STATE OF TEXAS

COUNTY OF TRAVIS

TWDB Commitment No. G1001314

Flood Infrastructure Fund Category 1

North Central Texas Council of Governments

This Contract, (hereinafter "CONTRACT"), between the Texas Water Development Board (hereinafter "TWDB") and the North Central Texas Council of Governments (hereinafter "GRANTEE"), is composed of two parts, SECTION I - SPECIFIC CONDITIONS AND EXCEPTIONS TO THE STANDARD AGREEMENT and SECTION II - STANDARD AGREEMENT.

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:

1. TWDB – The Texas Water Development Board, or its designated representative
2. GRANTEE – North Central Texas Council of Governments
3. EXECUTIVE ADMINISTRATOR – The Executive Administrator of TWDB or a designated representative
4. PARTICIPANT(S) –N/A
5. REQUIRED INTERLOCAL AGREEMENT(S) – N/A
6. TWDB APPROVAL DATE – May 20, 2021
7. PROJECT – A regional flood planning study of the PROJECT AREA identified as Project # 40076, as more specifically described in **EXHIBIT A**, Detailed Description of the Project Service Area and **EXHIBIT B**, Scope of Work.
8. PROJECT AREA – Wise County and portions of Dallas, Denton, Ellis, Hood, Johnson, Parker, and Tarrant counties, as more specifically defined in **EXHIBIT A**, Detailed Description of the Project Service Area.
9. DEADLINE FOR CONTRACT EXECUTION – November 30, 2021
10. CONTRACT INITIATION DATE – The date CONTRACT is signed by the EXECUTIVE ADMINISTRATOR as shown on the last page of this CONTRACT document.
11. FINAL REPORT – The report including deliverables as described in **EXHIBIT B**, Scope of Work, and all maps, models, and other data gathered and developed for the PROJECT as described in TWDB guidance.
12. PROJECT COMPLETION DATE – June 30, 2025

13. CONTRACT EXPIRATION DATE – August 31, 2025

14. TOTAL PROJECT COST – $6,000,000

15. TWDB SHARE OF THE TOTAL PROJECT COST – The lesser of $3,000,000 or 50 percent of the total cost.

16. LOCAL SHARE OF THE TOTAL PROJECT COST – $3,000,000 in cash and/or in-kind contributions or 50 percent of the total costs.

17. PAYMENT REQUEST SCHEDULE – Not less than quarterly but not more frequently than monthly.

18. SURPLUS FUNDS – Those funds remaining after the GRANTEE has submitted final accounting to the EXECUTIVE ADMINISTRATOR, including interest earned.

19. PROJECT ACCOUNT – An account dedicated to the payment of PROJECT costs.

20. ELIGIBLE EXPENSES – The expenses allowed by TWDB program requirements and authorized by the TWDB in the approved Project Task and Expense Budget. Expenses incurred prior to March 12, 2020, are not ELIGIBLE EXPENSES.

21. ESCROW ACCOUNT – An account established by GRANTEE that will be used to manage the grant funds in accordance with an escrow agreement acceptable to the EXECUTIVE ADMINISTRATOR, which is attached hereto as **EXHIBIT F**, until the EXECUTIVE ADMINISTRATOR authorizes the release of the grant funds to the PROJECT ACCOUNT.

ARTICLE II SPECIAL CONDITIONS

OTHER SPECIAL CONDITIONS AND EXCEPTIONS TO STANDARD AGREEMENT OF THIS CONTRACT –

1. GRANTEE must work with any community within the PROJECT AREA that does not yet have floodplain management standards at least equivalent to National Flood Insurance Program minimum standards to assist that community with adopting and enforcing floodplain management standards at least equivalent to National Flood Insurance Program minimum standards, in accordance with the Flood Intended Use Plan. This work must be reflected in the Scope of Work, **EXHIBIT B**.

SECTION II - STANDARD AGREEMENT

ARTICLE I RECITALS

WHEREAS, GRANTEE applied to TWDB for financial assistance to conduct flood protection planning for the PROJECT AREA;

WHEREAS, GRANTEE and PARTICIPANTS will commit cash and/or in-kind services to pay for the LOCAL SHARE OF THE TOTAL PROJECT COST;

WHEREAS, GRANTEE is the entity that will act as administrator of the PROJECT and will be responsible for the execution of this CONTRACT;

WHEREAS, on TWDB APPROVAL DATE, TWDB approved GRANTEE's application for financial assistance for the PROJECT, consisting of reimbursement of the TWDB SHARE OF THE TOTAL PROJECT COST; Now, therefore, TWDB and GRANTEE agree as follows:

ARTICLE II PROJECT DESCRIPTION AND SERVICES TO BE PERFORMED

1. TWDB enters into this CONTRACT pursuant to Texas Water Code § 15.405; **EXHIBIT A**, Detailed Description of the Project Service Area; **EXHIBIT B**, Scope of Work; **EXHIBIT C**, Task and Expense Budgets; **EXHIBIT D**, Guidelines for Authors Submitting Contract Reports to the Texas Water Development Board; **EXHIBIT E**, TWDB Guidelines for a Progress Report; and **EXHIBIT F**, Escrow Agreement, which are incorporated herein and made a permanent part of this CONTRACT.

2. GRANTEE will conduct the PROJECT for the PROJECT AREA, as delineated and described in **EXHIBIT A**, and according to the Scope of Work contained in **EXHIBIT B**. GRANTEE will be solely responsible for all costs that exceed the Task and Expense Budgets for the PROJECT, **EXHIBIT C**.

3. GRANTEE must hold public meetings with the PARTICIPANTS, consultants, local entities, TWDB, and any other interested parties to describe the PROJECT and to solicit input and comments from the affected public. Public meetings must be conducted in accordance with the Texas Open Meetings Act (in accordance with Section II, Article X, Paragraph 2H) and held as determined by GRANTEE and TWDB as detailed below.

4. GRANTEE must hold at least three public meetings as follows:

    A. One meeting should occur toward the beginning of the project during data collection phase, to inform people of the project, how the study outcome will benefit the community, and gather any additional project related information that people have to share including location of flood risk

    B. One meeting should be held toward the end of the project to present the key findings of the study, how the study outcome will benefit the community, communicate any identified flood risks in the study area, and receive feedback.

    C. For larger projects and projects involving alternative solution identification, an additional meeting should be scheduled to present project updates and receive feedback.

ARTICLE III CONTRACT TERM, SCHEDULE, REPORTS, AND OTHER REQUIREMENTS

1. GRANTEE has until the DEADLINE FOR CONTRACT EXECUTION to execute this CONTRACT and to provide acceptable evidence of any REQUIRED INTERLOCAL AGREEMENTS and evidence of GRANTEE's ability to provide the LOCAL SHARE OF THE TOTAL PROJECT COST, if applicable, and any applicable federal share. Otherwise, TWDB SHARE OF THE TOTAL PROJECT COST will be rescinded.

2. This CONTRACT begins and GRANTEE begins performing its obligations hereunder on the CONTRACT INITIATION DATE and ends on the EXPIRATION DATE. Delivery of an acceptable FINAL

REPORT for the PROJECT no later than the EXPIRATION DATE constitutes completion of the terms of this CONTRACT.

3. A progress report, including results to date, must be provided to the EXECUTIVE ADMINISTRATOR throughout the project on the same timetable as the PAYMENT REQUEST SCHEDULE. Interim reports on special topics and/or results must be provided as requested. Instructions for the progress report are shown in **EXHIBIT E**.

4. GRANTEE must complete a draft Report. Draft Reports must include an Executive Summary, Table of Contents, List of Figures, List of Tables, a List of References, Conclusion (including key findings and recommendations), and any other pertinent information such as the Scope of Work or other diagrams, graphics, or tables to explain the procedures and results of the PROJECT. The Draft Report also must include an electronic copy of any computer programs, maps, or models along with any manuals or sample data set(s) developed under the terms of this CONTRACT. GRANTEE must deliver one (1) Portable Document Format (PDF) copy, with searchable text of the Draft Report to the EXECUTIVE ADMINISTRATOR no later than the PROJECT COMPLETION DATE. All Draft Reports must be prepared according to **EXHIBIT D**. After a 45-day review period, the EXECUTIVE ADMINISTRATOR will return review comments to GRANTEE.

5. GRANTEE must consider incorporating comments from the EXECUTIVE ADMINISTRATOR and other commenters on all draft deliverables into the FINAL REPORT. GRANTEE must attach a copy of the EXECUTIVE ADMINISTRATOR's comments in the FINAL REPORT. GRANTEE must submit one (1), or more as requested by the TWDB project manager, physical copy (bound) and one (1) electronic copy of the entire FINAL REPORT in Portable Document Format (PDF), with searchable text, to the EXECUTIVE ADMINISTRATOR no later than the EXPIRATION DATE. GRANTEE must submit one (1) electronic copy of any computer programs or models and an operations manual developed under the terms of this CONTRACT. In compliance with Texas Administrative Code, Title 1, Part 10, Chapters 206 and 213 (related to Accessibility and Usability of State Web Sites), the digital copy of the FINAL REPORT must comply with the requirements and standards specified in statute. After a 30-day review period, the EXECUTIVE ADMINISTRATOR will either accept or reject the FINAL REPORT. If the FINAL REPORT is rejected, the rejection letter sent to GRANTEE will state the reasons for rejection and the steps GRANTEE needs to take to have the FINAL REPORT accepted and the retainage released. The CONTRACT may be extended if necessary and allowable, based on the state funding source, to allow time for GRANTEE to resubmit the FINAL REPORT.

6. The EXECUTIVE ADMINISTRATOR may extend the PROJECT COMPLETION DATE and the EXPIRATION DATE upon written approval. GRANTEE must notify the EXECUTIVE ADMINISTRATOR in writing within ten (10) working days prior to the PROJECT COMPLETION DATE or thirty (30) days prior to the EXPIRATION DATE that GRANTEE is requesting an extension to the respective dates.

7. If GRANTEE is a retail public utility as defined in Texas Water Code § 13.002 and GRANTEE provides potable water, then GRANTEE annually must perform and file a water audit computing GRANTEE's most recent annual system water loss with TWDB. The first water audit must be submitted by May 1st following the passage of one year after the effective date of this Agreement and then by May 1st every year thereafter during the term of this Agreement. GRANTEE agrees to comply with 31 TAC § 358.6 relating to water audits.

8. During the Term of this Agreement, GRANTEE must submit an annual audit of the general-purpose financial statements prepared in accordance with Generally Accepted Accounting Principles (GAAP)

by a certified public accountant or licensed public accountant. Audits must be submitted to TWDB no later than 120 days after the close of GRANTEE's fiscal year.

ARTICLE IV COMPENSATION AND REIMBURSEMENT

1. TWDB agrees to compensate and reimburse GRANTEE in a total amount not to exceed TWDB SHARE OF THE TOTAL PROJECT COST for costs incurred by GRANTEE pursuant to performance of this CONTRACT. GRANTEE will contribute local funds, if applicable, in sources and amounts defined as the LOCAL SHARE OF THE TOTAL PROJECT COST. TWDB will reimburse GRANTEE for ninety-five percent (95%) of TWDB SHARE OF THE TOTAL PROJECT COST pending GRANTEE's performance, completion of the PROJECT, and written acceptance of said PROJECT by the EXECUTIVE ADMINISTRATOR, at which time TWDB will pay the retained five percent (5%) to GRANTEE.

