation For Trenching By Hand In SoilIncludes stockpiling excess materials and trimming sides and bottom of trench.							\$6,040.76
			Quantity	Unit Price	Factor	=	Total			
		Installation	86.00 x	50.65 x	1.3868	=	6,040.76			
			cleaning out trenches for irrigation lines							
55	31 23 16 13 0010	CY	Backfilling or Placing Subbase for Trenches with Imported or Stockpiled Materials by Machine							\$2,421.21
			Quantity	Unit Price	Factor	=	Total			
		Installation	790.00 x	2.21 x	1.3868	=	2,421.21			
			backfill trenches by machine							
56	31 23 16 13 0011	CY	Backfilling or Placing Subbase for Trenches with Imported or Stockpiled Materials by Hand							\$1,580.49
			Quantity	Unit Price	Factor	=	Total			
		Installation	81.00 x	14.07 x	1.3868	=	1,580.49			
			backfill trenches by hand							
57	31 23 16 13 0013	CY	Compaction of Fill or Subbase for Trenches by Vibratory Plate , Air Tamper, Etcetera							\$3,308.63
			Quantity	Unit Price	Factor	=	Total			
		Installation	790.00 x	3.02 x	1.3868	=	3,308.63			
			compacting trenches							
58	31 23 16 13 0014	CY	Compaction of Fill or Subbase for Trenches by Hand							\$1,783.81
			Quantity	Unit Price	Factor	=	Total			
		Installation	81.00 x	15.88 x	1.3868	=	1,783.81			
			compacting trenches							
59	31 23 16 13 0016	CY	Load Excess Material by Machine for Removal from Excavation for Trenching							\$254.95
			Quantity	Unit Price	Factor	=	Total			
		Installation	48.00 x	3.83 x	1.3868	=	254.95			
			excess debris from trenches							
60	31 23 16 13 0016 0131		For >20 To 50, Add							\$191.05
			Quantity	Unit Price	Factor	=	Total			
		Installation	48.00 x	2.87 x	1.3868	=	191.05			
61	31 23 16 13 0019	CY	Spread Excess Or Imported Material On Site With Machine							\$156.49
			Quantity	Unit Price	Factor	=	Total			
		Installation	62.00 x	1.82 x	1.3868	=	156.49			
			excess debris from trenches							

Contractor's Price Proposal - Detail Continues..

Work Order Number: 121119.00

Work Order Title: City of San Angelo- Youth Sports Complex Renovation

Section - 31

62	31	23	16	13	0019	0132	MOD	For >50 To 250, Add										\$62.77
							Installation	Quantity		Unit Price		Factor	=	Total				
								62.00	x	0.73	x	1.3868	=	62.77				
63	31	23	16	33	0003		CY	Bulk Excavation by Hydraulic Excavator, Front End Loader, Backhoe in Soil										\$36,791.53
							Installation	Quantity		Unit Price		Factor	=	Total				
								6,820.00	x	3.89	x	1.3868	=	36,791.53				
								removing Dirt hill, and top soil at baseball field for new infield material, and practice field for new top soil										
64	31	23	16	33	0007		CY	Spreading, Shaping, and Rough Grading Imported or Stockpiled Material for Bulk Excavation by Machine										\$16,501.39
							Installation	Quantity		Unit Price		Factor	=	Total				
								3,390.00	x	3.51	x	1.3868	=	16,501.39				
								Grading to proper elevations after excavating										
65	31	23	16	33	0009		CY	Cutting, Shaping and Rough Grading Existing Elevations For Bulk Excavation by Machine										\$7,734.18
							Installation	Quantity		Unit Price		Factor	=	Total				
								1,430.00	x	3.90	x	1.3868	=	7,734.18				
								cutting and shaping elevations for removing hill										
66	31	23	16	33	0014		CY	Relocating On Site Excavated Material From Bulk Excavation >1,000'										\$30,926.47
							Installation	Quantity		Unit Price		Factor	=	Total				
								2,380.00	x	9.37	x	1.3868	=	30,926.47				
								relocating soils removed from hill, baseball field, and practice area, onsite to designated location by COSA										
67	31	23	16	33	0016		SY	Finish Grading for Bulk Excavation by Machine										\$24,263.16
							Installation	Quantity		Unit Price		Factor	=	Total				
								44,861.00	x	0.39	x	1.3868	=	24,263.16				
								Final grading to proper elevations for Baseball field and practice field areas										
68	31	23	16	33	0018		SY	Compaction of Fill or Subbase for Bulk Excavation by MachinePer Lift										\$23,641.03
							Installation	Quantity		Unit Price		Factor	=	Total				
								44,861.00	x	0.38	x	1.3868	=	23,641.03				
								proper compaction in lifts for graded areas										
69	31	23	16	33	0020		CY	Loading Excess Material For Removal From Bulk Excavation										\$1,537.68
							Installation	Quantity		Unit Price		Factor	=	Total				
								280.00	x	3.96	x	1.3868	=	1,537.68				
								hauling non salvageable debris off site										
70	31	23	23	23	0002		MGL	Compaction Water, Water Truck And OperatorUse this task in situations where earth fill, base material, etc. requires additional moisture to comply with the compaction specification. Includes delivery up to 15 miles. (Per each 1,000 gallons of water)										\$7,669.99
							Installation	Quantity		Unit Price		Factor	=	Total				
								31.00	x	178.41	x	1.3868	=	7,669.99				
								Compaction for fields subbase										
71	31	25	14	26	0003		LF	2' High Silt Fence with Stakes at 4' On Center										\$5,688.65
							Installation	Quantity		Unit Price		Factor	=	Total				
								1,400.00	x	2.93	x	1.3868	=	5,688.65				
								silt fence										
72	31	25	14	26	0017		LF	Removal Of Silt Fence And Stakes										\$640.70
							Installation	Quantity		Unit Price		Factor	=	Total				
								1,400.00	x	0.33	x	1.3868	=	640.70				
								removing silt fence										

Subtotal for Section - 31

\$193,028.82

Section - 32

Contractor's Price Proposal - Detail Continues..

Work Order Number: 121119.00

Work Order Title: City of San Angelo- Youth Sports Complex Renovation

Section - 32

73	32 11 16 16 0008	SY	9" Crushed Aggregate Base Course For Roadways And Parking Areas						\$4,334.64
		Installation	Quantity	Unit Price	Factor	=	Total		
			183.00 x	17.08 x	1.3868	=	4,334.64		
			base material for new ADA parking						
74	32 11 16 16 0008 0008		For Up To 500, Add						\$1,088.74
		Installation	Quantity	Unit Price	Factor	=	Total		
			183.00 x	4.29 x	1.3868	=	1,088.74		
75	32 13 13 33 0005	SY	6" 4,500 PSI Concrete Paving Assembly						\$12,636.11
		Installation	Quantity	Unit Price	Factor	=	Total		
			163.00 x	55.90 x	1.3868	=	12,636.11		
			handicap parking lot concrete						
76	32 13 13 33 0005 0024		For 5,000 PSI Concrete, Add						\$140.15
		Installation	Quantity	Unit Price	Factor	=	Total		
			163.00 x	0.62 x	1.3868	=	140.15		
77	32 15 40 00 0002	CY	Gravel Surfacing And Spreading						\$3,371.59
		Installation	Quantity	Unit Price	Factor	=	Total		
			30.00 x	81.04 x	1.3868	=	3,371.59		
			Spreading gravel and aggregate at construction entrance and throughout site						
78	32 16 23 00 0002	SF	4" Cast In Place Concrete Sidewalk						\$191,920.92
		Installation	Quantity	Unit Price	Factor	=	Total		
			23,220.00 x	5.96 x	1.3868	=	191,920.92		
			New Pedestrian side walks 3,870 lf x 6'= 23220						
79	32 17 13 19 0006	EA	8" x 13" x 6' Precast Concrete Wheel Stop With Dowels						\$696.12
		Installation	Quantity	Unit Price	Factor	=	Total		
			6.00 x	83.66 x	1.3868	=	696.12		
			concrete wheel stops for handicap parking						
80	32 17 23 13 0066	LF	Single 4" Wide Solid Line, Painted Pavement Striping For Parking Areas						\$227.78
		Installation	Quantity	Unit Price	Factor	=	Total		
			225.00 x	0.73 x	1.3868	=	227.78		
			parking lot striping						
81	32 17 23 13 0083	EA	Handicap Symbol For Standard Parking Stalls, Painted Pavement Marking For Parking AreasApproximate overall dimensions: 2-2/3' width x 3' height. White or blue symbol. Excludes striping.						\$144.28
		Installation	Quantity	Unit Price	Factor	=	Total		
			6.00 x	17.34 x	1.3868	=	144.28		
			parking lot markings						
82	32 18 23 13 0004	CY	Playing Field Maintenance Of Clay						\$4,584.15
		Installation	Quantity	Unit Price	Factor	=	Total		
			46.00 x	71.86 x	1.3868	=	4,584.15		
			Diamond Pro Infield Conditioner-A proprietary infield conditioner made from special raw clay then heated in a rotary kin to produce a vitreous material						
83	32 18 23 13 0005	Ton	Medium Pro Baseball Infield Mix (Diamond Select 60/40 Pro Infield Mix)						\$104,440.52
		Installation	Quantity	Unit Price	Factor	=	Total		
			492.00 x	153.07 x	1.3868	=	104,440.52		
			Diamond Pro infield dirt, proprietary blended and screened infield mix per specifications						
84	32 18 23 23 0004	BAG	Envirofill, 50 LB Bag						\$19,070.50
		Installation	Quantity	Unit Price	Factor	=	Total		
			218.00 x	63.08 x	1.3868	=	19,070.50		
			diamond pro home plate/mound clay						

Contractor's Price Proposal - Detail Continues..

Work Order Number: 121119.00

Work Order Title: City of San Angelo- Youth Sports Complex Renovation

Section - 32

85	32	31	13	13 0146	LF	5' Galvanized Chain Link Fence, 9 Gauge Coiled Spring Mesh, Top And Bottom Rails, 2-1/2" Line Post At 10' On Center, 3" Corner Post						\$69,744.11
						Quantity	Unit Price	Factor	=	Total		
					Installation	1,320.00	x 36.83	x 1.3868	=	67,420.11		
					Demolition	980.00	x 1.71	x 1.3868	=	2,324.00		
					New chain link fence around baseball field							
86	32	31	13	13 0148	LF	7' Galvanized Chain Link Fence, 9 Gauge Coiled Spring Mesh, Top And Bottom Rails, 2-1/2" Line Post At 10' On Center, 3" Corner Post						\$4,899.29
						Quantity	Unit Price	Factor	=	Total		
					Installation	80.00	x 41.59	x 1.3868	=	4,614.16		
					Demolition	80.00	x 2.57	x 1.3868	=	285.13		
					New Dugout fencing							
87	32	31	13	13 0287	EA	4' Wide x 5' High Single Gate Galvanized Steel Without Barbed Wire						\$1,436.36
						Quantity	Unit Price	Factor	=	Total		
					Installation	2.00	x 506.16	x 1.3868	=	1,403.89		
					Demolition	2.00	x 11.71	x 1.3868	=	32.48		
					walk through gates							
88	32	31	13	13 0295	EA	12' Wide x 5' High Double Gate Galvanized Steel Without Barbed Wire						\$2,516.96
						Quantity	Unit Price	Factor	=	Total		
					Installation	1.00	x 1,787.86	x 1.3868	=	2,479.40		
					Demolition	1.00	x 27.08	x 1.3868	=	37.55		
					vehicle gate							
89	32	31	13	13 0296	EA	14' Wide x 5' High Double Gate Galvanized Steel Without Barbed Wire						\$2,925.22
						Quantity	Unit Price	Factor	=	Total		
					Installation	1.00	x 2,080.00	x 1.3868	=	2,884.54		
					Demolition	1.00	x 29.33	x 1.3868	=	40.67		
					7' double gate							
90	32	31	13	13 0635	EA	Gate Keeper, Full Length, Galvanized Steel						\$588.78
						Quantity	Unit Price	Factor	=	Total		
					Installation	2.00	x 212.28	x 1.3868	=	588.78		
					Gate keeper for gates							
91	32	31	13	13 0637	EA	Heavy Duty Gate Latch, Malleable Galvanized Steel						\$257.83
						Quantity	Unit Price	Factor	=	Total		
					Installation	4.00	x 46.48	x 1.3868	=	257.83		
					gate latches							
92	32	31	13	13 0638	EA	Gate Keeper, Full Length, Stainless Steel, Internal Locking Device With 3/4" Stainless Steel Rod For 3' To 5' High Gate						\$3,058.70
						Quantity	Unit Price	Factor	=	Total		
					Installation	2.00	x 1,102.79	x 1.3868	=	3,058.70		
					locking gate keeper for double gates							
93	32	31	13	33 0004	EA	48'-3-1/2" Wide x 24' High Baseball Backstop Prefabricated With Hood, Galvanized						\$29,582.18
						Quantity	Unit Price	Factor	=	Total		
					Installation	1.00	x 20,134.62	x 1.3868	=	27,922.69		
					Demolition	1.00	x 1,196.63	x 1.3868	=	1,659.49		
					new backstop fencing							
94	32	84	23	00 0036	EA	5" Pop-Up Height, 1" Inlet, Up To 80' Spacing, Gear-Drive, Rotary Sprinkler Head (Rain Bird® 8005)						\$29,406.64
						Quantity	Unit Price	Factor	=	Total		
					Installation	163.00	x 130.09	x 1.3868	=	29,406.64		
					Sprinkler system pop up Rainbird MP Rotors							

Work Order Number: 121119.00
Work Order Title: City of San Angelo- Youth Sports Complex Renovation

95	32	84	23	00	0036	0360		For Stainless Steel Riser, Add		\$2,034.44					
							Installation	Quantity 163.00	x	Unit Price 9.00	x	Factor 1.3868	=	Total 2,034.44	
96	32	84	23	00	0040		EA	3/4" Inlet, Up To 51' Spacing, Riser Mounted, Brass/Bronze Body, Impact-Drive Sprinkler Head (Rain Bird® 35A-ADJ-TNTB)							\$5,935.50
							Installation	Quantity 40.00	x	Unit Price 107.00	x	Factor 1.3868	=	Total 5,935.50	
								Rainbird Falcon rotors for Baseball field							
97	32	84	23	00	0098		EA	10" Round Irrigation Valve Box With Lid (Rain Bird® VB-10RND)							\$1,001.38
							Installation	Quantity 8.00	x	Unit Price 90.26	x	Factor 1.3868	=	Total 1,001.38	
								Valve Boxes							
98	32	84	23	00	0099		EA	21.8" x 16.6" x 12" Depth, Rectangular Irrigation Valve Box With Lid (Rain Bird® VB-STD)							\$1,555.55
							Installation	Quantity 7.00	x	Unit Price 160.24	x	Factor 1.3868	=	Total 1,555.55	
								Valve boxes							
99	32	84	23	00	0196		EA	50-Station, Modular Controller For Two-Wire Decoder Systems (Rain Bird® ESP-LXD Series)							\$3,800.89
							Installation	Quantity 1.00	x	Unit Price 2,740.76	x	Factor 1.3868	=	Total 3,800.89	
								Rain Bird decoder for irrigation system							
100	32	84	23	00	0344		EA	12 Station, Satellite Irrigation Controller With Stainless Steel Cabinet (Rain Bird® RBESP12SATLS)							\$6,223.29
							Installation	Quantity 1.00	x	Unit Price 4,487.52	x	Factor 1.3868	=	Total 6,223.29	
								Remote irrigation controler per specifications							
101	32	84	23	00	0364		EA	2" Anti-Siphon Pressure Type Vacuum Breaker							\$3,641.43
							Installation	Quantity 3.00	x	Unit Price 875.26	x	Factor 1.3868	=	Total 3,641.43	
								Rainbird 44NPCamlock Female Coupler 2" MPT 2" Full Port Poly Valve							
102	32	84	23	00	0370		EA	2" Manual Sprinkler Control Valves, With Union							\$2,437.19
							Installation	Quantity 7.00	x	Unit Price 251.06	x	Factor 1.3868	=	Total 2,437.19	
								Wired valves							
103	32	84	23	00	0379		LF	1" Schedule 40 Polyvinyl Chloride (PVC) Pipe With Fittings							\$12,620.99
							Installation	Quantity 2,370.00	x	Unit Price 3.84	x	Factor 1.3868	=	Total 12,620.99	
								irrigation pipe							
104	32	84	23	00	0381		LF	2" Schedule 40 Polyvinyl Chloride (PVC) Pipe With Fittings							\$12,493.68
							Installation	Quantity 1,260.00	x	Unit Price 7.15	x	Factor 1.3868	=	Total 12,493.68	
								irrigation pipe							
105	32	84	23	00	0427		CLF	13-Conductor, 18 AWG, Irrigation Control Wire, Buried In Trench							\$12,688.14
							Installation	Quantity 54.00	x	Unit Price 169.43	x	Factor 1.3868	=	Total 12,688.14	
								Irrigation system wire							
106	32	91	19	13	0011		SY	Furnish And Place Imported Screened Topsoil, 2" Deep							\$67,637.01
							Installation	Quantity 17,800.00	x	Unit Price 2.74	x	Factor 1.3868	=	Total 67,637.01	
								new topsoil for fields							

Work Order Number: 121119.00
Work Order Title: City of San Angelo- Youth Sports Complex Renovation

Contractor's Price Proposal - Detail Page 11 of 12
8/27/2024

Contractor's Price Proposal - Detail Continues..

Work Order Number: 121119.00
Work Order Title: City of San Angelo- Youth Sports Complex Renovation

Subtotal for Section - 33	\$142,463.24
Proposal Total	\$1,460,605.64

This total represents the correct total for the proposal. Any discrepancy between line totals, sub-totals and the proposal total is due to rounding.

The Percentage of NPP on this Proposal: 10.88%



Subcontractor Listing

Date: August 27, 2024

Re: IQC Master Contract #: 660-21
Work Order #: 121119.00
Owner PO #:
Title: City of San Angelo- Youth Sports Complex Renovation
Contractor: Basic IDIQ Inc.
Proposal Value: \$1,460,605.64

Name of Contractor	Duties	Amount	%
No Subcontractors have been selected for this Work Order		\$0.00	0.00



SCOPE OF WORK
City of San Angelo
29th Street Practice Area Renovations
Gordian EZIQC
July 31, 2024

GENERAL:

This project provides for renovations to the existing Sports Practice area located the 29th St facility. Work includes select demolition of existing restrooms, fencing, earthwork, concrete, and bleachers, installation of a new prefabricated restroom, installation of new concrete walk ways, new fencing, new restroom facilities, new infield material, grading existing earthwork and irrigation. This project will be phased as required to accommodate the business and traffic of the facility.

1.0 SCOPE OF WORK:

In accordance with this scope of work all labor, materials, supervision, equipment, insurances, taxes, overhead, and all other things or services necessary to install components and systems to provide for the renovation of the affected areas as indicated herein.

1.1 29th Street Practice Area

1.1.1 Demolition:

Work includes but is not limited to the following:

- 1) Provide Project manager and Superintendent for entirety of the project.
- 2) Provide dumpsters for construction debris.
- 3) Provide and install construction entrance per plans C-005 and C-006.
- 4) Provide and install silt fence and erosion control per plans C-005 and C-006.
- 5) Remove existing fencing per, plans A1.1 note A, new fence to be installed.
- 6) Remove existing dug outs, per plans A1.1 note B, new dug outs to be constructed.
- 7) Remove existing parking area, approx. 23'x64', per plans A1.1 note F, new ADA parking to be constructed.
- 8) Remove existing restroom and storage structure, per plans A1.2 note A.
- 9) Remove existing concrete flatwork, per plans A1.2 note C.
- 10) Remove existing light poles and foundations, per plans A1.2 note D.
- 11) Remove existing earthwork (hill), to proper grade according to elevations provided by Architect, per plans A1.2 note F.
- 12) All salvageable base material will be stockpiled in a location provided by COSA and noted on plans A1.2 note F.

1.1.2 Concrete:

Work includes but is not limited to the following:

- 1) Grade and prepare areas for new concrete sidewalks, per plan A1.1 note G.
- 2) Grade and prepare area for new ADA Parking approx. 23'x64', per plan A1.1 note F, detail B.
- 3) Set forms and rebar as necessary for concrete,
- 4) Pour concrete sidewalks and parking lot.
- 5) Remove forms and clean area.

1.1.3 Plumbing:

Work includes but is not limited to the following:

- 1) Install new Rough in plumbing for Prefabricated restroom building, including septic and city water supply.
- 2) Install new Septic system per plans C-009 and C-0010.
- 3) Tie in plumbing for new Restroom building after building is set.
- 4) Prefab restroom will be delivered with toilets, urinals, and sinks installed.

1.1.4 Electrical:

Work includes but is not limited to the following:

- 1) Install new Rough in Electrical for Prefabricated restroom building, City will coordinate with Service provider.
- 2) Tie in electrical for new Restroom building after building is set.
- 3) Prefab restroom will be delivered with all interior fixtures installed.

1.1.5 Pre-Fabricated Restroom Building:

Work includes but is not limited to the following:

- 1) Grade location for Restroom building.
- 2) Provide rough in plumbing for Building.
- 3) Provide rough in Electrical for Building.
- 4) Coordinate delivery and offloading of building with vendor.
- 5) Tie in Plumbing and electrical for building.

1.1.6 Irrigation:

Work includes but is not limited to the following:

- 1) Provide drawings from certified irrigation contractor
- 2) Install irrigation system designed for COSA requirements.
- 3) Provide irrigation system for new baseball field.
- 4) Provide irrigation system loop for future expansion

1.1.7 General Construction:

Work includes but is not limited to the following:

- 1) Grade new baseball and soccer fields per drawings.
- 2) Install clay infield material per COSA specifications
- 3) All Grass or Sod to be installed by COSA.
- 4) Install new backstop and fencing around field per plans, A1.1 note A
- 5) Install new ada bleachers per plan A1.1 note C, existing canopy to remain.
- 6) Install new Dugouts per plans A1.1 note B.

2.0 DRAWINGS AND SPECIFICATIONS:

Drawings provided by City of San Angelo.

2.1 SPECIFICATIONS:

Work shall be performed per the requirements of the latest edition of the applicable local, state and federal codes and standards.

3.0 SUBMITTALS:

Subcontractor shall submit the indicated number of copies of each required submittal. Submittals shall be submitted and approved prior to incorporating that material or activity into the project. Submittals required by specification and/or drawings shall be made regardless of whether or not they are listed on this schedule.

3.1 SUBMITTAL TYPE AND DESCRIPTION OUTLINE:

Type	Description	Type	Description
A	Shop Drawings	F	Notification of Sample Availability
B	Manufacturer's Catalog Cuts/Data	G	Application Instructions
C	Certificate/Certification	H	Operations & Maintenance (O&M) Manuals
D	Performance Test Reports	I	Color Samples
E	Sample of Testing	J	Red Line Drawings

3.2 PROJECT SUBMITTAL REQUIREMENTS:

Required Submittal	Quantity	Due Date	Type
	1		I
	1		B

4.0 SPECIAL CONSIDERATIONS:

Special considerations are applicable to this project as outlined in the following:

- 4.1 BASIC IDIQ, Inc. will contact the client project manager for equipment outages as required. Basic will provide a minimum of two (1) working day notice for proper outage coordination.
- 4.2 Normal working hours for this project is 7:30am to 6:30pm. Working outside of standard hours or on weekends and holidays will be coordinated and approved by the owner/client. Proposed numbers do include some premium time hours.
- 4.3 All work performed shall be in accordance with the applicable requirements of the latest edition of the Occupational Safety and Health Act (OSHA), Basic IDIQ Safety Manual and Client procedures as applicable.
- 4.4 Work areas will be maintained in a clean and orderly manner with materials, tools, and equipment properly stored and utilized to prevent hazards for worker and incidental personnel in the area. Provide barricades, signs, and other devices as necessary to ensure facility occupants are notified and shielded from dangers that work areas may pose
- 4.8 Work activities and installations are subject to in process inspections and completion inspections by the Client personnel. No “hold points” are imposed on this project; however, items/materials installed which are not accessible after installation may be subject to rework if verification of acceptable installation is not possible
- 4.9 Owner property will be properly protected from damage by construction activities.
- 4.1.2 Please note that this proposal is good for **30 days** unless extension is agreed by Basic IDIQ.

5.0 Exclusions:

All exclusions are applicable to this project as outlined in the following:

- 1) Asbestos or Lead abatement
- 2) Any work outside of this scope
- 3) Electrical Service provider
- 4) Grass, Turf, or sod.
- 5) Hauling soils off site.

REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Jeremy Valgardson, Airport Director, Airport

Meeting Date: September 17, 2024

Item type: Consent Item

Caption:

Consider awarding RFB AP-02-24 Acquire/Replace Emergency Generator at the San Angelo Regional Airport to McDonald Municipal and Industrial – A Division of C.F. McDonald Electric, Inc. in the amount of \$546,469 and authorizing the City Manager to negotiate and execute all related documents (Jeremy Valgardson)

Staff Recommendation:

Approve

Summary/History:

The Airport Terminal building and Air Traffic Control Tower backup generator has failed several times and is beyond its useful life. The generator is 25 years old and due for replacement. We have had several power outages where the generator did not kick on, or the switch would not transfer the power load. We can no longer get replacement parts for the transfer switch due to its age.

This agreement is for McDonald Municipal to provide construction and electrical services to remove the old generator and switch and replace it with a new generator and switch. We received two sealed bids from McDonald Municipal and Imperial Electrical on August 15th. McDonald was the low bidder and had demonstrated to meet the design specs. Aviation has recommended we award McDonald Municipal the contract. The bid tab is attached.

This project will be funded with our FY-22 FAA AIP entitlement grant dollars (Grant 49). Congress announced the grant award on September 6th, and we should have the grant issued by September 17th.

Funding Source(s):

Financial Impact:

This project will be funded through FAA AIP Yearly Entitlement Grant 49. Congress announced the funding approval on September 6th. We should have the grant fully executed by September 17th. This will be a 90/10 split with PFC's covering the local 10% match.

Announced AIP Grant 49 Amount: \$1,000,000

FAA's Share (90%):	\$1,000,000
City's Match PFC's (10%):	\$111,111
TOTAL FUNDING:	<u>\$1,111,111</u>

Design and Engineering fees: -\$84,994.14
REMAINING FUNDING: \$1,026,116.86

Project Totals:

FAA's Share (90%): \$491,822
City's Share (PFC's)(10%) \$54,647
TOTAL: \$546,469

Other Information/Recommendation:

Attachments:

1. AP-02-24 Bid Tabulation AP-02-24 Bid Tabulation.pdf

Presentation:

Jeremy Valgardson

Approvals/Reviews:

Jeremy Valgardson	Created/Initiated
Brandon Dyson	Approved
Theresa James	Approved
Jeffrey Tomlinson	Approved
Tina Dierschke	Approved
Heather Stastny	Final Approval



RFB Bid Tabulation

AP-02-24 • Acquire/Replace Emergency Generator

Thursday, August 15, 2024 2:00 p.m.

**McDonald Municipal
and Industrial - A
Division of C.F.
McDonald Electric, Inc.**

**Imperial Electrical
Contracting, LLC**

TOTAL BID

\$ 546,469.00

\$ 570,293.00

REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Jeremy Valgardson, Airport Director, Airport

Meeting Date: September 17, 2024

Item type: Consent Item

Caption:

Consider approving Amendment #7 to the Master Airport Agreement with Jviation, A Woolpert Company LLC. For engineering services to acquire and replace the Airport Terminal Emergency Generator in the amount of \$84,994.14 and authorizing the City Manager to negotiate and execute all related documents (Jeremy Valgardson)

Staff Recommendation:

Approve

Summary/History:

The Airport Terminal building and Air Traffic Control Tower backup generator has failed several times and is beyond its useful life. The generator is 25 years old and due for replacement. We have had several power outages where the generator did not kick on, or the switch would not transfer the power load. We can no longer get replacement parts for the transfer switch due to its age.

This agreement is for the design, construction management, and engineering fees for Jviation to acquire and replace the old emergency generator and switch with new equipment.

This project will be funded with our FY-22 FAA AIP entitlement grant dollars (Grant 49). Congress announced the grant award on September 6th, and we should have the grant issued by September 17th.

Funding Source(s):

Financial Impact:

This project will be funded through FAA AIP Yearly Entitlement Grant 49. Congress announced the funding approval on September 6th. We should have the grant fully executed by September 17th. This will be a 90/10 split with PFC's covering the local 10% match.

Announced AIP Grant 49 Amount: \$1,000,000

FAA's Share (90%): \$1,000,000

City's Match PFC's (10%): \$111,111

TOTAL FUNDING: \$1,111,111

Project Totals:

FAA's Share (90%):	\$76,494
Citys Share (PFC's)(10%)	\$8,500.14
TOTAL:	\$84,994.14

Other Information/Recommendation:

Attachments:

- | | | |
|----|-----------------------------|---------------------------------|
| 1. | SJT AIP 049 Amendment No. 7 | SJT AIP 049 Amendment No. 7.pdf |
|----|-----------------------------|---------------------------------|

Presentation:

Jeremy Valgardson

Approvals/Reviews:

Jeremy Valgardson	Created/Initiated
Brandon Dyson	Approved
Theresa James	Approved
Jeffrey Tomlinson	Approved
Tina Dierschke	Approved
Theresa James	Approved
Heather Stastny	Final Approval

AMENDMENT NO. SEVEN (7) TO CONTRACT
DATED APRIL 19, 2021
BETWEEN
JVIATION, A WOOLPERT COMPANY, LLC
AND
SAN ANGELO REGIONAL AIRPORT
SAN ANGELO, TEXAS

The Sponsor and Jviation agree to amend their contract for improvements to the San Angelo Regional Airport, San Angelo, Texas to include fees for engineering services. The improvement item is included in the Scope of Work of the original contract. The item covered by this amendment is described as follows:

- Acquire/Replace Emergency Generator

The Sponsor agrees to pay Jviation for the services listed under Section 2 of the original contract in the following manner, and within the time constraints outlined in the AIP development schedule.

PART A - BASIC SERVICES

DESIGN

Preliminary Design Lump sum of \$12,015.00
Design Lump sum of \$25,774.00

BIDDING

Bidding..... Lump sum of \$11,484.00

TOTAL BASIC SERVICES Lump sum of \$49,273.00

PART B - SPECIAL SERVICES

The maximum estimated SPECIAL SERVICES engineering is as follows:

CONSTRUCTION ADMINISTRATION

Construction AdministrationLump sum of \$6,864.00
Post Construction Lump sum of \$14,654.00

TOTAL CONSTRUCTION ADMINISTRATION Lump sum of \$21,518.00

CONSTRUCTION COORDINATION AND FIXED FEE

Construction CoordinationCost Plus of \$9,733.14
Fixed Fee for Construction Coordination Lump Sum of \$2,000.00

REIMBURSABLE COSTS

Reimbursable Costs During Construction Coordination Actuals Not to Exceed of \$2,470.00

TOTAL CONSTRUCTION COORDINATION AND FIXED FEE.....	\$14,203.14
TOTAL SPECIAL SERVICES.....	\$35,721.14
TOTAL.....	\$84,994.14

Method of payment shall be as follows:

If work is abandoned, or terminated, after obtaining approval by the Sponsor and the FAA of the final construction plans and specifications, the Sponsor shall reimburse up to 100 percent of the total lump sum as listed under PART A, and 100 percent of the invoiced costs for soils and pavement investigations, topographic surveys, and hydrological studies, or other studies as listed under PART B.

The actual amounts to be invoiced for mileage, per diem, and lodging will be in accordance with the applicable, published IRS and GSA rates at the time of service and may vary from the rates used in the fee estimate.

The FAA's federal action is limited to airport layout plan (ALP) approval of only those portions of projects that meet the criteria established in 49 U.S.C. §47107(a)(16)(B), commonly referred to as Section 163(d) of the FAA Reauthorization Act of 2018. If it is determined that the FAA does not have authority over a portion of the project and associated work completed ahead of the determination is no longer FAA eligible, the Sponsor will remain responsible for this portion of the work.

Signature Page Follows

All other terms and conditions of the original contract shall remain in effect.

IN WITNESS WHEREOF, the parties hereto have affixed their signatures this _____ day of _____ 2024.

CITY OF SAN ANGELO, TEXAS:

By: _____

Daniel Valenzuela, City Manager

ATTEST:

By: _____

Heather Stastny, City Clerk

CITY OFFICIAL APPROVALS:

APPROVED AS TO PURCHASING:

Jeffrey Tomlinson, Purchasing Manager

APPROVED AS TO CONTENT:

Director of Airport: Jeremy Valgardson

APPROVED AS TO RISK:

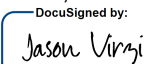
Shandi McWright, Interim- Risk Manager

APPROVED AS TO FORM

Brandon Dyson, Deputy City Attorney

ENGINEER APPROVAL:

Jviation, A Woolpert Company, LLC

DocuSigned by:


Jason Virzi, PE, Vice President

SCOPE OF WORK FOR SAN ANGELO REGIONAL AIRPORT/MATHIS FIELD San Angelo, Texas AIP Project No. 3-48-0191-0XX-2024 Acquire/Replace Emergency Generator

This is an Appendix attached to, made a part of and incorporated by reference with the Professional Services Agreement dated April 19, 2021, between San Angelo Regional Airport and Jviation, a Woolpert Company, for providing professional services. For the remainder of this scope the San Angelo Regional Airport is indicated as "Sponsor" and Jviation, a Woolpert Company, is indicated as "Engineer." The construction budget for this project is approximately \$850,000.00. This construction budget does not include administrative, legal, or professional fees.

This project shall consist of preparing Construction Plans, Contract Documents, Technical Specifications, and Engineer's Design Report, along with Bidding, Construction Administration, Post-Construction Coordination, and On-Site Construction Coordination for the Acquire/Replace Emergency Generator Project. This scope of work is for the consulting services provided by the Engineer for the Sponsor. See Exhibit No. 1 below for the project location.

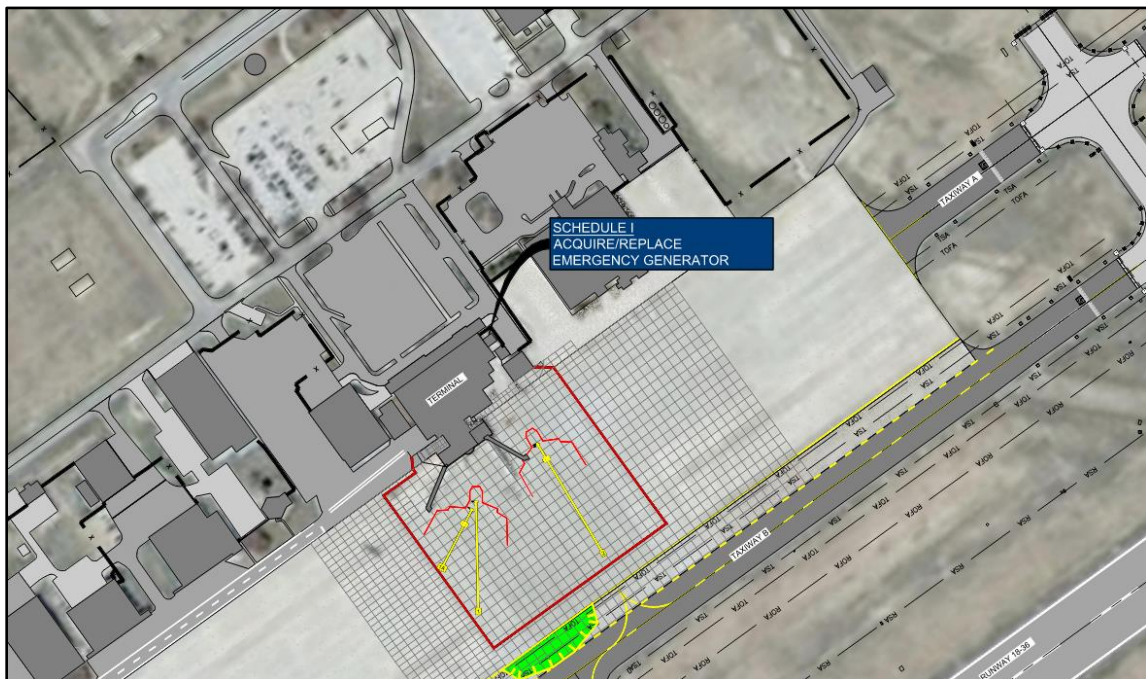


EXHIBIT NO. 1

DESCRIPTION

This project includes the acquisition and installation of an emergency generator (400 kW) to support the airport in the event of unplanned airport power outages. A reliable emergency generator is critical infrastructure for ensuring the safety and operational continuity of an airport in the event of power outages or other emergencies. The new generator will replace the existing generator (400 kW) that is unreliable, is no longer able to fulfill its intended purpose effectively and has reached the end of its useful

life. The existing generator, located west of the SJT ATCT, will be removed and the new generator will be installed in the same location.

A fixed generator is eligible to support AIP eligible airside infrastructure and terminal use for the specific purpose of meeting life safety code requirements for building evacuation of the public use areas. The generator must be a fixed generator, not mobile. The replacement generator will meet FAA policy requirements and is essential to safeguarding the safety, security, and operational integrity of the airport, and to fulfilling SJT obligations to users, passengers and personnel.

The engineering fees for this project will be broken into two parts. **Part A-Basic Services** includes; 1) Preliminary Design Phase, 2) Design Phase, 3) Bidding Phase, and Reimbursable Costs During Design and Bidding and **Part B-Special Services**, which includes; 4) Construction Administration Phase, 5) Post-Construction Coordination Phase, 6) On-Site Construction Coordination Phase or Field Engineering, and Reimbursable Costs During Construction. Parts A and B and the six phases are described in more detail below.

PART A - BASIC SERVICES consists of the Preliminary Design Phase, Design Phase, and Bidding Phase, all invoiced on a lump sum basis.

1.0 Preliminary Design Phase

1.01 Coordinate and Attend Meetings with the Sponsor and FAA. Meetings with the Sponsor and the FAA will take place to determine critical project dates, establish the proposed design schedule and AIP development schedule, review environmental component(s), and determine the feasibility of the proposed project. Various meetings during the design phase will also be conducted to review the progress of the design, discuss construction details and proposed time frame of construction, and identify any special requirements for the project.

1.02 Prepare Project Scope of Work and Contract. This task includes establishing the scope of work through meetings outlined above. Fees will be negotiated with the Sponsor and may be subject to an independent fee estimate conducted by a third party hired by the Sponsor. This task also includes drafting the contract for the work to be completed by the Engineer for the Sponsor once negotiations are complete.

1.03 Prepare Preliminary Cost Estimating. This task includes creating a preliminary construction rough order of magnitude (ROM) cost estimate, a preliminary working days estimate, a preliminary overall project schedule, and a preliminary overall project budget. The preliminary construction ROM cost estimate will be based upon the most current information available at the time of preparation. Work to refine these estimates is included under Task 2.10.

1.04 Provide Project Coordination. The Engineer shall provide project management and coordination services to ensure the completion of the design. These duties include:

- ➔ Time the Engineer spends planning, organizing, securing, and scheduling resources, and providing instruction to staff to meet project objectives as defined in the approved scope of work.
- ➔ The Engineer will analyze the budget semi-monthly to ensure budget and staffing needs are on track to meet design schedules within budget.

- ➔ Additional items to be accomplished include compiling and sending additional information requested from the office to related parties, maintaining project files as necessary and other items necessary in day-to-day project coordination.
- ➔ The Engineer will prepare and submit monthly invoicing.

The Engineer will complete the following tasks:

- ➔ Provide the Sponsor with a monthly Project Status Report (PSR), in writing, reporting on Engineer's progress and any problems that may arise while performing the work. The PSR must include an update of the project schedule, as described in this section, when schedule changes are expected.
- ➔ Submit for acceptance and maintain, a design schedule detailing the scheduled performance of the work.
- ➔ Create and maintain a Quality Control Checklist (QCC) for the project. The QCC shall include personnel, project milestone checking and peer review procedures at each phase of the project.

1.05 Review Existing Documents. The Engineer will gather and review existing available documentation that may be relevant to the project, including, but not limited to, record drawings (as-builts), design reports, final reports, utility reports/maps and previous surveys. The Engineer may use relevant information from this review to coordinate the design for the project.

1.06 Prepare Federal Grant Application. This task consists of preparing the federal grant application. The application will be submitted during the initial portion of the project. Preparation of the application includes the following:

- ➔ Prepare Federal 424 form.
- ➔ Prepare Federal Form 5100 – II thru IV.
- ➔ Prepare project funding summary.
- ➔ Prepare program narrative, discussing the purpose and need of the work and the method of accomplishment.
- ➔ Project sketch (8.5" x 11").
- ➔ Include preliminary cost estimate.
- ➔ Include the existing Exhibit "A" Property Map.
- ➔ Include the Sponsor's certifications.
- ➔ Attach the current grant assurances.
- ➔ Include DOT Title VI assurances.
- ➔ Include certification for contract, grants, and cooperative agreements.
- ➔ Include Title VI pre-award checklist.
- ➔ Include current FAA advisory circulars required for use in AIP funded projects.

The Engineer shall submit the grant application to the Sponsor for approval and signatures. After obtaining the necessary signatures, the Sponsor or Engineer shall forward a copy of the signed application to the FAA for further processing.

1.07 Prepare Environmental Documentation. The FAA has determined that a simple written Categorical Exclusion (CATEX) applies to the project according to FAA orders 1050.1F and 5050.4B. The Engineer shall prepare a simple written CATEX for the project. An overall environmental exhibit, if applicable, will be created as part of this scope of work, approved by the FAA, and referenced throughout the project.

1.08 Prepare Quarterly Performance Reports – Design. Federal Regulation 49 CFR Part 18 establishes uniform administrative requirements for grants to State and Local Governments. Sub-part 18.40 addresses monitoring and reporting requirements for the Sponsor. The Engineer will assist the Sponsor in managing grant activities to ensure compliance with applicable Federal requirements. The Engineer will submit a quarterly performance report while the grant is active. It is estimated there will be two quarterly performance reports completed during the design phase of this project.

