

**Wildlife Habitat Appraisal  
Elm Fork Relief Interceptor Segment EF-2**

*Trinity River Authority of Texas*

**November 2000**

**Prepared by  
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## Table of Contents

	<u>Page</u>
1.0 Introduction.....	1
2.0 Environmental Setting.....	1
3.0 Wildlife Habitat Appraisal Procedure.....	1
3.1 Methods.....	1
3.1.1 WHAP Evaluation.....	2
3.1.2 WHAP Scoring.....	2
3.2 Results.....	2
3.2.1 Emergent Wetland.....	2
3.2.2 Floodplain Grassland.....	3
3.2.3 Floodplain Forest.....	3
3.2.4 Maintained Lawn.....	4
4.0 Literature Cited.....	4

## Appendices

- Appendix A WHAP Data Sheets
- Appendix B Figures and Tables

## Figures

- Figure 1-1 Project Location Map.
- Figure 1-2 Site Plan and Waters of the U.S.
- Figure 3-1 View of typical emergent wetland impact area.
- Figure 3-2 View of emergent wetland that is usually adjacent to perennial pond.
- Figure 3-3 View of stormwater structure at jurisdictional area 8.
- Figure 3-4 View of stormwater structure at jurisdictional area 4.
- Figure 3-5 View of floodplain forest impact area at jurisdictional area 12.
- Figure 3-6 View of floodplain forest impact area at jurisdictional area 13.
- Figure 3-7 View of lake outfall at jurisdictional area 14.
- Figure 3-8 View of lake outfall at jurisdictional area 15 showing the typical condition of the maintained lawn.

## Table

- Table 1 Anticipated Loss of Habitat Units.

## 1.0 Introduction

The Trinity River Authority of Texas (TRA) proposes to construct new linear sanitary sewer interceptor facilities (sewer pipeline) parallel to existing pipelines located within the floodplain of the Elm Fork of the Trinity River in Dallas County, Texas (Figure 1-1 in Appendix B). The property was evaluated for Corps jurisdictional wetlands and other waters of the United States pursuant to the Clean Water Act, Section 404 and the Rivers and Harbors Act of 1879, Section 10. Temporary and permanent impacts to potential wetlands and other waters of the U.S. were presented in the *Preliminary Jurisdictional Determination of Waters of the United States* report (determination) submitted to the Corps July 20, 1999. Impacts were updated in the *Application for Department of the Army Permit* submitted to the Corps November 1999.

The determination identified 14 jurisdictional areas (Figure 1-2 in Appendix B), 5.87 acres of temporary impacts, and 1.17 acres of permanent impacts. Site 5 was determined to be non-jurisdictional. Permanent impacts include 0.78 acres of emergent wetland fill, 0.14 acres of floodplain forest fill, and 0.25 acres of fill in other US waters. TRA contracted with Black & Veatch to conduct a Wildlife Habitat Appraisal Procedure (WHAP) and to prepare this report addressing the existing condition of wetlands and other waters of the US that will be impacted by the proposed project.

## 2.0 Environmental Setting

A detailed description of the environmental setting for the TRA facilities is provided in the determination presented to the Corps in July 1999.

## 3.0 Wildlife Habitat Appraisal Procedure

The current conditions of the Corps jurisdictional areas that will be impacted by the proposed project were evaluated using the Texas Parks & Wildlife Department's *Wildlife Habitat Appraisal Procedure* (WHAP)(Frye 1995).

### 3.1 Methods

Following is a description of the methods used to evaluate the impact and mitigation areas along the sewer pipeline route. WHAP Sections IA Biological Habitat Components and IB Impact Assessment and Calculation of Mitigation Requirements were used exclusively, while Section II Significance of Protected Fauna and Flora and Section III Management Components Evaluation were not used.

### **3.1.1 WHAP Evaluation**

A pedestrian survey was conducted on September 9<sup>th</sup>, 2000, to evaluate the proposed impact areas along the sewer pipeline route. Sampling points were located within impact areas that were previously identified during the wetland determination. Each impact area was evaluated with the standard WHAP components, which include:

- Site potential
- Temporal development of existing successional stage
- Uniqueness and relative abundance
- Vegetation species diversity
- Vertical vegetation stratification
- Additional structural diversity components
- Condition of existing vegetation

Data for each of the sampling points was recorded on WHAP Data Forms. These forms are included in Appendix A.

