

Appendix C

TXRAM Functional Analysis

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TXRAM FUNCTIONAL ANALYSIS

1.0 BACKGROUND

The U.S. Army Corps of Engineers, Fort Worth and Tulsa Districts (USACE) have developed a wetland and stream conditional assessment model, referred to as the Texas Rapid Assessment Method (TXRAM); the method is described in *The Texas Rapid Assessment Method (TXRAM), Wetlands and Streams Modules* (TXRAM Manual) (USACE 2010a). TXRAM provides a rapid, repeatable, field-based conditional assessment methodology for evaluating the ecological condition of wetlands and streams located within each District's area of responsibility in the state of Texas. This method generates a single overall score of wetland or stream integrity. As such, TXRAM does not focus on specific ecologic functions or societal values provided by wetlands and streams. The output from TXRAM will be used for calculating baseline conditions as well as post-project conditions associated with actions subject to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. The TXRAM Manual contains two separate modules, one for wetlands and one for streams, each of which describe the intended use, scope, background, procedures, and guidelines (*Note: the assessment model does not apply to other open waters*).

As part of this effort, the USACE has also developed an Aquatic Resource Compensation Calculator (ARCC) that has been used to perform the functional analysis on impacts from the Dallas Floodway Project to wetlands and the Trinity River.

2.0 EXISTING CONDITIONS

2.1 JURISDICTIONAL WETLANDS

A TXRAM assessment was performed by Halff Associates (Halff) for most of the emergent wetlands located in the Dallas Floodway Project area (Halff 2011). However, the emergent wetlands listed in Table C-1 did not receive a TXRAM field assessment in 2011. The TXRAM scores indicated in Table C-1 were inferred from other nearby wetlands, based on guidance provided in Section 2.2.7.2 of the TXRAM Manual (USACE 2010a). The nearby representative wetlands used to infer TXRAM scores are listed in Table C-2. Tables 6 and 7 of the 404(b)(1) Analysis list existing TXRAM scores and total areas for each of the impacted wetlands.

2.1 TRINITY RIVER

The existing Trinity River channel that would be impacted by river relocation (i.e., from the confluence of the Elm and West Forks to the Commerce Street Bridge) is 38,232 linear feet/134.2 acres and is classified as riverine. A TXRAM assessment performed for this reach of the Trinity River determined a score of 68.52 for the existing channel (Halff 2011).

Table C-1. Wetlands with Inferred TXRAM Scores

Wetland Number	Total Area (acres)	Inferred TXRAM Score	Wetlands Used to Infer TXRAM Scores
1	2.09	58.01	14, 15, 16, 19, 21, 22
2	0.52	58.01	14, 15, 16, 19, 21, 22
10	0.20	58.01	14, 15, 16, 19, 21, 22
11	0.55	58.01	14, 15, 16, 19, 21, 22
12	0.76	58.01	14, 15, 16, 19, 21, 22
13	0.50	58.01	14, 15, 16, 19, 21, 22
84	0.97	58.01	14, 15, 16, 19, 21, 22
86	0.48	60.59	60
87	0.14	58.77	50, 52
88	0.07	58.83	44
89	0.07	57.76	29
189	0.43	58.01	14, 15, 16, 19, 21, 22
188	0.16	58.01	14, 15, 16, 19, 21, 22
181	0.03	58.01	14, 15, 16, 19, 21, 22

Table C-2. Wetlands Used to Infer TXRAM Scores

Wetland Number	Area (acres)	TXRAM Score
Group 1*		
14	1.00	58.25
15	1.07	57.78
16	0.60	58.26
19	1.66	57.87
21	0.08	58.46
22	1.42	57.44
Minimum		57.44
Maximum		58.46
Average		58.01
Group 2		
50	0.15	59.60
52	2.42	57.93
Average		58.77

Note: * Nearby wetland numbers 4, 17, and 18 were not used because their TXRAM scores differed by more than 2 points for the Landscape Core Element score; nearby wetland numbers 5 and 20 were not used because their TXRAM scores differed by more than 5 points for the overall score (based on guidance in Section 2.2.7.2 of the TXRAM Manual [USACE 2010a]).

3.0 FUNCTIONAL ANALYSIS

3.1 ALTERNATIVE 2: PROPOSED ACTION WITH THE TRINITY PARKWAY

3.1.1 Jurisdictional Wetlands

3.1.1.1 Wetlands Enhanced/Restored Under the BVP

As described in Section 3.3.2.3 of the 404(b)(1) analysis, the BVP component of the Dallas Floodway Project would restore or enhance 178.53 acres of emergent and forested wetlands. The details for each of the enhanced/restored wetlands under the BVP Component of the Dallas Floodway Project are provided in Table C-3.

Future TXRAM Scores

For each enhanced/restored wetland, future TXRAM scores for “Release of Monitoring” and “At Maturity” are needed to perform the TXRAM functional analysis using the ARCC. “Release of Monitoring” is the year that the construction of the enhanced/restored wetland is complete based on the anticipated construction schedule for the Dallas Floodway Project, and “At Maturity” is 1 year after construction for emergent wetlands and 30 years are construction for forested wetlands.

TXRAM assessments were conducted for each wetland based on anticipated future conditions, as identified in the 35% designs (City of Dallas 2009b,c) and the Dallas Floodway Project Draft EIS. Specifically, the 35% designs and the Dallas Floodway Project Draft EIS provided details used to assess the Metric Scores for several of the Core Elements, including the surrounding landscape (connectivity and buffer), hydrology physical structure and biotic structure. Based on design and construction measures identified below under *Failure Risk*, the soils metric scores assumed that the future soils would be similar to soils in existing wetlands in the floodway. Guidelines in the TXRAM Manual (USACE 2010a) for assessing the created wetlands were followed, when available. The “At Release” and “At Maturity” scores are provided for each enhanced/restored wetland in Table C-3; the metric scores used to determine the TXRAM scores are provided in Attachment C-1.

Failure Risk

A *Failure Risk* was needed for each enhanced/restored wetland to perform the TXRAM functional analysis using the ARCC. Failure risk for constructed wetlands is associated with the hydrology, vegetation, and soils of the enhanced/restored wetland. To ensure that the enhanced/restored wetland would properly function, the design/construction plans and post project monitoring would include the following measures:

- Hydrology
 - The wetland would be designed to achieve the minimum requirement to meet the hydrology criteria as defined in the 1987 Wetland Delineation Manual and the Great Plains Regional Supplement (USACE 2010b). This would be achieved through either (1) locating the wetland at an elevation where it would receive sufficient inundation/saturation from the Trinity River or (2) designing the wetland as a depressional basin that would receive stormwater runoff from surrounding areas, overbank flows from the Trinity River and drainage sumps, or water from other artificial sources (e.g., pumped from the created lakes or Trinity River).
 - After grading is complete, the permittee would complete an “as built” survey to verify the target elevations identified in the designs were established and then install and monitor

groundwater piezometers (for minimum of 1 year of normal rainfall conditions) to identify and document that sufficient wetland hydrology is present, as required.

- Vegetation

- The design would utilize a mixture of agency recommended native plants, as well as other native plants that are more common early successional species and easy to establish vegetative cover, to help ensure plant survival.
- No plants would be installed until soils and hydrology criteria are met.
- Ongoing maintenance would monitor and control invasives and monitor and replant native wetland plants, as needed.

- Soils

- During construction, soils would be collected from wetland impact locations and stockpiled to be spread on the enhanced/restored areas. By using soils from the impact sites, there would be the added benefit of an incredible seed source as well as organic material.
- The soils to be used for enhancement/restoration would be tested for nutrient, organics, and percolation and if they do not meet the minimum standards, additional organics/soil amendments/ripping would be added/completed until the standard is met.

By following the above measures, the *Failure Risk* would be low. The hydrology is the most difficult to achieve, while suitable soils can be developed and healthy plants can be planted. Without sufficient hydrology, the wetland would fail.

Most of the proposed wetlands would be designed as depressions, capable of storing water. For these wetlands, the source of water would be from either stormwater runoff from nearby urban areas, the Trinity Parkway, or BVP features; inundation when the flow in the Trinity River reaches 15,000 cfs (i.e., flow with an approximately 1.5 year return interval); or other artificial sources (e.g., pumped from the created lakes or Trinity River). These depressional wetlands are estimated to have a *Failure Risk* of 15%. The Lacustrine Fringe wetlands would be transitional and are designed to be at an elevation that receives partial inundation and saturation from fluctuating lake levels; these wetlands are estimated to have a *Failure Risk* of 15%. The River Terraces would be designed to be at an elevation completely inundated by Trinity River flows for at least 10-consecutive days during the growing season (i.e., from February 22 to December 11) for greater than 50% of the years (e.g., greater than 25 years out of 50 years). Due to some uncertainty and variations in climate, these wetlands are estimated to have a *Failure Risk* of 20%. The estimated *Failure Risk* for each of wetlands to be enhanced/restored under the BVP Component of the Dallas Floodway Project is provided in Table C-3.

Use of Forested Wetlands to Compensate for Impacts to Emergent Wetlands

A review of a 1928 aerial photograph (refer to Figure 2 in the *404(b)(1) Analysis*) identified large forested areas present in the current project area. The forested areas were located on floodplain areas adjacent to the Trinity River. Much of these areas have been converted to uplands or other wetland types such as emergent or open water.

Numerous studies have concluded that bottomland hardwood forests have been disappearing rapidly since the turn of this century in Texas as well as throughout the southeast, where they are most common. Most of the losses in Texas were from conversion to agriculture, water supply features, and other upland land uses (Moulton et al. 1997). Bottomland hardwood forests play an important role in controlling soil erosion, maintaining water quality by removing nutrients and toxicants, recharging groundwater,

1 floodwater storage, and flood attenuation. Bottomland hardwood areas are considered among the most
2 important habitats for wildlife and are also rich in plant and animal species diversity (Wear and Gre2002).

3 Based on the historic extent of bottomland hardwood forests in the Study Area, the important functions
4 and values that they provide, and the magnitude of the losses of this habitat to date, the habitat goal for a
5 portion of the enhanced/restored wetland areas was to create forested wetlands, specifically bottomland
6 hardwood forests.

7 **3.1.1.2 Impact Determination**

8 Methodology and Input Data

9 A functional analysis was performed using ARCC developed by the USACE. The inputs for the ARCC
10 are summarized in Tables C-3 and C-4. Existing wetland areas that would also be wetland areas under
11 Alternative 2 are identified as “Enhanced” in Table C-3 and as temporary impacts in Table C-4. Existing
12 wetland areas that would be converted to upland or other WOUS (i.e., river, lakes, drainage sumps, etc.)
13 are identified as permanent impacts in Table C-4. Wetland areas that would be created in existing wetland
14 areas or other WOUS (i.e., river, lakes, drainage sumps, etc.) are identified as “Restored” in Table C-3.

15 Each wetland was categorized by which project component and feature would impact the wetland. A year
16 of impact was assigned based on the anticipated construction schedule for the Dallas Floodway Project
17 (Table C-4). Wetlands enhanced/restored under the BVP Component were also assigned a year started
18 (i.e., year that construction of the wetland would be complete) based on the anticipated construction
19 schedule for the Dallas Floodway Project (Table C-3). Impacted wetlands were sorted by project
20 component and year of impact and then consecutively run through the ARCC (*Note: wetlands with the*
21 *same TXRAM score and impact timing were combined together into a single impact acreage and ARCC*
22 *calculation*). The functional analysis attempted to utilize the BVP wetland(s) with the closest year started
23 to compensate for a given impact. The *Alternative 2 Wetland Impact and Compensation Matrix* in
24 Attachment C-2 outlines the step by step process of compensation for impacts to each wetland/group of
25 wetlands (starting in the upper left corner of the matrix); each individual ARCC calculation sheet is also
26 provided in Attachment C-2.

27 Results

28 Overall, 166.37 acres of emergent wetlands would be impacted under Alternative 2. The BVP Component
29 of Alternative 2 would result in the enhancement/restoration of 178.53 acres of emergent and forested
30 wetlands for a predicted net gain in wetland area of 12.16 acres. However, after compensating for all
31 project impacts to jurisdictional wetlands (i.e., 166.37 acres) there would be an additional 40.82 acres of
32 enhanced/restored wetlands predicted to be remaining (Table C-4 and Attachment C-2). Assuming a
33 compensation ratio of 0.80 for this remaining area, a predicted net functional gain of 50.35 acres of
34 wetlands would be expected under Alternative 2.

Table C-3. Wetlands Enhanced or Restored under the Alternative 2 BVP Component of the Dallas Floodway Project

BVP Wetland # ¹	Wetland Type ²	Year Started ³	Year Matured ³	Failure Risk ⁴	TXRAM Scores ⁵			Wetland Area (acres)		
					Baseline	Future		Enhanced	Restored	Total
						At Release	At Maturity			
Flex Field Wetlands										
16	Depressional/Emergent	2024	2025	15%	0.00	71.07	78.21	0.01	2.28	2.29
21	Depressional/Emergent	2024	2025	15%	0.00	71.07	78.21		3.46	3.46
22	Depressional/Emergent	2024	2025	15%	0.00	71.07	78.21	0.01	2.31	2.32
23	Depressional/Emergent	2024	2025	15%	0.00	71.07	78.21		2.52	2.52
24	Depressional/Emergent	2024	2025	15%	0.00	71.07	78.21	0.55	2.27	2.82
25	Depressional/Emergent	2024	2025	15%	0.00	71.07	78.21	0.31	3.42	3.73
26	Depressional/Emergent	2024	2025	15%	0.00	71.07	78.21	0.19	1.27	1.46
27	Depressional/Emergent	2024	2025	15%	0.00	71.07	78.21		1.49	1.49
Meadow Wetlands										
11	Depressional/Emergent	2020	2021	15%	0.00	66.32	71.79	0.42		0.42
17	Riverine/Emergent	2024	2025	15%	0.00	70.65	79.46	1.84	1.56	3.40
18	Depressional/Emergent	2024	2025	15%	0.00	71.57	77.04	2.05	15.90	17.95
35	Riverine/Emergent	2025	2026	15%	0.00	67.15	72.63	0.77		0.77
Crow Lake Wetland										
31	Depressional/Emergent	2028	2029	15%	0.00	59.19	66.33	0.05	3.44	3.49
Corinth Wetlands										
59	Riverine/Emergent	2029	2030	15%	0.00	67.61	74.75	4.70	1.34	6.04
60	Riverine/Emergent	2029	2030	15%	0.00	67.82	74.96	38.27	39.47	77.74
Urban Lake Promenade Forested Ponds										
38	Depressional/Forested	2018	2048	15%	0.00	38.10	46.67		0.17	0.17
39	Depressional/Forested	2018	2048	15%	0.00	38.10	46.67		0.25	0.25
40	Depressional/Forested	2018	2048	15%	0.00	38.10	46.67		0.47	0.47
44	Depressional/Forested	2018	2048	15%	0.00	38.10	46.67		0.87	0.87
45	Depressional/Forested	2018	2048	15%	0.00	38.10	46.67		1.33	1.33

Table C-3. Wetlands Enhanced or Restored under the Alternative 2 BVP Component of the Dallas Floodway Project (cont.)