TASK 1 DELIVERABLES	TO FAA	TO SPONSOR
1.01 Meeting Agendas, AIP Development Schedule and Meeting Minutes from Pre-Design Meeting	✓	✓
1.02 Scope of Work and Draft Contract for the Sponsor	✓	✓
1.03 Preliminary Cost Estimate	✓	✓
1.04 Design Schedule, PSR, and Monthly Invoicing		✓
1.06 Federal Grant Application	✓	✓
1.07 Environmental Documentation	✓	✓
1.08 Quarterly Performance Reports	✓	✓

TASK 1 MEETINGS/SITE VISITS	LOCATION/ATTENDEES/DURATION
1.01 Pre-Design Meeting	San Angelo, TX One (1) Project Director, one (1) Project Manager and one (1) Senior Consultant Assume One (1) hour via teleconference (1 meeting)
1.02 Prepare Project Scope of Work and Contract	San Angelo, TX One (1) Project Director and one (1) Project Manager Assume One (1) hour via teleconference (1 meeting)

2.0 Design Phase

2.01 Prepare Existing Utility Inventory. This task includes reviewing record drawings and consulting with the Sponsor and local utility companies to identify all utilities within the project site. The Construction Plans will include, to the maximum extent possible, the surveyed locations of observable utility features and the locations identified by utility locates.

2.02 Prepare Preliminary Contract Documents. This task includes preparing the Preliminary Contract Documents, including Contract Proposal, Bid Bond, Contractor Information Sheet, Subcontractor/Material Supplier List, Certification of Non-Segregated Facilities, Equal Employment Opportunity Report Statement, Buy America Certification, Buy America Waiver Request, Buy America Conformance Listing, Bid Proposal, Contract, Payment Bond, Performance Bond, Notice of Award, Notice to Proceed, Notice of Contractor's Settlement, General Provisions, FAA AC 150/5370-2 (Current Edition), *Operational Safety on Airports During Construction*, and Wage Rates. The wage rates will be updated at the time of advertisement to reflect the most current wage rates available. Preparation will include establishing the location for the bid opening, dates for advertisement and description of the work schedule. Also included in the Preliminary Contract Documents, and covered under separate tasks below, are the Construction Safety and Phasing Plan, Technical Specifications, and Special Provisions. Preliminary Contract Documents will be prepared as early as possible during the design phase and submitted to the Sponsor for review.

2.03 Prepare Construction Safety and Phasing Plan (CSPP). This task includes meeting with the Sponsor to discuss the current operations of the airport to assist in determining how the proposed construction phasing of the project will affect these operations. From this meeting, a complete Construction Safety and

Phasing Plan (CSPP) will be developed to ensure safety compliance when coordinating construction activities and airport operations. The CSPP will be developed in accordance with the requirements of FAA AC 150/5370-2 (Current Edition), *Operational Safety on Airports During Construction*. A construction phasing plan that meets the requirements of the AC and operational needs of the airport will be developed and included in the Contract Documents. This plan will also identify any nighttime work, continuous working times, or other unusual conditions that could affect the Contractor's normal progress on the project. The draft CSPP will be submitted at 95% complete for ADO review. Upon preliminary approval from the ADO, the CSPP will be submitted to FAA for OE/AAA coordination.

2.04 Prepare Preliminary Construction Plans. This task includes preparing the following list of construction plans for the project. Additional plans may be added during the design phase as needed:

Plan Name/Description	Number of Sheets
Cover Sheet	1
Index of Drawings, Summary of Approximate Quantities and General Notes	2
Safety Plan	1
Construction Layout and Phasing Plan	1
Environmental Requirements and Details	1
Electrical/Generator Details	1
Total Sheet Count	7

2.05 Prepare Preliminary Technical Specifications. This task includes assembling the technical specifications necessary for the project. Standard FAA specifications will be utilized where possible, with the guidance from FAA AC 150/5370-10 (Current Edition), *Standard Specifications for Construction of Airports*. Additional specifications will be prepared to address work items for materials that are not covered by the standard FAA specifications. The standard specifications to be utilized shall include, but are not limited to, the following:

- ➔ Item C-100 Contractor Quality Control Program (CQCP)
- ➔ Item C-105 Mobilization
- ➔ Item P-610 Concrete for Miscellaneous Structures
- ➔ Item L-109 Airport Transformer Vault and Vault Equipment
- ➔ Item L-125 Installation of Airport Lighting Systems

2.06 Prepare Preliminary Special Provisions. This task includes preparing the preliminary Special Provisions to address, or expound on, site conditions that require additional clarification. These include, but are not limited to: Haul Roads, Airport Security, Radio Communications, Work Schedule, Contractor's Quality Control Program, Sequencing of the Work, Closure of Air Operations Areas, Accident Prevention, Underground Cables/Utilities, Insurance, Indemnification, Sales and Use Taxes, Permits and Compliance with Laws, Executed Contracts, Subletting or Assigning of Contracts, Qualification of Disadvantaged Business Enterprises, Liquidated Damages, and Instruction Manuals.

2.07 Compile/Submit Permits. This task includes identifying potential federal, state and local permits needed for the project. Permits are anticipated to be required for, but are not limited to, demolition activities, hauling, and stormwater management construction plans and associated permits (SWMP). When applicable, the Engineer will assist the Sponsor to compile information and submit permits that are required to be obtained by the Sponsor.

2.08 Compile/Submit FAA Form 7460. This task includes preparing and submitting the required FAA Form 7460-1, "Notice of Proposed Construction or Alteration," via the FAA's online Obstruction

Evaluation/Airport Airspace Analysis (OE/AAA) system on the Sponsor's behalf. The Engineer will reference FAA Advisory Circular (AC) 150/5300-20 (Current Edition), *Submission of On-Airport Proposals for Aeronautical Study*, and coordinate with the FAA Project Manager and/or Airspace Specialist to determine the locations of required airspace case studies to be submitted. Generally, such cases are required for any restrictive/critical points where construction operations or proposed alterations may affect navigable airspace. Typically, these locations include (but are not limited to): limits of construction, construction phasing limits, haul routes for construction traffic, and key points of any permanent, above-ground alterations. The Engineer will prepare an exhibit depicting the locations and other information pertinent to the cases' impact on the airspace to include with the submission. The Engineer will submit FAA Form 7460-1 and the associated documentation to the FAA via the OE/AAA system for approval a minimum of 45 days prior to the start of construction.

2.09 Calculate Estimated Quantities. This task includes calculating all necessary quantities for the various work items. Quantities must be consistent with the specifications and acceptable quantity calculation practices.

2.10 Prepare Estimate of Probable Construction Cost. Using the final quantities calculated following the completion of the construction plans and specifications, the Engineer will prepare the construction cost estimate. The estimate will be based on information obtained from previous projects, contractors, material suppliers and other available databases.

2.11 Prepare Engineer's Design Report. This task includes preparation of the Engineer's Design Report in accordance with current FAA Engineer's Design Report guidelines. The Engineer's Design Report will include a detailed summary of the project, photographs and descriptions of existing site conditions, estimate of project costs, and a schedule for the completion of the design, bidding, and construction. The Engineer's Design Report will also contain any alternative design concepts that were investigated and evaluated.

2.12 Review Plans at 90% Complete. At the 90% completion stage of the design, the Engineer will submit a set of Construction Plans, Specifications, and Contract Documents to the Sponsor for their review. A plans-in-hand meeting will be scheduled to discuss any comments from the review of the 90% documents. The project will be reviewed with the FAA to obtain their concurrence with the design.

2.13 Provide In-House Quality Control. The Engineer has an established quality control program that will provide both experienced and thorough reviews of all project submittals and will also provide engineering guidance to the design team throughout design development from an experienced, senior-level Professional Engineer.

Prior to each review set of Construction Plans, Specifications, Contract Documents, and Engineer's Design Report being submitted to the Sponsor and FAA, a thorough, in-house quality control review of the documents will be conducted. This process will include an independent review of the Construction Plans, Specifications, Contract Documents, and Engineer's Design Report being submitted by a licensed Professional Engineer other than the Engineer who performed the design of the project. Comments will be offered by the Engineer that performed the review, and revisions to the Construction Plans, Specifications, Contract Documents, and Engineer's Design Report will be made accordingly.

In addition to the 90% review, the Engineer's in-house quality control program also provides engineering guidance to the design team throughout the project design to steer the project in a manner that provides the best engineering judgment.

2.14 Prepare and Submit Construction Plans, Specifications, Contract Documents, and Engineer's Design Report. A final set of Construction Plans (11" x 17"), Specifications, Contract Documents, and the Engineer's Design Report will be prepared and submitted to the Sponsor, and the FAA. These documents will incorporate all revisions, modifications, and corrections identified during the final review. Paper and electronic copies will be provided.

2.15 Prepare Requests for Reimbursement. This task includes preparing the FAA Standard Form 271 for Sponsor reimbursement of eligible expenses incurred monthly. The Engineer will submit the completed form along with appropriate supporting documentation to the Sponsor for review and approval. Upon approval, the Engineer or the Sponsor will submit the completed forms and supporting documentation to the FAA for reimbursement. It is estimated there will be two RFRs for expenses incurred during the design and bidding phase of this project.

TASK 2 DELIVERABLES	TO FAA	TO SPONSOR
2.02 Preliminary Contract Documents for Sponsor's Review		✓
2.03 CSPP at 95% Complete	✓	✓
2.07 FAA Form 7460	✓	✓
2.12 90 % Construction Plans, Specifications, Contract Documents, and Engineer's Design Report	✓	✓
2.14 Final Construction Plans, Specifications and Contract Documents, and Engineer's Design Report	✓	✓
2.15 Requests for Reimbursement	✓	✓

TASK 2 MEETINGS/SITE VISITS	LOCATION/ATTENDEES/DURATION
2.01 Prepare Existing Utility Inventory	- San Angelo, TX One (1) Project Manager Assume full day site visit (1 site visit) - Assume travel to/from Houston, TX to San Angelo, TX
2.12 Plan Review at 90% Complete	San Angelo, TX One (1) Project Director and one (1) Project Manager Assume One (1) hour via teleconference (1 meeting)

3.0 Bidding Phase

3.01 Provide Bid Assistance. The Engineer will assist the Sponsor, as needed, with the preparation of any required bidding documents. Included as part of this task, the Engineer will prepare a legal advertisement for publication in the San Angelo Times and Bonfire website as a solicitation for bids. Additionally, the Engineer will advertise the project Invitation for Bids on their website and directly notify potential contractors and plan rooms to maximize project exposure and generate interest in the project.

3.02 Prepare/Conduct Pre-Bid Meeting. The Engineer will conduct the pre-bid meeting and pre-bid site visit in sequence with the Sponsor and contract document requirements. As a part of this meeting, the Engineer will also discuss the environmental plan sheet, surveyed areas, and environmental commitments.

3.03 Prepare Addenda. Any necessary addenda will be issued to clarify and modify the project, as required, and based on questions or comments that may arise from potential contractors during the bidding process. Any necessary addenda will be reviewed with the Sponsor and FAA prior to being issued. The addenda will meet all design and construction standards, as required.

3.04 Consult with Prospective Bidders. During the bidding process, the Engineer shall be available to clarify bidding issues with contractors and suppliers and for consultation with the various entities associated with the project.

3.05 Attend Bid Opening. The Engineer shall virtually attend the bid opening for the project, which will be conducted by the Sponsor.

3.06 Review Bid Proposals. Upon the opening of submitted bid proposals by the Sponsor, the Engineer shall review all the bid proposals submitted. A cost analysis of the bid prices will be completed and tabulated; the contractor's qualifications to perform the work will be included, including review of suspension and debarment rules on the www.Sam.gov website, Buy American compliance analysis/review, and project funding review. Inclusion of bid guarantee, acknowledgement of addenda, and in-state licensure verification shall be completed.

3.07 Prepare Recommendation of Award. The Engineer shall prepare a Recommendation of Award for the Sponsor to accept or reject the bids received with a summary of the items listed in Task 3.06. If rejection is recommended, the Engineer will supply an explanation for their recommendation and possible alternative actions the Sponsor can pursue to complete the project.

TASK 3 DELIVERABLES	TO FAA	TO SPONSOR
3.01 Required Bidding Documents	✓	✓
3.02 Pre-Bid Meeting Agenda and Pre-Bid Meeting Minutes	✓	✓
3.03 Addenda	✓	✓
3.06 Bid Tabulations	✓	✓
3.07 Recommendation of Award	✓	✓

TASK 3 MEETINGS/SITE VISITS	LOCATION/ATTENDEES/DURATION
3.02 Prepare/Conduct Pre-Bid Meeting	- San Angelo, TX One (1) Electrical Engineering Project Manager Assume full day site visit (1 site visit) - Assume travel to/from Denver, CO to San Angelo, TX with one (1) overnight stay for Electrical Engineering Project Manager for each site visit
3.05 Attend Bid Opening	San Angelo, TX One (1) Project Director and one (1) Project Manager Assume one (1) hour via teleconference (1 meeting)

EX Reimbursable Costs During Design and Bidding. This section includes reimbursable items such as auto rental, lodging, per diem, and other miscellaneous expenses incurred to complete **Part A – Basic Services**.

PART B - SPECIAL SERVICES consists of the Construction Administration Phase and Post-Construction Coordination Phase (invoiced on a lump sum basis), and On-Site Construction Coordination Phase (invoiced on a cost plus fixed fee basis).

4.0 Construction Administration Phase

4.01 Prepare Construction Contract and Documents. In agreement with the FAA, the Engineer shall prepare the Notice of Award, Notice to Proceed, and Contract Agreements, including bonds and insurance

documents, which will be updated to include all addenda items issued during bidding, for the Sponsor's approval and signatures. Approximately five copies will be submitted to the successful Contractor for their signatures.

The Engineer will ensure the construction contracts are in order, the bonds have been completed, and the Contractor has been provided with adequate copies of the Construction Plans, Specifications, and Contract Documents, which will be updated to include all addenda items issued during bidding.

4.02 Provide Project Coordination. The Engineer shall provide project management and coordination services to ensure the completion of all construction management tasks required of the Engineer. These duties include:

- ➔ Time the Engineer spends planning, organizing, securing and scheduling resources, and providing instruction to staff to meet project objectives as defined in the approved scope of work.
- ➔ Additional items to be accomplished include compiling and sending additional information requested from the office to related parties, maintaining project files as necessary and other items necessary in day-to-day project coordination.
- ➔ The Project Manager will review progress reports weekly and monthly.
- ➔ Assist with change orders and supplemental agreements as necessary. All change orders and supplemental agreements will be coordinated with the Sponsor and FAA staff prior to execution. All change orders and supplemental agreements will be prepared in accordance with the FAA Standard Operating Procedure (SOP) 7.0, *Airport Improvement Program Construction Project Change Orders*.
- ➔ Clerical staff shall prepare the quantity sheets, testing sheets, construction report format, etc.
- ➔ Office engineering staff, CAD personnel and clerical staff shall be required to assist the Field Personnel as necessary during construction. Specific tasks to be accomplished include providing secondary engineering opinions on issues arising during construction, maintaining project files as necessary and various other tasks necessary in the day-to-day operations.
- ➔ The Engineer will prepare and submit monthly invoicing.

The Engineer will complete the following tasks:

- ➔ Provide the Sponsor with a monthly Project Status Report (PSR), in writing, reporting on Engineer's progress and any problems that may arise while performing the work. The PSR must include an update of the project schedule, as described in this section, when schedule changes are expected.

4.03 Review Environmental Documentation. This task includes the review of the overall environmental exhibit in relation to final construction documents as well as coordination throughout construction to ensure environmental commitments are maintained and environmental resources are protected.

4.04 Prepare/Conduct Pre-Construction Meeting. The Engineer will conduct a pre-construction meeting to review FAA requirements as required per FAA AC 150/5370-12 (Current Edition), *Quality Management for Federally Funded Airport Construction Projects*, prior to the commencement of construction. It is anticipated that representatives of the Engineer will include the Project Manager and Construction Manager. As a part of this meeting, the Engineer will also discuss the environmental plan sheet, surveyed areas, and environmental commitments. The meeting will be held at the airport and will include the Sponsor, FAA (if possible), Contractor, subcontractors, and airport tenants affected by the project.

4.05 Review Contractor's Safety Plan Compliance Document. This task includes reviewing and providing comments on the Contractor's Safety Plan Compliance Document (SPCD) as required per FAA AC 150/5370-2 (Current Edition), *Operational Safety on Airports During Construction*. The Engineer shall review to ensure that all applicable construction safety items are addressed and meet the requirements of AC 150/5370-2 (Current Edition) and the Contract's Construction Safety and Phasing Plan (CSPP). The intent of the SPCD is to detail how the Contractor will comply with the CSPP. Following award of the project to the successful Contractor and prior to the issuance of the Notice to Proceed, the Engineer will review the SPCD, provide comments and ultimately approval of the document. It is anticipated that the document will require at least one re-submittal by the Contractor to address any missing information. The SPCD will be submitted to the Engineer for approval at least 14 days prior to the issuance of the Notice to Proceed to the Contractor. An approved copy of the SPCD shall be provided to the FAA.

4.06 Prepare Requests for Reimbursement. This task includes preparing the FAA Standard Form 271 for Sponsor reimbursement of eligible expenses incurred monthly. The Engineer will submit the completed form along with appropriate supporting documentation to the Sponsor for review and approval. Upon approval, the Engineer or the Sponsor will submit the completed forms and supporting documentation to the FAA for reimbursement. It is estimated there will be two RFRs for expenses incurred during the construction and closeout phase of the project.

TASK 4 DELIVERABLES	TO FAA	TO SPONSOR
4.01 Notice of Award, Notice to Proceed, and Contract Agreement	✓	✓
4.01 Issue Construction Plans, Specifications, and Contract Documents	✓	✓
4.02 Monthly Invoice and Monthly PSR		✓
4.02 Pay Request Review Documentation		✓
4.02 Weekly/Monthly Reports	✓	✓
4.02 Change Orders/Supplemental Agreements	✓	✓
4.04 Pre-Construction Agenda and Meeting Minutes	✓	✓
4.05 Review and Approval of SPCD and Final SPCD	✓	✓
4.06 Request for Reimbursement	✓	✓

TASK 4 MEETINGS/SITE VISITS	LOCATION/ATTENDEES/DURATION
4.04 Conduct Pre-Construction Meeting	- San Angelo, TX - One (1) Project Manager and one (1) Construction Manager - Assume full day site visit (1 site visit) - Assume travel to/from Houston, TX to San Angelo

5.0 Post-Construction Coordination Phase

5.01 Prepare Clean-up Item List. The Engineer will ensure the Contractor has removed all construction equipment and construction debris from the airport, that all access points have been re-secured (fences repaired, gates closed and locked, keys returned, etc.), and the site is clean.

5.02 Conduct Final Inspection. The Engineer, along with the Sponsor and FAA (if available), shall conduct the final inspection. The quality assurance testing summary report must be accepted by the FAA prior to final inspection.

5.03 Prepare Engineering Record Drawings. The Engineer will prepare the record drawings indicating modifications made during construction. The record drawings will be provided to the FAA electronically.

5.04 Prepare Final Construction Report. The Engineer will prepare the final construction report to meet the applicable FAA closeout checklist requirements.

5.05 Summarize Project Costs. The Engineer will be required to obtain all administrative expenses, engineering fees and costs, testing costs, and construction costs associated with the project and assemble a total project summary. The summary will be analyzed with the associated project funding.

TASK 5 DELIVERABLES	TO FAA	TO SPONSOR
5.01 Clean-up List		✓
5.02 Punchlists	✓	✓
5.03 Record Drawings	✓	✓
5.04 Final Construction Report	✓	✓
5.05 Project Cost Summary	✓	✓

TASK 5 MEETINGS/SITE VISITS	LOCATION/ATTENDEES/DURATION
5.02 Conduct Final Inspection	- San Angelo, TX One (1) Electrical Engineering Project Manager and One (1) Project Manager Assume full day site visit (1 site visit) - Assume travel to/from Denver, CO to San Angelo, TX with one (1) overnight stay for Electrical Engineering Project Manager for each site visit

6.0 On-Site Construction Coordination Phase

This phase will consist of providing one full-time Resident Project Representative (RPR). It shall be the responsibility of the RPR to facilitate sufficient on-site construction coordination to ensure that the project is completed according to good construction practice and the Project Manager's direction. It is estimated that it will take **five (5) calendar days** to complete construction of the project. Incidental travel costs, including vehicle usage, lodging, per diem, etc., are in addition to the engineering hours expended.

6.01 Provide Resident Engineering. It is estimated that the RPR will work approximately **10 hours per day**. It is assumed that the RPR will be able to complete all daily project documentation during their shift. The total time allotted for the completion of construction is anticipated to be **five (5) calendar days**. It is assumed that the Contractor will work **five (5) days** per week during the construction period **resulting in five (5) working days**.

The following tasks will be performed during a typical day's shift during construction:

- Review construction submittals, including shop drawings and materials proposed for use on the project, submitted by the Contractor, for general conformance with the project's Plans and Technical Specifications. The RPR will prepare and maintain a submittal register to log the submittals received. The submittal register will include information on the submitted items including date received, date returned, and action taken, and will be made available to the Sponsor and Contractor upon request.
- Review survey data and other construction tasks for general compliance with the construction documents.

- c. Coordinate, review, and provide a response to construction and general project Requests for Information (RFIs).
- d. Prepare and process field directives and change orders.
- e. Conduct labor standards interviews of the Contractor's and subcontractor's employees, and review weekly payroll records as required by the FAA. As part of this effort, all payrolls must be reviewed and logged when received. A log identifying status of reviews, and any action taken to correct noted discrepancies, will be provided for Sponsor review at time of Request for Reimbursement processing, as appropriate.
- f. Maintain record of the progress of construction, record as-built conditions, and review the quantity records with the Contractor on a periodic basis.
- g. Prepare the periodic construction cost estimates and review the quantities with the Contractor. The RPR, Sponsor, and Contractor will resolve discrepancies or disagreements with the Contractor's records. After compiling all costs, the RPR will submit the construction cost estimate to the Sponsor for payment.
- h. Maintain daily logs of construction activities for the duration of time on site, including the Construction Project Daily Safety Inspection Checklist as required by the CSPP and SPCD.
- i. Verify that construction activities associated with restricted areas, roads, staging areas, stockpiles, borrow/waste areas, etc. are all remaining within the areas cleared under environmental documentation.
- j. Prepare a weekly status report using FAA Form 5370-1, *Construction Progress and Inspection Report*. The report will be submitted to the Sponsor, the FAA, and the office following the week of actual construction activities performed.
- k. Review payments to subcontractors and ensure timely payment of retainage to subcontractors when payment to the Contractor is made as required by the DBE Program.

TASK 6 DELIVERABLES	TO FAA	TO SPONSOR
6.01a Coordinate Submittal Reviews	✓	✓
6.01c Coordinate RFIs	✓	✓
6.01d Field Directives and Change Orders	✓	✓
6.01e Payroll Reviews	✓	✓
6.01g Periodic Cost Estimates	✓	✓
6.01j Weekly Reports	✓	✓

TASK 6 ON-SITE PERIODS	LOCATION/STAFFING/DURATION
6.01 Provide Resident Engineering	- San Angelo, TX - One (1) Resident Project Representative - Assume five (5) calendar days for a total of five (5) nights of lodging

EX Reimbursable Costs During Construction. This section includes reimbursable items such as auto rental, lodging, per diem, travel and other miscellaneous costs incurred to complete **Part B – Special Services**. Sections 4 and 5 Reimbursables are invoiced on a lump sum basis, and Section 6 Reimbursables are invoiced on a cost plus fixed fee basis.

Assumptions

The scope of services described previously, and the associated fees, are based on the following rates and assumed responsibilities of the Engineer and Sponsor.

1. For the purposes of estimating the amount of reimbursable expenses which will be incurred by the Engineer, the cost of per diem and lodging are calculated in accordance with current GSA rates. The actual amount to be invoiced for per diem will be in accordance with the published GSA rate at the time of service and may vary from the rate used in the fee estimate. Lodging will be invoiced as an actual expense incurred.
2. During periods of On-Site Construction Coordination covered under Task 6, a \$5/day surcharge will be added to the daily vehicle charge which will be reflected in the Engineering Fee as a daily "Field Vehicle and Equipment" expense. This surcharge is intended to cover consumables (such as marking paint, lath, etc.) and the replacement of tools (such as measuring wheels, airfield radios, infrared thermometers, etc.) necessary to monitor and identify the various aspects of the work.
3. It is anticipated there will be a minimum number of trips and site visits to the airport to facilitate the completion of the various phases listed in this scope. The number of trips, as well as the anticipated lengths and details of the trips, are included at the end of each phase above.
4. The Sponsor will provide existing mapping data including as-builts available for the project areas, aerial orthoimagery, subsurface conditions information such as prior geotechnical investigations in the project area and other available information in the possession of the Sponsor.
5. The Sponsor will coordinate with tenants as required to facilitate field evaluations and construction.
6. All engineering work will be performed using accepted engineering principles and practices and provide quality products that meet or exceed industry standards. Dimensional criteria will be in accordance with FAA AC 150/5300-13 (Current Edition), *Airport Design*, and related circulars. Construction specifications will be in accordance with FAA AC 150/5370-10 (Current Edition), *Standard Specifications for Construction of Airports*, and the Southwest Region's Regional Updates for Specifying Construction of Airports and related circulars. Project planning, design, and construction will further conform to all applicable standards, including all applicable current FAA Advisory Circulars and Orders required for use in AIP-funded projects and other national, state, or local regulations and standards, as identified and relevant to an airfield design and construction project.
7. The Engineer will utilize the following plan standards for the project:
 - ➔ Plans will be prepared using the Engineer's standards, unless the Sponsor provides its own standards upon Notice to Proceed.
 - ➔ Plan elevations will be vertical datum NAVD 88 derived from the existing control network.
 - ➔ Plan coordinates will be based on horizontal datum NAD 83/2011 State Plane Coordinates derived from the existing control network.
 - ➔ All plans will be stamped and signed by a state-licensed Professional Engineer, or Professional Land Surveyor, as required.
 - ➔ Plans prepared by subconsultants will be prepared using the same base maps, the same coordinate systems and the same plan layout and format as plans prepared by the Engineer.

- The guidance included in FAA Memorandum, *FAA Review of Construction Plans and Specifications for AIP Funded Projects*, will be reviewed, incorporated and will supplement the Engineer's standards.
8. The Engineer will utilize the following assumptions when preparing the project manual for bidding and construction of the project:
- The project manual Contract Documents will be developed jointly by the Sponsor and the Engineer.
 - The Engineer is responsible for developing the contents of the document and including the Front-End documents which will be supplied by the Sponsor.
 - FAA General Provisions and required contract language will be used.
9. The Engineer must maintain records of design analyses and calculations consistent with typical industry standards, as required by the FAA, for a period of three years after the project is closed by the FAA.
10. Because the Engineer has no control over the cost of construction-related labor, materials, or equipment, the Engineer's opinions of probable construction costs will be made on the basis of experience and qualifications as a practitioner of his/her profession. The Engineer does not guarantee that proposals for construction, construction bids, or actual project construction costs will not vary from Engineer's estimates of construction cost.
11. An AC 150/5300-18B (or Current Edition) compliant survey is not required as a part of this project. No data will be submitted to Airports GIS (AGIS) through the Airport Data and Information Portal (ADIP).

Additional Services

The following items are not included under this agreement but will be considered as extra work:

- Redesign for the Sponsor's convenience or due to changed conditions after previous alternate direction and/or approval.
- Submittals or deliverables in addition to those listed herein.
- If a project audit occurs, the Engineer is prepared to assist the Sponsor in gathering and preparing the required materials for the audit.
- Serving as an expert witness for the Owner in any litigation, surety claim, contractor bond activation, or other proceeding involving the project.
- Additional or extended services during construction made necessary by extension of contract time, non-concurrent work, or changes in the work.
- Legal, surety, or insurance support, coordination, and representation.

Extra Work will be as directed by the Sponsor in writing for an additional fee as agreed upon by the Sponsor and the Engineer.



EXP BREAKDOWN			
Labor Category	Total Hours	Billing Rate	Total Cost
1.0 Preliminary Design Phase (Lump Sum)			
Practice Operations Leader	1 hrs. x \$ 330.00 /hr = \$		330.00
Practice Ldr I	11 hrs. x \$ 320.00 /hr = \$		3,520.00
Engineering Project Mgr III	16 hrs. x \$ 250.00 /hr = \$		4,000.00
Engineering Techn III	0 hrs. x \$ 160.00 /hr = \$		
Engineering Techn II	4 hrs. x \$ 145.00 /hr = \$		580.00
Project Coordinator II	3 hrs. x \$ 145.00 /hr = \$		435.00
Planner III	2 hrs. x \$ 265.00 /hr = \$		530.00
Consultant I	3 hrs. x \$ 290.00 /hr = \$		870.00
Quality Control Manager	21 hrs. x \$ 275.00 /hr = \$		5,775.00
Engineering Project Mgr IV	5 hrs. x \$ 295.00 /hr = \$		1,475.00
SUBTOTAL	46 hrs.	SUBTOTAL \$	12,015.00
Reimbursables			
Auto Rental	0 Day x \$ 130.00 /Day=		
Lodging + Tax & Fees	0 Day x \$ 50.00 /Day=		
Per Diem	0 Day x \$ 59.00 /Day=		
Travel & Airline Costs	0 Trip x \$ 500.00 /Trip=		
	SUBTOTAL	\$	-
PHASE SUBTOTAL			\$ 12,015.00

LABOR HOUR BREAKDOWN		LABOR CATEGORY									
TASK	Practice Operations Leader	Practice Ldr I	Engineer Project Mgr III	Engineering Techn III	Engineering Techn II	Project Coordinator II	Planner III	Consultant I	Quality Control Manager	Engineer Project Mgr IV	Phase Item Costs
1.0 Preliminary Design Phase (Lump Sum)	Jason	Kirk	Tom	Lynn	Sherilyn	Katrina	Morgan	Brad	Chris	Zach	
1.01 Coordinate and Attend Meetings with the Sponsor and FAA		2	2					2			\$ 1,720.00
1.02 Prepare Project Scope of Work and Contract	1	2	4						1		\$ 2,345.00
1.03 Prepare Preliminary Cost Estimating		1	1							1	\$ 865.00
1.04 Provide Project Coordination		4	4			1				2	\$ 3,025.00
1.05 Review Existing Documents			2							2	\$ 1,090.00
1.06 Prepare Federal Grant Application					4	2		1			\$ 1,430.00
1.07 Prepare Environmental Documentation							2				\$ 590.00
1.08 Prepare Quarterly Performance Reports - Design		2	2								\$ 1,140.00

Labor Category	Total Hours	Billing Rate	Total Cost
2.0 Design Phase (Lump Sum)			
Practice Ldr I	5 hrs. x \$	320.00 /hr = \$	1,600.00
Engineer Project Mgr III	45 hrs. x \$	250.00 /hr = \$	11,250.00
Engineering Techn III	20 hrs. x \$	160.00 /hr = \$	3,200.00
Engineering Techn II	20 hrs. x \$	145.00 /hr = \$	2,900.00
Project Coordinator II	2 hrs. x \$	145.00 /hr = \$	290.00
Quality Control Manager	4 hrs. x \$	275.00 /hr = \$	1,100.00
Project Accountant I	2 hrs. x \$	115.00 /hr = \$	230.00
Engineer Project Mgr IV	17 hrs. x \$	295.00 /hr = \$	5,015.00
SUBTOTAL		115 hrs.	SUBTOTAL \$ 25,585.00
Reimbursables			
Auto Rental	1 Day x \$	130.00 /Day= \$	130.00
Lodging + Tax & Fees	0 Day x \$	130.00 /Day= \$	
Per Diem	1 Day x \$	59.00 /Day= \$	59.00
Travel & Airline Costs	0 Trip x \$	500.00 /Trip= \$	
		SUBTOTAL	189.00
PHASE SUBTOTAL		\$	25,774.00

TASK		LABOR CATEGORY										Phase Item Costs
		Practice Ldr I	Engineer Project Mgr III	Engineering Techn III	Engineering Techn II	Project Coordinator II	Quality Control Manager	Project Accountant I	Engineer Project Mgr IV			
2.0	Design Phase (Lump Sum)	Kirk	Tom	Lynn	Sherilyn	Katrina	Chris	Mary Pat	Zach			
2.01	Prepare Existing Utility Inventory		8	2					2			\$ 2,910.00
2.02	Prepare Preliminary Contract Documents	1	4		7							\$ 2,335.00
2.03	Prepare Construction Safety and Phasing Plan (CSPP)	0.5	4			1						\$ 1,305.00
2.04	Prepare Preliminary Construction Plans											
	Cover Sheet		0.5	2								\$ 445.00
	Index of Drawings/Summary of Approximate Quantities & General Notes		1	2								\$ 570.00
	Safety Plan		1	2								\$ 570.00
	Construction Layout and Phasing Plan		1	2								\$ 570.00
	Environmental Requirements and Details		0.5	2								\$ 445.00
	Electrical/Generator Details		1	4					6			\$ 2,660.00
2.05	Prepare Preliminary Technical Specifications		2		1				4			\$ 1,825.00
2.06	Prepare Preliminary Special Provisions		2					2				\$ 1,235.00
2.07	Compile/Submit Permits		2									\$ 500.00
2.08	Compile/Submit FAA Form 7460		1	2		1						\$ 715.00
2.09	Calculate Estimated Quantities		1					1				\$ 545.00
2.10	Prepare Estimate of Probable Construction Cost	0.5	2									\$ 660.00
2.11	Prepare Engineer's Design Report	1	10		1							\$ 2,965.00
2.12	Review Plans at 90% Complete	2							2			\$ 1,230.00
2.13	Provide In-House Quality Control						4					\$ 1,100.00
2.14	Prepare and Submit Const. Plans, Specs., Cont. Docs., and Design Report		2	2	2							\$ 1,110.00
2.15	Prepare Requests for Reimbursement				8			2				\$ 1,890.00
TOTALS		5	45	20	20	2	4	2	17	0	0	\$ 25,585.00

Labor Category	Total Hours	Billing Rate	Total Cost
3.0 Bidding Phase (Lump Sum)			
Practice Ldr I	1.5 hrs. x \$	320.00 /hr = \$	480.00
Engineer Project Mgr III	9.5 hrs. x \$	250.00 /hr = \$	2,375.00
Engineering Techn II	4 hrs. x \$	145.00 /hr = \$	580.00
Project Coordinator II	1 hrs. x \$	145.00 /hr = \$	145.00
Engineer Project Mgr IV	23 hrs. x \$	295.00 /hr = \$	6,785.00
SUBTOTAL	39 hrs.	SUBTOTAL \$	10,365.00
Reimbursables			
Auto Rental	1 Day x \$	130.00 /Day= \$	130.00
Lodging + Tax & Fees	1 Day x \$	130.00 /Day= \$	130.00
Per Diem	1 Day x \$	59.00 /Day= \$	59.00
Travel & Airline Costs	1 Trip x \$	800.00 /Trip= \$	800.00
		SUBTOTAL \$	1,119.00
		PHASE SUBTOTAL \$	11,484.00

[illegible]

[illegible]

Labor Category	Total Hours	Billing Rate	Total Cost
5.0 Post Construction Coordination Phase (Lump Sum)			
Practice Ldr I	1 hrs.	x \$ 320.00 /hr = \$	320.00
Engineer Project Mgr III	22 hrs.	x \$ 250.00 /hr = \$	5,500.00
Engineering Techn III	2 hrs.	x \$ 160.00 /hr = \$	320.00
Engineering Techn II	3 hrs.	x \$ 145.00 /hr = \$	435.00
Project Coordinator II	0 hrs.	x \$ 145.00 /hr = \$	
Construction Manager I	10 hrs.	x \$ 160.00 /hr = \$	1,600.00
Engineer Project Mgr IV	18 hrs.	x \$ 295.00 /hr = \$	5,310.00
SUBTOTAL	56 hrs.	SUBTOTAL \$	13,485.00
Reimbursables			
Auto Rental	1 Day	x \$ 130.00 /Days = \$	130.00
Lodging + Tax & Fees	1 Day	x \$ 130.00 /Days = \$	130.00
Per Diem	1 Day	x \$ 59.00 /Days = \$	59.00
Travel & Airline Costs	1 Trip	x \$ 850.00 /Trip= \$	850.00
		SUBTOTAL \$	1,169.00
		PHASE SUBTOTAL \$	14,654.00

TASK		LABOR CATEGORY									Phase Item Costs
		Practice Ldr I	Engineer Project Mgr III	Engineering Techn III	Engineering Techn II	Project Coordinator II	Construction Manager I	Engineer Project Mgr IV			
5.0	Post Construction Coordination Phase (Lump Sum)	Kirk	Tom	Lynn	Sherilyn	Katrina		Zach			
5.01	Prepare Clean-up Item List		2								\$ 500.00
5.02	Conduct Final Inspection		8					12			\$ 5,640.00
5.03	Prepare Engineering Record Drawings		2	2				2			\$ 1,410.00
5.04	Prepare Final Construction Report	1			2		10	4			\$ 5,390.00
5.05	Summarize Project Costs		2		1						\$ 645.00

Labor Category	Total Hours	Billing Rate	Total Cost
6.0 On-Site Construction Coordination Phase (Cost Plus Fixed Fee)			
Construction Manager I	66 hrs. x \$	47.00 /hr = \$	3,102.00
SUBTOTAL	66 hrs.	SUBTOTAL \$	3,102.00
Direct Labor Cost		= \$	3,102.00
Overhead (% of Direct Labor Cost)		= \$	6,631.14
Total Labor Cost		= \$	9,733.14
Fixed Fee		= \$	2,080.00
		SUBTOTAL PHASE LABOR \$	11,733.14
Reimbursables			
Fuel Vehicle and Equipment	5 Day x \$	135.00 /Days	675.00
Lodging + Tax & Fees	5 Day x \$	130.00 /Days	650.00
Per Diem	5 Day x \$	59.00 /Days	295.00
Travel & Airline Costs	1 Trip x \$	850.00 /Trip	850.00
		SUBTOTAL \$	2,470.00
		PHASE SUBTOTAL \$	14,203.14

[illegible]

		Contract Hours	Phase Fee	Reimbursable Costs	Total Cost	
PART A - BASIC SERVICES (LUMP SUM)						
1.0	Preliminary Design Phase (Lump Sum)	46	\$ 12,015.00	\$ 189.00	\$ 12,015.00	
2.0	Design Phase (Lump Sum)	115	\$ 25,585.00	\$ 1,119.00	\$ 25,774.00	
3.0	Bidding Phase (Lump Sum)	39	\$ 10,365.00	\$ 1,119.00	\$ 11,484.00	
		200	SUBTOTAL \$ 47,965.00	\$ 1,308.00	\$ 49,273.00	
PART B - SPECIAL SERVICES (LUMP SUM)						
4.0	Construction Administration Phase (Lump Sum)	28	\$ 6,675.00	\$ 189.00	\$ 6,864.00	
5.0	Post Construction Coordination Phase (Lump Sum)	56	\$ 13,485.00	\$ 1,169.00	\$ 14,654.00	
		84	SUBTOTAL \$ 20,160.00	\$ 1,358.00	\$ 21,518.00	
PART B - SPECIAL SERVICES (COST PLUS FIXED FEE)						
		Contract Hours	Phase Fee	Fixed Fee	Reimbursable Costs	Total Cost
6.0	On-Site Construction Coordination Phase (Cost Plus Fixed Fee)	66	\$ 9,733.14	\$ 2,000.00	\$ 2,470.00	\$ 14,203.14
		66	SUBTOTAL \$ 9,733.14	\$ 2,000.00	\$ 2,470.00	\$ 14,203.14
				SUBTOTAL	\$	-
TOTAL			\$ 77,858.14	\$ 2,000.00	\$ 5,136.00	\$ 84,994.14

*For the purposes of estimating the amount of reimbursable expenses which will be incurred by the Engineer, the cost of per diem and lodging are calculated in accordance with current GSA rates. The actual amount to be invoiced for per diem will be in accordance with the published GSA rate at the time of service and may vary from the rate used in the fee estimate. Lodging will be invoiced as an actual expense incurred except in cases where specific client requirements exist that limit lodging to GSA standards.

REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Carlton White, Parks and Recreation Director, Parks and Recreation

Meeting Date: September 17, 2024

Item type: Consent Item

Caption:

Consider approving a fourth amendment to the Santa Fe Municipal Golf Course Services Agreement with Two Pro Management that extends the term of the agreement to September 30, 2025, and authorizing the City Manager to negotiate and execute all related documents (Carl White)

Staff Recommendation:

Adopt

Summary/History:

We are asking for another one-year extension to the term of the City's agreement with Two Pro Management for the operation and maintenance of the Santa Fe Golf Course.

The City has been in discussions with the Santa Fe Park Commission this last year about what direction we should go with Santa Fe Park. More time is needed to discern this direction.

Funding Source(s):

Financial Impact:

- * City pays Two Pro an annual fee, not to exceed \$75,000.
- * up to \$10,000 each year can be applied, with City approval, to golf course water bills to assist in watering the course during times of limited rainfall.

The fee and water credit amounts are currently budgeted for FY 25. This agreement will not require additional funds, but will maintain the commitment for an additional year.

Other Information/Recommendation:

The Santa Fe Park Commission recommended extension of the agreement for a year at their meeting on August 14, 2024.

Attachments:

Presentation:

Carlton White

Approvals/Reviews:

Carlton White

Theresa James

Heather Stastny

Created/Initiated

Approved

Final Approval

REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Morgan Chegwidden, Assistant Director of Neighborhood Services, Neighborhood and Family Services

Meeting Date: September 17, 2024

Item type: Consent Item

Caption:

Consider revisions to the Animal Shelter Advisory Committee (ASAC) bylaws (Morgan Chegwidden)

Staff Recommendation:

Approve

Summary/History:

Staff recommends amending the bylaws governing the Animal Shelter Advisory Committee to clarify procedures and roles including:

- attendance.
- meeting time and location.
- officers.
- conduct.