### **3.1.2 WHAP Scoring**

WHAP scores are based on component evaluation of the 14 jurisdictional areas that were identified during the wetland determination. Eight emergent wetland sites, two floodplain grassland sites, two floodplain forest sites, and two maintained lawn sites were evaluated. Component scores for each site were used to determine the average habitat quality score (HQ) for each cover type. The average HQ score for each cover type was then multiplied by the acreage of impact to that cover type to indicate the habitat units (HU) lost.

## **3.2 Results**

The HQ scores are relatively low, indicating that the wildlife habitat along the proposed sewer pipeline is poor quality habitat. This section provides a description of the existing conditions as they pertain to the WHAP components along the pipeline route. Component scores for each sample point are presented on WHAP Data Forms in Appendix A and average habitat quality scores are presented in Table 1 in Appendix B. Construction of the Elm Fork Relief Interceptor, Segment EF-2 will result in a total loss of 0.48 HUs.

### **3.2.1 Emergent Wetland**

The emergent wetland sites occur on alluvial substrates of the Elm Fork that are intermittently inundated or saturated for short periods during the year. The vegetation is dominated by sedges (*Carex* spp.), spike rushes (*Eleocharis* spp.), smartweed (*Polygonum* sp.), and willow saplings (*Salix* spp.). Figures 3-1 and 3-2 in Appendix B illustrate the typical emergent wetland impact areas. Emergent wetlands are relatively abundant in the Elm Fork

basin. The vertical structure of the emergent vegetation is dominated by grasses and forbs less than 3 feet tall. Additional structural components such as brush piles, rock piles, fallen trees, and thick vegetation are generally lacking in the emergent wetlands. This cover type provides a medium to low habitat value for wildlife. The HQ estimate for the emergent wetland is 0.44. Approximately 4.27 acres of emergent wetlands will be disturbed by the proposed project. However only 0.78 acres of the project impacts in emergent wetlands are permanent. Project construction will result in a loss of 0.34 HUs.

### **3.2.2 Floodplain Grassland**

Floodplain grasslands are areas that are upland of the emergent wetlands, but still occur within the alluvial substrates of the Elm Fork floodplain. Project impacts to these sites of concern occur in areas that have been developed for stormwater control (Figures 3-3 and 3-4 in Appendix B). Water flow within the stormwater structures comes from the upland side of the levee and is seasonally intermittent. These sites also appear to be inundated for short periods during Elm Fork flooding events. Mid-successional perennial grass and forb communities, common to the Elm Fork basin dominate the vegetation near the stormwater structures. The value of the wildlife habitat is medium to low. Typically, one to two woody species groups are represented in grasslands. The total number of woody species occurring in impact areas is typically 1 to 4 species. Grasses and forbs less than 3 feet high dominate the vertical structure of the vegetation. Approximately four to seven combined species of grasses and forbs are readily observable in the floodplain grassland. Additional structural components are sparse and consist of thick vegetation. No evidence of woody plant utilization by animals is apparent. The HQ for the floodplain grassland is 0.42. The total project impact in floodplain grassland is 0.72 acres. Only 0.13 acres of the project impacts are permanent. Project construction will result in a loss of 0.05 HUs.

### **3.2.3 Floodplain Forest**

The floodplain forests are narrow strips of vegetation that occur on the banks of the Elm Fork and its tributaries. Figures 3-5 and 3-6 in Appendix B illustrate the floodplain forests impact areas. The impact sites occur on alluvial substrates that are intermittently inundated or saturated for short periods during the year. Cedar elm (*Ulmus crassifolia*) and black willow (*Salix nigra*) dominate the woody vegetation. Most of the trees are less than 12 inches diameter at breast height. The floodplain forests along the proposed sewer pipeline provide wildlife habitat that has medium to low value. Floodplain forests are common to the Trinity River and its' Elm Fork. Two woody species groups are represented in floodplain forests and the total number of woody species occurring is typically 1 to 4. The vertical structure of the floodplain forest includes a canopy greater than 12 feet high and a 3 to 12 foot high understory. Additional

structural components such as brush piles, rock piles, fallen trees, and thick vegetation are sparse in this community. No evidence of woody plant utilization by animals is apparent. Approximately four to seven combined species of grasses and forbs are readily observable in the floodplain forest sites. The HQ for the sites in floodplain forest is 0.43. The total project impact in floodplain forests is 0.14 acres and 0.14 acres of impacts are permanent. Project construction will result in a loss of 0.06 HUs.