2. TWDB will deposit the TWDB SHARE OF THE TOTAL PROJECT COST in an approved ESCROW ACCOUNT to be released to GRANTEE's PROJECT ACCOUNT at the direction of the EXECUTIVE ADMINISTRATOR.

3. GRANTEE must submit TWDB Outlay Report forms identifying:

    A. the total amount of expenses incurred by GRANTEE for the period covered by the Outlay Report; and

    B. identification and description of LOCAL SHARE OF THE TOTAL PROJECT COST for the billing period, if applicable, and any applicable federal or other share for the billing period; and

    C. invoices, receipts, or other documentation satisfactory in form and in substance to TWDB sufficient to establish the requested amount as an eligible expense incurred by the GRANTEE.

4. EXECUTIVE ADMINISTRATOR will authorize the release of TWDB SHARE OF THE TOTAL PROJECT COST from the ESCROW ACCOUNT when Outlay Reports have been approved by TWDB.

5. GRANTEE must use grant funds for ELIGIBLE EXPENSES. GRANTEE must return any grant funds that are used for expenses that cannot be verified as eligible or that are ineligible. The amount of grant funds used for any ineligible or unverified expenses must be credited against verified ELIGIBLE EXPENSES. If the total amount of ELIGIBLE EXPENSES is insufficient to fully offset the amount of improperly expended grant funds, the GRANTEE must use other funds to fully repay the TWDB. This Section II, Article IV, Item 5 survives the termination or expiration of this Agreement.

6. GRANTEE must submit payment requests and documentation for reimbursement billing according to the PAYMENT REQUEST SCHEDULE.

7. GRANTEE is responsible for any food or entertainment expenses incurred by its own organization or that of its subcontractors, outside that of eligible travel expenses authorized and approved by the State of Texas under this CONTRACT.

8. Travel expenses are limited to travel expenses authorized for state employees by the Texas Comptroller of Public Accounts at https://fmx.cpa.texas.gov/fmx/travel/textravel/rates/current.php, as amended or superseded. Receipts required for lodging; as well as copies of invoices or tickets for transportation costs or, if not available, names, dates, and points of travel of individuals.

9. GRANTEE is responsible for submitting any final payment request and documentation for reimbursement, along with a request to release any retained funds, no later than 60 days following the EXPIRATION DATE. Failure to submit a timely final payment request may result in closure of the CONTRACT. After closure of the CONTRACT, any SURPLUS FUNDS will be unavailable for reimbursement.

10. GRANTEE must provide a final accounting of funds expended on the PROJECT and return any SURPLUS FUNDS remaining after GRANTEE has submitted a final accounting to the EXECUTIVE ADMINISTRATOR.

11. The GRANTEE shall submit payments and documentation for reimbursement billing according to the PAYMENT REQUEST SCHEDULE and in accordance with the approved Task and Expense Budgets contained in **Exhibit C** to this CONTRACT. The GRANTEE has budget flexibility within Task and Expense Budget categories to the extent that the resulting change in amount in any one task or expense category does not exceed 10% of the TOTAL PROJECT COST authorized by this CONTRACT for that task or category. Larger deviations shall require approval by EXECUTIVE ADMINISTRATOR, which will be documented through an Approved Budget Memorandum to the TWDB contract file. The GRANTEE must provide written explanation for the overage and reallocation of the Task and Expense Budget.

ARTICLE V INTELLECTUAL PROPERTY

1. It is agreed that all works developed by GRANTEE and any subcontractors using funds provided under this CONTRACT or otherwise rendered in or related to the performance in whole or part of this CONTRACT, including but not limited to reports, drafts of reports, material, data, drawings, studies, analyses, notes, plans, computer programs and codes, or other work products, whether final or intermediate, are the joint property of TWDB and GRANTEE. GRANTEE hereby conveys co-ownership of such works to TWDB as they are created in whole or part. If present conveyance is ineffective under applicable law, GRANTEE agrees to convey a co-ownership interest of such works to TWDB after creation and to provide written documentation of such conveyance upon request by TWDB. TWDB and GRANTEE each have full and unrestricted rights to use such works with no compensation obligation.

2. GRANTEE must include terms and conditions in all contracts or other engagement agreements with any subcontractors as are necessary to secure these rights and protections and must require that subcontractors include similar such terms and conditions in any contracts or other engagements with their subcontractors.

3. To the extent allowed by law, GRANTEE must make all reports, drafts of reports, data, drawings, studies, analyses, models, notes, plans, computer programs and codes, or other work products, whether final or intermediate, available to the regional flood planning group appliable to the PROJECT AREA within a reasonable time after a request from the regional flood planning group.

ARTICLE VI AMENDMENT, TERMINATION, AND STOP ORDERS

1. This CONTRACT may be altered or amended by mutual written consent of the GRANTEE and the EXECUTIVE ADMINISTRATOR. This CONTRACT may be terminated by the EXECUTIVE ADMINISTRATOR at any time by written notice to GRANTEE. PROJECT schedule dates and deadlines as outlined in Section I, Article I may not be revised without written approval by TWDB and amendment to this CONTRACT. Upon receipt of such termination notice, GRANTEE 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. GRANTEE must submit a statement showing in detail the work performed under this CONTRACT to the date of termination. TWDB will pay GRANTEE that proportion of the prescribed fee which applies to the work that is actually performed under this CONTRACT, less all payments that have been previously made. Thereupon, copies of all work accomplished under this CONTRACT must be delivered to TWDB.

2. The EXECUTIVE ADMINISTRATOR may issue a Stop Work Order to GRANTEE at any time. Upon receipt of such order, GRANTEE must discontinue all work under this CONTRACT and cancel all orders pursuant to this CONTRACT, unless the order directs otherwise. The GRANTEE may not resume work under this CONTRACT unless the EXECUTIVE ADMINISTRATOR issues a Restart Order. If the EXECUTIVE ADMINISTRATOR does not issue a Restart Order within 60 days after the Stop Work Order, this CONTRACT is terminated in accordance with the foregoing provisions.

ARTICLE VII SUBCONTRACTS

1. Each Subcontract entered into to perform required work under this CONTRACT must contain the following:

    A. A detailed budget estimate 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.

    B. A clause stating the following: “Subcontractor agrees and acknowledges that it is subject to all applicable requirements of the master contract between (Contractor Name) and the Texas Water Development Board. Subcontractor adopts by reference the requirements of Article VII of the TWDB Contract for this Subcontract.”

All Subcontracts entered into to perform required work under this CONTRACT are also subject to the following requirements:

1. the Subcontract is subject to audit by the Texas State Auditor’s Office, and Subcontractor must cooperate with any request for information from the Texas State Auditor, as further described in Section II, Article X, Paragraph 1K;

2. payments under the Subcontract are contingent upon appropriation of funds by the Texas Legislature, as further described in Section II, Article X, Paragraph 1C;

3. ownership of data, materials and work papers, in any media, that is gathered, compiled, adapted for use, or generated by Subcontractor or GRANTEE will become data, materials and work owned by TWDB and Subcontractor will have no proprietary rights in such data, materials and work papers, except as further described in Section II, Article V;

4. Subcontractor must keep timely and accurate books and records of accounts according to Generally Accepted Accounting Principles;

5. Subcontractor is solely responsible for securing all required licenses and permits from local, state and federal governmental entities and solely responsible for obtaining sufficient insurance in accordance with the general standards and practices of the industry or governmental entity; and

6. Subcontractor is an independent contractor and TWDB has no liability resulting from any failure of Subcontractor that results in breach of contract, property damage, personal injury or death.

ARTICLE VIII LICENSES, PERMIT, AND INSURANCE

1. For the purpose of this CONTRACT, GRANTEE will be considered an independent contractor (in accordance with Section II, Article X, Paragraph 2D) and therefore solely responsible for liability resulting from negligent acts or omissions. GRANTEE must obtain all necessary insurance that, in the judgment of GRANTEE and consistent with the standard practices of the industry or GRANTEE, is necessary to protect themselves, TWDB, and employees and officials of TWDB from liability arising out of this CONTRACT.

2. GRANTEE is solely and entirely responsible for procuring all appropriate licenses and permits, which may be required by any competent authority for GRANTEE to perform the subject work.

ARTICLE IX SEVERABILITY

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 X GENERAL TERMS AND CONDITIONS

1. GENERAL TERMS

   A. **Disaster Recovery Plan.** Upon request of TWDB, GRANTEE 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 GRANTEE signs its application with a false statement or it is subsequently determined that GRANTEE has violated any of the representations,

guarantees, warranties, certifications, or affirmations included in its application, GRANTEE will be in default under the CONTRACT and TWDB may terminate or void the CONTRACT.

E. **Force Majeure**. Neither GRANTEE 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. **Applicable Laws**. In consideration of the performance of the mutual agreements set forth in this CONTRACT, the GRANTEE, by and through its designated and authorized representatives agrees to implement the PROJECT in compliance with all state and federal laws and regulations that may be applicable; Texas Water Code, Chapter 15, Subchapters F and I; 31 Texas Administrative Code Chapter 355; and TWDB Guidance.

H. **Remedies.** TWDB has all remedies available in law or equity, including remedies available under Texas Water Code §§ 6.114 and 6.115.

I. **Public Information Act.** GRANTEE 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, GRANTEE 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.

J. **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.

K. **National Flood Insurance Program.** The appropriate entities within the PROJECT AREA must currently enforce and continue to enforce floodplain management standards at least

equivalent to National Flood Insurance Program minimum standards and may exceed the National Flood Insurance Program minimum standards subject to Section I, Article II.

L. **Investment and Collateralization of Public Funds.** Grant proceeds are public funds and, as such, these proceeds must be held at a designated state depository institution or other properly chartered and authorized institution in accordance with the Public Funds Investment Act, Government Code, Chapter 2256, and the Public Funds Collateral Act, Government Code, Chapter 2257.

2. STANDARDS OF PERFORMANCE

A. **Personnel.** GRANTEE must assign only qualified personnel to perform the services required under this CONTRACT. GRANTEE 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.** GRANTEE must provide the services and deliverables in accordance with applicable professional standards. GRANTEE 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**. GRANTEE must engage in competitive procurements for work on the Project. All purchases for goods, services, or commodities made with funds provided under this CONTRACT must comply with State and local procurement and contracting laws.

D. **Party Relationship**. Both the GRANTEE and TWDB, 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**. GRANTEE warrants and represents that any information that is proprietary or confidential and is received by GRANTEE 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 GRANTEE. TWDB's project manager will supervise TWDB's review of GRANTEE'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. GRANTEE must comply with Texas Government Code Chapter 573 by ensuring that no officer, employee or member of GRANTEE'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.** GRANTEE 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.** GRANTEE represents and warrants that, in accordance with Texas Government Code § 2155.005, neither GRANTEE nor any firm, corporation, partnership, or institution represented by GRANTEE, 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 GRANTEE.

B. **Child Support Obligation Affirmation.** Under Texas Family Code § 231.006, GRANTEE 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, GRANTEE 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.** GRANTEE 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.** GRANTEE certifies that for contracts for services, GRANTEE 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 GRANTEE to perform duties within Texas; and (2) all persons, including Subcontractors, assigned by GRANTEE 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, GRANTEE certifies that either (1) it meets one of the exemption criteria under § 2270.002; or (2) it does not boycott Israel and will not boycott Israel during the term of the CONTRACT resulting from this solicitation. GRANTEE must state any facts that make it exempt from the boycott certification.