BVP Wetland # ¹	Wetland Type ²	Year Started ³	Year Matured ³	Failure Risk ⁴	TXRAM Scores ⁵			Wetland Area (acres)		
					Baseline	Future		Enhanced	Restored	Total
						At Release	At Maturity			
Natural Lake Forested Pond										
58	Depressional/Forested	2017	2047	15%	0.00	44.35	52.92		6.68	6.68
West Dallas Lake Marshlands										
5	Lacustrine Fringe/Emergent	2027	2028	15%	0.00	58.27	65.41	0.25	0.83	1.08
6	Lacustrine Fringe/Emergent	2027	2028	15%	0.00	58.27	65.41		0.42	0.42
7	Lacustrine Fringe/Emergent	2027	2028	15%	0.00	58.27	65.41		0.21	0.21
8	Lacustrine Fringe/Emergent	2027	2028	15%	0.00	58.27	65.41		1.21	1.21
9	Lacustrine Fringe/Emergent	2027	2028	15%	0.00	58.27	65.41	0.11	0.63	0.74
10	Lacustrine Fringe/Emergent	2027	2028	15%	0.00	58.27	65.41		0.65	0.65
12	Lacustrine Fringe/Emergent	2027	2028	15%	0.00	58.27	65.41		0.83	0.83
13	Lacustrine Fringe/Emergent	2027	2028	15%	0.00	58.27	65.41	0.03	0.75	0.78
14	Lacustrine Fringe/Emergent	2027	2028	15%	0.00	58.27	65.41	0.04	1.11	1.15
Urban Lake Marshlands										
36	Lacustrine Fringe/Emergent	2018	2019	15%	0.00	57.18	64.33		0.05	0.05
37	Lacustrine Fringe/Emergent	2018	2019	15%	0.00	57.18	64.33		0.59	0.59
41	Lacustrine Fringe/Emergent	2018	2019	15%	0.00	57.18	64.33	0.10	0.12	0.22
42	Lacustrine Fringe/Emergent	2018	2019	15%	0.00	57.18	64.33	0.05	1.00	1.05
46	Lacustrine Fringe/Emergent	2018	2019	15%	0.00	57.18	64.33		0.10	0.10
Natural Lake Marshlands										
47	Lacustrine Fringe/Emergent	2017	2018	15%	0.00	60.52	67.66	0.05	0.46	0.51
48	Lacustrine Fringe/Emergent	2017	2018	15%	0.00	60.52	67.66		1.14	1.14
49	Lacustrine Fringe/Emergent	2017	2018	15%	0.00	60.52	67.66		2.14	2.14
52	Lacustrine Fringe/Emergent	2017	2018	15%	0.00	60.52	67.66		0.63	0.63
53	Lacustrine Fringe/Emergent	2017	2018	15%	0.00	60.52	67.66	0.03	0.45	0.48
54	Lacustrine Fringe/Emergent	2017	2018	15%	0.00	60.52	67.66	0.81	0.82	1.63

Table C-3. Wetlands Enhanced or Restored under the Alternative 2 BVP Component of the Dallas Floodway Project (cont.)

BVP Wetland # ¹	Wetland Type ²	Year Started ³	Year Matured ³	Failure Risk ⁴	TXRAM Scores ⁵			Wetland Area (acres)		
					Baseline	Future		Enhanced	Restored	Total
						At Release	At Maturity			
River Terrace										
1	Riverine/Forested	2020	2050	20%	0.00	71.21	80.97		1.61	1.61
2	Riverine/Forested	2020	2050	20%	0.00	71.21	80.97		1.77	1.77
3	Riverine/Forested	2020	2050	20%	0.00	71.21	80.97	1.00	3.03	4.03
4	Riverine/Forested	2020	2050	20%	0.00	71.21	80.97	0.15	0.97	1.12
15	Riverine/Forested	2022	2052	20%	0.00	71.21	80.97		1.79	1.79
19	Riverine/Forested	2024	2054	20%	0.00	73.71	83.47	0.64	2.83	3.47
20	Riverine/Forested	2024	2054	20%	0.00	73.71	83.47	0.00	2.00	2.00
30	Riverine/Forested	2025	2055	20%	0.00	71.21	80.97		0.35	0.35
32	Riverine/Forested	2025	2055	20%	0.00	73.71	83.47		2.27	2.27
43	Riverine/Forested	2025	2055	20%	0.00	71.21	80.97	0.23	1.81	2.04
50	Riverine/Forested	2027	2057	20%	0.00	71.21	80.97	0.00	0.44	0.44
51	Riverine/Forested	2027	2057	20%	0.00	71.21	80.97		0.71	0.71
55	Riverine/Forested	2027	2057	20%	0.00	71.21	80.97	0.01	0.58	0.59
56	Riverine/Forested	2027	2057	20%	0.00	71.21	80.97	0.10	0.30	0.40
57	Riverine/Forested	2027	2057	20%	0.00	71.21	80.97	0.23	0.43	0.66
							Total	53.00	125.53	178.53

Notes ¹ Refer to figures in Appendix A for location of BVP Wetlands.

² Wetland type is based on definition in TXRAM Manual (USACE 2010a) and the type of vegetation to be used (emergent = herbaceous cover; forested = bottomland hardwood).

³ *Year Started* is based on the anticipated construction schedule for the Dallas Floodway Project; *Year Matured* is based on *Year Started* plus 1 year for emergent wetlands and 30 years for forested wetlands to reach maturity.

⁴ Refer to text for description of *Failure Risk*.

⁵ Future TXRAM scores were based on the TXRAM assessments presented in Attachment C-1.

Table C-4. Jurisdictional Wetland Impacts and Compensation under Alternative 2

Existing Wetland Number	Total Area (acres)	TXRAM Score	Impacts (acres)			Year of Impact ¹	Impacting Feature	BVP Wetland Used to Compensate for Impacts	
			Temp	Perm	Total			BVP #(s)	Area Used (acres) ²
FRM									
1, 188, and 189	2.68	58.01 ³		0.03	0.03	2017	Elm Fork Levee and West Fork Levee	47	0.03
9	4.17	59.50		0.02	0.02	2017	East Levee	47	0.02
16	0.6	58.26		0.01	0.01	2017	Borrow Pit	47	0.01
19	1.66	57.87	0.09	0.03	0.12	2017	Borrow Pit	47	0.11
20	3.73	60.97	0.18	0.50	0.68	2017	Borrow Pit	47, 48	0.62
44	23.82	58.33		0.08	0.08	2017	West Levee	48	0.07
IDP									
65	6.8	58.18		0.16	0.16	2017	Charlie Pumping Plant	48	0.14
9	4.17	59.5		0.11	0.11	2020	Hampton Pumping Plant	18	0.09
Ecosystem Other									
59	2.03	60.73		0.25	0.25	2017	Natural Lake	48	0.23
67	6.3	56.98	0.07	0.97	1.04	2017	Natural Lake	48, 49	0.89
68	8.88	56.63	0.26	0.18	0.44	2017	Natural Lake	49	0.38
48	2.61	55.46		0.36	0.36	2017	Urban Lake	49	0.34
52	2.42	57.93	0.10	0.10	0.20	2017	Urban Lake	49	0.17
54	7.95	58.96		0.86	0.86	2017	Urban Lake	49	0.76
29	7.9	57.76	0.01	1.41	1.42	2019	Flex Field	1, 2	1.07
36	20.85	60.38		11.31	11.31	2019	Flex Field	2, 3, 4, 15, 16	9.01
89	0.07	57.76 ³		0.07	0.07	2019	Flex Field	16	0.06
71	0.86	54.82		0.20	0.20	2024	Park Lands	24	0.14
69	57.13	59.26	34.26	2.27	36.53	2025	Corinth Wetland	24	30.9
4	11.83	58.91		6.16	6.16	2025	Horse Meadow	25, 26	4.64
5	0.2	55.91		0.20	0.20	2025	Horse Meadow	26	0.14
6	7.03	53.94		6.47	6.47	2025	Horse Meadow	26, 27, 19	4.37
32	6.49	55.27	0.56	2.14	2.70	2025	Horse Meadow	19, 20	1.84
15	1.07	57.78		0.39	0.39	2025	West Dallas Lake	20	0.28
16	0.6	58.26		0.02	0.02	2025	West Dallas Lake	20	0.01
19	1.66	57.87	0.02	0.05	0.07	2025	West Dallas Lake	20	0.05
22	1.42	57.44		1.08	1.08	2025	West Dallas Lake	20	0.77
26	1.29	55.63	0.02		0.02	2025	West Dallas Lake	20	0.01
27	3.98	57.52	0.04	2.74	2.78	2025	West Dallas Lake	20, 35, 30, 32	2.09
44	23.82	58.33		1.84	1.84	2026	Oak Cliff Parkland	60	1.51
53	4.24	58.07		0.11	0.11	2026	Oak Cliff Parkland	60	0.09

Table C-4. Jurisdictional Wetland Impacts and Compensation under Alternative 2 (cont.)

Existing Wetland Number	Total Area (acres)	TXRAM Score	Impacts (acres)			Year of Impact ¹	Impacting Feature	BVP Wetland Used to Compensate for Impacts	
			Temp	Perm	Total			BVP #(s)	Area Used (acres) ²
Ecosystem Other (cont.)									
1, 2, 10, and 11	3.36	58.01 ³		0.86	0.86	2026	Confluence Fields	60	0.7
46	3.28	57.49	0.05		0.05	2027	Crow Park	60	0.04
Ecosystem River									
4	11.83	58.91	1.00	4.58	5.58	2018	River Relocation Phase 3a	58, 37	6.4
6	7.03	53.94		0.55	0.55	2018	River Relocation Phase 3a	58	0.59
14	1	58.25		0.01	0.01	2018	River Relocation Phase 3a	40	0.01
20	3.73	60.97	0.22	1.93	2.15	2018	River Relocation Phase 3a	40, 44, 45, 11	2.87
10, 11, 12, and 13	2.01	58.01 ³		1.83	1.83	2018	River Relocation Phase 3a	52, 58, 41, 42, 46, 38, 39	1.81
84 and 181	0.97	58.01 ³		1.00	1.00	2018	River Relocation Phase 3a	11, 1	0.79
9	4.17	59.5	0.42		0.42	2020	River Relocation Phase 3b	18	0.35
25	2.74	53.16		1.09	1.09	2020	River Relocation Phase 3b	18	0.8
26	1.29	55.63	0.01	0.01	0.01	2020	River Relocation Phase 3b	18	0.01
27	3.98	57.52		0.43	0.43	2020	River Relocation Phase 3b	18	0.34
29	7.9	57.76		0.80	0.80	2020	River Relocation Phase 3b	18	0.64
31	11.64	53.95	2.44	0.29	2.73	2022	River Relocation Phase 4a	18	1.98
32	6.49	55.27	0.49	0.63	1.12	2022	River Relocation Phase 4a	18	0.85
33	5.19	58.09	2.06	2.45	4.51	2022	River Relocation Phase 4a	18	3.53
36	20.85	60.38	0.04	0.43	0.47	2022	River Relocation Phase 4a	18	0.39
44	23.82	58.33	1.00	12.35	13.35	2023	River Relocation Phase 4b	18, 21, 22, 23	10.27
46	3.28	57.49		1.47	1.47	2023	River Relocation Phase 4b	23, 24	1.11
48	2.61	55.46		1.26	1.26	2023	River Relocation Phase 4b	24	0.92
52	2.42	57.93		0.90	0.90	2023	River Relocation Phase 4b	24	0.69
53	4.24	58.07		4.13	4.13	2025	River Relocation Phase 5	32, 43	3.05
56	0.95	56.26		0.95	0.95	2025	River Relocation Phase 5	43, 5	0.78
59	2.03	60.73	0.05	0.30	0.35	2025	River Relocation Phase 5	5	0.34
60	1.7	60.59		1.70	1.70	2025	River Relocation Phase 5	5, 6, 7, 8	1.65
65	6.8	58.18	0.14	6.17	6.31	2025	River Relocation Phase 5	8, 9, 10, 12, 13, 14, 50, 51	5.66
66	8.2	58.26		0.23	0.23	2025	River Relocation Phase 5	51, 55	0.18
67	6.3	56.98	0.67	1.37	2.04	2025	River Relocation Phase 5	55, 56, 57	1.54
68	8.88	56.63	2.02	2.16	4.18	2025	River Relocation Phase 5	57, 31, 59	3.76
69	57.13	59.26	6.73	3.49	10.22	2025	River Relocation Phase 5	59, 60	8.68

Table C-4. Jurisdictional Wetland Impacts and Compensation under Alternative 2 (cont.)

Existing Wetland Number	Total Area (acres)	TXRAM Score	Impacts (acres)			Year of Impact ¹	Impacting Feature	BVP Wetland Used to Compensate for Impacts	
			Temp	Perm	Total			BVP #(s)	Area Used (acres) ²
Ecosystem River (cont.)									
71	0.86	54.82		0.15	0.15	2025	River Relocation Phase 5	60	0.12
85	1.82	56.23	0.05	1.05	1.10	2025	River Relocation Phase 5	60	0.88
86	0.48	60.59 ³		0.48	0.48	2025	River Relocation Phase 5	60	0.42
Recreation									
27	3.98	57.52		0.66	0.66	2017	Park Road	49, 52	0.56
59	2.03	60.73		0.09	0.09	2017	Natural Lake	52	0.08
48	2.61	55.46		0.71	0.71	2017	Urban Lake	53, 54	0.59
52	2.42	57.93		0.12	0.12	2017	Urban Lake	54	0.14
54	7.95	58.96		1.72	1.72	2017	Urban Lake	54, 36, 37	1.57
87	0.14	58.77 ³		0.14	0.14	2017	Urban Lake	37	0.13
12	0.76	58.01 ³		0.03	0.03	2019	Flex Field	16	0.02
14	1	58.25		0.98	0.98	2019	Flex Field	16	0.8
15	1.07	57.78		0.68	0.68	2019	Flex Field	16	0.55
29	7.9	57.76		5.45	5.45	2019	Flex Field	16, 17, 18	4.41
36	20.85	60.38		6.36	6.36	2019	Flex Field	18	5.41
4	11.83	58.91		0.08	0.08	2024	Primary Path	24	0.06
68	8.88	56.63		0.08	0.08	2024	Primary Path	24	0.06
69	57.13	59.26		0.27	0.27	2024	Primary Path	24	0.21
16	0.6	58.26		0.01	0.01	2025	West Dallas Lake	60	0.01
19	1.66	57.87		0.02	0.02	2025	West Dallas Lake	60	0.02
1	2.09	58.01 ³		0.07	0.07	2027	Service Drive	60	0.06
32	6.49	55.27		0.14	0.14	2027	Service Drive	60	0.11
46	3.28	57.49		0.20	0.20	2027	Crow Park	60	0.16
22	1.42	57.44		0.33	0.33	2029	Equestrian Trail	60	0.26
44	23.82	58.33		0.06	0.06	2029	Equestrian Trail	60	0.05
Total Impacts			53.00	1	166.37				
Remaining Area and Net Functional Gain									
Left over acreage from BVP-60 ⁴								40.82	
Net Functional Gain ⁵								50.35	

Notes ¹ Year of Impact is based on the anticipated construction schedule for the Dallas Floodway Project.

² Area Used is the area of the BVP wetland used to compensate for the lost function of the impacted existing wetland.

³ TXRAM scores are inferred from other sites as described in Appendix C, Section 2.1.

⁴ This is the area left over area of BVP wetlands after all project impacts have been compensated for; refer to *Impact and Compensation Matrix* in Attachment C-2.

⁵ The Net Functional Gain is determined by dividing the left over 40.82 acres by 0.80 (i.e., the approximate Compensation Ratio for BVP wetlands).