#### **3.2.4 Maintained Lawn**

The maintained lawn sites occur in uplands adjacent to the outfall channels coming from Lake Carolyn and Lake Sitatunga, as illustrated in Figures 3-7 and 3-8 in Appendix B. Grasses common to the Dallas/Ft. Worth vicinity dominate the vegetation. These maintained areas exhibit little habitat value for wildlife. No woody vegetation occurs in the maintained areas. The vertical structure of the area is dominated by grasses maintained at a height of less than 4 inches. Additional structural components such as brush piles, rock piles, fallen trees, and thick vegetation are lacking in this cover type. The HQ for the maintained lawn is 0.26. The total project impact in the lawn sites is 0.74 acres. Only 0.12 acres of the project impacts are permanent. Project construction will result in a loss of 0.03 HUs.

## **4.0 Literature Cited**

Frye, R.G., *Wildlife Habitat Appraisal Procedure*. PWD RP N7100-145 (2/95) Texas Parks and Wildlife Department, Austin, TX, 1995.

## **Appendices**

**Appendix A**  
**WHAP Data Sheets**

WHAP  
Biological Components  
Field Evaluation Form

Project TRA EF2 Date: 9/8/2000  
Cover Type or Plant Association Emergent Wetlands/marsh

Habitat Components	Components Points (From Key)								Total
	Site No.	2	3	6	7	8	9	10/11	
1. Site Potential	20	20	20	20	20	20	20	20/20	180
2. Temporal Development									
Criteria A									
Criteria B (Marsh Wetlands Only)	5	5	5	5	5	5	5	5/5	40
3. Uniqueness and Relative Abundance	5	5	5	5	5	5	5	5/5	40
4. Vegetation Species Diversity									
Criteria A									
Criteria B									
Criteria C (Swamps Only)									
Criteria D (Marsh Wetlands Only)	5	5	3	5	5	5	5	5/5	38
5. Vertical Stratification									
6. Additional Structural Diversity Components	1	1	1	3	0	1	1	3/0	10
7. Condition of Existing Vegetation									
Criteria A (Woody Vegetation)									
Criteria B (Herbaceous Vegetation)									
Criteria C (Croplands Only)									
Criteria D (Marsh Wetlands Only)	5	5	5	5	5	5	5	5/5	40

Average Habitat Quality Score for all sites within this cover type =  $\frac{\text{Total Points}}{\text{Total number of sites}} \times \frac{1}{100} = 0.44$

Sites 3+8 are emergent wetlands associated with edges of perennial ponds.

WHAP  
Biological Components  
Field Evaluation Form

Project TRA EF2

Date: 9/8/2000

Cover Type or Plant Association Floodplain Grassland/Stormwater outfalls

Habitat Components		Components Points (From Key)						Total
Site No.	1*	4						
1. Site Potential	20	20					40	
2. Temporal Development								
Criteria A	5	5					10	
Criteria B (Marsh Wetlands Only)								
3. Uniqueness and Relative Abundance	5	5					10	
4. Vegetation Species Diversity								
Criteria A	1	1					2	
Criteria B	1	1					2	
Criteria C (Swamps Only)								
Criteria D (Marsh Wetlands Only)								
5. Vertical Stratification	1	1					2	
6. Additional Structural Diversity Components								
7. Condition of Existing Vegetation								
Criteria A (Woody Vegetation)	5	5					10	
Criteria B (Herbaceous Vegetation)	3	5					8	
Criteria C (Croplands Only)								
Criteria D (Marsh Wetlands Only)								

Average Habitat Quality Score for all sites within this cover type =  $\frac{\text{Total Points}}{\text{Total number of sites}} \times \frac{1}{100} = 0.42$

\* Upper bank of site 1 includes woody species

Both sites are part of stormwater system and are subject to disturbance for maintenance.