G. **Excluded Parties.** GRANTEE 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, GRANTEE 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 § 669.003 applies, the GRANTEE must provide the following information:

Name of Former Executive: _____

Name of State Agency: _____

Date of Separation from State Agency: _____

Position with GRANTEE: _____

Date of Employment with GRANTEE: _____

I. **Financial Participation Prohibited.** Pursuant to Texas Government Code § 2155.004(a), GRANTEE certifies that neither GRANTEE nor any person or entity represented by GRANTEE 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), GRANTEE 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.** GRANTEE 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, GRANTEE certifies that the GRANTEE 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.** GRANTEE represents and warrants that TWDB's payments to GRANTEE and GRANTEE'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.** GRANTEE 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. GRANTEE also represents and warrants that, during the term of this CONTRACT, GRANTEE 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, GRANTEE 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.** GRANTEE 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.

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ARTICLE XI CORRESPONDENCE

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

For **TWDB**:

Contract Issues:
Texas Water Development Board
Attention: Flood Planning
P.O. Box 13231
Austin, Texas 78711-3231
Email: floodplanning@twdb.texas.gov

Payment Request Submission:
Texas Water Development Board
Attention: Outlays and Escrows
P.O. Box 13231
Austin, Texas 78711-3231
Email: outlays@twdb.texas.gov

Physical Address:
Stephen F. Austin State Office Building
1700 N. Congress Avenue
Austin, Texas 78701

For the **GRANTEE**:

Contract Issues:
Edith Marvin
NCTCOG
616 Six Flags Drive
Arlington, Texas 76011
Email: emarvin@nctcog.org

Payment Request Submission:
Lisa Sack
NCTCOG
616 Six Flags Drive
Arlington, Texas 76011
Email: lsack@nctcog.org

Physical Address:
North Central Texas Council of Governments
C/O Edith Marvin, Environment and Development Department
616 Six Flags Drive
Arlington, Texas 76011

IN WITNESS WHEREOF, the parties have caused this CONTRACT to be duly executed in multiple counterparts, each of which shall be deemed to be an original.

NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS

By: Mike Eastland

Name: Mike Eastland

Title: Executive Director

Date: 11/23/2021

TEXAS WATER DEVELOPMENT BOARD

By: Jeff Walker

Name: Jeff Walker

Title: Executive Administrator

Date: 11/23/2021

EXHIBIT A

DETAILED DESCRIPTION OF THE PROJECT SERVICE AREA

Integrated Transportation and Stormwater Management

Due to the large geographic scope of this project and current availability of funds, NCTCOG will initiate a comprehensive integrated stormwater and transportation planning process for a smaller focus area that has been selected from the larger Project Area. The HUC 10 watersheds below will be the Phase One Project Area, herein described as the Phase One Area, and includes 48 cities, 7 counties, and has a population of approximately 442,171 (2018 ACS).

The following section will be funded by TWDB funds through this Grant

The following HUC-10 watersheds represent the Phase One Area where all Tasks (Task 1, 2, 3, 4) will be completed:

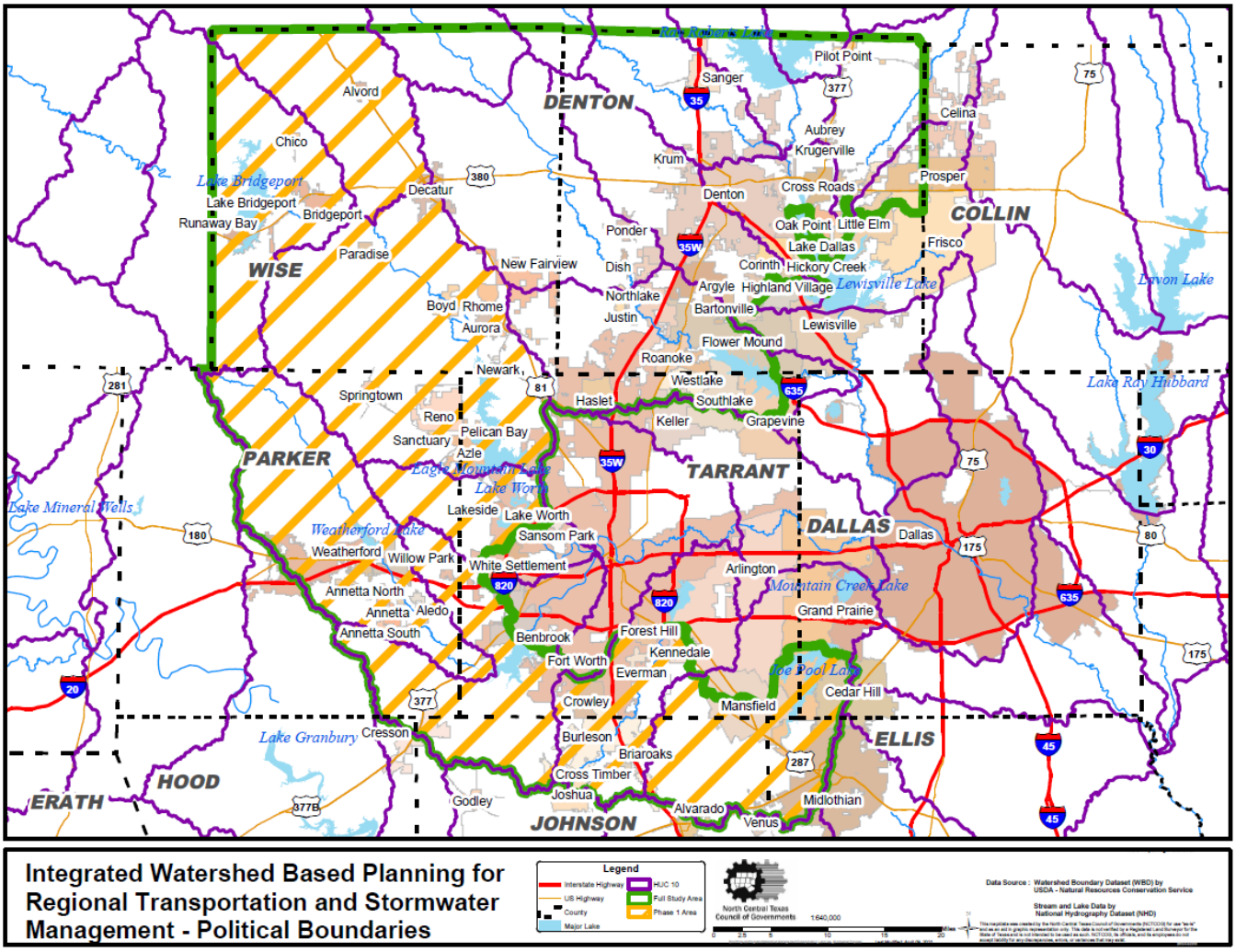
1. West Fork Trinity River-Eagle Mountain Lake 1203010106;
2. Lake Worth-West Fork Trinity River 1203010201;
3. Upper Clear Fork Trinity River 1203010202;
4. Lower Clear Fork Trinity River 1203010203;
5. Village Creek 1203010204;
6. Mountain Creek-Mountain Creek Lake 1203010206

The following section will not be funded by TWDB funds through this Grant, but is part of the entire Project Area for Phase One and Phase Two

The following HUC-10 watersheds represent the ultimate Project Area to be studied and where several of the Project Tasks (Tasks 1, 2, 4) will be completed:

1. Big Sandy Creek 1203010105;
2. West Fork Trinity River-Eagle Mountain Lake 1203010106;
3. Lake Bridgeport-West Fork Trinity River 1203010104;
4. Lake Worth-West Fork Trinity River 1203010201;
5. Upper Clear Fork Trinity River 1203010202;
6. Lower Clear Fork Trinity River 1203010203;
7. Village Creek 1203010204;
8. Big Fossil Creek-West Fork Trinity River 1203010205;
9. Mountain Creek-Mountain Creek Lake 1203010206;
10. Mountain Creek-West Fork Trinity River 1203010207;
11. Isle du Bois Creek-Elm Fork Trinity River 1203010303;
12. Isle du Bois Creek-Elm Fork Trinity River 1203010304;

13. Blocker Creek-Clear Creek 1203010305;
14. Duck Creek-Clear Creek 1203010306;
15. Little Elm Creek-Little Elm Reservoir 1203010307;
16. Hickory Creek-Little Elm Reservoir 1203010308;
17. Elm Fork Trinity River-Little Elm Reservoir 1203010309;
18. Timber Creek-Elm Fork Trinity River 1203010310;
19. Upper Denton Creek 1203010401;
20. Middle Denton Creek 1203010402;
21. Lower Denton Creek 1203010403;
22. North Fork Chambers Creek 1203010901;
23. Waxahachie Creek 1203010903;
24. Rock Creek-Brazos River 1206020111;
25. Lake Granbury-Brazos River 1206020112;
26. Fall Creek-Brazos River 1206020113;
27. Nolan River 1206020202;
28. Tenmile Creek-Trinity River 1203010502



Phase One Project Area hatched in yellow - TWDB Commitment No. G1001314, North Central Texas COG Grant Agreement coverage area (remaining balance of Full Study Area to be undertaken with alternate funding sources)

EXHIBIT B

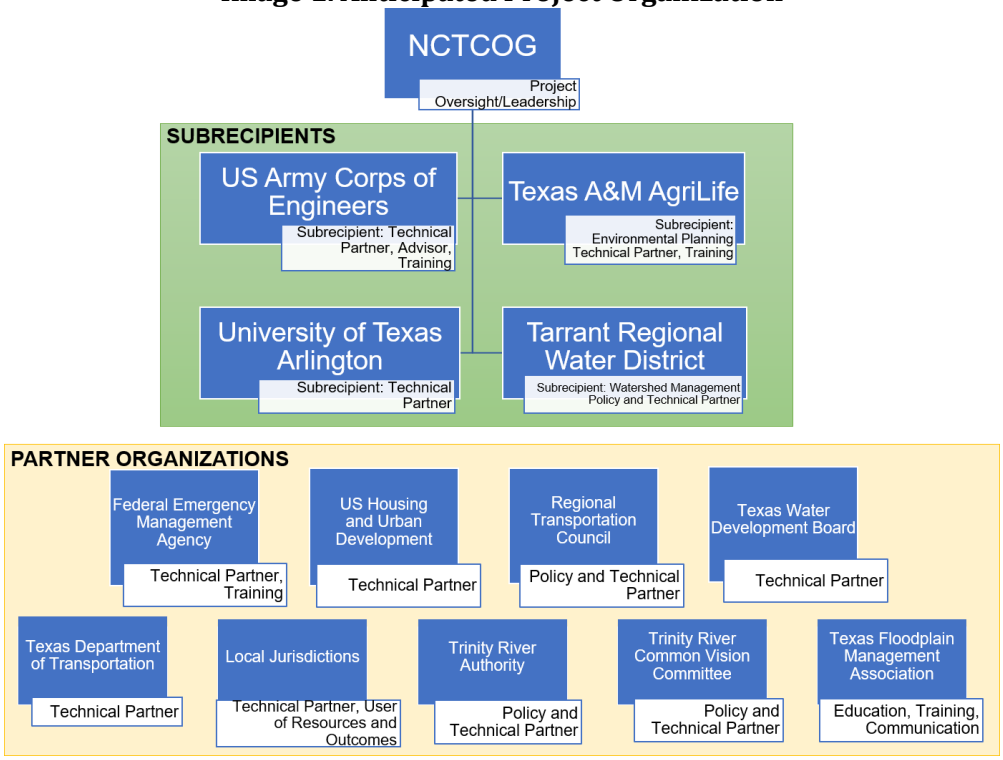
SCOPE OF WORK

Integrated Transportation and Stormwater Management

a. **Project Organization**:

The North Central Texas Council of Governments (NCTCOG) will be the lead agency for the Project, providing oversight, administration, and leadership of the tasks, deliverables, subrecipients, and coordination activities with partner organizations and technical advisors. NCTCOG will have at least four partner organizations that will be subrecipients who receive subawards. These organizations include the USACE, Tarrant Regional Water District (TRWD), Texas A&M AgriLife, Texas A&M TDIS, and University of Texas at Arlington (UTA). Other government and university resources will be evaluated based on the project needs, but it is not anticipated that NCTCOG will need to procure contractors to complete this Project. Other organizations will be supporting partners and will provide a variety of technical and policy assistance throughout the Project. The US Army Corps of Engineers (USACE) Fort Worth District will be a key partner agency; providing needed hydrology and hydraulic (H&H) modeling upon which all of the integrated transportation and environmental planning, tools, and resources will be built. NCTCOG, USACE, TRWD, Texas A&M AgriLife, Texas A&M TDIS, and UTA constitute the Project Team.

