CORRIDOR DEVELOPMENT CERTIFICATE MANUAL

TRINITY RIVER CORRIDOR – NORTH CENTRAL TEXAS

JOINTLY PREPARED BY:

CITIES:
ARLINGTON, CARROLLTON, COPPELL, DALLAS, FARMERS BRANCH, FORT WORTH, GRAND PRAIRIE, IRVING, LEWISVILLE

COUNTIES:
DALLAS, TARRANT

SPECIAL DISTRICTS:
FEDERAL EMERGENCY MANAGEMENT AGENCY – REGION VI, NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS, TARRANT REGIONAL WATER DISTRICT, TRINITY RIVER AUTHORITY OF TEXAS, UNITED STATES ARMY CORPS OF ENGINEERS - FORT WORTH DISTRICT

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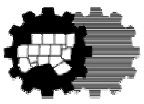
CORRIDOR DEVELOPMENT CERTIFICATE (CDC) PROCESS

1.1 PURPOSE OF THE CORRIDOR DEVELOPMENT CERTIFICATE PROCESS

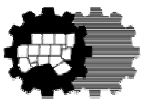
The Corridor Development Certificate Process (CDC) affirms local government authority for local floodplain management and establishes a set of Common Regional Criteria and procedures for development within the Trinity River Corridor. The goal of the Corridor Development Certificate is the stabilization of flooding risks along the Trinity River Corridor in North Central Texas. The CDC Process incorporates future watershed conditions as a consideration in floodplain development decisions. As floodplain development continues, standards have been established to ensure that this development does not exacerbate flooding.

To stabilize flood risks as the floodplain develops, the CDC Common Regional Criteria requires no increase in water surface elevation and no decrease in valley storage for the Regulatory Flood (100-year frequency flood); as well as analysis of the Standard Project Flood (SPF). To address future potential flood risks as the Upper Trinity River watershed develops, the CDC hydrologic modeling is based on future anticipated watershed development (year 2050). Any proposed private or public project within the Regulatory Zone, the Federal Emergency Management Agency (FEMA) 100-year regulatory floodplain of the Trinity River Corridor, must obtain a CDC prior to start of construction, unless specifically exempted per the provisions provided herein.

While local governments retain ultimate control over their own floodplain development decisions, the CDC Process provides other participating cities and counties along the Trinity River the opportunity to review and comment on projects throughout the Trinity River Corridor. This peer review process facilitates better floodplain management decisions.



The CDC is intended to be consistent and complementary with other community floodplain permit requirements. Each local government retains development authority within its jurisdiction. The CDC does not replace or substitute for any other state or federal program. Local governments may choose to incorporate the CDC Common Regional Criteria into existing permitting strategies for other floodplains throughout their respective communities.



1.2 BACKGROUND

During the Dallas-Fort Worth Metroplex development boom in the mid-1980s, the U.S. Army Corps of Engineers (USACE) began to receive numerous requests for federal Section 404 permits within the Trinity River floodplain for commercial and residential development. Individually or cumulatively, these projects were considered to have the potential to compromise existing flood control protection afforded to floodplain residents, and to impact wetlands and other natural resources. The USACE Fort Worth District Engineer determined that it was necessary to develop a regional perspective to evaluate the impacts of individual permit decisions in accordance with the spirit and intent of the National Environmental Policy Act (NEPA) and other applicable laws.

Therefore, during 1984 through 1988, the U.S. Army Corps of Engineers prepared a regional environmental impact statement "for the sole purpose of establishing a permitting strategy for the Trinity River and its tributaries." The *Regional Environmental Impact Statement Trinity River and Tributaries – 1988* (TREIS) determined that the cumulative impact of allowing individual development projects in the Trinity River floodplain could be both measurable and significant. The TREIS also indicated that the permitting approach adopted by the U.S. Army Corps of Engineers had the potential to significantly reduce flood hazards.

Based on the TREIS findings, the USACE issued a Record of Decision in April 1988 (included in Appendix C) specifying criteria the USACE would use to evaluate Section 404 permit applications in the Trinity River Corridor. These criteria included:

- "No rise in the 100-year or SPF elevation for the proposed condition will be allowed."
- "The maximum allowable loss in storage capacity for the 100-year and SPF, 0% and 5% respectively."
- "Alterations in the floodplain may not create or increase an erosive water velocity on or off-site."

In response to the TREIS and Record of Decision, the cities and counties in the Trinity River Corridor formed the Trinity River Steering Committee (Steering Committee), facilitated by the North Central Texas Council of Governments. The Steering Committee adopted a Draft Statement of Principles for Common Permit Criteria (January 1988), a Resolution for a Joint Trinity River Corridor Development Certificate Process (December 1988), and a Regional Policy Position on the Trinity River Corridor (January 1989).

In addition to the policy-oriented Steering Committee, a technically-oriented Flood Management Task Force was formed, comprised of city and county staff. The Steering Committee directed the Flood Management Task Force to develop a process and manual based on the criteria outlined in the USACE Record of Decision. The result was the publication of the 1st Edition of the Corridor Development Certificate Manual, drafted by the Flood Management Task Force following a two and one-half year period of intense discussion and negotiation. The Trinity River Corridor Steering Committee approved the first edition of the CDC Manual on May 23, 1991. Nearly two years later, all participating cities and counties had officially amended their floodplain ordinances to adopt the CDC Common Regional Criteria and process.

The USACE completed the Upper Trinity River Reconnaissance Study in 1990, which predicted that with only National Flood Insurance Program (NFIP) criteria in place, a Standard Project Flood would:

- flood 42,460 acres in the Upper Trinity River Basin
- cause $11.1 billion damage

With flood risks stabilized to 1990 levels with CDC criteria, a Standard Project Flood would:

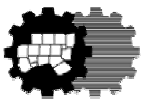
- flood 22,720 (compared to 42,460) acres in the Upper Trinity River Basin
- cause $4.25 billion (compared to $11.1 billion) in damages

The Upper Trinity River Reconnaissance Study indicated that CDC Common Regional Criteria would reduce the size and value of development losses in the SPF floodplain in half due to:

- decreased development impacts in the floodplain
- stabilized flood elevations due to preservation of valley storage, while allowing the permitted development in the floodplain

The three previous Editions of the CDC Manual were released in 1991, 1998 and 2002. The 2nd Edition of the CDC Manual included the establishment of a CDC Review Fund and Cost Recovery Fee to support maintenance of the CDC Model and technical review by the USACE; updated frequency flood peak discharge data; and the elimination of the "Review Zone". The 3rd Edition of the CDC Manual was a result of ongoing maintenance to address comments regarding the CDC Process from local floodplain administrators, CDC Applicants and others.

This edition, the 4th Edition of the CDC Manual, was necessary to address technological advances as well as out dated items including the Regulatory Zone map, exemptions, hydraulic model, and other topics. Many items were clarified in order to create consistency among applications and the Cost Recovery Fee was increased for the first time since the CDC Manual's inception in 1991.



1.3 BENEFITS OF THE CDC PROCESS

Establishment of the CDC Process provides a number of benefits and innovations, including the stabilization of flood risk. These include:

- Common Regional Criteria
- State-of-the-art floodplain mapping
- Hydrologic modeling based on year 2050 Upper Trinity River watershed development
- A hydraulic model incorporating CDC permitted floodplain development
- U.S. Army Corps of Engineers technical review
- Regional review and comment
- Guarantee of local control of floodplain development decisions

Each of these innovations is discussed below.

1.3.1 CDC Common Regional Criteria

A common design hydraulic computer model, the CDC Model, is used as the base model for design and analysis. The CDC Model incorporates flood event peak discharges based on 2050 watershed conditions. The specific CDC Common Regional Criteria include the following (see Chapter 2 for more detailed description of the Common Regional Criteria):

- No increase in the 100-year flood water surface elevation (within 0.04 feet) and no significant increase in the Standard Project Flood water surface elevation
- A maximum allowable decrease of valley storage in the 100-year flood and Standard Project Flood discharges of 0.0% and 5.0%, respectively
- No creation, or significant increase, in erosive water velocity on-site or off-site

The Applicant must submit applicable supporting data indicating that the Common Regional Criteria have been satisfied. The data enables the CDC/Floodplain Administrator to make a more informed decision and ensure that development in the floodplain does not contribute to an increased flooding risk.

1.3.2 Floodplain Mapping

As part of the development of the original CDC Process and CDC Model, 2-foot contour interval topographic mapping was developed in 1991, which includes approximately 240 square miles of the Upper Trinity River Watershed, indicating roadways and other major topographic features. The mapping provides a consistent base for all the cities and counties in the Trinity River Corridor.

1.3.3 Hydrologic Modeling Based on 2050 Watershed Development

The CDC Common Regional Criteria requires hydrologic data based on a future watershed development scenario. This data will be used in evaluation of the proposed project. Flood event peak discharges based on year 2050 expected watershed development in the upper Trinity River watershed are provided in Appendix B of this manual. These discharges give the CDC/Floodplain Administrator a better idea of future runoff conditions on which to base development approval decisions.

1.3.4 A Current Hydraulic Model Incorporating Permitted Floodplain Development

The USACE Fort Worth District maintains the official CDC Model. The CDC Model is updated by the USACE periodically. The goal of the CDC Model is to include permitted and completed projects to reflect cumulative effects of all permitted actions to aid the CDC/Floodplain Administrator in the considerations of future CDC applications.

1.3.5 U.S. Army Corps of Engineers Technical Review of CDC Applications

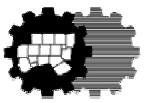
The USACE provides Technical Review of the CDC applications, per letter of request by the participating CDC/Floodplain Administrator. The Technical Review includes evaluation of the Applicant's hydraulic modeling, and evaluation of the project as it pertains to the Common Regional Criteria. The USACE provides the respective CDC/Floodplain Administrator, via letter, with the results of the Technical Review. This provides CDC/Floodplain Administrators with additional data to make well-informed development decisions.

1.3..6 Regional Review and Comment

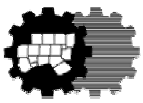
The CDC Process provides the participating cities and counties along the Trinity River the opportunity to review and comment on projects in their neighbors' jurisdiction. The Applicant's CDC submittal is forwarded to each of the participating entities in the Trinity River Corridor for review and comment. USACE Technical Review results may be forwarded, per the CDC/Floodplain Administrator's discretion. Participating local governments have 30 days to review and comment on the development request. These comments will be tracked by NCTCOG. While each individual city and county makes the final development decisions, the CDC Process reinforces "peer pressure" through the establishment of the Common Regional Criteria.

1.3.7 Guarantee of Local Control of Floodplain Development Decisions

Cities and counties, via their elected officials and floodplain ordinances, retain ultimate authority over development occurring in their floodplain, providing that the development comply with other pertinent state and federal regulations. The CDC Process does not supersede other state and federal programs.



The CDC Process allows parallel review of the various federal and local regulatory permits required for floodplain development. This feature of the CDC Process ensures that minimal additional time is added to the local development decision-making process and that the overall federal, state, and local approval process is streamlined for quicker decision-making.



1.4 GEOGRAPHIC AREA OF REGULATION

The Trinity River Corridor is defined in the Trinity River Corridor Interlocal Agreement (effective date January 1, 1990) as the bed and banks of the river segments from the dams of Lewisville Lake, Grapevine Lake, Lake Worth, Benbrook Lake, Lake Arlington, and Mountain Creek Lake, downstream to the area near Post Oak Road and the Trinity River in southeast Dallas County, and all of the adjacent land area and all watercourses contained within the boundaries of the river floodplain as designated by the Steering Committee.

The Regulatory Zone is the Federal Emergency Management Agency (FEMA) 100-year regulatory floodplain of the Trinity River Corridor, minus areas of Specific Prior Development, produced from the Clear Fork, West Fork, Elm Fork, and main stem of the Trinity River. The outer boundary of the Regulatory Zone within the tributaries, such as Village Creek, Mountain Creek, and Denton Creek, is determined from the backwater from the Clear Fork, West Fork, Elm Fork, and main stem of the Trinity River.

As the Trinity River COMMON VISION Program and the Upper Trinity River Feasibility Study produce new information, these geographic areas may be revised. The Trinity River Corridor Steering Committee will approve revisions to the CDC Regulatory Zone boundaries as necessary.

1.5 DEVELOPMENT ACTIVITIES AFFECTED

Any proposed public or private development located entirely or partially within the Regulatory Zone of the Trinity River Corridor must obtain a CDC prior to start of any development activity, unless specifically exempted as discussed in Section 1.6 EXEMPTIONS AND VARIANCES.

A development activity is defined as "any manmade change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation, or significant changes to vegetative cover." To ensure consistency with Texas Commission on Environmental Quality (TCEQ) requirements, development activity also includes "any levee or other improvement."

A development activity by a city or county within the Regulatory Zone will be subject to CDC requirements and will be subject to other applicable local, federal, and state regulations. To avoid conflicts between adopted policy and city or county ordinances, a government CDC application will be considered as any other CDC application. If a city or county proposes a project within its own jurisdiction, the CDC/Floodplain Administrator of that city or county will issue or deny a CDC for the project. Even when ruling on itself, the city or county must complete the CDC Process as described in Chapter 4.

1.6 EXEMPTIONS AND VARIANCES

CDC Applicants may request an Exemption or Variance to the CDC Process. If an Applicant proposing a development activity that is located partially or completely within the Trinity River Corridor can show in writing, through the completion of Part 1 of the CDC Application, that the activity meets any of the conditions below, the permitting entity may deem the project exempt from the CDC Process or grant a Variance.

1.6.1Exemptions to the CDC Process

Under certain circumstances, the permitting entity may issue an Exemption from the Common Regional Criteria and CDC Process. Applicants seeking development approval may request an Exemption if the development activity in question falls into any of the following categories:

- Maintenance, repair, or identical replacement of existing infrastructure
- Outfall structures where the outfall has been permitted under the Federal NPDES or State TPDES program
- Intake structures
- Discharge of material for backfill or bedding for utility lines, provided that no significant change occurs in pre-existing bottom contours and excess material is removed to a disposal area out of the Regulatory Zone
- Bank stabilization activities provided that no significant change occurs in pre-existing bottom contours and excess material is removed to a disposal area out of the Regulatory Zone
- Small-scale projects that cause minimal change in ground surface elevation and no decrease in hydraulic conveyance and valley storage for the 100-year flood.
- Temporary construction-related activity. (Note: See Chapter 2 Section G regarding "Significant Temporary Construction".)

- Specific Prior Development. The existing development projects as defined in Section 1.7 DEFINITIONS AND ACRONYMS of this Manual and listed in Appendix B.3 (also referred to as Grandfathered Projects).

Prior to initiation of the Regional Review and Comment process, the CDC Applicant may request an Exemption to the CDC Process in writing, by completing Part 1 of the CDC Application (see Chapter 3). The permitting entity will issue or deny the Exemption in accordance with the local floodplain ordinance and other ordinance Exemption procedures. If an Exemption is granted, Part 2 of the CDC Application does not have to be completed. If an Exemption is granted, Part 1 shall be maintained on file by the permitting entity and the jurisdiction granting the exemption shall notify CDC signatories and USACE of the Exemption. This ends the CDC Process for the case of Exemption.

It is recommended that the CDC Applicant contact the appropriate local government for floodplain management ordinance requirements and the U.S. Army Corps of Engineers Fort Worth District for federal regulations that may pertain to the Applicant's project.

1.6.2 Variances to CDC Common Regional Criteria

Applicants may request a Variance if the development activity does not meet the established Common Regional Criteria as detailed in Chapter 2 CDC COMMON REGIONAL CRITERIA of this manual. A Variance shall be any modification of the literal provisions of the CDC Criteria by the participating local jurisdiction. The permitting entity may issue a Variance under the following circumstances:

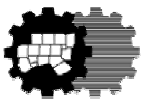
- When strict enforcement of the CDC Process would cause undue hardship, owing to circumstances unique to the individual property on which the Variance from the process is requested.

- When a public project is deemed to be in the "overall regional public interest", as determined by the jurisdiction's policy-making body, e.g. city council or commissioners' court.

An Applicant seeking a Variance must:

- Complete the standard CDC Application. The CDC Application will be subject to Regional Review and Comment by the participating CDC permitting entities.
- Undergo Technical Review by the USACE.
- Complete the Variance Request Form, explaining why meeting the Common Regional Criteria would cause undue hardship or why the project is in the "overall regional public interest".

Since the CDC is adopted as an element of the permitting entity's National Flood Insurance Program floodplain ordinance, a CDC Variance is subject to that jurisdiction's floodplain ordinance Variance procedures.



1.7 DEFINITIONS AND ACRONYMS

Applicant. Entity or individual requesting a CDC.

100-year Flood. A statistical description of a flood having a one percent (1%) probability of being equaled or exceeded in any given year.

2050 Hydrology. The Upper Trinity River watershed conditions associated with anticipated land use in the year 2050.

CDC Hydraulic Ineffective Flow Area. The area of the floodplain that floodwater occupies and the downstream velocity is near zero. This area is represented in the CDC model river cross-sections by the ineffective flow area option and is excluded from the water surface elevation computations. The floodwater in the ineffective flow area of the river cross-sections occupies valley storage and is included in valley storage computations.

The final determination of the project boundary and location with respect to the ineffective flow area will be made by the local CDC/Floodplain Administrator. The CDC/Floodplain Administrator may request assistance of the USACE with the determination procedure.

CDC Model. The official computer model of the Upper Trinity River study area. The CDC Model was developed using the USACE Hydrologic Engineering Center River Analysis System (HEC-RAS) computer program. Discharges for eight specific flood events are included in the CDC Model, however only the 100-year and SPF are used in the CDC. The flood event discharges were developed based on year 2050 watershed conditions and were developed using the USACE Upper Trinity River watershed HEC-1 program. The limits of the CDC Model are as follows:

- Elm Fork: West Fork/Elm Fork confluence to Lewisville Dam (29.04 miles)
- West Fork: West Fork/Elm Fork confluence to Lake Worth Dam (58.08 miles)
- Clear Fork: West Fork/Clear Fork confluence to Benbrook Dam (12.43 miles)
- Trinity River main stem: West Fork/Elm Fork confluence to downstream of Dowdy Ferry Road in southeast Dallas (23.25 miles).

The CDC Model includes several projects permitted but not constructed.

CDC Process. Process (as presented in Chapter 4) to be followed by Applicants seeking a Corridor Development Certificate for projects located within the Trinity River Corridor.

CDC Review Fund. In order to offset the costs associated with USACE Technical Review and NCTCOG corridor-wide CDC administration, a CDC Review Fund and cost recovery fee have been incorporated into the CDC Process and have been specified in the CDC Manual. This fund provides for the technical review, administration, and tracking of the CDC Process. Section 3.3 of the CDC Manual contains a detailed description of the fund and the CDC cost recovery fees.

CDC Tracking Code. Upon receipt of a completed CDC Application, the CDC/Floodplain Administrator must assign it a CDC Tracking Code, which is a unique identification number for each CDC Application. The Tracking Code begins with "CDC" and then indicates the city/county name, the date, and the order the application was received that day. For example, if the City of Dallas receives two CDC applications on 1 June 2002, the CDC Tracking Codes would be as follows: "CDC Dallas 060102-1" and "CDC Dallas 060102-2."

Conveyance. A measure of the flow capacity of a cross-section. Conveyance is dependent on the geometry and friction or roughness characteristics of the cross-section.

Corridor Development Certificate (CDC). Local government permission for development activity within the Regulatory Zone of the Trinity River Corridor. The Corridor Development

Certificate is implemented at the local level as the official "floodplain permit" for the Trinity River Corridor, and is issued as a part of the city or county floodplain permit program.

Development Activity. Any manmade change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, clearing, paving, excavation, drilling operations, or storage of equipment or materials. To ensure consistency with TCEQ requirements, development activity also includes "any levee or other improvement."

Exemptions. Developments outside the scope and intent of the CDC Process as described in Section 1.6 EXEMPTIONS AND VARIANCES.

FEMA. Federal Emergency Management Agency

HEC-RAS. The Hydrologic Engineering Center - River Analysis System software developed by the U.S. Army Corps of Engineers to perform one-dimensional steady flow and unsteady flow river hydraulics computations. Refer to the Hydrologic Engineering Center web site for more information: http://www.hec.usace.army.mil/

HEC-1. U.S. Army Corps of Engineers software developed by the Hydrologic Engineering Center designed to simulate the surface runoff response of a river basin to precipitation by representing the basin as an interconnected system of hydrologic and hydraulic components. Refer to the Hydrologic Engineering Center web site for more information: http://www.hec.usace.army.mil/

NCTCOG. North Central Texas Council of Governments. Refer to the NCTCOG website for more information: http://www.nctcog.org.

NFIP. National Flood Insurance Program

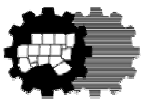
Permitting Entity. One of the currently participating local governments in the CDC Process.

Regulatory Zone. The area where the CDC Process and requirements apply. This area is the FEMA 100-year floodplain minus areas of Specific Prior Development. The Regulatory Zone is more fully defined in Section 1.4.

Significant Changes to Project. Any significant changes to a development activity, project plan, or regulatory program that require the re-evaluation of CDC approval may require re-application for a new CDC. In general terms, a significant change that would require a new CDC would be a change that would materially affect permitted valley storage or conveyance, or have significant environmental impacts. Changes in regulatory programs include ordinance/order changes of the permitting jurisdiction, as well as changes in state and federal regulatory programs prior to the completion of the development activity. The CDC/Floodplain Administrator will review the changes and determine whether re-application for a new CDC is required.