Staff recommends approval of the attached bylaws reflecting these items.

Funding Source(s):

Financial Impact:

N/A

Other Information/Recommendation:

Staff recommends approval.

Attachments:

- | | | |
|----|---|--|
| 1. | 240815 Animal Shelter Advisory Committee Bylaws DRAFT | 240815 Animal Shelter Advisory Committee Bylaws DRAFT.docx |
|----|---|--|

Presentation:

Morgan Chegwidden

Approvals/Reviews:

Morgan Chegwidden
Theresa James
Heather Stastny

Created/Initiated
Approved
Final Approval

City of San Angelo
Animal Shelter Advisory Committee
Bylaws

These bylaws restate in their entirety and supersede any bylaws of the board that may be in effect upon their adoption and approval by the City Council for the City of San Angelo.

1. General governing statutes, ordinances, and rules

The Animal Shelter Advisory Committee of the City of San Angelo, hereinafter referred to as the “Animal Shelter Advisory Committee” or simply the “Committee”, shall be governed by these bylaws, subject to ordinances establishing and governing the Animal Shelter Advisory Committee now in effect or hereinafter adopted or amended, and state law including:

- a. City of San Angelo Code of Ordinances, Chapter 2, Article 2.07 “Boards, Committees and Commissions”, Division 1 “Generally” and Division 13 “Animal Shelter Advisory Committee”.
- b. Chapter 171 in the State of Texas Local Government Code, concerning conflicts-of-interest by officers of municipalities.
- c. Chapter 551 in the State of Texas Government Code, concerning the open conduct of meetings, recording and notices of meetings.
- d. Chapter 552 in the State of Texas Government Code, concerning Public Information.
- e. Chapter 823 in the State of Texas Health and Safety Code, concerning animal shelters.

2. Membership of the Committee and Quorum

The Animal Shelter Advisory Committee shall consist of seven (7) members appointed by the City Council pursuant to the rules, terms and qualifications provided at Article 2.07, Divisions 1 and 13 of the City of San Angelo Code of Ordinances as amended from time to time. Membership criteria shall include one veterinarian, one municipal or county official, one person whose duties include the daily operation of an animal shelter, one person who is an officer or employee of an animal welfare organization and three members who are City of San Angelo residents.

Four members shall constitute a quorum of the committee necessary to conduct business. The following additional rules shall apply to the Committee:

a. Resignation

Any committee member proposing to resign, shall give written notice of that intent to the committee chairperson and secretary. When a chairperson resigns or a position otherwise becomes vacant, the secretary shall promptly advise the city clerk of the vacancy on the committee.

b. Officer consecutive terms

A committee member may serve consecutive one-year terms as chairperson or vice-chairperson.

c. Attendance

Any committee member who misses three (3) duly called meetings pursuant to notice in any twelve (12) month period shall be deemed to have automatically resigned from office subject to reappointment for the balance of the member's term by City Council. The secretary shall make periodic attendance reports to the committee, which may form the basis for declaration of a vacancy by the committee. The vacancy shall be filled in the manner provided for under Article 2.07, Division 1, of the City of San Angelo Code of Ordinances, as amended.

d. Staff Liaison

The assistant director of Neighborhood & Family Services shall be designated as the committee's staff liaison and shall cause copies of the committee's agenda, minutes, and notices to be filed with the City of San Angelo city clerk. Said liaison may cause designate other City staff to facilitate matters of the committee as he/she deems necessary.

3. Meeting date, time and place

Notwithstanding anything contrary in Division 1 of Article 2.07, and pursuant to authority provided at subsections 2.07.001(7) and (13) thereof, the committee shall meet at least three times annually on a day and at a time called by the staff liaison with notice to each committee member.

All meetings of the committee shall be held at the City Hall – East Mezzanine, 72 West College Avenue, San Angelo, Texas 76903, except as may be designated by the staff liaison for a different, appropriate venue located inside the corporate limits of the City of San Angelo.

4. Conduct of meetings

Meetings of the committee shall be open to the public in compliance with the requirements of the Open Meetings Act, Chapter 551 of the Texas Government Code. The committee may meet in closed executive session during an open meeting only when in compliance with the Open Meetings Act, Chapter 551 of the Texas Government Code.

5. Minute record

The committee shall maintain a minute record book which shall be kept posted to date. In the minute record book shall be recorded the committee's proceedings, showing attendance, absences, the agenda subject of each consideration, each decision, recommendation or action taken, and all other official actions.

The draft minute record of a committee meeting shall be presented for approval at the next subsequent meeting of the committee after preparation of the draft. The minute record must be approved by a majority of the committee members present and voting.

6. Officers of the Animal Shelter Advisory Committee

a. Election of chairperson and vice-chairperson

At the first meeting of each calendar year, as the first item of new business, the committee shall elect a chairperson and vice-chairperson. The election shall be determined by a majority of those committee members present and constituting a quorum at said meeting.

b. Presiding at meetings

If present and able, the chairperson shall preside at all meetings of the committee. During the absence or inability of the chairperson to preside, the vice-chairperson shall exercise or perform all the duties and be subject to all the responsibilities of the chairperson. If both are absent or unable to preside, the members present shall appoint an acting chairperson to preside.

c. Chairperson authority

In accordance with these and other applicable rules, the presiding officer shall decide all points of procedure or order, unless otherwise directed by a majority of the members in attendance on a motion duly made and passed. The presiding officer shall maintain order and decorum, and to that end, may order removal of disorderly or disruptive

persons. The presiding officer shall, furthermore, vote on all matters and motions pending before the committee.

d. Sub-committees

The chairperson shall appoint such sub-committees as may be found necessary by a majority of the committee members or upon request of the staff liaison or City Council. Sub-committees shall consist of at least two (2) members of the committee.

e. Succession of vice-chairperson to chairperson

The vice-chairperson shall succeed the chairperson if the chairperson vacates office before the term is completed. The installation of the vice-chairperson as chairperson, and the election of a new vice-chairperson, shall occur at the next called meeting following vacation of the chairperson's seat on the committee.

f. Delegation to vice-chairperson

The chairperson may delegate specific duties generally to the vice-chairperson or may authorize the vice-chairperson to perform specific duties, during the chairperson's absence, so that the necessary committee functions are performed in a timely manner. The vice-chairperson shall perform all duties so delegated. In case of absence or incapacity of the chairperson, and on approval by a majority of the committee members, the vice-chairperson shall perform any or all of the duties of the chairperson, whether or not so delegated.

g. Appointment of secretary and secretary duties

The staff liaison shall be designated as the committee secretary. The secretary shall attend to correspondence relating to business of the committee; prepare and post all notices required; attend meetings of the committee as required; prepare staff reports and make recommendations to the committee on matters under deliberation; ensure compliance with applicable rules, ordinances and statutes; maintain custody of the records of the committee; and generally perform clerical work of the committee.

7. Conduct of committee members

If any committee member has a perceived conflict of interest other than as stated in the Conflict of Interest provisions of Division 1, Article 2.07 of the City of San Angelo Code of Ordinances, for a specific matter from which he or she desires to be excused, then that committee member may be excused by a majority vote of the remaining committee members. The committee member excused must leave the meeting room. After all deliberation by the committee on that matter is complete, the excluded committee member shall rejoin the committee.

8. Amending these bylaws

These rules may be amended at any regular or special meeting of the Animal Shelter Advisory Committee, by a majority vote of a quorum of the committee, provided that notice of said proposed amendment is given to each member in writing at least 72 hours prior to said meeting.

9. Miscellaneous

- a. All documents, photographs, or copies thereof submitted to the committee for presentation purposes shall become the property of the City.
- b. Matters referred to the committee by the City Council shall be placed on an agenda for the next called meeting or designated future meeting of the committee for consideration.

Duly adopted by the Animal Shelter Advisory Committee, subject to approval of the City Council of the City of San Angelo, Texas this _____ day of _____, 2024.

ATTEST:

Morgan Chegwidden, Assistant Director
Neighborhood & Family Services

Victor Schulze, Chairperson

Approved and adopted by the City Council for the City of San Angelo, Texas, this 3rd day of September, 2024.

Brenda Gunter, Mayor

REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Kimberly Holle, Budget Manager, Human Resources/Risk Management

Meeting Date: September 17, 2024

Item type: Consent Item

Caption:

Consider change in benefits provider for supplemental critical illness and accident insurance to allow for a better employee experience (Kimberly Holle)

Staff Recommendation:

Approve

Summary/History:

The City offers staff the opportunity to enroll in supplemental critical illness and accident insurance plans as an additional benefit. These plans are separate from the medical plans and have no City contribution.

Due to difficulties in the administration of the plan with the current provider, and the inability to notify members of potential opportunities for reimbursement, Human Resources staff requested additional options. The City's current provider for its health insurance plan, Aetna, submitted a proposal that will allow for a better member experience for the following reasons:

- Lower cost for members
- Automatic notification to Aetna members for eligible reimbursements to the members based on their accident or critical illness claims
- A more accurate and less time-consuming administration of the plans

Funding Source(s):

Financial Impact:

There is no cost to the City associated with supplemental critical illness and accident insurance policies.

Other Information/Recommendation:

Attachments:

Presentation:

Kimberly Holle

Approvals/Reviews:

Kimberly Holle
Bryan Kendrick
Theresa James
Jeffrey Tomlinson
Tina Dierschke
Heather Stastny

Created/Initiated
Approved
Approved
Approved
Approved
Final Approval

REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Robert Schneeman, Economic Development Coordinator, Economic Development

Meeting Date: September 17, 2024

Item type: Consent Item

Caption:

Consider ratifying COSADC approval of the sale of 8.2 acres at the Industrial Park to NAI Wheelhouse at a price of \$65,000 per acre, the exact price to be determined by a survey on the ground, and authorizing the Board President to negotiate and execute all related documents (Michael Dane)

Staff Recommendation:

Approve

Summary/History:

This is the sale of approximately 8.2 acres of land at the Industrial Park to a developer, NAI Wheelhouse, intending to construct a build to suit manufacturing facility.

Funding Source(s):

Financial Impact:

\$533,000+/- in revenue. Exact amount dependent upon actual acreage determined by a survey on the ground.

Other Information/Recommendation:

Attachments:

- | | | |
|----|---------------------|-------------------------|
| 1. | Exhibit for Council | Exhibit for Council.pdf |
|----|---------------------|-------------------------|

Presentation:

Michael Dane

Approvals/Reviews:

Robert Schneeman	Created/Initiated
Michael Dane	Approved
Brandon Dyson	Approved
Theresa James	Approved

Tina Dierschke
Theresa James
Heather Stastny

Approved
Approved
Final Approval

REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Nora Nevarez, Executive Office Coordinator, Economic Development

Meeting Date: September 17, 2024

Item type: Consent Item

Caption:

Consider ratifying the Administrative Services agreement between the City of San Angelo Development Corporation and the City of San Angelo to provide staff services and authorizing the City Manager or his designee to negotiate and execute all related documents (Michael Dane)

Staff Recommendation:

Approve

Summary/History:

On July 28, 2021, the Staff Service agreement between COSADC and COSA was approved. This agreement is automatically renewed annually effective the first day of October, terminating on September 30, 2024. A committee consisting of three COSADC Board members met with staff to review the current agreement and to make recommendations for revisions to the new deal commencing October 1, 2024. The committee's efforts concentrated on a closer alignment of the agreement with required services, broadening the range of available services, and clarifying language pertaining to the reimbursement of the cost of services based on the City's Cost Allocation Plan (CAP). The revised agreement also includes a provision for an annual presentation of the CAP by the city, to the COSADC Board prior to final budget approval. The CAP shall be prepared by a third-party consultant and the cost & expense of securing the CAP shall be born solely by the City. COSADC approved the changes on August 28, 2024.

Funding Source(s):

Financial Impact:

Fiscal impact will be determined by City's Cost Allocation Plan (CAP) and the Board approved annual budget.

Other Information/Recommendation:

Attachments:

1. COSADC City Admin Services Agreement COSADC City Admin Services Agreement CLEAN (1).pdf

Presentation:

Michael Dane

Approvals/Reviews:

Nora Nevarez

Michael Dane

Theresa James

Jeffrey Tomlinson

Tina Dierschke

Theresa James

Heather Stastny

Created/Initiated

Approved

Approved

Approved

Approved

Approved

Final Approval

SAN ANGELO DEVELOPMENT CORPORATION AND CITY OF SAN ANGELO
AGREEMENT FOR PROVISION OF ADMINISTRATIVE SERVICES

This Agreement (“Agreement”) is entered into by and between the City of San Angelo, a Texas home-rule municipal corporation (“CITY”) and the City of San Angelo Development Corporation, a Type 4 B Development Corporation organized pursuant to the Texas Development Corporation Act (“COSADC”), effective the 1st day of October, 2024, the Effective Date.

RECITALS

- A.** The San Angelo Code of Ordinances requires COSADC to contract with CITY for the provision of administrative services (“Services”).
- B.** CITY is authorized by law to provide Services to COSADC utilizing municipal personnel.
- C.** COSADC wishes to engage Services of CITY, and CITY wishes to perform Services for COSADC, under the terms and conditions set forth herein (“Agreement”).
- D.** On _____, 2024, COSADC approved this Agreement between COSADC and CITY and authorized the President of COSADC to execute a contract, under the terms and conditions set forth herein.
- E.** On _____, 2024, the CITY Council ratified approval of this Agreement given by the Board of Directors of COSADC and authorized its execution for CITY.

NOW THEREFORE, in consideration of the mutual covenants and promises herein contained, COSADC and CITY agree as follows:

Article 1.
Term

This Agreement shall commence on the Effective Date and automatically renew annually effective on the first day of October of each fiscal year, terminating on September 30, 2028, unless earlier terminated in accordance with Article 6 herein.

Article 2.
Scope of Services

- A. CITY agrees the CITY's Economic Development Department Staff will administer COSADC's authorized projects by performing Services for COSADC, as set out in **Exhibit "A"** attached hereto and incorporated herein for all purposes.
- B. In addition to Services described under Section A of this Article 2, CITY agrees to provide staff employees for the provision of Audit, Finance, Real Estate, Accounting, Public Information Office, Information Technology, Purchasing, Billing & Receipt, Human Resources, Communications, Neighborhood & Family Services, City Attorney, City Management, and Risk Management services to COSADC as set out in **Exhibit "A"**.
- C. The Parties acknowledge and agree that the Services detailed in **Exhibit "A"** do not constitute an exhaustive list of all the Services that the CITY may provide to COSADC hereunder. COSADC may request, and CITY may provide, different or additional Services than those listed in **Exhibit "A"** as determined by the operational needs of each Party.

Article 3.
Compensation

- A. COSADC agrees to reimburse CITY for all Economic Development Department Staff Services provided under Article 2(A) above and described in **Exhibit "A"**, in the total amount expended by City for such staffs' salaries and benefits, and as approved by the COSADC Board and City Council budget approval process.
- B. COSADC agrees to reimburse CITY for all other staff Services provided under Article 2(B) above and described in **Exhibit "A"**, in the total amount not to exceed the amount determined by an annual Cost Allocation Plan ("CAP") conducted by CITY's third-party consultant. The amount determined by the CAP for each fiscal year shall be subject to review and approval by the COSADC Board and City Council during the budget approval process.
- C. Cost reimbursement payments shall be made in four equal quarterly installments for each fiscal year during the Term of this Agreement.
- D. CITY shall secure the CAP at its sole cost and expense. CITY shall present the CAP to the COSADC Board at least annually prior to final budget approval. Amounts determined by the CAP shall be subject to adjustments to ensure that estimated administrative services costs allocated to COSADC accurately reflect CITY employee staff time required to perform those services. Any adjustments to the staff services cost reimbursements are subject to the agreement of both parties.

Article 4.
Use of Funds

It is expressly understood and agreed by COSADC and CITY that all funds received from COSADC by CITY shall be used for the purposes set out in Article 2. CITY shall establish and maintain a reasonable accounting system necessary to track, report and verify expenditures related to the services provided under this agreement. During the term of this Agreement and any extension thereof, and for a period of three years from and after its expiration of the term as the term may be extended, CITY shall allow COSADC or its third-party auditor, upon five (5) days advance notice, to inspect and audit all books and records of CITY as necessary to verify CITY's compliance with the terms and conditions of this Agreement.

Article 5
Employees

All personnel furnishing administrative services provided for hereunder shall be employees of CITY.

Article 6
Termination

Either party hereto may terminate this Agreement by giving the other party notice in writing of termination of this Agreement thirty (30) calendar days prior to the effective date of termination. Upon the effective date of termination of this Agreement, COSADC shall pay CITY for all administrative services rendered by CITY staff up to the date of termination on a pro-rated basis.

Article 7.
Assignment

This Agreement may not be assigned by either party hereto without prior written consent of the other party.

Signature Page Follows

EXECUTED this _____ day of August, 2024.

**CITY OF SAN ANGELO
DEVELOPMENT CORPORATION**

By: _____
Dr. Clifton Jones, President

ATTEST:

Nora Nevarez, Corporate Secretary

APPROVED AS TO FORM FOR CITY:

Theresa James
City Attorney

APPROVED AS TO CONTENT:

Michael Dane
Interim Economic Development Director

CITY OF SAN ANGELO

By: _____
Daniel Valenzuela, City Manager

ATTEST:

Heather Stastny, City Clerk

APPROVED AS TO FORM FOR COSADC:

Brandon Dyson
Deputy City Attorney

EXHIBIT “A”

I.

Required Economic Development Administration Services

1. Prepare, post and distribute COSADC meeting agenda and related background Information.
2. Respond to economic development prospect inquiries:
 - a. Prepare offers of financial incentives;
 - b. Compose related agreements;
 - c. Ensure compliance with all economic development incentive agreements and abatement agreements.
3. Begin preparations of annual COSADC budget in early spring.
4. Monitor performance measures required of COSADC administrative partners (e.g., the San Angelo Chamber of Commerce).
5. Provide management services to the Business Resource Center
6. Coordinate and facilitate business recruiting prospect meetings, including participation in other economic development partners’ business recruitment meetings as necessary.
7. Coordinate with officials of Tom Green County and City of San Angelo on reinvestment zones, tax abatement agreements and other economic development programs or incentives.
8. Obtain and maintain staff professional training and proficiency in economic development trends, techniques, and knowledge of market conditions.
9. The CITY’s Economic Development Director shall serve on the Water Advisory Board at the discretion of COSADC Board.

II.

Required Audit Services

1. Perform audit services for COSADC operations, as necessary and appropriate.
2. Coordinate with CITY Financial staff and COSADC Board and staff to establish audit objectives in advance of performing any audit services.
3. Provide audit report to the COSADC Board and staff upon completion.

III.
Required Real Estate Services

1. Manage real estate closings for COSADC.
2. Research history of properties, including council actions.

IV.
Required Finance & Accounting Services

1. Develop monthly and present quarterly financial reports in format and detail level to meet the needs of the COSADC Board.
2. Deliver monthly financial reports no later than the 15th day of each succeeding month (e.g., April financials would be due no later than May 15th).
3. Determine allocation of cost of services for COSADC budget as part of the indirect costs contract with consultant or other comparable means.
4. Assist COSADC staff in the preparation of the annual COSADC budget and amendments thereafter.
5. Provide financial analysis and projections on available funds, sales tax trends, bonding capacity, and voter-approved project, as requested by COSADC Board.
6. Provide annual Economic Development Corporation report to the Texas Comptroller of Public Accounts.
7. Provide services of the Finance Director to serve as Board Treasurer.
8. Assist with travel advances and settlements.
9. Provide Treasury services, including cash management, oversight, and reporting of COSADC investments; manage banking relations, including reconciliation of bank accounts.
10. Provide Accounting services, including general ledger, payroll, and accounts payable.
11. Handle the financial audit and annual comprehensive financial reporting requirement for COSADC, including providing information to external auditors, responding to questions, and reviewing the annual report to ensure accuracy and compliance with GAAP.
12. Provide financial analysis and reports for Economic Development projects.

V.
**Required Information &
Communications Services**

1. Create, update, install and maintain all IT infrastructure.
2. Provide communications reliability and maintenance support to the BRC building.

VI.
Required Purchasing Services

1. Review purchase requisitions and compile formal bids as requested.
2. Manage P-card initiation, monthly reconciliation, and on-going program support.
3. Prepare, assemble, draft, execute, and manage contract documents. Route Legal Services requests on behalf of COSADC for new agreements, Change Orders, Task Orders, etc. upon request of COSADC.

VII.
Required Billing & Receipt Services

1. Timely and accurate maintenance to charge codes, printing of invoices, and receiving and reconciliation of records of cash receipts for Staff Services and other City-COSADC contracts.

VIII.
Required Human Resources Services

1. Provide sufficient availability of HR staff support, guidance, and resources to ensure compliance by COSADC with applicable federal, state and local laws. Make recommendations to the Board to assist with such compliance as reasonably necessary.
2. Attend COSADC Board meetings, as necessary or appropriate.
3. Assist COSADC staff in the preparation /review of annual insurance coverages.

IX.
Required Public Information Services

1. Facilitate all COSADC Board meetings that are to be recorded or broadcast.
2. Prepare, maintain and operate audio, visual, and computer equipment for all COSADC Board meetings when necessary.
3. Maintain presence during COSADC Board meetings for technical assistance as staffing permits.
4. Post public notice of COSADC Board meetings on COSA Government Channel for public view.

X.

**Required Neighborhood
& Family Services**

1. Maintain oversight & management of City of San Angelo Affordable Housing Program.
2. Assist in preparation of contracts with approved program applicants.
3. Administer Affordable Housing contracts and oversight of compliance issues.
4. Assist with COSADC administrative oversight of the community development projects authorized by ballot.
5. Assist the City Finance Department with budget oversight of projects and Affordable Housing Development funds, receipts and expenditures.
6. Make reports to civic groups, City Council and COSADC.
7. Ensure effective management of grant agreements.
8. Provide necessary follow-up services to grantees and contractors under the Affordable Housing Development program.
9. Gather, maintain and report statistical data for the program.
10. Provide closing documents and payments to title company at loan closings.

XI.

Required City Attorney Services

1. Attend all COSADC meetings to provide legal recommendations; as an observer of COSADC proceedings, and to the extent which Legal is involved, ensure the board and staff are adhering to all applicable federal and State laws, City ordinances and policies, and the corporation Articles and Bylaws.
2. Provide legal services to COSADC Board and the CITY Economic Development Department staff including, but not limited to the following:
 - a. Draft, review and finalize all real estate-related and legal transactions pertaining to matters for which the Board has authority.
 - b. Provide oversight of and assist in developing and implementing economic development programs for the City of San Angelo and the COSADC Board.

- c. Agreement composition, review and approval as to form for economic development partner agreements, economic incentives such as tax abatements or grants and other agreements authorized by the Board.
 - d. Respond to requests for legal opinions on matters relating to the use of sales tax revenue, Type 2 (4B) economic development corporations and projects and other legal matters related to the COSADC Board.
3. Advise Board and COSADC staff on matters relating to the Public Information Act, Open Meetings Act, Corporate By Laws, and Corporate Charter, including keeping the Board and staff up to date on changes which may occur at the City, State and Federal level affecting COSADC.

XII.

Required CITY Management Services

- 1. Attend COSADC Board meetings, as requested and/or appropriate.
- 2. Participate in business prospect/incentive meetings, discussions, and negotiations, as requested and/or as appropriate.
- 3. Make available sufficient staff support, guidance, and resources to provide effective and efficient operations of Economic Development Department services and COSADC programs in compliance with law.

REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Robert Schneeman, Economic Development Coordinator, Economic Development

Meeting Date: September 17, 2024

Item type: Consent Item

Caption:

Second reading of an ordinance designating Reinvestment Zone No. 24-2 to be located at the easterly 12.9 acres of land, more or less, out of a 32 acre tract of land, more or less, out of Survey 1114, Abstract No. 8036, F. Tankersley, Tom Green County, Texas, and being more particularly described as Parcel 2 in that certain Warranty Deed dated June 1, 2007, of record at Instrument No. 633054, Official Public Records, Tom Green County, Texas, for the purpose of providing an ad valorem commercial-industrial tax abatement (Michael Dane)

Staff Recommendation:

Adopt

Summary/History:

Applicant is requesting a tax abatement for a project to construct a battery storage facility, to be located on the north side of 28th Street approximately 0.7 miles east of Armstrong Street as shown in the attached exhibit. The applicant intends to invest approximately \$160,000,000 in capital improvements and is requesting a three (3) YEAR, 85% Abatement of ad valorem taxes. The project is estimated to provide a total tax revenue increase to the City of San Angelo of \$4,164,700 after the abatement. First reading & Public HEaring was held September 3, 2024.

Funding Source(s):

Financial Impact:

No budget action required. If approved, Tom Green County Appraisal District will handle the abatement process.

Other Information/Recommendation:

Attachments:

1. Ordinance Project BESS Reinvestment Zone Final Ordinance Project BESS Reinvestment Zone Final.pdf

Presentation:

Michael Dane

Approvals/Reviews:

Robert Schneeman

Michael Dane

Brandon Dyson

Theresa James

Tina Dierschke

Heather Stastny

Created/Initiated

Approved

Approved

Approved

Approved

Final Approval

AN ORDINANCE OF THE CITY OF SAN ANGELO TEXAS, DESIGNATING REINVESTMENT ZONE NO. 24-2 TO BE LOCATED AT THE EASTERLY 12.9 ACRES OF LAND, MORE OR LESS, OUT OF A 32 ACRE TRACT OF LAND, MORE OR LESS, OUT OF SURVEY 1114, ABSTRACT NO. 8036, F. TANKERSLEY, TOM GREEN COUNTY, TEXAS, AND BEING MORE PARTICULARLY DESCRIBED AS PARCEL 2 IN THAT CERTAIN WARRANTY DEED DATED JUNE 1, 2007, OF RECORD AT INSTRUMENT NO. 633054, OFFICIAL PUBLIC RECORDS, TOM GREEN COUNTY, TEXAS, PROVIDING ELIGIBILITY OF THE ZONE FOR COMMERCIAL-INDUSTRIAL TAX ABATEMENT; CONTAINING FINDINGS THAT THE AREA QUALIFIES TO BE DESIGNATED AS A REINVESTMENT ZONE AND THE IMPROVEMENTS SOUGHT ARE FEASIBLE AND PRACTICABLE AND OF BENEFIT TO THE LAND AND THE CITY; PROVIDING FOR SEVERABILITY; AND, PROVIDING FOR AN EFFECTIVE DATE

WHEREAS, the City Council of the City of San Angelo reauthorized Chapter 1 “General Provisions”, Article 1.09 “Taxation”, Division 3 “Uniform Tax Abatement Policy” of the City of San Angelo Code of Ordinances, on October 3, 2023; and

WHEREAS, in conjunction with reauthorizing the Uniform Tax Abatement Policy, City Council passed Resolution No. 2023-095 on October 3, 2023, which provided that the City of San Angelo elects to participate in tax abatement agreements pursuant to Chapter 312 of the Texas Tax Code; and

WHEREAS, the Uniform Tax Abatement Policy was amended by ordinance finally passed on August 19, 2024; and

WHEREAS, Zeppelin Energy Storage LLC has applied for designation as a reinvestment zone and for commercial-industrial tax abatement of the increase in ad valorem taxes on its property located at for improvements of up to \$160M made on or after January 1, 2025; and

WHEREAS, on September 3, 2024, a public hearing was held at which time interested persons were entitled to speak and present evidence for or against the designation of the property described in Exhibit “A” as Reinvestment Zone No. 24-2, and notice of such public hearing was published in a newspaper of general circulation in the City of San Angelo not later than the seventh day before the date of the scheduled hearing; and

WHEREAS, written notice of the public hearing was also provided to the presiding officer of the governing body of each taxing unit that includes in its boundaries real property that is to be included in the proposed Reinvestment Zone No. 24-2.

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF SAN ANGELO, TEXAS THAT:

SECTION 1: The facts and matters set forth in the preamble of this Ordinance are found to be true and correct.

SECTION 2: The City Council, after conducting a public hearing and having considered all relevant evidence and testimony, has made the following findings and determinations based on such evidence and testimony:

A. That a public hearing on the designation of Reinvestment Zone No. 24-2 was properly called, held, and conducted, and that notice of such hearing was published and provided in accordance with the law; and

B. That the boundaries of Reinvestment Zone No. 24-2 should be the proposed area of land more fully described in the property description attached hereto as Exhibit "A" and depicted on the map attached hereto as Exhibit "B"; and

C. That the improvements sought to be made in Reinvestment Zone No. 24-2 are feasible and practical and would be a benefit to the land to be included therein and to the City of San Angelo following expiration of an executed tax abatement agreement; and

D. That the area of land to be designated as Reinvestment Zone No. 24-2 is reasonably likely, as a result of this designation, to contribute to the retention or expansion of primary employment or to attract major investment in the zone that would be a benefit to the property and would contribute to the economic development of the City of San Angelo.

SECTION 3: Pursuant to Chapter 312 of the Texas Tax Code, the real property described in Exhibit "A" and depicted in Exhibit "B", is hereby designated as a reinvestment zone and for identification is assigned the name "Reinvestment Zone No. 24-2". The property within Reinvestment Zone No. 24-2 is eligible for commercial-industrial tax abatement effective on the final passage of this Ordinance. The designation of Reinvestment Zone No. 24-2 shall expire five (5) years after the final passage of this Ordinance but may be renewed as provided by law.

SECTION 4: The designation of Reinvestment Zone No. 24-2 does not obligate the City of San Angelo to enter into any tax abatement agreement with any person or entity for the abatement of taxes for any real or personal property located within the zone, or any other City provided incentives.

SECTION 5: Should any section, provision, clause, or word of this Ordinance be declared unconstitutional or invalid for any reason, the remainder of this Ordinance shall not be affected thereby.

SECTION 6: This Ordinance shall be effective on, from and after final passage by City Council.

INTRODUCED with public hearing the 3rd day of September, 2024 and finally PASSED this 17th day of September, 2024.

THE CITY OF SAN ANGELO, TEXAS:

Brenda Gunter, Mayor

ATTEST:

APPROVED AS TO FORM:

Heather Stastny, City Clerk

Theresa James, City Attorney

EXHIBIT "A"
Legal Description

12.9 acres of land, more or less, out of a 32-acre tract of land, more or less, out of Survey 1114, Abstract No. 8036, F. Tankersley, Tom Green County, Texas, and being more particularly described as all of Exhibit B, labeled as Parcel Two, consisting of five tracts of land comprising 32 acres, in that certain Warranty Deed with Vendor's Lien from Western Iron Works, Inc., a Texas Corporation, to Marty Frey Trucking, Inc., a Texas Corporation, dated June 1, 2007, recorded in Instrument No. 633054, Official Public Records, Tom Green County, Texas.

EXHIBIT "B"

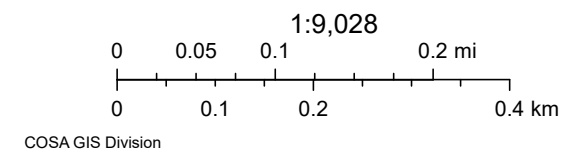
EXHIBIT B



7/2/2024, 9:08:36 AM

 Parcels

PROJECT BESS



REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Jonathan Flores, Budget Manager, Budget

Meeting Date: September 17, 2024

Item type: Regular Item

Caption:

Second reading of an ordinance amending the budget for the fiscal year beginning October 1, 2023, and ending September 30, 2024

1. Short-term Debt
2. Riverstage Phase I
3. Fleet Services Materials
4. Capital Improvement Projects
5. Health Insurance Claims
6. Property & Casualty Claims
(Tina Dierschke)

Staff Recommendation:

Adopt

Summary/History:

This proposed amendment contains the following items (additional information attached):

- Short-term debt proceeds allocations previously presented for public safety and Riverstage improvements.
- Civic Events fund balance for the remaining Riverstage improvement amounts.
- Increase Fleet Services materials revenue and expense for maintaining city vehicles and equipment.
- Capital funding for public safety and animal service projects utilizing intergovernmental funds.
- Increase health insurance revenue and expense for claims and premiums.
- Increase property and casualty revenues and utilize fund balance for claims in excess of projected costs.

Funding Source(s):

Fund:	Account:	Project Number:	Amount Budgeted:
Intergovernmental			-\$732,000
Fleet Services			\$0.00
Health Insurance			\$0.00

General Capital Projects	\$0.00
Short-term Debt	\$0.00
Civic Events	-\$472,745
Property and Casualty	-\$130,000

Financial Impact:

The numbers above are net benefit/(cost); see Exhibit A of the ordinance for additional details. Negative numbers indicate the use of fund balance. Funds showing \$0.00 have a corresponding revenue and expenditure offset each other; therefore, the net financial impact is zero.

Other Information/Recommendation:

Staff recommends approval.

Attachments:

1. BA MEMO - Fleet Services Material	BA MEMO - Fleet Services Material.pdf
2. BA Memo - Health Insurance	BA Memo - Health Insurance.pdf
3. BA Memo - Property Casualty Fund	BA Memo - Property Casualty Fund.pdf
4. 2024 09-03 Ordinance (2)	2024 09-03 Ordinance (2).docx
5. BA MEMO - Bi-annual Short Term Debt	BA MEMO - Bi-annual Short Term Debt.pdf
6. BA MEMO - Capital Projects	BA MEMO - Capital Projects.pdf
7. BA Memo - CE Riverstage	BA Memo - CE Riverstage.pdf

Presentation:

Tina Dierschke

Approvals/Reviews:

Jonathan Flores	Created/Initiated
Jeffrey Tomlinson	Approved
Tina Dierschke	Approved
Theresa James	Approved
Heather Stastny	Final Approval

Memo

To: Tina Dierschke, Finance Director
From: Ryan Kramer, Fleet Manager
Date: 09/03/2024
Re: Budget Amendment Request

Purpose of Budget Amendment Request:

Increase revenue and expense for Fleet Services materials operating budget.

Source of Funding:

Fleet Services internal service fund.

Funding previously approved? If so, by City Manager or City Council and when?

No

Project/Budget to be amended	Revenue	Expense
Fleet Service Materials	160,000	160,000

Additional Comments:

Fleet services needs additional funding to support the maintenance of city vehicles and equipment. This additional expense will be offset by increased billings to city departments. Increases requested due to rising parts and repairs costs.

Memo

To: Tina Dierschke, Finance Director
From: Bryan Kendrick, Director of HR & Risk Management
Date: 09/03/2024
Re: Budget Amendment Request

Purpose of Budget Amendment Request:

Increase revenue and expense for health insurance claims and premiums.

Source of Funding:

Health Insurance Internal Service Fund

Funding previously approved? If so, by City Manager or City Council and when?

No

Project/Budget to be amended	Revenue	Expense
Health Insurance Claims & Premiums	750,000	750,000

Additional Comments:

Increase is requested due to increased healthcare costs.

Memo

To: Tina Dierschke, Finance Director
From: Bryan Kendrick, Director of HR/Risk
Date: 09/03/2024
Re: Budget Amendment Request

Purpose of Budget Amendment Request:

Capture additional revenue from insurance recovery and fund claims in excess of projected costs.

Source of Funding:

Revenue from insurance recovery and the Property Casualty fund balance

Funding previously approved? If so, by City Manager or City Council and when?

No

Project/Budget to be amended	Revenue	Expense
Insurance Recovery	47,000	
Self-insured claims		177,000

Additional Comments:

AN ORDINANCE OF THE CITY OF SAN ANGELO AMENDING THE BUDGET FOR THE FISCAL YEAR BEGINNING OCTOBER 1, 2023, AND ENDING SEPTEMBER 30, 2024, FOR DEBT ALLOCATION, FLEET MATERIALS, CAPITAL ITEMS AND HEALTH INSURANCE.

WHEREAS, the City of San Angelo has determined that certain budgeted amounts should be amended due to purchases, and

WHEREAS, the resources necessary for these changes are available.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY OF SAN ANGELO, TEXAS THAT:

The City's budget for fiscal year 2023-2024 be amended by the amounts contained in **Exhibit "A"** to be effective upon final approval.

INTRODUCED with public hearing on the 3rd day of September 2024, and finally **PASSED** on this 17th day of September 2024.

ATTEST:

THE CITY OF SAN ANGELO, TEXAS:

Heather Stastny, City Clerk

Brenda Gunter, Mayor

APPROVED AS TO CONTENT:

APPROVED AS TO FORM:

Tina Dierschke, Finance Director

Theresa James, City Attorney

Exhibit A

City of San Angelo Proposed Budget Amendment

FUND	REVENUE	EXPENSE	NET BENEFIT /(COST)
Intergovernmental	-	732,000	(732,000)
Fleet Services	160,000	160,000	-
Health Insurance	750,000	750,000	-
Property and Casualty Insurance	47,000	177,000	(130,000)
Civic Events Fund Balance	-	482,745	(482,745)
General Capital Projects	732,000	732,000	-
Debt Obligations	7,590,000	7,590,000	-
	\$9,279,000	\$10,623,745	\$(1,344,745)

Additional Information

PROJECT/NEED	SOURCE OF FUNDING	REVENUE	EXPENSE	NET BENEFIT /(COST)
Bi-annual Short Term debt allocation	Series 2024 Tax Note Proceeds	7,590,000	7,590,000	-
Riverstage Phase I	Civic Events Fund Balance	-	482,745	(482,745)
Fleet Services rising parts and repairs costs	Fleet Services Internal Service Fund	160,000	160,000	-
Capital projects for Fire, Animal Services, and Public Safety Communications	General Capital Projects and Intergovernmental Fund Balance	732,000	1,464,000	(732,000)
Health Insurance claims and premiums	Health Insurance Internal Service Fund	750,000	750,000	-
Property and casualty additional revenue from insurance recovery and fund claims more than projected costs.	Property and Casualty Additional Revenue received	47,000	177,000	(130,000)
		\$9,279,000	\$10,623,745	\$(1,344,745)

Memo

To: Tina Dierschke, Finance Director
From: Jonathan Flores, Budget Manager
Date: 09/03/2024
Re: Budget Amendment Request

Purpose of Budget Amendment Request:

Bi-annual Short Term Debt allocation.

Source of Funding:

Series 2024 tax note proceeds.

Funding previously approved? If so, by City Manager or City Council and when?

Tax note was approved by City Council on 08/19/2024.

Project/Budget to be amended	Revenue	Expense
Debt Proceeds	7,590,000	
Fire Truck Contribution		250,000
Communication Radios		1,500,000
Body Cameras & Tasers		3,743,745
Public Safety Radio Hardware		800,000
Riverstage Phase I		1,211,255
Issue Costs		85,000

Additional Comments:

Debt proceed allocations were also presented at the 08/19/2024 City Council meeting.

Memo

To: Tina Dierschke, Finance Director
From: Jonathan Flores, Budget Manager
Date: 09/03/2024
Re: Budget Amendment Request

Purpose of Budget Amendment Request:

Request funding for Fire Station land, Animal Services temporary shelter, and Dispatch flooring/furniture.

Source of Funding:

Intergovernmental fund balance.

Funding previously approved? If so, by City Manager or City Council and when?

Funding proposal was presented to council during the general fund budget workshop on 07/16/2024

Project/Budget to be amended	Revenue	Expense
Intergovernmental Fund Balance		
Fire Station Land		400,000
Animal Services Temporary Shelter		232,000
Dispatch Flooring/Furniture		100,000

Additional Comments:

The city has received reimbursement related to Covid grant funds freeing up Intergovernmental fund balance. Funding for fire station land and dispatch flooring was presented at the general fund workshop on 08-08-2024. City Council gave direction to find funding source on 05-21-2024 for temporary animal shelter.

Memo

To: Tina Dierschke, Finance Director
From: Sidney Walker, Civic Events Manager
Date: 09/03/2024
Re: Budget Amendment Request

Purpose of Budget Amendment Request:

Phase I Riverstage improvements project

Source of Funding:

Civic Events fund balance

Funding previously approved? If so, by City Manager or City Council and when?

No

Project/Budget to be amended	Revenue	Expense
Civic Events Fund Balance		
Riverstage Phase I		482,745

Additional Comments:

The riverstage phase I project has already been allocated \$1,211,255 through the 2024 short term debt issue. This additional amendment would provide the remaining amount not funded through debt.

REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Theresa James, City Attorney, Legal

Meeting Date: September 17, 2024

Item type: Consent Item

Caption:

Second reading of an ordinance amending Chapter 11 "Utilities", Article 11.05 "Water Conservation and Drought Contingency Plan" of the City of San Angelo Code of Ordinances (Shane Kelton, Theresa James)

Staff Recommendation:

Adopt

Summary/History:

The City of San Angelo reviews and updates the Water Conservation and Drought Contingency Plan ("Plan") every five years in order to adjust goals and targets, and take into account new technology and new best management practices.

On June 18, 2024, the City of San Angelo City Council adopted by resolution a 2024 version of the Plan. The adopted Plan was presented to the Texas Commission on Environmental Quality (TCEQ) for review and approval. The TCEQ requested additional changes which have been incorporated into the attached ordinance.

The attached ordinance codifies the 2024 Water Conservation Drought Contingency Plan as revised, providing the City with the ability to enforce violations of the plan.