WHAP  
Biological Components  
Field Evaluation Form

Project TRA EF2

Date: 9/8/2000

Cover Type or Plant Association Floodplain Forest

Habitat Components		Components Points (From Key)					
	Site No.	12	13				Total
1. Site Potential		20	12				32
2. Temporal Development							
Criteria A		3	12				15
Criteria B (Marsh Wetlands Only)							
3. Uniqueness and Relative Abundance		5	5				10
4. Vegetation Species Diversity							
Criteria A		2	2				4
Criteria B		1	1				2
Criteria C (Swamps Only)							
Criteria D (Marsh Wetlands Only)							
5. Vertical Stratification		4	3				7
6. Additional Structural Diversity Components		1	0				1
7. Condition of Existing Vegetation							
Criteria A (Woody Vegetation)		3	5				8
Criteria B (Herbaceous Vegetation)		3	3				6
Criteria C (Croplands Only)							
Criteria D (Marsh Wetlands Only)							

Average Habitat Quality Score for all sites within  
this cover type =  $\frac{\text{Total Points}}{\text{Total number of sites}} \times \frac{1}{100} = 0.43$

**WHAP**  
**Biological Components**  
**Field Evaluation Form**

Project TRAFZ

Date: 9/8/2000

Cover Type or Plant Association Maintained Lawn / Lake outfalls

Habitat Components		Components Points (From Key)					
Site No.	14	15					Total
1. Site Potential	12	12					24
2. Temporal Development							
Criteria A	5	5					10
Criteria B (Marsh Wetlands Only)							
3. Uniqueness and Relative Abundance	5	5					10
4. Vegetation Species Diversity							
Criteria A	0	0					0
Criteria B	0	0					0
Criteria C (Swamps Only)							
Criteria D (Marsh Wetlands Only)							
5. Vertical Stratification	1	4					5
6. Additional Structural Diversity Components	0	0					0
7. Condition of Existing Vegetation							
Criteria A (Woody Vegetation)	0	0					0
Criteria B (Herbaceous Vegetation)	0	3					3
Criteria C (Croplands Only)							
Criteria D (Marsh Wetlands Only)							

Average Habitat Quality Score for all sites within  
 this cover type =  $\frac{\text{Total Points}}{\text{Total number of sites}} \times \frac{1}{100} = 0.26$