Specific Prior Development (Grandfathered Projects). Under the CDC Process, existing projects that are included in the CDC Model are identified as Specific Prior Development and may not require a CDC. (See Appendix B.3). If any significant changes in the project occur, or if the Term of CDC Validity expires (5 years from the date of listing in the CDC Manual as Specific Prior Development), the project may lose its specific prior development status and be subject to the CDC Process. This provision of the process only applies to the CDC requirement. It does not apply to any other state or federal regulatory program.

Standard Project Flood (SPF). The Standard Project Flood is the flood that may be expected from the most severe combination of meteorological and hydrologic conditions that are considered to be reasonably characteristic of the geographical region involved, excluding extremely rare combinations. In practical terms, a SPF usually has a 0.3 to 0.08 percent probability of being equaled or exceeded in any given year, and is usually between 40 and 60 percent of a Probable Maximum Flood (PMF). The SPF represents a "standard" against which



the degree of protection selected for a project may be judged and compared with protection provided for similar projects in other localities. In general terms, the SPF for the Trinity River Corridor is commonly equated to an 800-year storm frequency.

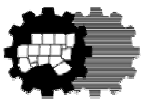
TCEQ. Texas Commission on Environmental Quality

Technical Review. Review performed by the USACE. The review is initiated by the letter request of the participating city or county. The Technical Review consists of evaluation of the Applicant's hydraulic information as it pertains to the CDC Common Regional Criteria.

Term of CDC Validity (Sunsetting of CDC). The CDC is valid for five (5) years. If no development activities occur within five years from the date of issuance, the Applicant may submit a written request no later than 60 days prior to the fifth anniversary of the CDC issuance for up to a three (3) year CDC extension (see sample letter D.4 in Appendix D), otherwise, the CDC shall cease to be valid on that anniversary date. The permitting entity may grant an additional three-year extension (see sample letter D.5 in Appendix D). If an extension is granted, summary project status reports are required and must be submitted to the CDC/Floodplain Administrator annually. If an extension is not granted, the Applicant must reapply for a CDC. Note: Other local, state, and federal permits and regulatory processes may not have the same validity time or sunsetting requirements.

Trinity River Corridor. For the purpose of the CDC Process, the Trinity River Corridor is defined as the bed and banks of the river segments from the dams of Lewisville Lake, Grapevine Lake, Lake Worth, Benbrook Lake, Lake Arlington, and Mountain Creek Lake downstream to the point on the main stem of the Trinity River near Post Oak Road in southeast Dallas County, and all of the adjacent land area and all watercourses contained within the boundaries of the river floodplain as designated by the approved Trinity River Corridor digital map maintained on computer by NCTCOG.

TWDB. Texas Water Development Board. Coordinates NFIP within the State of Texas



USACE. United States Army Corps of Engineers

Upper Trinity River Basin. The Trinity River watershed upstream of the vicinity of Post Oak Road and the main stem of the Trinity River in southeast Dallas County.

USACE Section 404 Permit. Important elements of the program implemented by the USACE under Section 404 of the Clean Water Act include conducting jurisdictional determinations for wetlands and other waters of the United States, evaluating applications for individual and general permits for activities in these jurisdictional areas, ensuring compliance of issued permits, and enforcing requirements of the law for unpermitted activities. The USACE works closely with other federal, state and local natural resource agencies and the public in exercising these responsibilities. The USACE Fort Worth District web site gives additional information on the USACE Regulatory Program:
http://www.swf.usace.army.mil/pubdata/environ/regulatory/index.asp

Valley Storage. The water volume between the water surface and the ground surface that occupies a given reach of the river. For purposes of the CDC Process, the valley storage is computed with respect to the Pre-Project and With-Project 100-year and SPF water surface elevations. The CDC Process relies on the protection and preservation of this storage of floodwater to stabilize flooding risk over time.

Variance. A Variance is any modification of the literal provisions of the CDC Manual Criteria by the participating local jurisdiction when strict enforcement of the CDC Process would cause undue hardship owing to circumstances unique to the individual property on which the Variance is granted, or when the project would be in the overall regional public interest, as determined by the jurisdiction's policy-making body, e.g. city council or commissioners' court. Please see Section 1.6 EXEMPTIONS AND VARIANCES.

1.8 PENALTIES FOR UNAUTHORIZED CONSTRUCTION

Failure to comply with the provisions of the policies and regulations within this CDC Manual will result in the penalties specified in the floodplain management ordinance or regulations of the jurisdiction.

For further information regarding penalties for unlawful storm water management or development activities within the floodplain, please consult the appropriate local government for floodplain management ordinance requirements, as well as the following:

- Texas Commission on Environmental Quality
- Federal Emergency Management Agency
- U.S. Environmental Protection Agency
- U.S. Army Corps of Engineers Fort Worth District.

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Chapter 2
CDC COMMON REGIONAL CRITERIA

2.1 COMMON REGIONAL CRITERIA/GENERAL INFORMATION

The CDC Common Regional Criteria for development in the Regulatory Zone of the Trinity River are based on year 2050 watershed conditions. In the CDC Application, the Applicant must provide sufficient detailed information to document Common Regional Criteria compliance. The burden of proof of compliance is the responsibility of the CDC Applicant.

The Applicant must use the CDC Model to evaluate the impacts of the proposed project. The CDC Model may be obtained from the USACE Fort Worth District Hydrology and Hydraulics Branch. The Applicant and the CDC/Floodplain Administrator may request additional supporting hydrologic or hydraulic information from the USACE.

The proposed project hydrologic and hydraulic information, submitted as part of the CDC Application for compliance with the Common Regional Criteria, must be representative of a project close to a 100 percent level of design and one that the proposed project plans and specifications will be directly based upon.

All CDC applications must comply with the following CDC Common Regional Criteria, unless granted an Exemption or a Variance:

2.1.1 Hydraulic Impacts

2.1.1.1 Water Surface Elevations. No increase in the 100-year flood water surface elevations (within 0.04 feet) and no significant increase in the Standard Project Flood water surface elevations.

Note: It is expected that every effort will be made to limit increases in the SPF water surface to at or near zero. The significance of any increases will be at the discretion of the technical reviewer and the local permitting authority.

Evaluation of projects for water surface elevation and valley storage criteria will be based on the following guidelines:

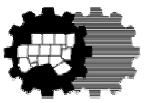
- Project is located within both the 100-year and SPF ineffective flow areas:
  - No evaluation of the 100-year and the SPF water surface elevation is required
  - 100-year and SPF valley storage evaluation is required

- Project is located within a 100-year ineffective flow area but within the SPF effective flow area:
  - No evaluation of the 100-year water surface elevation is required
  - Evaluation of the SPF water surface elevation is required
  - 100-year and the SPF valley storage evaluation is required

The location of a project with respect to an ineffective flow area will be determined by the USACE with assistance of the local CDC/Floodplain Administrator.

The evaluation of water surface elevation for compliance with the criteria shall be based on the submitted "as-designed" condition with the inherent assumption that the project will be operated and maintained in perpetuity as designed. If no maintenance will be performed on the project to preserve the original design parameters, then this future project condition shall be considered the "as-designed" condition.

The current CDC Model (Pre-Project Model) establishes a baseline condition that will be used to compare the proposed project condition model (With-Project Model) with respect to the CDC Common Regional Criteria. There may be conditions where additional cross-



sections are necessary to adequately represent a proposed project, due to the cross-section spacing, location, and alignment of the cross-sections in the CDC Model. If additional cross-sections are used in the With-Project model, additional Pre-Project cross-sections should also be developed in the same locations and incorporated into the CDC Model, thereby creating a 'Revised CDC Model'. This Revised CDC Model shall be used as the Pre-Project conditions model for comparison to evaluate the With-Project hydraulic impacts. If a Revised CDC Model is developed, then a comparison of results of the Revised CDC Model with the original CDC Model shall be submitted (in addition to the With-Project comparison results). The method of developing the additional cross-sections is at the applicant's discretion but shall be described in the application package. Hydraulic calculations shall be provided for a distance upstream of the project sufficiently to identify the full impacts of the project.

2.1.1.2 Valley Storage. The maximum allowable valley storage decrease for the 100-year flood and Standard Project Flood are 0.0% and 5.0%, respectively. Percent change in valley storage is computed with respect to the amount of valley storage originally available within the boundary of the proposed project tract. The original on-site valley storage must be determined in order to compute the total percent change in valley storage. It is suggested that if specialized terrain software or other detailed methods are used for design to compute on-site changes, such as, earthwork quantities, that these methods also be used to compute the on-site change in valley storage due to physical changes in the terrain. In addition to on-site physical changes, proposed projects may also result in hydraulic changes that reduce the water surface profiles both adjacent and upstream of the project. If the With-Project condition results in a reduction of the water surface profile, this is considered a valley storage loss. Total valley storage change shall be determined on a full cross-section width basis for both onsite and off-site areas, and expressed as a percentage of the original on-site valley storage.

Compensatory valley storage to offset decreases may be provided at a separate site preferably in the vicinity of the original project site, subject to approval by the local CDC/Floodplain

Administrator and the USACE. The off-site valley storage compensation area will be evaluated with the same criteria as the original project site such that the valley storage compensation can be maintained in perpetuity. Off-site valley storage sites shall be added to the original site footprint to compute the percent reduction in valley storage. The off-site valley storage area will be subject to a full hydraulic evaluation in the same manner as the original project site if it is located in the active flow area. If the proposed off-site valley storage area is located within a participating city or county jurisdiction other than the originating jurisdiction, then the CDC/Floodplain Administrator from the affected city or county must be notified and an approval granted by the affected CDC/Floodplain Administrator.

Flows in the Elm Fork, West Fork, and main stem of the Trinity River have been established as part of the valley storage design process for a project. A discharge of 4000 cfs in the Elm Fork, 1200 cfs in the West Fork downstream of the Clear Fork, 600 cfs in the West Fork upstream of the Clear Fork, 600 cfs in the Clear Fork, and 5200 cfs in the main stem of the Trinity River shall be considered as baseline discharges when computing valley storage. Storage below the water surface elevations produced by these baseline discharges shall be considered ineffective, unless a control structure is designed to ensure that the entire volume is available for storage.

Use of the average end area method or volumetric software is the recommended method for computing valley storage within a project site, and will be appropriate for a large majority of projects. However, there may be instances where using the CDC Model to compute valley storage may be acceptable. The choice of method for valley storage computation is at the discretion of the Applicant's engineer. However, assistance in determining the most appropriate method is available by the CDC/Floodplain Administrator and/or the USACE Hydrology and Hydraulics Branch. As part of the CDC Application, detailed computations must be submitted that clearly explains the computational procedure used and the determined storage values.

2.1.1.3 Velocities. Alterations of the floodplain may not create or significantly increase an erosive water velocity, on-site and off-site, including the main river channel, based on requirements of the permitting entity.

2.1.2 Hydraulic Impacts of Tributary Projects

For portions of tributary projects that are located in the Regulatory Zone, the hydraulic criteria are the same as for projects located in the Clear Fork, West Fork, Elm Fork, and main stem Trinity River Regulatory Zone. No separate tributary hydraulic model is required.

2.1.3 Cumulative Impacts

The upstream, adjacent, and downstream effects of the proposed project will be considered. The proposed project will be reviewed with the assumption that adjacent projects have an equal opportunity to be constructed. The cumulative impacts of all projects must not exceed the Common Regional Criteria.

2.1.4 Preservation of Adjacent Project Storage

The Applicant must respect the valley storage provided by adjacent projects by ensuring that their hydraulic connection to the river is maintained. If the proposed project blocks the hydraulic connection of the adjacent project, additional valley storage to offset the decrease caused by the blockage of the hydraulic connection is required.

2.1.5 Design Level of Flood Protection

The engineering analysis for a CDC will include the effects of the Applicant's proposal on the 100-year flood and Standard Project Flood and shall demonstrate meeting USACE, TWDB, and local criteria for pertinent flood events.

2.1.5.1 Levees. For new levees protecting urban development, the minimum design criterion for the top of levee is the SPF water surface elevation plus four feet, unless a relief system is designed and implemented that will prevent catastrophic failure of the levee system.

2.1.5.2 Buildings. For fills associated with building construction of habitable structures, the minimum finished floor elevation is the CDC 100-year flood elevation plus one foot. However, in some cases, city and county criteria exceeds this minimum, and the higher standard must be used in the design of the project and the CDC Application.

2.1.6 Storage and Borrow Areas

The excavation of storage and borrow areas to elevations lower than the bottom elevation of the stream is generally hydraulically undesirable. The volume of such excavations above the elevation to which the area can be kept drained can be considered in the hydrologic storage computations. Refer to the Paragraph 2.1.1.2 Valley Storage regarding baseline flows. Excavation or fill that compromises channel stability shall not be allowed.

2.1.7 Significant Temporary Construction.

For proposed projects that do not qualify for an Exemption and have significant temporary construction activities associated with the proposed project, the Applicant shall be required to submit hydraulic and valley storage impacts representing these temporary impacts, as well as the proposed final project. Mitigation of adverse hydraulic and valley storage impacts due to these temporary construction activities may be required by the CDC/Floodplain Administrator.

Chapter 3
CDC APPLICATION REQUIREMENTS

3.1 CDC APPLICATION REQUIREMENTS

CDC applications shall be submitted on forms contained in Section 3.2. The permitting entity shall furnish the forms to the Applicant in either hard copy or digital form. To insure that all proposed developments are afforded a complete and consistent level of analysis, the Application shall include, but not be limited to the following:

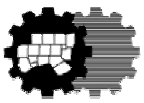
- CDC Application Part 1 and Part 2 (see Section 3.2)
- CDC Application Data Requirements (See Section 3.1B)
- CDC Cost Recovery Fee (Section 3.3).

An Engineer licensed in the State of Texas must seal or stamp the CDC Application. Detailed descriptions of these requirements are presented below.

3.1.1 CDC Application - Part 1 and Part 2

To initiate the Corridor Development Certificate process, the Applicant should first contact the permitting entity for a pre-submittal conference. The CDC/Floodplain Administrator of that entity will determine if the project is located within or partially within the Regulatory Zone.

If no part of the proposed project is located within the Regulatory Zone, the CDC/Floodplain Administrator is not required to take any further action beyond making this determination. No forms are required and the CDC Process ends at this point (although other local floodplain regulations may apply).



If the project is located within or partially within the Regulatory Zone, the CDC Process must be followed. The Applicant shall complete Part 1 and Part 2 of the CDC Application (see Section 3.2) and submit the Application to the CDC/Floodplain Administrator, unless the Applicant is seeking an Exemption, in which case the Applicant must only complete Part 1. If the CDC/Floodplain Administrator decides at any time to deny a CDC, the CDC Process may be terminated.

Hydrologic data (Part 1). Discharges for the 100-year and Standard Project Flood events are based on projected year 2050 urbanization. The Applicant shall use the year 2050 discharges provided in Appendix B Table 1 (and included in the HEC-RAS CDC Model, or as revised by USACE). The Applicant should clearly identify these discharges in the '100 Year Flood' and 'Standard Project Flood' tables.

In conjunction with the common policies described herein, the CDC discharges listed in Appendix B Table 1 represent a watershed with modest stability in future discharges. However, future discharge modifications will undoubtedly be required. For consistency in CDC review and evaluation of design requirements, the Trinity River Corridor Steering Committee will continue to periodically review and approve revisions to the discharges.

Hydraulic data (Part 2). Water surface elevations shall be provided at the upstream, middle, and downstream ends of the project (for Pre-Project and With-Project conditions) for the 100-year flood and Standard Project Flood discharges presented in the Appendix B Table 1. Hydraulic calculations shall be continued for a distance great enough upstream and downstream of the project to verify that water surface elevations are not increased by the proposed modifications.

Spaces are provided in the "100 Year Flood" and "Standard Project Flood" tables to list water surface elevations for a number of points upstream and downstream of the project. In all

cases, the best available water surface elevation data shall be utilized. Elevation data should be computed considering full cross-section widths across the floodplain.

3.1.2 CDC Application Data Requirements

The following information, as a minimum, shall be submitted in a CDC Application.

- Technical Report. A report that describes in detail the proposed project, the project area, the hydraulic modeling analysis, and a summary of the project impacts.

- Computer Models. Submit the HEC-RAS models for Pre-Project conditions and With-Project conditions in digital format. Include sufficient descriptions of the project (including new or revised cross-sections, plan names, etc.) in the HEC-RAS model for both Pre-Project and With-Project conditions. Include a listing and description of the plans used in the HEC-RAS models and the version of HEC-RAS used in the analysis.

- Output. HEC-RAS hydraulic computation output tables for Pre-Project and With-Project conditions models for the 100-year and SPF flood events in both hardcopy and digital format for the project reach and upstream river extents as necessary. Hardcopy HEC-RAS input data are not necessary as long as the HEC-RAS models are provided in digital format.

- Plots. Pre-Project and With-Project conditions cross-section plots (hardcopy). The number and location of sections shall adequately describe and support documented computations.

- Valley Storage Data. Detailed valley storage computations, produced by either the CDC Model or other methods. Include applicable plots indicating the water surface elevations produced from the baseline discharges.

- Operation and Maintenance Summary. Explanation of the operation and maintenance aspects of the project and requirements to preserve the 'as-designed' conditions represented in the submitted computer model.

- Comparison Tables. Develop comparison tables for Pre-Project and With-Project water surface elevations, channel velocities, and overbank velocities, for the 100-year and SPF flood events.

- Location Map(s). A map indicating the location of the project within the Trinity River Corridor and a more detailed map indicating the location of the project relative to adjacent properties and major roads and physical features.

- Hydraulic Work Map. The hydraulic work map must indicate the locations of the model cross-sections relative to the project used in the hydraulic analysis. The map must also show Pre-Project and With-Project contour data, floodplain and floodway boundaries, map scale, and benchmarks (with datum adjustments).

- Site Map. The site map may be general or detailed, according to the complexity of the project and the level of analysis required. The site map must be consistent with the permitting requirements of the community and should be adequate for confirmation of model parameters during technical review.

- Project Boundary in Digital Format (if available). At a minimum, the application shall include a hardcopy map indicating the project boundary used to compute the on-site valley storage.

3.1.3 CDC Cost Recovery Fee

For information regarding the CDC Cost Recovery Fee, see Section 3.3.

3.2 CDC APPLICATION FORM

The CDC Application Form consists of the following:

- CDC Application Checklist
- CDC Application Part 1 and Part 2
- Final CDC Action/Findings Form
- CDC Extension Request

CDC Tracking Code: _____

CDC APPLICATION CHECKLIST

APPLICATION FORMS

____ Application Form Part 1

____ Application Form Part 2

MAPS

____ Location map

____ Hydraulic Work Map

____ Site map

____ Project boundary in digital format

CDC MODEL FILES

____ Pre-Project conditions and With-Project conditions models in digital format

____ Hard copy printouts and plots of cross-sections and water surface elevation profiles for 100-year flood and SPF for Pre-Project and With-Project conditions

____ Technical Report

COST RECOVERY FEE

____ $5,750 for effective flow area

____ $3,250 for ineffective flow area

____ $0 for exempted projects

CDC Tracking Code: _____

CDC APPLICATION - PART 1

To be completed by Applicant or Applicant's representative and submitted to the appropriate local CDC/Floodplain Administrator. Attach additional pages as necessary. This application is considered public information and will be distributed to federal, state, and local governmental agencies as outlined in the CDC Manual.

1. APPLICANT INFORMATION

Applicant's Representative. Identify person knowledgeable of and authorized to respond to questions concerning data provided by the Applicant.

Name: _____

Relationship to Applicant: _____

Address: _____

_____

Telephone: _____

Fax: _____

E-mail: _____

CDC Applicant: _____

Project Name: _____

Property Owner: _____

City/County: _____

Engineer: _____

Project Size (total acres): _____

CDC Tracking Code: _____

2. LOCATION

Provide general description of location, including street address, nearest cross street, and identified impacted water bodies:

MAPSCO and Location Reference: _____

Latitude/longitude of project centroid (to six decimal places). Can be found using DFWmaps.com:

_____

Project boundary in digital format (if available) _____

3. PROPOSED PROJECT

Proposed Activity: (check appropriate categories)

☐ dredge/channel modification

☐ swale construction

☐ fill

☐ levee

☐ bridge/river crossing

☐ other (include explanation here)

Proposed Use: (check appropriate categories)

☐ private single dwelling(s)

☐ private multi-dwelling(s)

☐ public

☐ commercial

☐ industrial

☐ other (include explanation here)

Brief description of project:

4. PROJECT LOCATION WITH RESPECT TO INEFFECTIVE FLOW AREA

- ☐ Not located entirely within an ineffective flow area
- ☐ Located entirely within both the 100-year and the SPF ineffective flow area
- ☐ Located entirely within the 100-year ineffective flow area only

5. VERSION OF HEC-RAS USED IN THE ANALYSIS: _____

6. EXEMPTIONS AND VARIANCES

Exemption Category: (check if applicable - additional documentation may be required)

- ☐ Maintenance, repair, or identical replacement of existing infrastructure
- ☐ Outfall structures where the outfall has been permitted under the Federal NPDES or State TPDES program
- ☐ Intake structures
- ☐ Discharge of material for backfill or bedding for utility lines, provided that no significant change occurs in pre-existing bottom contours and excess material is removed to a disposal area out of the Regulatory Zone
- ☐ Bank stabilization activities provided that no significant change occurs in pre-existing bottom contours and excess material is removed to a disposal area out of the Regulatory Zone
- ☐ Small-scale projects that cause minimal change in ground surface elevation and no decrease in hydraulic conveyance and valley storage for the 100-year flood
- ☐ Temporary construction-related activity
- ☐ Specific Prior Development - The existing development projects as defined in Section 1.7 DEFINITIONS AND ACRONYMS of this Manual and listed in Appendix B.3 (also referred to as Grandfathered Projects).