Image 1. Anticipated Project Organization



b. **Description of how flood protection needs of the entire watershed will be considered:**

The Project Area is defined by a combination of watershed boundaries, NCTCOG service area boundaries, and existing impervious areas, but is focused on a large, western portion of the North Central Texas (NCT) region. The Project Area encompasses 85 cities, eight counties, and covers 2,816 square miles. The

population of the Project Area is forecast to grow to 2,044,176 residents (NCTCOG); a 126% percent increase over the current population of 904,427 (ACS, 2018). From 2006 to 2016, the Project Area experienced an 18% growth in impervious surfaces. This growth in impervious cover, coupled with the expected future growth will lead to a number of local and regional challenges such as with long-term transportation infrastructure maintenance, increased stream erosion, water quality degradation, increased sediment deposition in downstream reservoirs, and loss of open space, to name a few. With more than 7,000 miles of streams and over 274,000 acres of 100-year floodplain, there are many opportunities to support a proactive planning approach to advance concepts of integrated long- range planning in the Project Area to minimize encroachment into flood-prone areas, evaluate opportunities for providing ecosystem enhancements, and developing more resilient transportation infrastructure.

Flood protection needs of the communities within the Project Area will be explored throughout multiple Project Tasks, including, but not limited to: pre-and post-surveys; development of a Upper Trinity River Basin Transportation - Stormwater Infrastructure Plan (Plan) that identifies projects for future implementation to minimize overall life cycle costs, address vulnerable and critical assets, decrease flood risk, and provide environmental and ecosystem benefits to accommodate future population growth and respond to changing storm frequency, duration, and intensity; and, an evaluation of how communities might fund the planning stormwater infrastructure through federal, state, and local funding opportunities and/or revenue from environmental features or other new/innovative revenue sources.

Phase One Project Area

Due to the large geographic scope of this project and current availability of funds, NCTCOG will initiate a comprehensive integrated stormwater and transportation planning process for a smaller focus area that has been selected from the larger Project Area. The HUC 10 watersheds shown in Exhibit A will be the Phase One Project Area, herein described as the Phase One Area, and includes 48 cities, 7 counties, and has a population of approximately 442,171 (2018 ACS).

The Phase One Area will be used to provide proof of concept and will allow the Project Team to establish the hydrology and hydraulic modeling, community engagement, data collection, infrastructure and environmental integration processes and standard operating procedures that can then be applied to the larger Project Area in subsequent phases, as additional funding becomes available.

Project Impact

Integrating transportation, environmental, and stormwater planning will have enormous regional benefits for multiple parties, including cities, counties, developers, transportation entities, and utilities responsible for water and wastewater services. While comprehensive regional transportation planning is performed on a 5-year cycle, stormwater and environmental infrastructure generally are not comprehensively planned. Shifting planning paradigms to include these additional planning areas will afford an opportunity to increase resiliency by decreasing the risk of flooding in a large geographic portion of the NCT region. The benefits of this Project include, but are not limited to:

- Minimize the increase in stormwater runoff resultant from growth and development by evaluating regional stormwater management features.
- Minimize the impact of growth and development on transportation infrastructure by stabilizing stormwater runoff levels and accounting for future conditions.

- Minimize the impact of growth and development on existing downstream communities.
- Extend the design life of transportation and stormwater infrastructure by planning for future conditions.
- Examine alternative hydrologic loadings, not just a 100-yr loading, to increase resiliency and reduce the risk of flooding, including looking at downstream damage centers as a consideration in designing stormwater infrastructure for the Project Area.
- Reduce the threats of flooding to health, safety, and first responders by designing road crossings for adequate access during emergencies.
- Provide meaningful environmental features such as wetlands, riparian stream reaches and habitat.
- Reducing channel erosion and stream sediment transport and their impacts on the operation and maintenance budgets of transportation and infrastructure.
- Improving water quality through the comprehensive planning of environmental features.
- Provide opportunities to develop and integrate human features and ecotourism opportunities into environmental and stormwater planning.
- Provide regulatory tools for unincorporated areas and extra-territorial jurisdictions (ETJ) that county officials may use to regulate their floodplains in a more resilient and sustainable manner.
- Develop a planning model that could be replicated throughout the larger Project Area, State, and Nation.

The watersheds within the Project Area drain directly into the Trinity River so any increase in runoff and any adverse environmental impacts are transferred to downstream communities along the Trinity River including Fort Worth, Arlington, Grand Prairie, Dallas, and many others. Growth and development within the Project Area pose significant risks for increased runoff and environmental impacts across the major developed areas within the DFW region. Changing frequency, duration, and intensity of storms, when combined with increased impervious surface, present additional threats that need to be evaluated to make informed decisions and provide the maximum opportunity to minimize and mitigate future flood impacts. In addition to providing resources and tools to local government entities in the Project Area, the final deliverable of this Project is development of a replicable/transferable process to conduct a watershed-based stormwater infrastructure planning effort resulting in a plan with actionable strategies and implementation projects.

The NCT region will engage in a comprehensive planning effort integrating transportation planning, regional stormwater management planning, and environmental planning to address the health, safety, and welfare concerns while helping local governments manage their growth and development in an effective manner with respect to life cycle costs. To increase resiliency and to proactively prevent flooding, transportation, stormwater, and environmental planners will dissolve silos and incorporate stormwater management and environmental features into a comprehensive multi-infrastructure plan in the Phase One Area. The overall resultant products from this multi-year project will be a comprehensive Upper Trinity River Basin Transportation - Stormwater Infrastructure Plan (Plan) that can be replicated throughout the larger intended Project Area as additional funds become available to do so. The Plan will focus on elements to minimize overall life cycle costs, address vulnerable and critical assets, decrease flood risk, and provide environmental and ecosystem benefits to accommodate future population growth in a more resilient manner. The Project will also assess hydrologic loading that will consider the threat from larger regional storms that exceed the 100-year, if appropriate.

c. **Identification of tasks**:

The following tasks will be conducted for the identified Phase One Area to establish a replicable process for the remaining portions of the larger Project Area.

Task 1.0: Data Collection and Analysis

Understanding existing conditions and accounting for environmental stressors to infrastructure in the Phase One Area is critical to establishing a strong foundation upon which to build future plans and project recommendations. A first and important deliverable will be a comprehensive literature review conducted to document similar studies that have been completed in other parts of the country and document best practices and lessons learned.

Existing data for the entire Project Area and the Phase One Area will be collected and included as a Project Data Inventory. Through identification of what is currently existing, a list of what is not available but is desired or needed will be compiled based on stakeholder and project team input. Processing of datasets will be included in this task and will include development of GIS layers representing the entire project area. For example, individual land use maps and GIS files from cities will be collected, digitized, and compiled into one GIS layer for the entire project area. Data sets to be requested and/or developed could include, but are not limited to:

- Current and future land use maps, thoroughfare plans, other future infrastructure plans (ex. known water and wastewater master plans)
- Existing and projected future populations
- LiDAR, topographic and other spatial imaging data sets
- Special areas of habitat and high/unique ecological value for preservation and enhancement
- Existing environmental/natural assets including slope, soils, swales, drainageways, wetlands, streams, aquifers, floodplains, native plant communities, agricultural land, steep lands, forests and woodlands, ecoregions, etc.
- Existing disturbances including buried/piped streams, contaminated areas (i.e. brownfields), abandoned development (including greyfields), spoil areas, hazard areas (i.e. floodplains), and degraded soils
- Changes to impervious surface over time
- Transportation collectors, arterials, and highways
- Existing cultural and historic assets including cultural and historic elements, important buildings, unique natural features, sites with special histories, or planned infrastructure expansions
- Attributes of composition, elevation, conveyance, performance, exposure, criticality, and adaptive capacity of stormwater management structures, transportation assets, and utilities
- Current status of water conveyance streams and features
- Development tracking
- Low water crossings
- Existing meteorology, hydrology and hydraulic modeling data (for active study area)
- Existing locations of green infrastructure installations

- Building footprints and parcel data
- Building elevations from building elevation certificates
- Repetitive losses
- Stormwater Phase II Permit Best Management Practices and Phase II Reports documenting implementation
- Existing detention structures and other stormwater management infrastructure
- Identify national and regional experts to form a technical advisory team
- Identify meteorological, hydrologic, and hydraulic models that would be suitable to meet the range of project purposes

Task 1.0 Deliverables

- Literature Review Report and Case Studies
- Memo documenting needed/desired datasets
- Memo documenting detailed metadata for those datasets that have been acquired
- Final maps and data sets for inclusion in reports, documents, presentations, models, etc.

Task 2.0: Stakeholder Engagement

There are eighty-five cities, eight counties, multiple transportation providers, two major regional water providers, one major regional wastewater provider and numerous other partners and stakeholder groups that will be engaged in the larger Project Area. In the smaller Phase One Area, 48 cities, and seven counties (Dallas, Ellis, Hood, Johnson, Parker, Tarrant, and Wise) will be the key stakeholders, in addition to the water and wastewater providers and other stakeholders. Stakeholder engagement throughout the larger Project Area will be important as additional funds are secured to support additional modeling and planning integration elements that will be piloted in the Phase One Area. The Project Team will provide engagement opportunities, including, but not limited to: establishing a Technical Advisory Group, conducting training opportunities, preparing and issuing surveys, and hosting scenario planning workshops throughout the Project Area.

Existing Federal Emergency Management Agency (FEMA) funding will be leveraged to begin initial outreach and engagement in the Project Area in the Winter of 2021. The FIF funds will allow NCTCOG to expand the stakeholder engagement to a three-year period and ensure adequate funds are available to do robust engagement to all communities and impacted parties. TRWD will be a key partner in assisting with community outreach and engagement, as most of the Project Area is in their service area boundary and many cities are drinking water customers of TRWD.

This task is focused on ensuring local government representatives and partner organizations maintain engagement in the process and ownership of the final project outcomes and implementation actions. Regional project update meetings will be conducted in order to inform stakeholders of the project status and solicit any needed feedback. Through this Task, the Project Team will:

- Establish a Technical Advisory Group and other advisory groups
- Conduct a minimum of two (Community Health and Resource Management) Workshops per year to provide stakeholders opportunities to weigh in on potential and recommended policy actions, project types (e.g. environmental features, stormwater features, green infrastructure, etc.).