**Appendix B**  
**Figures and Tables**



**Figure 3-1.** View of typical emergent wetland impact area.



**Figure 3-2.** View of emergent wetland that is usually adjacent to perennial pond.  
Pond is dry in this figure.



**Figure 3-3.** View of stormwater structure at jurisdictional area 8.



**Figure 3-4.** View of stormwater structure at jurisdictional area 4.



**Figure 3-5.** View of floodplain forest impact area at jurisdictional area 12.



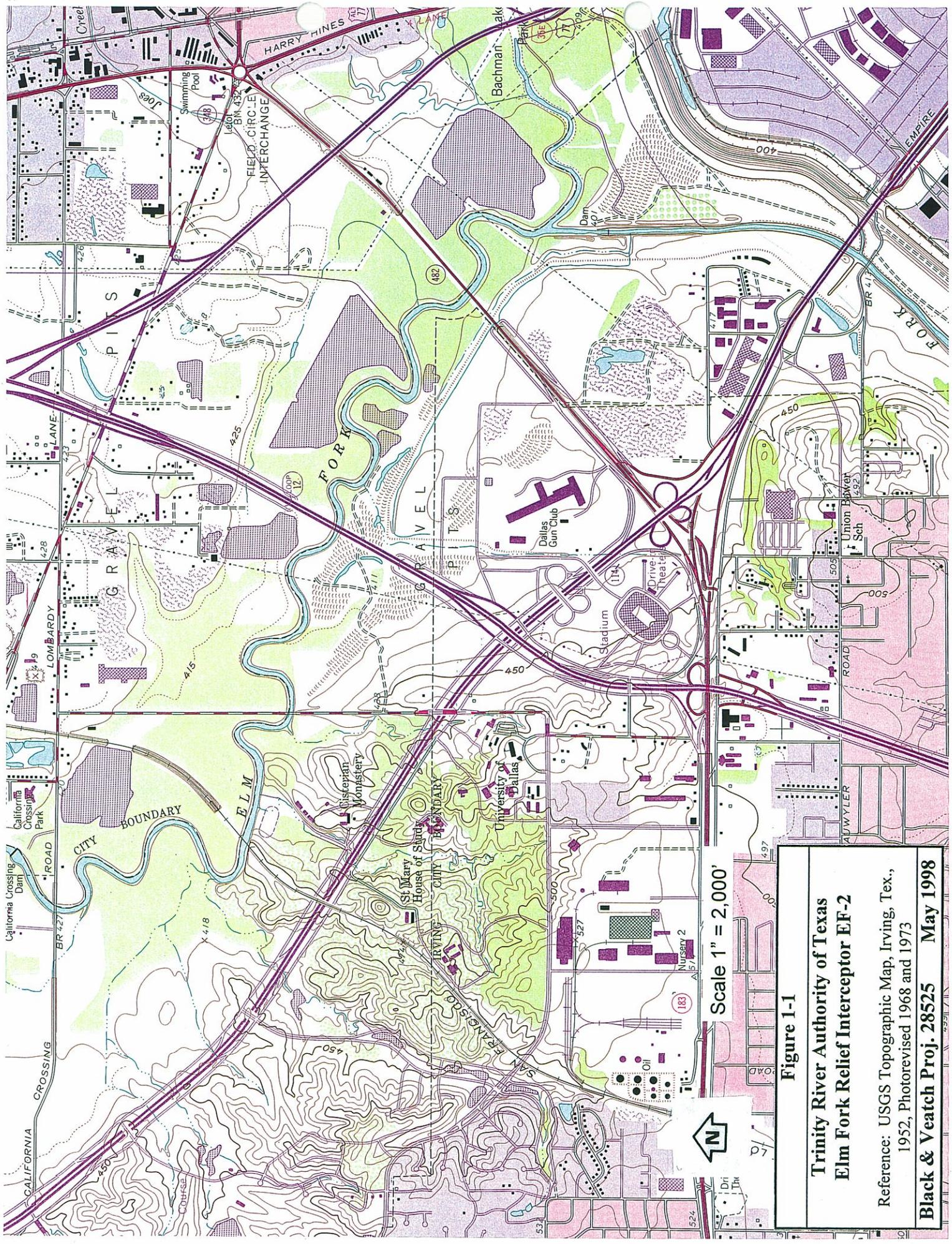
**Figure 3-6.** View of floodplain forest impact area at jurisdictional area 13.



**Figure 3-7.** View of lake outfall at jurisdictional area 14.



**Figure 3-8.** View of lake outfall at jurisdictional area 15 showing the typical condition of the maintained lawn.



Scale 1" = 2,000'



**Figure 1-1**  
**Trinity River Authority of Texas**  
**Elm Fork Relief Interceptor EF-2**

Reference: USGS Topographic Map, Irving, Tex.,  
 1952, Photorevised 1968 and 1973