Applicant requests a Variance to Common Permit Criteria: ☐ Yes ☐ No

(If yes, please explain supporting information here)

CDC Tracking Code: _____

CDC APPLICATION - PART 2

Detailed Hydrologic and Hydraulic Information

To be completed by Applicant or Applicant's representative and submitted to the appropriate local CDC/Floodplain Administrator. Attach additional pages as necessary. This application is considered public information and will be distributed to federal, state, and local governmental agencies as outlined in the CDC Manual.

100-YEAR FLOOD

Parameter	Location	Pre-Project	With-Project	Change
Discharge	Downstream Boundary (DB) cross-section _____	cfs	n/a	n/a
	Upstream Boundary (UB) cross-section _____	cfs	n/a	n/a
Channel Velocity	Downstream Boundary cross-section _____	fps	fps	fps
	Upstream Boundary cross-section _____	fps	fps	fps
Water Surface Elevation (NGVD)	_____ feet downstream of DB cross-section _____	ft	ft	ft
	_____ feet downstream of DB cross-section _____	ft	ft	ft
	Downstream Boundary cross-section _____	ft	ft	ft
	Mid-project cross-section _____	ft	ft	ft

	Upstream Boundary cross-section _____	ft	ft	ft
	_____ feet upstream of DB cross-section _____	ft	ft	ft
	_____ feet upstream of UB cross-section _____	ft	ft	ft
	_____ feet upstream of UB cross-section _____	ft	ft	ft
	_____ feet upstream of UB cross-section _____	ft	ft	ft
Project Lands in Floodplain		ac	ac	ac
Valley Storage on Project Lands		ac-ft	ac-ft	ac-ft
Total Valley Storage Change				ac-ft
Valley Storage Percent Change				%

CDC Tracking Code: _____

STANDARD PROJECT FLOOD (SPF)

Parameter	Location	Pre-Project	With-Project	Change
Discharge	Downstream Boundary (DB) cross-section _____	cfs	n/a	n/a
	Upstream Boundary (UB) cross-section _____	cfs	n/a	n/a
Channel Velocity	Downstream Boundary cross-section _____	fps	fps	fps
	Upstream Boundary cross-section _____	fps	fps	fps
Water Surface Elevation (NGVD)	_____ feet downstream of DB cross-section _____	ft	ft	ft
	_____ feet downstream of DB cross-section _____	ft	ft	ft
	Downstream Boundary cross-section _____	ft	ft	ft
	Mid-project cross-section _____	ft	ft	ft
	Upstream Boundary cross-section _____	ft	ft	ft
	_____ feet upstream of DB cross-section _____	ft	ft	ft

	_____ feet upstream of UB cross-section _____	ft	ft	ft
	_____ feet upstream of UB cross-section _____	ft	ft	ft
	_____ feet upstream of UB cross-section _____	ft	ft	ft
Project Lands in Floodplain		ac	ac	ac
Valley Storage on Project Lands		ac-ft	ac-ft	ac-ft
Total Valley Storage Change				ac-ft
Valley Storage Percent Change				%

7. VALLEY STORAGE MITIGATION

Describe hydraulic mitigation used to compensate for project valley storage impacts.

Application is hereby submitted for a Corridor Development Certificate (CDC). I certify that I am knowledgeable of the information contained in this application, and that to the best of my knowledge and belief, this information is true, complete, and accurate.

_____

Signature of CDC Applicant or Applicant's Representative

_____

Typed Name/Title/Date

_____

P.E. License Number and seal/stamp

CDC Tracking Code: _____

FINAL CDC ACTION/FINDINGS FORM

(To be completed by CDC/Floodplain Administrator and submitted to NCTCOG)

CDC ACTION: (check one)

☐ Granted with favorable/neutral comments from other signatories

☐ Granted with one or more unfavorable comments from other signatories

☐ Granted with Variance with favorable/neutral comments from other signatories

☐ Granted with Variance with one or more unfavorable comments from other signatories

☐ Denied (please explain):

By my authority under the City/County, I hereby issue the City/County's findings and final action.

_____

Signature of CDC/Floodplain Administrator

_____

Typed Name/Title/Date

(For multi-jurisdictional approval) By my authority under the City/County, I hereby issue the City/County's findings and final action.

_____

Signature of CDC/Floodplain Administrator

_____

Typed Name/Title/Date

CDC Tracking Code: _____

CDC EXTENSION REQUEST

(To be submitted by CDC Applicant to local CDC/Floodplain Administrator, with a copy to NCTCOG)

Applicant's Representative. Identify person knowledgeable and authorized to respond to questions concerning data provided by the Applicant.

Name: _____

Relationship to Applicant: _____

Address: _____

_____

Telephone/fax/e-mail: _____

Explanation for Extension Request

_____

Applicant's Signature/Typed Name /Title Date

CDC/Floodplain Administrator Action/Findings
(To be completed by CDC/Floodplain Administrator)

Extension Request Granted? Yes ☐ No ☐

Period of Extension: From: _____ To: _____

_____

Signature of CDC Administrator/Typed Name/Title Date

3.3 CDC COST RECOVERY FEE

The CDC Cost Recovery Fee funds the costs associated with the USACE Technical Review of CDC applications and NCTCOG corridor-wide CDC administration. The fees, paid into the CDC Review Fund, also support the continued USACE maintenance of the CDC Model.

CDC Applicants for development activities within the Regulatory Zone and within a hydraulically effective flow area will submit a $5,750 fee to NCTCOG as Custodian of the CDC Review Fund.

Evaluation of projects for water surface elevation and valley storage criteria will be based on the following guidelines:

CDC Applicants for development activities within the CDC Regulatory Zone but within a hydraulically ineffective flow area will submit a $3,250 fee to NCTCOG as Custodian of CDC Review Fund. The criteria governing the application of the ineffective flow area with respect to hydrologic and hydraulic impact requirements and CDC Cost Recovery Fee are as follows:

- Project is located within both the 100-year and SPF ineffective flow areas
  - No evaluation of the 100-year and the SPF water surface elevation is required
  - 100-year and SPF valley storage evaluation is required
  - CDC Application Fee $3,250
- Project is located within a 100-year ineffective flow area but within the SPF effective flow area
  - No evaluation of 100-year water surface elevation is required
  - Evaluation of SPF water surface elevation is required
  - 100-year and SPF valley storage evaluation required
  - CDC Application Fee $5,750

This reduction in fee for ineffective flow areas represents the reduced costs for technical analyses and administration associated with projects that are within a CDC ineffective flow area of the Regulatory Zone. CDC ineffective flow areas are defined in the CDC Model. The location

of a project with respect to an ineffective flow area will be determined by the USACE with assistance of the local CDC/Floodplain Administrator.

Cost Recovery Fee payments should be made payable and submitted to:

North Central Texas Council of Governments - Custodian of Corridor
Development Certificate Review Fund
Department of Environmental and Development
P.O. Box 5888
Arlington, Texas 76005-5888

The CDC Tracking Code must be included on the check. The local CDC/Floodplain Administrator will coordinate the submittal of the CDC Cost Recovery Fee in a similar manner to the fees associated with FEMA reviews. Note: The CDC Cost Recovery Fee does not include fees related to federal or state programs (specifically, FEMA Letter of Map Change review fees).

Once the Cost Recovery Fee is paid to NCTCOG as Custodian of the CDC Review Fund, NCTCOG will forward a check for the appropriate fee to the USACE. The check, bearing the CDC Tracking Code for identification, shall be mailed to:

U.S. Army Corps of Engineers
Fort Worth District
ATTN: CESWF-RM-FC
P.O. Box 17300
Fort Worth, Texas 76102-0300

Supplemental fees to fund additional USACE Technical Review will be required for projects requiring more extensive analysis. In the event that the USACE determines that additional funds are required to meet the final cost of the specified Technical Review, the USACE shall notify the CDC Applicant and NCTCOG in writing of the amount of additional funds required. These additional costs will be billed on a per hour basis beyond the Cost Recovery Fee amount

based upon a time and cost estimate provided by USACE within the 30-day review period. Within 30 calendar days thereafter, the Applicant must provide the additional funds to the NCTCOG as custodian of the CDC Review Fund. The additional funds shall include a $250 processing fee for the NCTCOG. NCTCOG shall provide the USACE with a check for the full amount of the additional required funds. The Technical Review will be suspended if no funds are received.

CHAPTER 4
THE CDC PROCESS

A process as complex as the CDC Process can be described from a variety of perspectives. In order to describe the process for the purposes of this manual, two perspectives have been utilized. Section 4.1 CDC PROCESS - OUTLINE DESCRIPTION describes the process from the point of view of a CDC Applicant. Section 4.2 CDC PROCESS - RESPONSIBILITY DESCRIPTIONS describes the responsibilities of the CDC/Floodplain Administrator, the USACE Hydrology and Hydraulics Branch, the USACE Regulatory Branch, TCEQ, Reviewing Local Governments (Signatories), NCTCOG, and the CDC Applicant.

4.1 CDC PROCESS - OUTLINE DESCRIPTION

4.1.1 Pre-Application Conference and Determination

To initiate the CDC Process, the Applicant shall meet with the permitting entity (city or county) for a Pre-Application Conference. The CDC/Floodplain Administrator of that local government identifies the location of the proposed project in relation to the boundary of the Regulatory Zone.

- If the project is located completely outside the Regulatory Zone, the CDC/Floodplain Administrator is not required to take any further action. No forms are required and the CDC Process ends at this point, although other local floodplain ordinance requirements may apply.

- If the project is located within or partially within the Regulatory Zone, the CDC Process must be continued.

If a project is located within two or more jurisdictions within the Regulatory Zone, the jurisdiction with the largest portion of project land area will be responsible for the CDC application process (lead permitting entity) subject to agreement between the local jurisdictions. Two local jurisdictions can agree to a multijurisdictional permit in which case they would both complete the Final CDC Action/Findings Form. The Applicant shall submit a complete CDC application to all jurisdictions in which the project is located. The lead permitting entity shall consult with the other jurisdictions in which the project is located and obtain their approval before granting a CDC.

4.1.2 Obtaining the CDC Model

The Applicant shall contact the USACE Fort Worth District Hydrology and Hydraulics Branch (817-886-1690 or 817-886-1676) to obtain the current CDC Model.

4.1.3 Submission of CDC Application and Assignment of Tracking Code

The Applicant is required to submit all parts of the CDC Application as described in Chapter 3 and shown on the Application Checklist (Section 3.2).

Upon receipt of a completed CDC Application, the CDC/Floodplain Administrator must assign it a CDC Tracking Code, which is a unique identification number for each CDC Application. The Tracking Code begins with "CDC" and then indicates the city/county name, the date (day/month/year), and the order the application was received that day. For example, if the City of Dallas receives two CDC applications on 1 June 1, the CDC Tracking Codes would be as follows: "CDC Dallas 060108-1" and "CDC Dallas 060108-2."

4.1.4 Request for Exemption

The CDC Applicant may request an Exemption to the CDC Process in writing, using the Part 1 of the CDC Application. The permitting entity will issue or deny the Exemption in accordance with the allowable exemptions noted in Section 1.6.

If an exemption is granted, Part 2 of the CDC Application does not have to be completed. Part 1 of the CDC Application should be maintained on file by the permitting entity and a copy provided to NCTCOG for CDC administration and to the USACE for documenting hydrologic and hydraulic analyses. This ends the CDC Process for the case of Exemption. (The CDC Applicant should still contact the USACE and TCEQ to determine if the development activity is subject to specific permit requirements by those agencies.)

4.1.5 Request for Variance

An Applicant seeking a Variance must complete the CDC Application and undergo Regional Review and Comment by participating cities and counties of the Trinity River Corridor Interlocal Agreement. In addition, whenever a Variance is requested, Technical Review by USACE is required.

4.1.6 Regional Review and Comment

Upon receipt of a complete CDC Application, the CDC/Floodplain Administrator initiates the Regional Review and Comment process by forwarding hard or electronic copies (by regular mail or e-mail under 1 MB) of the CDC Application to the local government signatories, USACE Hydrology and Hydraulics Section (2 hard copies), TCEQ, and NCTCOG. Addresses are listed in Appendix E. Electronic copies of the Application larger than 1MB must be sent by regular mail on a compact disc.

Other participating local government signatories will have 30 days from receipt of the CDC Application to review and comment. If the signatory reviewer decides to comment, the comments should be forwarded in writing (hard copy or e-mail under 1MB) to the appropriate CDC/Floodplain Administrator and copied to NCTCOG (see sample review and comment letter D.1 in Appendix D).

4.1.7 Database Identifier Number

NCTCOG will assign a database identifier number, separate from the CDC Tracking Code, that will be used to locate the project and access project specific information from the NCTCOG/CDC website. This number will be distributed to the CDC/Floodplain Administrator to be distributed to all other parties.

4.1.8 Technical Review

To initiate Technical Review, the required CDC cost recovery payment is submitted, along with the completed CDC Application, to NCTCOG as Custodian of the CDC Review Fund. USACE Technical Review will not occur without payment. See Section 3.3 for a complete discussion of the CDC Cost Recovery Fee.

USACE shall have 30 days to complete the Technical Review, following payment processing and receipt of complete application information (payment processing through the NCTCOG and USACE administrative systems may take 2-4 weeks from NCTCOG receipt of payment). Comments from the USACE will be forwarded to the local CDC/Floodplain Administrator (copied to the Applicant and NCTCOG). In the event that the USACE is not able to complete the CDC Review within 30 days, the USACE will notify the Applicant, the local CDC/Floodplain Administrator, and NCTCOG.

4.1.9 Final CDC Decision

The CDC/Floodplain Administrator reviews comments from other CDC participants and the results of the Technical Review and makes a CDC decision. This decision can be:

- granting the CDC with favorable/unfavorable comments from other signatories,
- granting the CDC with conditions (including a Variance) with favorable/unfavorable comments from other signatories, or
- denying the CDC.

The CDC/Floodplain Administrator shall notify the Applicant of the final CDC decision (see sample letters D.2 and D.3 in Appendix D). The CDC/Floodplain Administrator shall complete the Final CDC Action/Findings Form and forward copies to NCTCOG and USACE.

A CDC will not substitute for a Section 404 permit and vice versa. Note: The Applicant must also satisfy permitting requirements of state and federal agencies (FEMA, TCEQ, USACE), if such permits are applicable.

4.1.10 CDC Term, Annual Status Reports, and CDC Extensions

The CDC is valid for five (5) years. During the development phase, annual project status reports must be submitted to the CDC/Floodplain Administrator and forwarded to NCTCOG (see sample status memo D.4 in Appendix D).

If no development activities occur within five (5) years from the date of issuance, the Applicant may submit a written request, no later than 60 days prior to the fifth anniversary of the CDC issuance, for up to a three (3) year CDC extension (see Form in Section 3.2), otherwise, the CDC shall cease to be valid on that anniversary date. The permitting entity may grant an additional three-year extension (see sample letter D.5 in Appendix D). If an extension is granted, summary

project status reports are required and must be submitted to the CDC/Floodplain Administrator annually. If an extension is not granted, the Applicant must reapply for a CDC.

4.1.11 Changes in Development Activities, Project Plans, or Regulatory Programs

Any significant changes to a development activity, project plan, or regulatory program require a re-evaluation of the CDC and may require re-application for a new CDC. In general terms, a significant change that would require a new CDC would be a change that would materially affect approved valley storage or conveyance, or have significant environmental impacts. Changes in regulatory programs include city ordinance/county order changes of the permitting jurisdiction, as well as changes in state and federal regulatory programs prior to the completion of the development activity. The CDC/Floodplain Administrator will review the changes and determine whether re-application for a new CDC is required.

The permitting entity's CDC decision is subject to that jurisdiction's floodplain ordinance appeals process. Any change in a CDC action due to an appeal should be forwarded to NCTCOG.

4.2 CDC PROCESS - RESPONSIBILITY DESCRIPTIONS

4.2.1 CDC/Floodplain Administrator

- Hold initial pre-application consultation with potential Applicants
- Determine if the project is located inside or outside the CDC Regulatory Zone
- Determine if the project qualifies for an Exemption
- Ensure that the CDC Application is complete and that the current version of the CDC Model has been used. Assign tracking number.
- Request a Technical Review by the USACE via written letter.
- Forward copies of the CDC Application to the local government signatories, USACE Fort Worth District Hydrology and Hydraulics Branch (2 copies), TCEQ, and NCTCOG for Regional Review and Comment and Technical Review. Respond to signatory reviewers' requests for more information as needed.
- Coordinate CDC Cost Recovery Fee payment
- Based on regional comments, Technical Review, and the CDC/Floodplain Administrator's own judgment, determine final CDC action. Issue a letter and forward copies of Final CDC Action/Findings Form to NCTCOG and USACE.
- Request annual status reports from Applicant. Forward copies of status reports to NCTCOG.
- Re-evaluate CDC due to significant changes in project
- Submit responses to CDC extension requests to the Applicant with a copy to NCTCOG.

4.2.2 USACE

- Perform Technical Review within 30 days from the time that the review fee has been processed and a complete Application has been received (See Section 4.1.7)
- Notify the permitting entity, Applicant's Representative, and NCTCOG, if the Technical Review will take longer than 30 days
- Provide Technical Review findings to permitting entity, Applicant's Representative, and NCTCOG

- Update the CDC Model with project information

4.2.3 USACE Regulatory Branch

- Notify USACE permit applicants that they may need to apply for a CDC
- Forward Section 404 determination to permitting entity, Applicant's representative, and NCTCOG

4.2.4 TCEQ

- Notify parties applying for a TCEQ 401 Certification that they may need to apply for a CDC
- Forward 401 Certification reviews to Applicant, permitting entity, and NCTCOG

4.2.5 Reviewing Local Governments (Signatories)

- Review CDC Applications forwarded for Regional Review and Comment
- Forward comments to appropriate CDC/Floodplain Administrator and NCTCOG within 30 days of receipt of CDC Application

4.2.6 NCTCOG

- Track CDC applications
- NCTCOG will forward a check for the appropriate fee to the USACE
- Submit quarterly CDC Status Reports to Trinity River Committees and participating cities and counties, and USACE
- Provide support for revisions of the CDC Manual and CDC maps when necessary
- Administer CDC Cost Recovery Fee

4.2.7 CDC Applicant

- Obtain current CDC Model
- Pre-application conference
- Prepare CDC Application

- Submit the CDC Application and the Cost Recovery Fee to the local CDC/Floodplain Administrator. (CDC Tracking Code must be included on the check)
- Submit annual status reports to the local CDC/Floodplain Administrator, with a copy to NCTCOG
- If an extension of the CDC is desired, a request shall be submitted to the CDC/Floodplain Administrator no later than 60 days prior to the expiration of the CDC

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APPENDIX A

MAP SET
TRINITY RIVER CORRIDOR – CDC REGULATORY ZONE

The following map is for reference only. Final determination of the CDC Regulatory Zone boundary is the responsibility of the local Floodplain Administrator.