3.1.2 Trinity River

3.1.2.1 River Relocation

The relocation of the Trinity River would impact 38,232 linear feet/134.2 acres of the existing Trinity River channel. As described in Section 1.2 of the 404(b)(1) Analysis and shown in Table C-5, the Trinity River relocation would occur in five sequential phases starting from the confluence of the Elm and West Forks in 2019 and ending at the Corinth Street Bridge in 2026. The more sinuous configuration of the river would result in the river channel in the impacted area increasing to 39,967 linear feet/209.7 acres.

Future TXRAM Scores

TXRAM assessments were conducted for each of the five stream assessment reaches (SARs) (Table C-5) based on anticipated future conditions, as identified in the 35% designs (City of Dallas 2009b,c) and the Dallas Floodway Project Draft EIS. Specifically, the 35% designs and the Dallas Floodway Project Draft EIS provided details used to assess the Metric Scores for several of the Core Elements, including the channel condition, riparian buffer condition, and in-stream condition. It was assumed that the Metric Scores for hydrologic condition would be the same as existing conditions. The “At Release” and “At Maturity” scores are provided for each of the five SARs in Table C-5; the detailed metric scores used to determine the TXRAM scores are provided in Attachment C-1. The design of the relocated river channel and other BVP ecosystem restoration/enhancement components (including planting of native woodland/riparian habitats) are anticipated to result in an increase of TXRAM scores by 9.7 to 15.7 from existing scores (Table C-5).

Failure Risk

Failure risk for each of the five SARs was determined to be 15%. This was based on extensive engineering used to develop the design of the river relocation. Extensive analysis, including independent review, associated with the channel design in relation to these specific constraints is detailed in the *Trinity River Corridor Project: Fluvial Geomorphic Assessment and Basis of River Realignment Design* (City of Dallas 2009b) which guided the ultimate channel plan, profile, dimension and location. Further consideration was also given to ensure the river channel would be stable.

3.1.2.1 Impact Determination

Methodology and Input Data

A functional analysis was performed using ARCC developed by the USACE. Impacts to each of the individual impacted SARs was compensated with the corresponding restored river segment (Table C-5).

Results

Overall, 38,232 linear feet/134.2 acres of emergent would be impacted from the relocation of the Trinity River under Alternative 2. However, the new Trinity River channel under Alternative 2 would result in the enhancement/restoration of 39,967 linear feet/209.7 acres of riverine habitat for a predicted net functional gain of 6,938 linear feet (*Note: the functional analysis only considered impacts/compensation to linear feet for a riverine system*).

Table C-5. Summary of Impacts and Functional Analysis for the Trinity River

SAR ¹	Stream Segment	Impact Year	Year Started	TXRAM Scores ²			Impact to Existing (linear feet/acres)	Required Restoration/ Enhancement (linear feet) ³	Proposed Restoration (linear feet/acres)	Net Functional Gain/Loss (linear feet)
				Existing	Future					
					At Release	At Maturity				
24-1	Confluence of the Elm and West Forks to the North Westmoreland Bridge	2019	2020	68.52	78.08	82.33	7,439/ 22.6	6,394	7,657/ 43.0	+1,263
24-2	North Westmoreland Bridge to the Hampton/Inwood Bridge	2020	2021	68.52	78.83	83.33	5,893/ 16.6	5,009	6,269/ 33.7	+1,260
24-3	Hampton/Inwood Bridge to the Sylvan Bridge	2022	2024	68.52	79.58	84.08	6,844/ 18.2	6,130	7,179/ 36.6	+1,049
24-4	Sylvan Bridge to the Commerce Street Bridge	2024	2025	68.52	74.71	78.21	7,268/ 23.7	6,512	7,558/ 38.2	+1,046
24-5	Commerce Street Bridge to the Corinth Street Bridge	2026	2027	68.52	79.58	84.21	10,788/ 53.1	8,985	11,305/ 58.2	+2,320
						Total	38,232/ 134.2	33,030	39,967/ 209.7	+6,938

Notes: ¹ Refer to figures in Appendix A.

² Existing TXRAM Scores are from Halff 2011. Future TXRAM Scores are based on future conditions outlined in the 35% design plans; refer to Attachment C-1 for the data used to determine these TXRAM scores.

³ The required restoration/enhancement is based on results from the ARCC; refer to Attachment C-2 for results for each SAR.

3.2 ALTERNATIVE 3: PROPOSED ACTION WITHOUT THE TRINITY PARKWAY

3.2.1 Jurisdictional Wetlands

3.2.1.1 Wetlands Enhanced/Restored Under the BVP

As described in Section 3.3.2.4 of the 404(b)(1) Analysis, the BVP component of the Dallas Floodway Project would enhance or restore 182.46 acres of emergent and forested wetlands. The details for each of the enhanced/restored wetlands under the BVP Component of the Dallas Floodway Project are provided in Table C-6.

Future TXRAM Scores

The “At Release” and “At Maturity” future TXRAM scores were assessed as described for Alternative 2 (Section 3.1.1.1) and are provided for each enhanced/restored wetland in Table C-6; the detailed metric scores used to determine the TXRAM scores are provided in Attachment C-1.

Failure Risk

The estimated *Failure Risk* for each of wetlands to be enhanced/restored under the BVP Component of the Dallas Floodway Project was determined as described for Alternative 2 (Section 3.1.1.1) and is provided in Table C-6.

3.2.1.2 Impact Determination

Methodology and Input Data

The methodology for the Alternative 3 functional analysis is the same as described for Alternative 2 (Section 3.1.1.2) and the input data used for analysis is provided in Tables C-6 and C-7. The *Alternative 3 Wetland Impact and Compensation Matrix* in Attachment C-3 outlines the step by step process of compensation for impacts to each wetland/group of wetlands; each individual ARCC calculation sheet is also provided in Attachment C-3.

Results

Overall, 214.50 acres of emergent wetlands would be impacted under Alternative 3. The BVP Component of Alternative 3 would result in the enhancement/restoration of 182.46 acres of emergent and forested wetlands for a predicted net loss in wetland area of 32.09 acres. However, after compensating for all project impacts to jurisdictional wetlands (i.e., 214.50 acres) there would be an additional 2.95 acres predicted to be remaining (Table C-7 and Attachment C-3). Assuming a compensation ratio of 0.80 for this remaining area, a predicted net functional gain of 3.69 acres of wetlands would be expected under Alternative 3.

Table C-6. Wetlands Enhanced or Restored under the Alternative 3 BVP Component of the Dallas Floodway Project

BVP Wetland # ¹	Wetland Type ²	Year Started ³	Year Matured ³	Failure Risk ⁴	TXRAM Scores ⁵			Wetland Area (acres)		
					Baseline	Future		Enhanced	Restored	Total
						At Release	At Maturity			
Flex Field Wetlands										
16	Depressional/Emergent	2024	2025	15%	0.00	71.07	78.21	0.01	2.28	2.29
21	Depressional/Emergent	2024	2025	15%	0.00	71.07	78.21		3.44	3.44
22	Depressional/Emergent	2024	2025	15%	0.00	71.07	78.21	0.07	2.23	2.30
23	Depressional/Emergent	2024	2025	15%	0.00	71.07	78.21		2.51	2.51
24	Depressional/Emergent	2024	2025	15%	0.00	71.07	78.21	0.59	2.21	2.80
25	Depressional/Emergent	2024	2025	15%	0.00	71.07	78.21	0.33	3.39	3.72
26	Depressional/Emergent	2024	2025	15%	0.00	71.07	78.21	0.20	1.25	1.45
27	Depressional/Emergent	2024	2025	15%	0.00	71.07	78.21		1.49	1.49
Meadow Wetlands										
11	Depressional/Emergent	2020	2021	15%	0.00	66.32	71.79	0.41		0.41
17	Riverine/Emergent	2024	2025	15%	0.00	70.65	79.46	1.81		1.81
18	Depressional/Emergent	2024	2025	15%	0.00	71.57	77.04	2.78	22.90	25.68
35	Riverine/Emergent	2025	2026	15%	0.00	67.15	72.63	0.77		0.77
Corinth Wetlands										
59	Riverine/Emergent	2029	2030	15%	0.00	67.61	74.75	5.54	0.47	6.01
60	Riverine/Emergent	2029	2030	15%	0.00	67.82	74.96	42.03	37.10	79.13
Urban Lake Promenade Forested Ponds										
40	Depressional/Forested	2018	2048	15%	0.00	38.10	46.67		1.88	1.88
44	Depressional/Forested	2018	2048	15%	0.00	38.10	46.67		0.90	0.90
45	Depressional/Forested	2018	2048	15%	0.00	38.10	46.67		0.90	0.90
Natural Lake Forested Pond										
58	Depressional/Forested	2017	2047	15%	0.00	44.35	52.92		6.62	6.62

Table C-6. Wetlands Enhanced or Restored under the Alternative 3 BVP Component of the Dallas Floodway Project (cont.)

BVP Wetland # ¹	Wetland Type ²	Year Started ³	Year Matured ³	Failure Risk ⁴	TXRAM Scores ⁵			Wetland Area (acres)		
					Baseline	Future		Enhanced	Restored	Total
						At Release	At Maturity			
West Dallas Lake Marshlands										
5	Lacustrine Fringe/Emergent	2027	2028	15%	0.00	58.27	65.41	0.28	0.77	1.05
6	Lacustrine Fringe/Emergent	2027	2028	15%	0.00	58.27	65.41		0.43	0.43
7	Lacustrine Fringe/Emergent	2027	2028	15%	0.00	58.27	65.41		0.20	0.20
8	Lacustrine Fringe/Emergent	2027	2028	15%	0.00	58.27	65.41		1.20	1.20
9	Lacustrine Fringe/Emergent	2027	2028	15%	0.00	58.27	65.41	0.13	0.62	0.75
10	Lacustrine Fringe/Emergent	2027	2028	15%	0.00	58.27	65.41		0.64	0.64
12	Lacustrine Fringe/Emergent	2027	2028	15%	0.00	58.27	65.41		0.82	0.82
13	Lacustrine Fringe/Emergent	2027	2028	15%	0.00	58.27	65.41	0.03	0.76	0.79
14	Lacustrine Fringe/Emergent	2027	2028	15%	0.00	58.27	65.41	0.04	1.10	1.14
Urban Lake Marshlands										
36	Lacustrine Fringe/Emergent	2018	2019	15%	0.00	57.18	64.33		0.05	0.05
37	Lacustrine Fringe/Emergent	2018	2019	15%	0.00	57.18	64.33		0.59	0.59
42	Lacustrine Fringe/Emergent	2018	2019	15%	0.00	57.18	64.33	0.08	0.94	1.02
46	Lacustrine Fringe/Emergent	2018	2019	15%	0.00	57.18	64.33	0.04	0.15	0.19
Natural Lake Marshlands										
47	Lacustrine Fringe/Emergent	2017	2018	15%	0.00	60.52	67.66	0.11	0.39	0.50
48	Lacustrine Fringe/Emergent	2017	2018	15%	0.00	60.52	67.66		0.67	0.67
49	Lacustrine Fringe/Emergent	2017	2018	15%	0.00	60.52	67.66		2.14	2.14
52	Lacustrine Fringe/Emergent	2017	2018	15%	0.00	60.52	67.66		0.87	0.87
53	Lacustrine Fringe/Emergent	2017	2018	15%	0.00	60.52	67.66		0.48	0.48
54	Lacustrine Fringe/Emergent	2017	2018	15%	0.00	60.52	67.66	0.69	0.92	1.61

Table C-6. Wetlands Enhanced or Restored under the Alternative 3 BVP Component of the Dallas Floodway Project (cont.)

BVP Wetland # ¹	Wetland Type ²	Year Started ³	Year Matured ³	Failure Risk ⁴	TXRAM Scores ⁵			Wetland Area (acres)		
					Baseline	Future		Enhanced	Restored	Total
						At Release	At Maturity			
River Terrace										
1	Riverine/Forested	2020	2050	20%	0.00	71.21	80.97		1.62	1.62
2	Riverine/Forested	2020	2050	20%	0.00	71.21	80.97		1.77	1.77
3	Riverine/Forested	2020	2050	20%	0.00	71.21	80.97	1.03	2.98	4.01
4	Riverine/Forested	2020	2050	20%	0.00	71.21	80.97	0.12	1.00	1.12
15	Riverine/Forested	2022	2052	20%	0.00	71.21	80.97		1.80	1.80
19	Riverine/Forested	2024	2054	20%	0.00	73.71	83.47	0.69	2.76	3.45
20	Riverine/Forested	2024	2054	20%	0.00	73.71	83.47		2.00	2.00
30	Riverine/Forested	2025	2055	20%	0.00	71.21	80.97		0.35	0.35
32	Riverine/Forested	2025	2055	20%	0.00	73.71	83.47		2.27	2.27
43	Riverine/Forested	2025	2055	20%	0.00	71.21	80.97	0.45	1.58	2.03
50	Riverine/Forested	2027	2057	20%	0.00	71.21	80.97	0.02	0.42	0.44
51	Riverine/Forested	2027	2057	20%	0.00	71.21	80.97		0.70	0.70
55	Riverine/Forested	2027	2057	20%	0.00	71.21	80.97	0.06	0.52	0.58
56	Riverine/Forested	2027	2057	20%	0.00	71.21	80.97	0.23	0.17	0.40
57	Riverine/Forested	2027	2057	20%	0.00	71.21	80.97	0.48	0.19	0.67
							Total	59.02	123.44	182.46

Notes ¹ Refer to figures in Appendix A for location of BVP Wetlands.

² Wetland type is based on definition in TXRAM Manual (USACE 2010a) and the type of vegetation to be used (emergent = herbaceous cover; forested = bottomland hardwood).

³ *Year Started* is based on the anticipated construction schedule for the Dallas Floodway Project; *Year Matured* is based on *Year Started* plus 1 year for emergent wetlands and 30 years for forested wetlands to reach maturity.

⁴ Refer to text for description of *Failure Risk*.

⁵ Future TXRAM scores were based on the TXRAM assessments presented in Attachment C-1.

Table C-7. Jurisdictional Wetland Impacts and Compensation under Alternative 3

Existing Wetland Number	Total Area (acres)	TXRAM Score	Impacts (acres)			Year of Impact ¹	Impacting Feature	BVP Wetland Used to Compensate for Impacts	
			Temp	Perm	Total			BVP #(s)	Area Used (acres) ²
FRM									
1, 188, and 189	2.68	58.01 ³		0.03	0.03	2017	Elm Fork Levee and West Fork Levee	54, 58	0.03
9	4.17	59.50		0.02	0.02	2017	East Levee	47	0.02
16	0.60	58.26		0.58	0.58	2017	Borrow Pit	47, 48	0.51
17	10.63	56.97		0.04	0.04	2017	Borrow Pit	48	0.03
18	25.68	60.56		1.45	1.45	2017	Borrow Pit	48, 49	1.32
19	1.66	57.87	0.12	1.45	1.57	2017	Borrow Pit	49	1.37
20	3.73	60.97	0.22	1.22	1.44	2017	Borrow Pit	49, 52, 53	1.32
21	3.44	58.46		0.08	0.08	2017	Borrow Pit	53	0.07
25	2.74	53.16		1.60	1.60	2017	Borrow Pit	53, 54	1.28
26	1.29	55.63		0.10	0.10	2017	Borrow Pit	54	0.08
44	23.82	58.33		0.08	0.08	2017	West Levee	54	0.07
66	8.20	58.26		0.24	0.24	2017	East Levee	54	0.21
IDP									
65	6.8	58.18		0.16	0.16	2017	Charlie Pumping Plant	58	0.19
9	4.17	59.5		0.11	0.11	2020	Hampton Pumping Plant	18	0.09
Ecosystem Other									
59	2.03	60.73	0.11	1.32	1.43	2017	Natural Lake	58	1.73
65	6.80	58.18		0.01	0.01	2017	Natural Lake	58	0.01
66	8.20	58.26		3.46	3.46	2017	Natural Lake	58	4.02
67	6.30	56.98	0.14	0.76	0.90	2017	Natural Lake	58, 36, 37	1.13
68	8.88	56.63	0.71	0.09	0.80	2017	Natural Lake	37, 42	0.73
48	2.61	55.46		0.62	0.62	2017	Urban Lake	42, 46	0.55
52	2.42	57.93		0.14	0.14	2017	Urban Lake	46, 40	0.76
54	7.95	58.96	0.04	1.96	2.00	2017	Urban Lake	40, 44, 45	2.72
29	7.9	57.76	0.01	1.57	1.58	2019	Flex Field	21, 22	1.25
36	20.85	60.38		11.80	11.80	2019	Flex Field	22, 23, 24, 25	9.9
89	0.07	57.76 ³		0.07	0.07	2019	Flex Field	25	0.06
71	0.86	54.82		0.41	0.41	2024	Park Lands	20	0.28
69	57.13	59.26	37.67	6.65	44.32	2025	Corinth Wetland	18, 20, 60	37.3
4	11.83	58.91		6.17	6.17	2025	Horse Meadow	35, 30, 32, 43	4.68
5	0.2	55.91		0.20	0.20	2025	Horse Meadow	43	0.14
6	7.03	53.94		6.47	6.47	2025	Horse Meadow	43, 5, 6, 7, 8, 9, 10, 12	5.43

Table C-7. Jurisdictional Wetland Impacts and Compensation under Alternative 3 (cont.)