Funding Source(s):

Financial Impact:

Other Information/Recommendation:

Attachments:

- | | | |
|----|--|---|
| 1. | Enacting Ordinance Water Conservation Drought Contingency Plan | Enacting Ordinance Water Conservation Drought Contingency Plan.docx |
| 2. | Exhibit A Water Conservation Drought Contingency Plan | Exhibit A Water Conservation Drought Contingency Plan.docx |

Presentation:

Shane Kelton, Theresa James

Approvals/Reviews:

Theresa James

Shane Kelton

Heather Stastny

Created/Initiated

Approved

Final Approval

**AN ORDINANCE AMENDING CHAPTER 11 “UTILITIES”, ARTICLE 11.05
“WATER CONSERVATION AND DROUGHT CONTINGENCY PLAN” OF THE
CODE OF ORDINANCES OF THE CITY OF SAN ANGELO TEXAS; PROVIDING
FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE**

BE IT ORDAINED BY THE CITY OF SAN ANGELO:

- 1) THAT**, CHAPTER 11, ARTICLE 11.05 of the Code of Ordinances is hereby amended to read as depicted on Exhibit A.
- 2) THAT**, the ordinance was adopted after two readings of the San Angelo City Council with public hearing.
- 3) THAT**, the following severability clause is hereby adopted with this amendment:

SEVERABILITY:

That the terms and provisions of this Ordinance shall be deemed to be severable in that if any portion of this Ordinance shall be declared to be invalid, the same shall not affect the validity of the other provisions of this Ordinance.

- 4) THAT**, this Ordinance shall be effective upon passage.

INTRODUCED on the 3rd day of September, 2024, and finally PASSED, APPROVED and ADOPTED on this the 17th day of September, 2024.

CITY OF SAN ANGELO

ATTEST:

Heather Stastny, City Clerk

Brenda Gunter, Mayor

APPROVED AS TO FORM:

Theresa James, City Attorney

EXHIBIT A
CODE OF ORDINANCES
CHAPTER 11 UTILITIES

ARTICLE 11.05 WATER CONSERVATION AND DROUGHT CONTINGENCY PLANS

Sec. 11.05.001 Purpose

~~The purpose of the water conservation and drought contingency plan~~ This Article establishes the city's water conservation plan and drought contingency plan, as defined in title 30, section 288.1, of the Texas Administrative Code, as amended. ~~The combined purpose of the plans~~ is to encourage water conservation at all times and to establish strategies and procedures for identifying, classifying, and handling temporary and recurring water supply shortages and/or a water demand emergency emergencies effectively and efficiently.

(Ordinance adopted 2-7-12)

Sec. 11.05.002 Water conservation measures

The city will utilize the following strategies to encourage, promote and require citizens to conserve water at all times.

- 1) *Conservation plan.* The "City of San Angelo Water Conservation Plan and Drought Contingency Plan," as adopted by Council by resolution, on file in the office of the city clerk, and available for public inspection, is adopted and incorporated herein (the "Plan").
 - a. *Implementation.* The director of water utilities will act as the administrator of the water conservation plan Plan. The administrator will oversee the execution and implementation of all elements of the program and will be responsible for supervising the promulgation and retention of records for program verification.
- 2) *Plumbing code.* The city plumbing code has provision for water-conserving plumbing devices. The city will enforce the requirements of the code to ensure the use of water-saving devices.
- 3) *Universal metering.* All users of municipal treated water, except for fire sprinkler lines, will be metered.
- 4) *Water supply meters.* The city metering devices will record water use with an accuracy of plus or minus five percent in order to measure and account for the amount of raw water diverted from the source of supply.
- 5) *Restaurants.* Restaurants shall not serve water to their customers except when specifically requested by the customer.
- 6) *Waste of water.* As defined below, shall be prohibited.
 - a. Allowing treated or raw city water, greywater, reclaimed water or well water to run

off property to a gutter, street, alley, ditch or drainage facility and drain for more than 150 feet downgrade of the point of entry into such gutter, street, alley, ditch or drainage facility.

- b. Failure to repair a controllable leak.
- 7) *Prohibited watering hours.* The use of treated or raw city water, greywater or reclaimed water for watering lawns, gardens, landscape areas, trees, golf courses, shrubs or other plants being grown outdoors (not in a nursery) shall be prohibited between the hours of 12:00 noon and 6:00 p.m. daily from April 1 through October 31.
 - 8) *Watering frequency.* The use of treated or raw city water, greywater or reclaimed water for watering lawns, landscape areas, trees, gardens, golf courses (except greens), shrubs or other plants being grown outdoors (not in a nursery) shall be allowed at a frequency of twice every seven days during the period of April 1 through October 31 and once every seven days during the period of November 1 through March 31. Golf course greens may be watered once per day year-round.
 - 9) *New landscape.* Watering of newly seeded or sodded lawns or newly planted trees, shrubs or landscape plants will be allowed at the following frequency provided written notification is given to the city code compliance division or water conservation division of the watering schedule:
 - a. Days 1—14 from planting: three times per day every day of such period at any time of day.
 - b. Days 15—28 from planting: twice per day every day of such period at any time of day.
 - 10) *Allowable application rates.* The maximum amount of treated or raw city water, greywater or reclaimed water applied to established lawns, landscape plants, golf courses (except greens) or shrubs shall not exceed one inch per week.
 - 11) *Drip irrigation.* Landscape or foundation watering with a drip irrigation system such as a soaker hose, deep root watering system, drip pipe or tape, or bubbler shall be permitted on any day and at any time of day provided that the total amount of water applied shall not exceed one inch per week. For the purpose of this article, drip irrigation shall mean a water-saving irrigation system designed to emit water at low volumes and low pressures directly onto or below the soil surface without airborne streams or droplets.
 - 12) *Hand watering.* Hand watering of lawns, gardens, landscape areas, trees, shrubs or other plants being grown outdoors or foundations may be done on any day, except during the prohibited watering hours, provided the allowable application rate is not exceeded. Hand watering shall be watering with a hose that is hand-held for the duration of the irrigation event, or watering with a container of five gallons or less.
 - 13) *Excessive usage of water.* Excessive usage of water as defined below shall be prohibited and shall be a violation of the water conservation and drought contingency plan:

- a. Any use of water by a customer in excess of the maximum allowable application rates under subsection (10) above.
- 14) ~~Contracts including contract extensions, with other political subdivisions, water supply corporations or water suppliers entered into or renewed after adoption of the plan. Any~~ In addition to the requirements in Section XIV of the City of San Angelo Water Conservation Plan and Drought Contingency Plan regarding wholesale water contract requirements, any political subdivision, water supply corporation, or water supplier that contracts with the city for the purchase of water shall adopt applicable provisions of the city's water conservation and drought contingency plan. Contracts for the sale of water that are already in effect will be revised to reflect the applicable provisions of the city's most current water conservation and drought contingency plan when the contracts are renewed or extended. To the extent of the city's legal authority, the city shall require the city's wholesale customers to issue a public notice advising their water customers of required drought management measures declared in the city as follows in section 11.05.003.
- a. In the event that the triggering criteria specified in section 11.05.003(f) of the plan for Water Supply Stage - Drought Level III have been met, the city manager is hereby authorized to ~~initiate allocation of water supplies~~ curtail water deliveries to or diversions by wholesale water customers on a pro rata basis in accordance with Texas Water Code section 11.039, as it may be amended, and according to the following water allocation policies and procedures.
- b. A wholesale customer's monthly allocation shall be a percentage of the customer's water usage baseline. The percentage will be set by resolution of the city council based on the administrator's assessment of the severity of the water shortage condition and the need to curtail water diversions and/or deliveries and may be adjusted periodically by resolution of the city council as conditions warrant. Once pro rata allocation is in effect, water diversions by or deliveries to each wholesale customer shall be limited to the allocation established for each month.
- c. Upon initiation of pro rata water allocation, the water utility director shall provide notice, by certified mail, to each wholesale water customer informing them of their monthly water usage allocations and shall notify the news media and the executive director of the ~~state-Texas commission-Commission~~ on environmental ~~Environmental quality~~ Quality.
- 15) Water demand emergency. In the event the quantity of water usage from the city's water distribution system reaches a level that exceeds the amount which may be treated or safely delivered through the system, the water utilities director shall notify the city manager and the city council of such an occurrence. The city council shall be authorized to limit the use of water by passage of a resolution outlining such limitations, which shall remain in effect until the water demand emergency can be met. Upon initiation of a water demand emergency, the water utility director shall provide notice, by certified mail, to the executive director of the ~~state-Texas commission-Commission~~ on environmental ~~Environmental quality~~ Quality and shall notify the news media.
- 16) Water supply emergency. In the event of a water system failure or emergency (i.e., pressure zone deficiencies, chemical spills, broken water mains, power outages, failures of storage

tanks or other equipment, treatment plant breakdown and/or water contamination) which limits the amount of water which may be treated or safely delivered through the system, the water utilities director shall notify the city manager and city council of such occurrence. The city council shall be authorized to limit the use of water by passage of a resolution outlining such limitations, which shall remain in effect until the water supply emergency can be met. Upon initiation of a water supply emergency, the water utility director shall provide notice, by certified mail, to the executive director of the ~~state-Texas commission~~ Commission on environmental-Environmental quality-Quality and shall notify the news media.

- 17) Public information. The water utilities director will provide ~~regular-continuing~~ public education and information about the Plan, including the importance of year-round water efficiency as delineated in the ~~plan~~Plan, and will provide general information about water supply conditions and drought plan provisions on at least an annual basis. The city will affirmatively provide opportunity for public input to the drought contingency plan at regularly scheduled City Council meetings. Prior notice of the scheduled City Council meetings are posted on the city's website. The purpose of this effort shall be to ~~seek publicuser input on formulation in the preparation of the drought contingency plan, for informing wholesale customers about the plan, and~~ keep the citizenry informed about the ~~drought and water conservation plans-plan and drought contingency plans~~ and their importance to the city's water supply.

Sec. 11.05.003 Drought stages and water management measures

- a) *Water supply sources.* The city has several water supply sources that it can draw upon to meet its needs. Local surface water sources include Lake Nasworthy, Twin Buttes Reservoir, O.C. Fisher Reservoir and the South Concho River. Nonlocal surface water supplies are available to the city from O.H. Ivie Reservoir and Spence Reservoir. The city has a groundwater source in the Hickory Aquifer. When local reservoirs are full, the city's primary water supply will be from these reservoirs along with nonlocal or groundwater sources as needed. When local reservoirs are below full but above drought trigger points, the local sources may be utilized along with water brought in from nonlocal sources or groundwater sources. During drought conditions, the primary source of supply will be nonlocal sources, subject to the maximum amount available from each source, with the remaining amount of water coming from the local sources or groundwater sources that the city may develop. During each water supply level stage established in this section, the water utilities director may also use other alternative water sources with the prior approval of the Texas Commission on Environmental Quality executive director as appropriate and when required (e.g., interconnection with another water system, temporary use of a non-municipal water supply, use of reclaimed water for non-potable purposes, etc.).
- b) *Drought trigger point.* Whenever the total amount of water available to the city falls below the minimum criteria established for each water supply stage level, the city shall be deemed to have entered a drought stage for management of its water supplies. The water utilities director shall notify the city manager and city council upon entering the threshold of a drought stage. The council shall implement each stage by resolution. A notice of such resolution shall be published one time in the local newspaper. The criteria for each stage and the water management measures which shall be enforced are as follows in subsections d) to f).

c) *Public information.* The water utilities director will provide reports to the news media with information regarding current water supply conditions, projected water supply and demand conditions if the current drought conditions continue, and consumer information on water conservation measures and practices. Information describing each water supply stage trigger point and drought level restrictions on water use shall be prepared and published on the city's website.

d) *Water supply stage - Drought Level I.*

- 1) The minimum criteria for this drought stage shall be the following: The required minimum daily groundwater production coupled with the total amount of surface water available, as determined by the water utilities director, to the city from its developed water sources is less than a 24-month supply.
- 2) In addition to the conservation measures stated in section 11.05.002 of this article, the following additional water conservation measures shall be in force during Water Supply Stage - Drought Level I.
 - i. The use of treated or raw city water for watering lawns, gardens, landscape areas, trees, shrubs, golf courses (except greens) or other plants being grown outdoors (not in a nursery) shall be prohibited at all times; provided, however, a person may do such watering which shall be once every seven days during the period of April 1 through October 31 and once every 14 days during the period of November 1 through March 31 except during the "prohibited watering hours" as stated in section 11.05.002.
 - ii. Golf courses greens may be watered daily except during the "prohibited watering hours" as stated in section 11.05.002.
 - iii. Watering of "new landscape" shall be allowed in accordance with the provisions as stated in section 11.05.002 for "new landscape."

- 3) A multiplier shall be assessed to the volumetric water fees as set forth in section A8.002(a)(7) of this code.

e) *Water supply stage - Drought Level II.*

- 1) The minimum criteria for this drought stage shall be the following: The required minimum daily groundwater production coupled with the total amount of surface water available, as determined by the water utilities director, to the city from its developed water sources is less than an 18-month supply.
- 2) In addition to the conservation measures stated in section 11.05.002 of this article, the following additional water conservation measures shall be in force during Water Supply Stage - Drought Level II:
 - i. The use of treated or raw city water for watering lawns, gardens, landscape areas, trees, shrubs, golf courses (except greens) or other plants being grown outdoors (not in a nursery) shall be prohibited at all times; provided, however, a person may do such watering which shall be once every seven days during the period of April 1

through October 31 and once every 14 days during the period of November 1 through March 31 except during the "prohibited watering hours" as stated in section 11.05.002.

- ii. Golf course greens may be watered daily except during the "prohibited watering hours" as stated in section 11.05.002.
- iii. Watering of "new landscape" shall not be allowed as stated in section 11.05.002 for "new landscape."

- 3) A multiplier shall be assessed to the volumetric water fees as set forth in section A8.002(a)(7) of this code.

f) *Water supply stage - Drought Level III.*

- 1) The minimum criteria for this drought stage shall be the following: The required minimum daily groundwater production coupled with the total amount of surface water available, as determined by the water utilities director, to the city from its developed water sources is less than a 12-month supply.
- 2) In addition to the water conservation measures stated in section 11.05.002 of this article, the following water conservation measures shall be in force during Water Supply Stage - Drought Level III:
 - i. The use of treated or raw city water for watering of lawns, gardens, landscape areas, golf courses (including greens), shrubs or other plants being grown outdoors is prohibited. Hand watering or drip irrigation of trees and foundations may be done on days and at times as established by the city council.
 - ii. The use of treated or raw city water to fill, refill or maintain the level of any fountain or swimming pool is prohibited.
 - iii. Washing of automobiles, trucks, trailers, boats, or other types of vehicles or mobile equipment is prohibited except, if the health, safety and welfare of the public is contingent upon vehicle cleaning, as determined by the director of city health services, then the washing of such vehicles shall be allowed.
- 3) A multiplier shall be assessed to the volumetric water fees as set forth in section A8.002(a)(7) of this code.

Sec. 11.05.004 Exceptions and variances

- a) *Authority of city council.* The city council may allow exceptions to any of the provisions of this article. The council may place conditions on any exception.
- b) *Exceptions to watering restrictions.* There shall be an exception to the prohibitions of this article

regarding watering restrictions:

- 1) Use of water for installing, testing and repairing sprinkler systems.
- 2) Watering frequency and schedules for public parks, athletic facilities, schools, colleges and cemeteries shall be as approved by the city council.

c) *Variances.*

- 1) A person desiring an exemption from any provision of this article shall file a petition for variance with the city manager. All petitions for variances shall be reviewed and acted upon by the city council. The petition shall include at a minimum the following information:
 - i. Name and address of the petitioner(s).
 - ii. Purpose and estimated amount of water use.
 - iii. Specific provision(s) of this article from which the petitioner is requesting an exemption.
 - iv. Detailed statement as to how the specific provision of this article adversely affects the petitioner or what damage or harm will occur to the petitioner or others if the petitioner complies with this article.
 - v. Description of the relief requested.
 - vi. Period of time for which the variance is sought.
 - vii. Alternative water use restrictions or other measures the petitioner is taking or proposes to take to meet the intent of this article and the effective date of such other measures.
 - viii. Other pertinent information.
 - ix. A statement that petitioner has not within the last six months intentionally violated the current ordinance for which a variance is sought or, if such violations have occurred, a statement setting out all reasons why such ordinance was violated.
- 2) The city council may grant a variance from the requirements of this article after determining that, because of special circumstances applicable to the applicant, compliance with this article:
 - i. Cannot be technically accomplished during the expected duration of the water supply shortage or other condition for which this article is in effect;
 - ii. Will cause undue hardship on a program or service offered by a public entity; or

- iii. Substantially threatens the applicant's primary source of income.
- 3) Additionally, the city council may grant a variance from the requirements of this article if it determines that the applicant can implement alternative water use restrictions which meet or exceed the intent of this article. The city council shall approve specific alternative water use restrictions.
- 4) Any variance granted by the city council may be revoked after a determination by the city council that revocation is necessary for the public health and safety or upon a finding that the holder of a variance allowing alternative water use restrictions has not complied with such alternative restrictions.

Sec. 11.05.005 Implementation and service restrictions

a) Implementation.

- 1) The water utilities director for the city will act as the administrator of the ~~water conservation drought contingency plan~~Plan. The administrator will oversee the execution and implementation of all elements of the water conservation and drought contingency programs. The administrator will be responsible for supervising the promulgation and retention of adequate records for program verification.
- 2) The water conservation plan will be maintained for the duration of the city's financial obligation to the state under the state revolving loan fund program.

- b) *Contracts with other political subdivisions, water supply corporations or water suppliers.* Any political subdivision, water supply corporation, or water supplier that contracts with the city for the purchase of water shall adopt applicable provisions of the city's water conservation and drought contingency plan. Contracts for the sale of water that are already in effect will be revised to reflect the applicable provisions of the city's most current water conservation and drought contingency plan when the contracts are renewed. Every wholesale water contract entered into or renewed after this Article becomes effective, including contract extensions, must include a provision stating that, in case of a shortage of water resulting from drought, the water to be distributed shall be divided pro rata in accordance with Texas Water Code section 11.039, as it may be amended.

- c) *Service restrictions.* The ~~water conservation and drought contingency p~~Plan shall be enforced by the following service restrictions:

- 1) Water service taps will not be provided to customers not meeting the plan requirements.
- 2) The inclining block water rate structure should encourage retrofitting of old plumbing fixtures which use large quantities of water.
- 3) Customers who do not pay their water bills shall be subject to discontinuance or disconnection of service.
- 4) The building inspection department will not certify new construction which fails to meet the

plan requirements.

Sec. 11.05.006 Enforcement

- a) Violations of any provisions of the water conservation and drought contingency plan may be enforced as follows:
 - 1) *First violation.* Any person or entity as defined under this chapter may be given a verbal or written warning.
 - 2) *Second and subsequent violations.*
 - i. Violation of any provision of the water conservation and drought contingency plan constitutes a class C misdemeanor offense for which a citation may be issued.
 - ii. Second and subsequent violations shall be punishable by a maximum fine of up to \$2,000.00 per day per violation as provided by section 1.01.009 of the Code of Ordinances of the city.
 - iii. Proof of a culpable mental state is not required for a conviction of an offense under this section. Each day any person or entity fails to comply with the water conservation and drought contingency plan is a separate violation.
 - 3) *Third and subsequent violations.* For third and subsequent violations of the water conservation and drought contingency plan, the water utilities director shall, upon due notice to the customer, be authorized to discontinue water service to the premises where such violations occur. Services discontinued or disconnected under such circumstances shall be restored only upon payment of charges as provided for in article 11.02, division 2.
- b) Compliance with any provision of the water conservation and drought contingency plan may be enforced by civil court action as provided by state and federal law.

REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Pete Madrid Jr., Operations, Operations

Meeting Date: September 17, 2024

Item type: Consent Item

Caption:

Consider approving a five-year extension of the Water Remediation Technology LLC. Long Term Service Agreement "Radium Removal System Agreement", and authorizing the City Manager to negotiate and execute all related documents (Shane Kelton)

Staff Recommendation:

Approve

Summary/History:

Water Remediation Technology LLC. (WRT) is the provider for the radium removal process in the treatment of the Hickory Groundwater. The initial ten-year agreement with (WRT) is expiring this month. This action will allow us to extend this contract for another five-year term. We will be bring an amendment to this contract at the next meeting of the City Council to add the additional capacity that is being created with the Hickory Wellfield Expansion Project, but this contract must be extended prior to the amendment.

Funding Source(s):

Financial Impact:

There is no fiscal impact of this extension.

Other Information/Recommendation:

Staff recommends approval.

Attachments:

Presentation:

Shane Kelton

Approvals/Reviews:

Pete Madrid Jr.
Shane Kelton
Theresa James

Created/Initiated
Approved
Approved

Jeffrey Tomlinson
Heather Stastny

Approved
Final Approval

REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Sherry Bailey, Sr. Planner, Planning and Development Services

Meeting Date: September 17, 2024

Item type: Consent Item

Caption:

Consider approving a revised encroachment agreement with Shannon Medical Center and authorizing the City Manager to negotiate and execute all related documents (Aaron Vannoy)

Staff Recommendation:

Approve

Summary/History:

This encroachment agreement will be modified to include not only the aerial encroachment at 112 E College Ave but the vertical encroachment of the support structure on the north side of 112 E College Ave. Shannon will release the original agreement, and then we will file the new agreement with the County.

Funding Source(s):

Financial Impact:

Other Information/Recommendation:

Attachments:

- | | |
|-------------------|--------------------|
| 1. Overhead image | Overhead image.pdf |
|-------------------|--------------------|

Presentation:

Aaron Vannoy

Approvals/Reviews:

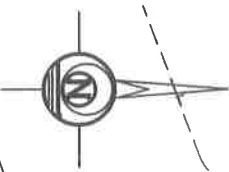
Sherry Bailey	Created/Initiated
Aaron Vannoy	Approved
Brandon Dyson	Approved
Aaron Vannoy	Approved
Theresa James	Approved

Heather Stastny

Final Approval

0 20 40 80
 GRAPHIC SCALE : FEET
 BEARINGS HEREON ARE BASED ON
 TEXAS COORDINATE SYSTEM NAD83
 - TEXAS CENTRAL ZONE BY GPS
 OBSERVATION.

SCALE: 1" = 40'



2" in Concrete for northwest
 corner of Block 22A

Oakes Street

REF.: West 110' of Lots 10
 and 11, Block 22-1/2, San
 Angelo Main Town Addition

2" in Concrete for southerly
 most corner of Block 22-1/2
 REF.: First Christian Church
 Vol. 673 Pg. 640 OPR

S69°47'43"W 110.00'

N20°12'18"W 100.00'

NEW CENTRAL
 UTILITY PLANT

REF.: Lot A, Block 22-1/2,
 Section Four,
 Shannon Medical Center
 Downtown Campus
 Cabinet H, Slide 59, PR

N69°47'43"E 20.00'

ENCROACHMENT
 30 SQ. FT.

S69°47'43"W 240.00'

N70°11'56"E 509.72'

5'-6" R.O.W.

REF.: Lot A, Block 22A,
 Section One,
 Shannon Medical Center
 Downtown Campus
 Cabinet E, Slide 200, PR

MAP OF A 30 SQUARE FEET ENCROACHMENT IN
 THE EAST COLLEGE AVENUE RIGHT OF WAY, CITY
 OF SAN ANGELO, TOM GREEN COUNTY, TEXAS.

REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Jeremy Valgardson, Airport Director, Airport

Meeting Date: September 17, 2024

Item type: Regular Item

Caption:

Consider approving Revision #1 to Amendment #4 to the Master Airport Agreement with Jviation, A Woolpert Company LLC. to construct the South Taxilane, adding \$186,961 to the base agreement and authorizing the City Manager to negotiate and execute all related documents (Presentation made by Airport Director Jeremy Valgardson)

Staff Recommendation:

Approve

Summary/History:

This item is to add \$186,961 to Jviations Amendment #4, design and engineering fees to construct the south taxilane. To date, this project has been placed for bid 3 times to meet FAA specs. We received no bidders through all three attempts. After meeting with several local and non-local contractors we have discovered that it is difficult to meet FAA specs with the readily available material in and around San Angelo. One of the local contractors recommended we bid the project out using a less stringent TxDOT spec. After meeting with the FAA, they were open to discussion but needed to see a proper modified TxDOT design that would handle the weight of a 60,000lb aircraft and would have an expected lifespan of 20 years. Jviation has taken the core samples and modified the TxDOT roadway mix to meet the FAA's modified standards. The regional FAA engineers have approved the design. We are awaiting approval from the regional FAA headquarters before we have the greenlight to place the item for bid using FAA grant dollars. Once we get the signatures from the FAA regional engineering office, we can put the project back out for bid.

The additional funds are needed to pay Jviation for the extra design and testing that was required to build the modified model. The additional funds are also to cover the additional expenses to place the project back out for bid.

The FAA agrees that the expenses are grant eligible and will cover 90% of the cost through our already awarded Grant 47 AIP funds.

Funding Source(s):

Financial Impact:

This project will amend \$186,961 to Jviation Amendment #4 bringing the total #4 amendment amount to \$684,985.37

This project will be funded through AIP Grant 47. We already have the Grant award with the following allowances:

FAA's Share (90%):	\$1,043,050
City's Match through PFC's (10%):	\$115,895
GRANT TOTAL:	\$1,158,945

Financial Breakdown for this project:

FAA's Share (90%):	\$616,486
City's Share (PFC's)(10%):	\$68,499.37
Amendment #4 TOTAL:	\$684,985.37

Other Information/Recommendation:

Attachments:

1. SJT AIP 047 Revision No. 1 to Amendment No. 4 SJT AIP 047 Revision No. 1 to Amendment No. 4.pdf

Presentation:

Jeremy Valgardson

Approvals/Reviews:

Jeremy Valgardson	Created/Initiated
Brandon Dyson	Approved
Theresa James	Approved
Jeffrey Tomlinson	Approved
Tina Dierschke	Approved
Theresa James	Approved
Heather Stastny	Final Approval

**REVISION NO. ONE (1) TO
AMENDMENT NO. FOUR (4) TO CONTRACT
DATED APRIL 19, 2021
BETWEEN
JVIATION, A WOOLPERT COMPANY
AND
SAN ANGELO REGIONAL AIRPORT
SAN ANGELO, TEXAS**

The Sponsor and Jviation agree to amend their contract for improvements to the San Angelo Regional Airport, San Angelo, Texas to include fees for engineering services. The improvement item is included in the Scope of Work of the original contract. The item covered by this amendment is described as follows:

- Construct South Hangar Access Taxilane

The Sponsor agrees to pay Jviation for the services listed under Section 2 of the original contract in the following manner, and within the time constraints outlined in the AIP development schedule.

PART A - BASIC SERVICES

DESIGN

Preliminary Design Lump sum of \$89,941.00
Design Lump sum of \$138,340.00
Value Engineering Lump sum of \$126,461.00

BIDDING

Bidding..... Lump sum of \$14,098.00

TOTAL BASIC SERVICES.....Lump sum of \$368,840.00

Method of payment shall be as follows:

If work is abandoned, or terminated, after obtaining approval by the Sponsor and the FAA of the final construction plans and specifications, the Sponsor shall reimburse up to 100 percent of the total lump sum as listed under PART A, and 100 percent of the invoiced costs for soils and pavement investigations, topographic surveys, and hydrological studies, or other studies as listed under PART B.

PART B - SPECIAL SERVICES

The maximum estimated SPECIAL SERVICES engineering is as follows:

GEOTECHNICAL INVESTIGATIONS

Beyond Engineering and Testing Lump sum of \$15,000.00

CULTURAL AND HISTORICAL SURVEY

Moore Archaeological Consulting, Inc. Lum sum of \$2,500.00

POTHOLING/UTILITY CAMERA

Potholing/Utility Camera Time and Materials of \$4,000.00

QA TESTING

QA Testing..... Lump sum of \$30,000.00

Additional QA Testing Lump sum of \$60,500.00

TOTAL SUBCONSULTANT SERVICES..... \$112,000.00

DESIGN SURVEY

Design Survey.....Lump sum of \$5,776.75

TOTAL DESIGN SURVEY.....Lump sum of \$5,776.75

CONSTRUCTION ADMINISTRATION

Construction Administration..... Lump sum of \$54,866.00

Post Construction Lump sum of \$40,138.00

TOTAL CONSTRUCTION ADMINISTRATION Lump sum of \$95,004.00

CONSTRUCTION COORDINATION AND FIXED FEE

Construction CoordinationCost Plus of \$72,690.51

Fixed Fee for Construction CoordinationLump Sum of \$14,500.00

REIMBURSABLE COSTS

Reimbursable Costs During Construction Coordination..... Actuals Not to Exceed of \$16,174.11

TOTAL CONSTRUCTION COORDINATION AND FIXED FEE.....\$ 103,364.62

TOTAL SPECIAL SERVICES..... \$ 316,145.37

TOTAL\$ 684,985.37

Method of payment shall be as follows:

For services rendered under PART B - SPECIAL SERVICES, the Sponsor agrees to make monthly payments based upon the work performed by Jviation, up to 90 percent of the total contract. The final ten percent of the fee shall be due and payable when the project final inspection and the construction report have been completed, and when reproducible Record Drawings have been submitted to the Sponsor and when the revised Airport Layout Plan has been approved by the FAA or when the construction work has terminated. The Record Drawings and Construction Report shall be submitted within a period of 90 days from end of construction period.

The actual amounts to be invoiced for mileage, per diem, and lodging will be in accordance with the applicable, published IRS and GSA rates at the time of service and may vary from the rates used in the fee estimate.

All other terms and conditions of the original contract shall remain in effect.

IN WITNESS WHEREOF, the parties hereto have affixed their signatures this _____ day of _____ 2024.

CITY OF SAN ANGELO, TEXAS:

By: _____

Daniel Valenzuela, City Manager

ATTEST:

By: _____

Heather Stastny, City Clerk

CITY OFFICIAL APPROVALS:

APPROVED AS TO PURCHASING:

Jeffrey Tomlinson, Purchasing Manager

APPROVED AS TO CONTENT:

Director of Airport: Jeremy Valgardson

APPROVED AS TO RISK:

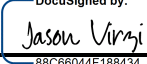
Shandi McWright, Interim- Risk Manager

APPROVED AS TO FORM

Brandon Dyson, Deputy City Attorney

ENGINEER APPROVAL:

Jvation, A Woolpert Company, LLC

DocuSigned by:

88C66044F188434...

Jason Virzi, PE, Vice President

Project Description:

Construction of a new taxilane at the south end of the apron. The main taxilane will be 935-feet long with two additional side taxilanes 260-feet long by 35-feet wide. The addition of these taxilanes is to support hangar development in the area. It is anticipated sixteen box/executive hangars, and two nested T-hangars will be constructed once the taxilanes are complete. The hangars will accommodate existing and new users of the Airport. Most of the hangar spots have been reserved by interested individuals.

Progress to Date:

Initial Bid

The Taxilane project was originally advertised for bid alongside the Reconfigure Runway 9-27 to Taxiway H project on March 30, 2023. A pre-bid meeting was held on April 12, 2023. There was representation from one local contractor, Trifecta Equipment, at the pre-bid meeting. Bid opening was held on May 12, 2023, and no bids were received.

Just before the initial bid of the project, a design change was requested to add two additional taxilanes to the project to support 8 additional 60'x60' hangers. This was not in the original scope of the project and there was a large effort to develop grading plans for the new area. In addition, replacement of vehicle gates was added to the project.

Bid #2

After discussions with the FAA Texas ADO, the project was redesigned with a concrete pavement section since the contractors (Reese Albert) indicated they would not produce the FAA P-401 asphalt. The taxilane project was bid again with the Reconfigure Runway 9-27 to Taxiway H project on May 31, 2023. The original asphalt project design was included along with a concrete bid alternative. In addition, the pavement width was divided into a 75' width bid alternative and an additional 35' width bid alternative. A pre-bid meeting was conducted on June 14, 2023. Zachary Construction and Royal Electric were the contractors in attendance at the meeting. The bid opening was held on June 29, 2023, with no responsive bids. Zachary Construction did submit a bid but did not follow all bid requirements and was considered non-responsive. The bid from Zachary Construction was for the concrete alternative and was more than double the engineer's estimate.

Bid #3

Up until bid #3, the costs to advertise the taxilane project were split between the Taxiway H project and the taxilane project. Bid #3 was solely for the taxilane project. Subsequently, the project was discussed with the local contractor, Reece Albert, to collaborate on a design and schedule that would result in successful bidding and construction. The taxilane project was redesigned to use P-208 instead of P-209 and the utility relocation work was moved to a separate schedule. During this time there was a turnover with AEP (the power company) which required the project limits to be adjusted and the design changed

for the utilities (which make up a significant portion of the project). The project was repackaged and bid as a stand-alone project on September 26, 2023. A pre-bid meeting was held on October 12, 2023. Representatives from Reece Albert, Reece Albert Trucking/Diamond A, and Ambrozi Contracting were in attendance. The bid opening was held on November 30, 2023, and one responsive bid was received from Housley Communications for Schedule III (Utility Relocation). No bids were received for Schedule I and II (Construct Taxilane).

After the bid opening, Reece Albert explained it is very difficult and costly to meet the P-401 and P-208 specifications. They requested utilizing Texas Department of Transportation (TxDOT) specifications for the asphalt and base courses. Other contractors contacted during the bidding phases indicated their schedules were full, and they weren't looking to bid additional projects at the time. However, there is growing interest in the project from contractors outside the San Angelo area. The consensus from all contractors is that utilizing TxDOT Special Specification 3076, Dense Graded Hot-Mix Asphalt and Item 247, Flexible Base will increase the availability of material and the likelihood of competitive bids.

A preliminary meeting with the ADO was held on May 2, 2024, to discuss the use of TxDOT asphalt and base specifications for the taxilane. Because the fleet mix has aircraft greater than 30,000 lbs and less than 60,000 lbs, it was determined that the TxDOT specifications could be used for the taxilane project with the approval of Modifications of Standards (MOS). MOS for the asphalt and base course specifications were submitted in ADIP on May 8, 2024. There have been ongoing discussions to resolve questions from the ADO during review of the MOS.

Additionally, there has been ongoing work regarding the FAA communications lines that runs through the project limits. An Reimbursable Agreement (RA) was signed February 23, 2023, for engineering costs to develop an approved plan for the communications lines. It was originally proposed that the lines should be protected in place. After potholing the existing lines in February 2024, the FAA determined the lines could not remain in place and need to be relocated. A relocation plan was submitted for FAA approval July 1, 2024.

Next Steps:

Bid #4

Once final approval for the MOS and the FAA communications line relocation plan have been received, the project will be redesigned and repackaged to include the updated specifications and design changes. The RA will be amended to include any construction inspection costs and the taxilane project can be bid as a stand-alone project again.

PHASE SUBTOTAL		\$	35,483.00	TOTALS			40	4	9	4		48		24	18	8	\$	34,205.00

	Phase Fee	Reimbursable Costs	Total Cost
PART A - BASIC SERVICES (LUMP SUM)			
3.0 Rebidding Phase (Lump Sum) Concrete Option Added 5-31-2023	\$ 36,575.00	\$ -	\$ 36,575.00
3.1 Rebidding Phase (Lump Sum) Utilities as a separate schedule 9-26-2023	\$ 53,125.00	\$ 1,278.00	\$ 54,403.00
3.2 Rebidding Phase (Lump Sum) TxDot Specifications	\$ 34,205.00	\$ 1,278.00	\$ 35,483.00
SUBTOTAL	\$ 123,905.00	\$ 2,556.00	\$ 126,461.00
QA Testing			
Rodriguez Engineering Laboratories			
		SUBTOTAL	\$ 60,500.00
TOTAL	\$ 123,905.00	\$ 2,556.00	\$ 186,961.00

REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Sidney Walker, Civic Events Manager, Civic Events

Meeting Date: September 17, 2024

Item type: Regular Item

Caption:

Discussion and direction regarding the Bill Aylor, Sr. Memorial River Stage renovations (Presentation made by Civic Events Manager Sidney Walker)

Staff Recommendation:

Direction from Council

Summary/History:

Following the March 2023 approval by City Council for Bill Aylor Sr. Memorial River Stage renovations, City staff proceeded with developing the plans for the funded improvements. We also reviewed the possibility of adding a shade canopy in the initial phase of the renovations. On August 22, 2024, staff met with the Civic Events Advisory Board, and they showed strong interest in adding the new restrooms/concessions building with a new lift station in the initial phase. The Board believed these improvements would benefit customers and the City more than the shade canopy. Staff also met with the Development Corporation to gauge their interest in funding some of the currently unfunded improvements. They also preferred additional improvements in the new restrooms/concessions building with a lift station.

Staff has identified \$1,694,00 in funding for improvements. We have identified partial funding of approx. \$720k remaining at this time for other improvements, including the higher priority items such as the shady canopy or the new concessions/restroom building and lift station. We are seeking City Council's direction for the next step in the renovation. Should we proceed with the project as designed and funded or work towards securing the funds and designs for some of the other improvements?

Funding Source(s):

Financial Impact:

The City has identified \$1,694,000 in funding to start the initial phase of the Bill Aylor Sr. Memorial River Stage renovations. Staff has identified additional funding of approx. \$720k for other unfunded improvements.

Unfunded High Priority Improvements:

Shady Canopy and lighting - \$1,350,000

New Restrooms/Concessions/ Lift Station - \$1,720,000

Other Information/Recommendation:

Attachments:

- | | | |
|----|---|---|
| 1. | City Council - River Stage Improvements
Presentation - V.5 (003) | City Council - River Stage Improvements
Presentation - V.5 (003).pdf |
| 2. | Green Phase Estimate - RS Renovations | Green Phase Estimate - RS Renovations.pdf |
| 3. | Gold Phase Estimate - RS Renovations | Gold Phase Estimate - RS Renovations.pdf |

Presentation:

Sidney Walker

Approvals/Reviews:

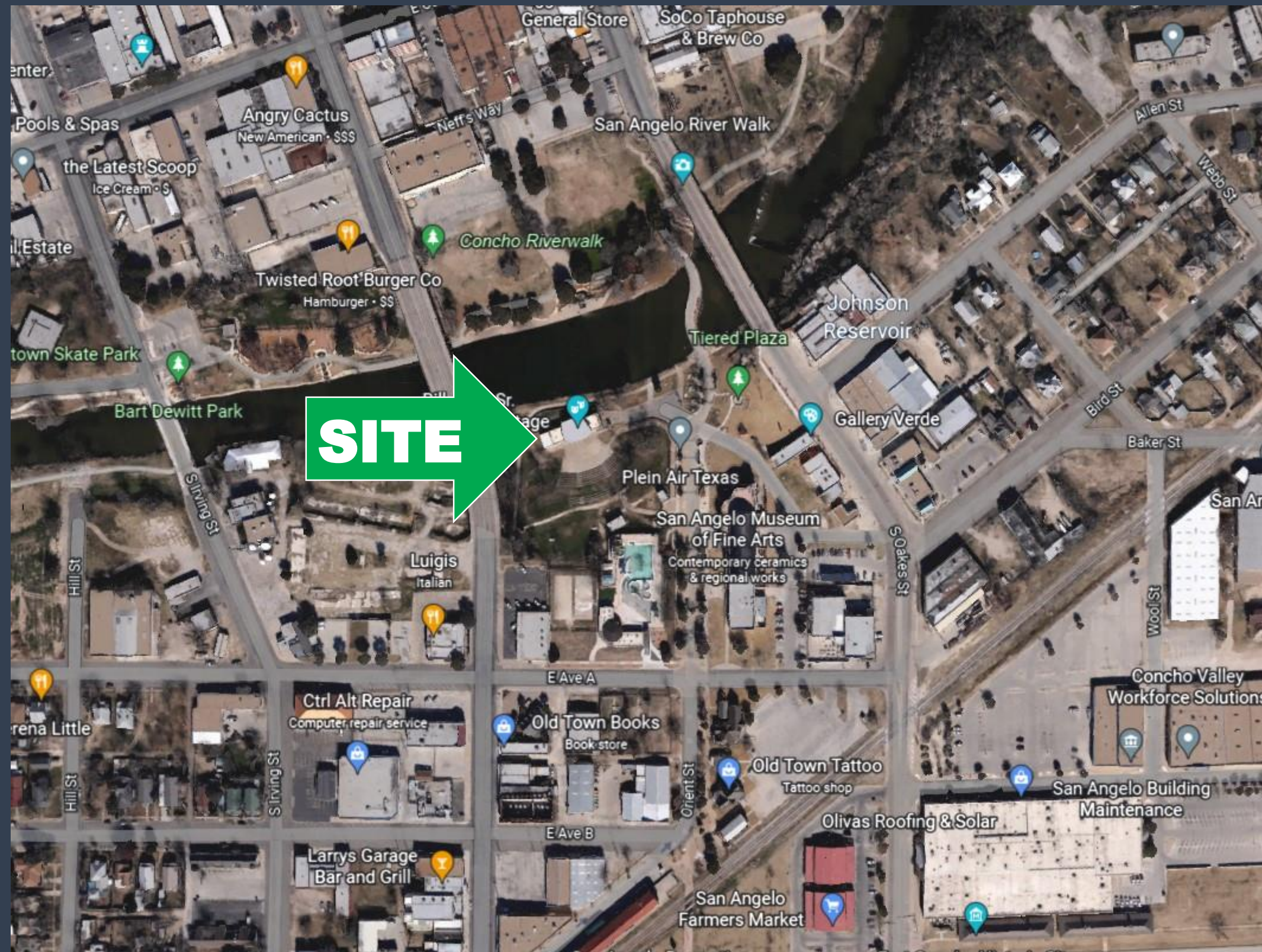
Sidney Walker	Created/Initiated
Carlton White	Approved
Theresa James	Approved
Jeffrey Tomlinson	Approved
Tina Dierschke	Approved
Theresa James	Approved
Heather Stastny	Final Approval



CITY COUNCIL

September 17, 2024

Bill Aylor Sr. Memorial
River Stage Proposed Renovations



Bill Aylor Sr. Memorial River Stage Proposed Renovations

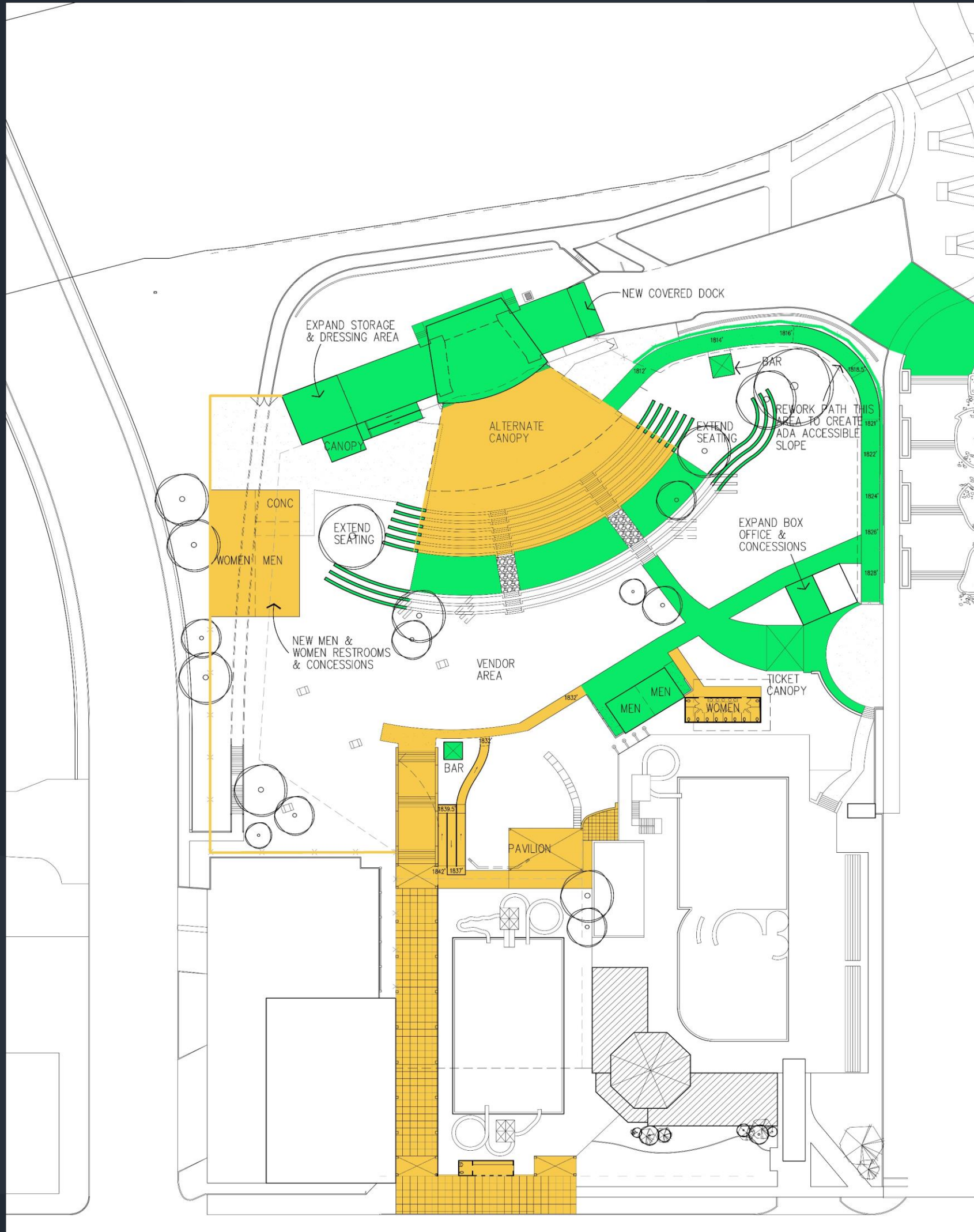
Bill Aylor Sr. Memorial River Stage- Current Conditions



Bill Aylor Sr. Memorial River Stage

Timeline

- Jan 26, 2023 - CEAB made recommendation in favor of RS renovations.**
- Mar 21, 2023 - City Council approved of RS renovations**
- Mar 2023 – Jul 2024 – design work for funded items and shade canopy feasibility research.**
- Jul 24, 2024 - Met w/ COSA DC**
- Aug 22, 2024 - Met w/ CEAB**



Bill Aylor Sr. River Stage Funding

- Green - City staff has secured approx. \$1,694,000 in funding.
- Gold - Funding source not secured.