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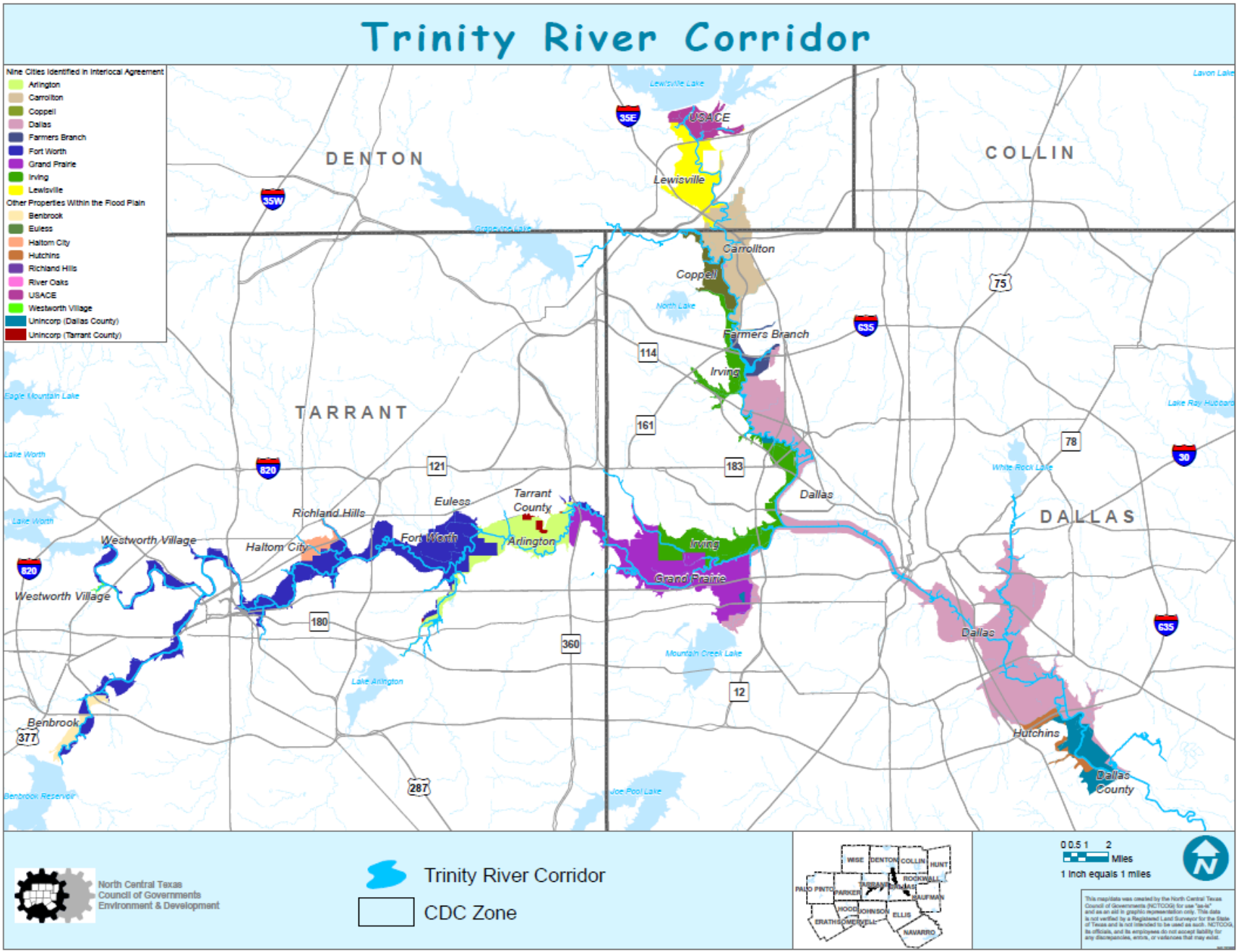
Trinity River Corridor
Nine Cities Identified in Interlocal Agreement
Arlington
Carrollton
Coppell
Dallas
Farmers Branch
Fort Worth
Grand Prairie
Irving
Lewisville
Other Properties Within the Flood Plain
Benbrook
Euless
Haltom City
Hutchins
Richland Hills
River Oaks
USACE
Westworth Village
Unincorp (Dallas County)
Unincorp (Tarrant County)
DENTON
COLLIN
TARRANT
DALLAS
Lewisville
Carrollton
Coppell
Farmers Branch
Irving
Dallas
Grand Prairie
Euless
Tarrant County
Arlington
Richland Hills
Fort Worth
Haltom City
Westworth Village
Benbrook
Hutchins
Dallas County
Lake Worth
Eagle Mountain Lake
Lake Arlington
Mountain Creek Lake
Joe Pool Lake
Benbrook Reservoir
Lewisville Lake
Lavon Lake
North Lake
Lake Ray Hubbard
White Rock Lake
35E
35W
635
820
121
114
161
183
75
78
30
180
360
12
377
287
North Central Texas Council of Governments
Environment & Development
Trinity River Corridor
CDC Zone
0 0.5 1 2
Miles
1 inch equals 1 miles

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APPENDIX B

CDC MODEL - HYDROLOGIC AND HYDRAULIC BASELINE INFORMATION

B.1 Table 1A-1D: Computed Probability Discharges

The CDC flood event discharges listed in Table 1A-1D represent a watershed with modest stability in future discharges. However, discharge revisions may be required in the future. For consistency in permit review and evaluation of design requirements, the Trinity River Corridor Steering Committee will continue to periodically review and approve revisions.

B.2 Table 2A-2D: 100-Year Flood and SPF Water Surface Elevation Data

B.3 Specific Prior Development/Grandfathered Projects

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APPENDIX B.1
TABLE 1-A

WEST FORK TRINITY RIVER
COMPUTED PROBABILITY DISCHARGES (CFS)

FUTURE CONDITIONS

February 1996

LOCATION	CROSS-SECTION	1 YEAR	2 YEAR	5 YEAR	10 YEAR	25 YEAR	50 YEAR	100 YEAR	500 YEAR	SPF
West Fork downstream of Eagle Mountain Dam		6900	7700	13600	14700	23600	28900	35800	48400	54600
West Fork downstream of Lake Worth Dam	306246	4800	7800	13500	14500	23200	28600	35400	54700	56400
West Fork upstream of Clear Fork confluence	289479	4900	7800	13500	14500	23200	28600	35400	54700	59700
West Fork at Fort Worth Gage	254346	7400	10400	15800	21500	30800	39900	48700	82000	118600
West Fork upstream of Marine Creek	248861	7300	10200	15600	21400	30800	39500	48400	81500	118600
West Fork downstream of Marine Creek	242451	8600	12100	18800	24400	32400	40900	50500	85100	122500
West Fork upstream of Sycamore Creek	233994	7500	10800	17800	24200	33200	43400	51700	86600	129600

LOCATION	CROSS-SECTION	1 YEAR	2 YEAR	5 YEAR	10 YEAR	25 YEAR	50 YEAR	100 YEAR	500 YEAR	SPF
West Fork downstream of Sycamore Creek	219536	10800	15000	27000	36300	50700	64200	75300	114200	158800
West Fork upstream of Big Fossil Creek	206439	9400	13100	21700	27900	38700	52100	64700	101900	148500
West Fork downstream of Big Fossil Creek	184495	11900	16000	30400	40800	57000	67500	85800	133600	197300
West Fork upstream of Village Creek	162435	11000	14400	24000	31500	48700	64300	81100	129800	192500
West Fork downstream of Village Creek	140885	13700	17900	29200	37600	58500	77200	97800	156300	212700
West Fork upstream of Walker Branch	133413	13100	17400	28500	36700	55700	73800	94500	153300	208800
West Fork downstream of Walker Branch	123744	13400	17600	28700	37100	56600	75200	96500	157300	214000
West Fork at FM 157	116053	13200	17300	28200	36600	55700	74100	95700	156000	212500
West Fork at SH 360	96104	12900	17000	27500	36200	53500	70500	91300	153900	208200
West Fork upstream of Johnson Creek	70006	12800	16800	27200	35700	52600	69000	90500	155200	210300

LOCATION	CROSS-SECTION	1 YEAR	2 YEAR	5 YEAR	10 YEAR	25 YEAR	50 YEAR	100 YEAR	500 YEAR	SPF
West Fork downstream of Johnson Creek – upstream end of split flow reach	53730	12800	16800	27200	35700	52700	69000 100*	87700 3000*	156700	211900
West Fork at Grand Prairie Gage - split flow reach	46329	12700	16800	27200	35700	52700	68400 100*	87500 3000*	156700	212400
West Fork upstream of Big Bear Creek - split flow reach	41697	12400	16400	27100	35500	52100	66500 100*	84200 3000*	148700	205400
West Fork downstream of Big Bear Creek – downstream end of split flow reach	37015	13100	16900	28300	38500	57100	72000	95300	167400	233600
West Fork upstream of Mountain Creek	18823	13100	16900	28200	37000	55800	71100	91400	155600	217400
West Fork downstream of Mountain Creek	11911	14400	19600	29700	38900	56800	72100	92900	159500	223400
West Fork upstream of Elm Fork	8149	14400	19700	29800	38200	56300	71800	92200	158700	222500

* Split flow discharges. Split flow in lower West Fork for the 50-year flood and 100-year flood only. For total discharges for the 50-year flood and 100-year flood produced from the HEC-1 model, add split flow discharges to West Fork discharges.

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APPENDIX B.1
TABLE 1-B

CLEAR FORK TRINITY RIVER
COMPUTED PROBABILITY DISCHARGES (CFS)

FUTURE CONDITIONS

May 1996

LOCATION	CROSS-SECTION	1 YEAR	2 YEAR	5 YEAR	10 YEAR	25 YEAR	50 YEAR	100 YEAR	500 YEAR	SPF
Clear Fork upstream of Lake Benbrook spillway channel	65616	1	1	1	1	1	1	1	1	1
Clear Fork upstream of Mary's Creek	60451	1900	2700	4100	6000*	7300	9000	13000*	46000*	71800*
Clear Fork downstream of Mary's Creek	41045	4200	6300	9900	13700	18600	22800	27600	46000*	71800*
Clear Fork at IH-30	35076	6000	8100	11900	16200	21700	27100	32700	48700	79600
Clear Fork upstream of West Fork	8243	6100	8400	12900	17100	22500	27700	32600	47700	78100

* Discharge-frequency releases from Lake Benbrook considered critical discharges where they exceed local discharges.

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APPENDIX B.1
TABLE 1-C

ELM FORK TRINITY RIVER
COMPUTED PROBABILITY DISCHARGES (CFS)

FUTURE CONDITIONS

February 1996

LOCATION	CROSS-SECTION	1 YEAR	2 YEAR	5 YEAR	10 YEAR	25 YEAR	50 YEAR	100 YEAR	500 YEAR	SPF
Elm Fork upstream of Prairie Creek and downstream of Lewisville Dam	153328	1100	2500*	7000*	7000*	7000*	1***	1***	1***	1***
Elm Fork downstream of Prairie Creek	153092	2000	3100	7000*	7000*	7000*	1***	1***	1***	1***
Elm Fork upstream of Stewart Creek	150592	1200	2500*	7000*	7000*	7000*	1***	1***	1***	1***
Elm Fork downstream of Stewart Creek (S.H. 121)	147489	3500	5000	7000*	7700	9200	10500	21000*	57000*	66600*
Elm Fork upstream of Midway Branch	144474	2900	4400	7000*	7200	8800	10200*	21000*	57000*	66600*
Elm Fork downstream of Midway Branch	142900	3600	5700	8000	9500	11500	13200	21000*	57000*	66600*
Elm Fork main stem split flow reach	138514	3600	5700	8000	8600 900	8900 2600#	9200 4000#	10300* 10700#	9700* 47300#	10600* 56000#

LOCATION	CROSS-SECTION	1 YEAR	2 YEAR	5 YEAR	10 YEAR	25 YEAR	50 YEAR	100 YEAR	500 YEAR	SPF
Elm Fork upstream of Indian Creek	124975	2400	3500	7000*	7000*	8300	10200*	21000*	57000*	66600*
Elm Fork downstream of Indian Creek	118732	5300	7800	10800	13400	17200	20900	24600	57000*	66600*
Elm Fork at IH 35E	112732	5100	6900	9400	11700	15100	18300	22100	57000*	66600*
Elm Fork downstream of Timber Creek (at IH 35E lower crossing)	110572	7200	10900	15000	18700	24400	29700	35600	57000*	66600*
Elm Fork downstream of Timber Creek (includes Denton Creek)	102686	8500	13900	21600	27000	34400	41400	49600	74800	92700
Elm Fork at Carrollton Gage	93940	7600	12900	18900	24400	32300	39900	51500	78700	99200
Elm Fork downstream of Hutton Branch	88712	7300	12000	17700	22300	29700	36800	45400	70700	89800
Elm Fork upstream of Grapevine Creek	83530	7300	11900	17500	22200	29700	36500	45100	70700	90100
Elm Fork downstream of Grapevine Creek	80579	9000	13600	18700	22500	30300	37200	46600	73000	93300
Elm Fork downstream of Cell B Sluice outlet	72713	8300	13900	20000	23000	30300	37400	46900	73900	95100
Elm Fork downstream of Cooks Branch	71682	8500	12500	17600	22400	30100	37300	46700	73800	95300

LOCATION	CROSS-SECTION	1 YEAR	2 YEAR	5 YEAR	10 YEAR	25 YEAR	50 YEAR	100 YEAR	500 YEAR	SPF
Elm Fork downstream of Irving FCD sluice outlet	69701	7800	11700	17400	22200	29900	37100	46500	74600	97300
Elm Fork downstream of Cell A Sluice outlet	67364	7800	11700	17400	22200	29900	37100	46500	74900	98300
Elm Fork downstream of Farmers Branch	60810	7900	11800	17400	22100	29700	37200	46400	73800	99400
Elm Fork upstream of Hackberry Creek	57195	7600	11500	17100	21500	28900	36200	45100	72900	99300
Elm Fork downstream of Hackberry Creek	53292	10200	14800	18900	22000	29200	36500	45600	74000	101900
Elm Fork main stem split flow reach	48911	10200	14800	18900	20550 1450#	26500 2700#	31800 4700#	36400 9200#	74000	101900
Elm Fork downstream end of split flow reach	31605	10200	14800	18900	22000	29200	36500	45600	51800**	102500
Elm Fork upstream of Joe's Creek	30755	7500	11200	16400	20600	27600	34500	42900	51800**	102500
Elm Fork downstream of Joe's Creek	23574	7500	11200	16400	20600	27600	34500	42900	51800**	103200
Elm Fork downstream of Joe's Creek	23574	7500	11200	16400	20600	27600	34500	42900	51800**	103200
Elm Fork upstream of Bachman Branch	21333	7400	11000	16200	20300	27100	34200	42500	51800**	103200
Elm Fork downstream of Bachman Branch	18621	7400	11100	16300	20500	27400	34800	43100	51800**	106200

LOCATION	CROSS-SECTION	1 YEAR	2 YEAR	5 YEAR	10 YEAR	25 YEAR	50 YEAR	100 YEAR	500 YEAR	SPF
Elm Fork upstream of West Fork	12658	7400	11000	16300	20300	27000	34500	42700	51800**	106200
Elm Fork upstream of West Fork	6689	7400	11000	16300	20300	27000	34500	28800**	51800**	106200

* Discharge-frequency releases from Lake Lewisville are considered critical flows where they exceed local flows.

** Maximum water surface profile determined from Elm Fork coincident discharge with peak water surface elevation downstream of West Fork/Elm Fork confluence.

*** During the 50-year flood and rarer flood events, the Lake Lewisville outlet works is closed. Therefore, a nominal discharge of 1 cfs is used on the Elm Fork river channel upstream of the Lewisville Lake spillway outlet channel.

Split flow discharges. For total discharges produced from the HEC-1 model, add split flow discharges to Elm Fork discharges.

APPENDIX B.1
TABLE 1-D

MAIN STEM TRINITY RIVER
COMPUTED PROBABILITY DISCHARGES (CFS)

FUTURE CONDITIONS

April 1997

LOCATION	CROSS-SECTION	1 YEAR	2 YEAR	5 YEAR	10 YEAR	25 YEAR	50 YEAR	100 YEAR	500 YEAR	SPF
Trinity River downstream of Elm Fork	148136	21100	27500	44200	57000	78200	98700	120300	208500	278500
Trinity River at Dallas Gage	138046	20700	27100	43600	56200	77700	98100	119800	207300	277000
Trinity River upstream of White Rock Creek	91392	19400	26000	40000	53300	75100	95600	117800	198500	265900
Trinity River downstream of White Rock Creek	82361	21900	29300	46100	61100	81200	103300	127500	211900	285200
Trinity River downstream of Below Dallas Gage	77843	21900	29200	46000	61000	81200	103200	127400	211500	284700
Trinity River upstream of Five Mile Creek	68027	21400	28600	45200	60000	80800	102700	126900	209700	281000
Trinity River downstream of Five Mile Creek	51060	21400	28600	45200	60000	80800	102700	126900	209700	281100

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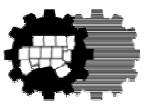
APPENDIX B.2

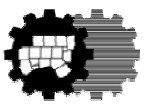
TABLE 2-A
WEST FORK TRINITY RIVER
100-YEAR FLOOD AND SPF WATER SURFACE ELEVATIONS
FUTURE CONDITIONS

CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
0	West Fork/Elm Fork confluence			
1494	92200	423.82	222500	435.79
2208	92200	423.87	222500	435.81
2687	92200	424.21	222500	436.07
3120	Delaware Creek (LB)			
3323	92200	425.41	222500	437.14
3831	92200	425.60	222500	437.34
4671	92200	425.88	222500	437.63
5788	92200	426.11	222500	437.81
8149	92200	426.40	222500	438.02
8375	92900	426.39	223400	438.00
9520	92900	426.62	223400	438.14
9616	92900	426.65	223400	438.16
9617	92900	426.65	223400	438.16
9690	Loop 12/Walton Walker Boulevard			
9763	92900	426.72	223400	438.25
9764	92900	426.64	223400	438.24
9861	92900	426.73	223400	438.30
10280	92900	426.98	223400	438.46
10681	92900	427.11	223400	438.56
11274	92900	427.22	223400	438.64
11911	92900	427.34	223400	438.71
12311	Mountain Creek (LB)			
12811	91400	427.45	217400	438.78
13523	91400	427.73	217400	438.94

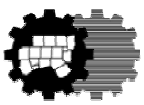
CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
14335	91400	427.95	217400	439.11
15055	91400	427.93	217400	439.17
15780	91400	429.16	217400	439.64
16454	91400	429.49	217400	440.05
17516	91400	430.63	217400	440.89
17726	91400	430.80	217400	440.95
18140	91400	431.51	217400	441.36
18823	91400	432.09	217400	441.71
19924	95300	432.92	233600	442.09
24832	Bear Creek (LB)			
24882	95300	435.12	233600	443.33
25434	95300	435.41	233600	443.51
27882	95300	435.88	233600	443.85
28450	95300	436.01	233600	443.98
28749	95300	436.01	233600	443.69
28795	Meyers Road			
28841	95300	436.12	233600	444.17
29040	95300	436.41	233600	444.89
31471	95300	436.52	233600	445.02
32042	95300	436.85	233600	445.24
32967	95300	437.23	233600	445.54
33382	95300	437.35	233600	445.67
34268	95300	437.43	233600	445.75
35205	95300	437.52	233600	445.84
37015	95300	437.78	233600	446.03
37866	84200	438.02	205400	446.21
38059	84200	438.19	205400	446.28
39095	84200	438.60	205400	446.44
40850	84200	439.10	205400	446.60
41697	84200	439.25	205400	446.67
42751	87500	439.54	212400	446.82
42961	87500	439.73	212400	446.92
43369	87500	440.10	212400	447.04
44153	87500	440.08	212400	447.16



CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
44232	87500	438.71	212400	446.12
44291.5	Belt Line Road			
44351	87500	440.89	212400	450.07
44427	87500	442.74	212400	450.28
45296	87500	442.92	212400	450.33
46329	87500	442.82	212400	450.40
47265	87700	443.08	211900	450.52
48431	87700	443.26	211900	450.69
49477	87700	443.83	211900	450.91
50225	87700	444.25	211900	451.10
51481	87700	444.55	211900	451.34
52000	Johnson Creek (RB)			
52592	87700	444.41	211900	451.70
53730	87700	447.56	211900	452.12
55761	90500	450.14	210300	453.73
57099	90500	450.60	210300	454.84
58337	90500	451.05	210300	455.80
59680	90500	451.84	210300	456.94
60480	90500	452.27	210300	457.70
61054	90500	452.69	210300	458.43
61157	90500	452.71	210300	458.27
61158	90500	452.11	210300	458.10
61198	Roy Orr Boulevard			
61238	90500	453.01	210300	459.52
61239	90500	454.37	210300	461.20
61344	90500	454.66	210300	461.51
63507	90500	456.20	210300	463.64
66037	90500	457.82	210300	465.74
66515	90500	458.10	210300	466.16
67543	90500	458.66	210300	467.03
68329	90500	459.09	210300	467.64
69186	90500	459.49	210300	468.18
70006	90500	459.73	210300	468.46
71246	91300	459.99	208200	468.78

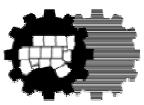


CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
73634	91300	460.48	208200	469.39
74891	91300	460.97	208200	470.05
78083	91300	461.88	208200	470.75
78183	91300	462.41	208200	471.00
78184	91300	462.58	208200	471.06
78189	Union Pacific Railroad			
78194	91300	462.75	208200	471.64
78195	91300	462.75	208200	471.64
78299	91300	462.74	208200	471.56
80816	91300	463.41	208200	471.75
80912	91300	463.47	208200	471.82
80913	91300	463.89	208200	471.88
80958	SH 360			
81003	91300	463.98	208200	472.96
81004	91300	463.99	208200	472.96
81130	91300	464.19	208200	473.06
82018	91300	464.64	208200	473.58
83836	91300	464.70	208200	473.65
84548	91300	464.78	208200	473.75
86951	91300	464.97	208200	473.92
88045	91300	465.13	208200	474.10
89053	91300	465.32	208200	474.30
91637	91300	465.55	208200	474.51
92941	91300	465.72	208200	474.69
94908	91300	465.80	208200	474.77
96104	91300	465.89	208200	474.85
97918	95700	466.26	212500	475.12
100038	95700	466.52	212500	475.30
101623	95700	466.67	212500	475.43
102743	95700	466.80	212500	475.54
104211	95700	466.93	212500	475.64
106934	95700	467.10	212500	475.75
108112	95700	467.69	212500	476.09
108609	95700	468.14	212500	476.32

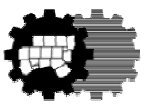


CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
109000	95700	468.52	212500	476.55
109328	95700	469.06	212500	476.93
109427	95700	469.45	212500	477.06
109468	FM 157			
109509	95700	470.00	212500	477.22
109616	95700	469.75	212500	477.12
111679	95700	471.52	212500	478.01
112574	95700	472.42	212500	478.73
116053	95700	475.31	212500	481.28
118369	96500	476.83	214000	483.35
119740	96500	477.58	214000	484.30
120428	96500	477.88	214000	484.59
120930	96500	478.18	214000	484.79
121401	96500	478.50	214000	485.05
122304	96500	478.79	214000	485.39
122858	96500	478.91	214000	485.59
123744	96500	479.08	214000	485.88
124300	Walker Branch (LB)			
125016	94500	479.39	208800	486.28
125562	94500	479.52	208800	486.49
126400	94500	479.74	208800	486.74
127781	94500	479.81	208800	486.82
127872	94500	479.82	208800	486.83
127873	94500	479.82	208800	486.84
127880.5	Trammel-Davis Road			
127888	94500	479.84	208800	486.85
127889	94500	479.84	208800	486.85
127989	94500	479.84	208800	486.86
130407	94500	479.93	208800	486.94
130918	94500	479.95	208800	486.96
131467	94500	479.99	208800	487.00
133290	94500	480.12	208800	487.11
133369	94500	480.13	208800	487.12
133370	94500	480.11	208800	487.12

CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
133391	Bedford-Arlington Road			
133412	94500	480.14	208800	487.13
133413	94500	480.16	208800	487.14
133499	97800	480.18	212700	487.15
136930	97800	480.41	212700	487.36
138208	97800	480.47	212700	487.42
140885	97800	480.61	212700	487.58
141285	Village Creek (RB)			
142669	81100	480.70	192500	487.69
144480	81100	480.78	192500	487.76
147512	81100	480.87	192500	487.85
148106	81100	480.95	192500	487.92
148663	81100	481.08	192500	488.04
149202	81100	480.99	192500	488.12
150374	81100	482.34	192500	488.51
151136	81100	482.96	192500	488.84
151932	81100	484.10	192500	489.57
153293	81100	485.19	192500	490.33
154301	81100	485.77	192500	490.98
154403	81100	485.88	192500	491.09
154404	81100	485.64	192500	491.01
154424	Precinct Line Road			
154444	81100	486.00	192500	491.18
154445	81100	486.26	192500	491.24
154527	81100	486.26	192500	491.26
155714	81100	487.03	192500	492.19
158061	81100	488.39	192500	493.74
160878	81100	490.18	192500	495.56
161634	81100	490.80	192500	496.39
162435	81100	491.15	192500	496.92
165243	85800	492.26	197300	498.42
171900	85800	494.95	197300	500.95
176313	85800	498.95	197300	505.75
177485	85800	499.99	197300	507.41

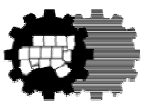


CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
178263	85800	500.59	197300	508.20
178377	85800	501.11	197300	509.44
178428	IH 820			
178479	85800	501.49	197300	510.89
178664	85800	501.54	197300	511.07
179075	85800	502.10	197300	511.95
180455	85800	502.36	197300	512.11
181265	85800	502.30	197300	511.58
181285	85800	502.18	197300	510.95
181326	Handley-Ederville Road			
181367	85800	502.31	197300	511.65
181471	85800	502.37	197300	512.03
181475	85800	502.34	197300	511.99
181475	channel dam			
181479	85800	502.34	197300	511.99
181521	85800	502.47	197300	512.27
182146	85800	502.73	197300	512.85
183096	85800	503.00	197300	513.13
183709	85800	503.23	197300	514.14
184495	85800	503.71	197300	514.87
184965	Big Fossil Creek (LB)			
185387	64700	504.46	148500	515.47
185909	64700	504.54	148500	515.51
187025	64700	504.46	148500	515.54
187075	64700	504.47	148500	515.56
187076	64700	504.47	148500	515.57
187076	channel dam			
187080	64700	504.47	148500	515.58
187126	64700	504.62	148500	515.67
187647	64700	504.55	148500	515.73
188241	64700	505.25	148500	515.90
189097	64700	505.47	148500	515.98
189901	64700	505.63	148500	516.00
190115	64700	505.64	148500	516.01

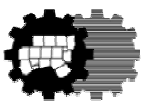


CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
190275	64700	505.71	148500	516.02
190456	64700	505.70	148500	516.03
190850	64700	505.75	148500	516.03
191625	64700	505.89	148500	516.08
192756	64700	506.11	148500	516.12
193090	64700	506.24	148500	516.16
193550	64700	506.36	148500	516.24
193960	64700	506.73	148500	516.33
195089	64700	507.01	148500	516.50
195526	64700	507.22	148500	516.63
196680	64700	508.14	148500	517.03
198174	64700	509.35	148500	517.78
199816	64700	510.43	148500	518.57
204336	64700	511.18	148500	519.05
205240	64700	511.67	148500	519.51
206218	64700	512.00	148500	519.78
206314	64700	512.04	148500	519.87
206327	East 1st Street			
206340	64700	512.33	148500	519.99
206439	64700	512.30	148500	519.96
208797	75300	513.09	158800	520.45
209288	75300	513.25	158800	520.64
209960	75300	513.48	158800	520.90
210574	75300	514.10	158800	521.24
211133	75300	514.49	158800	521.58
212018	75300	515.17	158800	522.05
213435	75300	516.30	158800	523.53
214788	75300	517.29	158800	524.38
214946	75300	517.44	158800	524.55
215762	75300	517.88	158800	525.03
217369	75300	518.85	158800	525.76
218384	75300	518.98	158800	525.73
218496	75300	519.02	158800	525.81
218528	Beach Street			

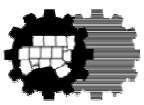
CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
218560	75300	519.11	158800	526.60
218677	75300	519.69	158800	527.67
219536	75300	519.88	158800	527.95
220156	Sycamore Creek (RB)			
220594	51700	520.14	129600	528.17
221044	51700	520.14	129600	528.18
221650	51700	520.16	129600	528.19
222503	51700	520.20	129600	528.16
222789	51700	520.15	129600	528.06
222896	51700	519.74	129600	527.37
222897	51700	519.72	129600	527.30
222947	Riverside Drive			
222998	51700	520.41	129600	528.44
223089	51700	520.49	129600	528.69
223377	51700	520.97	129600	529.36
223820	51700	521.32	129600	530.14
224594	51700	521.43	129600	530.26
225271	51700	521.52	129600	530.39
225658	51700	521.53	129600	530.34
225923	51700	521.56	129600	530.44
226962	51700	521.65	129600	530.52
227288	51700	521.72	129600	530.60
227980	51700	521.79	129600	530.73
228084	51700	521.68	129600	530.37
228085	51700	521.68	129600	530.37
228095	CRIP Railroad			
228105	51700	521.75	129600	530.62
228106	51700	521.75	129600	530.62
228208	51700	521.81	129600	530.94
228755	51700	521.96	129600	531.20
229360	51700	522.10	129600	531.29
229462	51700	522.11	129600	531.24
229463	51700	522.12	129600	531.24
229494.5	East 4th Street			



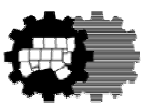
CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
229526	51700	522.18	129600	531.57
229527	51700	522.18	129600	531.58
229630	51700	522.32	129600	532.00
230254	51700	522.53	129600	532.49
230852	51700	522.67	129600	532.92
230949	51700	522.61	129600	532.79
230950	51700	522.61	129600	532.79
231025	SH 121			
231100	51700	522.70	129600	533.12
231101	51700	522.71	129600	533.12
231188	51700	522.79	129600	533.22
231242	51700	522.79	129600	533.25
231291	51700	522.71	129600	533.12
231292	51700	522.71	129600	533.12
231316	Belknap Street			
231340	51700	522.80	129600	533.47
231341	51700	522.80	129600	533.47
231452	51700	522.82	129600	533.48
232217	51700	522.92	129600	533.70
233091	51700	523.36	129600	534.56
233994	51700	523.48	129600	534.80
234857	50500	523.54	122500	534.96
235192	50500	523.63	122500	535.12
235296	50500	523.56	122500	534.98
235297	50500	523.56	122500	534.98
235355	IH 35E W			
235412	50500	523.62	122500	535.08
235413	50500	523.63	122500	535.08
235522	50500	523.65	122500	535.12
236729	50500	523.86	122500	535.49
237615	50500	523.79	122500	535.43
238288	50500	523.98	122500	535.71
238390	50500	523.98	122500	535.72
238391	50500	523.98	122500	535.73



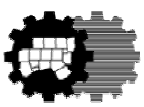
CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
238401	Union Pacific Railroad			
238411	50500	524.02	122500	535.93
238412	50500	524.02	122500	535.93
238508	50500	523.94	122500	535.86
238751	50500	524.11	122500	535.80
239095	50500	524.33	122500	535.84
239197	50500	524.31	122500	535.81
239198	50500	524.31	122500	535.81
239229.5	Northside Drive			
239261	50500	524.39	122500	536.04
239262	50500	524.39	122500	536.04
239369	50500	524.49	122500	536.31
239744	50500	524.57	122500	536.54
240517	50500	524.84	122500	537.07
241255	50500	524.99	122500	537.27
241708	50500	525.15	122500	537.32
241811	50500	525.04	122500	537.09
241812	50500	525.04	122500	537.08
241825	Union Pacific Railroad			
241838	50500	525.20	122500	537.69
241839	50500	525.20	122500	537.70
241926	50500	525.20	122500	537.72
241927	50500	525.20	122500	537.72
241937	BNSF Railroad			
241947	50500	525.25	122500	538.25
241948	50500	525.25	122500	538.26
242099	50500	525.24	122500	538.54
242100	50500	525.24	122500	538.46
242110	BNSF Railroad			
242120	50500	525.32	122500	538.75
242121	50500	525.33	122500	538.97
242222	50500	525.63	122500	538.98
242259	50500	525.61	122500	538.94
242318	50500	525.59	122500	538.73



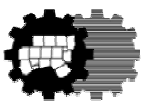
CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
242340.5	Samuels Avenue			
242363	50500	525.89	122500	538.89
242451	50500	526.29	122500	539.78
242813	48400	526.21	118600	539.79
243471	48400	526.50	118600	539.77
243785	48400	526.59	118600	539.75
244635	48400	526.82	118600	539.94
244735	48400	526.77	118600	539.88
244736	48400	526.77	118600	539.88
244766.5	Northside Drive			
244797	48400	526.91	118600	540.39
244798	48400	526.91	118600	540.39
244898	48400	527.18	118600	540.70
245960	48400	527.56	118600	541.26
247106	48400	528.16	118600	542.30
247156	48400	528.17	118600	542.30
247157	48400	527.85	118600	542.11
247157	channel dam			
247172	48400	527.86	118600	542.11
247173	48400	528.27	118600	542.35
247207	48400	528.23	118600	542.34
247307	48400	528.22	118600	542.33
247957	48400	528.38	118600	542.21
248861	48400	528.73	118600	542.73
249891	48700	529.12	118600	543.05
250903	48700	529.59	118600	543.44
251970	48700	529.91	118600	543.70
251976	48700	530.08	118600	543.86
252010	48700	530.09	118600	543.88
252041	Nutt Dam			
252042	48700	533.09	118600	543.88
252091	48700	533.30	118600	544.11
252218	48700	533.29	118600	544.28
252218	USGS Fort Worth Gage			



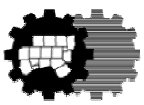
CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
252603	48700	533.70	118600	544.31
253140	48700	533.58	118600	543.65
253240	48700	533.83	118600	544.65
253241	48700	533.53	118600	543.83
253241	North Main Street			
253301	48700	533.69	118600	544.18
253302	48700	534.62	118600	546.79
253414	48700	534.66	118600	546.55
253803	48700	535.28	118600	547.27
254060	48700	535.25	118600	547.37
254112	48700	535.62	118600	547.87
254113	48700	535.62	118600	547.88
254118	pedestrian bridge			
254123	48700	535.66	118600	548.39
254124	48700	535.67	118600	548.40
254165	48700	535.43	118600	548.91
254346	48700	536.31	118600	550.02
254596	Clear Fork (RB)			
255442	35400	537.26	59700	551.14
256107	35400	537.77	59700	551.26
257010	35400	538.08	59700	551.44
257426	35400	538.18	59700	551.56
257535	35400	538.22	59700	551.56
257536	35400	538.22	59700	551.56
257546	Fort Worth and Western Railroad			
257557	35400	538.37	59700	551.76
257654	35400	538.48	59700	551.79
258103	35400	539.15	59700	552.10
258678	35400	539.14	59700	552.10
259003	35400	539.12	59700	552.07
259337	35400	539.10	59700	551.97
259463	35400	538.72	59700	551.67
259500.5	SH 199/Henderson Street			
259538	35400	539.06	59700	551.97



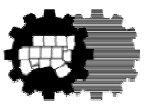
CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
259657	35400	539.79	59700	552.22
260385	35400	540.72	59700	553.12
261002	35400	540.80	59700	553.19
262394	35400	540.66	59700	553.31
262497	35400	540.74	59700	553.31
262548	University Drive			
262599	35400	541.48	59700	553.44
262705	35400	542.14	59700	553.42
263531	35400	542.84	59700	553.63
264804	35400	542.93	59700	553.66
266213	35400	543.02	59700	553.68
267221	35400	543.03	59700	553.64
268190	35400	543.52	59700	553.81
269070	35400	543.80	59700	554.00
269743	35400	544.07	59700	554.09
270249	35400	544.13	59700	554.09
270730	35400	544.54	59700	554.25
271402	35400	544.55	59700	554.18
271794	35400	544.76	59700	554.27
272377	35400	544.95	59700	554.41
273102	35400	544.73	59700	554.34
273902	35400	545.48	59700	554.65
274754	35400	546.27	59700	555.04
275461	35400	546.24	59700	554.83
275969	35400	546.94	59700	555.33
276325	35400	547.11	59700	555.47
276562	35400	547.42	59700	555.88
276627	White Settlement Road			
276692	35400	547.76	59700	556.16
276853	35400	547.83	59700	556.17
277391	35400	548.46	59700	556.80
278130	35400	548.84	59700	557.12
279002	35400	549.22	59700	557.51
280042	35400	549.70	59700	557.75



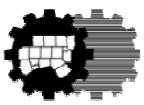
CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
281199	35400	550.30	59700	558.26
281771	35400	551.04	59700	559.13
281820	35400	551.07	59700	559.27
281821	35400	551.21	59700	559.30
281821	Tucker Dam			
281831	35400	551.22	59700	559.42
281832	35400	551.27	59700	559.37
281871	35400	551.28	59700	559.38
282801	35400	551.19	59700	559.21
283400	35400	551.71	59700	559.67
283853	35400	551.99	59700	559.97
284944	35400	552.86	59700	560.78
285970	35400	553.48	59700	561.35
286710	35400	553.83	59700	561.65
286808	35400	553.93	59700	561.62
286844	White Settlement Road			
286880	35400	554.09	59700	561.84
286976	35400	554.18	59700	562.16
287615	35400	554.55	59700	562.62
288475	35400	555.20	59700	563.06
289136	35400	555.55	59700	563.49
289236	35400	555.41	59700	563.14
289274.5	SH 183/River Oaks Boulevard			
289313	35400	555.59	59700	563.35
289379	35400	555.77	59700	563.76
289428	35400	555.80	59700	563.79
289429	35400	555.82	59700	563.93
289429	channel dam			
289441	35400	555.84	59700	563.94
289442	35400	555.85	59700	563.90
289479	35400	555.86	59700	563.92
290271	35400	556.35	56400	564.43
290370	Farmers Branch (RB)			
291282	35400	557.00	56400	565.44



CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
291834	35400	557.29	56400	565.23
292711	35400	557.82	56400	565.71
293499	35400	558.53	56400	566.49
293600	35400	558.36	56400	566.17
293621	Carswell Access Road			
293642	35400	558.47	56400	566.25
293744	35400	558.90	56400	566.97
294211	35400	559.15	56400	566.99
295195	35400	559.56	56400	567.22
296125	35400	560.19	56400	567.82
296992	35400	560.69	56400	568.08
297107	35400	560.88	56400	568.11
297126.5	Meandering Road			
297146	35400	560.96	56400	568.21
297265	35400	561.02	56400	568.42
297822	35400	561.44	56400	569.12
298198	35400	561.61	56400	569.23
298248	35400	561.65	56400	569.25
298249	35400	561.24	56400	569.22
298249	channel dam			
298259	35400	561.26	56400	569.23
298260	35400	561.39	56400	569.22
298300	35400	561.57	56400	569.43
298645	35400	562.51	56400	569.64
299489	35400	563.66	56400	570.22
299539	35400	563.73	56400	570.25
299540	35400	563.72	56400	570.27
299540	channel dam			
299545	35400	563.72	56400	570.28
299546	35400	563.80	56400	570.28
299590	35400	563.86	56400	570.30
300278	35400	564.59	56400	570.64
301177	35400	565.91	56400	571.29
302041	35400	566.60	56400	571.82



CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
303421	35400	567.57	56400	572.44
304157	35400	568.04	56400	572.79
304207	35400	568.07	56400	572.83
304208	35400	567.94	56400	572.75
304208	channel dam			
304213	35400	567.94	56400	572.76
304214	35400	567.80	56400	572.59
304259	35400	567.85	56400	572.65
305256	35400	568.92	56400	573.80
306246	35400	569.28	56400	574.25
299540	35400	563.72	56400	570.26
299545	35400	563.72	56400	570.26
299546	35400	563.81	56400	570.27
299590	35400	563.87	56400	570.29
300278	35400	564.60	56400	570.63
301177	35400	565.91	56400	571.28
302041	35400	566.60	56400	571.81
303421	35400	567.57	56400	572.43
304157	35400	568.03	56400	572.79
304207	35400	568.06	56400	572.83
304208	35400	567.93	56400	572.75
304213	35400	567.94	56400	572.75
304214	35400	567.79	56400	572.58
304259	35400	567.85	56400	572.64
305256	35400	568.92	56400	573.80
306246	35400	569.28	56400	574.26
306670	Lake Worth Dam			
SPLIT FLOW AREA IN LOWER WEST FORK				
37866	11600	437.92	n/a	n/a
38059	11600	437.94	n/a	n/a
41697	11600	437.96	n/a	n/a
42751	11600	438.01	n/a	n/a
42961	11600	438.01	n/a	n/a



CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
43369	11600	438.22	n/a	n/a
44153	11600	439.87	n/a	n/a
44232	11600	440.46	n/a	n/a
44291.5	Belt Line Road			
44351	11600	441.06	n/a	n/a
44427	11600	441.24	n/a	n/a
46329	11600	441.95	n/a	n/a
49477	11600	442.16	n/a	n/a
50225	11600	442.35	n/a	n/a
51481	11600	442.50	n/a	n/a
52592	11600	443.10	n/a	n/a
53730	3000	443.17	n/a	n/a
54255	3000	443.19	n/a	n/a
54330	Hardrock Road			
54405	3000	447.49	n/a	n/a

APPENDIX B.2

TABLE 2-B
CLEAR FORK TRINITY RIVER
100-YEAR FLOOD AND SPF WATER SURFACE ELEVATIONS
FUTURE CONDITIONS

CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
0	Clear Fork/West Fork confluence			
477	32600	537.14	78100	551.07
483	pedestrian bridge			
489	32600	537.15	78100	551.15
935	32600	537.13	78100	551.14
1324	32600	537.74	78100	551.23
1427	32600	537.85	78100	551.30
1428	32600	537.86	78100	551.30
1463	SH 199/Henderson Street			
1499	32600	538.08	78100	551.55
1605	32600	538.33	78100	551.56
2249	32600	538.68	78100	551.77
3423	32600	539.64	78100	552.40
4267	32600	539.88	78100	552.48
4371	32600	539.90	78100	552.56
4372	32600	539.91	78100	552.56
4402	West 7th Street			
4433	32600	540.02	78100	552.72
4535	32600	540.12	78100	552.73
5170	32600	540.45	78100	552.65
5990	32600	541.52	78100	553.85
6101	32600	541.42	78100	553.86
6102	32600	541.42	78100	553.87
6129.5	Lancaster Avenue			
6158	32600	541.48	78100	553.90

CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
6258	32600	541.85	78100	554.02
6656	32600	541.91	78100	553.96
6707	32600	541.80	78100	553.94
6707	channel dam			
6757	32600	541.90	78100	553.96
7400	32600	542.15	78100	554.05
8073	32600	542.91	78100	554.48
8178	32600	542.95	78100	554.31
8179	32600	542.95	78100	554.31
8189	Fort Worth and Western Railroad			
8200	32600	543.15	78100	554.57
8243	32600	542.77	78100	554.91
8243	channel dam			
8293	32700	543.75	79600	554.87
9045	32700	544.80	79600	555.21
9515	32700	545.15	79600	555.40
9566	32700	544.84	79600	555.37
9614	32700	545.41	79600	555.49
10175	32700	545.68	79600	555.68
10906	32700	546.01	79600	555.89
10956	32700	545.46	79600	555.72
10956	channel dam			
11006	32700	546.38	79600	555.98
11918	32700	546.77	79600	556.00
12019	32700	546.92	79600	556.32
12020	32700	546.92	79600	556.32
12075	IH 30			
12130	32700	547.11	79600	556.62
12131	32700	547.11	79600	556.55
12261	32700	547.12	79600	556.49
12262	32700	547.12	79600	556.49
12287	Vickery Street			
12313	32700	547.38	79600	556.97
12411	32700	547.50	79600	557.23

CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
12541	32700	547.61	79600	557.93
12565	32700	547.92	79600	558.14
12616	city dam no. 2			
12626	32700	552.03	79600	558.91
12665	32700	552.02	79600	558.79
12688	32700	552.02	79600	558.73
12703.5	Union Pacific Railroad			
12719	32700	552.20	79600	559.09
12765	32700	552.17	79600	559.14
12766	32700	552.17	79600	559.26
12826	Rosedale Street			
12886	32700	552.39	79600	559.58
12887	32700	552.39	79600	559.58
12988	32700	552.44	79600	560.64
13376	32700	552.72	79600	561.01
13381	32700	552.73	79600	561.02
13386	Miniature Railroad			
13396	32700	552.78	79600	561.19
14297	32700	553.80	79600	561.72
14949	32700	554.22	79600	562.15
15442	32700	554.62	79600	562.87
15613	32700	554.74	79600	562.73
15948	32700	555.32	79600	563.61
16054	32700	555.38	79600	563.55
16077.5	University Drive - north bound			
16100	32700	555.43	79600	563.75
16120	32700	555.37	79600	563.63
16140	University Drive - south bound			
16161	32700	555.43	79600	563.85
16268	32700	555.46	79600	564.16
16547	32700	555.46	79600	564.02
16746	32700	555.68	79600	564.53
17057	32700	555.75	79600	564.49
17161	32700	556.19	79600	564.51

CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
17162	32700	556.19	79600	564.53
17183.5	Rogers Road			
17206	32700	556.31	79600	565.08
17302	32700	556.38	79600	565.34
17746	32700	556.96	79600	565.64
18275	32700	557.24	79600	565.78
18867	32700	557.79	79600	565.99
19645	32700	558.64	79600	567.12
20351	32700	559.41	79600	568.19
21239	32700	560.43	79600	569.83
21279	32700	560.13	79600	569.49
21279	channel dam			
21329	32700	560.61	79600	569.98
21844	32700	561.23	79600	570.68
22604	32700	562.33	79600	571.93
23535	32700	563.71	79600	573.52
24198	32700	564.84	79600	574.81
24297	32700	565.55	79600	575.89
24298	32700	565.56	79600	575.89
24326	Hulen Street			
24355	32700	565.71	79600	576.07
24456	32700	565.58	79600	575.77
25321	32700	567.01	79600	577.06
25371	32700	567.05	79600	577.28
25421	32700	567.29	79600	577.61
26300	32700	568.11	79600	578.54
27364	32700	569.46	79600	579.72
28689	32700	571.78	79600	582.19
29100	Overton Woods diversion channel			
29435	32700	572.96	79600	584.95
29485	32700	572.83	79600	585.03
29535	32700	573.43	79600	585.41
29613	32700	573.49	79600	584.87
29638	32700	571.76	79600	584.13

CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
29663	32700	574.81	79600	586.58
30174	32700	576.11	79600	587.02
30913	32700	577.25	79600	587.65
31770	32700	578.57	79600	588.82
32371	32700	579.79	79600	590.00
32940	32700	580.54	79600	590.03
33577	32700	581.69	79600	591.21
34116	32700	582.67	79600	592.29
34699	32700	584.20	79600	594.60
34814	32700	583.50	79600	593.34
34830	Bryant-Irvin Road north bound			
34846	32700	584.44	79600	594.56
34878	32700	584.68	79600	594.88
34896.5	Bryant-Irvin Road north bound			
34915	32700	585.27	79600	595.55
34957	32700	586.42	79600	597.63
35016	32700	586.04	79600	597.76
35016	channel dam			
35076	32700	586.69	79600	598.02
35519	27600	587.55	71800	598.29
35969	27600	588.00	71800	598.54
36466	27600	588.76	71800	598.85
37449	27600	590.08	71800	599.90
38091	27600	590.68	71800	600.17
38738	27600	591.20	71800	600.57
39023	27600	592.20	71800	601.83
39056	27600	593.81	71800	600.69
39056	channel dam			
39068	27600	594.84	71800	601.99
39101	27600	597.35	71800	607.14
39380	27600	597.59	71800	606.97
39879	27600	598.00	71800	607.76
39977	27600	597.98	71800	607.49
40020.5	SH 183/Southwest Boulevard			

CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
40064	27600	598.12	71800	607.67
40178	27600	598.00	71800	608.23
41045	27600	600.83	71800	610.54
41445	Marys Creek (LB)			
43324	13000	609.67	71800	614.81
44342	13000	610.88	71800	615.99
45015	13000	611.41	71800	618.35
45544	13000	612.12	71800	620.23
46175	13000	612.67	71800	621.31
46489	13000	612.67	71800	621.11
46490	13000	612.67	71800	621.11
46550	IH 20/Loop 820			
46610	13000	612.86	71800	622.78
46611	13000	612.87	71800	622.79
46736	13000	613.00	71800	624.36
49420	13000	615.80	71800	627.64
50598	13000	617.50	71800	628.33
51599	13000	618.70	71800	628.89
52140	13000	619.18	71800	629.10
52192	13000	619.18	71800	629.14
52192	Rawls Dam			
52242	13000	619.27	71800	629.17
53352	13000	620.35	71800	629.80
53901	13000	621.17	71800	630.46
54806	13000	622.40	71800	631.31
57021	13000	624.62	71800	632.64
58850	13000	626.96	71800	634.00
60451	13000	630.14	71800	635.55
60850	Benbrook Lake spillway channel			
61472	1	631.00	1	636.28
62405	1	631.00	1	636.28
62953	1	631.00	1	636.28

CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
64380	1	631.00	1	636.28
65344	1	631.00	1	636.28
65616	1	631.00	1	636.28
66206	Benbrook Lake Dam			

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APPENDIX B.2

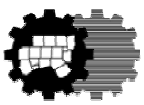
TABLE 2-C

ELM FORK TRINITY RIVER
100-YEAR FLOOD AND SPF WATER SURFACE ELEVATIONS
FUTURE CONDITIONS

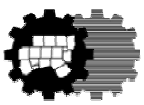
CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF FLOOD WSEL (FEET)
0	Elm Fork/West Fork confluence			
3013	28800	424.02	106200	436.01
3118	28800	424.04	106200	436.06
3119	28800	424.04	106200	436.06
3154	Shady Grove Road			
3190	28800	424.06	106200	436.10
3295	28800	424.07	106200	436.11
4076	28800	424.10	106200	436.20
4653	28800	424.11	106200	436.21
4759	28800	424.12	106200	436.23
4760	28800	424.11	106200	436.22
4792.5	SH 356/Irving Boulevard			
4826	28800	424.12	106200	436.30
4925	28800	424.13	106200	436.32
5438	28800	424.14	106200	436.36
5965	28800	424.16	106200	436.40
6563	28800	424.17	106200	436.43
6667	28800	424.18	106200	436.46
6668	28800	424.19	106200	436.46
6678	CRIP Railroad			
6689	28800	424.20	106200	436.48
6783	42700	424.14	106200	436.49
7355	42700	424.26	106200	436.64
7829	42700	424.31	106200	436.68
8599	42700	424.39	106200	436.72

CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF FLOOD WSEL (FEET)
9594	42700	424.57	106200	436.88
10532	42700	424.66	106200	436.97
11576	42700	424.77	106200	437.09
12658	42700	424.83	106200	437.19
13293	43100	424.87	106200	437.22
13842	43100	424.92	106200	437.28
13940	43100	424.93	106200	437.29
13941	43100	424.94	106200	437.32
13961	43100	424.95	106200	437.33
13962	43100	424.95	106200	437.33
14062	43100	424.95	106200	437.33
14317	43100	424.95	106200	437.33
14411	43100	424.96	106200	437.33
14478	SH 183/John W. Carpenter Freeway			
14544	43100	424.98	106200	437.40
14545	43100	424.99	106200	437.40
14648	43100	425.00	106200	437.41
15678	43100	425.10	106200	437.52
16649	43100	425.19	106200	437.63
17615	43100	425.29	106200	437.76
18521	43100	425.31	106200	437.77
18570	43100	425.32	106200	437.78
18571	43100	425.29	106200	437.70
18571	Frasier Dam			
18576	43100	425.29	106200	437.70
18577	43100	425.34	106200	437.82
18621	43100	425.35	106200	437.83
19477	42500	425.42	103200	437.91
20480	42500	425.54	103200	438.04
21333	42500	425.59	103200	438.07
22356	42900	425.65	103200	438.10
22456	42900	425.65	103200	438.04
22457	42900	425.71	103200	438.15

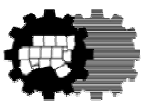
CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF FLOOD WSEL (FEET)
22501	SH 482/Storey Lane			
22546	42900	425.74	103200	438.26
22649	42900	425.72	103200	438.26
23574	42900	425.93	103200	438.38
23874	Daniels Creek (RB)			
24534	42900	426.03	102500	438.44
25248	42900	426.07	102500	438.45
26342	42900	426.12	102500	438.48
27249	42900	426.22	102500	438.51
28109	42900	426.32	102500	438.55
28770	42900	426.55	102500	438.60
29170	42900	426.88	102500	438.65
29319	42900	427.04	102500	438.65
29320	42900	427.04	102500	438.68
29378.5	Loop 12/Walton Walker Boulevard			
29438	42900	427.10	102500	438.80
29539	42900	427.12	102500	438.84
30755	42900	427.24	102500	438.92
31605	45600	427.32	102500	438.95
32748	36400	427.58	102500	439.04
34078	36400	427.76	102500	439.12
34178	36400	427.70	102500	439.12
34179	36400	427.86	102500	439.15
34191.5	Wildwood Drive			
34205	36400	427.90	102500	439.17
34320	36400	427.91	102500	439.18
36107	36400	428.08	102500	439.24
37169	36400	428.46	102500	439.45
37297	36400	428.48	102500	439.38
37298	36400	428.71	102500	439.72
37307	Burlington Northern Railroad			
37317	36400	428.76	102500	439.73
37450	36400	428.82	102500	439.78
39820	36400	428.97	102500	439.90



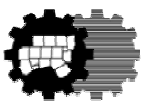
CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF FLOOD WSEL (FEET)
40767	36400	429.02	102500	439.94
42882	36400	429.23	102500	440.06
42992	36400	429.25	101900	440.07
42993	36400	429.33	101900	440.10
43005.5	California Crossing Road			
43019	36400	429.38	101900	440.15
43144	36400	429.37	101900	440.15
44243	36400	429.61	101900	440.26
44293	36400	429.63	101900	440.27
44294	36400	429.38	101900	440.10
44294	California Crossing Dam			
44299	36400	429.38	101900	440.10
44300	36400	429.77	101900	440.36
44345	36400	429.79	101900	440.39
47791	36400	430.41	101900	440.66
48610	36400	430.55	101900	440.76
48711	36400	430.57	101900	440.77
48712	36400	430.76	101900	440.82
48756	SH 483/Northwest Highway			
48801	36400	430.96	101900	440.93
48911	36400	430.98	101900	440.93
49916	45600	431.22	101900	441.08
50753	45600	431.35	101900	441.15
51512	45600	431.39	101900	441.17
52394	45600	431.42	101900	441.18
53292	45600	431.43	101900	441.20
53292	Hackberry Creek (RB)			
54233	45100	431.53	99300	441.25
54985	45100	431.62	99300	441.29
55696	45100	431.82	99300	441.33
57195	45100	432.06	99300	441.36
58046	46400	432.40	99400	441.41
58429	46400	432.52	99400	441.45
58532	46400	432.86	99400	441.29



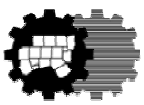
CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF FLOOD WSEL (FEET)
58572	Royal Lane			
58612	46400	433.10	99400	441.56
58654	46400	433.32	99400	441.68
59073	46400	433.61	99400	441.81
59073	Farmers Branch (LB)			
59960	46400	433.74	99400	441.86
60810	46400	433.75	99400	441.87
61203	46500	433.74	98300	441.86
62351	46500	433.86	98300	441.96
63381	46500	433.89	98300	442.01
64104	46500	433.82	98300	442.05
64195	46500	433.98	98300	442.10
64196	46500	433.98	98300	442.10
64240	IH 635/LBJ Freeway east bound			
64285	46500	434.14	98300	442.20
64405	46500	434.26	98300	442.26
64406	46500	434.26	98300	442.26
64450	IH 635/LBJ Freeway west bound			
64495	46500	434.40	98300	442.36
64617	46500	434.33	98300	442.31
65313	46500	435.01	98300	442.74
66159	46500	435.57	98300	443.04
67169	46500	436.01	98300	443.37
67264	46500	435.65	98300	443.14
67265	46500	435.65	98300	443.14
67314	Valley View Lane			
67364	46500	435.93	98300	444.09
67474	46500	436.34	97300	444.32
68705	46500	437.25	97300	444.93
69701	46500	437.49	97300	445.16
70593	46700	437.56	95300	445.24
71682	46700	437.77	95300	445.38
72510	Cooks Branch (LB)			
72713	46900	437.93	95100	445.50



CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF FLOOD WSEL (FEET)
76475	46600	438.36	93300	445.75
78187	46600	438.69	93300	445.94
80579	46600	439.21	93300	446.20
80780	Grapevine Creek (RB)			
81848	45100	439.57	90100	446.40
82762	45100	439.75	90100	446.50
83530	45100	439.92	90100	446.60
83680	Hutton Branch (LB)			
84436	45400	440.11	89800	446.70
84959	45400	440.29	89800	446.79
86107	45400	440.40	89800	446.84
86793	45400	440.61	89800	446.99
87191	45400	440.52	89800	446.86
87338	45400	440.51	89800	446.69
87339	45400	440.65	89800	446.93
87383	Belt Line Road			
87428	45400	440.91	89800	447.87
87521	45400	441.54	89800	448.52
87522	45400	441.54	89800	448.53
87531	Southern Pacific Railroad			
87541	45400	441.61	89800	448.64
87645	45400	441.58	89800	448.63
88712	45400	442.71	89800	449.29
89694	51500	443.49	99200	449.38
90532	51500	443.70	99200	449.43
91530	51500	443.92	99200	449.49
92351	51500	443.95	99200	449.52
93141	51500	443.78	99200	449.55
93190	51500	443.84	99200	449.58
93191	51500	442.69	99200	449.53
93191	USGS Carrollton Gage			
93196	51500	443.06	99200	449.53
93197	51500	444.56	99200	449.61
93212	51500	444.55	99200	449.60



CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF FLOOD WSEL (FEET)
93254.5	Sandy Lake Road			
93297	51500	444.54	99200	449.61
93359	51500	444.80	99200	449.71
93940	51500	445.84	99200	449.84
95100	Denton Creek (RB)			
97178	49600	447.98	92700	450.31
97919	49600	448.29	92700	450.53
98884	49600	448.48	92700	450.73
99708	49600	448.61	92700	450.88
101428	49600	448.73	92700	451.02
102386	Furneaux Creek (RB)			
102686	49600	448.81	92700	451.11
105167	35600	449.01	66600	451.35
105936	35600	449.35	66600	451.70
106657	35600	449.54	66600	451.91
107710	Timber Creek (RB)			
107964	35600	449.84	66600	452.22
109445	35600	450.02	66600	452.46
110074	35600	450.42	66600	453.01
110174	35600	450.45	66600	453.01
110194	IH 35E access road			
110214	35600	450.60	66600	453.30
110261	35600	450.77	66600	453.61
110323	IH 35E/Stemmons Freeway			
110385	35600	451.18	66600	454.37
110435	35600	451.16	66600	454.36
110455	IH 35E access road			
110475	35600	451.33	66600	454.78
110572	35600	451.83	66600	455.37
111934	22100	452.27	66600	455.91
112494	22100	452.32	66600	456.04
112617	22100	452.32	66600	456.05
112622	Union Pacific Railroad			
112627	22100	452.34	66600	456.08

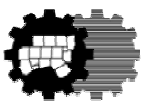


CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF FLOOD WSEL (FEET)
112732	22100	452.35	66600	456.12
113864	24600	452.45	66600	456.26
116381	24600	452.57	66600	456.38
118732	24600	452.70	66600	456.50
118732	Indian Creek (LB)			
119714	21000	452.79	66600	456.61
120752	21000	452.88	66600	456.77
122744	21000	453.06	66600	457.12
122844	SH 121 Lewisville bypass			
122944	21000	453.09	66600	457.20
123524	21000	453.16	66600	457.32
124975	21000	453.30	66600	457.50
125658	21000	453.41	66600	457.69
126171	10300	453.64	10600	457.88
126172	10300	453.65	10600	457.88
126232	Hebron Parkway			
126292	10300	453.67	10600	457.88
126293	10300	453.66	10600	457.89
126818	10300	453.73	10600	457.90
126819	10300	453.73	10600	457.91
127374	10300	453.79	10600	457.92
127686	10300	453.86	10600	457.94
128259	10300	453.92	10600	457.97
129048	10300	454.00	10600	457.99
129689	10300	454.10	10600	458.01
130377	10300	454.43	10600	458.04
130977	10300	454.68	10600	458.06
131532	10300	455.20	10600	458.26
131998	10300	455.47	10600	458.39
132656	10300	455.77	10600	458.58
132856	Midway Branch (LB)			
133634	10300	456.08	10600	458.73
134538	10300	456.27	10600	458.85
135370	10300	456.65	10600	459.03

CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF FLOOD WSEL (FEET)
136149	10300	457.11	10600	459.28
137352	10300	457.48	10600	459.47
137878	10300	457.60	10600	459.56
138514	10300	458.01	10600	459.82
139643	21000	458.59	66600	460.38
141518	21000	459.65	66600	460.99
142900	21000	460.36	66600	461.56
143756	21000	460.47	66600	461.83
144474	21000	460.58	66600	462.34
146373	21000	461.20	66600	463.95
147204	21000	461.60	66600	464.60
147300	21000	461.67	66600	464.75
147301	21000	461.66	66600	464.74
147345	SH 121			
147390	21000	461.84	66600	465.23
147489	21000	461.94	66600	465.45
148101	1	462.32	1	466.25
148723	1	462.32	1	466.25
149594	1	462.32	1	466.25
150592	1	462.32	1	466.25
151320	1	462.32	1	466.25
152100	1	462.32	1	466.25
153092	1	462.32	1	466.25
153092	Prairie Creek (RB)			
153191	1	462.32	1	466.25
153192	1	462.32	1	466.25
153206	ATSF Railroad			
153221	1	462.32	1	466.25
153328	1	462.32	1	466.25
158878	Lewisville Dam			
SPLIT FLOW AREA IN UPPER ELM FORK				
126171	10700	453.62	56000	457.84
126172	10700	453.63	56000	457.85

CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF FLOOD WSEL (FEET)
126232	Hebron Parkway			
126292	10700	453.65	56000	457.87
126293	10700	453.65	56000	457.87
126818	10700	453.72	56000	457.88
127248	10700	453.74	56000	457.93
127678	10700	453.75	56000	457.98
128188	10700	453.77	56000	458.10
128738	10700	454.05	56000	458.32
129258	10700	454.13	56000	458.49
129848	10700	454.59	56000	458.66
130418	10700	454.89	56000	459.14
131168	10700	455.70	56000	459.34
131838	10700	455.93	56000	459.61
132538	10700	456.24	56000	459.78
132780	10700	456.39	n/a	n/a
132950	10700	458.06	n/a	n/a
SPLIT FLOW AREA IN MIDDLE ELM FORK				
81	9200	427.16	n/a	n/a
408	9200	427.71	n/a	n/a
712	9200	427.92	n/a	n/a
889	9200	428.12	n/a	n/a
1069	9200	428.20	n/a	n/a
1527	9200	428.24	n/a	n/a
1693	culvert			
1859	9200	428.29	n/a	n/a
1936	9200	428.37	n/a	n/a
1985.5	SH 348/Northwest Highway			
2035	9200	428.37	n/a	n/a
2241	9200	428.37	n/a	n/a
2443	9200	428.39	n/a	n/a
2478.5	Lombardy Lane			
2514	9200	428.41	n/a	n/a
2906	9200	428.20	n/a	n/a

CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF FLOOD WSEL (FEET)
3188	9200	428.35	n/a	n/a
3525	9200	428.99	n/a	n/a
3806	9200	429.14	n/a	n/a
4071	9200	429.26	n/a	n/a
4345	9200	430.06	n/a	n/a
4677	9200	430.22	n/a	n/a
5127	9200	430.39	n/a	n/a
5841	9200	430.49	n/a	n/a
6108	9200	430.52	n/a	n/a
6448	9200	430.56	n/a	n/a
6925	9200	430.65	n/a	n/a
7360	9200	430.69	n/a	n/a
7639	9200	430.73	n/a	n/a
7856	9200	430.77	n/a	n/a
8084	9200	430.79	n/a	n/a
8217	9200	430.82	n/a	n/a
8255	Spangler Road			
8293	9200	430.83	n/a	n/a
8419	9200	430.84	n/a	n/a
8594	9200	430.91	n/a	n/a
8953	9200	430.98	n/a	n/a
9089	9200	430.80	n/a	n/a
9100	Burlington Northern Railroad			
9111	9200	431.17	n/a	n/a
LEWISVILLE LAKE SPILLWAY				
3500	21000	465.60	66600	469.49
4420	21000	468.55	66600	471.20
5080	21000	469.64	66600	472.71
5500	21000	470.00	66600	473.19
5940	21000	470.58	66600	477.24
6730	21000	472.26	66600	479.70
7310	21000	473.93	66600	485.21
7380	21000	473.26	66600	484.47



CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF FLOOD WSEL (FEET)
8300	21000	479.74	66600	489.37
9030	21000	480.70	66600	490.44
9810	21000	482.30	66600	492.54
10510	21000	483.04	66600	493.04
11770	21000	485.66	66600	495.53
11870	21000	485.90	66600	495.53
11880	ATSF Railroad			
11890	21000	486.08	66600	495.82
12720	21000	490.36	66600	500.26
13580	21000	500.73	66600	507.67
15010	21000	508.92	66600	518.50
15590	21000	512.70	66600	520.72

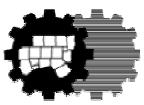
APPENDIX B.2

TABLE 2-D
TRINITY RIVER MAIN STEM
100-YEAR FLOOD AND SPF WATER SURFACE ELEVATIONS
FUTURE CONDITIONS

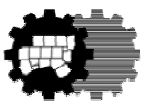
CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
25457	126900	392.70	281100	398.90
27415	126900	393.78	281100	400.15
29003	126900	394.08	281100	400.53
30157	126900	394.21	281100	400.70
32658	126900	394.70	281100	401.27
32756	126900	394.76	281100	401.36
32757	126900	394.93	281100	401.53
32772	Dowdy-Ferry Road			
32787	126900	394.97	281100	401.66
32788	126900	394.91	281100	401.61
32870	126900	395.11	281100	401.79
35192	126900	395.68	281100	402.58
36519	126900	395.88	281100	402.86
37760	126900	396.02	281100	403.03
40250	126900	396.26	281100	403.34
42590	126900	396.55	281100	403.74
44224	126900	397.11	281100	404.51
48797	126900	398.47	281100	406.28
49913	126900	398.97	281100	407.17
50003	IH20/IH 635 LBJ Freeway			
50093	126900	399.07	281100	407.36
51060	126900	399.41	281100	407.74
51200	Five Mile Creek (RB)			
52016	126900	399.62	281000	408.58
53028	126900	399.63	281000	408.60
54014	126900	399.65	281000	408.62

CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
55003	126900	399.66	281000	408.64
55893	126900	399.67	281000	408.65
56750	126900	399.69	281000	408.66
58584	126900	399.70	281000	408.68
59451	126900	399.71	281000	408.70
60954	126900	399.73	281000	408.72
62087	126900	399.75	281000	408.77
63971	126900	399.79	281000	408.82
66395	126900	399.92	281000	408.99
68027	126900	400.74	281000	409.87
69782	127400	401.25	284700	410.30
71510	127400	401.51	284700	410.46
73020	127400	401.84	284700	410.76
74136	127400	402.28	284700	411.21
75204	127400	402.86	284700	411.85
75882	127400	403.19	284700	412.09
75926	Loop 12/USGS Below Dallas Gage			
75970	127400	403.34	284700	412.84
76824	127400	404.19	284700	414.09
77843	127400	404.49	284700	414.36
78614	127500	404.59	285200	414.45
79352	127500	404.70	285200	414.59
80036	127500	404.81	285200	414.71
80641	127500	404.94	285200	414.83
81209	127500	405.11	285200	414.95
81790	127500	405.32	285200	415.15
82361	127500	405.53	285200	415.35
82361	White Rock Creek (LB)			
83381	117800	405.72	265900	415.55
84658	117800	405.84	265900	415.68
85916	117800	406.08	265900	415.91
87333	117800	406.35	265900	416.16
88626	117800	406.62	265900	416.46
89527	117800	406.83	265900	416.63
89537	Southern Pacific Railroad			

CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
89547	117800	406.90	265900	416.88
89996	117800	407.12	265900	417.09
90458	117800	407.27	265900	417.26
90498	SH 310/Central Expressway			
90538	117800	407.41	265900	417.83
91392	117800	408.08	265900	418.54
95404	119800	408.90	277000	419.17
96286	119800	409.40	277000	419.49
97280	119800	409.71	277000	419.71
97456	IH 45			
98188	119800	409.92	277000	419.84
98653	119800	410.02	277000	419.87
99800	119800	410.44	277000	420.34
101138	119800	411.07	277000	421.06
103483	119800	412.71	277000	422.69
103493	MKT Railroad			
103503	119800	413.15	277000	423.03
104446	119800	413.91	277000	423.90
105333	119800	414.10	277000	424.19
105358	Martin Luther King Boulevard/Cedar Crest Boulevard			
105383	119800	414.15	277000	424.56
106650	119800	414.57	277000	425.07
106975	Cedar Creek (RB)			
107551	119800	414.73	277000	425.32
107776	119800	414.74	277000	425.31
108128	119800	414.73	277000	425.30
108276	119800	414.75	277000	425.28
108287	ATSF Railroad			
108298	119800	414.99	277000	425.73
108348	119800	415.00	277000	425.77
108364	DART Rail Line OC-2			
108380	119800	415.11	277000	425.90
108530	119800	415.25	277000	426.12
109035	119800	415.29	277000	426.22
109882	119800	415.29	277000	426.16

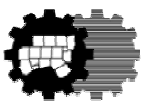


CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
109957	119800	415.29	277000	426.17
109958	119800	415.29	277000	426.17
109983	Corinth Street			
110008	119800	415.35	277000	426.25
110009	119800	415.36	277000	426.24
110086	119800	415.38	277000	426.25
110470	119800	415.44	277000	426.33
110783	119800	415.46	277000	426.35
111223	119800	415.48	277000	426.37
111754	119800	415.58	277000	426.52
112314	119800	415.66	277000	426.67
112933	119800	415.72	277000	426.75
113563	119800	415.78	277000	426.82
114054	119800	415.86	277000	426.96
114116	119800	415.87	277000	426.97
114117	119800	415.88	277000	426.98
114149.5	IH 35E north bound/Cadiz Street			
114182	119800	415.94	277000	427.07
114183	119800	415.94	277000	427.07
114243	119800	415.94	277000	427.08
114457	119800	415.98	277000	427.13
114510	119800	416.00	277000	427.14
114511	119800	416.01	277000	427.15
114541	IH 35E south bound/Cadiz Street			
114571	119800	416.05	277000	427.23
114572	119800	416.08	277000	427.26
114641	119800	416.10	277000	427.28
115038	119800	416.16	277000	427.36
115633	119800	416.18	277000	427.40
115705	119800	416.25	277000	427.51
115706	119800	416.22	277000	427.41
115706	Jefferson Street			
115763	119800	416.23	277000	427.43
115764	119800	416.32	277000	427.68
116111	119800	416.36	277000	427.75



CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
116185	119800	416.39	277000	427.78
116186	119800	416.40	277000	427.80
116214	Houston Street			
116242	119800	416.42	277000	427.96
116243	119800	416.43	277000	427.96
116314	119800	416.41	277000	427.95
116766	119800	416.66	277000	428.27
117294	119800	416.77	277000	428.39
118000	119800	416.99	277000	428.66
118533	119800	417.11	277000	428.81
118611	119800	417.13	277000	428.83
118612	119800	417.14	277000	428.84
118657	IH 30			
118702	119800	417.19	277000	428.93
118703	119800	417.20	277000	428.93
118782	119800	417.21	277000	428.95
119518	119800	417.38	277000	429.16
120192	119800	417.48	277000	429.30
120629	119800	417.54	277000	429.36
120629	USGS Dallas Gage			
120693	119800	417.55	277000	429.38
120694	119800	417.56	277000	429.39
120729	Commerce Street			
120764	119800	417.64	277000	429.47
120765	119800	417.68	277000	429.50
120831	119800	417.70	277000	429.52
121517	119800	417.96	277000	429.86
121607	119800	417.98	277000	429.89
121608	119800	417.99	277000	429.89
121623	Texas and Pacific Railroad			
121638	119800	418.03	277000	430.02
121639	119800	418.03	277000	430.02
121723	119800	418.04	277000	430.03
122206	119800	418.14	277000	430.14
122760	119800	418.24	277000	430.26

CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
122834	119800	418.26	277000	430.28
122835	119800	418.27	277000	430.29
122860	Continental Avenue			
122885	119800	418.32	277000	430.35
122886	119800	418.35	277000	430.40
122961	119800	418.38	277000	430.42
123861	119800	418.59	277000	430.69
124626	119800	418.75	277000	430.92
125703	119800	418.96	277000	431.19
126428	119800	419.11	277000	431.36
127155	119800	419.24	277000	431.52
127746	119800	419.36	277000	431.63
127747	119800	419.35	277000	431.63
127762.5	Sylvan Avenue at West Levee			
127779	119800	419.39	277000	431.67
127994	119800	419.43	277000	431.71
128010.5	Sylvan Avenue at river channel			
128027	119800	419.48	277000	431.75
128290	119800	419.51	277000	431.79
128291	119800	419.50	277000	431.79
128306.5	Sylvan Avenue at East Levee			
128323	119800	419.53	277000	431.82
128538	119800	419.62	277000	431.90
129105	119800	419.76	277000	432.05
129822	119800	419.84	277000	432.14
130709	119800	420.05	277000	432.34
131579	119800	420.24	277000	432.54
132627	119800	420.44	277000	432.74
133738	119800	420.58	277000	432.92
134697	119800	420.73	277000	433.07
134798	119800	420.75	277000	433.08
134799	119800	420.76	277000	433.09
134826.5	Hampton/Inwood Road			
134854	119800	420.78	277000	433.13
134855	119800	420.81	277000	433.16



CROSS-SECTION/ RIVER-STATION (FEET)	100-YEAR FLOOD DISCHARGE (CFS)	100-YEAR FLOOD WSEL (FEET)	SPF DISCHARGE (CFS)	SPF WSEL (FEET)
134952	119800	420.83	277000	433.18
135899	119800	420.94	277000	433.29
136927	119800	421.12	277000	433.45
138046	119800	421.31	277000	433.60
138809	120300	421.45	278500	433.75
139569	120300	421.61	278500	433.90
140448	120300	421.77	278500	434.05
140548	120300	421.78	278500	434.06
140646	120300	421.79	278500	434.07
140647	120300	421.81	278500	434.08
140690	Westmoreland Avenue			
140733	120300	421.84	278500	434.14
140734	120300	421.83	278500	434.13
140840	120300	421.84	278500	434.14
140940	120300	421.86	278500	434.15
141789	120300	422.04	278500	434.31
142652	120300	422.21	278500	434.46
143400	120300	422.37	278500	434.60
144312	120300	422.57	278500	434.76
145193	120300	422.79	278500	434.94
145967	120300	423.00	278500	435.12
146724	120300	423.21	278500	435.28
147469	120300	423.30	278500	435.38
148136	120300	423.44	278500	435.49
148190	West Fork/Elm Fork confluence			

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APPENDIX B.3

TABLE 1

SPECIFIC PRIOR DEVELOPMENT/GRANDFATHERED PROJECTS

CITY	PROJECT
Main Stem Trinity River	
Dallas	McCommas Bluff Landfill
Elm Fork Trinity River	
Lewisville	Farmers Branch Landfill
West Fork Trinity River	
Irving	Irving Landfill
Grand Prairie	Grand Prairie Landfill
Arlington	Arlington Landfill
Fort Worth	River Trails
Clear Fork Trinity River	

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APPENDIX C

BACKGROUND DOCUMENTATION

C.1 Regional Policy Position on Trinity River Corridor – 1989

C.2 Resolution for a Joint Corridor Development Certificate Process

C.3 U.S. Army Corps of Engineers Record of Decision – Regional Environmental Impact Statement: Trinity River and Tributaries

Regional Policy Position on Trinity River Corridor – 1989

Adopted by the Trinity River Corridor Steering Committee and the Executive Board of the North Central Texas Council of Governments

The Dallas/Fort Worth metroplex is the largest inland metropolitan region in the country, surrounding a relatively small stream named the Trinity River. To assure adequate water supply to the region's 4 million people, upstream reservoirs have been built on all major forks and tributaries. Thus, the summer flows in the West Fork and Main Stem of the river consist primarily of highly-treated wastewater effluent, while the Elm Fork conveys mostly lake releases to a Dallas water treatment plant.

Long-standing federal plans to construct a barge canal from Fort Worth to the Gulf were abandoned in the early 1980's, leading to numerous unrelated requests for federal permits to reclaim portions of the flood plain for commercial and residential development. The Fort Worth District of the U.S. Army Corps of Engineers, which was formed after severe river flooding in the 1940's, has completed a three-year regional study of the cumulative effects of alternative development scenarios. Throughout this effort they have worked closely with elected officials and staff from the nine affected cities and three counties through the North Central Texas Council of Governments.

The Corps of Engineers indicates that two major conclusions have emerged from their Final Regional Environmental Impact Statement. The first "reemphasizes that a widespread lack of Standard Project Flood (SPF) protection currently exists" throughout the river corridor. The SPF flood plain now consists of about 69,500 acres, with 4,400 acres of residential property and 10,000 acres of commercial/industrial property. Damages to property if a Standard Project Flood were to occur today could approach several billion dollars.

The second major Corps of Engineers conclusion is that "different permitting strategies have a measurable and significant impact on the extent of increase of this lack of SPF protection." Under the most extensive development scenario, flood damages could triple the estimates for the baseline condition, not including the catastrophic effects if the Dallas Floodway levees were breached. However, the Corps of Engineers has stated that it has limited permit authority in the flood plain to affect these scenarios, and that any solutions must come from a cooperative approach among local governments.

Since mid-1986, NCTCOG has been serving as convenor and facilitator of affected local governments in pursuit of a COMMON VISION for the Trinity River Corridor. The Regional EIS provides invaluable information to aid local governments in this quest. The Steering Committee of elected officials which is guiding the interjurisdictional program has recognized that even under existing developed conditions many citizens and many thousands of acres of land are under the threat of flooding in SPF conditions. Until a major flood control program can be completed to reduce or eliminate the existing flooding threats, the continuing pressure for development of the flood plain must be managed in the most practical and equitable manner possible to at least stabilize current levels of flooding risk. Attention must also be placed on meeting water and other environmental quality goals and implementing desired regional public facilities.

As a significant next step in its pursuit of a COMMON VISION, the Trinity River Corridor Steering Committee revises and adopts this **Regional Policy Position on Trinity River Corridor – 1989.**

The Trinity River Corridor is a unique regional resource.

The 100-mile Trinity River Corridor includes the Standard Project Flood (SPF) flood plain of the West Fork, Elm Fork, Main Stem and major tributaries from the reservoir dams downstream to south Dallas. The river corridor is a unique regional resource in the heart of a growing metroplex. Desires to reclaim or preserve it can and will obviously conflict — there is room in the 70,000 acres of the corridor for both. The river corridor is valuable to all 4 million residents of the region and the millions to come.

Local governments must be the stewards of the Trinity River Corridor.

Whatever is done to reclaim or preserve the river corridor will require local government action — zoning, permits, capital expenditures, maintenance. While other governmental bodies, such as levee districts, several state agencies, and three Federal agencies, have fragmented authority within the river corridor, local governments are directly responsible for the overall health, safety and welfare of their own citizens. Thus, local governments must take the lead as stewards of the river corridor.

A Trinity Greenway of major parks linked by a regional trails system is being pursued.

Tens of thousands of acres of open space are being preserved within the river corridor with outstanding potential for active and passive recreation. Even if the most extensive development scenario were implemented, the remaining open space acreage would equal more than twenty New York Central Parks. Using TRIN, local parks and recreation professionals will prepare a realistic Trinity Greenway strategy of major parks linked by a regional trails system. Funding priorities for implementing such a greenway will be sought from the Texas Parks and Wildlife Department in their 1990 Texas Outdoor Recreation Plan.

Studies to identify the causes and solutions to periodic fish kills should be continued.

Dissolved oxygen quality in the river under normal flow conditions has improved significantly during the last decade, as major wastewater treatment plants have been upgraded. However, fish kills occurred downstream of the region in 1985 and 1986 during peak river flow events with low dissolved oxygen levels. The Texas Water Commission should continue its lead role in coordinating local, state and federal studies to document the causes of these fish kills and to identify realistic and effective solutions.

Scientifically-sound information on toxic pollutants should be obtained.

In the past, limited sampling of river bottom sediments at scattered sites has found elevated levels of selected toxic pollutants. Several monitoring studies are now underway to determine the levels of selected pesticides and heavy metals in the water and fish. The Texas Water Commission should use scientifically-sound technical data as the basis for setting any new toxic standards required by federal law.

Sites for future regional stormwater detention basins should be preserved.

As identified in the Final Regional EIS, sites for future regional wet detention ponds should be preserved, since the fish kill studies or the emerging EPA storm water permit requirements on cities may identify a need for such facilities as an alternative to costly stormwater treatment. However, the need for tertiary treatment of wastewater effluent by land application in the flood plain has not been justified at this time.

Particular attention should be given to desired regional public facilities.

There are important regional public facilities that must be protected from potential flooding damages, such as the joint system wastewater treatment plants. New public facilities such as bridge crossings, a potential parkway, and the RAILTRAN mass transit system must be planned carefully and comply with the common criteria.

The Corps is identifying alternatives to reduce flooding risks and provide environmental enhancements in its Reconnaissance Study.

During 1988, the participating local governments aided the Corps in obtaining Congressional appropriations of $680,000 to conduct a Reconnaissance Study of the Upper Trinity basin. The purpose is to identify problems and opportunities, identify potential solutions, determine whether a federal interest is warranted, identify the local sponsor(s), and outline the next steps to be addressed in a Feasibility Study. The Reconnaissance Study began in October 1988 and is expected to be completed in early 1990. Close coordination is occurring with local governments through the Steering Committee and staff.

The full range of nonstructural and structural alternatives should be examined without restrictions by the State.

In its studies, the Corps should examine the full range of nonstructural and structural alternatives to reduce flood damages, enhance water and environmental qualities, and provide for recreation. It would be inappropriate for the State Legislature to enact restrictions on the options which could be implemented for the Elm Fork, West Fork or Main Stem.

State and Federal funding for the Feasibility Study should be earmarked for FY91 and beyond.

It is already clear that there are at least two nonstructural cooperative projects for further refinement in a Feasibility Study. One is the improvement of the Corps' computer models through an extensive data collection effort, so that they can serve as useful tools in the CDC permitting process to stabilize the flooding risk. Interest has also been registered by Dallas, the River Forecast Center and others to explore the benefits of a sophisticated computer-based Flood Warning System. The initial portion of the four-year $5 million Feasibility Study needs to begin in FY91 with 50% federal funding and 50% state and/or local matching funds.

December 15, 1988

RESOLUTION FOR A JOINT
TRINITY RIVER CORRIDOR DEVELOPMENT CERTIFICATE PROCESS

WHEREAS, the 1987 **Regional Environmental Impact Statement on Trinity River Corridor** prepared by the U.S. Army Corps of Engineers indicates that different permitting strategies have a measurable and significant impact on the risk of flooding and potential damage; and

WHEREAS, goals toward a **COMMON VISION** for the Trinity River can only be achieved through intergovernmental cooperation; and

WHEREAS, the North Central Texas Council of Governments, which is serving as convenor and facilitator in pursuit of a **COMMON VISION**, and the Steering Committee of elected officials representing the twelve affected local governments have adopted an **Interim Regional Policy Position on Trinity River Corridor** and prepared a **Draft Statement of Principles for Common Permitting Process**; and

WHEREAS, the **Draft Statement of Principles** was developed with the assistance of the U.S. Army Corps of Engineers and includes: (1) a definition of the affected river corridor area; and (2) a recommended Corridor Development Certificate (CDC) process for the joint processing of applications for river corridor modifications; and

WHEREAS, the affected local governments participate in the National Flood Insurance Program (NFIP), and under the Texas Water Code (V.T.C.A. Section 16.236) thereby exercise authority and responsibility for regulating and approving modifications to flood prone areas within their jurisdictional boundaries; and

WHEREAS, in accordance with the NFIP under 44 CFR 59-77 the affected local governments have a Local Flood Plain Administrator to execute and enforce local flood plain management ordinances aimed at protecting lives and reducing flood losses, and

WHEREAS, under 33 CFR 320-330 the Corps of Engineers is directed to process permit applications affecting waters of the United States concurrently with other required federal/state/local authorizations; and

WHEREAS, the Corps of Engineers is also directed to deny without prejudice any permit which fails to receive required federal/state/local authorizations,

NOW, THEREFORE, THE STEERING COMMITTEE OF THE NCTCOG TRINITY RIVER CORRIDOR INTERJURSIDICTIONAL MANAGEMENT PROGRAM RESOLVES:

1. To reaffirm its support for a joint Corridor Development Certificate (CDC) process whereby each city still retains development authority within its jurisdiction; and

2. That implementation of an effective CDC process requires well defined cooperation and coordination among the responsible permitting agencies; and

3. That, in accordance with the Draft Statement of Principles, applications for Trinity River Corridor flood plain modifications (as defined in the Draft Statement of Principles) are to be processed in the following manner:

   a. applications for Trinity River Corridor flood plain modifications will be initially filed with the Local Flood Plain Administrator;

   b. the Local Flood Plain Administrator will document the filing of an application for flood plain modification by providing the applicant with a "Standard Notice of Intent to Process." (This joint and standard form will be cooperatively developed and designed, and is to be approved by the Steering Committee);

   c. the "Standard Notice of Intent to Process" will document the city's intent to process an application to modify the Trinity River Corridor flood plain, and will serve as notice and verification that the Local Flood Plain Administrator has received the application and is reviewing the proposal;

   d. the Local Flood Plain Administrator, to assure proper interagency coordination, will distribute copies of the "Standard Notice of Intent to Process" to the U.S. Army Corps of Engineers, the Federal Emergency Management Agency (FEMA), the Texas Water Commission, the twelve affected local governments and the North Central Texas Council of Governments;

   e. the U.S. Army Corps of Engineers will refuse to accept a Trinity River Corridor permit application which does not include a copy of the Local Flood Plain Administrator's "Standard Notice of Intent to Process;"

4. That the Corps of Engineers, the Federal Emergency Management Agency, the Texas Water Commission and other permitting agencies provide a timely summary of their permit actions and/or findings to the local Flood Plain Administrator (and the NCTCOG) to assist the Administrator with properly exercising his ultimate authority and responsibility for flood plain alterations;

5. That the North Central Texas Council of Governments maintain a computerized tracking system of the "Standard Notice of Intent to Process" and all relevant local, State and Federal permit actions; and

6. That the District Engineer of the Fort Worth District Corps of Engineers, the Regional Director of FEMA Region VI, and the Executive Director of the Texas Water Commission be requested to review this resolution, and either concur with this procedure or provide the Steering Committee with recommended alternatives which will fulfill, to greatest extent possible, the intent of this resolution.

7. That this resolution be sent to the nine affected cities and three affected counties along the Trinity River Corridor for their review, concurrence and supporting city council/commissioners court adoption.

ADOPTED ON DECEMBER 15, 1988 BY THE STEERING COMMITTEE OF THE TRINITY RIVER CORRIDOR INTERJURISDICTIONAL MANAGEMENT PROGRAM.