Existing Wetland Number	Total Area (acres)	TXRAM Score	Impacts (acres)			Year of Impact ¹	Impacting Feature	BVP Wetland Used to Compensate for Impacts	
			Temp	Perm	Total			BVP #(s)	Area Used (acres) ²
Ecosystem Other (cont.)									
32	6.49	55.27	0.52	4.42	4.94	2025	Horse Meadow	12, 13, 14, 50, 51, 55, 56	3.94
33	5.19	58.09	0.14		0.14	2025	Horse Meadow	56	0.11
15	1.07	57.78		0.32	0.32	2025	West Dallas Lake	56	0.25
16	0.6	58.26		0.02	0.02	2025	West Dallas Lake	56, 57	0.02
19	1.66	57.87	0.01	0.06	0.07	2025	West Dallas Lake	57	0.05
22	1.42	57.44		1.06	1.06	2025	West Dallas Lake	57, 59	0.82
26	1.29	55.63	0.02		0.02	2025	West Dallas Lake	59	0.02
27	3.98	57.52	0.04	2.83	2.87	2025	West Dallas Lake	59	2.37
42	1.02	53.74		0.02	0.02	2026	Oak Cliff Parkland	60	0.02
44	23.82	58.33		2.45	2.45	2026	Oak Cliff Parkland	60	2.02
53	4.24	58.07		0.12	0.12	2026	Oak Cliff Parkland	60	0.1
1, 2, 10, and 11	3.36	58.01 ³		0.86	0.86	2026	Confluence Fields	60	0.7
46	3.28	57.49		0.22	0.22	2027	Crow Park	60	0.18
Ecosystem River									
4	11.83	58.91	1.03	4.56	5.59	2018	River Relocation Phase 3a	3, 4, 15, 16	4.46
6	7.03	53.94		0.55	0.55	2018	River Relocation Phase 3a	16	0.42
9	4.17	59.5	0.41		0.41	2020	River Relocation Phase 3b	18	0.34
14	1.00	58.25		0.01	0.01	2018	River Relocation Phase 3a	16	0.01
20	3.73	60.97	0.18	2.11	2.29	2018	River Relocation Phase 3a	16, 21	1.97
25	2.74	53.16		1.12	1.12	2020	River Relocation Phase 3b	18	0.83
26	1.29	55.63	0.01	0.55	0.56	2020	River Relocation Phase 3b	18	0.43
27	3.98	57.52		0.38	0.38	2020	River Relocation Phase 3b	18	0.3
29	7.90	57.76		0.82	0.82	2020	River Relocation Phase 3b	18	0.66
31	11.64	53.95	2.44	0.37	2.81	2022	River Relocation Phase 4a	18	2.04
32	6.49	55.27	0.69	0.56	1.25	2022	River Relocation Phase 4a	18	0.93
33	5.19	58.09	2.64	2.40	5.04	2022	River Relocation Phase 4a	18	3.95
36	20.85	60.38	0.04	0.44	0.48	2022	River Relocation Phase 4a	18	0.39
44	23.82	58.33	1.22	11.42	12.64	2023	River Relocation Phase 4b	18, 19	9.78
46	3.28	57.49		1.56	1.56	2023	River Relocation Phase 4b	19	1.14
48	2.61	55.46		1.26	1.26	2023	River Relocation Phase 4b	19	0.89
52	2.42	57.93	0.03	1.23	1.26	2023	River Relocation Phase 4b	19, 20	0.93
53	4.24	58.07		4.12	4.12	2025	River Relocation Phase 5	59, 60	3.43

Table C-7. Jurisdictional Wetland Impacts and Compensation under Alternative 3 (cont.)

Existing Wetland Number	Total Area (acres)	TXRAM Score	Impacts (acres)			Year of Impact ¹	Impacting Feature	BVP Wetland Used to Compensate for Impacts	
			Temp	Perm	Total			BVP #(s)	Area Used (acres) ²
Ecosystem River (cont.)									
54	7.95	58.96		0.25	0.25	2025	River Relocation Phase 5	60	0.24
56	0.95	56.26		0.95	0.95	2025	River Relocation Phase 5	60	0.76
59	2.03	60.73		0.45	0.45	2025	River Relocation Phase 5	60	0.39
60	1.70	60.59		1.70	1.70	2025	River Relocation Phase 5	60	1.47
65	6.80	58.18	0.30	6.33	6.63	2025	River Relocation Phase 5	60	5.52
66	8.20	58.26		4.10	4.10	2025	River Relocation Phase 5	60	3.42
67	6.30	56.98	0.54	4.86	5.40	2025	River Relocation Phase 5	60	4.4
68	8.88	56.63	2.88	5.19	8.07	2025	River Relocation Phase 5	60	6.54
69	57.13	59.26	6.79	5.89	12.68	2025	River Relocation Phase 5	60	10.75
71	0.86	54.82		0.26	0.26	2025	River Relocation Phase 5	60	0.2
85	1.82	56.23	0.05	1.77	1.82	2025	River Relocation Phase 5	60	1.46
86	0.48	60.59 ³	0.02	0.46	0.48	2025	River Relocation Phase 5	60	0.42
10, 11, 12, 13, 84, and 181	2.01	58.01 ³		2.83	2.83	2018	River Relocation Phase 3a	21	2.31
Recreation									
1	2.09	58.01 ³		0.06	0.06	2027	Service Drive	60	0.05
4	11.83	58.91		0.07	0.07	2024	Primary Path	20	0.05
12	0.76	58.01 ³		0.03	0.03	2019	Flex Field	25	0.02
14	1	58.25		0.99	0.99	2019	Flex Field	25, 26	0.8
15	1.07	57.78		0.75	0.75	2019	Flex Field	26	0.6
19	1.66	57.87		0.01	0.01	2025	West Dallas Lake	60	0.01
22	1.42	57.44		0.36	0.36	2029	Equestrian Trail	60	0.28
25	2.74	53.16		0.01	0.01	2025	West Dallas Lake	60	0.01
26	1.29	55.63		0.62	0.62	2025	West Dallas Lake	60	0.49
27	3.98	57.52		0.73	0.73	2017	Park Road	45, 11, 1	0.71
29	7.9	57.76		5.59	5.59	2019	Flex Field	26, 27, 17, 18	4.47
32	6.49	55.27		0.30	0.30	2027	Service Drive	60	0.23
36	20.85	60.38		5.87	5.87	2019	Flex Field	18	4.98
44	23.82	58.33		0.21	0.21	2029	Equestrian Trail	60	0.17
46	3.28	57.49		1.49	1.49	2027	Crow Park	60	1.19
48	2.61	55.46		0.73	0.73	2017	Urban Lake	1	0.54
50	0.04	59.60		0.15	0.15	2017	Urban Lake	1	0.12
52	2.42	57.93		1.02	1.02	2017	Urban Lake	1, 2	0.8

Table C-7. Jurisdictional Wetland Impacts and Compensation under Alternative 3 (cont.)

Existing Wetland Number	Total Area (acres)	TXRAM Score	Impacts (acres)			Year of Impact ¹	Impacting Feature	BVP Wetland Used to Compensate for Impacts	
			Temp	Perm	Total			BVP #(s)	Area Used (acres) ²
Recreation (cont.)									
54	7.95	58.96		5.70	5.70	2017	Urban Lake	2, 3	4.52
59	2.03	60.73		0.15	0.15	2017	Natural Lake	1	0.12
66	8.20	58.26		0.40	0.40	2017	Natural Lake	1	0.31
68	8.88	56.63		0.03	0.03	2024	Primary Path	20	0.02
69	57.13	59.26		0.13	0.13	2024	Primary Path	20	0.1
71	0.86	54.82		0.20	0.20	2024	Park Lands	20	0.15
87	0.14	58.77 ³		0.14	0.14	2017	Urban Lake	3	0.11
Total Impacts			59.02	155.48	214.50				
Remaining Area and Net Functional Gain									
								Left over acreage from BVP-60 ⁴	2.95
								Net Functional Gain ⁵	3.69

Notes ¹ *Year of Impact* is based on the anticipated construction schedule for the Dallas Floodway Project.

² *Area Used* is the area of the BVP wetland used to compensate for the lost function of the impacted existing wetland.

³ TXRAM scores are inferred from other sites as described in Appendix C, Section 2.1.

⁴ This is the area left over area of BVP wetlands after all project impacts have been compensated for; refer to *Impact and Compensation Matrix* in Attachment C-2.

⁵ The *Net Functional Gain* is determined by dividing the left over 40.82 acres by 0.80 (i.e., the approximate Compensation Ratio for BVP wetlands).

3.2.2 Trinity River

The functional analysis for impacts to the Trinity River under Alternative 3 would be the same as described under Alternative 2.

4.0 REFERENCES

- City of Dallas. 2009b. Trinity River Corridor Project: Fluvial Geomorphic Assessment and Basis of River Realignment Design. Prepared by CH2M HILL. September.
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Attachment C-1

TXRAM Assessments for Anticipated Future Conditions

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TXRAM Assessments for Anticipated Future Conditions of Wetlands to be Enhanced/Restored under the BVP Component of the Dallas Floodway Project

Wetland Name		Corinth Wetlands		Corinth Island		River Terrace		River Terrace		Flex Field Wetlands		Meadow Wetlands		Meadow Wetlands		Meadow Wetlands		Meadow Wetlands	
Wetland Type		Riverine/Emergent		Riverine/Emergent		Riverine/Forested		Riverine/Forested		Depressional/ Emergent		Depressional/ Emergent		Riverine/Emergent		Depressional/ Emergent		Riverine/Emergent	
WAA		BVP-60		BVP-59		BVP-1, 2, 3, 4, 15, 30, 43, 50, 51, 55, 56, 57		BVP-19, 20, 32		BVP-21, 22, 23, 24, 25, 26, 27		BVP-11		BVP-17		BVP-18		BVP-35	
Time Frame		Release of Monitoring	At Maturity	Release of Monitoring	At Maturity	Release of Monitoring	At Maturity	Release of Monitoring	At Maturity	Release of Monitoring	At Maturity	Release of Monitoring	At Maturity	Release of Monitoring	At Maturity	Release of Monitoring	At Maturity	Release of Monitoring	At Maturity
Landscape																			
Connectivity		4	4	3	3	3	3	4	4	4	4	4	4	4	4	4	4	3	3
Data Entry Connection to Aquatic Resources		6	6	5	5	4	4	7	7	6	6	7	7	7	7	8	8	4	4
Buffer (types below)	Score	2.65	2.65	2.90	2.90	2.15	2.15	2.15	2.15	1.95	1.95	2.05	2.05	2.45	2.45	2.15	2.15	2.05	2.05
Data Entry Woodlands/Riparian	4	25%	25%	5%	5%	10%	10%	10%	10%	5%	5%			10%	10%	5%	5%	5%	5%
Data Entry Wetlands/Riverine	3	50%	50%	90%	90%	35%	35%	35%	35%	25%	25%	20%	20%	35%	35%	25%	25%	50%	50%
Data Entry Meadow	2					35%	35%	35%	35%	50%	50%	70%	70%	50%	50%	55%	55%	10%	10%
Data Entry Grassland	1	15%	15%									5%	5%			10%	10%	15%	15%
Data Entry Urban	0	10%	10%	5%	5%	10%	10%	10%	10%	10%	10%	5%	5%	5%	5%	5%	5%	20%	20%
Data Entry Turf	0					10%	10%	10%	10%	10%	10%								
Core Element Score		16.63	16.63	14.75	14.75	12.88	12.88	15.38	15.38	14.88	14.88	15.13	15.13	16.13	16.13	15.38	15.38	12.63	12.63
Hydrology																			
Water Source		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Hydroperiod		2	2	2	2	3	3	3	3	3	3	2	2	3	3	3	3	3	3
Hydrologic Flow		3	3	4	4	4	4	4	4	4	4	3	3	4	4	4	4	4	4
Core Element Score		13.33	13.33	15.00	15.00	16.67	16.67	16.67	16.67	16.67	16.67	13.33	13.33	16.67	16.67	16.67	16.67	16.67	16.67
Soils																			
Organic Matter		2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3
Sedimentation		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Soil Modification		2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3
Core Element Score		13.33	16.67	13.33	16.67	13.33	16.67	13.33	16.67	13.33	16.67	13.33	16.67	13.33	16.67	13.33	16.67	13.33	16.67
Physical Structure																			
Topographic Complexity		2	2	2	2	3	4	3	4	3	3	3	3	3	3	3	3	3	3
Edge Complexity (P/A)		2	2	2	2	3	3	3	3	3	3	3	3	2	2	2	2	2	2
Data Entry (perimeter)		11562	11562	3005	3005							13028	13028	9857	9857	7218	7218		
Data Entry (area)		3386248	3386248	262785	262785							176276	176276	468611	468611	781992	781992		
Physical Habitat Richness		3	4	3	4	2	4	2	4	2	3	1	1	2	4	3	3	2	2
Physical Habitat Types		A,C,D,F,J,K,L	A,C,D,F,J,K,L,N	A,C,D,F,J,K,L	A,C,D,F,J,K,L,N	K,L,N,Q	I,K,L,M,N,O,Q,R	K,L,N,Q	I,K,L,M,N,O,Q,R	A,D,J,K,L	A,D,J,K,L,N	C,K,L	C,I,K,L	C,F,K,L,N	C,F,I,K,L,N,O,R	A,C,D,J,K,L	A,C,D,J,K,L,N	C,F,K,L,N	C,F,I,K,L,N
Core Element Score		11.7	13.3	11.7	13.3	13.3	18.3	13.3	18.3	13.3	15.0	11.7	11.7	11.7	15.0	13.3	13.3	11.7	11.7
Biotic Structure																			
Plant Strata		2	2	2	2	4	4	4	4	2	2	2	2	2	2	2	2	2	2
Species Richness		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Invasives		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Interspersion		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Strata Overlap		2	3	2	3	3	4	3	4	2	3	2	3	2	3	2	3	2	3
Herbaceous Cover		3	4	3	4	3	3	3	3	3	4	3	4	3	4	3	4	3	4
Vegetation Alteration		2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3
Core Element Score		12.86	15.00	12.86	15.00	15.00	16.43	15.00	16.43	12.86	15.00	12.86	15.00	12.86	15.00	12.86	15.00	12.86	15.00
Total Overall TXRAM Score		67.82	74.96	67.61	74.75	71.21	80.97	73.71	83.47	71.07	78.21	66.32	71.79	70.65	79.46	71.57	77.04	67.15	72.63

Notes: The Core Element Scores are based on future conditions outlined in the 35% design plans (i.e., City of Dallas 2009b,c) and the Dallas Floodway Project Draft EIS.