- Conduct a minimum of six training workshops throughout the project area, offered in-person and virtually, and record each training for long-term training availability on the Project website. Partner organizations such as Texas Floodplain Managers Association and others will provide low-cost or free training options. Training topics will be identified through survey responses, sub-area discussions and feedback, and will incorporate training on incorporating best management practices and the Project results (e.g. models, data, infrastructure design elements) into community processes and decision- making.
- On-going coordination meetings to ensure appropriate/required collaboration with resource agencies, technical committees, project partners, transportation providers, developers, and a broad range of stakeholders through individual meetings and small group discussions. Public meetings will be conducted as the need is identified in collaboration with city, county, and other project partners.
- Conduct a Regional Project Update Workshop a minimum of once per year to provide an overall update to the stakeholders on the activities underway, resources developed, engagement opportunities, and next steps.
- Engagement assets such as frequently asked questions and answers document, brochures, public awareness campaigns, local government and partner recognition programs, or other identified strategies to ensure long-term engagement and ownership of the project outcomes amongst local governments and the communities in the project area.

Additionally, there are three communities in the larger Project Area that are not members of the National Flood Insurance Program (NFIP) and do not currently enforce floodplain management ordinances that are at least equivalent to the NFIP minimum standards. In accordance with Flood Infrastructure Fund standards, NCTCOG staff will reach out individually to the three communities of Corral City, Annetta North, and Newark, Texas, to provide assistance to these non-NFIP Communities to draft and adopt floodplain ordinances that meet the NFIP minimum standards. Assistance will consist of written correspondence and at a minimum one (1) teleconference to discuss floodplain ordinances.

Model floodplain ordinances developed by the TWDB will be provided to each non-NFIP Community for their consideration.

Task 2.0 Deliverables:

- List of Technical Advisory Group, meeting agendas, summaries, etc.
- Six (6) CHARM workshops including agendas, presentations, sign-in sheets, Q&A, evaluations, and resultant policy/project recommendations.
- Six (6) Training workshops including agendas, presentations, sign-in sheets, Q&A, evaluations, etc.
- Meeting agendas, presentations, sign-in sheets for all in-person/virtual meetings with partners and stakeholders
- Three (3) Regional Project Update Workshops including agendas, presentations, sign-in sheets, Q&A, evaluations, etc.
- Public information to include, but not limited to FAQ document for local governments and public, public campaigns, recognition programs, etc. (identified as project needs materialize and as budget will support)
- Documentation of written correspondence and teleconferences with the non-NFIP communities of

Corral City, Annetta North, and Newark, Texas.

Task 3.0: Integrated Transportation, Stormwater, and Environmental Planning

Task 3 constitutes the integrated, comprehensive planning activities that will incorporate outcomes of stormwater infrastructure planning, transportation infrastructure assessments, and environmental features planning to develop an Upper Trinity River Basin Transportation - Stormwater Infrastructure Plan (Plan). Because flood risk cannot be mitigated alone by assessing opportunities to integrate innovative stormwater features with transportation infrastructure, the Project Team will look beyond transportation infrastructure to assess other areas that could serve as nature-based solutions to mitigate stormwater runoff in the Phase One Area, such as commercial environmental area development. Additional tools and resources that will inform the Plan will be developed in this Task, resulting in the final compiled Plan report and web-based maps.

Subtask 3.1 Project Area Hydrology and Hydraulics Assessment and Scenarios: The Project Team will leverage latest methods and state-of-the-art technology to complete comprehensive H&H studies of the Phase One Area selected during the Data Collection and Analysis Task (Task 1.0). This relies on applicable existing models, FEMA's Base Level Engineering (BLE) data, InFRM/USACE Trinity River Watershed Hydrology Assessment (WHA) and new storm shifting tools, and impervious surface Geographic Information System (GIS) layers to estimate storm runoff for 2055 (i.e., how much water and where it will flow). The Project Team will analyze current conditions (i.e., existing/baseline conditions and land use) versus future changes (future land use), including loss of valley storage, runoff estimations to inform the need for areas of low impact development, green infrastructure, or on-stream structures for regional detention. Furthermore, the impacts to water supply/ environmental flows of proposed measures (detention, recharges zones, etc.) during non-flooding periods will be evaluated.

Subtask 3.1 Deliverables:

- Investigate and add detail to the Trinity River Watershed Hydrology Assessment (WHA) hydrologic model: For Phase One Area, complete investigation and data collection for existing and future conditions and add select subbasins to HEC-HMS model to produce additional discharge points.
- Investigate and update FEMA generated BLE hydraulic models: For the Phase One Area, complete investigation and data collection for existing and future conditions, download latest FEMA-generated BLE studies and enhance models with hydraulic structures (and including survey/bathymetry data as appropriate) to create detailed (zone AE)-level information.
- Perform storm shifting to simulate the impact of larger regional storms over Phase One Area: Perform necessary modeling and analysis of historic regional storms to determine impact if similar event occurred over the Phase One Area.
- Response and emergency management modeling tool
    - Take H&H models and build a RTS (Real Time Simulation) forecast system that can feed into new or existing flood risk /emergency management platforms such as the InFRM (Interagency Flood Risk Management) Flood Decision Support Toolbox (FDST).
    - Explore considerations related to ownership and forecasting for this system.

Subtask 3.2. Assess Transportation Infrastructure Impacts and Develop Decision-Making Tools: As the transportation network is developed, residential, commercial, and industrial development follow close behind. Transportation infrastructure is impacted by non-stationary stormwater trends associated with growth and development, which can be exacerbated if facilities are built and/or sustained with limitations and/or vulnerabilities associated with design, composition, capacity, elevation, maintenance practices, or other attributes. Often transportation infrastructure is built to required design levels at the time of initial construction, but during its design life, those design attributes and need requirements change over time. These changes can shift the infrastructure status to be inadequate, deficient, or even obsolete after upstream growth and development has occurred. This Task will evaluate existing and future hydrologic models to determine existing and future transportation facilities at risk of flooding based on future development scenarios, state of repair, and/or specific asset qualities. The Project Team will engage with TxDOT and local transportation authorities to determine how and to what extent stormwater infrastructure and transportation infrastructure can be integrated. This will include integration of transportation infrastructure and stormwater infrastructure, including, but not limited to the determination of the types, suitability, and equity of enhancements required to allow use of roadway embankments as detention structures. Project Team members will also evaluate discharge appurtenances suitable for use to develop outlet works through roadways.

To assess transportation infrastructure impacts and develop decision-making tools, the Project Team will:

- Identify and catalog potential data sets needed for transportation evaluation of stormwater impacts.
- Evaluate hydrologic models to determine existing and future transportation facilities that are at risk of flooding based on future development scenarios.
- Identify and incorporate the long-term impacts, costs, and vulnerabilities associated with these flood risks to transportation through development of a lifecycle cost analysis for existing and future transportation infrastructure in the Phase One Project Area.
- Evaluate short term and long-term land use and transportation regulatory tools, green infrastructure applications, and adaptability strategies that may provide flooding mitigation effects.
- Test scenarios of implementing flood control and wetland/streambed mitigation best practice measures such as stormwater detention, increased elevation for roadway crossings, mechanical culverts or other innovative conveyance structures , land use strategies and environmental features to promote filtration and recharge, environmentally sustainable design applications, expanded water detention, and other elements that are identified in Transportation integrated Stormwater Management (TriSWM) and sustainability rating systems, to identify both benefits and impacts to regional development and infrastructure.
- Based on the outcomes of the lifecycle cost analysis and scenario testing, develop performance measures and evaluation criteria to inform transportation project selection and prioritization processes for future regional transportation plans.
- Develop delivery, management, safety, and maintenance strategies and technologies aimed at improving operational capabilities and reducing risk from flooding of prioritized low-lying facilities.
- Develop a planning tool highlighting flooding hot spots to identify design criteria for existing and future infrastructure investments and opportunities for environmental stewardship as potential revenue.
- Generate stormwater infrastructure/flood control structures planning data: optimization study that reviews latest transportation network and H&H models and provides a comprehensive assessment

of TSI study area by modeling ideal locations and sizing for smaller/regional ponds and other drainage/flood control structures, considering more than just the 100-year event. This includes considerations for minimizing and reducing downstream detention.

- Determination for how stormwater and transportation infrastructure can be integrated: Investigate embankment compositions required when using roadways to form detention structures:
    - Investigate outlet or discharge appurtenances that would allow roadways to be used to form detention structures (structure elevation, culverts, model growth, and mechanical culverts).
    - Ensure integration of related tools, data, and subject matter experts.
- Transportation routing and safety
    - Leverage the work done under the H&H response/emergency management subtask to find and explore entities that can leverage this capability, such as NCTCOG, emergency managers, universities, etc. Also explore the specific tools that can utilize this capability (i.e., Waze for routing).

Subtask 3.2 Deliverables

- Transportation/stormwater infrastructure data sets
- Model recommendations for transportation and stormwater Integration; updates to existing systems and scenarios developed
- Lifecycle cost analysis and impact assessment for existing and future transportation infrastructure in the Project Area
- Report of land use tools, sustainable development best practices, and green infrastructure potential strategy impacts
- Scenario options, strategies, and predictable return on investment (ROI) parameters in adopting higher protection levels for existing and proposed transportation projects
- List of performance measures, evaluation criteria, and benefit-cost ratio methodologies to inform transportation project selection process for future regional transportation plans
- Report of delivery, management, and maintenance strategies aimed at improving operational capabilities and reducing risk from flooding
- Map of future vulnerable areas and strategies for design mitigation and planning tool to develop design criteria for existing and future infrastructure investments

Subtask 3.3 Environmental Planning: Existing natural resources in the Project Area provide stormwater absorption that minimizes and reduces downstream flood risk. Identifying, conserving, and preserving existing natural pervious surfaces, and providing a plan for new environmental features in the Phase One Area is a key outcome of the Plan. Currently, creation of new environmental areas such as wetlands and prairie areas is accomplished piecemeal in conjunction with mitigation actions associated with construction of incremental portions of transportation and other infrastructure. The Plan will define appropriate nature-based solutions and green stormwater infrastructure features to support intentional saturation of the stormwater runoff determined in Subtask 3.1. This task will encompass an evaluation of land Inventory, needed comprehensive mitigation requirements for future infrastructure (utilities, transportation, water, wastewater, etc.), and potential developments allowing for stormwater management

structures to stabilize and offset impacts while providing equitable ecosystem, potential environmental educational areas, and economic benefits. Evaluating the use of environmental features as a revenue generator will be evaluated in this Task. This task will be carried out for the entire project area with assistance from TRWD and Texas A&M AgriLife as subrecipients, in collaboration with NCTCOG, local governments, and other stakeholders.