Green Phase One Plans

Box Office/ Concessions addition

Entry canopy

New Paving and relocate fencing at plaza

New HC elevated platforms

Relocate fencing for ADA access

Relocate west side fencing

Demolition

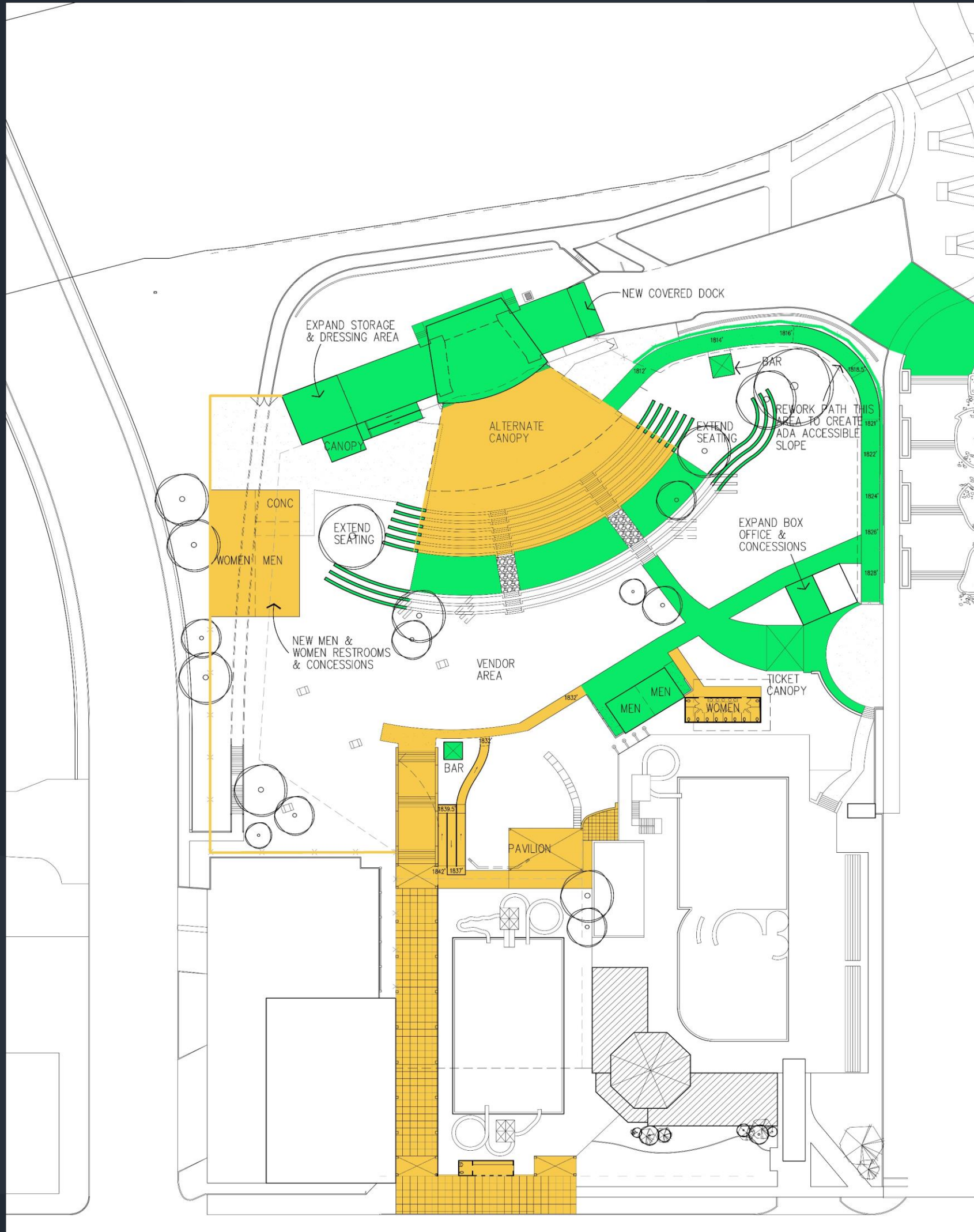
Remodel existing restrooms – ADA issues

Storage/ Dressing room addition

Add Production office/ remodel interior

Green Phase One Plans

- 2 new concrete ramps and stairs
- Paint all surfaces
- New loading dock and canopies
- Extend hillside seating
- New stamped concrete
- New bar/merchandise structures (2)
- Irrigation for manual watering
- Sewer lines
- Electrical
- New concrete drive paving / level drive



Green Phase Costs

- Construction Subtotal - \$1,204,000
- Contingency - \$240,000
- AE fees, P/O, Approvals - \$250,000
- Estimated Cost - \$1,694,000

Gold Phase Two Plans

New 16 x 42 restroom bldg.

New sewer lift station

New 48 x 72 restrooms/concessions bldg.

Site work - new walks, rework plaza, paving

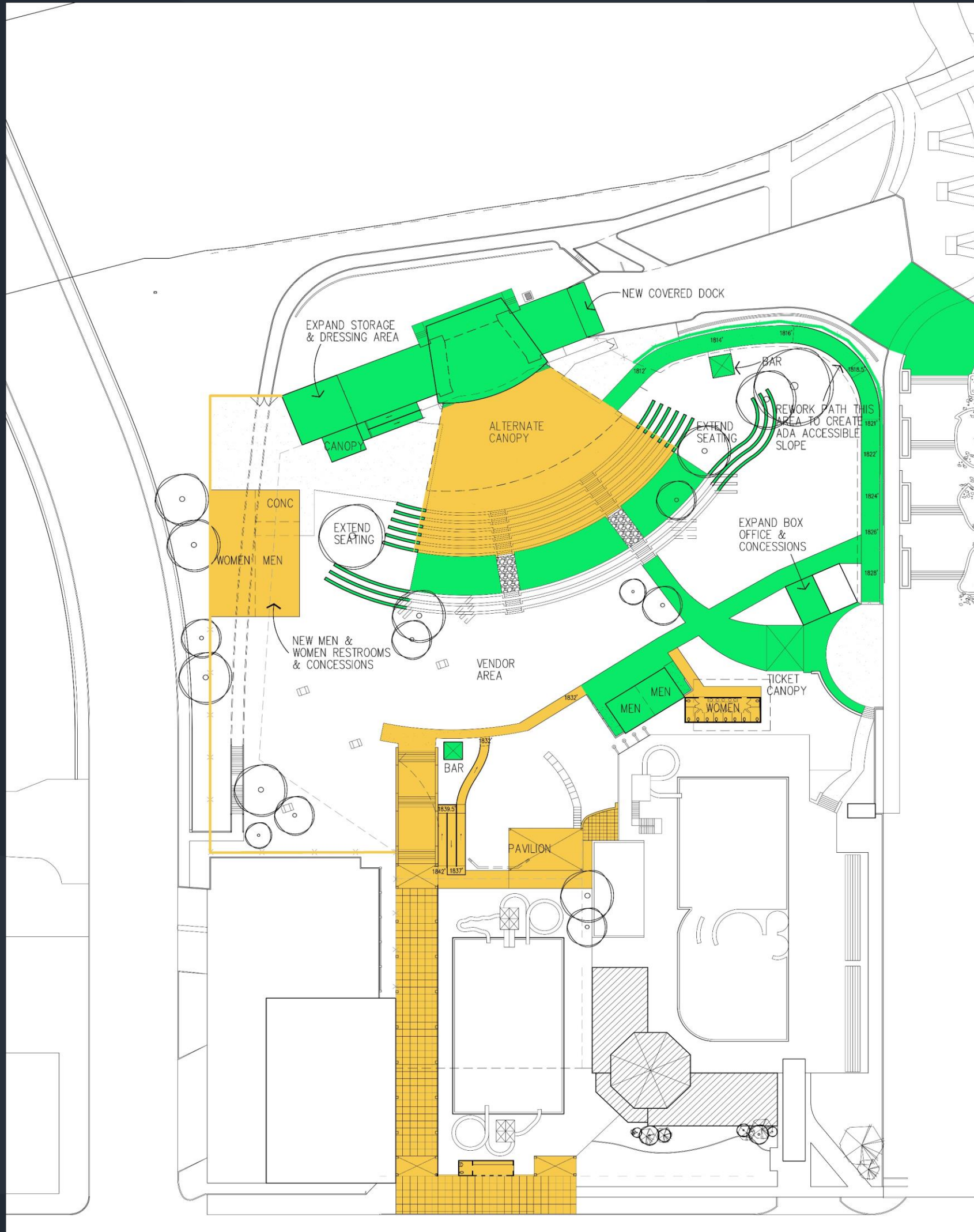
Arbor walk and entry towers

New ticketing office

New Fabric Canopy

Canopy lighting

New digital signage



Gold Phase Costs

- Construction Subtotal - \$3,670,000
- Contingency - \$370,000
- AE fees, P/O, Approvals - \$917,500
- **Estimated Cost - \$4,957,500**

Unfunded High Priority Improvements

Shade canopy and lighting - \$1,350,000

New Restrooms/Concessions/Lift Station* - \$1,720,000

*Does not include design/contractor fees

Bill Aylor Sr. Memorial River Stage

- **Seeking City Council's direction**



CITY COUNCIL

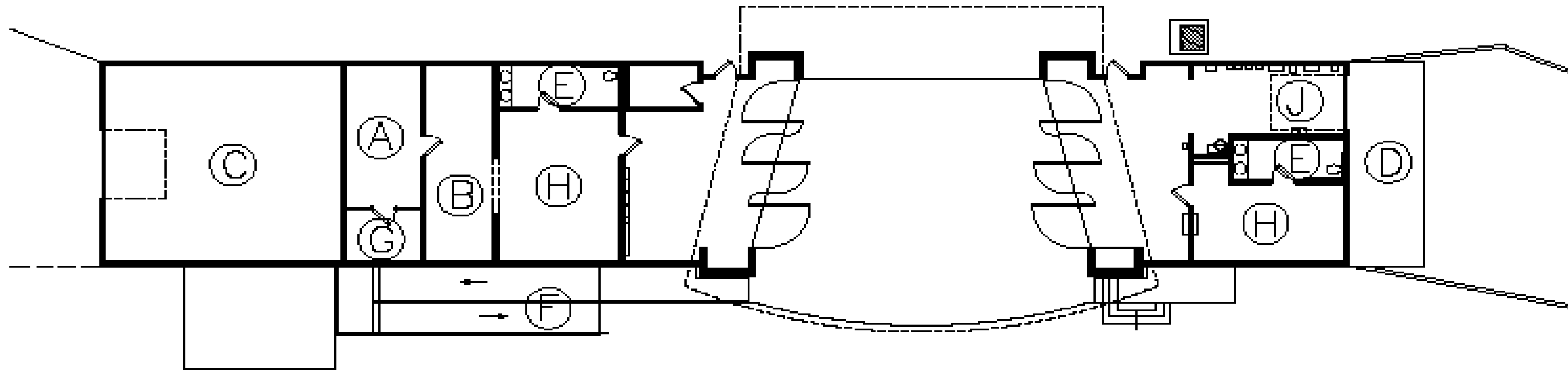
September 17, 2024

Bill Aylor Sr. Memorial
River Stage Proposed Improvements

Bill Aylor Sr. Memorial River Stage

- Additional slides for reference

Bill Aylor, Sr. Memorial River Stage - Plan



- (A) NEW PRODUCTION OFFICE
- (B) EXPANDED GREEN ROOM
- (C) NEW STORAGE ADDITION
- (D) NEW COVERED DOCK
- (E) ADA ACCESSIBLE TOILET

- (F) NEW ACCESSIBLE RAMP
- (G) NEW STORAGE
- (H) EXISTING GREEN ROOM
- (J) MECHANICAL

Shade Canopy

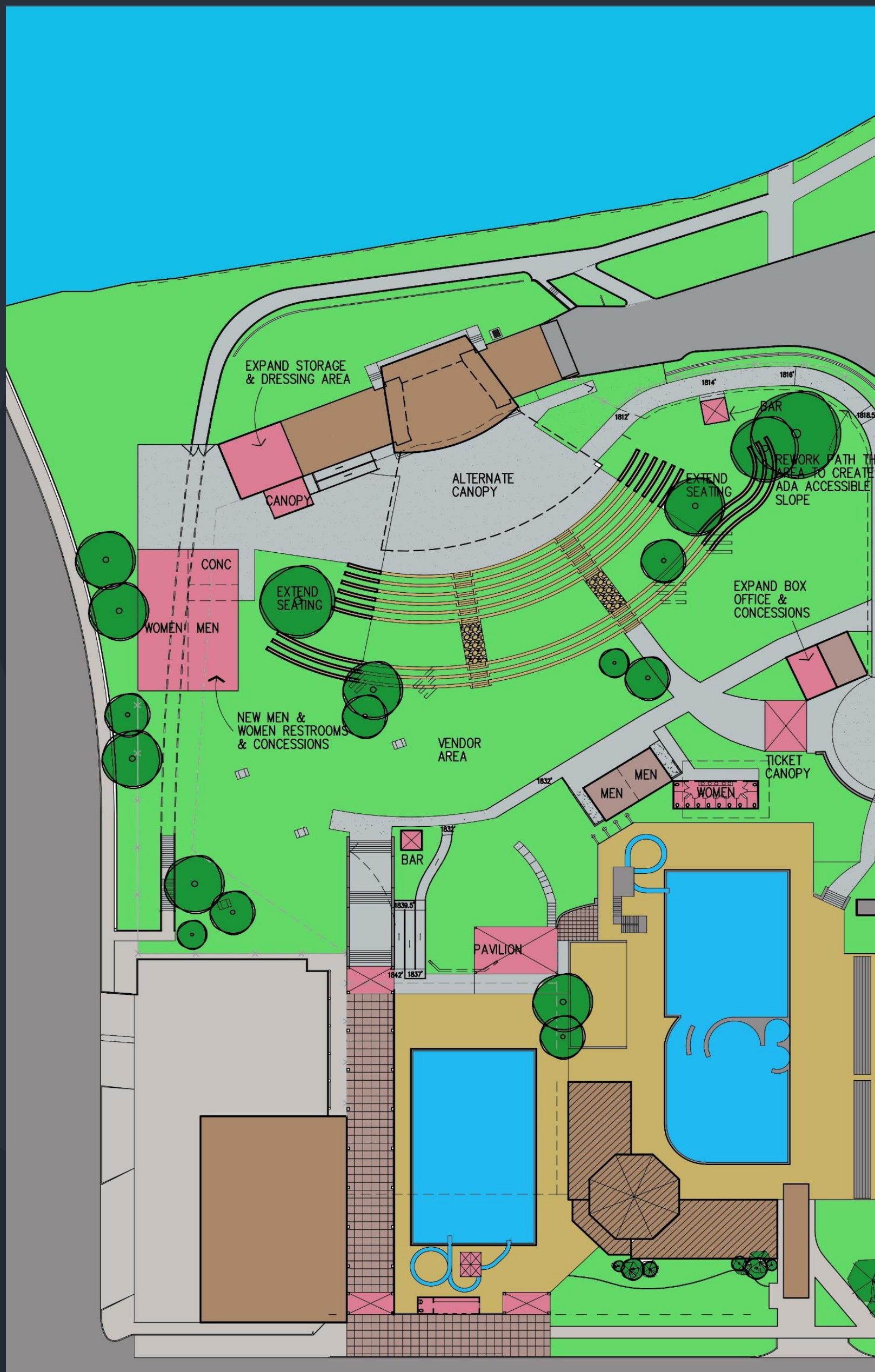


Shade Canopy

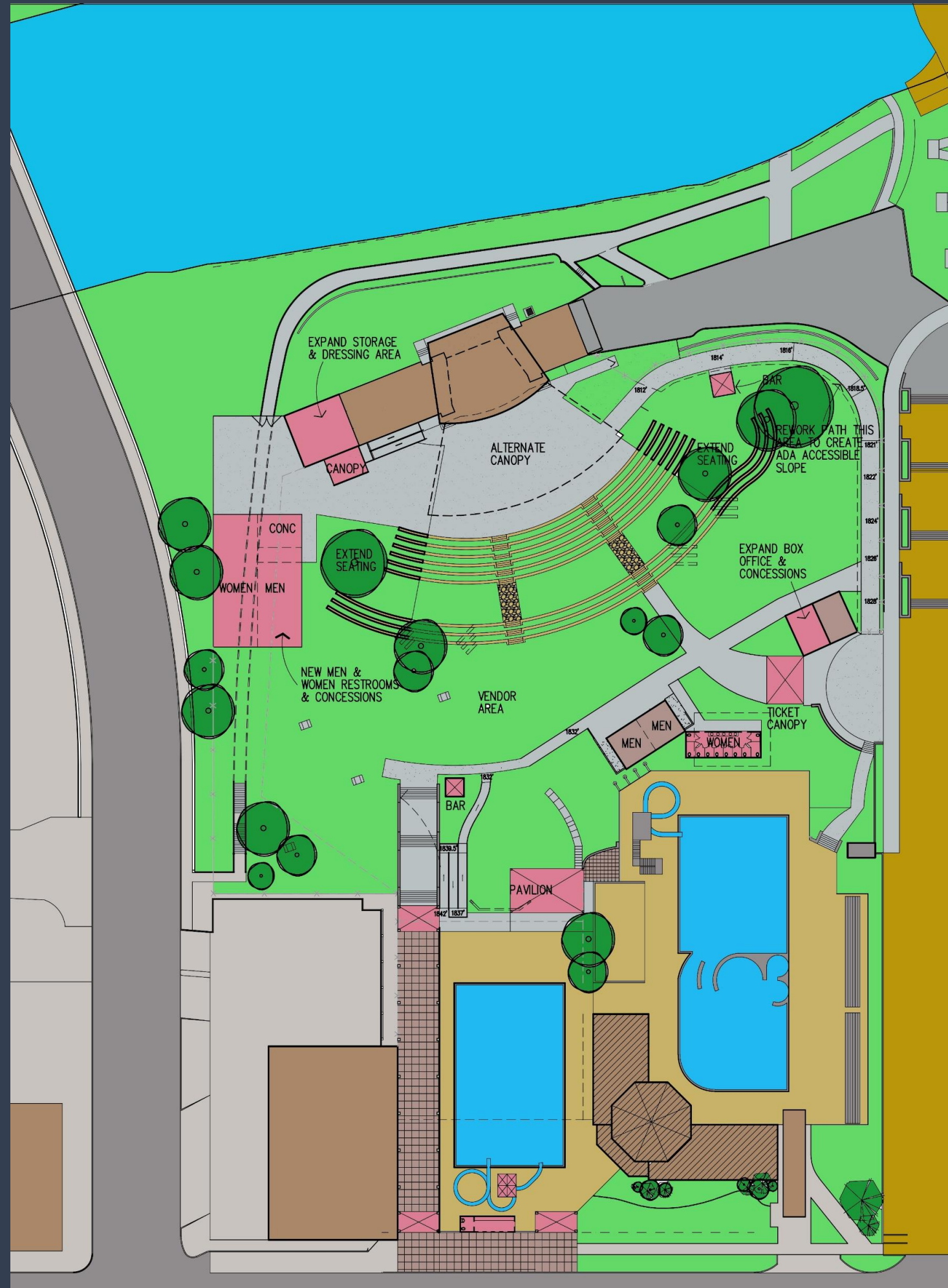


ADA improvements

- Accessible walkways.
- Improving bathroom reach ranges.
- Adding accessible toilet stalls and lavatories.
- Improved accessibility to stage and back of stage.
- Accessible elements in dressing room bathrooms.



Bill Aylor, Sr. River Stage Proposed Renovations



Riverstage Modifications - Year ONE plan

Year ONE

Box Office/Concessions addition	\$72,000
Entry canopy	\$40,000
New paving and relocate fencing at plaza	\$75,000
New HC elevated platforms	\$20,000
Relocate fencing for ADA access	\$25,000
Relocate west side fencing	\$25,000
Demolition	\$30,000
Remodel existing restrooms - ADA issues	\$21,000
Storage/Dressing room addition	\$225,000
Add Production office/remodel interior	\$169,800
2 new concrete ramps and stairs	\$22,000
Paint all surfaces	\$60,000
New loading dock and canopies	\$40,000
Extend hillside seating	\$42,000
New stamped concrete	\$95,000
New Bar structures (2)	\$43,200
Irrigation - rotator heads	\$55,000
Sewer Lines	\$30,000
Electrical	\$20,000
New concrete drive paving	\$34,000
Level drive for buses	\$60,000
Construction subtotal	\$1,204,000
Contingency	\$240,000
AE fees, Contractor P/O, Approvals,	\$250,000
Year One cost	\$1,694,000

Riverstage Modifications - Year TWO plan

Year TWO

New 16 x 42 restroom building	\$68,000
New sewer liftstation	\$1,000,000
New 48 x 72 Restrooms/Concession building	\$720,000
Site Work (new walks, rework plazas, paving)	\$262,000
Arbor Walk and Entry towers	\$200,000
New Ticketing Office	\$45,000
New Fabric Canopy	\$1,200,000
Canopy Lighting	\$150,000
New digital signage	<u>\$25,000</u>
Construction subtotal	\$3,670,000
Contingency	\$370,000
AE fees, Contractor P/O, Approvals,	\$917,500
Year Two cost	\$4,957,500

REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Theresa James, City Attorney, Human Resources/Risk Management

Meeting Date: September 17, 2024

Item type: Regular Item

Caption:

Consider the following items regarding Meet & Confer:

1. Approval of an agreement with the San Angelo Police Officers Coalition, establishing certain terms and conditions of employment for covered Police Officers, to be effective October 1, 2024 through December 31, 2025, and authorizing the City Manager to negotiate and execute all related documents; and
2. First reading and public hearing of an ordinance amending the budget for the fiscal year beginning October 1, 2024, and ending September 30, 2025, for Police Department salary adjustments (Presentation made by Human Resources Director Bryan Kendrick, SAPOC President Noel Anderson and Finance Director Tina Dierschke)

Staff Recommendation:

Approve

Summary/History:

In December 2024, the City and San Angelo Coalition of Police (SACOP) entered into a Meet and Confer Agreement that expires December 31, 2024. Negotiations between the two parties for another agreement have concluded, and the parties have reached a tentative agreement that includes the following:

- Increased pay for officers within current budgetary limits
- additional add pay for specialized duties
- increased lateral transfer opportunities
- Modifications to the assessment center process
- freezing of six vacant officer positions to help supplement pay

The agreement will be effective from October 1, 2024, through December 31, 2025.

This proposed Budget amendment contains the following items (additional information attached):

- The Police Department will utilize the funds to implement a new pay plan effective 10/01/2024 as covered by the Meet & Confer Agreement and employed on October 1, 2024.

Funding Source(s):

Financial Impact:

The numbers above are net benefit/(cost); see Exhibit A of the ordinance for additional details. Negative numbers indicate the use of fund a balance. Funds showing \$0.00 have a corresponding revenue and expenditure offset each other; therefore, the net financial impact is zero.

Other Information/Recommendation:

Attachments:

- 1. 2024 09-17 Budget Ordinance Amendment 2024 09-17 Budget Ordinance Amendment.docx

Presentation:

Bryan Kendrick, Noel Anderson, Tina Dierschke

Approvals/Reviews:

Theresa James	Created/Initiated
Bryan Kendrick	Approved
Tina Dierschke	Approved
Michael Dane	Approved
Theresa James	Approved
Heather Stastny	Final Approval

AN ORDINANCE OF THE CITY OF SAN ANGELO AMENDING THE BUDGET FOR THE FISCAL YEAR BEGINNING OCTOBER 1, 2024, AND ENDING SEPTEMBER 30, 2025, FOR POLICE DEPARTMENT SALARIES.

WHEREAS, the City of San Angelo has determined that the police department pay plan shall be amended,

WHEREAS, the resources necessary for these changes are available.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY OF SAN ANGELO, TEXAS THAT:

The City's budget for fiscal year 2024-2025 be amended by the amounts contained in **Exhibit "A"** to be effective upon final approval.

INTRODUCED with public hearing on the 17th day of September 2024, and finally **PASSED** on this 1st day of October 2024.

ATTEST:

THE CITY OF SAN ANGELO, TEXAS:

Heather Stastny, City Clerk

Brenda Gunter, Mayor

APPROVED AS TO CONTENT:

APPROVED AS TO FORM:

Tina Dierschke, Finance Director

Theresa James, City Attorney

EXHIBIT A

Police Department

Effective 10-1-24

Civil Service Pay Plan

<u>Grade</u>	<u>Step</u>	<u>Position</u>	<u>Annually</u>
P23	1	Recruit	\$58,208
P27	1	Police Officer: Basic	\$62,595
P27	2	Police Officer: Intermediate	\$70,085
P27	3	Police Officer: Advanced	\$76,505
P27	4	Police Officer: Master	\$81,855
P29	1	Sergeant: Intermediate	\$83,460
P29	2	Sergeant: Advanced	\$89,880
P29	3	Sergeant: Master	\$94,695
P30	1	Lieutenant: Advanced	\$105,930
P30	2	Lieutenant: Master	\$111,280

Additional Pay

Crisis Negotiation	\$100/month
Critical Incident	\$100/month
Special Weapons & Tactics	\$100/month
Incentive/College Training	max of \$400/month
Longevity Per Year of Service (25 yr max)	\$4/month
Loyalty Per Year of Service (no max)	\$25/month
Drone Pay (4 positions max)	\$100/month
Training Officer	\$100/month
Training Officer Assignment	\$50/day

On-call response overtime will pay at 150%, and will be eligible for FLSA overtime. This overtime will be capped at the budgeted amount. Once this value is exceeded, on-call response overtime will convert to call out pay. Any expenses that exceed the budgeted amount will need to be funded through the police operating budget.

REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Carlton White, Parks and Recreation Director, Parks and Recreation

Meeting Date: September 17, 2024

Item type: Regular Item

Caption:

Consider approving agreements with non-profit organizations allocating up to \$75,000 of Hotel Occupancy Tax receipts for eligible activities listed as follows and authorizing the City Manager to negotiate and execute all related documents (Carl White)

1. Annual Request

- San Angelo Symphony -- \$25,000
- Angelo Civic Theater -- \$15,000
- Ballet San Angelo -- \$15,000
- San Angelo Broadway Academy -- \$10,000
- Fort Concho Museum - \$2,500

2. Annual Special Projects

- Hispanic Heritage Museum & Cultural Center, Dia de los Muertos -- \$2,500
- San Angelo YMCA -- \$1,000
- Emmanuel School of the Fine Arts -- \$1,000
- Heritage Park -- \$500

3. New Request

- Downtown San Angelo, Mini Miss Wool Pageant -- \$1,000

Staff Recommendation:

Approve

Summary/History:

With the dissolution of the San Angelo Cultural Affairs Council (SACAC), an action item that needs to be picked up by the City of San Angelo is the allocation of hotel occupancy tax funds to local qualified not-for-profit organizations based on applications that had been submitted to SACAC. The total amount SACAC had been allocated (through agreement with the City) for this purpose was \$75,000, so these proposed allocations of \$71,000 are within that budgeted amount.

Funding Source(s):

Financial Impact:

Other Information/Recommendation:

Attachments:

1. Ballet San Angelo Request

Ballet San Angelo Request.docx

Presentation:

Carlton White

Approvals/Reviews:

Carlton White

Theresa James

Tina Dierschke

Heather Stastny

Created/Initiated

Approved

Approved

Final Approval

From: "susan@balletsanangelo.org" <susan@balletsanangelo.org>

Subject: Ballet San Angelo - HOT funding allocation increase

Date: September 3, 2024 at 9:17:56 AM CDT

To: Carl White <carl.white@cosatx.us>

Cc: rick.weise@cosatx.us, "Dierschke, Tina" <tina.dierschke@cosatx.us>, Erin Lane <erin@balletsanangelo.org>, trenton325@gmail.com

Hello Carl,

Rick Weise asked me to email this request that I put forward this morning during the public comment section at City Council. Please let me know if you need any additional information for this request to be considered. Thank you, Susan

My name is Susan Kinney and I serve as Ballet San Angelo's Development Director. On July 16th, I presented a current overview of the Ballet's organization and its need for Hotel Occupancy Tax funding. **I am here today to respectfully request an increase in our HOT funds allocation from \$15,000 to \$25,000.** As demonstrated in my July 16th presentation, our overall scope of work and ability to draw the cultural tourist to San Angelo has grown, but our HOT funding has not. We are an arts organization that serves seniors, families, children and adults year-round. Our non-profit status is demonstrated daily through free education and health programming, Sharing Dance work within the public schools, needs-based tuition assistance, and high quality original productions. We attract "heads to beds" and annually invest significant marketing dollars to that make our town shine. I understand that this evaluation takes valuable time away from your staff, but at least every 3-5 years, I believe the arts entities that you are supporting should be engaged in reporting current verifiable numbers to you for potential adjustment of their allocation. Thank you for your time and consideration.

<image001.png>

Susan T. Kinney

Development Director I Joy of Movement

www.balletsanangelo.org

325.653.8877 (o)

325.234.7237 (c)

This message (including any attachments) is intended only for the use of the individual or entity to which it is addressed and may contain information that is non-public, proprietary, privileged, confidential, and may constitute attorney work product or be exempt from disclosure under one or more of the following sections of the Texas Public Information Act: SECS. 552.101, 552.103 or 552.107. If you are not the intended recipient, you are hereby notified that any use, dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, notify us immediately by telephone and (i) destroy this message if a facsimile or (ii) delete this message immediately if this is an electronic communication. Thank you.

REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Sherry Bailey, Sr. Planner, Planning Commission

Meeting Date: September 17, 2024

Item type: Regular Item

Caption:

First reading and public hearing of an ordinance for Z24-08, a request to rezone property from General Commercial/Heavy Commercial zoning district to Single Family Residential zoning district, located at 21 E. 30th St. (Presentation made by Planning and Development Services Director Aaron Vannoy)

Staff Recommendation:

Approve

Summary/History:

A request to rezone from (CG/CH) General Commercial/Heavy Commercial to (RS-1) Single Family Residential at 21 E 30th St to construct a single-family home on .41 acres. This property is in a transition area of the City, just a half block to the west on the corner of N. Chadbourne St. and E. 30th St. is a new Dollar General. Across the street, there is a large multiple-family apartment complex. This is a vacant lot between two existing houses.

The Planning Commission voted 5-0 in favor and the City Staff recommends approval of this case.

Funding Source(s):

Financial Impact:

NA

Other Information/Recommendation:

A request to rezone from (CG/CH) General Commercial/Heavy Commercial to (RS-1) Single Family Residential at 21 E 30th St to construct a single-family home on .41 acres. This property is in a transition area of the City, just a half block to the west on the corner of N. Chadbourne St. and E. 30th St. is a new Dollar General. Across the street, there is a large multiple-family apartment complex. This is a vacant lot between two existing houses.

The Planning Commission voted 5-0 in favor and the City Staff recommends approval of this case.

Attachments:

1. Z24-08 21 E 30th St. Staff Report

Z24-08 21 E 30th St. Staff Report.pdf

2. Z24-08 Ordinance 21 E 30th Street

Z24-08 Ordinance 21 E 30th Street.docx

Presentation:

Sherry Bailey

Approvals/Reviews:

Sherry Bailey

Sherry Bailey

Aaron Vannoy

Brandon Dyson

Aaron Vannoy

Theresa James

Heather Stastny

Created/Initiated

Approved

Approved

Approved

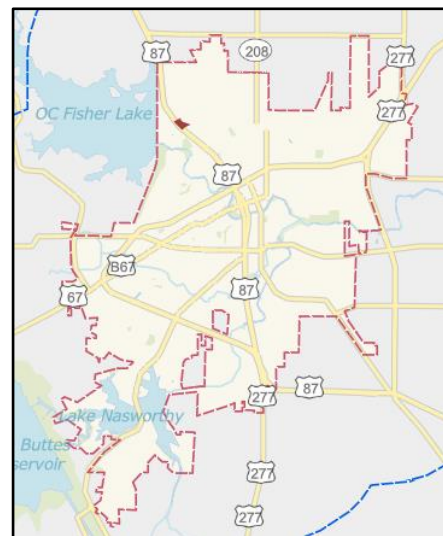
Approved

Approved

Final Approval

PLANNING COMMISSION – August 19, 2024**STAFF REPORT***City Council First Reading September 17, 2024**City Council Second Reading October 1, 2024*

APPLICATION TYPE:		CASE:	
Rezoning		Z24-08 21 E 30 th Street	
SYNOPSIS:			
Request to rezone from (CG/CH) General Commercial/Heavy Commercial to (RS-1) Single Family Residential at 21 E 30 th St to construct a single-family home. 82 ft. by 175 ft., 14,350 sq. ft., .41 acres.			
LOCATION:		LEGAL DESCRIPTION:	
East side of N Bryant Blvd. on E 30 th Street, first vacant lot on the south side of 30 th Street.		E 75 ft. of W175 of N 222.4 ft. of Tract B Mather Addition No. 1; Blk 13 & 14.	
SM DISTRICT / NEIGHBORHOOD:	ZONING:	FUTURE LAND USE:	SIZE:
SMD #2 – Tom Thompson Neighborhood: Lake View	CG/CH	Residential	.41 acres
THOROUGHFARE PLAN:			
• N. Bryant Blvd. Major Arterial State Highway 87 • E 30th Street, 50 ft. of right of way, 36 ft. of paving. Local Street.			
NOTIFICATIONS			
20 notices were mailed out. None have been received either for or against at this time.			
STAFF RECOMMENDATION:			
Planning staff recommends approval of the request. The Single Family (RS-1 zoning) is adjacent to the east of this lot and a single family home is adjacent to the west.			
PROPERTY OWNER/PETITIONER:			
Owner: David Tanguma			
STAFF CONTACT:			
Sherry Bailey Principal Planner (325) 657-4210, Extension 1546 sherry.bailey@cosatx.us			



Information:

This property is in a transition area of the City. Just a half block to the west on the corner of N. Brant Blvd. and E. 30th St. is a new Dollar General. There is a large multiple family apartment complex across the street and then a commercial building next to the apartments on Bryant Blvd. Moving east on 30th Street there are small single-family homes from the 50's and 60's and a mobile home on an individual lot. This area is still a solid residential area that can support additional homes built on the few other vacant lots. A block east of this residence is the Day Elementary School which is part of the SAISD property holdings and sometimes used as a pre-school. The area is still very much a residential area.

Planning Commission evaluation of appropriateness.

Section 213(G) of the Zoning Ordinance requires that the Planning Commission and City Council consider, at minimum, seven (7) factors in determining the appropriateness of any rezoning request as outlined in #1 through #7 below:

1. **Compatible with Plans and Policies.** *Whether the proposed amendment is compatible with the Comprehensive Plan and any other land use policies adopted by the Planning Commission or City Council.*
The property proposed to be rezoned is in the General Commercial/Heavy Commercial (CG/CH) zoning district. The Comprehensive Plan has the area as "Neighborhood," Rezoning to Single-Family Residential (RS-1) is in keeping with the Neighborhood Land Use designation in the City's Comprehensive Plan, updated in 2006.
2. **Consistent with Zoning Ordinance.** *Whether and the extent to which the proposed amendment would conflict with any portion of this Zoning Ordinance.* As proposed, the lot will more than meet the requirement for Single-Family Residential.
3. **Compatible with Surrounding Area.** *Whether and the extent to which the proposed amendment is compatible with existing and proposed uses surrounding the subject land and is the appropriate zoning district for the land.* The rezoning is generally compatible with the surrounding area as outlined in the Comprehensive Plan mentioned above there is Single Family (RS-1) zoning to the east. The area still retains its residential character although it is close to heavy commercial zoning.
4. **Changed Conditions.** *Whether and the extent to which there are changed conditions that require an amendment.* The applicant wants to develop a single-family home on the lot. The lot is compatible with that designation.
5. **Effect on Natural Environment.** *Whether and the extent to which the proposed amendment would result in significant adverse impacts on the natural environment, including but not limited to water and air quality, noise, storm water management, wildlife, vegetation, wetlands and the practical functioning of the natural environment.* Staff does not anticipate any adverse environmental affects at this time. A review of drainage, grading, and stormwater will not be required during the subdivision platting process.
6. **Community Need.** *Whether and the extent to which the proposed amendment addresses a demonstrated community need.* Staff believes there is a need for this type of product, a new home in this area of San Angelo.

7. Development Patterns. *Whether and the extent to which the proposed amendment would result in a logical and orderly pattern of urban development in the community.* This buildout would provide additional residential traffic in an area that is just starting to develop more commercial services. The closeness of the Dollar General is not considered detrimental.

Recommendation:

Staff recommends APPROVAL of the rezoning request with one condition.