TXRAM Assessments for Anticipated Future Conditions of Wetlands to be Enhanced/Restored under the BVP Component of the Dallas Floodway Project (cont.)

Wetland Name		Crow Lake Wetland		West Dallas Lake Marshlands		Urban Lake Marshlands		Natural Lake Marshlands		Urban Lake Forested Ponds		Natural Lake Forested Pond	
Wetland Type		Depressional/ Emergent		Lacustrine Fringe/ Emergent		Lacustrine Fringe/ Emergent		Lacustrine Fringe/ Emergent		Depressional/ Forested		Depressional/ Forested	
WAA		BVP-31		BVP- 5, 4, 6, 7, 8, 9, 10, 12, 13, 14		BVP-36, 37, 41, 42		BVP-47, 48, 49, 52, 53, 54		BVP-38, 39, 40, 44, 45		BVP-58	
Time Frame		Release of Monitoring	At Maturity	Release of Monitoring	At Maturity	Release of Monitoring	At Maturity	Release of Monitoring	At Maturity	Release of Monitoring	At Maturity	Release of Monitoring	At Maturity
Landscape													
Connectivity		2	2	3	3	2	2	3	3	0	0	0	0
Data Entry Connection to Aquatic Resources		2	2	5	5	3	3	4	4	0	0	0	0
Buffer (types below)	Score	1.20	1.20	1.45	1.45	1.35	1.35	2.35	2.35	0.00	0.00	2.50	2.50
Data Entry Woodlands/Riparian	4			5%	5%							40%	40%
Data Entry Wetlands/Riverine	3	5%	5%	10%	10%	25%	25%	70%	70%			30%	30%
Data Entry Meadow	2	45%	45%	40%	40%	20%	20%	10%	10%				
Data Entry Grassland	1	15%	15%	15%	15%	20%	20%	5%	5%				
Data Entry Urban	0	5%	5%	5%	5%	10%	10%	10%	10%	100%	100%	30%	30%
Data Entry Turf	0	30%	30%	25%	25%	25%	25%	5%	5%				
Core Element Score		8.00	8.00	11.13	11.13	8.38	8.38	13.38	13.38	0.00	0.00	6.25	6.25
Hydrology													
Water Source		2	2	2	2	2	2	2	2	1	1	1	1
Hydroperiod		3	3	2	2	2	2	2	2	1	1	1	1
Hydrologic Flow		3	3	3	3	3	3	3	3	1	1	1	1
Core Element Score		13.33	13.33	11.67	11.67	11.67	11.67	11.67	11.67	5.00	5.00	5.00	5.00
Soils													
Organic Matter		2	3	2	3	2	3	2	3	2	2	2	2
Sedimentation		4	4	4	4	4	4	4	4	4	4	4	4
Soil Modification		2	3	2	3	2	3	2	3	2	3	2	3
Core Element Score		13.33	16.67	13.33	16.67	13.33	16.67	13.33	16.67	13.33	15.00	13.33	15.00
Physical Structure													
Topographic Complexity		3	3	2	2	2	2	2	2	2	2	2	2
Edge Complexity (P/A)		2	2	3	3	4	4	3	3	2	2	2	2
Data Entry (perimeter)		3355	3355									5142	5142
Data Entry (area)		151898	151898									291319	291319
Physical Habitat Richness		2	3	1	2	1	2	1	2	1	3	1	3
Physical Habitat Types		A,D,J,K,L	A,D,J,K,L	I,J,K,N	I,J,K,N,O,R	I,J,K,N	I,J,K,N,O,R	I,J,K,N	I,J,K,N,O,R	A,D,J	A,D,J,M,Q,R	A,D,J	A,D,J,M,Q,R
Core Element Score		11.7	13.3	10.0	11.7	11.7	13.3	10.0	11.7	8.3	11.7	8.3	11.7
Biotic Structure													
Plant Strata		2	2	1	1	1	1	1	1	2	3	2	3
Species Richness		3	3	3	3	3	3	3	3	3	3	3	3
Invasives		3	3	3	3	3	3	3	3	4	4	4	4
Interspersion		3	3	3	3	3	3	3	3	2	3	2	3
Strata Overlap		2	3	2	3	2	3	2	3	2	3	2	3
Herbaceous Cover		3	4	3	4	3	4	3	4	1	2	1	2
Vegetation Alteration		2	3	2	3	2	3	2	3	2	3	2	3
Core Element Score		12.86	15.00	12.14	14.29	12.14	14.29	12.14	14.29	11.43	15.00	11.43	15.00
Total Overall TXRAM Score		59.19	66.33	58.27	65.41	57.18	64.33	60.52	67.66	38.10	46.67	44.35	52.92

Notes: The Core Element Scores are based on future conditions outlined in the 35% design plans (i.e., City of Dallas 2009b,c) and the Dallas Floodway Project Draft EIS.

TXRAM Assessments for Anticipated Future Conditions of the Relocated Trinity River Channel under the BVP Component of the Dallas Floodway Project

SAR		24-1	24-1	24-2	24-2	24-3	24-3	24-4	24-4	24-5	24-5
Time Frame		Release of Monitoring	At Maturity	Release of Monitoring	At Maturity	Release of Monitoring	At Maturity	Release of Monitoring	At Maturity	Release of Monitoring	At Maturity
Segment Length		7,657	7,657	6,269	6,269	7,179	7,179	7,558	7,558	11,305	11,305
Channel Condition											
Floodplain Connectivity		4	4	4	4	4	4	4	4	4	4
Bank Condition		5	5	5	5	5	5	5	5	5	5
Sediment Deposition		5	5	5	5	5	5	5	5	5	5
Core Element Score		23.33	23.33	23.33	23.33	23.33	23.33	23.33	23.33	23.33	23.33
Riparian Buffer Condition											
Riparian Buffer (left bank)	Score	3.70	4.20	3.60	4.00	3.80	4.20	1.85	2.00	2.90	3.40
Meadow (20% Canopy; Low Use)	3	40%	40%	50%	50%	40%	40%			15%	15%
Meadow (20% Canopy; Mod/High Use)	2							70%	70%	20%	20%
Woodlands/Riparian (40% Canopy; Low Use)	4	50%		40%		40%				30%	
Woodlands/Riparian (40% Canopy; Med Use)	3									20%	
Woodlands/Riparian (40% Canopy; High Use)	2							15%			
Woodlands/Riparian (80% Canopy; Low Use)	5	10%	60%	10%	50%	10%	50%			5%	35%
Woodlands/Riparian (80% Canopy; Med Use)	4										20%
Woodlands/Riparian (80% Canopy; High Use)	3							5%	20%		
Turf	0							10%	10%	5%	5%
Urban	0									5%	5%
Open Water	3										
Wetlands	5					10%	10%				
Riparian Buffer (right bank)	Score	2.20	2.40	2.60	3.00	2.70	3.10	2.70	2.95	3.60	3.95
Meadow (20% Canopy; Low Use)	3							30%	30%	25%	25%
Meadow (20% Canopy; Mod/High Use)	2	60%	60%	50%	50%	50%	50%	10%	10%	10%	10%
Woodlands/Riparian (40% Canopy; Low Use)	4							15%		35%	
Woodlands/Riparian (40% Canopy; Med Use)	3	20%		40%		40%		10%			
Woodlands/Riparian (40% Canopy; High Use)	2										
Woodlands/Riparian (80% Canopy; Low Use)	5					10%	10%	5%	20%	10%	45%
Woodlands/Riparian (80% Canopy; Med Use)	4	10%	30%	10%	50%		40%	5%	15%		
Woodlands/Riparian (80% Canopy; High Use)	3										
Turf	0	10%	10%					20%	20%		
Urban	0									5%	5%
Open Water	3										
Wetlands	5							5%	5%	15%	15%
Core Element Score		14.75	16.50	15.50	17.50	16.25	18.25	11.38	12.38	16.25	18.38
In-Stream Condition											
Substrate Composition		2	2	2	2	2	2	2	2	2	2
Instream Habitat		4	5	4	5	4	5	4	5	4	5
undercut banks											
overhanging vegetation		1	1	1	1	1	1	1	1	1	1
rootmats		1	1	1	1	1	1	1	1	1	1
rootwads			1		1		1		1		1
woody/leafy debris		1	1	1	1	1	1	1	1	1	1
boulders/cobbles											
aquatic macrophytes											
riffle/pool sequence											
artificial habitat enhancement		1	1	1	1	1	1	1	1	1	1
other											
Total Number Present		4	5	4	5	4	5	4	5	4	5
Core Element Score		15.00	17.50	15.00	17.50	15.00	17.50	15.00	17.50	15.00	17.50
Hydrologic Condition											
Flow Regime		4	4	4	4	4	4	4	4	4	4
Channel Flow Status		4	4	4	4	4	4	4	4	4	4
Core Element Score		25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Total Overall TXRAM Score		78.08	82.33	78.83	83.33	79.58	84.08	74.71	78.21	79.58	84.21

Notes: The Core Element Scores are based on future conditions outlined in the 35% design plans (i.e., City of Dallas 2009b,c) and the Dallas Floodway Project Draft EIS; the primary difference between TXRAM Scores for *Release of Monitoring* (5 years after completion of construction) and *At Maturity* (30 years after completion of construction) is the filling out of tree canopy cover and increased Instream Habitat types.

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Attachment C-2

Alternative 2 Wetland Impact and Compensation Matrix and ARCC Calculation Sheets

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Alternative 2 Wetland Impact and Compensation Matrix

*Refer to attached Aquatic Resource Compensation Calculator sheets for details on each site.

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Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site																							
Project #:		SWF-		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM ScoreDivided by 100			Mitigation																
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)			
Assessment Area and Impact Type				0.58		0.00		0.03		0		Restoration BVP 47		2017		2018		15%		0.00		0.61		0.68		0.03		0.03			
Outputs				Compensation Ratios								Instructions																			
Mitigation :										Ratio				1) Describe the project Impacts:																	
Impact														a) For each Assessment Area (aquatic resource of one given type with homogenous baseline conditions), using only the gray boxes, indicate when the impact(s) would occur (i.e., Impact Year)																	
M vs I (1)		>= 0.87												b) For each Assessment Area (aquatic resource of one given type with homogeneous baseline conditions) input the baseline TXRAM Score (i.e., Pre-Impact)																	
														c) For each Assessment Area, Input the predicted TXRAM Score after the proposed impacts would occur (i.e., Post-Impact)																	
														d) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Assessment Area associated with the proposed impact																	
														2) Describe the proposed mitigation used to offset proposed impacts:																	
														a) For each Mitigation Area and Type, using only the gray boxes, input the date at which time the proposed mitigation would take place (i.e., Year Started)																	
														b) For each Mitigation Area and Type, input the predicted year at which when the mitigation project would the time at which the predicted At Maturity TXRAM Score would be achieved (i.e., Year Matured).																	
														c) Input the estimated Risk of Failure for the each proposed mitigation activity (Mitigation Area and Type)																	
														d) For each proposed mitigation activity, input the baseline TXRAM Score, the predicted TXRAM Score at the end of the USACE monitoring period (Release of Monitoring) and the predicted TXRAM Score at the year fully matured (At Maturity).																	
														e) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Mitigation Area associated with the proposed compensation, indicate the linear distance of the proposed mitigation offered to offset proposed impacts																	
														f) If necessary, (indicated by a balance > 0 in Column P), continue with additional mitigation sites																	
														Use a separate spreadsheet for each Assessment Area (aquatic resource of one given type with homogenous baseline conditions) .																	

Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site																							
Project #:		SWF-		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure						TXRAM ScoreDivided by 100				Mitigation													
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)			
Assessment Area and Impact Type				0.60		0.00		0.02		0		Restoration BVP 47		2017		2018		15 %		0.00		0.61		0.68		0.02		0.02			
Outputs		Compensation Ratios										Instructions																			
Mitigation :		Ratio										1) Describe the project Impacts:																			
Impact												a) For each Assessment Area (aquatic resource of one given type with homogenous baseline conditions), using only the gray boxes, indicate when the impact(s) would occur (i.e., Impact Year)																			
M vs I (1)		>= 0.89										b) For each Assessment Area (aquatic resource of one given type with homogeneous baseline conditions) input the baseline TXRAM Score (i.e., Pre-Impact)																			
												c) For each Assessment Area, input the predicted TXRAM Score after the proposed impacts would occur (i.e., Post-Impact)																			
												d) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Assessment Area associated with the proposed impact																			
												2) Describe the proposed mitigation used to offset proposed impacts:																			
												a) For each Mitigation Area and Type, using only the gray boxes, input the date at which time the proposed mitigation would take place (i.e., Year Started)																			
												b) For each Mitigation Area and Type, input the predicted year at which when the mitigation project would the time at which the predicted At Maturity TXRAM Score would be achieved (i.e., Year Matured).																			
												c) Input the estimated Risk of Failure for the each proposed mitigation activity (Mitigation Area and Type)																			
												d) For each proposed mitigation activity, input the baseline TXRAM Score, the predicted TXRAM Score at the end of the USACE monitoring period (Release of Monitoring) and the predicted TXRAM Score at the year fully matured (At Maturity).																			
												e) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Mitigation Area associated with the proposed compensation, indicate the linear distance of the proposed mitigation offered to offset proposed impacts																			
												f) If necessary, (indicated by a balance > 0 in Column P), continue with additional mitigation sites																			
												Use a separate spreadsheet for each Assessment Area (aquatic resource of one given type with homogenous baseline conditions) .																			