Through this Task, the Project Team will:

- Evaluate existing models and work already occurring in the region, such as the Denton County Hazardous Mitigation Plan and Denton County Greenbelt Plan, that should be integrated into the Phase One Area, and replicated in other portions of the Project Area.
- Identify the appropriate project type, location, and size of green stormwater infrastructure (GSI) and other existing and future nature-based solutions (NBS) resulting in a high level strategy map which includes locations to conserve/preserve or restore the highest ecosystem and offer other environmental benefits and outcomes, such as improved water quality, reduction in stormwater runoff, and heat island impact mitigation. This includes, but is not limited to:
    - Existing/future on and off-stream natural and constructed systems
    - Existing/future open space and other areas of significant preservation/conservation importance (e.g. horse farms)
    - Existing/future habitat areas
    - Existing/future tree canopy and tree planting opportunities (e.g. establishing tree farms, and other innovative strategies)
    - Existing/future recreational and ecotourism opportunities
    - Existing/future nature-based solutions that are man-made (e.g. constructed wetlands, potential mitigation banks, etc.)
- Develop an environmental and wetland analysis:
    - Collaboratively discuss environmental considerations and recommendations based on research and analysis. This should include wetland design (i.e., specific focus areas and design criteria to inform future mitigation projects) and groundwater considerations.
    - Ensure mitigation banking considerations are addressed (H&H addresses where to consider).
    - Planning of comprehensive regional mitigation areas that will offset long-term future mitigation requirements rather than the current piecemeal approach.
    - Discuss ownership, revenue, and maintenance of these environmental/mitigation actions and areas of effect (addresses how and who can implement).
- Develop a GSI and NBS suitability index based on a variety of geological, social, and environmental parameters. Existing planning tools and calculators, such as the Regional Ecosystem Framework, CHARM, Economic & Environmental Benefits of Stewardship (EEBS), and other widely available stormwater and GSI calculators. Stakeholders will provide input on the ranking system, suitability, and equitable distribution of areas for implementation of GSI and NBS projects.
- Develop a Green Stormwater Infrastructure Plan (GSI Plan) that is a GIS tool visualization tool that relates flooding risk/potential/vulnerability with natural and man-made drainage and transportation and other infrastructure features. This visualization tool will identify priority and

ideal locations for stormwater quantity and quality features.

- Estimate reduction in flooding from the proposed system of GSI and NBS practices and develop cost-benefit analyses and return on investment information for local government decision makers and partner organizations. Evaluate the ability of the GSI and NBS system to reduce channel erosion and stream sediment transport and any subsequent impacts on the operation and maintenance budgets of transportation and other infrastructure.
- Develop a funding strategy toolbox that local governments and partners could use for implementation of the identified projects. Utilizing existing organizations and tools, such as active land trusts and regional, state, and Federal GSI tools, will be a key goal to minimize duplication and ensure the most efficient use of funds.
- Determine how availability and use of these new resources/tools may impact National Environmental Policy Act (NEPA) documentation and decision-making at the project level, particularly as they relate to mitigation for indirect and cumulative impacts or environmental justice considerations.

Subtask 3.3 Deliverables

- Memo documenting review of ongoing planning and infrastructure efforts related to GSI and NBS that could be used as models, replicated, or integrated into the Plan.
- Environmental and Wetland Analysis Memo
- List of GSI and NBS suitability index parameters and ranking of project types and locations
- Literature review of return on investment for developers and cities who preserve floodplain areas and implement GSI
- Financial Pro Forma, Benefit/Cost Analysis Tool for multiple GSI and NBS Applications that displays the economic benefits and return on investment of identified GSI and NBS
- Fact Sheets on GSI and NBS applications illustrating project economics
- Documented return on investment of identified GSI and NBS using EEBS to produce a menu of options for communities
- Draft and Final Upper Trinity River Basin Transportation - Stormwater Infrastructure Plan (Plan) including maps identifying a number of attributes including, but not limited to flood-prone areas, ideal locations for implementation of GSI and NBS, funding sources and strategy toolbox
- Web-based map that identifies the flood-prone areas and ideal locations for implementation of GSI and NBS
- White Paper highlighting recommended methodologies and documentation for addressing future flood risk, mitigation, and related economic/social equity issues in project-level transportation NEPA studies

When possible and as applicable, evaluations of flood risk reduction solutions, including flood mitigation projects, should be consistent with "Technical Guidelines for Regional Flood Planning," Exhibit C to Regional Flood Planning Grant Contracts, which can be found at: https://www.twdb.texas.gov/flood/planning/planningdocu/2023/index.asp.

Each feasible flood mitigation alternatives evaluated must identify and compare cost and benefits of projects. Quantification of cost will include engineering, permitting, easement and/or property acquisition, capital cost, operation and maintenance, and other costs as applicable. Quantification of benefit of the project will include the following items, as applicable:

1. Number of structures with reduced 100-year (1% annual chance) flood risk.
2. Number of structures removed from 100-year (1% annual chance) flood risk.
3. Number of structures removed from 500-year (0.2% annual chance) flood risk.
4. Residential structures removed from 100-year (1% annual chance) flood risk.
5. Estimated Population removed from 100-year (1% annual chance) flood risk.
6. Critical facilities removed from 100-year (1% annual chance) flood risk (#).
7. Number of low water crossings removed from 100-year (1% annual chance) flood risk (#).
8. Estimated reduction in road closure occurrences.
9. Estimated length of roads removed from 100-year flood risk (miles).
10. Estimated farm & ranch land removed from 100-year flood risk (acres). 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.
11. Estimated reduction in fatalities (if available).
12. Estimated reduction in injuries (if available).
13. Pre-Project Level-of-Service
14. Post-Project Level-of-Service
15. Cost/ Structure removed
16. Percent Nature-based Solution (by cost)
17. Negative Impact (Y/N)
18. Negative Impact Mitigation (Y/N)
19. Social Vulnerability Index (SVI)
20. Water Supply Benefit (Y/N)
21. Traffic Count for Low Water Crossings

The recommended solutions must be permittable, constructable and implementable.

The recommended flood risk reduction solutions must have no negative effect on neighboring areas in accordance with statutory requirements for regional flood plans (Texas Water Code § 16.062(i) and (j)(2)). Recommended flood risk reduction solutions, including flood mitigation projects, must meet the definition and requirements regarding no negative effect identified in Exhibit C to the Regional Flood Planning Contracts, Technical Guidelines for Regional Flood Planning, which can be found at: https://www.twdb.texas.gov/flood/planning/planningdocu/2023/index.asp. The flood mitigation

projects identified from this FIF CAT 1 study must comply with 'no negative effect' in order to be included in the regional flood plans.

Subtask 3.4 Project Area Real-Time Flood Warning System: The Project Team will evaluate the latest methods and state-of-the-art technology to provide a flood forecasting and warning system for the Project Area. This work will include an investigation into the best practices for meteorological, hydrologic and hydraulic modeling systems that could be used to provide flood forecasting and flood warning system for the Project Area. Additionally, this effort will investigate the short and long-term funding and organizational requirements of a flood warning system. To avoid duplication, the capabilities and opportunities to use existing regional flood warning platforms and tools, such as the NCTCOG Flood Data North Texas program and website (http://flooddatantx.com), will be evaluated as the Project Team works to provide the latest/greatest data and information for communities.

Subtask 3.4 Deliverables:

- Report on finding of the investigation into real-time flood warning system including recommendations on equipment, resources, and organizational requirements to produce real- time forecasts

Subtask 3.5 Managing Land through Strategic Planning and Development Regulations: While there are many steps to implementation of regional environmental features, for example, there are regulatory and strategic planning elements counties and municipalities could adopt in a relatively short-term timeframe. Deliverables from this task will focus on development of model regulatory tools cities and counties could integrate into their existing development and planning processes.

Development of tools, such as the City of Austin's FloodPro website (https://www.austintexas.gov/FloodPro/), will be explored for deployment in the Project Area to support city and county staff administration of regulations and policy.

Subtask 3.5 Deliverables:

- Document potential options or incentives to provide for conservation and preservation of flood-prone areas and environmentally sensitive areas such as purchase of development rights, cluster development, etc.
- Evaluation of stormwater management fees or districts and associated; anticipate revenue based on future growth
- Literature review of existing zoning, building codes, and stormwater ordinances that integrate green infrastructure, including regional efforts such as integrated Stormwater Management resources
- Document common recommendations from Denton County Greenbelt Plan, Watershed Protection Plans that could be applied elsewhere in the Project Area
- Develop model development code and recommended floodplain management ordinances
- Proposed list of city planning and development documents to incorporate Project outcomes into including comprehensive plans, building code updates, design criteria manuals, capital improvement programs, development review checklists, etc.

- Evaluate opportunities to expand the Corridor Development Certificate process into the Project area
- Actions/recommendations to implement into planning and development documents and processes for both county and municipality

Task 4: Project Management and Project Replication

Subtask 4.1 Project Management

This task includes fulfillment of funding administrative requirements. Activities will include, but are not limited to: agreement execution; project oversight; project team coordination meetings; general project coordination with funding agencies, including meetings and conference calls as needed; maintenance of project website and all deliverables; invoicing and financial accounting; risk and compliance assessments; procurement of contractors, as needed; manage project teams and contractors; contract management; project presentations; attendance at conferences/workshops/symposiums; task memos; and report development.

A critical, important step of this project is to develop a detailed scope of work for each Task and project element outlined here. For each major task, NCTCOG and subrecipients would refine the scope and identify specific deliverables for each element.

The Project Team will complete a Final Project Summary Report that includes outcomes and lessons learned, best practices, and other important information to document the finalization of the project and resultant outcomes, including any measurable results.

Subtask 4.1 Deliverables:

- Project Team Kick-Off Meeting and subsequent project team coordination meetings
- Develop detailed scopes of work for each project element and identify lead agency
- Procurement documentation
- Subcontractor and subrecipient meetings
- Project presentations and attendance at conferences, etc.
- Quarterly reports and other funding agency required documentation
- Task memorandums and summaries
- Project website development and maintenance

Subtask 4.2 Replicate and Amplify Outcomes

The Project Team will document the processes developed throughout this Project including data, methods, tools, analyses, and standard practices required to integrate transportation and stormwater infrastructure planning. The standard operating procedures, or planning model template documents, will allow for easy replication for the remaining larger Project Area in NCT, and for the duplication and amplification of the Project outcomes in other portions of the State and Nation by any type of entity and at varying geographic scales.

Subtask 4.2 Deliverables:

- Report documenting the standard processes, methods, tools, and analyses for replication of the project activities and amplification of the positive stormwater, infrastructure, and environmental outcomes

EXHIBIT C

TASK AND EXPENSE BUDGETS

TASK BUDGET

TASK	DESCRIPTION	AMOUNT
1	Data Collection and Analysis	$325,000
2	Stakeholder Engagement	$725,000
3	Integrated Transportation and Environmental Planning	$4,570,000
Subtask 3.1	*Phase One Project Area Hydrology and Hydraulics Assessment and Scenarios*	*$2,741,860*
Subtask 3.2	*Assess Transportation Infrastructure Impacts and Develop Decision-Making Tools*	*$685,465*
Subtask 3.3	*Environmental Planning*	*$754,245*
Subtask 3.4	*Phase One Project Area Real-Time Flood Warning System*	*$114,244*
Subtask 3.5	*Managing Land through Strategic Planning and Development Regulations*	*$274,186*
4	Project Management	$380,000
TOTAL		**$ 6,000,000**

EXPENSE BUDGET

CATEGORY	AMOUNT
Salaries & Wages[1]	$660,000
Fringe[2]	$322,080
Travel[3]	$13,920
Subcontract Services	$4,625,000
Equipment	$0
Other Expenses[4]	$205,172
Overhead[5]	$173,828
Profit	$0
TOTAL	**$6,000,000**

[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] Travel is limited to the maximum amounts authorized for state employees by the General Appropriations Act, Tex. Leg. Regular Session, 2017, Article IX, Part 5, as amended or superseded

[4] Other Expenses is defined to include expendable supplies, communications, reproduction, postage, and costs of public meetings directly chargeable to this CONTRACT.