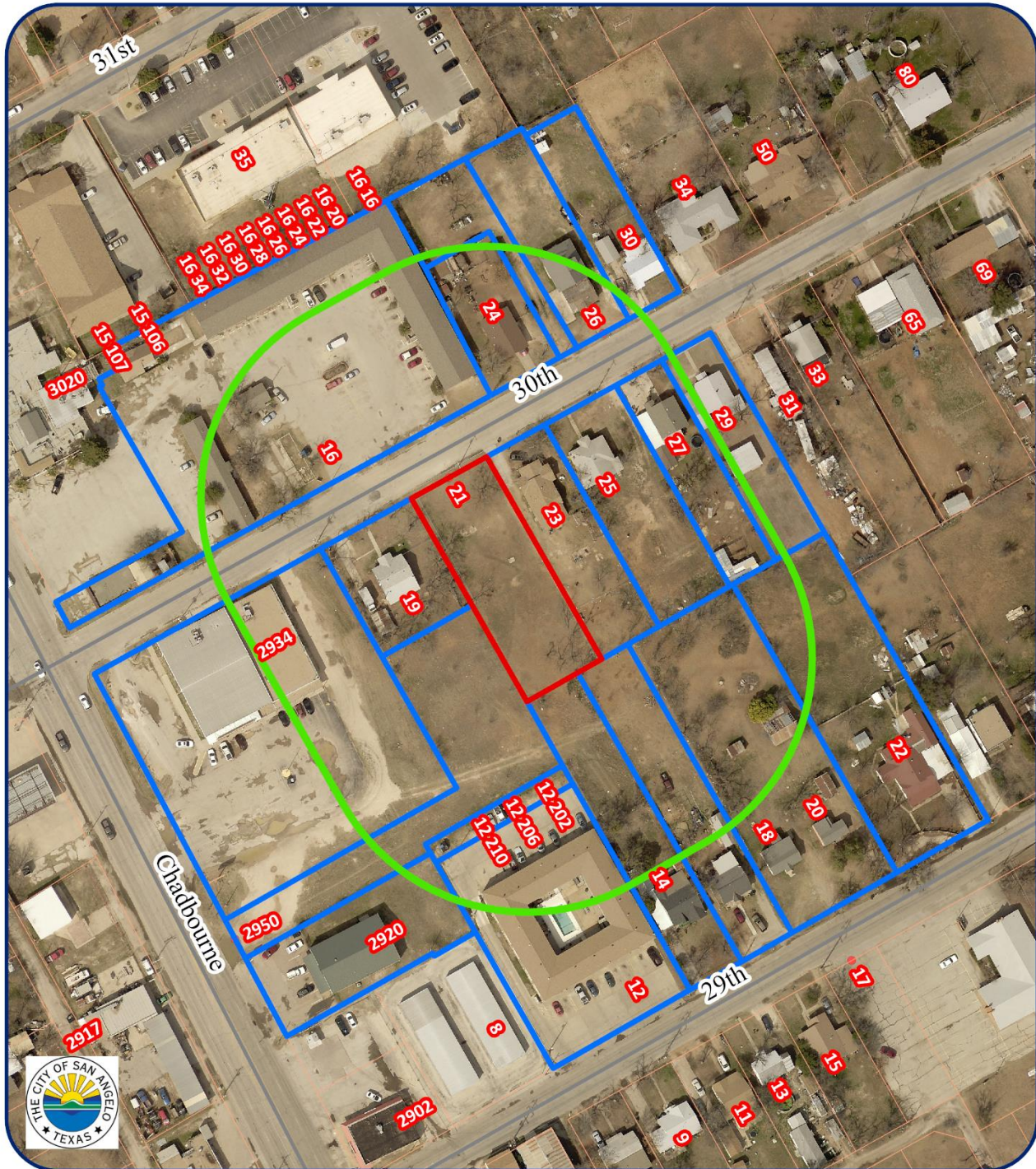
1. The condition of the meets and bounds legal description requires that the property be platted before a building permit can be issued.

Attachments:

Aerial Map

Final Plat

Notification Map



200' Notification Map

Z24-08 21 E 30th St

Council District: #2 Tom Thompson

Neighborhood: Lake View

Scale: 00.00 0.01 0.02 0.03 0.04
Miles

Subject Properties: ———

200' Buffer: ———

Notified Properties: ———



Aerial Map



Aerial Map
Z24-08 21 E 30th St
Council District: #2 Tom Thompson
Neighborhood: Lake View
Scale: 0.01010.020.030.04
Miles

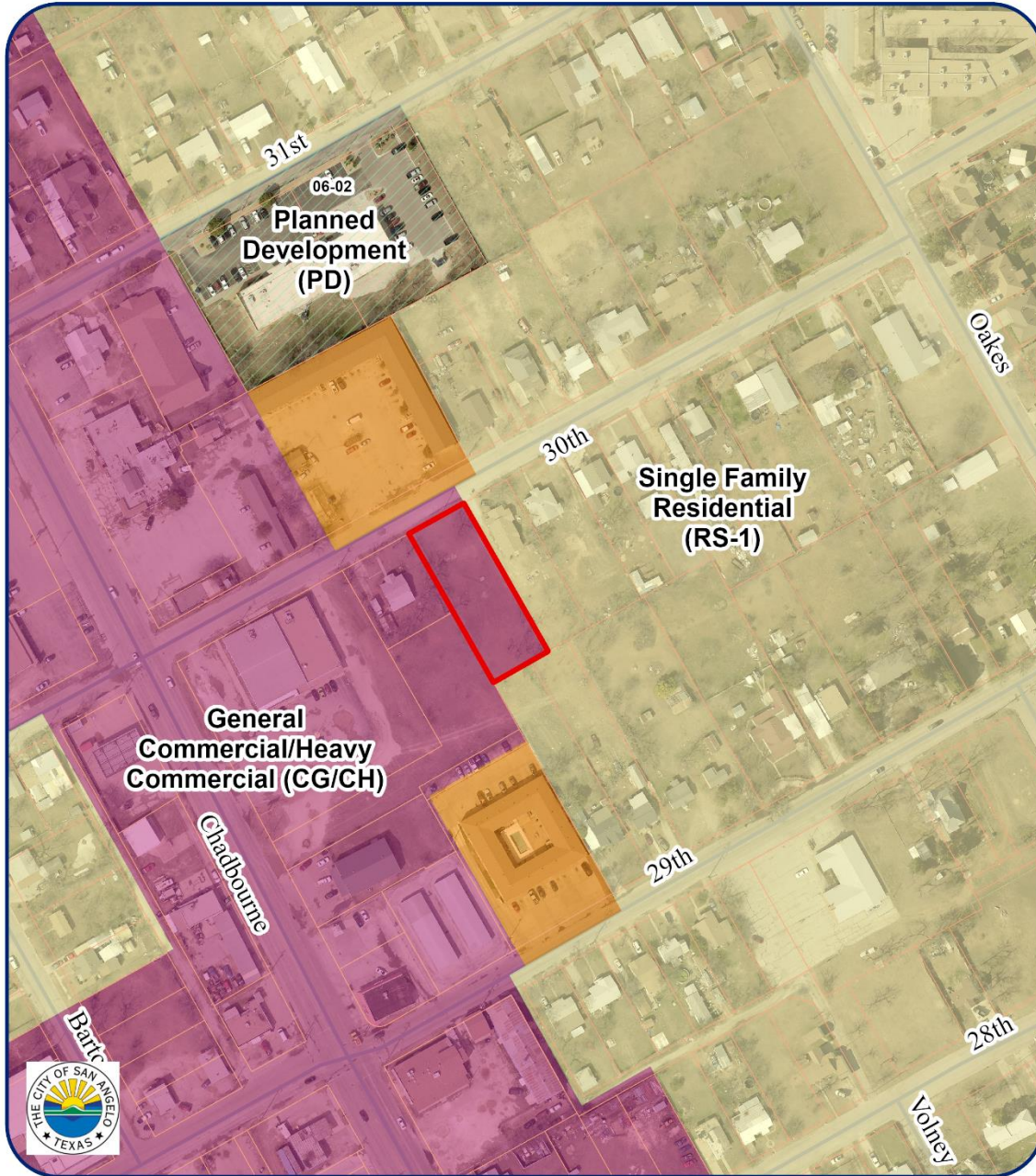
Subject Properties:



N



Zoning Map



Zoning Map

Z24-08 21 E 30th St

Council District: #2 Tom Thompson

Neighborhood: Lake View

Scale: 0.01010.020.030.04

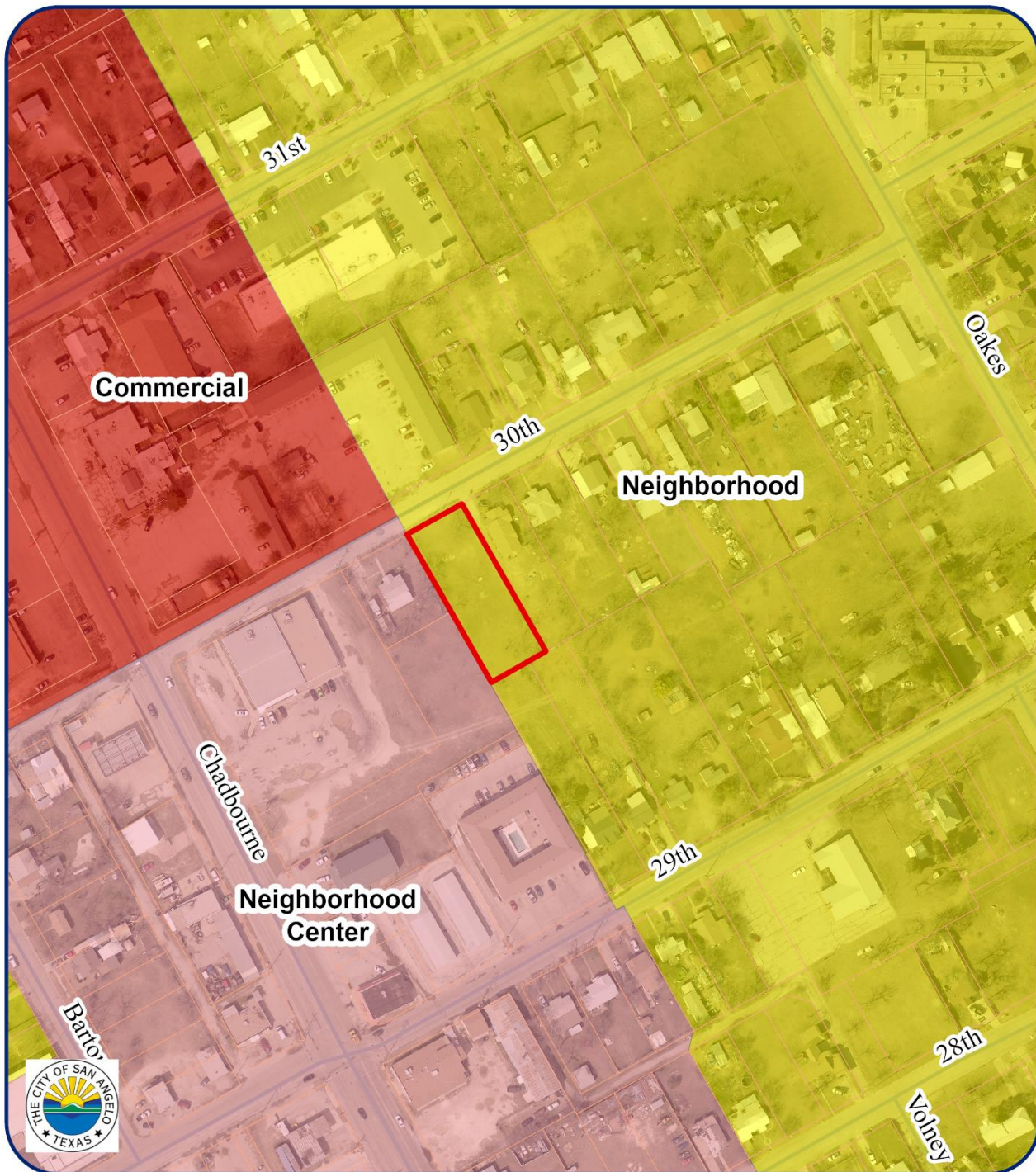
0.01010.020.030.04 Miles

Subject Properties:



N



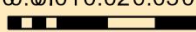


Vision Map
Z24-08 21 E 30th St

Council District: #2 Tom Thompson

Neighborhood: Lake View

Scale: 0.01010.020.030.04

 Miles

Subject Properties:



N





AN ORDINANCE AMENDING CHAPTER 12, EXHIBIT “A” OF THE CODE OF ORDINANCES, CITY OF SAN ANGELO, TEXAS, WHICH ADOPTS ZONING REGULATIONS, USE DISTRICTS AND A ZONING MAP, IN ACCORDANCE WITH A COMPREHENSIVE PLAN, BY CHANGING THE ZONING CLASSIFICATION OF THE FOLLOWING PROPERTY: **APPROXIMATELY .41 ACRES LOCATED AT 21 E 30th STREET**; FROM GENERAL COMMERCIAL/HEAVY COMMERCIAL (CG/CH) TO THE SINGLE FAMILY RESIDENTIAL (RS-1) ZONING DISTRICT, PROVIDING FOR SEVERABILITY; AND, PROVIDING FOR AN EFFECTIVE DATE

RE: Z24-08: 21 E 30TH St.

WHEREAS, on the 19th day of August 2024, the Planning Commission for the City of San Angelo in compliance with the City Charter, City ordinance and state law, and after holding a public hearing thereon, caused to be prepared and delivered a report and recommendation to City Council to approve the Single Family Residential (RS-1) Zoning District; and,

WHEREAS, on the 17th day of September 2024, City Council held a public hearing on Z24-08, pursuant to published notice, and has considered the application, comments, reports and recommendations of the Planning Commission and staff, public testimony, and other relevant support materials.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY OF SAN ANGELO:

SECTION 1: The basic zoning ordinance for the City of San Angelo, as enacted by the governing body for the City of San Angelo effective January 4, 2000, and included within Exhibit “A” of Chapter 12 of the Code of Ordinances of the City of San Angelo, and zoning map be and the same are hereby amended to designate the following described properties permanently zoned Single Family Residential (RS-1) Zoning District:

The real property generally located 21 E 30th Street, being approximately .41 acres described as the East 75 feet of the West 175 feet of the North 222.4 feet of Tract B in Blocks 13 and 14, Mather Addition No. 1, within the City of San Angelo, Tom Green County, Texas as more particularly described and depicted on Exhibit “A” of this Ordinance. (“Zone Change Map”).

SECTION 2: The Director of the Planning & Development Department, or his/her designee, is hereby directed to correct zoning district maps in the office of the Planning & Development Department, to implement the zoning provision adopted herein, as further depicted on **Exhibit “A”** of this Ordinance (**“Zone Change Map”**).

SECTION 3: The use of the hereinabove described property shall be subject to all applicable regulations contained in Chapter 12 of the Code of Ordinances for the City of San Angelo, as amended.

SECTION 4: The terms and provisions of this Ordinance shall be deemed to be severable in that, if any portion of this Ordinance shall be declared to be invalid, the same shall not affect the validity of the other provisions of this Ordinance.

SECTION 5: This Ordinance shall be effective on, from and after the date of adoption.

INTRODUCED on the **17th day of September 2024**, and finally PASSED, APPROVED AND ADOPTED on this the **1st day of October 2024**.

THE CITY OF SAN ANGELO

Brenda Gunter, Mayor

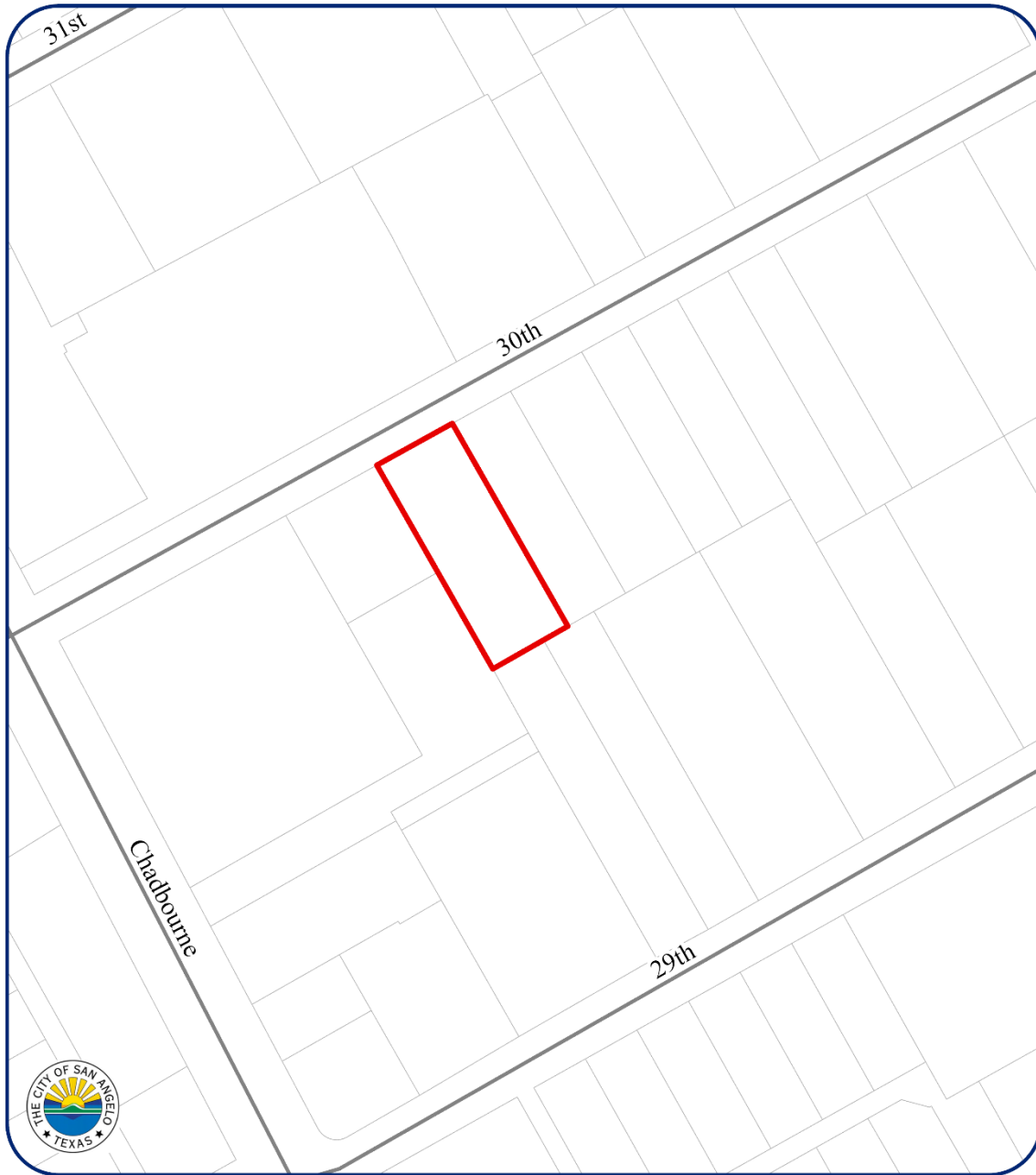
ATTEST:

Heather Stastny, City Clerk

APPROVED AS TO FORM:

Theresa James, City Attorney

Exhibit "A" (Zone Change Map)



Ordinance Map Z24-08 21 E 30th St

Council District: #2 Tom Thompson

Neighborhood: Lake View

Scale: 0.00 0.01 0.02 0.03 0.04
Miles

Subject Properties: 

Existing Zoning: CG/CH

Requested Zoning: RS-1



REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Austin Reed, Planning Technician, Planning and Development Services

Meeting Date: September 17, 2024

Item type: Regular Item

Caption:

First reading and public hearing of an ordinance for Z24-09, a request to rezone from Two-Family Residential zoning district to Low-Rise Multifamily zoning district, located at 1628 and 1640 Beacon St. (Presentation made by Planning and Development Services Director Aaron Vannoy)

Staff Recommendation:

Approve

Summary/History:

This property initially was 4 individual properties which developed as duplexes. The property was platted into one lot and thus conditioned on becoming a low-rise multifamily lot needing a change from RS-2 to RM-1 zoning for two duplexes a total of 4 living units on one lot. The Planning Commission recommends approval by a 5-0 vote and the City Staff recommends approval for this case.

Funding Source(s):

Financial Impact:

Other Information/Recommendation:

This property initially was 4 individual properties which developed as duplexes. The property was platted into one lot and thus conditioned on becoming a low-rise multifamily lot needing a change from RS-2 to RM-1 zoning for two duplexes a total of 4 living units on one lot. The Planning Commission recommends approval by a 5-0 vote and the City Staff recommends approval for this case.

Attachments:

- | | | |
|----|--|--|
| 1. | Z24-09 - Staff Report 1628 & 1640 Beacon | Z24-09 - Staff Report 1628 & 1640 Beacon.pdf |
| 2. | Z24-09 Ordinance | Z24-09 Ordinance.docx |

Presentation:

Aaron Vannoy

Approvals/Reviews:

Austin Reed
Aaron Vannoy
Brandon Dyson
Aaron Vannoy
Theresa James
Heather Stastny

Created/Initiated
Approved
Approved
Approved
Approved
Final Approval

STAFF REPORT
PLANNING COMMISSION – August 19, 2024
City Council First Reading – September 17, 2024

APPLICATION TYPE:		CASE:	
Rezoning		Z24-09: 1628 & 1640 Beacon	
SYNOPSIS:			
The applicant is requesting a zone change from Two-Family Residential (RS-2) to Low-Rise Multifamily (RM-1). There are two existing duplex structures within the subject area. The applicant has received approval of a plat to combine these lots into one.			
LOCATION:		LEGAL DESCRIPTION:	
Northeast corner of Beacon Street and North Marie Street		Acres: 0.075, Lot: 30, Blk: 6, Subd: AVONDALE ADDITION Acres: 0.075, Lot: 31, Blk: 6, Subd: AVONDALE ADDITION Acres: 0.082, Lot: 32, Blk: 6, Subd: AVONDALE ADDITION Acres: 0.082, Lot: 33, Blk: 6, Subd: AVONDALE ADDITION	
SM DISTRICT / NEIGHBORHOOD:	ZONING:	FUTURE LAND USE:	SIZE:
SMD #4 – Lucy Gonzales Neighborhood: Paulann	RS-2	Transitional	.314 acres
THOROUGHFARE PLAN:			
• North Marie Street – Local Road • Beacon Street – Local Road			
NOTIFICATIONS			
38 notices were mailed out. At the time of this report, no notices have been returned.			
STAFF RECOMMENDATION:			
Staff recommend APPROVAL of the zone change from Two-Family Residential (RS-2) to Low-Rise Multifamily (RM-1).			
PROPERTY OWNER/PETITIONER:			
Petitioner: Wilde Engineering and Surveying, LLC Owner: Riley Development, LLC			
STAFF CONTACT:			
Austin Reed Planner (325) 657-4210, Ext. 1550 austin.reed@cosatx.us			

Information:

There are two existing duplex structures on separate lots within the subject area. The applicant recently received approval of a plat to combine these lots into one, which when filed will result in two separate duplex structures on a single lot. This requires a zoning of RM-1. The applicant will not be able to file this plat without an approved zone change.

Planning Commission evaluation of appropriateness.

Section 213(G) of the Zoning Ordinance requires that the Planning Commission and City Council consider, at minimum, seven (7) factors in determining the appropriateness of any rezoning request as outlined in #1 through #7 below:

1. **Compatible with Plans and Policies.** *Whether the proposed amendment is compatible with the Comprehensive Plan and any other land use policies adopted by the Planning Commission or City Council.*
The Comprehensive Plan envisions this property to be “Transitional” in nature. Therefore, a zoning of Low-Rise Multifamily is compatible with the Comprehensive Plan and can help to provide a transition between the Single-Family Residential to the east and the commercial/manufacturing zoning to the west.
2. **Consistent with Zoning Ordinance.** *Whether and the extent to which the proposed amendment would conflict with any portion of this Zoning Ordinance.*
As proposed, this lot will meet all requirements for Low-Rise Multifamily (RM-1) zoning.
3. **Compatible with Surrounding Area.** *Whether and the extent to which the proposed amendment is compatible with existing and proposed uses surrounding the subject land and is the appropriate zoning district for the land.*
This rezoning is compatible with the surrounding area. Land to the east is largely Single-Family Residential and is continuing to develop in this way. Near to the northeast is a Manufactured Housing Subdivision. To the northwest is Light Manufacturing, and to the west is a mix of commercial and residential. Placing RM-1 zoning in this location will not seem unusual.
4. **Changed Conditions.** *Whether and the extent to which there are changed conditions that require an amendment.*
The applicant wishes to combine the existing structures’ lots into one. They will not be able to file their plat to do so unless they receive approval of a zoning that will allow the two duplexes on a single lot.
5. **Effect on Natural Environment.** *Whether and the extent to which the proposed amendment would result in significant adverse impacts on the natural environment, including but not limited to water and air quality, noise, storm water management, wildlife, vegetation, wetlands and the practical functioning of the natural environment.*
Staff does not anticipate any adverse environmental effects.
6. **Community Need.** *Whether and the extent to which the proposed amendment addresses a demonstrated community need.*
Multifamily zoning in this area will help to provide diversity in housing, thereby addressing a community need.

7. Development Patterns. *Whether and the extent to which the proposed amendment would result in a logical and orderly pattern of urban development in the community.*

This rezoning will fall in line comfortably with the current development patterns of the surrounding area and the Comprehensive Plan, as well.

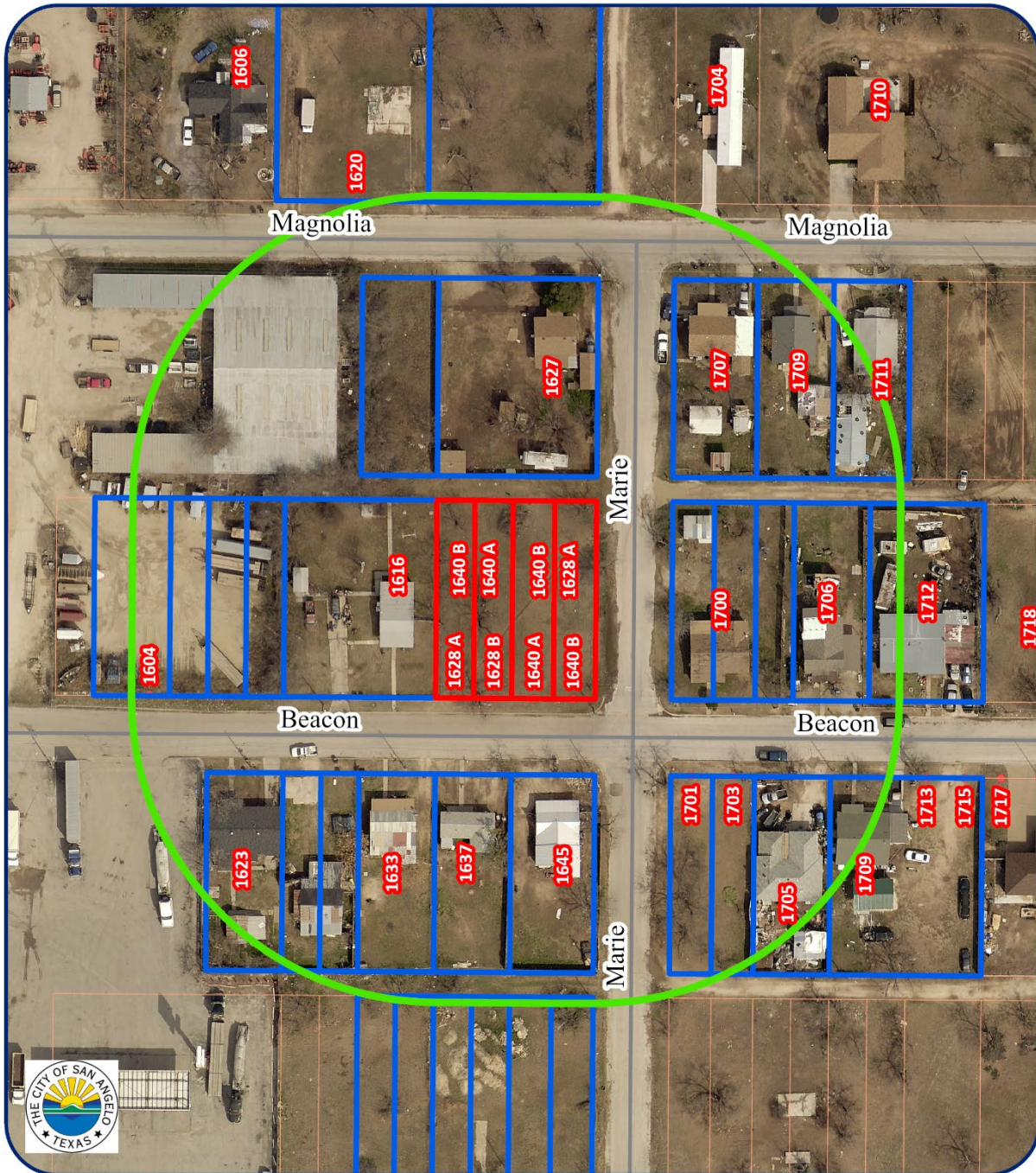
Recommendation:

Staff recommend **APPROVAL** of the zone change from Two-Family Residential (RS-2) to Low-Rise Multifamily (RM-1).

Attachments:

Notification Map
Aerial Map
Zoning Map

Notification Map



200' Notification Map Z24-09 1628 & 1640 Beacon St

Council District: #4 Lucy Gonzales
Neighborhood: Paulann

0 0.01 0.02 0.03 0.03
Miles

Subject Properties:



200' Buffer:



Notified Properties:



N



Aerial Map



Aerial Map

Z24-09 1628 & 1640 Beacon St

Council District: #4 Lucy Gonzales
Neighborhood: Paulann

0 0.00 0.02 0.04 0.06 0.08
Miles

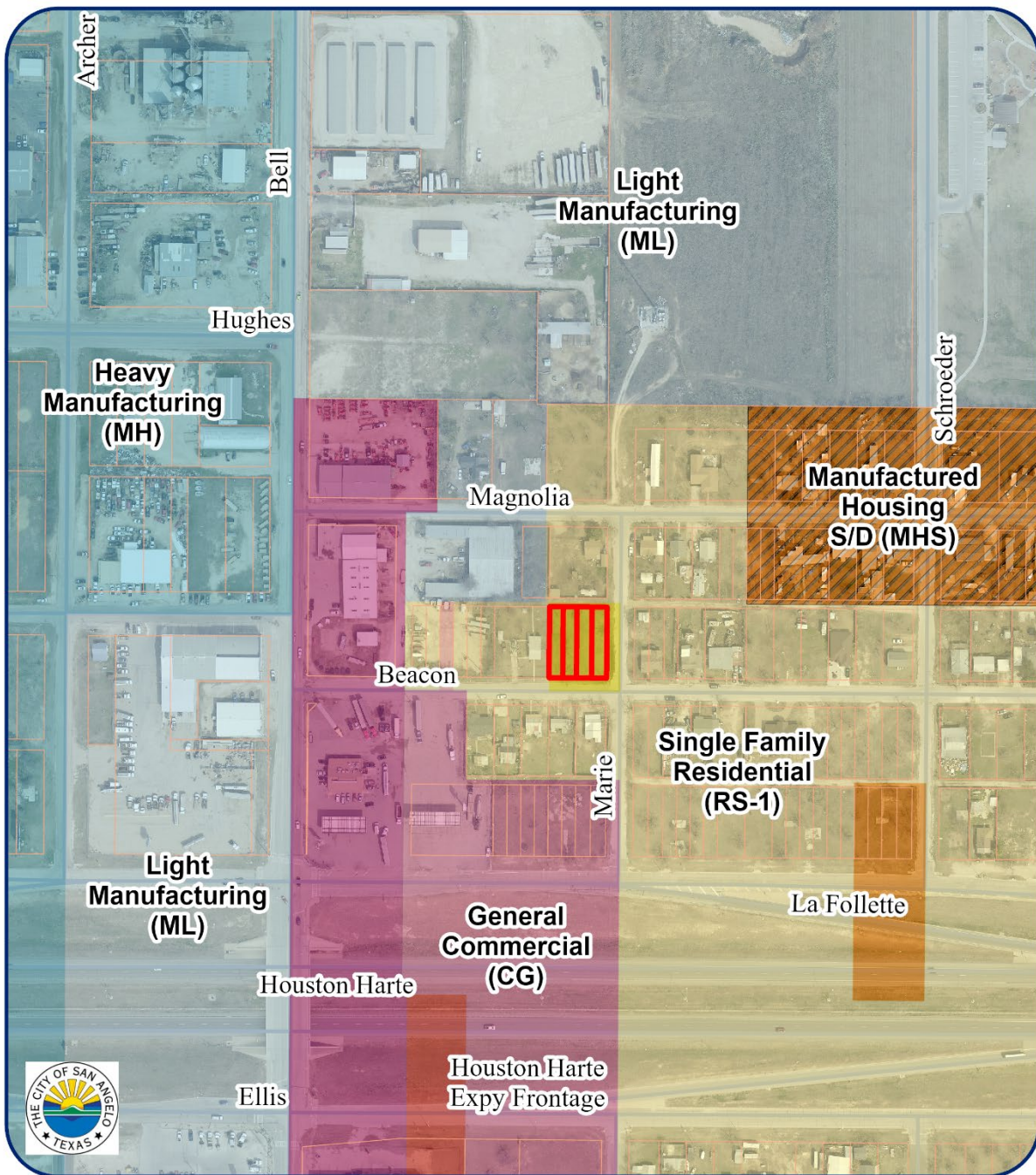
Subject Properties:



N



Zoning Map



Zoning Map

Z24-09 1628 & 1640 Beacon St

Council District: #4 Lucy Gonzales

Neighborhood: Paulann

0 0.00 0.02 0.04 0.06 0.08
Miles

Subject Properties:



N



AN ORDINANCE AMENDING CHAPTER 12, EXHIBIT “A” OF THE CODE OF ORDINANCES, CITY OF SAN ANGELO, TEXAS, WHICH ADOPTS ZONING REGULATIONS, USE DISTRICTS AND A ZONING MAP, IN ACCORDANCE WITH A COMPREHENSIVE PLAN, BY CHANGING THE ZONING CLASSIFICATION OF THE FOLLOWING PROPERTY: **APPROXIMATELY .314 ACRES LOCATED AT 1628 AND 1640 BEACON STREET**; FROM TWO-FAMILY RESIDENTIAL (RS-2) TO THE LOW-RISE MULTIFAMILY (RM-1) ZONING DISTRICT, PROVIDING FOR SEVERABILITY; AND, PROVIDING FOR AN EFFECTIVE DATE

RE: Z24-09: 1628 and 1640 Beacon St.

WHEREAS, on the 19th day of August 2024, the Planning Commission for the City of San Angelo in compliance with the City Charter, City ordinance and state law, and after holding a public hearing thereon, caused to be prepared and delivered a report and recommendation to City Council to approve the Low-Rise Multifamily (RM-1) Zoning District; and,

WHEREAS, on the 17th day of September 2024, City Council held a public hearing on Z24-09, pursuant to published notice, and has considered the application, comments, reports and recommendations of the Planning Commission and staff, public testimony, and other relevant support materials.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY OF SAN ANGELO:

SECTION 1: The basic zoning ordinance for the City of San Angelo, as enacted by the governing body for the City of San Angelo effective January 4, 2000, and included within Exhibit “A” of Chapter 12 of the Code of Ordinances of the City of San Angelo, and zoning map be and the same are hereby amended to designate the following described properties permanently zoned Low-Rise Multifamily (RM-1) Zoning District:

The real property generally located at 1628 and 1640 Beacon Street, being approximately .314 acres described as Lots 30, 31, 32, and 33, Block 6, Avondale Addition, within the City of San Angelo, Tom Green County, Texas as more particularly described and depicted on Exhibit “A” of this Ordinance. (“Zone Change Map”).

SECTION 2: The Director of the Planning & Development Department, or his/her designee, is hereby directed to correct zoning district maps in the office of the Planning & Development Department, to implement the zoning provision adopted herein, as further depicted on **Exhibit “A”** of this Ordinance (**“Zone Change Map”**).

SECTION 3: The use of the hereinabove described property shall be subject to all applicable regulations contained in Chapter 12 of the Code of Ordinances for the City of San Angelo, as amended.

SECTION 4: The terms and provisions of this Ordinance shall be deemed to be severable in that, if any portion of this Ordinance shall be declared to be invalid, the same shall not affect the validity of the other provisions of this Ordinance.

SECTION 5: This Ordinance shall be effective on, from and after the date of adoption.

INTRODUCED on the **17th day of September 2024**, and finally PASSED, APPROVED AND ADOPTED on this the **1st day of October 2024**.

THE CITY OF SAN ANGELO

Brenda Gunter, Mayor

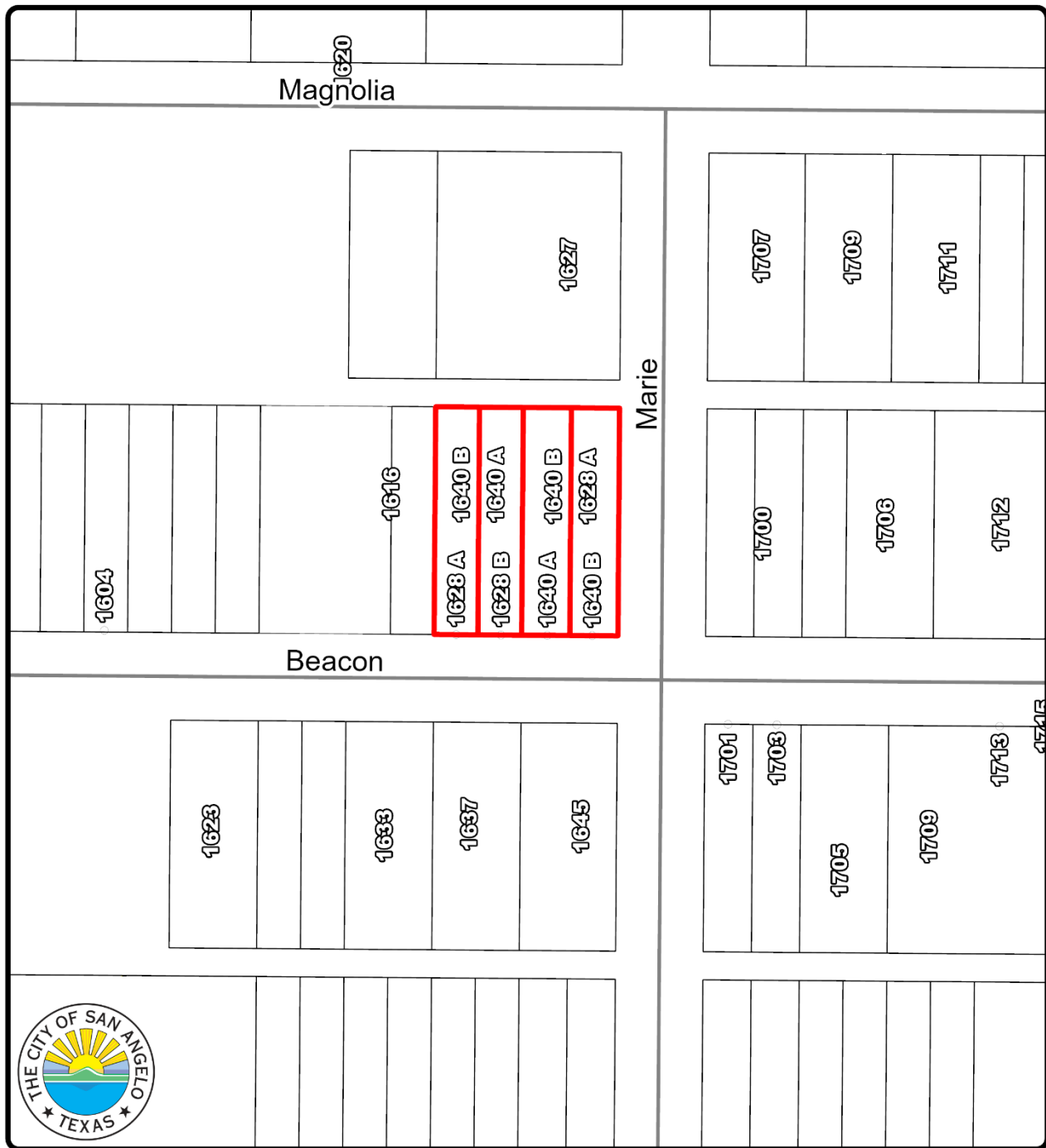
ATTEST:

APPROVED AS TO FORM:

Heather Stastny, City Clerk

Theresa James, City Attorney

Exhibit "A" (Zone Change Map)



Ordinance Map Z24-09: 1628 and 1640 Beacon St.

Council District: #4 Lucy Gonzales
Neighborhood: Paulann

Scale: 0 0.01 0.01 0.02 0.03 0.04 Miles

Subject Property: —

Existing Zoning: RS-2

Requested Zoning: RM-1



REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Rae Lineberry, Planner, Planning and Development Services

Meeting Date: September 17, 2024

Item type: Regular Item

Caption:

First reading and public hearing of ordinances for the following cases for property located at 2588 Armstrong:

1. CP24-05, a request to amend the Comprehensive Plan, changing from Neighborhood and Commercial to Neighborhood Center;
2. Z24-11, a request to rezone from the Single-Family Residential zoning district to the Neighborhood Commercial zoning district (Presentation by Planning and Development Services Director Aaron Vannoy)

Staff Recommendation:

Approve

Summary/History:

A request for approval of a zone change from (RS-1) Single-family Residential to (CN) Neighborhood Commercial and a Comprehensive Plan Amendment from Neighborhood to Neighborhood Center for the property at 2588 Armstrong St. The applicant is wanting to build a small commercial strip center on the southern 3 acres. The north 3 acres is undecided but the neighborhood commercial provides options while keeping larger commercial away from the residential to the north, south, and east.

Funding Source(s):

Financial Impact:

Other Information/Recommendation:

Planning Commission recommends approval with a 5-0 vote.