**Black & Veatch Proj. 28525**    **May 1998**

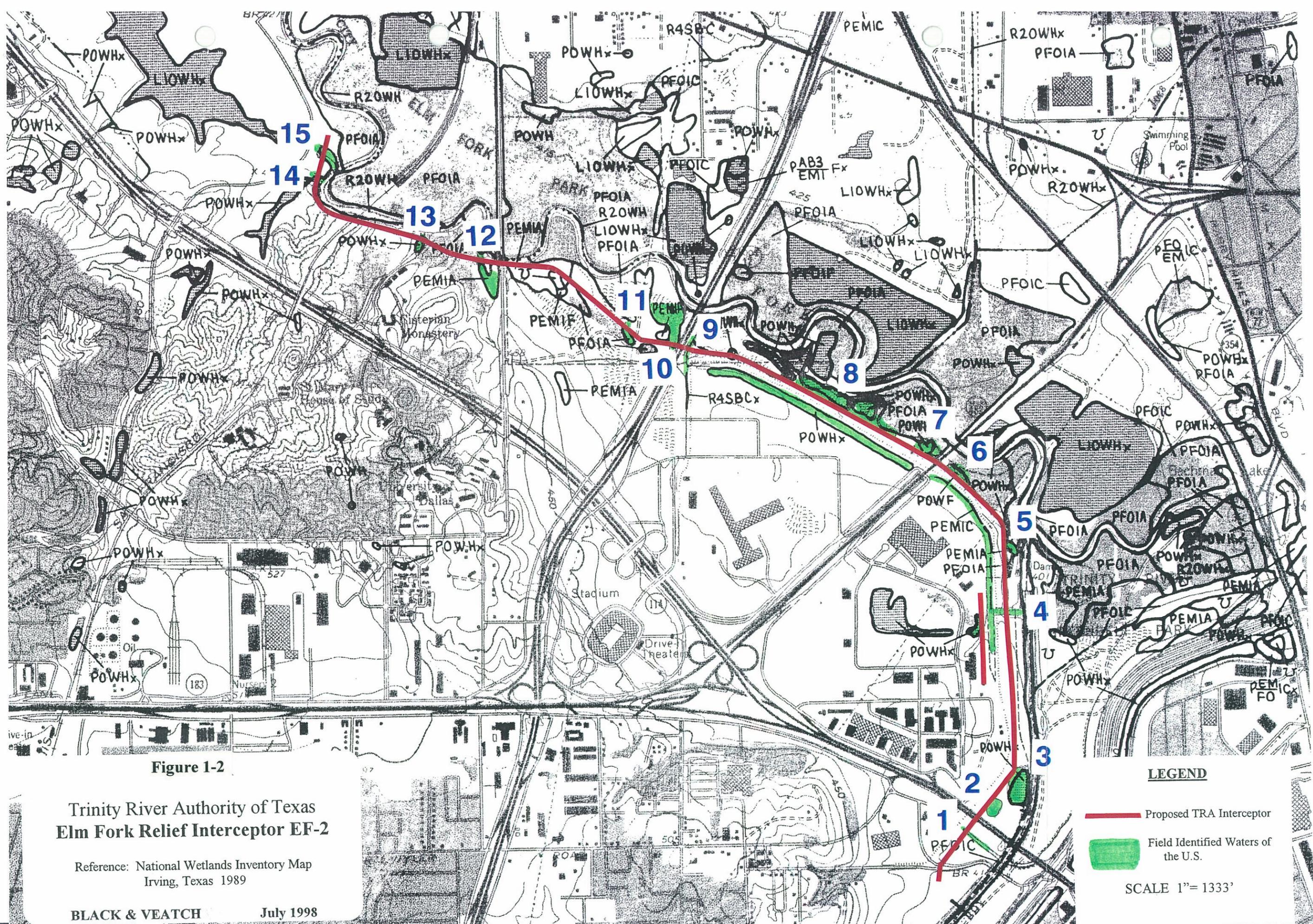


Figure 1-2

Trinity River Authority of Texas  
 Elm Fork Relief Interceptor EF-2

Reference: National Wetlands Inventory Map  
 Irving, Texas 1989

BLACK & VEATCH

July 1998

LEGEND

- Proposed TRA Interceptor
- Field Identified Waters of the U.S.

SCALE 1" = 1333'

**Table 1. Anticipated Loss of Habitat Units.**

HABITAT TYPE	Site No.	AVG. HABITAT QUALITY SCORE	PERMANENT IMPACT ACRES	HABITAT UNITS LOST
Emergent Wetland	2		0.00	
	3		0.00	
	6		0.00	
	7		0.00	
	8		0.72	
	9		0.06	
	10		0.00	
	11		0.00	
			0.44	0.78
Floodplain Grassland	1		0.05	
	4		0.08	
			0.42	0.13
Floodplain Forest	12		0.08	
	13		0.06	
			0.43	0.14
Maintained Lawn	14		0.00	
	15		0.12	
			0.26	0.12
<b>TOTAL</b>			1.17	0.48

**Note:** Site 5 was determined to be non-jurisdictional and was not included in this appraisal.