[5] Overhead is defined as the costs incurred in maintaining a place of business and performing professional services similar to those specified in this CONTRACT.

EXHIBIT D

GUIDELINES FOR AUTHORS SUBMITTING CONTRACT REPORTS
TO THE TEXAS WATER DEVELOPMENT BOARD

1.0 Introduction

The purpose of this document is to describe the required format of contract reports submitted to the Texas Water Development Board (TWDB). Our reason for standardizing the format of contract reports is to provide our customers a consistent, and therefore familiar, format for contract reports (which we post online for public access). Another reason for standardizing the format is so that we can more easily turn a contract report into a TWDB numbered report if we so choose. Remember that your report will not only be seen by TWDB staff, but also by any person interested in the results of your study. A professional and high-quality report will reflect well on you, your employer, and the TWDB.

Available upon request, we will provide a Microsoft Word template (used to write these instructions) that gives the fonts, spacing, and other specifications for the headings and text of the report. Please follow this template as closely as possible.

2.0 Formatting your report

The TWDB format is designed for simplicity. For example, we use Times New Roman for all text. We use 12 point, single-spaced text, left justification for paragraph text, 18 point bold for first-level headings, and 14 point bold for second-level headings. Page numbers are centered at the bottom of the page. Other than page numbers, please refrain from adding content to the document header or footer. Page setup should use one-inch margins on all four sides.

2.1 Text

The best way to format your document is to use the styles described and embedded in the template document (Authors_Template.dot) that is available on request from the TWDB. To use the Authors_Template.dot file, open it in Word (make sure *.dot is listed under Files of type) and save it as a .doc file. Advanced users can add the .dot file to their computers as a template.

Make sure the formatting bar is on the desktop (to open, go to View→Toolbars→Formatting) or, to view all of the formatting at once, go to Format→Styles and Formatting and select Available Styles from the dropdown box at the bottom of the window. The formatting in the template document provides styles (such as font type, spacing, and indents) for each piece of your report. Each style is named to describe what it should be used for (for example, style names include Chapter Title, Body Text, Heading 1, References, and Figure or Table Caption). As you add to your report, use the dropdown list on the Formatting Toolbar or the list in the Styles and Formatting window to adjust the text to the correct style. The Authors_Template.dot file shows and lists the specifications for each style.

2.1.1 Title

Give your report a title that gives the reader an idea of the topic of your report but is not terribly long. In addition to the general subject (for example, “Droughts”), you may include a few additional words to describe a place, methodology, or other detail focused on throughout the paper (for example, “Droughts in the High Plains of Texas” or “Evaluating the effects of drought using groundwater flow modeling”). Please capitalize only the first letter of each word except ‘minor’ words such as ‘and’ and ‘of’. Never use all caps. Use headings to help the reader follow you through the main sections of your report and to make it easier for readers to skim through your report to find sections that might be the most interesting or useful to them. The text of the report should include an executive summary and sections outlined in 4.4 of Attachment 1. Headings for up to five levels of subdivision are provided in the template; however, we

suggest not using more than three or four levels of subdivision except where absolutely necessary. Please avoid stacked headings (for example, a Heading 1 followed immediately by a Heading 2) and capitalize only the first letter of headings or words where appropriate—never use all caps.

2.2 Figures and photographs

To publish professional-looking graphics, **we need all originals to be saved at 300 dots-per-inch** (dpi) and in grayscale, if possible, or in the CMYK color format if color is necessary. Excessive use of color, especially color graphics that do not also work in grayscale, will prevent us from publishing your report as a TWDB numbered report (color reproduction costs can be prohibitive). Preferred file formats for your original graphics are Adobe Illustrator (.ai), Photoshop (.psd), EPS with .tiff preview, .jpg, .png, or .tiff files. Refrain from using low resolution .jpg or .gif files. Internet images at 72 dpi are unacceptable for use in reports. All graphics shall be submitted in two forms:

1. Inserted into the Microsoft Word document before you submit your report. Ideally, inserted graphics should be centered on the page. Format the picture to downsize to 6 inches wide if necessary. Please do not upsize a graphic in Word.

2. Saved in one of the formats listed above.

2.2.1 Other graphics specifications

It is easiest to design your figures separately and add them in after the text of your report is complete. Graphics should remain within the 1-inch page margins of the template (6 inches maximum graphic width). Be sure that the graphics (as well as tables) are numbered in the same order that they are mentioned in the text. Figures should appear embedded in the report after being called out in the text. Also, remember to include a caption for each graphic in Word, not as part of the graphic. We are not able to edit or format figure captions that are part of the figure. For figures and photographs, the caption should appear below the graphic. For tables, the caption should appear above.

2.2.2 Creating publication-quality graphics

When designing a graphic, make sure that the graphic (1) emphasizes the important information and does not show unnecessary data, lines, or labels; (2) includes the needed support material for the reader to understand what you are showing; and (3) is readable (see Figures 1 and 2 for examples). Edward R. Tufte's books on presenting information (Tufte, 1983; 1990; 1997) are great references on good graphic design. Cole Nussbaumer Knaflic's website *Storytelling With Data* also provides freely accessible resources for designing infographics and data visualizations (http://www.storytellingwithdata.com/blog). Figures 1 through 3 are examples of properly formatted, easy to understand graphics. Do not include fonts that are less than 6 points.

For good-looking graphics, the resolution needs to be high enough to provide a clear image at the size you make them within the report. In general, 300 dpi will make a clear image and is the minimum resolution for all situations. Try to create your figures at the same size they will be in the report, as resizing them in Word greatly reduces image quality. Photographs taken with at least a two-megapixel camera (if using digital) and with good contrast will make the best images. Save the original, and then adjust color levels and size in a renamed image copy. Print a draft copy of your report to double-check that your figures and photographs have clear lines and show all the features that you want them to have.

Figures and photographs should be in grayscale. Color greatly adds to the cost of printing, so we are trying to keep it to a minimum. Also remember that your report may be photocopied, scanned, or downloaded and printed in black and white. For this reason, you should use symbols or patterns, or make sure that colors print as different shades in black and white. All interval or ratio data (data measuring continuous

phenomena, with each color representing an equal interval) need to be displayed in a graded scale of a single color (Figure 3). This way your figures will be useful even as a photocopy.

If you need help with your graphics or have questions, please contact the TWDB graphics department at (512)936-0129.

2.2.3 Use of Figures, Graphics, and Photographs

Figures, photographs, and tables need to be your own unless you have written permission from the creator, publisher, or copyright holder that allows us to reprint them (we will need a copy of this permission for copyrighted material our records). All figures and photographs must cite the source in the legend, and include whether the material is in the public domain, used under a Creative Commons License (https://creativecommons.org/licenses/), or used with permission of the copyright holder. Use caution when using any figures or photographs taken off the Internet or from newspapers or magazines—these sources may be subject to copyright and must be cited properly and/or used by permission.

2.3 Tables

Tables should be created in Microsoft Word (see Table 1). Tables should include a minimal amount of outlining or bold font to emphasize headings, totals, or other important points. Tables should be numbered separately from figures, and captions should appear above the text of the table.

Table 1: A sample table. Note caption above table.

Table text heading*

Table text	1940	1950	1960	1970	1980	1990	2000	%GW
Table text	15	441	340	926	196	522	83	97.4
Table text	64	944	626	173	356	171	516	99.9
Total	79	1385	966	1099	552	693	599	

* A footnote should look like this using 10 point Cambria.
%GW = percent groundwater
Be sure to describe any abbreviations or symbols, and, unlike in this table, be sure to note the units!

3.0 Units

Measurements should be in English units. Metric units may be included in parentheses after the English units.

4.0 Citations and references

It is important to give credit for all external sources referenced in your report. Therefore, be sure to use the appropriate citations and include references in your paper.

4.1 In-text citations

Each piece of information you use in your report that comes from an outside source must be cited within the text using the author's last name and the year of publication. If there are two authors, list the last name of each followed by the year, and if there are more than two authors, list the last name of the first author followed by "and others" and the year. For example: "the end of the Jurassic Period occurred approximately

145.5 million years ago (Gradstein and others, 2004)."

4.2 References

All sources that are cited within the report should be listed at the end of the paper under the heading References. The references should follow the guidelines in "Suggestions to Authors of the Reports of the United States Geological Survey" (Hansen, 1991). These are available online at https://pubs.usgs.gov/unnumbered/7000088 (a link to the chapter "Preparing references for Survey reports," p. 234-241, is found at https://pubs.usgs.gov/unnumbered/7000088/sta28.pdf). Several examples of complete reference citations are listed at the end of these guidelines. Be sure that any citations that appear in tables or figures are included in the reference list. Also, before submitting the report, please check that all the citations in the report are included in the reference list and all references in the reference list are cited in the report.

5.0 Submitting your report

Before you submit your report, proofread it. Look for spelling and grammatical errors. Also, check to see that you have structured the headings, paragraphs, and sentences in your paper so that it is easy to follow and understand (imagine you are a reader who does not already know the information you are presenting).

6.0 Conclusions

Following the instructions above and providing accurate and readable text, tables, figures, and citations will help to make your report useful to readers. Scientists may read your report, as well as water planners, utility providers, and interested citizens. If your report successfully conveys accurate scientific information and explanations to these readers, we can help to create more informed decisions about the use, development, and management of water in the state.

7.0 Acknowledgments

Be sure to acknowledge the people and entities that assisted you in your study and report. For example:

We would like to thank the Keck Geology Consortium, the American Society of Civil Engineers, and the Texas Bar CLE for providing examples to use in developing these guidelines. In addition, we appreciate Mike Parcher for providing information on how to create publication-quality graphics, Shirley Wade for creating the data used in sample Figure 1, and Ian Jones for providing sample Figure 3.

8.0 References

Gradstein, F.M., J.G. Ogg, and A.G. Smith, eds., 2005, A geologic time scale 2004: Cambridge, Cambridge University Press, 610 p.

Hansen, W.R., ed., 1991, Suggestions to authors of the reports of the United States Geological Survey (7th ed.): Washington, D.C., U.S. Government Printing Office, 289 p.

Tufte, E. R., 1983, The visual display of quantitative information: Cheshire, C.T., Graphics Press, 197 p.

Tufte, E. R., 1990, Envisioning information: Cheshire, C.T., Graphics Press, 126 p.

Tufte, E. R., 1997, Visual explanations: Cheshire, C.T., Graphics Press, 156 p.

9.0 Examples of references

Arroyo, J. A., and Mullican, III, W. F., 2004, Desalination: in Mace, R. E., Angle, E. S., and Mullican, W. F., III, editors, Aquifers of the Edwards Plateau: Texas Water Development Board Report 360, p. 293-302.

Bates, R. L., and Jackson, J. A., 1984, Dictionary of geological terms: Anchor Press/Doubleday, Garden City, New York, 571 p.

Blandford, T. N., Blazer, D. J., Calhoun, K. C., Dutton, A. R., Naing, T., Reedy, R. C., and Scanlon, B. R., 2003, Groundwater availability of the southern Ogallala aquifer in Texas and New Mexico–Numerical simulations through 2050: contract report by Daniel B. Stephens and Associates, Inc., and the Bureau of Economic Geology, The University of Texas at Austin to the Texas Water Development Board, variably paginated.