Attachments:

- | | | |
|----|--|--|
| 1. | Z24-11 & CP24-05 Staff Report 2588 Armstrong | Z24-11 & CP24-05 Staff Report 2588 Armstrong.pdf |
| 2. | 2588 Armstrong CP24-05 Ordinance2 | 2588 Armstrong CP24-05 Ordinance2.docx |
| 3. | 2588 Armstrong Z24-11 Ordinance2 | 2588 Armstrong Z24-11 Ordinance2.docx |

Presentation:

Aaron Vannoy

Approvals/Reviews:

Rae Lineberry

Aaron Vannoy

Brandon Dyson

Aaron Vannoy

Theresa James

Heather Stastny

Created/Initiated

Approved

Approved

Approved

Approved

Final Approval



STAFF REPORT - Z24-11 & CP24-05

Planning Commission: August 19, 2024

City Council 1st reading: September 17, 2024

APPLICATION TYPE:		CASES:	
Zoning & Comp Plan Amendment		Z24-11 & CP24-05: 2588 Armstrong St	
SYNOPSIS:			
A request for approval of a zone change from (RS-1) Single-family Residential to (CN) Neighborhood Commercial and a Comprehensive Plan Amendment from Neighborhood to Neighborhood Center for the property at 2588 Armstrong St.			
LOCATION:		LEGAL DESCRIPTION:	
2588 Armstrong St		Acres: 6.000, Abst: A-5735 S-0027, Survey: R S LONGBOTHAM, 6.0000 ACRES IN TRACT 39	
SM DISTRICT / NEIGHBORHOOD:	ZONING:	FUTURE LAND USE:	SIZE:
District #4 – Lucy Gonzales Neighborhood – PaulAnn	Currently: RS-1 Requesting: CN	Currently: Neighborhood Requesting: Neighborhood Center	6.000 acres
NOTIFICATIONS:			
11 notifications were mailed within a 200-foot radius on July 31, 2024. Staff has received zero in favor and 1 phone call from a surrounding property owner in opposition.			
STAFF RECOMMENDATION:			
Staff recommends APPROVAL of the request to rezone from (RS-1) Single-family Residential to (CN) Neighborhood Commercial and a Comprehensive Plan Amendment from Neighborhood to Neighborhood Center for the property at 2588 Armstrong St.			
PROPERTY OWNER/PETITIONER:			
Owner: Sagewood Design Group Petitioner: Gresham Smith			
STAFF CONTACT:			
Rae Lineberry Planner (325) 657-4210, ext 1533 Rae.lineberry@cosatx.us			

Additional Information: The applicant is wanting to build a small commercial strip center on the southern 3 acres. The north 3 acres is undecided but the neighborhood commercial provides options while keeping larger commercial away from the residential to the north, south, and east.

1. **Compatible with Plans and Policies.** *Whether the proposed amendment is compatible with the Comprehensive Plan and any other land use policies adopted by the Planning Commission or City Council.* The north and west have general and heavy commercial. The proposed zoning and comprehensive plan amendment will provide a buffer between the heavier commercial and the residential.
2. **Consistent with Zoning Ordinance.** *Whether and the extent to which the proposed amendment would conflict with any portion of this Zoning Ordinance.* The proposed zoning does not conflict with the zoning ordinance but instead will provide a buffer from the residential to the east and south and the heavy commercial across Armstrong St.
3. **Compatible with Surrounding Area.** *Whether and the extent to which the proposed amendment is compatible with existing and proposed uses surrounding the subject land and is the appropriate zoning district for the land.* The proposed use is a small commercial strip center that will provide light traffic commercial and a buffer along a state-owned road.
4. **Changed Conditions.** *Whether and the extent to which there are changed conditions that require an amendment.* This area has been vacant for an extended period and the previously approved final plat for 10 residential lots was never recorded.
5. **Effect on Natural Environment.** *Whether and the extent to which the proposed amendment would result in significant adverse impacts on the natural environment, including but not limited to water and air quality, noise, storm water management, wildlife, vegetation, wetlands and the practical functioning of the natural environment.* There are no anticipated adverse effects on neighboring properties.
6. **Community Need.** *Whether and the extent to which the proposed amendment addresses a demonstrated community need.* There is a need for a neighborhood commercial area in between general/heavy commercial and residential.
7. **Development Patterns.** *Whether and the extent to which the proposed amendment would result in a logical and orderly pattern of urban development in the community.* The property in question is well suited for the proposed project and will meet the development needs.

Recommendation:

Staff recommends **APPROVAL** of the request to rezone from (RS-1) Single-family Residential to (CN) Neighborhood Commercial and a Comprehensive Plan Amendment from Neighborhood to Neighborhood Center for the property at 2588 Armstrong St.

Attachments:

Aerial Map
Notification Map
Zoning Map
Vision Plan Map



Aerial Map
Z24-11 & CP24-05 2588 Armstrong St

Council District: #4 Lucy Gonzales

Neighborhood: Paulann

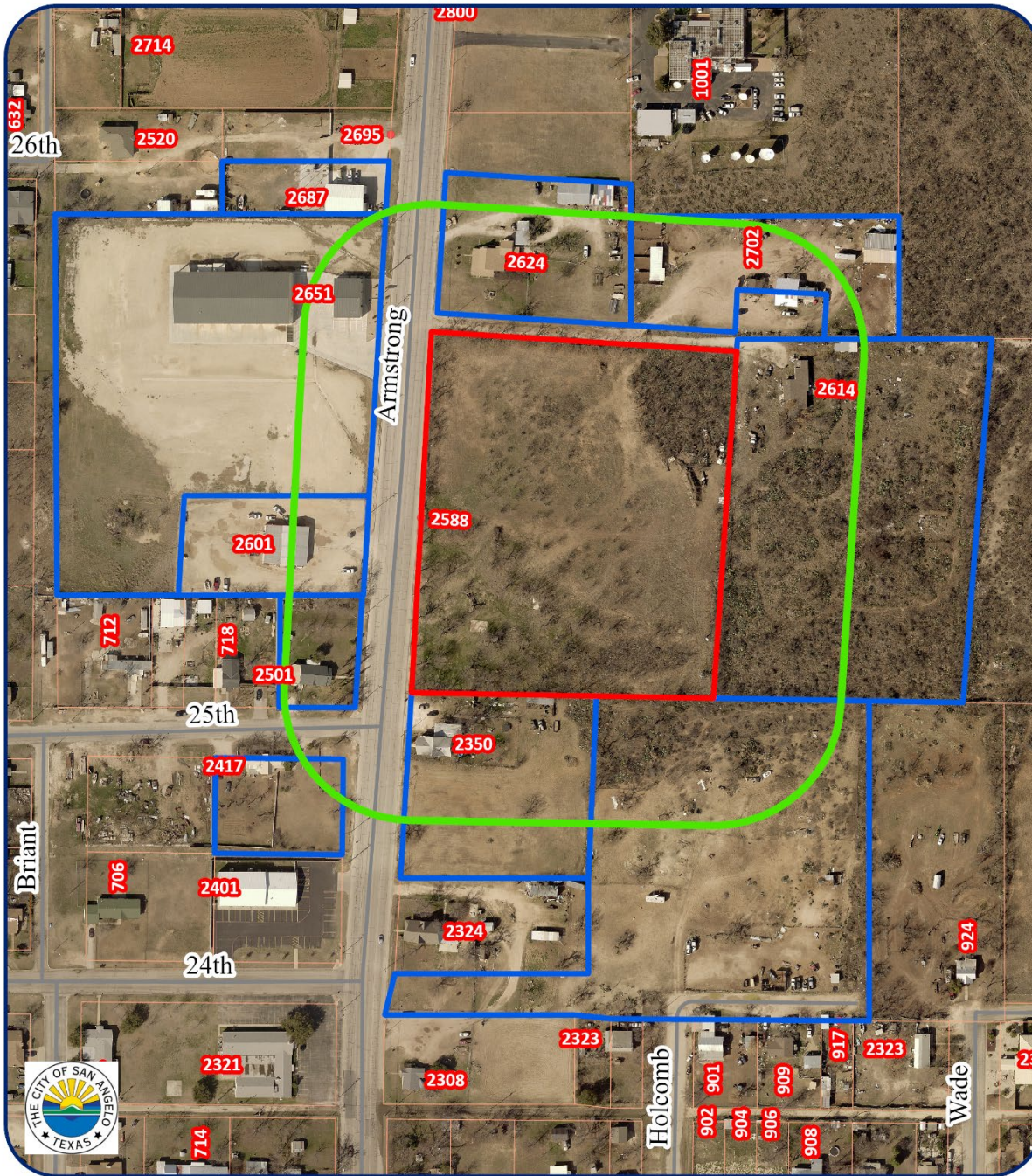
Scale: 0 0.02 0.04 0.09 0.14 0.18
Miles

Subject Properties:



N





200' Notification Map
Z24-11 & CP24-05 2588 Armstrong St

Council District: #4 Lucy Gonzales
Neighborhood: Paulann

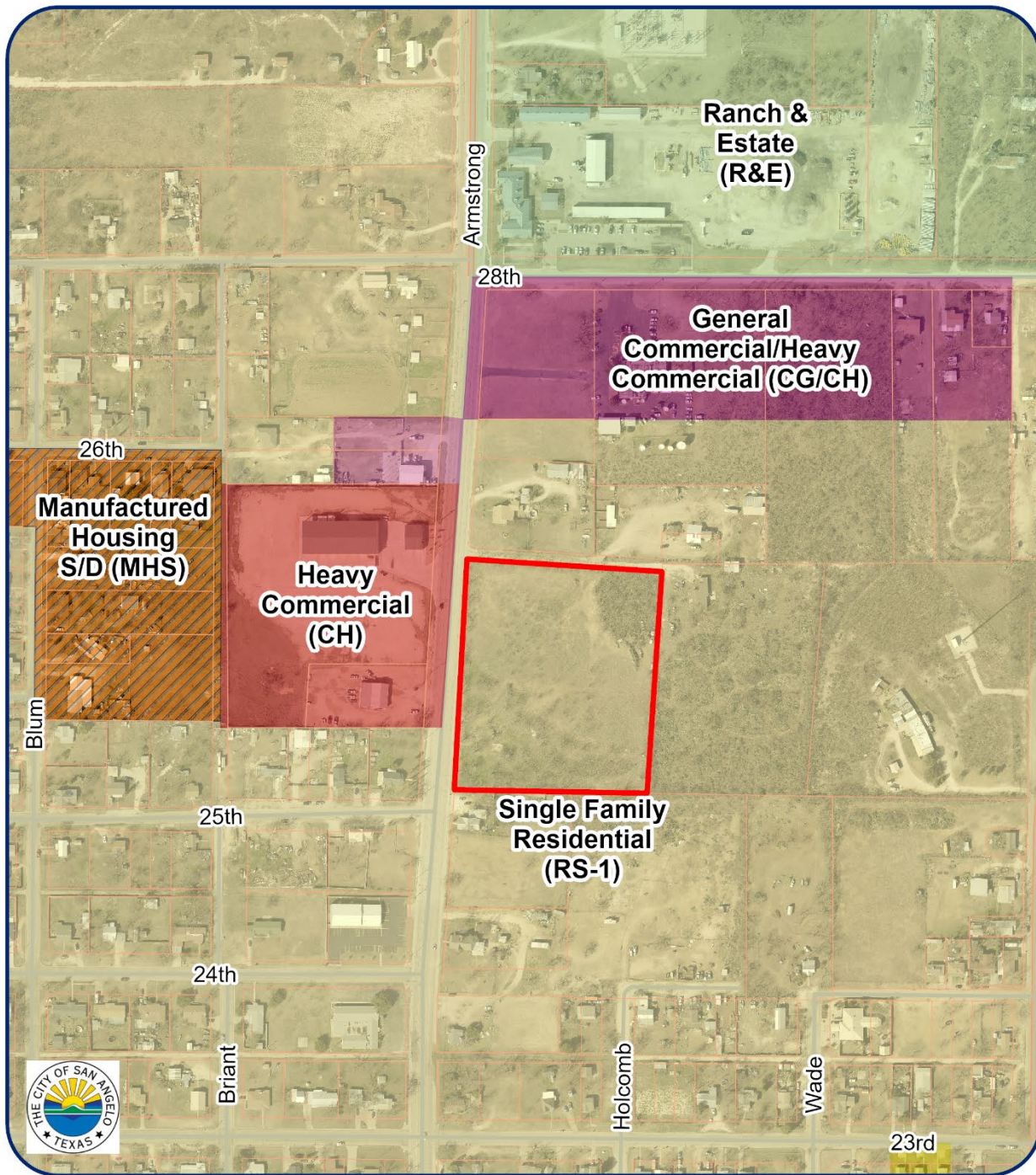
Scale: 0 0.01 0.02 0.04 0.06 0.08
Miles

Subject Properties: —

200' Buffer: —

Notified Properties: —





Zoning Map

Z24-11 & CP24-05 2588 Armstrong St

Council District: #4 Lucy Gonzales

Neighborhood: Paulann

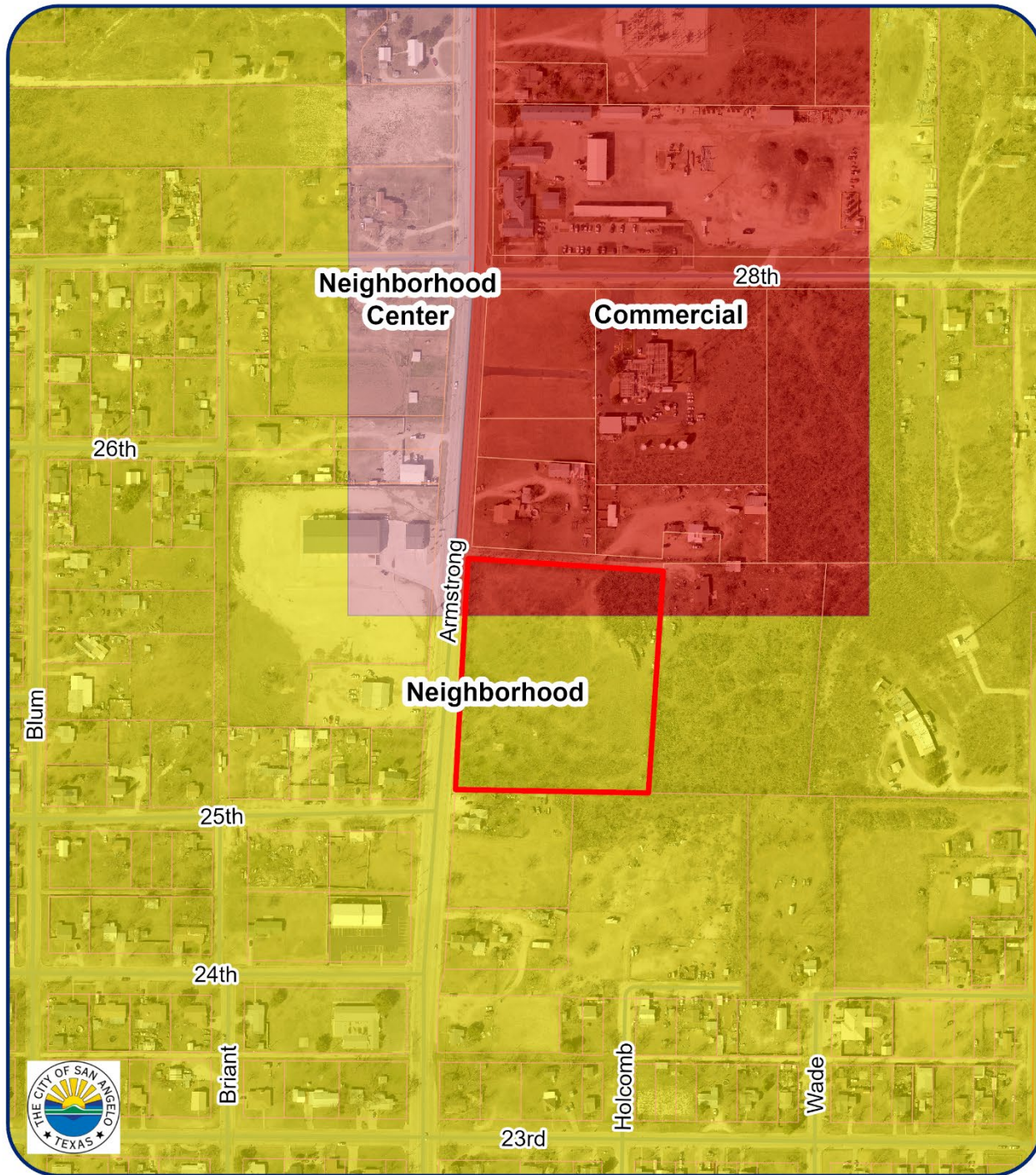
Scale: 0 0.01 0.03 0.06 0.09 0.12
Miles

Subject Properties:



N





Vision Plan Map

Z24-11 & CP24-05 2588 Armstrong St

Council District: #4 Lucy Gonzales

Neighborhood: Paulann

Scale: 0 0.01 0.03 0.06 0.09 0.12
Miles

Subject Properties:



N



AN ORDINANCE OF THE CITY OF SAN ANGELO, TEXAS, AMENDING THE CITY'S COMPREHENSIVE PLAN BY CHANGING THE FUTURE LAND USE PLAN MAP DESIGNATION OF CERTAIN LANDS LOCATED AT **2588 ARMSTRONG STREET, BEING A TOTAL OF 6.000 ACRES**; FROM "NEIGHBORHOOD" AND "COMMERCIAL" TO "NEIGHBORHOOD CENTER" PROVIDING FOR SEVERABILITY; AND, PROVIDING FOR AN EFFECTIVE DATE

RE: CP24-05: 2588 Armstrong Street

WHEREAS, the City Council for the City of San Angelo, Texas, in accordance with the City Charter and Chapter 213 of the Texas Local Government Code, has adopted a Comprehensive Plan (Vision Plan and Future Land Use Map within the San Angelo Strategic Plan adopted by City Council as updated on October 20, 2009) to guide the long-range development of the City, manage the future growth of the City and promote the health, safety and welfare of its citizens; and

WHEREAS, the Comprehensive Plan includes a Future Land Use Map to serve as a geographical representation of anticipated land use patterns and long range development for the City; and

WHEREAS, inconsistencies have developed between current long standing land use and development patterns and development envisioned by the Future Land Use Map, which inconsistencies call for compatible revisions to the Future Land Use Map; and

WHEREAS, on the 19th day of August, 2024, the Planning Commission for the City of San Angelo in compliance with the City Charter, City ordinance and state law, and after holding a public hearing thereon, caused to be prepared and delivered a report and recommendation to City Council to approve the proposed Comprehensive Plan amendment; and,

WHEREAS, on the 17th day of September, 2024, City Council held a public hearing on CP24-05, pursuant to published notice, and has considered the application, comments, reports and recommendations of the Planning Commission and staff, public testimony, and other relevant support materials.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY OF SAN ANGELO:

SECTION 1: The Future Land Use Plan Map, a component of the adopted Comprehensive Plan for the City of San Angelo be and the same is hereby amended to change the Future Land Use designation of the following described parcel as outlined below:

The real property located at 2588 Armstrong Street, described as 6.000 acres from Abst: A-5735 S-0027, Survey: R S Longbotham, in Tract 39 within the City of San Angelo, Tom Green County, Texas as more particularly described and depicted on Exhibit “A” of this Ordinance.

SECTION 2: The Director of the Planning and Development Services Department is hereby authorized and directed to amend the Future Land Use Planning Map maintained in the Office of the Director to incorporate the foregoing amendments, as further depicted on **Exhibit “A”** of this Ordinance.

SECTION 3: The terms and provisions of this Ordinance shall be deemed to be severable in that, if any portion of this Ordinance shall be declared to be invalid, the same shall not affect the validity of the other provisions of this Ordinance.

SECTION 4: This Ordinance shall be effective on, from and after the date of adoption.

INTRODUCED on the **17th day of September, 2024**, and finally PASSED, APPROVED AND ADOPTED on this the **1st day of October, 2024**.

THE CITY OF SAN ANGELO

Brenda Gunter, Mayor

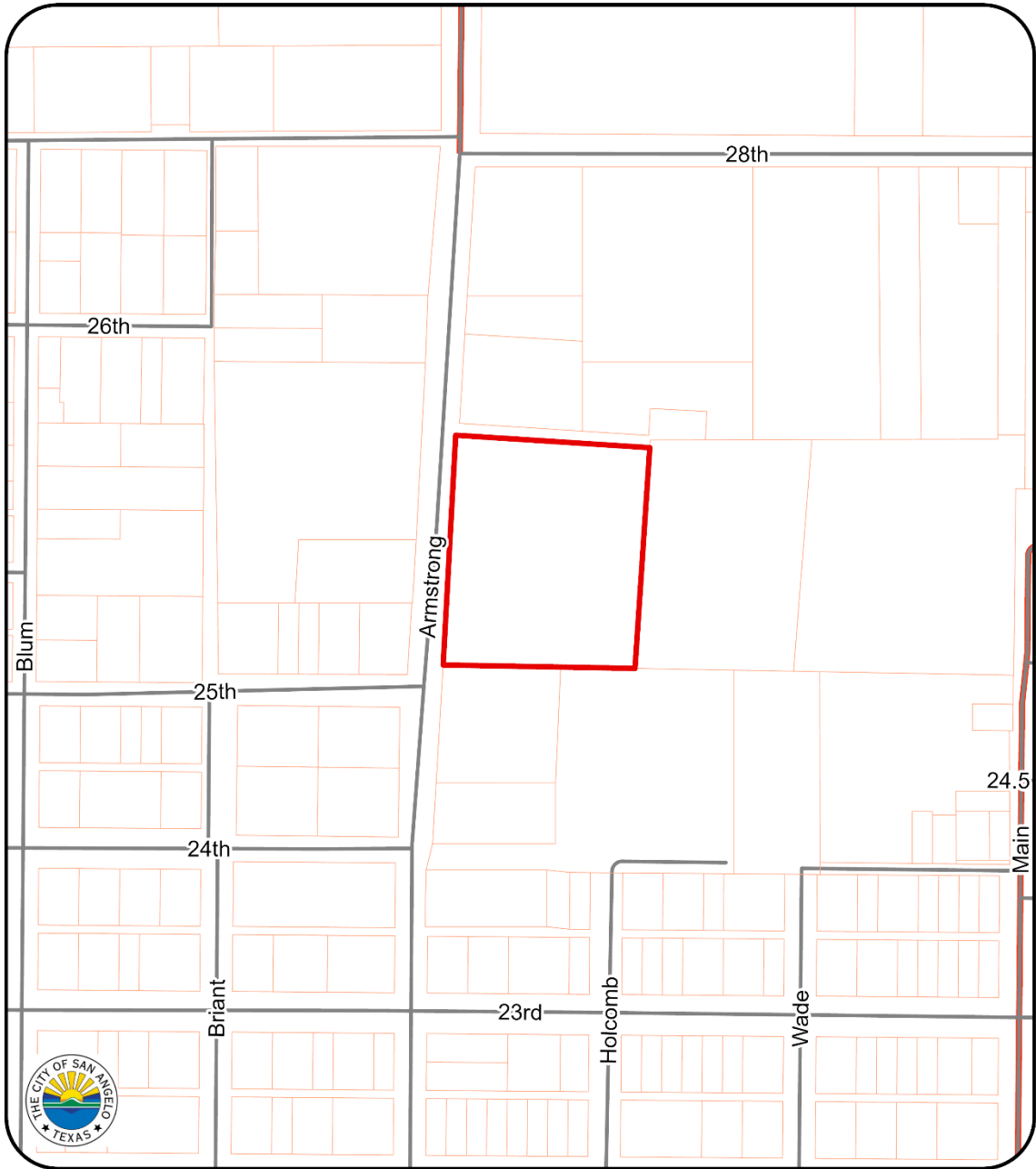
ATTEST:

APPROVED AS TO FORM:

Heather Stastny, City Clerk

Theresa James, City Attorney

Exhibit “A”



Ordinance Map
CP24-05 2588 Armstrong St
Council District: #4 Lucy Gonzales
Neighborhood: Paulann
Scale: 0 0.03 0.06 0.09 0.12 Miles

Subject Properties: —

Existing Comp Plan: Neighborhood & Commercial

Requested Comp Plan: Neighborhood Center

N

AN ORDINANCE AMENDING CHAPTER 12, EXHIBIT “A” OF THE CODE OF ORDINANCES, CITY OF SAN ANGELO, TEXAS, WHICH ADOPTS ZONING REGULATIONS, USE DISTRICTS AND A ZONING MAP, IN ACCORDANCE WITH A COMPREHENSIVE PLAN, BY ZONING AND CLASSIFYING THE FOLLOWING PROPERTY: **APPROXIMATELY 6.000 ACRES LOCATED AT 2588 ARMSTRONG STREET**; FROM SINGLE-FAMILY RESIDENTIAL (RS-1) TO NEIGHBORHOOD COMMERCIAL (CN); PROVIDING FOR SEVERABILITY; AND, PROVIDING FOR AN EFFECTIVE DATE

RE: Z24-11: 2588 Armstrong Street

WHEREAS, on the 19th day of August, 2024, the Planning Commission for the City of San Angelo in compliance with the City Charter, City ordinance and state law, and after holding a public hearing thereon, caused to be prepared and delivered a report and recommendation to City Council to approve the proposed Neighborhood Commercial (CN) Zoning District; and,

WHEREAS, on the 17th day of September, 2024, City Council held a public hearing on Z24-11, pursuant to published notice, and has considered the application, comments, reports and recommendations of the Planning Commission and staff, public testimony, and other relevant support materials.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY OF SAN ANGELO:

SECTION 1: The basic zoning ordinance for the City of San Angelo, as enacted by the governing body for the City of San Angelo effective January 4, 2000, and included within Exhibit “A” of Chapter 12 of the Code of Ordinances of the City of San Angelo, and zoning map be and the same are hereby amended to designate the following described properties permanently zoned NEIGHBORHOOD COMMERCIAL (CN) ZONING DISTRICT:

The real property located at 2588 Armstrong Street, described as 6.000 acres from Abst: A-5735 S-0027, Survey: R S Longbotham, Tract 39 within the City of San Angelo, Tom Green County, Texas as more particularly described and depicted on Exhibit “A” of this Ordinance.

SECTION 2: The Director of the Planning & Development Department, or his/her designee, is hereby directed to correct zoning district maps in the office of the Planning & Development

Department, to implement the zoning provision adopted herein, as further depicted on **Exhibit “A”** of this Ordinance.

SECTION 3: In all other respects, the use of the hereinabove described property shall be subject to all applicable regulations contained in Chapter 12 of the Code of Ordinances for the City of San Angelo, as amended.

SECTION 4. The remaining provisions of Chapter 12 of the Code of Ordinances of the City of San Angelo, Texas, not amended herein shall remain in full force and effect.

SECTION 5: The terms and provisions of this Ordinance shall be deemed to be severable in that, if any portion of this Ordinance shall be declared to be invalid, the same shall not affect the validity of the other provisions of this Ordinance.

SECTION 6: This Ordinance shall be effective on, from and after the date of adoption.

INTRODUCED on the **17th day of September, 2024**, and finally PASSED, APPROVED AND ADOPTED on this the **1st day of October, 2024**.

THE CITY OF SAN ANGELO

Brenda Gunter, Mayor

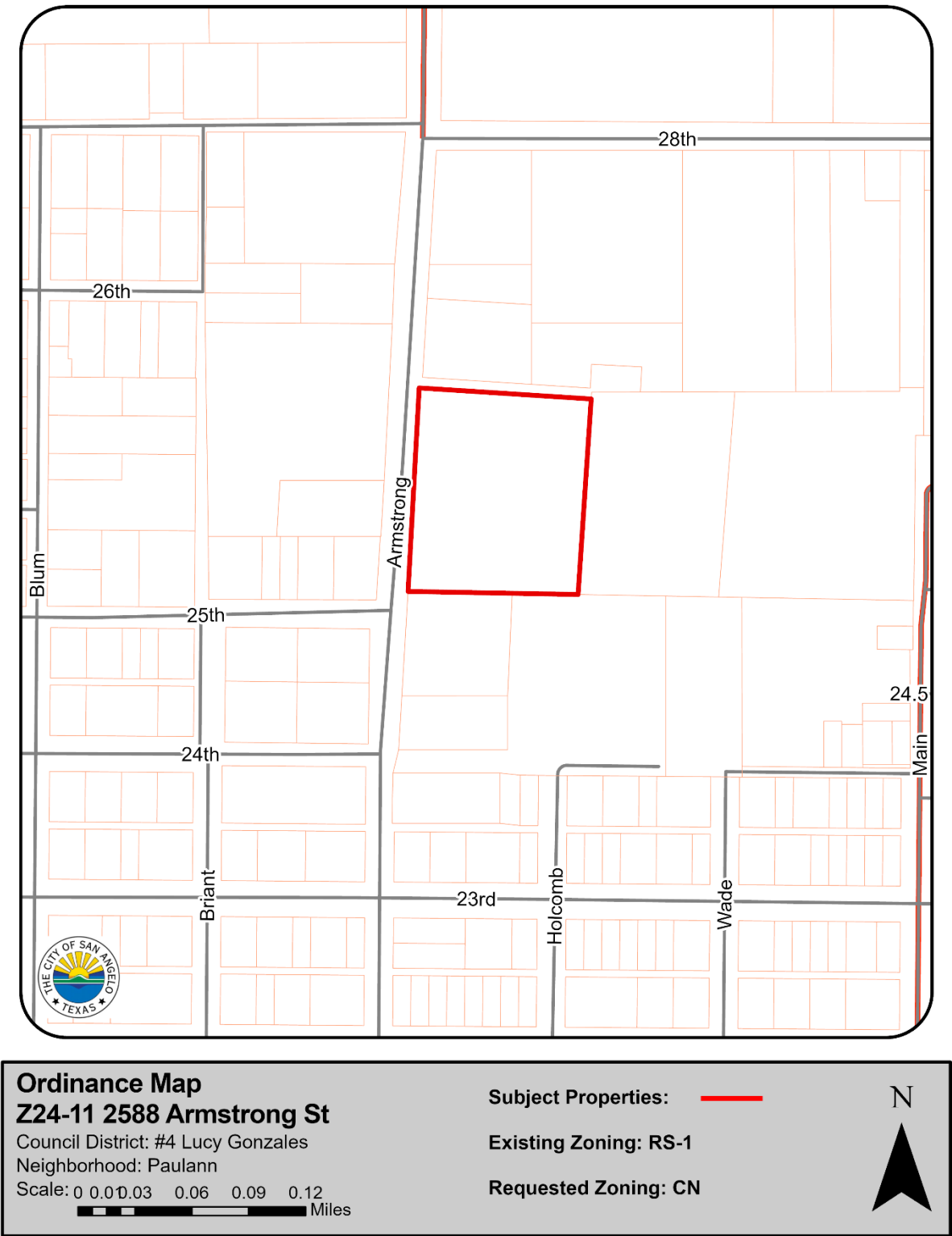
ATTEST:

Heather Stastny, City Clerk

APPROVED AS TO FORM:

Theresa James, City Attorney

Exhibit “A”



REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Aaron Vannoy, Assistant Director, Planning Commission

Meeting Date: September 17, 2024

Item type: Regular Item

Caption:

First reading and public hearing of an ordinance for Z24-12, a request to rezone property from the Neighborhood Commercial and Single-Family Residential zoning district to the Low Rise Multifamily zoning district, located at 2815, 2821, 2835 Houston St. and 2826 W. Houston Harte Expy. Frontage Rd. and an unaddressed lot being lots 4-8, block 81 of the Hatcher Addition (Presentation made by Planning and Development Services Director Aaron Vannoy)

Staff Recommendation:

Approve

Summary/History:

The properties have been partially cut through as the Houston Harte Expressway developed. Since these have been zoned as neighborhood Commercial (CN) they have not been developed. New single family residential homes have developed on the same block to the north. However, these lots individually are too small to develop in that manner. They have now been combined into one larger lot of .862 acres with the request to become a low-rise multifamily residential (RM-1). The Planning Commission voted 5-0 and the City Staff recommend approval of this case.

Funding Source(s):

Financial Impact:

Other Information/Recommendation:

Attachments:

- | | | |
|----|--|---|
| 1. | Z24-12 Houston St Staff Report | Z24-12 Houston St Staff Report.docx |
| 2. | Z24-12 W Houston Harte Expy Rd - ordinance | Z24-12 W Houston Harte Expy Rd - ordinance.docx |

Presentation:

Aaron Vannoy

Approvals/Reviews:

Aaron Vannoy

Aaron Vannoy

Brandon Dyson

Aaron Vannoy

Theresa James

Heather Stastny

Created/Initiated

Approved

Approved

Approved

Approved

Final Approval



STAFF REPORT - Z24-04

Planning Commission: August 19, 2024

City Council 1st reading: September 17, 2024

APPLICATION TYPE:		CASES:	
Zoning		Z24-12: 2815, 2821, 2826 Houston St & 2836 W Houston Harte Expy. Frontage Rd.; and an unaddressed lot, being Lots 4-8, Block	
SYNOPSIS:			
A request for approval of a zone change from (CN) Neighborhood Commercial and (RS-1) Single-family Residential to (CG) General Commercial for the property at following addresses 2815, 2821, 2826 Houston St & 2836 W Houston Harte Expy. Frontage Rd.; and an unaddressed lot, being Lots 4-8, Block 81 of the Hatcher Addition			
LOCATION:		LEGAL DESCRIPTION:	
2815, 2821, 2826 Houston St & 2836 W Houston Harte Expy. Frontage Rd.; and an unaddressed lot, being Lots 4-8, Block 81 of		Lot: 4, 5,6,7 and 8 Blk: 81, Subd: HATCHER ADDITION	
SM DISTRICT / NEIGHBORHOOD:	ZONING:	FUTURE LAND USE:	SIZE:
SMD #2 – Tom Thompson Bluffs Neighborhood	Existing: CN & RS-1 Proposed: RM-1 Low-rise multifamily	Neighborhood Center	.862 acres
NOTIFICATIONS:			
24 notifications were mailed within a 200-foot radius on August 1, 2024. Staff has received zero in favor and zero against.			
STAFF RECOMMENDATION:			
Staff recommends APPROVAL of zoning to Low-rise Multifamily (RM-1) zoning district.			
PROPERTY OWNER/PETITIONER:			
Applicant: Zane Willard Representative: Erica Wilde, Wilde Engineering			
STAFF CONTACT:			
Aaron Vannoy Planning and Development Services Director (325) 657-4210, ext. 1542 Aaron.vannoy@cosatx.us			

August 19, 2024

Additional Information: The applicant is looking to build multifamily units on this parcel. These parcels have been vacant and underused since Houston Harte Freeway route dissected these lots. IN recent years the lots to the north have been built out with single family housing. This property once combined is ideal for low-rise multifamily to add options to the housing inventory for this area.

1. **Compatible with Plans and Policies.** **Whether the proposed amendment is compatible with the Comprehensive Plan and any other land use policies adopted by the Planning Commission or City Council.** The Comprehensive Plan identifies this area as Neighborhood Center. Typical neighborhood center is light intensity commercial and higher intensity housing. This low-rise zoning district will be a good accent piece to the neighborhood.
2. **Consistent with Zoning Ordinance.** **Whether and the extent to which the proposed amendment would conflict with any portion of this Zoning Ordinance.** The proposed zoning will not conflict with the Zoning Ordinance.
3. **Compatible with Surrounding Area.** **Whether and the extent to which the proposed amendment is compatible with existing and proposed uses surrounding the subject land and is the appropriate zoning district for the land.** The proposed use is compatible with the surrounding area as there is some light commercial on the high traffic intersection being Garfield and the frontage road; then to the west and north continues a mix of light commercial and residential areas.
4. **Changed Conditions.** **Whether and the extent to which there are changed conditions that require an amendment.** This area has been vacant and adding housing units would be a good buffer between the freeway and the single family neighborhood to the north.
5. **Effect on Natural Environment.** **Whether and the extent to which the proposed amendment would result in significant adverse impacts on the natural environment, including but not limited to water and air quality, noise, storm water management, wildlife, vegetation, wetlands and the practical functioning of the natural environment.** There are no anticipated adverse effects on neighboring properties.
6. **Community Need.** **Whether and the extent to which the proposed amendment addresses a demonstrated community need.** Staff believes that this type of use has a history of success.
7. **Development Patterns.** **Whether and the extent to which the proposed amendment would result in a logical and orderly pattern of urban development in the community.** The property in question is well suited for the proposed project and will meet the development needs.

August 19, 2024

Recommendation:

Staff recommends **APPROVAL** of zoning to Low-rise Multifamily (RM-1) zoning district.

Attachments:

Aerial Map

Notification Map

Zoning Map

Vision Plan Map



Aerial Map

Case # Z24-12 – 2815, 2821, 2826, & 2836 Houston St.

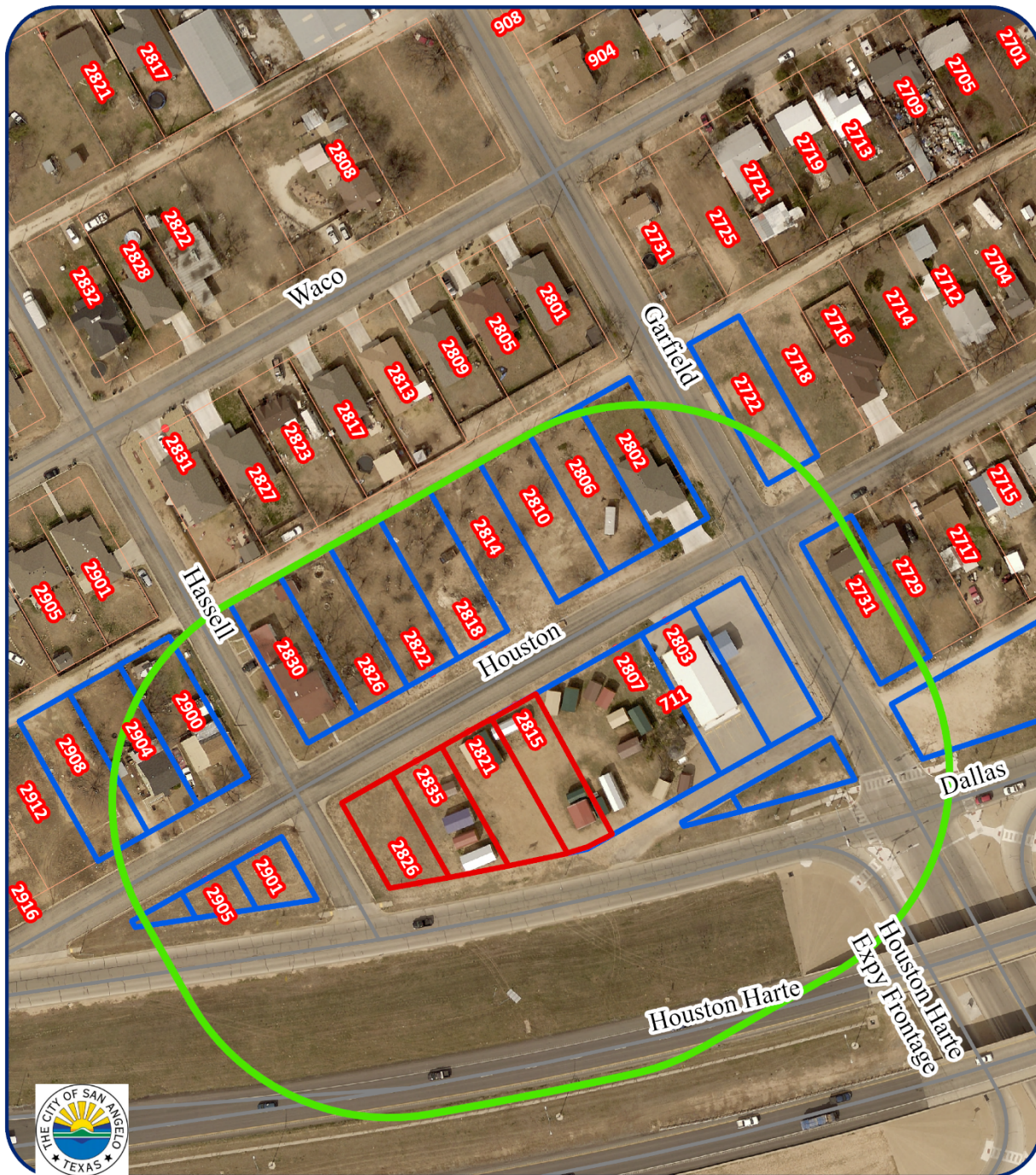
Council District: #2 Tom Thompson

Neighborhood: Bluffs

Scale: 0 0.00 0.02 0.04 0.06 0.08
Miles

Subject Properties: —





200' Notification Map

Case # Z24-12 – 2815, 2821, 2826, & 2836 Houston St.

Council District: #2 Tom Thompson

Neighborhood: Bluffs

Scale: 0 0.00 0.01 0.02 0.03 0.04
Miles

Subject Properties:

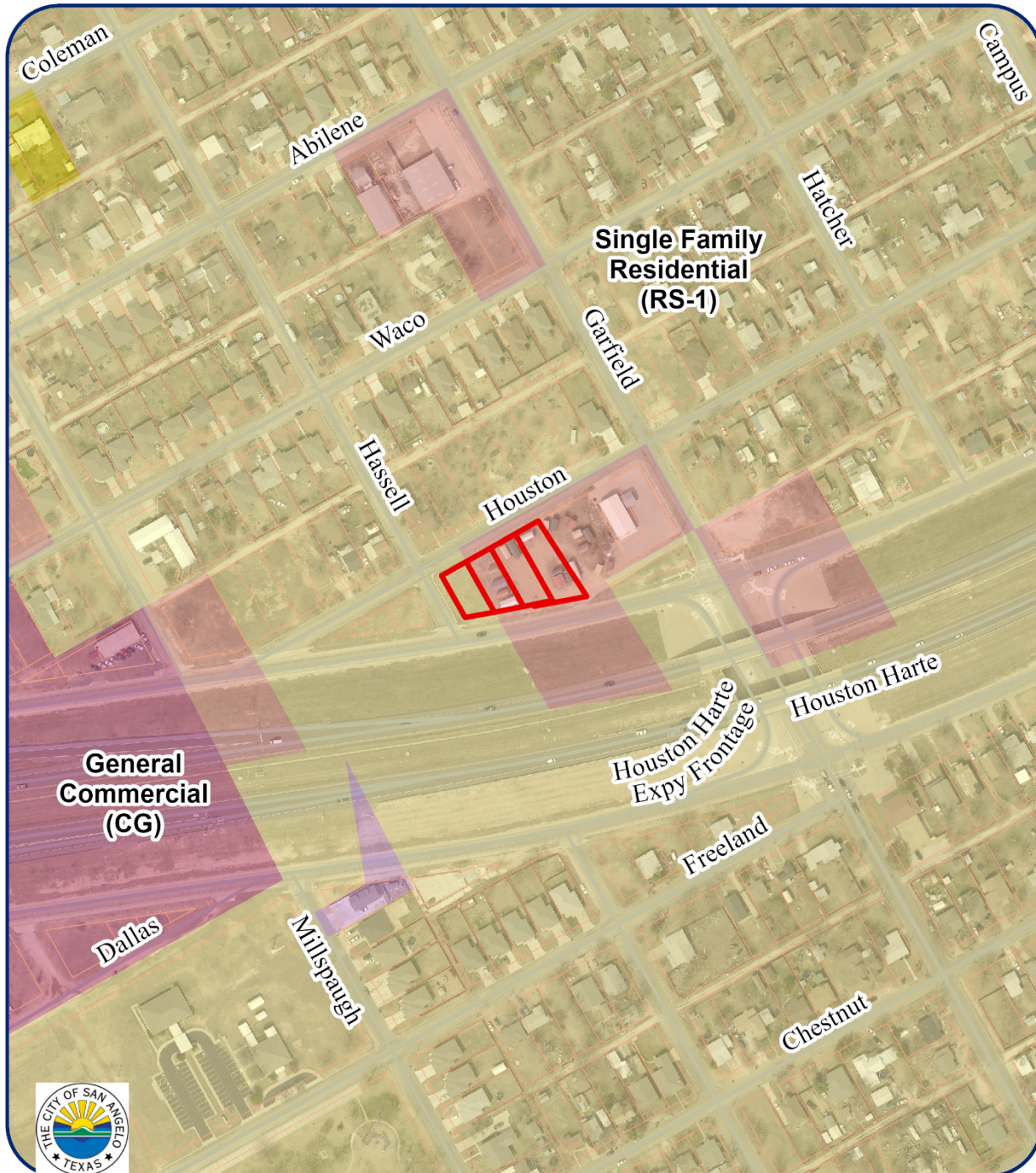
200' Buffer:

Notified Properties:



N





Zoning Map

Case # Z24-12 – 2815, 2821, 2826, & 2836 Houston St.