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2017		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.58		0.00		0.01				Restoration BVP 47		2017		2018		15%		0.00		0.61		0.68		0.01		0.01	
WAA-16 FRM										0																			

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2017		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.58		0.00		0.12				Restoration BVP 47		2017		2018		15%		0.00		0.61		0.68		0.10		0.11	
WAA-19 FRM										0																			

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Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2017		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.58		0.00		0.08				Restoration BVP 48		2017		2018		15%		0.00		0.61		0.68		0.07		0.07	
WAA-44 FRM										0																			

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2020		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.60		0.00		0.11		0		Restoration BVP 18		2024		2025		15%		0.00		0.72		0.77		0.09		0.09	
WAA-9 IDP																													

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2017		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.58		0.00		0.16				Restoration BVP 48		2017		2018		15%		0.00		0.61		0.68		0.14		0.14	
WAA-65 IDP																													

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2018		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
WAA-4 Ecosystem River				0.59		0.00		5.58				Restoration BVP 37		2018		2019		15%		0.00		0.57		0.64		5.20		0.32	
Reach Continued				0.59		0.00		5.24		0		Restoration BVP 58		2017		2048		15%		0.00		0.44		0.53		6.07		6.08	

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2018		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.54		0.00		0.55				Restoration BVP 58		2017		2047		15%		0.00		0.44		0.53		0.58		0.59	
WAA-6 Ecosystem River																													

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2020		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.60		0.00		0.42				Restoration BVP 18		2024		2025		15%		0.00		0.72		0.77		0.35		0.35	
WAA-9 Ecosystem River																													

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Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2018		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.58		0.00		0.01				Restoration BVP 40		2018		2048		15%		0.00		0.38		0.47		0.01		0.01	
WAA-14 Ecosystem River										0																			

Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure						TXRAM ScoreDivided by 100				Mitigation											
Project Name:		Dallas Floodway Project		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)					
Assessment Area and Impact Type				Baseline Condition		Post-Impact		Ac or LF		Ac or LF		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
WAA-20 Ecosystem River				0.61		0.00		2.15		1.82		Restoration BVP 40		2018		2048		15%		0.00		0.38		0.47		2.98		0.46	
Reach Continued				0.61		0.00		1.82		Restoration BVP 44		2018		2048		15%		0.00		0.38		0.47		2.52		0.87			
Reach Continued				0.61		0.00		1.19		Restoration BVP 45		2018		2048		15%		0.00		0.38		0.47		1.65		1.33			
Reach Continued				0.61		0.00		0.23		Restoration BVP 11		2020		2021		15%		0.00		0.66		0.72		0.21		0.21			

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2020		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.53		0.00		1.09		0		Restoration BVP 18		2024		2025		15%		0.00		0.72		0.77		0.80		0.80	
WAA-25 Ecosystem River																													

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2020		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.56		0.00		0.01				Restoration BVP 18		2024		2025		15%		0.00		0.72		0.77		0.01		0.01	
WAA-26 Ecosystem River										0																			

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2020		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.58		0.00		0.43				Restoration BVP 18		2024		2025		15%		0.00		0.72		0.77		0.34		0.34	
WAA-27 Ecosystem River																													

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2020		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.58		0.00		0.80				Restoration BVP 18		2024		2025		15%		0.00		0.72		0.77		0.64		0.64	
WAA-29 Ecosystem River																													

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2022		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.54		0.00		2.72		0		Restoration BVP 18		2024		2025		15%		0.00		0.72		0.77		1.98		1.98	
WAA-31 Ecosystem River																													

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2022		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.55		0.00		1.12		0		Restoration BVP 18		2024		2025		15%		0.00		0.72		0.77		0.83		0.85	
WAA-32 Ecosystem River																													

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2022		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.58		0.00		4.50		0		Restoration BVP 18		2024		2025		15%		0.00		0.72		0.77		3.53		3.53	
WAA-33 Ecosystem River																													

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2022		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.60		0.00		0.48				Restoration BVP 18		2024		2025		15%		0.00		0.72		0.77		0.39		0.39	
WAA-36 Ecosystem River																													

Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site											
Project #:		SWF-		TXRAM Score Divided by 100			Balance		Mitigation Work Timing & Risk of Failure						TXRAM ScoreDivided by 100			Mitigation	
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact	Units	Units	Mitigation Area & Type		Year Started	Year Matured	Failure Risk	Baseline	Release of Monitoring	At Maturity	Mitigation Required	Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type							Ac or LF	Ac or LF											
WAA-60 Ecosystem River				0.61		0.00	1.70		Restoration BVP 5		2027	2028	15%	0.00	0.58	0.65	1.65	0.29	
Reach Continued				0.61		0.00		1.40	Restoration BVP 6		2027	2028	15	0.00	0.58	0.65	1.36	0.42	
Reach Continued				0.61		0.00		0.97	Restoration BVP 7		2027	2028	15	0.00	0.58	0.65	0.94	0.21	
Reach Continued				0.61		0.00		0.750	Restoration BVP 8		2027	2028	15	0.00	0.58	0.65	0.73	0.73	

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2025		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure						TXRAM Score Divided by 100													
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
WAA-65 Ecosystem River				0.58	0.00	6.31						Restoration BVP 8	2027	2028	15	0.00	0.58	0.65	5.87	0.48									
Reach Continued				0.58	0.00	5.79						Restoration BVP 9	2027	2028	15	0.00	0.58	0.65	5.39	0.74									
Reach Continued				0.58	0.00	5.00						Restoration BVP 10	2027	2028	15	0.00	0.58	0.65	4.65	0.65									
Reach Continued				0.58	0.00	4.30						Restoration BVP 12	2027	2028	15	0.00	0.58	0.65	4.00	0.83									
Reach Continued				0.58	0.00	3.41						Restoration BVP 13	2027	2028	15	0.00	0.58	0.65	3.17	0.78									
Reach Continued				0.58	0.00	2.57						Restoration BVP 14	2027	2028	15	0.00	0.58	0.65	2.39	1.15									
Reach Continued				0.58	0.00	1.33						Restoration BVP 50	2027	2057	20	0.00	0.71	0.81	1.03	0.44									
Reach Continued				0.58	0.00	0.76						Restoration BVP 51	2027	2057	20	0.00	0.71	0.81	0.59	0.59									
						0																							
Outputs		Compensation Ratios										Instructions																	
Mitigation :		Ratio										1) Describe the project impacts: a) For each Assessment Area (aquatic resource of one given type with homogenous baseline conditions), using only the gray boxes, indicate when the impact(s) would occur (i.e., Impact Year) b) For each Assessment Area (aquatic resource of one given type with homogeneous baseline conditions) input the baseline TXRAM Score (i.e., Pre-Impact) c) For each Assessment Area, Input the predicted TXRAM Score after the proposed impacts would occur (i.e., Post-Impact) d) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Assessment Area associated with the proposed impact 2) Describe the proposed mitigation used to offset proposed impacts: a) For each Mitigation Area and Type, using only the gray boxes, input the date at which time the proposed mitigation would take place (i.e., Year Started) b) For each Mitigation Area and Type, input the predicted year at which when the mitigation project would the time at which the predicted At Maturity TXRAM Score would be achieved (i.e., Year Matured). c) Input the estimated Risk of Failure for the each proposed mitigation activity (Mitigation Area and Type) d) For each proposed mitigation activity, input the baseline TXRAM Score, the predicted TXRAM Score at the end of the USACE monitoring period (Release of Monitoring) and the predicted TXRAM Score at the year fully matured (At Maturity). e) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Mitigation Area associated with the proposed compensation, indicate the linear distance of the proposed mitigation offered to offset proposed impacts f) If necessary, (indicated by a balance > 0 in Column P), continue with additional mitigation sites Use a separate spreadsheet for each Assessment Area (aquatic resource of one given type with homogenous baseline conditions) .																	
Impact																													
M vs I (1)		>= 0.93																											
IR vs MR2		>= 0.93																											
IR vs MR3		>= 0.93																											
IR vs MR4		>= 0.93																											
IR vs MR5		>= 0.93																											
IR vs MR6		>= 0.93																											
IR vs MR7		>= 0.77																											
IR vs MR8		>= 0.77																											

Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure						TXRAM ScoreDivided by 100			Mitigation												
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.57		0.00		2.04		1.34		Restoration BVP 55		2027		2057		20		0.00		0.71		0.81		1.54		0.53	
WAA-67 Ecosystem River				0.57		0.00		2.04		1.34		Restoration BVP 56		2027		2057		20		0.00		0.71		0.81		1.01		0.40	
Reach Continued				0.57		0.00		2.04		1.34		Restoration BVP 57		2027		2057		20		0.00		0.71		0.81		0.61		0.61	
Reach Continued				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			
				0.57		0.00		2.04		1.34																			

[illegible]

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2026		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.58		0.00		0.86				Restoration BVP 60		2029		2030		15%		0.00		0.68		0.75		0.70		0.70	
WAA-1, 2, 10, and 11 Ecosystem Other																													

Outputs		Compensation Ratios		Instructions	
Mitigation :				1) Describe the project impacts:	
Impact				a) For each Assessment Area (aquatic resource of one given type with homogenous baseline conditions), using only the gray boxes, indicate when the impact(s) would occur (i.e., Impact Year)	
M vs I (1)		>= 0.82		b) For each Assessment Area (aquatic resource of one given type with homogeneous baseline conditions) input the baseline TXRAM Score (i.e., Pre-Impact)	
				c) For each Assessment Area, Input the predicted TXRAM Score after the proposed impacts would occur (i.e., Post-Impact)	
				d) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Assessment Area associated with the proposed impact	
				2) Describe the proposed mitigation used to offset proposed impacts:	
				a) For each Mitigation Area and Type, using only the gray boxes, input the date at which time the proposed mitigation would take place (i.e., Year Started)	
				b) For each Mitigation Area and Type, input the predicted year at which when the mitigation project would the time at which the predicted At Maturity TXRAM Score would be achieved (i.e., Year Matured).	
				c) Input the estimated Risk of Failure for the each proposed mitigation activity (Mitigation Area and Type)	
				d) For each proposed mitigation activity, input the baseline TXRAM Score, the predicted TXRAM Score at the end of the USACE monitoring period (Release of Monitoring) and the predicted TXRAM Score at the year fully matured (At Maturity).	
				e) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Mitigation Area associated with the proposed compensation, indicate the linear distance of the proposed mitigation offered to offset proposed impacts	
				f) If necessary, (indicated by a balance > 0 in Column P), continue with additional mitigation sites	
				Use a separate spreadsheet for each Assessment Area (aquatic resource of one given type with homogenous baseline conditions) .	

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[illegible]

[illegible]

Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure						TXRAM ScoreDivided by 100				Mitigation											
Project Name:		Dallas Floodway Project		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)					
Assessment Area and Impact Type				Baseline Condition		Post-Impact		Ac or LF		Ac or LF		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
WAA-16 Ecosystem Other				0.58		0.00		0.02				Restoration BVP 20		2024		2054		20%		0.00		0.74		0.83		0.01		0.01	

Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure						TXRAM ScoreDivided by 100				Mitigation											
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.58		0.00		0.07		0		Restoration BVP 20		2024		2054		20%		0.00		0.74		0.83		0.05		0.05	
WAA-19 Ecosystem Other																													

Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site																							
Project #:		SWF-		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure						TXRAM ScoreDivided by 100				Mitigation													
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)			
Assessment Area and Impact Type				0.57		0.00		1.08		0		Restoration BVP 20		2024		2054		20%		0.00		0.74		0.83		0.77		0.77			
Outputs		Compensation Ratios										Instructions																			
Mitigation :		Ratio										1) Describe the project Impacts:																			
Impact												a) For each Assessment Area (aquatic resource of one given type with homogenous baseline conditions), using only the gray boxes, indicate when the impact(s) would occur (i.e., Impact Year)																			
M vs I (1)		>= 0.71										b) For each Assessment Area (aquatic resource of one given type with homogeneous baseline conditions) input the baseline TXRAM Score (i.e., Pre-Impact)																			
												c) For each Assessment Area, Input the predicted TXRAM Score after the proposed impacts would occur (i.e., Post-Impact)																			
												d) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Assessment Area associated with the proposed impact																			
												2) Describe the proposed mitigation used to offset proposed impacts:																			
												a) For each Mitigation Area and Type, using only the gray boxes, input the date at which time the proposed mitigation would take place (i.e., Year Started)																			
												b) For each Mitigation Area and Type, input the predicted year at which when the mitigation project would the time at which the predicted At Maturity TXRAM Score would be achieved (i.e., Year Matured).																			
												c) Input the estimated Risk of Failure for the each proposed mitigation activity (Mitigation Area and Type)																			
												d) For each proposed mitigation activity, input the baseline TXRAM Score, the predicted TXRAM Score at the end of the USACE monitoring period (Release of Monitoring) and the predicted TXRAM Score at the year fully matured (At Maturity).																			
												e) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Mitigation Area associated with the proposed compensation, indicate the linear distance of the proposed mitigation offered to offset proposed impacts																			
												f) If necessary, (indicated by a balance > 0 in Column P), continue with additional mitigation sites																			
												Use a separate spreadsheet for each Assessment Area (aquatic resource of one given type with homogenous baseline conditions) .																			

Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site																	
Project #:		SWF-		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure						TXRAM ScoreDivided by 100											
Project Name:		Dallas Floodway Project		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation		Mitigation	
Assessment Area and Impact Type				Baseline Condition		Post-Impact		Ac or LF		Ac or LF												Required		Proposed (Ac or LF)	
WAA-26 Ecosystem Other				0.56		0.00		0.02								0.00		0.74		0.83		0.01		0.01	

[illegible]

Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure						TXRAM ScoreDivided by 100				Mitigation											
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.55		0.00		2.70		1.230		Restoration BVP 19		2024		2054		20%		0.00		0.74		0.83		1.84		1.00	
WAA-32 Ecosystem Other				0.55		0.00		2.70		1.230		Restoration BVP 20		2024		2054		20%		0.00		0.74		0.83		0.84		0.84	
Reach Continued				0.55		0.00		2.70		1.230																			

[illegible]

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2026		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.58		0.00		1.84		0		Restoration BVP 60		2029		2030		15%		0.00		0.68		0.75		1.51		1.51	
WAA-44 Ecosystem Other																													

Outputs		Compensation Ratios		Instructions	
Mitigation :				1) Describe the project impacts:	
Impact				a) For each Assessment Area (aquatic resource of one given type with homogenous baseline conditions), using only the gray boxes, indicate when the impact(s) would occur (i.e., Impact Year)	
M vs I (1)		>= 0.82		b) For each Assessment Area (aquatic resource of one given type with homogeneous baseline conditions) input the baseline TXRAM Score (i.e., Pre-Impact)	
				c) For each Assessment Area, Input the predicted TXRAM Score after the proposed impacts would occur (i.e., Post-Impact)	
				d) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Assessment Area associated with the proposed impact	
				2) Describe the proposed mitigation used to offset proposed impacts:	
				a) For each Mitigation Area and Type, using only the gray boxes, input the date at which time the proposed mitigation would take place (i.e., Year Started)	
				b) For each Mitigation Area and Type, input the predicted year at which when the mitigation project would the time at which the predicted At Maturity TXRAM Score would be achieved (i.e., Year Matured).	
				c) Input the estimated Risk of Failure for the each proposed mitigation activity (Mitigation Area and Type)	
				d) For each proposed mitigation activity, input the baseline TXRAM Score, the predicted TXRAM Score at the end of the USACE monitoring period (Release of Monitoring) and the predicted TXRAM Score at the year fully matured (At Maturity).	
				e) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Mitigation Area associated with the proposed compensation, indicate the linear distance of the proposed mitigation offered to offset proposed impacts	
				f) If necessary, (indicated by a balance > 0 in Column P), continue with additional mitigation sites	
				Use a separate spreadsheet for each Assessment Area (aquatic resource of one given type with homogenous baseline conditions) .	

Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure						TXRAM ScoreDivided by 100				Mitigation											
Project Name:		Dallas Floodway Project		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)					
Assessment Area and Impact Type				Baseline Condition		Post-Impact		Ac or LF		Ac or LF		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
WAA-67 Ecosystem Other				0.57		0.00		1.04		0.55		Restoration BVP 48		2017		2018		15%		0.00		0.61		0.68		0.89		0.42	
Reach Continued				0.57		0.00		0.55		0		Restoration BVP 49		2017		2018		15		0.00		0.61		0.68		0.47		0.47	

Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure						TXRAM ScoreDivided by 100				Mitigation											
Project Name:		Dallas Floodway Project		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)					
Assessment Area and Impact Type				Baseline Condition		Post-Impact		Ac or LF		Ac or LF		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
WAA-89 Ecosystem Other				0.58		0.00		0.07		0		Restoration BVP 16		2024		2025		15%		0.00		0.71		0.78		0.06		0.06	

Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site											
Project #:		SWF-		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure						TXRAM ScoreDivided by 100				Mitigation	Mitigation
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact	Units	Units	Mitigation Area & Type		Year Started	Year Matured	Failure Risk	Baseline	Release of Monitoring	At Maturity	Mitigation Required	Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type						0.58	0.00	0.03											
WAA-12 Recreation									Restoration BVP 16	2024	2025	15%	0.00	0.71	0.78	0.02	0.02		

Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure						TXRAM ScoreDivided by 100				Mitigation											
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.58		0.00		5.54		4.89		Restoration BVP 16		2024		2025		15%		0.00		0.71		0.78		4.45		0.52	
WAA-29 Recreation				0.58		0.00		5.54		4.89		Restoration BVP 17		2024		2025		15%		0.00		0.71		0.79		3.88		3.40	
Reach Continued				0.58		0.00		5.54		4.89		Restoration BVP 18		2024		2025		15%		0.00		0.72		0.77		0.49		0.49	
Reach Continued				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			
				0.58		0.00		5.54		4.89																			

Aquatic Resource Compensation Calculator sheets for the relocation of the Trinity River.

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site		Proposed Mitigation Site																									
Project #:		SWF-		Impact Year: 2019		TXRAM Score Divided by 100				Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units Ac or LF		Units Ac or LF		Mitigation Area & Type				Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)							
Assessment Area and Impact Type				0.69		0.00		7439.00				Restoration				2020		2050		20%		0.00		0.78		0.82		6394.40		7657.00	

Outputs		Compensation Ratios		Instructions	
Mitigation :		Ratio		1) Describe the project Impacts:	
Impact				a) For each Assessment Area (aquatic resource of one given type with homogenous baseline conditions), using only the gray boxes, indicate when the impact(s) would occur (i.e., Impact Year)	
M vs I (1)		> 0.86		b) For each Assessment Area (aquatic resource of one given type with homogeneous baseline conditions) input the baseline TXRAM Score (i.e., Pre-Impact)	
				c) For each Assessment Area, input the predicted TXRAM Score after the proposed impacts would occur (i.e., Post-Impact)	
				d) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Assessment Area associated with the proposed impact	
				2) Describe the proposed mitigation used to offset proposed impacts:	
				a) For each Mitigation Area and Type, using only the gray boxes, input the date at which time the proposed mitigation would take place (i.e., Year Started)	
				b) For each Mitigation Area and Type, input the predicted year at which when the mitigation project would the time at which the predicted At Maturity TXRAM Score would be achieved (i.e., Year Matured).	
				c) Input the estimated Risk of Failure for the each proposed mitigation activity (Mitigation Area and Type)	
				d) For each proposed mitigation activity, input the baseline TXRAM Score, the predicted TXRAM Score at the end of the USACE monitoring period (Release of Monitoring) and the predicted TXRAM Score at the year fully matured (At Maturity).	
				e) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Mitigation Area associated with the proposed compensation, indicate the linear distance of the proposed mitigation offered to offset proposed impacts	
				f) If necessary, (indicated by a balance > 0 in Column P), continue with additional mitigation sites	
				Use a separate spreadsheet for each Assessment Area (aquatic resource of one given type with homogenous baseline conditions) .	

[illegible]

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site		Proposed Mitigation Site																									
Project #:		SWF-		Impact Year: 2022		TXRAM Score Divided by 100				Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units Ac or LF		Units Ac or LF		Mitigation Area & Type				Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)							
Assessment Area and Impact Type				0.69		0.00		7179.00				Restoration				2024		2054		20%		0.00		0.80		0.84		6130.28		7179.00	

Outputs		Compensation Ratios		Instructions	
Mitigation :				1) Describe the project Impacts:	
Impact				a) For each Assessment Area (aquatic resource of one given type with homogenous baseline conditions), using only the gray boxes, indicate when the impact(s) would occur (i.e., Impact Year)	
M vs I (1)		> 0.85		b) For each Assessment Area (aquatic resource of one given type with homogeneous baseline conditions) input the baseline TXRAM Score (i.e., Pre-Impact)	
				c) For each Assessment Area, input the predicted TXRAM Score after the proposed impacts would occur (i.e., Post-Impact)	
				d) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Assessment Area associated with the proposed impact	
				2) Describe the proposed mitigation used to offset proposed impacts:	
				a) For each Mitigation Area and Type, using only the gray boxes, input the date at which time the proposed mitigation would take place (i.e., Year Started)	
				b) For each Mitigation Area and Type, input the predicted year at which when the mitigation project would the time at which the predicted At Maturity TXRAM Score would be achieved (i.e., Year Matured).	
				c) Input the estimated Risk of Failure for the each proposed mitigation activity (Mitigation Area and Type)	
				d) For each proposed mitigation activity, input the baseline TXRAM Score, the predicted TXRAM Score at the end of the USACE monitoring period (Release of Monitoring) and the predicted TXRAM Score at the year fully matured (At Maturity).	
				e) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Mitigation Area associated with the proposed compensation, indicate the linear distance of the proposed mitigation offered to offset proposed impacts	
				f) If necessary, (indicated by a balance > 0 in Column P), continue with additional mitigation sites	
				Use a separate spreadsheet for each Assessment Area (aquatic resource of one given type with homogenous baseline conditions) .	

[illegible]

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site		Proposed Mitigation Site																									
Project #:		SWF-		Impact Year: 2026		TXRAM Score Divided by 100				Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units Ac or LF		Units Ac or LF		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)			
Assessment Area and Impact Type				0.69		0.00		10788.00				Restoration		2027		2025		20%		0.00		0.80		0.84		8984.72		11305.00			

Outputs		Compensation Ratios		Instructions	
		Ratio			
Mitigation :				1) Describe the project impacts:	
Impact				a) For each Assessment Area (aquatic resource of one given type with homogenous baseline conditions), using only the gray boxes, indicate when the impact(s) would occur (i.e., Impact Year)	
				b) For each Assessment Area (aquatic resource of one given type with homogeneous baseline conditions) input the baseline TXRAM Score (i.e., Pre-Impact)	
				c) For each Assessment Area, input the predicted TXRAM Score after the proposed impacts would occur (i.e., Post-Impact)	
				d) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Assessment Area associated with the proposed impact	
				2) Describe the proposed mitigation used to offset proposed impacts:	
				a) For each Mitigation Area and Type, using only the gray boxes, input the date at which time the proposed mitigation would take place (i.e., Year Started)	
				b) For each Mitigation Area and Type, input the predicted year at which when the mitigation project would the time at which the predicted At Maturity TXRAM Score would be achieved (i.e., Year Matured).	
				c) Input the estimated Risk of Failure for the each proposed mitigation activity (Mitigation Area and Type)	
				d) For each proposed mitigation activity, input the baseline TXRAM Score, the predicted TXRAM Score at the end of the USACE monitoring period (Release of Monitoring) and the predicted TXRAM Score at the year fully matured (At Maturity).	
				e) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Mitigation Area associated with the proposed compensation, indicate the linear distance of the proposed mitigation offered to offset proposed impacts	
				f) If necessary, (indicated by a balance > 0 in Column P), continue with additional mitigation sites	
				Use a separate spreadsheet for each Assessment Area (aquatic resource of one given type with homogenous baseline conditions) .	

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Attachment C-3

Alternative 3 Wetland Impact and Compensation Matrix and ARCC Calculation Sheets

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Alternative 3 Wetland Impact and Compensation Matrix

*Refer to attached Aquatic Resource Compensation Calculator sheets for details on each site.

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Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site										
Project #:		SWF-		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure						TXRAM ScoreDivided by 100			Mitigation	Mitigation
Project Name:		Dallas Floodway Project				Units	Units	Mitigation Area & Type		Year Started	Year Matured	Failure Risk	Baseline	Release of Monitoring	At Maturity	Required	Proposed (Ac or LF)	
Assessment Area and Impact Type				Baseline Condition	Post-Impact	Ac or LF	Ac or LF											
WAA-9 FRM				0.60	0.00	0.02		Restoration BVP 47	2017	2018	15 %	0.00	0.61	0.68	0.02	0.02		
Outputs		Compensation Ratios										Instructions						
Mitigation :												1) Describe the project impacts:						
Impact												a) For each Assessment Area (aquatic resource of one given type with homogenous baseline conditions), using only the gray boxes, indicate when the impact(s) would occur (i.e., Impact Year)						
M vs I (1)		>										b) For each Assessment Area (aquatic resource of one given type with homogeneous baseline conditions) input the baseline TXRAM Score (i.e., Pre-Impact)						
												c) For each Assessment Area, Input the predicted TXRAM Score after the proposed impacts would occur (i.e., Post-Impact)						
												d) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Assessment Area associated with the proposed impact						
												2) Describe the proposed mitigation used to offset proposed impacts:						
												a) For each Mitigation Area and Type, using only the gray boxes, input the date at which time the proposed mitigation would take place (i.e., Year Started)						
												b) For each Mitigation Area and Type, input the predicted year at which when the mitigation project would the time at which the predicted At Maturity TXRAM Score would be achieved (i.e., Year Matured).						
												c) Input the estimated Risk of Failure for the each proposed mitigation activity (Mitigation Area and Type)						
												d) For each proposed mitigation activity, input the baseline TXRAM Score, the predicted TXRAM Score at the end of the USACE monitoring period (Release of Monitoring) and the predicted TXRAM Score at the year fully matured (At Maturity).						
												e) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Mitigation Area associated with the proposed compensation, indicate the linear distance of the proposed mitigation offered to offset proposed impacts						
												f) If necessary, (indicated by a balance > 0 in Column P), continue with additional mitigation sites						
												Use a separate spreadsheet for each Assessment Area (aquitic resource of one given type with homogenous baseline conditions) .						

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Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2017		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.57		0.00		0.04				Restoration BVP 48		2017		2018		15%		0.00		0.61		0.68		0.03		0.03	
WAA-17 FRM										0																			

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Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2017		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.58		0.00		1.57				Restoration BVP 49		2017		2018		15%		0.00		0.61		0.68		1.37		1.37	
WAA-19 FRM																													

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Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2026		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.58		0.00		0.86				Restoration BVP 60		2029		2030		15%		0.00		0.68		0.75		0.70		0.70	

Outputs		Compensation Ratios		Instructions	
Mitigation :				1) Describe the project impacts:	
Impact				a) For each Assessment Area (aquatic resource of one given type with homogenous baseline conditions), using only the gray boxes, indicate when the impact(s) would occur (i.e., Impact Year)	
M vs I (1)		>= 0.82		b) For each Assessment Area (aquatic resource of one given type with homogeneous baseline conditions) input the baseline TXRAM Score (i.e., Pre-Impact)	
				c) For each Assessment Area, Input the predicted TXRAM Score after the proposed impacts would occur (i.e., Post-Impact)	
				d) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Assessment Area associated with the proposed impact	
				2) Describe the proposed mitigation used to offset proposed impacts:	
				a) For each Mitigation Area and Type, using only the gray boxes, input the date at which time the proposed mitigation would take place (i.e., Year Started)	
				b) For each Mitigation Area and Type, input the predicted year at which when the mitigation project would the time at which the predicted At Maturity TXRAM Score would be achieved (i.e., Year Matured).	
				c) Input the estimated Risk of Failure for the each proposed mitigation activity (Mitigation Area and Type)	
				d) For each proposed mitigation activity, input the baseline TXRAM Score, the predicted TXRAM Score at the end of the USACE monitoring period (Release of Monitoring) and the predicted TXRAM Score at the year fully matured (At Maturity).	
				e) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Mitigation Area associated with the proposed compensation, indicate the linear distance of the proposed mitigation offered to offset proposed impacts	
				f) If necessary, (indicated by a balance > 0 in Column P), continue with additional mitigation sites	
				Use a separate spreadsheet for each Assessment Area (aquatic resource of one given type with homogenous baseline conditions) .	

Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site																							
Project #:		SWF-		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure						TXRAM ScoreDivided by 100				Mitigation													
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)			
Assessment Area and Impact Type				0.58		0.00		0.32		0		Restoration BVP 56		2027		2057		20		%		0.00		0.71		0.81		0.25		0.25	

Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site													
Project #:		SWF-		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure						TXRAM ScoreDivided by 100			Mitigation	Mitigation			
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact	Units	Units	Mitigation Area & Type		Year Started	Year Matured	Failure Risk	Baseline	Release of Monitoring	At Maturity	Required	Proposed (Ac or LF)			
Assessment Area and Impact Type																					
WAA-32 Ecosystem Other				0.55		0.00		4.94						0.00		0.71		0.81		3.53	0.26
Reach Continued				0.55		0.00		4.58		2027		2028	15%	0.00	0.58	0.65	4.04	0.79			
Reach Continued				0.55		0.00		3.68		2027		2028	15%	0.00	0.58	0.65	3.25	1.14			
Reach Continued				0.55		0.00		2.39		2027		2057	20	0.00	0.71	0.81	1.75	0.44			
Reach Continued				0.55		0.00		1.79		2027		2057	20	0.00	0.71	0.81	1.31	0.70			
Reach Continued				0.55		0.00		0.84		2027		2057	20	0.00	0.71	0.81	0.61	0.58			
Reach Continued				0.55		0.00		0.05		2027		2057	20	0.00	0.71	0.81	0.03	0.03			

Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site										
Project #:		SWF-		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure						TXRAM ScoreDivided by 100			Mitigation	Mitigation
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact	Units	Units	Mitigation Area & Type		Year Started	Year Matured	Failure Risk	Baseline	Release of Monitoring	At Maturity	Mitigation Required	Mitigation Proposed (Ac or LF)
Assessment Area and Impact Type																		
WAA-36 Ecosystem Other				0.60		0.00	11.80		Restoration BVP 22		2024	2025	15%	0.00	0.71	0.78	9.90	1.38
Reach Continued				0.60		0.00		10.16	Restoration BVP 23		2024	2025	15	0.00	0.71	0.78	8.52	2.51
Reach Continued				0.60		0.00		7.16	Restoration BVP 24		2024	2025	15	0.00	0.71	0.78	6.01	2.80
Reach Continued				0.60		0.00		3.83	Restoration BVP 25		2024	2025	15	0.00	0.71	0.78	3.21	3.21
								0										

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2026		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.58		0.00		2.45		0		Restoration BVP 60		2029		2030		15%		0.00		0.68		0.75		2.02		2.02	
WAA-44 Ecosystem Other																													

Outputs		Compensation Ratios		Instructions	
Mitigation :				1) Describe the project impacts:	
Impact				a) For each Assessment Area (aquatic resource of one given type with homogenous baseline conditions), using only the gray boxes, indicate when the impact(s) would occur (i.e., Impact Year)	
M vs I (1)		>= 0.82		b) For each Assessment Area (aquatic resource of one given type with homogeneous baseline conditions) input the baseline TXRAM Score (i.e., Pre-Impact)	
				c) For each Assessment Area, Input the predicted TXRAM Score after the proposed impacts would occur (i.e., Post-Impact)	
				d) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Assessment Area associated with the proposed impact	
				2) Describe the proposed mitigation used to offset proposed impacts:	
				a) For each Mitigation Area and Type, using only the gray boxes, input the date at which time the proposed mitigation would take place (i.e., Year Started)	
				b) For each Mitigation Area and Type, input the predicted year at which when the mitigation project would the time at which the predicted At Maturity TXRAM Score would be achieved (i.e., Year Matured).	
				c) Input the estimated Risk of Failure for the each proposed mitigation activity (Mitigation Area and Type)	
				d) For each proposed mitigation activity, input the baseline TXRAM Score, the predicted TXRAM Score at the end of the USACE monitoring period (Release of Monitoring) and the predicted TXRAM Score at the year fully matured (At Maturity).	
				e) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Mitigation Area associated with the proposed compensation, indicate the linear distance of the proposed mitigation offered to offset proposed impacts	
				f) If necessary, (indicated by a balance > 0 in Column P), continue with additional mitigation sites	
				Use a separate spreadsheet for each Assessment Area (aquatic resource of one given type with homogenous baseline conditions) .	