Fenneman, N. M., 1931, Physiography of Western United States (1st edition): New York, McGraw-Hill, 534 p.

Hubert, M., 1999, Senate Bill 1–The first big bold step toward meeting Texas's future water needs: Texas Tech Law Review, v. 30, no. 1, p. 53-70.

Kunianski, E. L., 1989, Precipitation, streamflow, and baseflow in West-Central Texas, December 1974 through March 1977: U. S. Geological Survey Water-Resources Investigations Report 89-4208, 2 sheets.

Mace, R. E., Chowdhury, A. H., Anaya, R., and Way, S.-C., 2000, A numerical groundwater flow model of the Upper and Middle Trinity aquifer, Hill Country area: Texas Water Development Board Open File Report 00-02, 62 p.

Maclay, R. W., and Land, L. F., 1988, Simulation of flow in the Edwards aquifer, San Antonio Region, Texas, and refinements of storage and flow concepts: U. S. Geological Survey Water-Supply Paper 2336, 48 p.

For more examples of references, see p. 239-241 of "Suggestions to Authors of the Reports of the United States Geological Survey" at https://pubs.usgs.gov/unnumbered/7000088/sta28.pdf.

10.0 Examples of figures

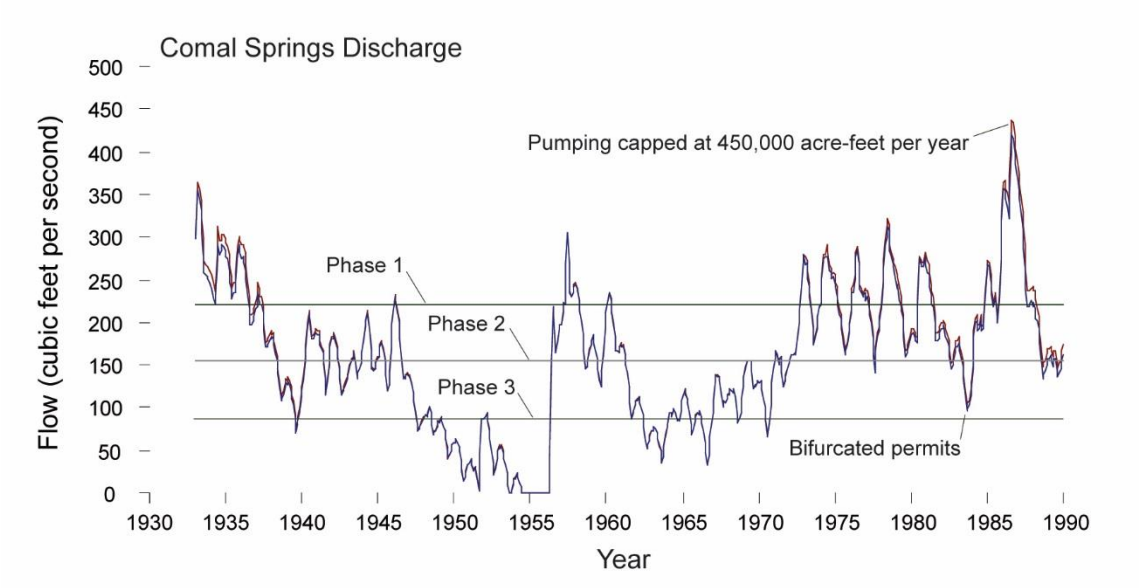


Figure 1. A sample figure showing only the information needed to help the reader understand the data. Font size for figure callouts or labels should never be less than 6 point.

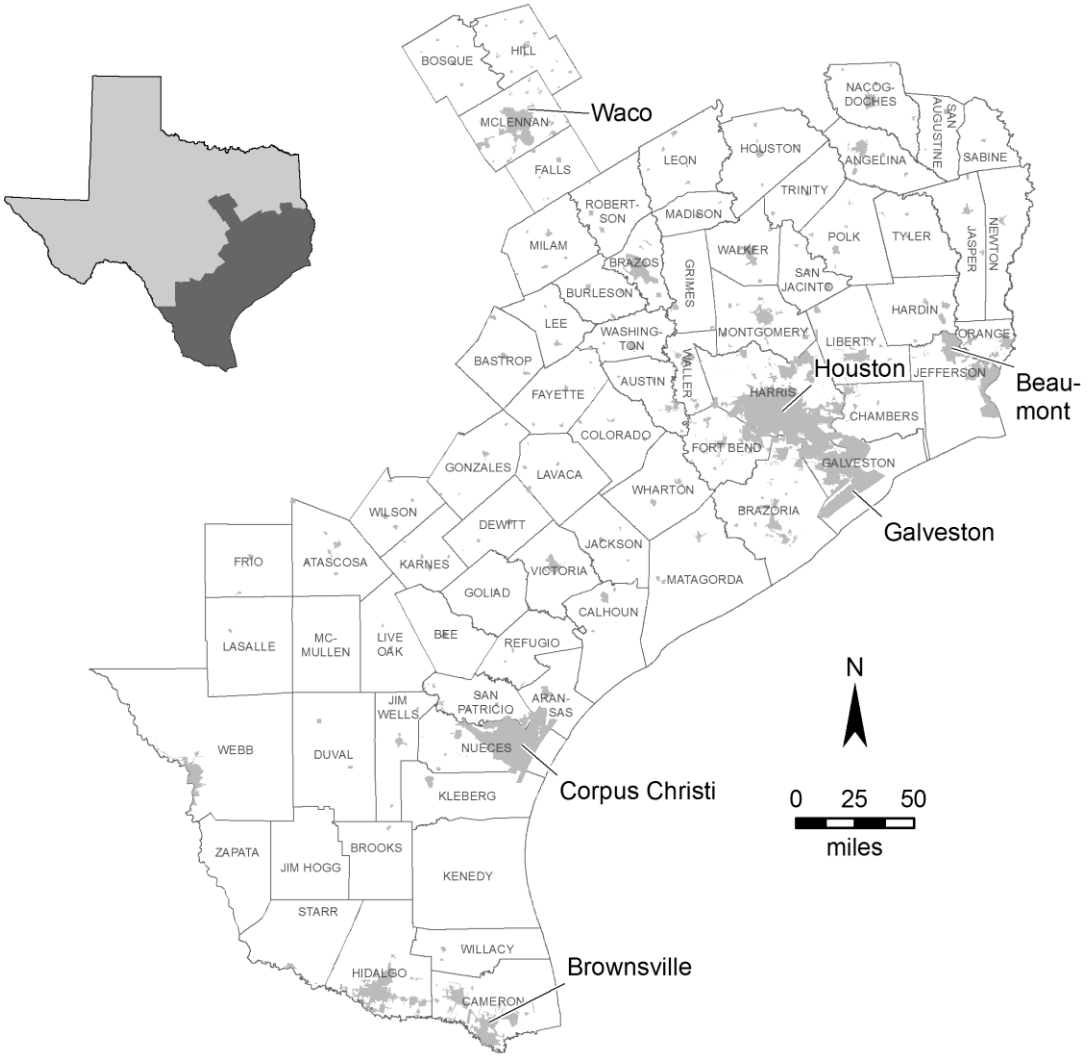


Figure 2. A sample subject area map, giving the reader enough information to understand the location being discussed in this conference. For map figures, be sure to include a north arrow to orient the reader, a scale, and, if needed, a submap that places the figure in greater geographic context. Be sure that text is readable and that any citations listed on the figure or in the figure caption are included in the reference list. Font size should never be less than 6 point.

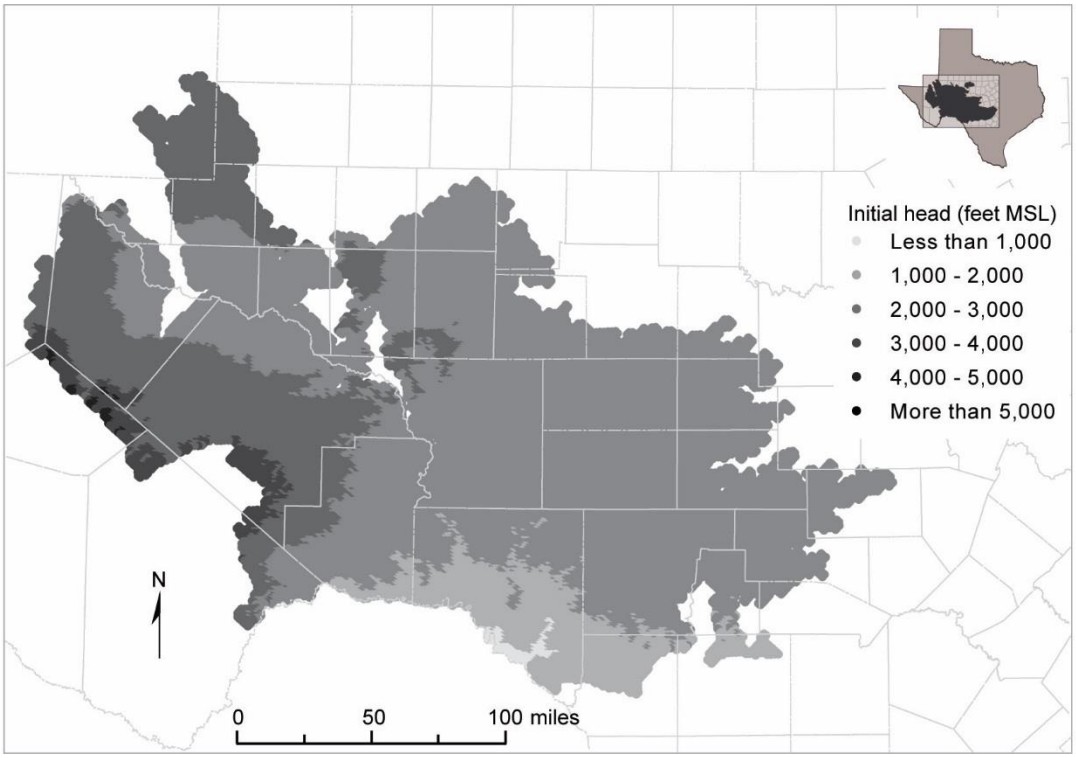


Figure 3. Initial hydraulic heads used in model simulations for layer 1. Note the use of grayscale shading to show differences.

EXHIBIT E

TWDB GUIDELINES FOR A PROGRESS REPORT

Texas Water Development Board Borrowers/Grantees are required by their contracts to provide Progress Reports according to the *"Payment Request Schedule".*

The progress report should contain the following standard elements:

- Date: Date the memo is sent
- To: Name and position of the reader
- From: Name and position of the writer
- Subject: TWDB Contract Number and the period that this report covers (i.e. Progress Report 09/01/18 – 11/30/18)

In-Kind Services: (please include a value and description of any in-kind services provided during the reporting period)

Work Completed: (Explain what work has been done during the reporting period by Scope of Work task. Specify the dates of the reporting period and use active voice verbs to report progress made. Please include any updates on special conditions.)

For Example:

Task 1: Completed 3 draft chapters and all appendices. Met with sub consultants on their chapters.

Task 2: Completed sample collection throughout river reach.

Task 3: No work completed in reporting period.

Problems: (If the reader is likely to be interested in the glitches you have encountered along the way, mention the problems you have encountered and explain how you have solved them. If there are problems you have not yet been able to solve, explain your strategy for solving them and tell the reader when you think you will have them solved.)

EXHIBIT F

ESCROW AGREEMENT