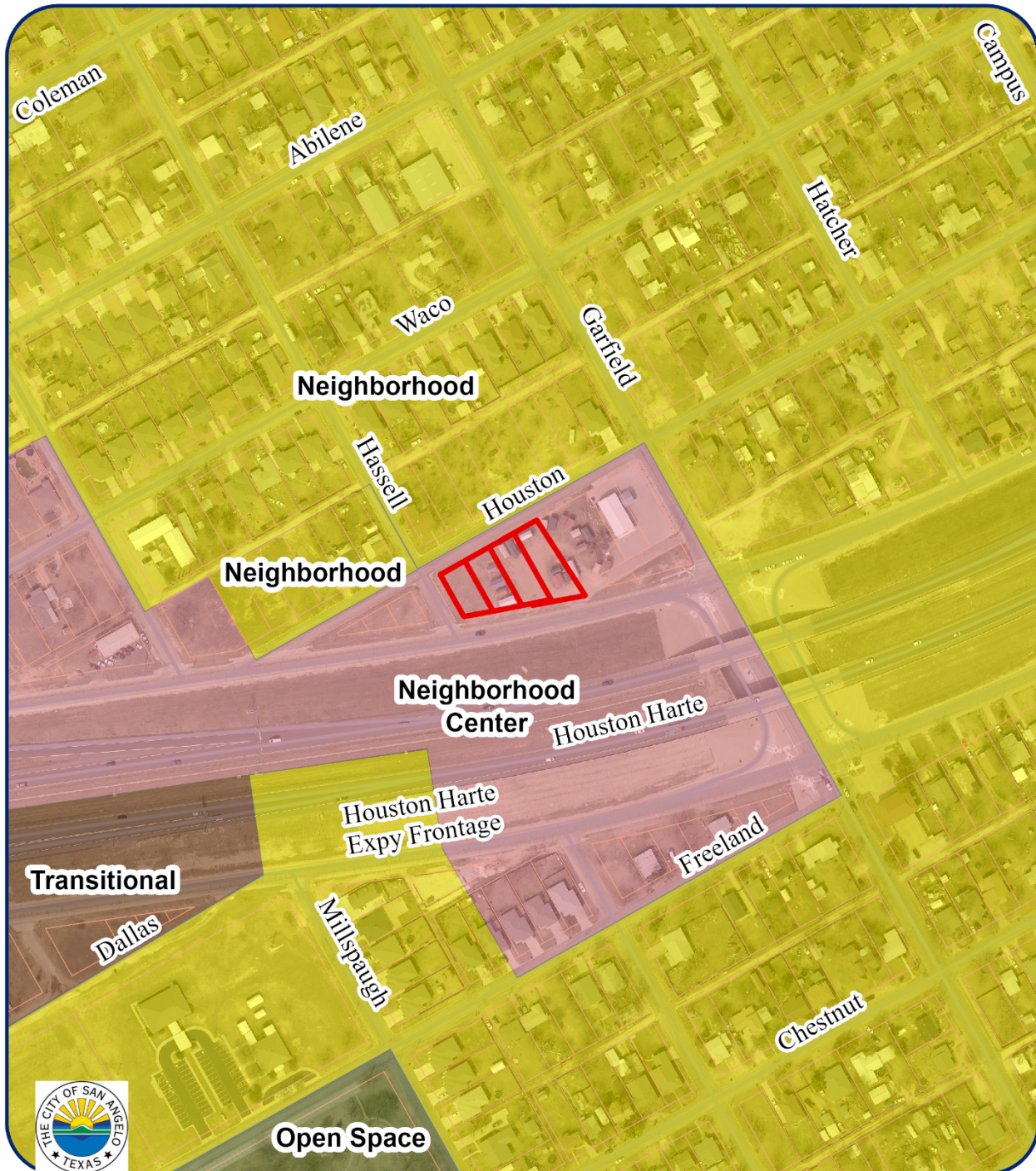
Council District: #2 Tom Thompson

Neighborhood: Bluffs

Scale: 0 0.00 0.02 0.04 0.06 0.08
Miles

Subject Properties: ———





Vision Plan Map

Case # Z24-12 – 2815, 2821, 2826, & 2836 Houston St.

Council District: #2 Tom Thompson

Neighborhood: Bluffs

Scale: 0 0.00.02 0.04 0.06 0.08
Miles

Subject Properties:



AN ORDINANCE AMENDING CHAPTER 12, EXHIBIT “A” OF THE CODE OF ORDINANCES, CITY OF SAN ANGELO, TEXAS, WHICH ADOPTS ZONING REGULATIONS, USE DISTRICTS AND A ZONING MAP, IN ACCORDANCE WITH A COMPREHENSIVE PLAN, BY ZONING AND CLASSIFYING THE FOLLOWING PROPERTIES: **APPROXIMATELY .862 ACRES LOCATED AT 2815, 2821, 2835 HOUSTON ST. AND 2826 W HOUSTON HARTE EXPY. FRONTAGE RD.; AND AN UNADDRESSED LOT, BEING LOTS 4-8, BLOCK 81 OF THE HATCHER ADDITION;** FROM NEIGHBORHOOD COMMERCIAL (CN) and SINGLE FAMILY RESIDENTIAL (RS-1) TO LOW RISE MULTIFAMILY RESIDENTIAL (RM-1); PROVIDING FOR SEVERABILITY; AND, PROVIDING FOR AN EFFECTIVE DATE

RE: Z24-12: 2815, 2821, 2835 Houston St & 2826 W Houston Harte Expy. Frontage Rd.; and an unaddressed lot, being Lots 4-8, Block 81 of the Hatcher Addition

WHEREAS, on the 19th day of August 2024, the Planning Commission for the City of San Angelo in compliance with the City Charter, City ordinance and state law, and after holding a public hearing thereon, caused to be prepared and delivered a report and recommendation to City Council to approve the proposed Low Rise Multifamily (RM-1) Zoning District; and,

WHEREAS, on the 17th day of September 2024, City Council held a public hearing on Z24-12, pursuant to published notice, and has considered the application, comments, reports and recommendations of the Planning Commission and staff, public testimony, and other relevant support materials.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY OF SAN ANGELO:

SECTION 1: The basic zoning ordinance for the City of San Angelo, as enacted by the governing body for the City of San Angelo effective January 4, 2000, and included within Exhibit “A” of Chapter 12 of the Code of Ordinances of the City of San Angelo, and zoning map be and the same are hereby amended to designate the following described properties permanently zoned LOW-RISE MULTIFAMILY RESIDENTIAL ZONING DISTRICT:

The real property generally located at 2815, 2821, 2835 Houston ST. and 2826 W. Houston Harte Expy. Frontage Rd., and an unaddressed lot, being Lots 4-8, Block 81 of the Hatcher Addition within the City of San Angelo, Tom Green County, Texas as more particularly described and depicted on Exhibit “A” of this Ordinance.

SECTION 2: The Director of the Planning & Development Department, or his/her designee, is hereby directed to correct zoning district maps in the office of the Planning & Development Department, to implement the zoning provision adopted herein, as further depicted on **Exhibit “A”** of this Ordinance.

SECTION 3: In all other respects, the use of the hereinabove described property shall be subject to all applicable regulations contained in Chapter 12 of the Code of Ordinances for the City of San Angelo, as amended.

SECTION 4: The remaining provisions of Chapter 12 of the Code of Ordinances of the City of San Angelo, Texas, not amended herein shall remain in full force and effect.

SECTION 5: The terms and provisions of this Ordinance shall be deemed to be severable in that, if any portion of this Ordinance shall be declared to be invalid, the same shall not affect the validity of the other provisions of this Ordinance.

SECTION 6: This Ordinance shall be effective on, from and after the date of adoption.

INTRODUCED on the **17th day of September, 2024**, and finally PASSED, APPROVED AND ADOPTED on this the **1st day of October, 2024**.

THE CITY OF SAN ANGELO

Brenda Gunter, Mayor

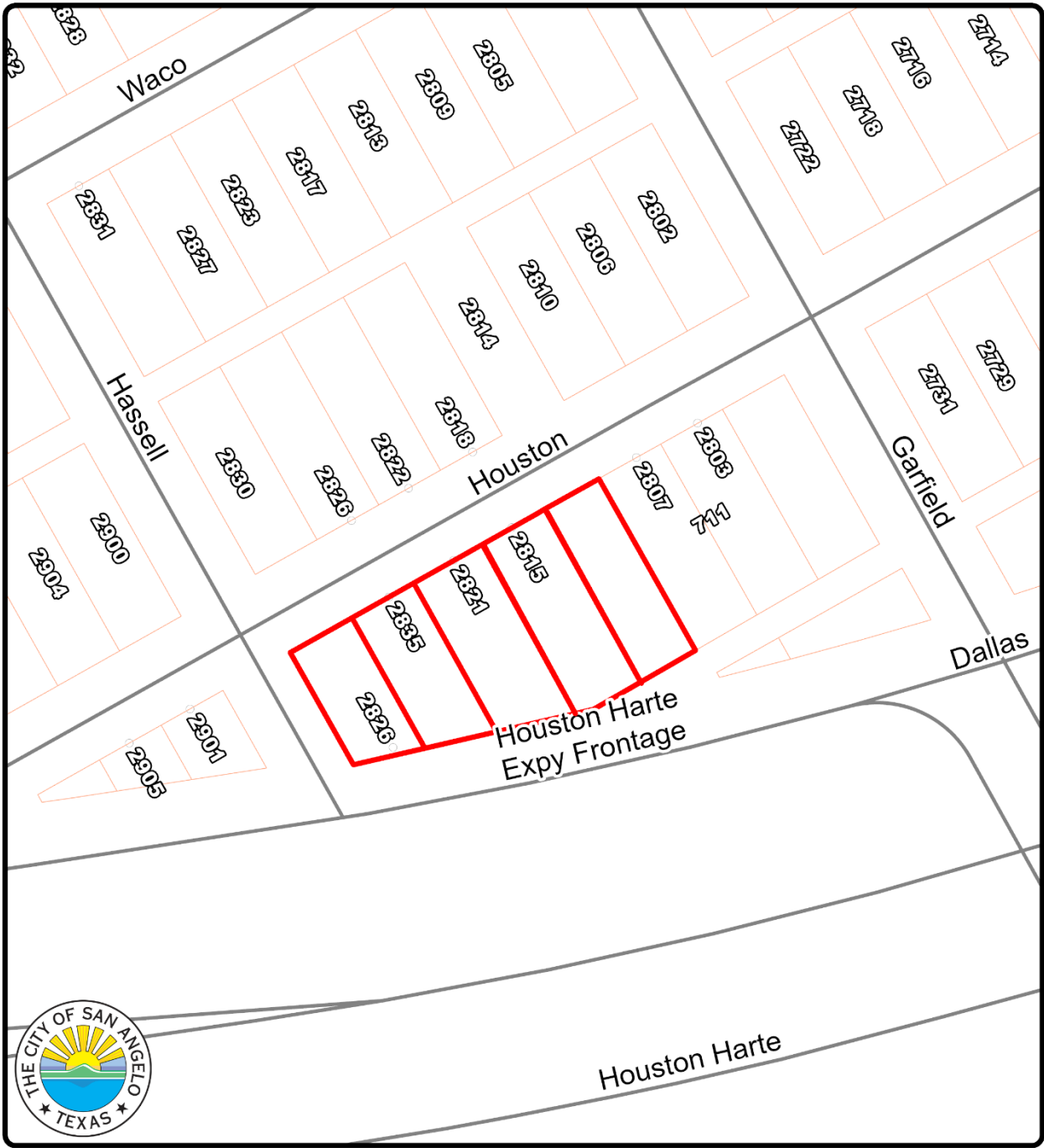
ATTEST:

APPROVED AS TO FORM:

Heather Stastny, City Clerk

Theresa James, City Attorney

Exhibit "A"



Ordinance Map
Z24-12: Houston Street

Council District: #2 Tom Thompson
Neighborhood: Bluffs

Scale: 0 0.01 0.02 0.03 0.04 Miles

Subject Property: —

Existing Zoning: CN & RS-1

Requested Zoning: RM-1



REPORT TO MAYOR & MEMBERS OF CITY COUNCIL



Requestor: Sherry Bailey, Sr. Planner, Planning Commission

Meeting Date: September 17, 2024

Item type: Regular Item

Caption:

First reading and public hearing of an ordinance for Z24-13, a request to rezone property from the General Commercial/Heavy Commercial zoning district to the Low Rise Multifamily Residential zoning district, located at 2025 & 2029 Vaughn St. (Presentation made by Planning and Development Services Director Aaron Vannoy)

Staff Recommendation:

Approve

Summary/History:

A request to rezone from (CG/CH) General Commercial/Heavy Commercial to (RM-1) Low Rise Multi-Family Residential at Vaughn and Jack Streets in order to build a small multifamily unit apartment complex. The property adjacent to this is an older low-rise multifamily complex. These two lots were platted as single family residential homes and remained vacant for years while everything to the east is commercial and heavy commercial zoned and developed. To the West is the Angelo State University campus and no further private development is expected. The Planning Commission voted 5-0 in approval and the City Staff recommends approval of this case.

Funding Source(s):

Financial Impact:

NA

Other Information/Recommendation:

A request to rezone from (CG/CH) General Commercial/Heavy Commercial to (RM-1) Low Rise Multi-Family Residential at Vaughn and Jack Streets in order to build a small multifamily unit apartment complex. The property adjacent to this is an older low-rise multifamily complex. These two lots were platted as single family residential homes and remained vacant for years while everything to the east is commercial and heavy commercial zoned and developed. To the West is the Angelo State University campus and no further private development is expected. The Planning Commission voted 5-0 in approval and the City Staff recommends approval of this case.

Attachments:

- | | | |
|----|-------------------------------------|--|
| 1. | Z24-13 2025 & 2029 Vaughn Street | Z24-13 2025 & 2029 Vaughn Street.pdf |
| 2. | Z24-13 Ordinance 2025 Vaughn Street | Z24-13 Ordinance 2025 Vaughn Street.docx |

Presentation:

Aaron Vannoy

Approvals/Reviews:

Sherry Bailey	Created/Initiated
Sherry Bailey	Approved
Aaron Vannoy	Approved
Brandon Dyson	Approved
Aaron Vannoy	Approved
Theresa James	Approved
Heather Stastny	Final Approval

PLANNING COMMISSION – August 19, 2024**STAFF REPORT***City Council First Reading September 17, 2024**City Council Second Reading October 1, 2024*

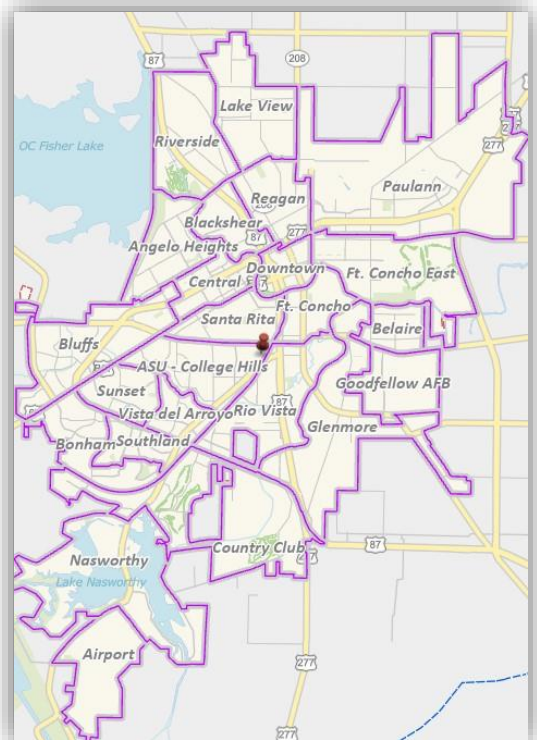
APPLICATION TYPE:		CASE:	
Rezoning		Z24-13 Vaughn and Jack Streets	
SYNOPSIS:			
Request to rezone from (CG/CH) General Commercial/Heavy Commercial to (RM-1) Low Rise Multi-Family Residential at Vaughn and Jack Street to build small multi-family units.			
LOCATION:		LEGAL DESCRIPTION:	
Intersection of Vaughn and Jack Streets – immediately adjacent to ASU land		South Angelo Addition Lots 11 and 12, less 5 ft. to City, Blk 4	
SM DISTRICT / NEIGHBORHOOD:	ZONING:	FUTURE LAND USE:	SIZE:
SMD #5 – Karen Hesse Smith Neighborhood: College Hills	RM-1	Residential	.0342 acres
THOROUGHFARE PLAN:			
• Vaughn Street-Local Street, 36 ft. of paving, 60 ft. of ROW • Jack Street – Local Street, 48 ft. of paving, 56 ft. of ROW			
NOTIFICATIONS			
11 notices were mailed out. None have been received either for or against at this time.			
STAFF RECOMMENDATION:			
Planning staff recommends approval of the request. The Low Rise Multi-family zone (RM-1) is adjacent to the north of these two lots and General Commercial/Heavy Commercial (CG/CH) is across the street to the east. Single Family (RS-1) zoning is behind the lots, but the land is ASU land set aside for future development.			

PROPERTY OWNER/PETITIONER:

Owner: Zane Willard
Representative: Erica Wilde P.E.

STAFF CONTACT:

Sherry Bailey
Principal Planner
(325) 657-4210, Extension 1546
sherry.bailey@cosatx.us



Information:

The property in question is presently zoned (CG/CH) General Commercial/Heavy Commercial. The applicant intends on building a small multiple unit housing structure. The proximity of the proposed apartment complex to the ASU campus is a strategic endeavor. Mr. Willard's property backs up to ASU property. Mr. Willard is requesting (RM-1) Low Rise Multifamily housing designation. That is the same zoning as the large apartment complex just north of this property enjoys. This area is off Austin Street which is a tie in between W Ave. N and Knickerbocker Rd. Light Manufacturing zoning surrounds this area of Austin St. and then CG/CH zoning surrounds the Light Manufacturing. The residents of this proposed apartment complex may well have their choice of employment opportunities and areas to shop. This entire area is a microcosm of zoning opportunities. Traffic flows easily between W Ave N and Knickerbocker Rd. Yet the area is small and compact enough to meet the public's needs.

Planning Commission evaluation of appropriateness.

Section 213(G) of the Zoning Ordinance requires that the Planning Commission and City Council consider, at minimum, seven (7) factors in determining the appropriateness of any rezoning request as outlined in #1 through #7 below:

1. **Compatible with Plans and Policies.** *Whether the proposed amendment is compatible with the Comprehensive Plan and any other land use policies adopted by the Planning Commission or City Council.*
The property proposed to be rezoned is in the General Commercial/Heavy Commercial (CG/CH) zoning district. The Comprehensive Plan has the area as "Commercial," Rezoning to Low Rise Multifamily Residential (RM-1) is the zoning that allows the residential use surrounded by different commercial and manufacturing uses which catering to the needs of a ready workforce. The melding of the zones appears to have worked well for the complex to the north of this spot. Multi-family is very close to commercial in compactness, as well as the number of people it can serve.
2. **Consistent with Zoning Ordinance.** *Whether and the extent to which the proposed amendment would conflict with any portion of this Zoning Ordinance.* As proposed, the site will provide support to the employees as well as shelter. The need is there, this helps address the need.
3. **Compatible with Surrounding Area.** *Whether and the extent to which the proposed amendment is compatible with existing and proposed uses surrounding the subject land and is the appropriate zoning district for the land.* The rezoning is generally compatible with the surrounding area as outlined in the Comprehensive Plan mentioned above. The services being met go both ways. Housing for workers and students, employment for students and education.
4. **Changed Conditions.** *Whether and the extent to which there are changed conditions that require an amendment.* The applicant wants to develop a single-family home on the lot. The lot is compatible with that designation.
5. **Effect on Natural Environment.** *Whether and the extent to which the proposed amendment would result in significant adverse impacts on the natural environment, including but not limited to water and air quality, noise, storm water management, wildlife, vegetation, wetlands and the practical functioning of the natural environment.* Staff does not anticipate any adverse environmental affects at this time. A

review of drainage, grading, and stormwater will not be required during the subdivision platting process.

6. **Community Need.** *Whether and the extent to which the proposed amendment addresses a demonstrated community need.* Staff believes there is a need for this type of product specifically in this area.

7. **Development Patterns.** *Whether and the extent to which the proposed amendment would result in a logical and orderly pattern of urban development in the community.* This buildout would provide additional traffic in an area that is just starting to develop more commercial services. There are ample exit paths, including walking trails between the residential apartments and the university.

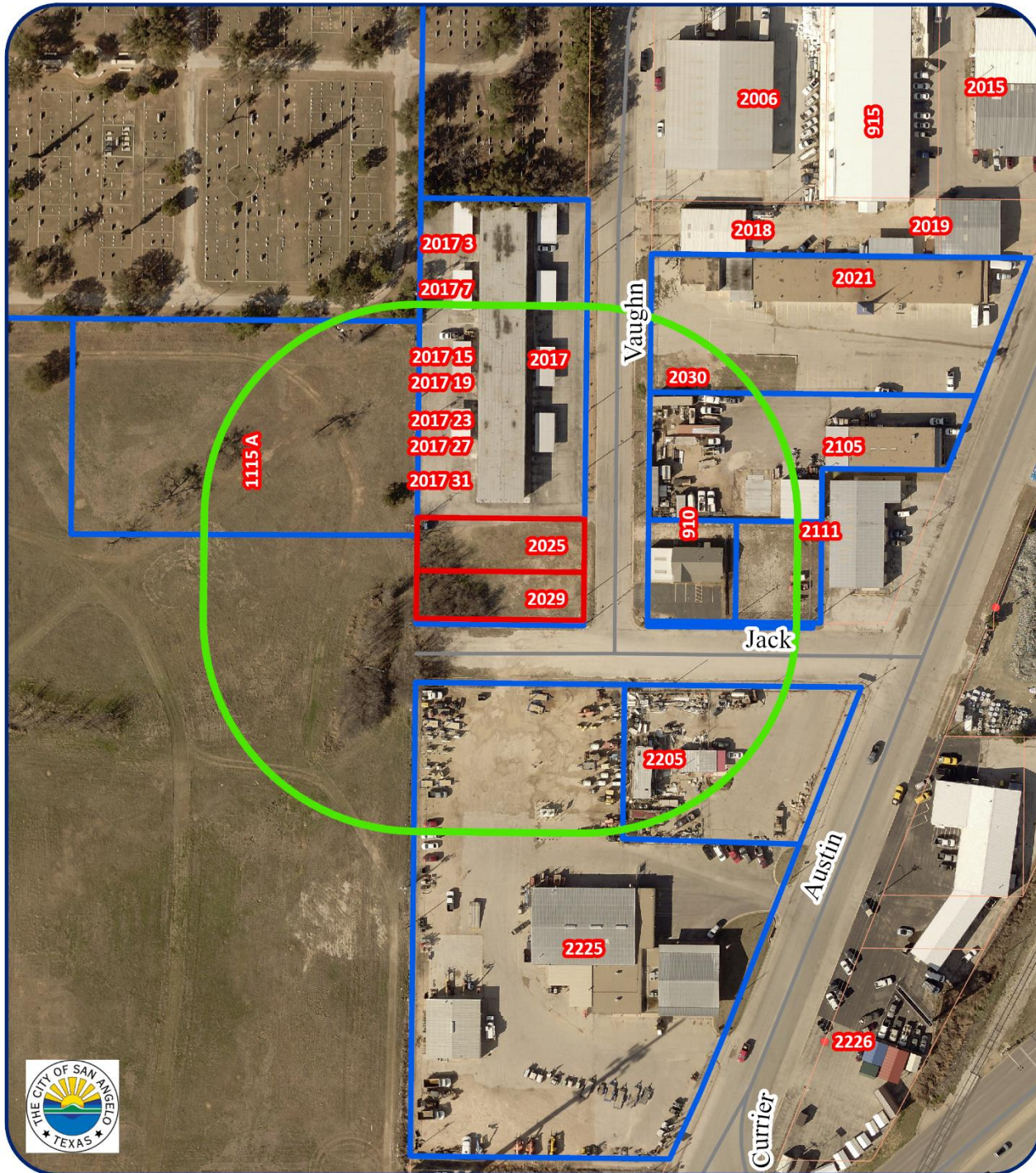
Recommendation:

Staff recommends APPROVAL of the rezoning as presented.

Attachments:

Aerial Map
Final Plat

Notification Map



200' Notification Map

Case # Z24-13 2025 & 2029 Vaughn St

Council District: #5 Karen Hesse Smith

Neighborhood: ASU - College Hills

Scale: 0.00 0.01 0.02 0.03 0.04

Miles

Subject Properties: —

200' Buffer: —

Notified Properties: —



Aerial Map



Aerial Map Case # Z24-13 2025 & 2029 Vaughn St

Council District: #5 Karen Hesse Smith

Neighborhood: ASU - College Hills

Scale: 0 0.01 0.02 0.04 0.06 0.08

Miles

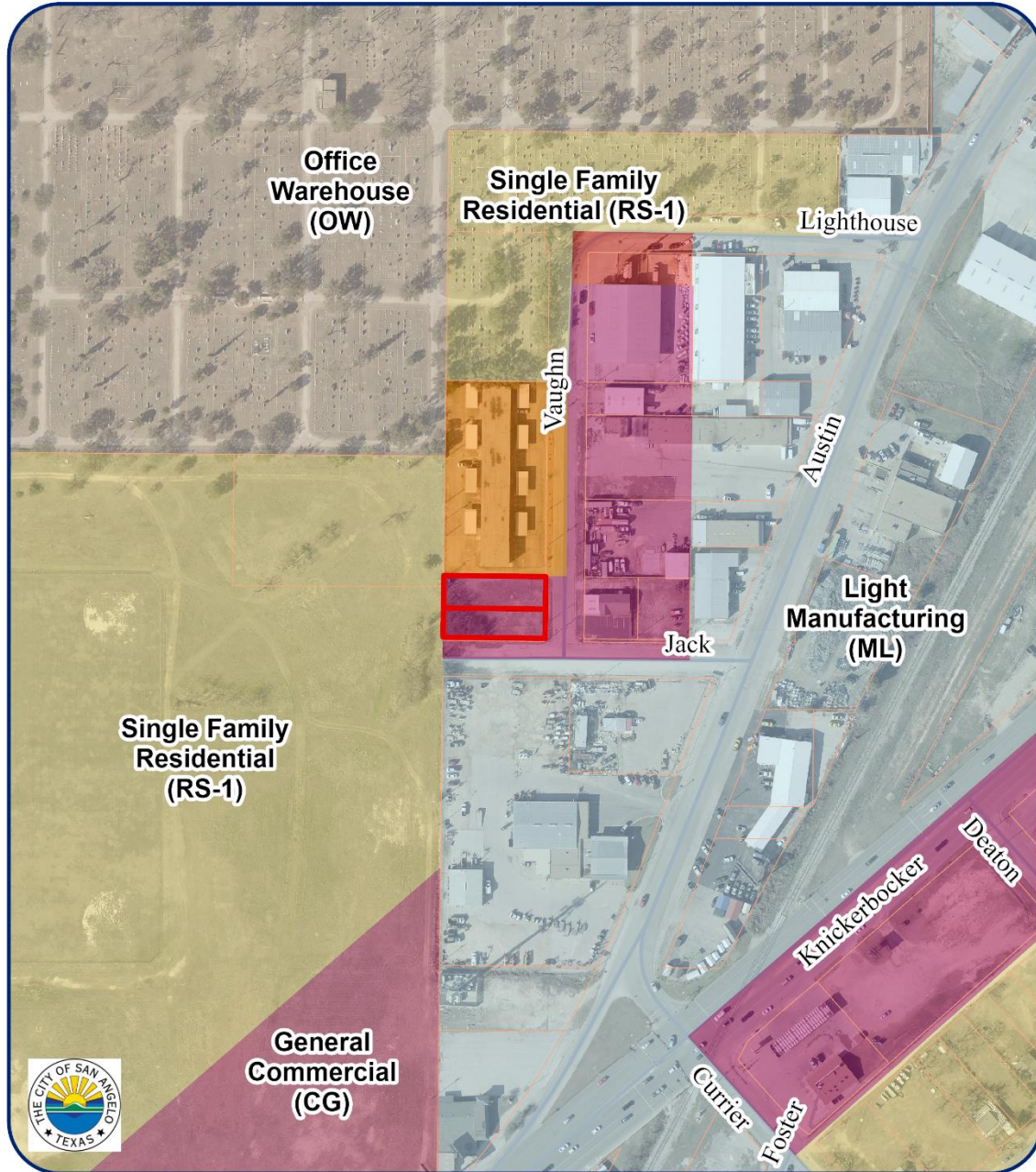
Subject Properties:



N



Zoning Map



Zoning Map

Case # Z24-13 2025 & 2029 Vaughn St

Council District: #5 Karen Hesse Smith

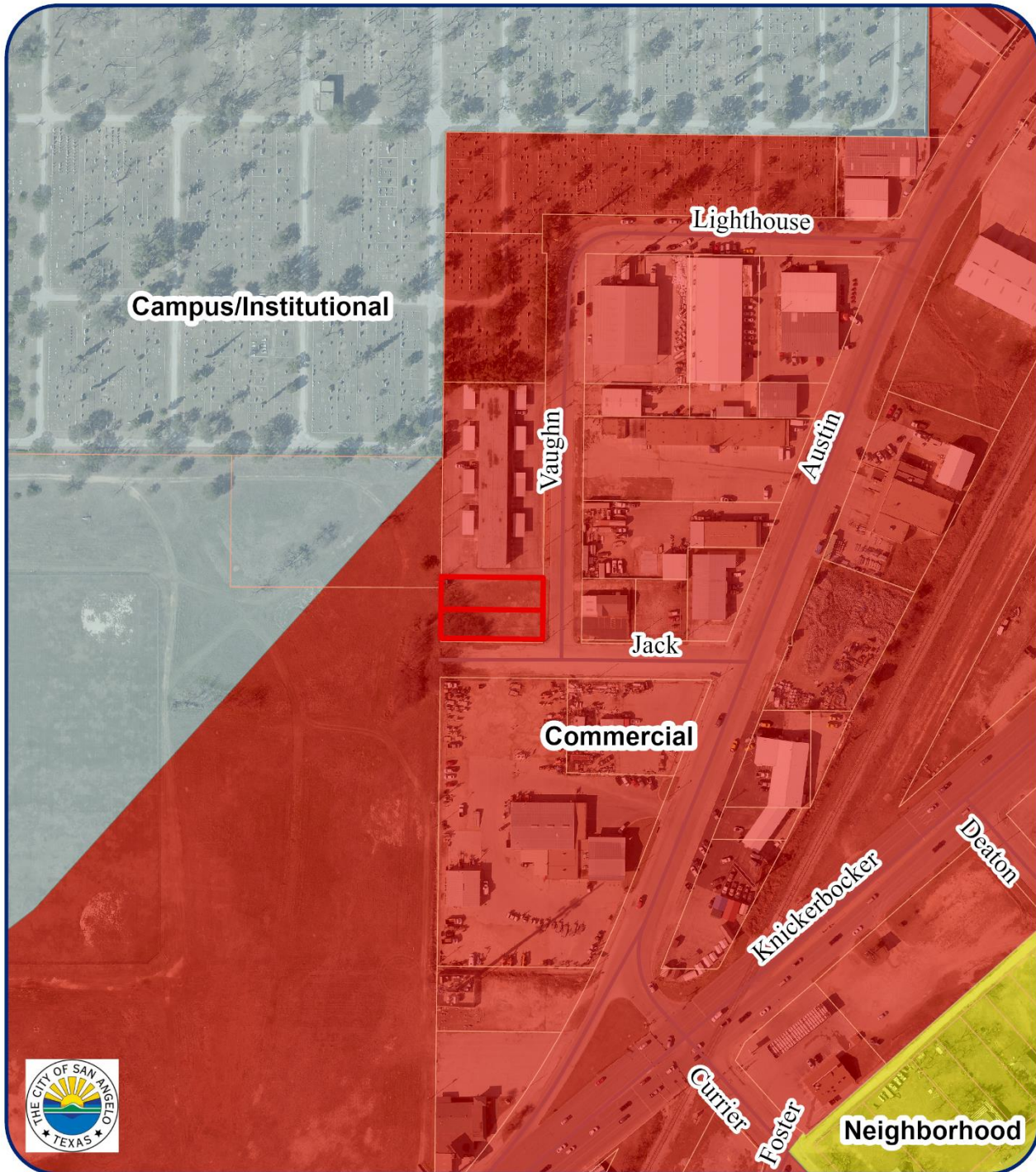
Neighborhood: ASU - College Hills

Scale: 0 0.01 0.02 0.04 0.06 0.08 Miles

Subject Properties: —

N





Vision Plan Map

Case # Z24-13 2025 & 2029 Vaughn St

Council District: #5 Karen Hesse Smith

Neighborhood: ASU - College Hills

Scale: 0 0.01 0.02 0.04 0.06 0.08
Miles

Subject Properties:







AN ORDINANCE AMENDING CHAPTER 12, EXHIBIT “A” OF THE CODE OF ORDINANCES, CITY OF SAN ANGELO, TEXAS, WHICH ADOPTS ZONING REGULATIONS, USE DISTRICTS AND A ZONING MAP, IN ACCORDANCE WITH A COMPREHENSIVE PLAN, BY CHANGING THE ZONING CLASSIFICATION OF THE FOLLOWING PROPERTY: **APPROXIMATELY .0342 ACRES LOCATED AT 2025 AND 2029 VAUGHN STREET**; FROM GENERAL COMMERCIAL (CG) TO THE LOW-RISE MULTIFAMILY (RM-1) ZONING DISTRICT, PROVIDING FOR SEVERABILITY; AND, PROVIDING FOR AN EFFECTIVE DATE

RE: Z24-13: 2025 & 2029 Vaughn St.

WHEREAS, on the 19th day of August 2024, the Planning Commission for the City of San Angelo in compliance with the City Charter, City ordinance and state law, and after holding a public hearing thereon, caused to be prepared and delivered a report and recommendation to City Council to approve the Low-Rise Multifamily (RM-1) Zoning District; and,

WHEREAS, on the 17th day of September 2024, City Council held a public hearing on Z24-13, pursuant to published notice, and has considered the application, comments, reports and recommendations of the Planning Commission and staff, public testimony, and other relevant support materials.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY OF SAN ANGELO:

SECTION 1: The basic zoning ordinance for the City of San Angelo, as enacted by the governing body for the City of San Angelo effective January 4, 2000, and included within Exhibit “A” of Chapter 12 of the Code of Ordinances of the City of San Angelo, and zoning map be and the same are hereby amended to designate the following described properties permanently zoned Low-Rise Multifamily (RM-1) Zoning District:

The real property generally located 2025 and 2029 Vaughn Street, being approximately .0342 acres described as Lots 11 and 12, Block 4, South Angelo Addition, save and except the south 5 feet of Lot 12, Block 4, South Angelo Addition, within the City of San Angelo, Tom Green County, Texas as more particularly described and depicted on Exhibit “A” of this Ordinance. (“Zone Change Map”).

SECTION 2: The Director of the Planning & Development Department, or his/her designee, is hereby directed to correct zoning district maps in the office of the Planning & Development Department, to implement the zoning provision adopted herein, as further depicted on **Exhibit “A”** of this Ordinance (**“Zone Change Map”**).

SECTION 3: The use of the hereinabove described property shall be subject to all applicable regulations contained in Chapter 12 of the Code of Ordinances for the City of San Angelo, as amended.

SECTION 4: The terms and provisions of this Ordinance shall be deemed to be severable in that, if any portion of this Ordinance shall be declared to be invalid, the same shall not affect the validity of the other provisions of this Ordinance.

SECTION 5: This Ordinance shall be effective on, from and after the date of adoption.

INTRODUCED on the **17th day of September 2024**, and finally PASSED, APPROVED AND ADOPTED on this the **1st day of October 2024**.

THE CITY OF SAN ANGELO

Brenda Gunter, Mayor

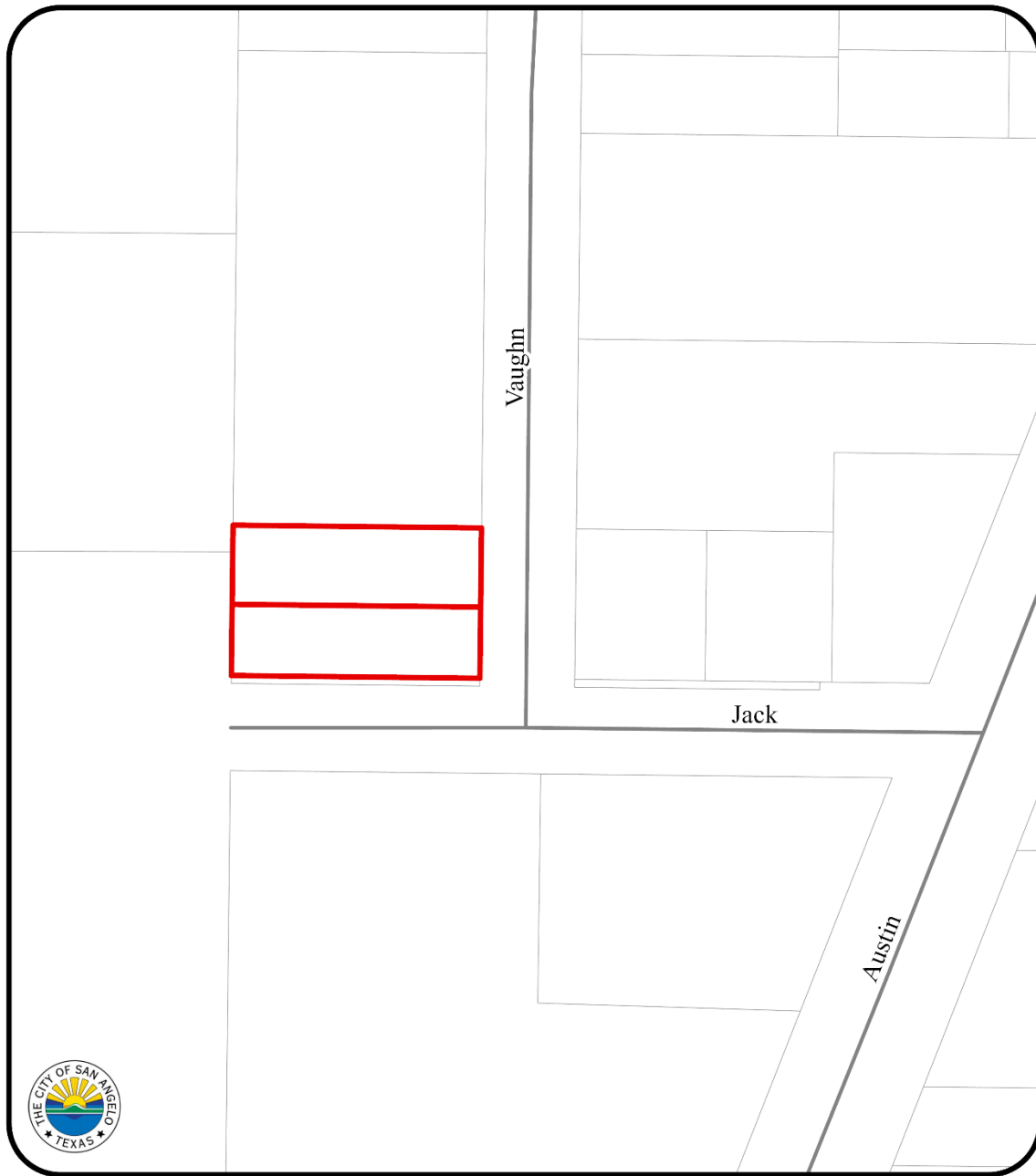
ATTEST:

APPROVED AS TO FORM:

Heather Stastny, City Clerk

Theresa James, City Attorney

Exhibit "A" (Zone Change Map)



Ordinance Map

Case # Z24-13 2025 & 2029 Vaughn St

Council District: #5 Karen Hesse Smith

Neighborhood: ASU - College Hills

Scale: 0 0.01 0.02 0.02 0.03 Miles

Subject Properties: 

Existing Zoning: CG/CH

Requested Zoning: RM-1

N