RECORD OF DECISION
REGIONAL ENVIRONMENTAL IMPACT STATEMENT
TRINITY RIVER AND TRIBUTARIES

I. Introduction

Since its early history, the U.S. Army Corps of Engineers has played an important role in the development of the nation's water resources. Originally, this involved construction of harbor fortifications and coastal defenses. Later duties included the improvement of waterways to provide avenues of commerce and reduce flood hazards. An important part of its mission today is the protection of the nation's waterways through the administration of the Regulatory Program. The Corps is directed by Congress under Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) to regulate all work or structures in or affecting the course, condition, or capacity of navigable waters of the United States. Section 9 (33 USC 401) directs the Corps to regulate the construction of any dam or dike across a navigable water of the United States. The intent of these laws is to protect the navigable capacity of waters important to interstate commerce.

Additionally, the Corps is directed by Congress under Section 404 of the Clean Water Act (33 USC 1344) to regulate the discharge of dredged and fill material into all waters of the United States, including adjacent wetlands. The intent of this law is to protect the nation's waters from the indiscriminate discharge of material capable of causing pollution, and to restore and maintain their chemical, physical, and biological integrity. Because the District Engineer's decision to issue or deny a permit under these laws is a significant Federal Action, various other statutes, principally Public Law 91-190 (the National Environmental Policy Act, or NEPA) come into play. Among other things, NEPA requires the consideration of the direct, indirect, and cumulative impacts of an action (40 CFR 1508.25(C)).

Late in 1984 and early in 1985, it became apparent that numerous unrelated development projects were being proposed along the Trinity River and its tributaries in Dallas, Denton, and Tarrant Counties, Texas. Most involved modification of the river channel and/or flood plain in some form or another, and most required a Corps of Engineers permit as a result. Because, individually or cumulatively, these projects were felt to have the potential to compromise the existing protection afforded to flood plain residents, because of perceived impacts to wetlands and other natural resources, and because of competing public demands for other uses of the river channel and flood plain, the District Engineer determined that it was necessary to develop a regional perspective in order to properly evaluate the impacts of individual permit decisions in accordance with the spirit and intent of NEPA and other applicable laws.

The Draft Regional Environmental Impact Statement (EIS), published in May 1986, analyzed a number of scenarios which were specifically designed to identify possible, significant cumulative impacts associated with different permitting strategies for the Trinity River flood plain. In addition to developing a baseline condition, it examined three groups of conditions based on a) maximizing environmental quality, b) ultimate implementation of the

Federal Emergency Management Agency's (FEMA) minimum criteria for the flood insurance program, and c) maximizing economic development.

The results of the Draft Regional ElS indicated strongly that there are potential cumulative impacts associated with individual flood plain development projects which are both measurable and significant. Additionally, the Draft Regional EIS indicated that the permitting approach adopted by the Corps of Engineers had the potential to have significantly different impacts on a number of regional parameters, especially flood hazards. Even though the analyses were not complete, and the public comment on the Draft Regional EIS indicated that there was much work to follow, the implications to the ongoing Regulatory Program could not be overlooked. In response to this, the Corps formulated a set of interim criteria to be in effect until the Record of Decision was rendered.

Many of the comments received on the Draft Regional EIS indicated that the slate of alternatives analyzed did not represent a realistic approach to regulatory strategies. In many cases, the predicted results were publicly unacceptable. Two important examples include the overtopping of the Dallas Floodway levees under two of the scenarios, and a substantial downstream shift in the Dissolved Oxygen “sag" resulting in noncompliance with State Water Quality Standards in the reach below the Trinidad gage. After careful analysis of the public and agency input, several new scenarios were formulated for analysis in the Final Regional EIS.

In addition to updating the baseline, three scenarios, representing the same three broad categories that had been previously addressed, were developed. Many people suggested that the Maximum Development scenarios analyzed in the Draft Regional EIS were too extreme, either because they conflicted with an ongoing project, or because levees were physically impractical in some portions of the flood plain. In response to this criticism, we agreed to replace them with a “Composite Future" scenario. Each city was tasked to provide the North Central Texas Council of Governments (NCTCOG) a delineation of the "most likely" limits of maximum encroachment within their jurisdiction. NCTCOG compiled each city's individual prediction and presented the resultant set of maps to local staffs and local elected officials before providing them to the Corps for analysis.

The Modified Floodway scenario of the Final Regional EIS replaced the floodway-based scenarios of the Draft Regional EIS as a representative compromise between maximum (realistic) development and maximum (realistic) environmental quality. In this scenario, the Corps defined the geographic limits of a drainageway incorporating the FEMA concept with significant technical variations. For the third scenario, the Corps revised and represented a Maximum Environmental Quality scenario, hydraulically identical to the revised baseline because it incorporated no additional flood plain projects except water quality, recreation, and wildlife enhancements. Of the scenarios, or alternatives, examined in the Final Regional EIS, this is the environmentally preferred alternative.

The extensive coordination and public involvement characteristic of the Regional EIS process continued during the comment period on the Final Regional EIS, which extended from its release on October 22, 1987, through January 31, 1988. During this period, I held a public meeting at Lamar High School at

which eleven people submitted statements. My staff attended in excess of twenty meetings with local government staffs, public agencies, and citizen groups. In addition, sixty-six written comments on the Final Regional EIS were received.

II. Discussion of Issues and Factors

Most of the formal public comment and discussion with local governments centered on three general issues: the appropriate level of flood protection (100-year vs. SPF), the level of accuracy of the hydraulic and hydrologic analyses displayed in the Regional EIS, and the issue of equity as it pertains to governmental regulation. "Benefits" and "Costs" of an action, whether it be a proposed project or a proposed regulation, do not always occur to the same group of people, let alone in the same order of magnitude. The definition of the "public interest" which is at the heart of the Regional EIS calls for an assessment of the tradeoffs inherent between public demands for enhanced environmental quality in the river corridor and for its use for needed public facilities, and economic development and the rights of private landowners.

A major consensus achieved through the review of the Final Regional EIS is that additional regional increases in flood hazards for either the 100-year or Standard Project Flood are undesirable, and that the thrust of flood plain management, in the short term, should be to stabilize the flood hazard at existing levels through regulation. Future efforts on the part of both the Corps and local organizations may be required to reduce flood hazard over the long term.

The Regional EIS is probably the most comprehensive such study done in the United States. It has highlighted the need for planning for the region and cooperation among the governmental entities along the Trinity River corridor to achieve quality development. The document was developed for the sole purpose of establishing a permitting strategy for the Trinity River and its tributaries. It does not contain a technical baseline that will remain current over time and is not to be used as a design document. Design decisions requiring water surface predictions based on critical storm centerings, and which are sensitive to valley storage computations, must be based on detailed site-specific engineering analyses. Other site-specific public or private flood control management decisions should likewise be based on current technical analyses. Further, flood insurance data must be obtained from the FEMA and not from the Regional EIS.

Neither the Regional EIS nor this Record of Decision encroaches upon the responsibility of design engineers or the authority of local governments. The Regional EIS, its public review, and this Record of Decision serve only to establish and document the "best overall public interest" as it applies to the Trinity River and its tributaries. It remains the responsibility of design engineers to perform competent work in accordance with professional design practices. Permit applicants which proposed flood plain modifications and/or site-specific flood control structures will need to satisfy review agencies as to the reasonableness of design assumptions.

Throughout the development of this Record of Decision, the Corps has worked closely with the NCTCOG to insure consistency with their COMMON VISION program. The criteria listed below for the West Fork, Elm Fork, and Main Stem are consistent with the Statement of Principles for Common Permit Criteria sub-

mitted by the Steering Committee of local government officials. Because of the massiveness of this undertaking and the importance of its impact on future growth, the comments from the cities and other governmental entities have been carefully considered.

III. Decision

Based on my consideration of the data developed and presented in both the Draft and Final Regional EIS's and my careful consideration of all public input, I have determined that, for the purposes of the Regional EIS study area, my Regulatory Program will be henceforth based on the following criteria. The baseline to be used in analyzing permit applications will be the most current hydraulic and hydrologic model of the specific site in question. The burden of proof of compliance with these criteria rests with the permit applicant. Variance from the criteria would be made only if public interest factors not accounted for in the Regional EIS overwhelmingly indicate that the "best overall public interest" is served by allowing such variance.

A. Hydraulic Impacts--Projects within the SPF Flood Plain of the Elm Fork, West Fork, and Main Stem. The following maximum allowable hydraulic impacts will be satisfied, using reasonable judgment based on the degree of accuracy of the evaluation, and using cross sections and land elevations which are representative of the reaches under consideration:

1. No rise in the 100-year or SPF elevation for the proposed condition will be allowed.
2. The maximum allowable loss in storage capacity for 100-year and SPF discharges will be O% and 5% respectively.

3. Alterations of the flood plain may not create or increase an erosive water velocity on-or off-site.
4. The flood plain may be altered only to the extent permitted by equal conveyance reduction on both sides of the channel.

B. Hydraulic Impacts--Tributary Projects. For tributaries with drainage areas less then 10 square miles, valley storage reductions of up to 15% and 20% for the 100-year and Standard Project Floods, respectively, will be allowed. For tributaries with intermediately-sized drainage areas (10 square miles to 100 square miles), the maximum valley storage reduction allowed will fall between 0% and 15% for the 100-year flood and 5% and 20% for the Standard project Flood. Increases in water surface elevations for the 100-year flood will be limited to approximately zero feet. Increases in water surface elevations for the Standard Project Flood will be limited to those which do not cause significant additional flooding or damage to others. Projects involving tributary streams with drainage areas in excess of 100 square miles will be required to meet the same criteria as main stem projects (see "A" above).

C. Cumulative Impacts. The upstream, adjacent, and downstream effects of the applicant's proposal will be considered. The proposal will be reviewed on the assumption that adjacent projects will be allowed to have an equitable chance to be built, such that the cumulative impacts of both will not exceed the common criteria.

D. Design Level of Flood Protection. The engineering analysis will include the effects of the applicant's proposal on the 100-year and Standard

Project Floods and should demonstrate meeting FEMA, Texas Water Commission, and local criteria, as well as Corps, for both flood events.

1. For levees protecting urban development, the minimum design criterion for the top of levee is the SPF plus 4.0, unless a relief system can be designed which will prevent catastrophic failure of the levee system.

2. For fills, the minimum design criterion is the 100-year elevation, see above, plus one foot.

E. Borrow Areas. The excavation of "borrow" areas to elevations lower than the bottom elevation of the stream is generally hydrologically undesirable. The volume of such excavations, above the elevation to which the area can be kept drained, can be considered in hydrologic storage computations.

F. Preservation of Adjacent Project Storage. The applicant will be required to respect the valley storage provided by adjacent projects by ensuring that their hydraulic connection to the river is maintained. If the project blocks the hydraulic connection of the adjacent project, then the applicant will be required to provide additional valley storage to offset the loss caused by the blockage of the hydraulic connection.

G. Special Aquatic Sites. Value-for-value replacement of special aquatic sites (i.e. wetlands, pool and riffle complexes, mud flats, etc.) impacted by non-water dependent proposals will be required.

These criteria will be used by the Corps for the express purpose of evaluating new permit applications received subsequent to the effective data. They will not be used to reevaluate any flood plain project already constructed or permitted. They apply to permit applications from public agencies as well as private sector applications. In addition to the criteria discussed above, the following guidelines will be used by my staff in evaluating permit applications:

A. Runoff. Site drainage systems should minimize potential erosion and sedimentation problems both on site and in receiving water bodies.

B. Habitat Mitigation. A standardized, habitat-based evaluation method should be used to evaluate the impacts of the applicant's proposal to fish and wildlife resources. Guidelines for the quality and quantity of mitigation are as follows:

1. Category 2 resources--habitat of high value which is scarce, or is becoming scarce in the ecoregion--no net loss of habitat value. Category 2 resources in the study area include vegetated shallows, riffle and pool complexes, and riparian forests, as well as wetlands (see above for mitigation of wetlands). A buffer strip of natural vegetation 100' feet wide on each side of the channel for main area projects, and 50' feet for tributaries, should be maintained.

2. Category 3 resources--habitat of medium-to-high value that is relatively abundant in the ecoregion--no net loss of habitat value while minimizing the loss of the habitat type. (This means to reduce the loss of the habitat and compensate the remainder of loss of habitat value by creation or improvement of other Category 2 or 3 resources.) Category 3 resources in the study area include deep water, native rangeland, upland forests, and upland

shrubland.

3. Category 4 resources--habitat of low-to-medium value--mitigation should be to minimize the loss of habitat value, which can be accomplished by avoidance or improving other habitat types. Category 4 resources in the study area include cropland and improved pasture.

C. Cultural Resources. Cultural resources, including prehistoric and historic sites, will be identified and evaluated according to National Register of Historic Placer Criteria. Identification procedures may involve literature review, pedestrian survey, and excavation to identify buried cultural materials. Sites which are eligible for inclusion in the National Register of Historic Places will be treated by measures which range from avoidance, to preservation in place, to mitigation through excavation.

D. Other Regional Needs and Plans. Consideration will be given when evaluating permit applications of the proposal's impact on regional facilities which have been identified as important through the Regional EIS process. These include, but are not limited to, a linear hike/bike system linking large flood plain parks throughout the Metroplex, the Trinity Tollway, and sites for regional stormwater detention basins. (Specific locations and plans for these facilities will continue to evolve through coordination with NCTCOG and local governments.) Applicants will be urged to design projects which do not preclude future implementation of these regional assets.

It is my conclusion that the criteria and guidelines set forth above represent the best available definition of the "overall public interest," taking into account the rights of individual landowners and the direct, indirect, and cumulative impacts of individual actions under by purview. Further, I conclude that these policies represent all the practical means known to me to avoid or minimize environmental harm within that framework. This document will therefore provide the specific framework within which we will operate the Fort Worth District's Regulatory Program within the Regional EIS study area.

/Signed/

JOHN E. SCHAUFELBERGER
Colonel, Corps of Engineers
District Engineer

Date: *April 29, 1988*

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APPENDIX D

SAMPLE LETTERS

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D.1 Sample Review Comment Letter

DATE:

From:
Signatory
CDC/Floodplain Administrator
(Contact Person)
Address Block
Phone

To:
Permitting Entity
(Contact Person)
Address Block

CDC APPLICATION REVIEW AND COMMENT

CDC Tracking Code _____

Dear Sir or Madam:

After reviewing the CDC Application with the above tracking code, the City/County would like to make the following comment(s):

1.

2.

3.

4.

If you have any questions regarding the information provided, please contact me at {phone #}. Thank you for this opportunity to provide comments and your continued participation in this important regional effort.

_____
SIGNED

cc:
CDC Tracking
Dept. of Environment and Development
(Contact Person)
P.O. Box 5888
Arlington, Texas 76005-5888
(817) 695-9210
(817) 695-9191 fax

D.2 Sample Transmittal Letter – CDC Final Action – CDC Granted

DATE:

From:
Permitting Entity
(Contact Person)
Address Block
Phone

To:
CDC Applicant

CDC FINAL ACTION

CDC Tracking Code _____

Dear Sir or Madam:

After processing with the Corridor Development Certificate application process, the {Permitting Entity} has made the following decision in regard to CDC application:

If you have any questions regarding this information, please contact me at {phone #}.

_____
SIGNED

Enclosure: CDC Final Action/Findings Form

cc:
CDC Tracking
Dept. of Environment and Development
(Contact Person)
P.O. Box 5888
Arlington, Texas 76005-5888
(817) 695-9210
(817) 695-9191 fax

D.3 Sample Transmittal Letter – CDC Final Action – CDC Denied

DATE:

From:
Permitting Entity
(Contact Person)
Address Block
Phone

To:
CDC Applicant

CDC FINAL ACTION
REQUEST FOR REAPPLICATION

CDC Tracking Code _____

Dear Sir or Madam:

After proceeding with the Corridor Development Certificate application process, the {Permitting Entity} has made the following decision in regard to CDC application {CDC Tracking Code}:

The original CDC application has been denied and a request for a new CDC application has been made with the following comments:

If you have any questions regarding this information, please contact me at {phone #}.

_____
SIGNED

Enclosure: CDC Final Action/Findings Form

cc:
CDC Tracking
Dept. of Environment and Development
(Contact Person)
P.O. Box 5888
Arlington, Texas 76005-5888
(817) 695-9210(817)
695-9191 fax

D.4 CDC Annual Status Summary Memo

DATE:

From:
CDC Applicant

To:
Permitting Entity
(Contact Person)
Address Block
Phone

CDC ANNUAL STATUS SUMMARY

CDC Tracking Code _____

Dear Sir or Madam:

It has been ___ year(s) since the issuance of CDC {CDC Tracking Code}. The status of the development activity associated with that CDC is as follows:

An extension of this permit ***is or is not*** being requested at this time. (Please see CDC Manual for information).

If you have any questions regarding this information, please contact me at {phone #}.
If you are requesting an extension, please return this form and other information to me.

_____
SIGNED

cc:
CDC Tracking
Dept. of Environment and Development
(Contact Person)
P.O. Box 5888
Arlington, Texas 76005-5888
(817) 695-9210
(817) 695-9191 fax

D. 5 Sample response to Request for CDC Extension

DATE:

From:
Permitting Entity
(Contact Person)
Address Block
Phone

To:
CDC Applicant

RESPONSE TO REQUEST FOR CDC EXTENSION

CDC Tracking Code _____

Dear Sir or Madam:

The {Permitting Entity} received your request for an extension to your CDC {CDC Tracking Code}.

After consideration, the {city/county} has decided to deny your request for extension for the following reasons:

OR

After consideration, the {city/county} has decided to grant one 3–year extension to your CDC. If at the end of 3 years the project is not complete, you will need to submit a new CDC Application.

If you have any questions regarding this decision, please contact me at {phone #}.

_____
SIGNED

cc:
CDC Tracking
Dept. of Environment and Development
(Contact Person)
P.O. Box 5888
Arlington, Texas 76005-5888
(817) 695-9210
(817) 695-9191 fax

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APPENDIX E

POINTS OF CONTACT

Last Update: March 2009

ARLINGTON

CDC/Floodplain Administrator
Keith Brooks
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P.O. Box 90231
Arlington, Texas 76004-3231
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CARROLLTON

CDC/Floodplain Administrator
Michael McKay
City of Carrollton
P.O. Box 110535
Carrollton, Texas 75011-0535
mike.mckay@cityofcarrollton.com
(972) 466-3200 fax (972) 466-3193

COPPELL

Director of Engineering
Ken Griffin
City of Coppell
P.O. Box 9478
Coppell, Texas 75019
kgriffin@ci.coppell.tx.us
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DALLAS

CDC/Floodplain Administrator
Steve Parker
City of Dallas
320 E. Jefferson Blvd. Suite #321
Dallas, Texas 75203
stephen.parker@dallascityhall.com
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FARMERS BRANCH

City Engineer
Jerry Murawski
P.O. Box 819010
Farmers Branch, Texas 75381-9010
jerry.murawski@farmersbranch.info
(972) 919-2588 fax (972) 919-2585

FORT WORTH

CDC/Floodplain Administrator
Clair Davis
City of Fort Worth
1000 Throckmorton St.
Fort Worth, Texas 76102
clair.davis@fortworthgov.org
(817) 392-7947 fax (817) 392-7854

GRAND PRAIRIE

CDC/Floodplain Administrator
Romin Khavari
City of Grand Prairie
P.O. Box 534045
Grand Prairie, Texas 75053-0011
rkhavari@gptx.org
(972) 237-8154 fax (972) 237-8116

IRVING

CDC/Floodplain Administrator
Garry Fennell
City of Irving
825 W. Irving Blvd.
Irving, Texas 75060
gfennell@cityofirving.org
(972) 721-3721 fax (972) 721-2592

LEWISVILLE

CDC/Floodplain Administrator
David Salman
City of Lewisville
P.O. Box 299002
Lewisville, Texas 75029-9002
DSalmon@cityoflewisville.com
(972) 219-3492 fax (972) 219-3487

DALLAS COUNTY

CDC/Floodplain Administrator
Abel Saldana
Dallas County
411 Elm Street, 4th floor
Dallas, Texas 75202
Asaldana@dallascounty.org
(214) 653-6240 fax (214) 653-6445

TARRANT COUNTY

CDC/Floodplain Administrator
Joe Trammel
Tarrant County
100 East Weatherford Rm# 401
Fort Worth, Texas 76196
jltrammel@tarrantcounty.com
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TARRANT REGIONAL WATER DISTRICT

Planning Director
Wayne Owen
P.O. Box 4508
Fort Worth, TX 76164
wayne.owen@trwd.com
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TRINITY RIVER AUTHORITY

Executive Services Manager
Sam Scott
Trinity River Authority
P.O. Box 60
Arlington, Texas 76004
scotts@trinityra.org
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U.S. ARMY CORPS OF ENGINEERS

Hydrology and Hydraulics Branch
Michael Danella
P.O. Box 17300
Fort Worth, Texas 76102-0300
Michael.a.danella@ usace.army.mil
(817) 886-1690 fax (817) 978-6481

FEDERAL EMERGENCY MANAGEMENT AGENCY

Region VI
Natural Hazards Program Specialist
Floodplain Management & Insurance Branch
Rob Connell
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Denton, TX 76209
rob.connell@dhs.gov
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TEXAS COMMISION ON ENVIRONMENTAL QUALITY

Water Quality Division
401 Coordinator
P.O. Box 13087, Capitol Station
Austin, Texas 78711-3087
401certs@tceq.state.tx.us
(512) 239-5366

TEXAS Water Development Board

State NFIP Coordinator
Mike Howard
P.O. Box 13231, Capitol Station
Austin, Texas 78711-3231
Mike.Howard@twdb.state.tx.us
(512) 463-3509 fax (512) 475-2053

NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS

Environmental & Development Department
Manager
Jack Tidwell
P.O. Box 5888
Arlington, Texas 76005-5888
jtidwell@nctcog.org
(817) 695-9210 fax (817) 695-9191