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Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure						TXRAM ScoreDivided by 100				Mitigation											
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.55		0.00		0.41		0		Restoration BVP 20		2024		2054		20 %		0.00		0.74		0.83		0.28		0.28	
WAA-71 Ecosystem Other																													

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Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																							
Project #:		SWF-		Impact Year: 2020		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100																	
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)			
Assessment Area and Impact Type				0.60		0.00		0.41		0		Restoration BVP 18		2024		2025		15%		0.00		0.72		0.77		0.34		0.34			
WAA-9 Ecosystem River																															

Outputs		Compensation Ratios		Instructions	
Mitigation :				1) Describe the project impacts:	
Impact				a) For each Assessment Area (aquatic resource of one given type with homogenous baseline conditions), using only the gray boxes, indicate when the impact(s) would occur (i.e., Impact Year)	
M vs I (1)		>= 0.82		b) For each Assessment Area (aquatic resource of one given type with homogeneous baseline conditions) input the baseline TXRAM Score (i.e., Pre-Impact)	
				c) For each Assessment Area, Input the predicted TXRAM Score after the proposed impacts would occur (i.e., Post-Impact)	
				d) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Assessment Area associated with the proposed impact	
				2) Describe the proposed mitigation used to offset proposed impacts:	
				a) For each Mitigation Area and Type, using only the gray boxes, input the date at which time the proposed mitigation would take place (i.e., Year Started)	
				b) For each Mitigation Area and Type, input the predicted year at which when the mitigation project would the time at which the predicted At Maturity TXRAM Score would be achieved (i.e., Year Matured).	
				c) Input the estimated Risk of Failure for the each proposed mitigation activity (Mitigation Area and Type)	
				d) For each proposed mitigation activity, input the baseline TXRAM Score, the predicted TXRAM Score at the end of the USACE monitoring period (Release of Monitoring) and the predicted TXRAM Score at the year fully matured (At Maturity).	
				e) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Mitigation Area associated with the proposed compensation, indicate the linear distance of the proposed mitigation offered to offset proposed impacts	
				f) If necessary, (indicated by a balance > 0 in Column P), continue with additional mitigation sites	
				Use a separate spreadsheet for each Assessment Area (aquatic resource of one given type with homogenous baseline conditions) .	

[illegible]

Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM ScoreDivided by 100			Mitigation														
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.58		0.00		0.01		0		Restoration BVP 16		2024		2025		15%		0.00		0.71		0.78		0.01		0.01	

Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM ScoreDivided by 100			Mitigation														
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.53		0.00		1.12		0		Restoration BVP 18		2024		2025		15%		0.00		0.72		0.77		0.83		0.83	
WAA-25 Ecosystem River																													

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																							
Project #:		SWF-		Impact Year: 2022		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure					TXRAM Score Divided by 100																
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)			
Assessment Area and Impact Type				0.54		0.00		2.81		0		Restoration BVP 18		2024		2025		15%		0.00		0.72		0.77		2.04		2.04			
WAA-31 Ecosystem River																															

Outputs		Compensation Ratios		Instructions	
Mitigation :				1) Describe the project impacts:	
Impact				a) For each Assessment Area (aquatic resource of one given type with homogenous baseline conditions), using only the gray boxes, indicate when the impact(s) would occur (i.e., Impact Year)	
M vs I (1)		>= 0.73		b) For each Assessment Area (aquatic resource of one given type with homogeneous baseline conditions) input the baseline TXRAM Score (i.e., Pre-Impact)	
				c) For each Assessment Area, Input the predicted TXRAM Score after the proposed impacts would occur (i.e., Post-Impact)	
				d) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Assessment Area associated with the proposed impact	
				2) Describe the proposed mitigation used to offset proposed impacts:	
				a) For each Mitigation Area and Type, using only the gray boxes, input the date at which time the proposed mitigation would take place (i.e., Year Started)	
				b) For each Mitigation Area and Type, input the predicted year at which when the mitigation project would the time at which the predicted At Maturity TXRAM Score would be achieved (i.e., Year Matured).	
				c) Input the estimated Risk of Failure for the each proposed mitigation activity (Mitigation Area and Type)	
				d) For each proposed mitigation activity, input the baseline TXRAM Score, the predicted TXRAM Score at the end of the USACE monitoring period (Release of Monitoring) and the predicted TXRAM Score at the year fully matured (At Maturity).	
				e) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Mitigation Area associated with the proposed compensation, indicate the linear distance of the proposed mitigation offered to offset proposed impacts	
				f) If necessary, (indicated by a balance > 0 in Column P), continue with additional mitigation sites	
				Use a separate spreadsheet for each Assessment Area (aquatic resource of one given type with homogenous baseline conditions) .	

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		Impact Year: 2022		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100															
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				0.55		0.00		1.25		0		Restoration BVP 18		2024		2025		15%		0.00		0.72		0.77		0.93		0.93	
WAA-32 Ecosystem River																													

Outputs		Compensation Ratios		Instructions	
Mitigation :				1) Describe the project impacts:	
Impact				a) For each Assessment Area (aquatic resource of one given type with homogenous baseline conditions), using only the gray boxes, indicate when the impact(s) would occur (i.e., Impact Year)	
M vs I (1)		>= 0.75		b) For each Assessment Area (aquatic resource of one given type with homogeneous baseline conditions) input the baseline TXRAM Score (i.e., Pre-Impact)	
				c) For each Assessment Area, Input the predicted TXRAM Score after the proposed impacts would occur (i.e., Post-Impact)	
				d) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Assessment Area associated with the proposed impact	
				2) Describe the proposed mitigation used to offset proposed impacts:	
				a) For each Mitigation Area and Type, using only the gray boxes, input the date at which time the proposed mitigation would take place (i.e., Year Started)	
				b) For each Mitigation Area and Type, input the predicted year at which when the mitigation project would the time at which the predicted At Maturity TXRAM Score would be achieved (i.e., Year Matured).	
				c) Input the estimated Risk of Failure for the each proposed mitigation activity (Mitigation Area and Type)	
				d) For each proposed mitigation activity, input the baseline TXRAM Score, the predicted TXRAM Score at the end of the USACE monitoring period (Release of Monitoring) and the predicted TXRAM Score at the year fully matured (At Maturity).	
				e) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Mitigation Area associated with the proposed compensation, indicate the linear distance of the proposed mitigation offered to offset proposed impacts	
				f) If necessary, (indicated by a balance > 0 in Column P), continue with additional mitigation sites	
				Use a separate spreadsheet for each Assessment Area (aquatic resource of one given type with homogenous baseline conditions) .	

Aquatic Resource Compensation Calculator Version 1.0

Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																							
Project #:		SWF-		Impact Year: 2022		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100																	
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)			
Assessment Area and Impact Type				0.58		0.00		5.04		0		Restoration BVP 18		2024		2025		15%		0.00		0.72		0.77		3.95		3.95			
WAA-33 Ecosystem River																															

Outputs		Compensation Ratios		Instructions	
Mitigation :				1) Describe the project impacts:	
Impact				a) For each Assessment Area (aquatic resource of one given type with homogenous baseline conditions), using only the gray boxes, indicate when the impact(s) would occur (i.e., Impact Year)	
M vs I (1)		>= 0.78		b) For each Assessment Area (aquatic resource of one given type with homogeneous baseline conditions) input the baseline TXRAM Score (i.e., Pre-Impact)	
				c) For each Assessment Area, Input the predicted TXRAM Score after the proposed impacts would occur (i.e., Post-Impact)	
				d) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Assessment Area associated with the proposed impact	
				2) Describe the proposed mitigation used to offset proposed impacts:	
				a) For each Mitigation Area and Type, using only the gray boxes, input the date at which time the proposed mitigation would take place (i.e., Year Started)	
				b) For each Mitigation Area and Type, input the predicted year at which when the mitigation project would the time at which the predicted At Maturity TXRAM Score would be achieved (i.e., Year Matured).	
				c) Input the estimated Risk of Failure for the each proposed mitigation activity (Mitigation Area and Type)	
				d) For each proposed mitigation activity, input the baseline TXRAM Score, the predicted TXRAM Score at the end of the USACE monitoring period (Release of Monitoring) and the predicted TXRAM Score at the year fully matured (At Maturity).	
				e) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Mitigation Area associated with the proposed compensation, indicate the linear distance of the proposed mitigation offered to offset proposed impacts	
				f) If necessary, (indicated by a balance > 0 in Column P), continue with additional mitigation sites	
				Use a separate spreadsheet for each Assessment Area (aquatic resource of one given type with homogenous baseline conditions) .	

Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site																							
Project #:		SWF -		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure						TXRAM ScoreDivided by 100				Mitigation													
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)			
Assessment Area and Impact Type				0.55		0.00		1.26		0		Restoration BVP 19		2024		2054		20 %		0.00		0.74		0.83		0.89		0.89			
Outputs		Compensation Ratios										Instructions																			
Mitigation :		Ratio										1) Describe the project Impacts:																			
Impact												a) For each Assessment Area (aquatic resource of one given type with homogenous baseline conditions), using only the gray boxes, indicate when the impact(s) would occur (i.e., Impact Year)																			
M vs I (1)		>= 0.70										b) For each Assessment Area (aquatic resource of one given type with homogeneous baseline conditions) input the baseline TXRAM Score (i.e., Pre-Impact)																			
												c) For each Assessment Area, Input the predicted TXRAM Score after the proposed impacts would occur (i.e., Post-Impact)																			
												d) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Assessment Area associated with the proposed impact																			
												2) Describe the proposed mitigation used to offset proposed impacts:																			
												a) For each Mitigation Area and Type, using only the gray boxes, input the date at which time the proposed mitigation would take place (i.e., Year Started)																			
												b) For each Mitigation Area and Type, input the predicted year at which when the mitigation project would the time at which the predicted At Maturity TXRAM Score would be achieved (i.e., Year Matured).																			
												c) Input the estimated Risk of Failure for the each proposed mitigation activity (Mitigation Area and Type)																			
												d) For each proposed mitigation activity, input the baseline TXRAM Score, the predicted TXRAM Score at the end of the USACE monitoring period (Release of Monitoring) and the predicted TXRAM Score at the year fully matured (At Maturity).																			
												e) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Mitigation Area associated with the proposed compensation, indicate the linear distance of the proposed mitigation offered to offset proposed impacts																			
												f) If necessary, (indicated by a balance > 0 in Column P), continue with additional mitigation sites																			
												Use a separate spreadsheet for each Assessment Area (aquatic resource of one given type with homogenous baseline conditions) .																			

[illegible]

Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site																							
Project #:		SWF-		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure						TXRAM ScoreDivided by 100				Mitigation													
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)			
Assessment Area and Impact Type				0.59		0.00		0.25		0		Restoration BVP 60		2029		2030		15 %		0.00		0.68		0.75		0.21		0.21			
Outputs		Compensation Ratios										Instructions																			
Mitigation :		Ratio										1) Describe the project Impacts:																			
Impact												a) For each Assessment Area (aquatic resource of one given type with homogenous baseline conditions), using only the gray boxes, indicate when the impact(s) would occur (i.e., Impact Year)																			
M vs I (1)		>= 0.84										b) For each Assessment Area (aquatic resource of one given type with homogeneous baseline conditions) input the baseline TXRAM Score (i.e., Pre-Impact)																			
												c) For each Assessment Area, Input the predicted TXRAM Score after the proposed impacts would occur (i.e., Post-Impact)																			
												d) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Assessment Area associated with the proposed impact																			
												2) Describe the proposed mitigation used to offset proposed impacts:																			
												a) For each Mitigation Area and Type, using only the gray boxes, input the date at which time the proposed mitigation would take place (i.e., Year Started)																			
												b) For each Mitigation Area and Type, input the predicted year at which when the mitigation project would the time at which the predicted At Maturity TXRAM Score would be achieved (i.e., Year Matured).																			
												c) Input the estimated Risk of Failure for the each proposed mitigation activity (Mitigation Area and Type)																			
												d) For each proposed mitigation activity, input the baseline TXRAM Score, the predicted TXRAM Score at the end of the USACE monitoring period (Release of Monitoring) and the predicted TXRAM Score at the year fully matured (At Maturity).																			
												e) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Mitigation Area associated with the proposed compensation, indicate the linear distance of the proposed mitigation offered to offset proposed impacts																			
												f) If necessary, (indicated by a balance > 0 in Column P), continue with additional mitigation sites																			
												Use a separate spreadsheet for each Assessment Area (aquatic resource of one given type with homogenous baseline conditions) .																			

Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site																							
Project #:		SWF-		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM ScoreDivided by 100			Mitigation																
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)			
Assessment Area and Impact Type				0.58		0.00		6.63				Restoration BVP 60		2029		2030		15%		0.00		0.68		0.75		5.52		5.52			
Outputs				Compensation Ratios								Instructions																			
Mitigation :										1) Describe the project Impacts:																					
Impact										a) For each Assessment Area (aquatic resource of one given type with homogenous baseline conditions), using only the gray boxes, indicate when the impact(s) would occur (i.e., Impact Year)																					
M vs I (1)		>= 0.83								b) For each Assessment Area (aquatic resource of one given type with homogeneous baseline conditions) input the baseline TXRAM Score (i.e., Pre-Impact)																					
										c) For each Assessment Area, Input the predicted TXRAM Score after the proposed impacts would occur (i.e., Post-Impact)																					
										d) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Assessment Area associated with the proposed impact																					
										2) Describe the proposed mitigation used to offset proposed impacts:																					
										a) For each Mitigation Area and Type, using only the gray boxes, input the date at which time the proposed mitigation would take place (i.e., Year Started)																					
										b) For each Mitigation Area and Type, input the predicted year at which when the mitigation project would the time at which the predicted At Maturity TXRAM Score would be achieved (i.e., Year Matured).																					
										c) Input the estimated Risk of Failure for the each proposed mitigation activity (Mitigation Area and Type)																					
										d) For each proposed mitigation activity, input the baseline TXRAM Score, the predicted TXRAM Score at the end of the USACE monitoring period (Release of Monitoring) and the predicted TXRAM Score at the year fully matured (At Maturity).																					
										e) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Mitigation Area associated with the proposed compensation, indicate the linear distance of the proposed mitigation offered to offset proposed impacts																					
										f) If necessary, (indicated by a balance > 0 in Column P), continue with additional mitigation sites																					
										Use a separate spreadsheet for each Assessment Area (aquatic resource of one given type with homogenous baseline conditions) .																					

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Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																							
Project #:		SWF-		Impact Year: 2025		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100																	
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)			
Assessment Area and Impact Type				0.56		0.00		1.82		0		Restoration BVP 60		2029		2030		15%		0.00		0.68		0.75		1.46		1.46			
WAA-85 Ecosystem River																															

Outputs		Compensation Ratios		Instructions	
Mitigation :				1) Describe the project impacts:	
Impact				a) For each Assessment Area (aquatic resource of one given type with homogenous baseline conditions), using only the gray boxes, indicate when the impact(s) would occur (i.e., Impact Year)	
M vs I (1)		>= 0.80		b) For each Assessment Area (aquatic resource of one given type with homogeneous baseline conditions) input the baseline TXRAM Score (i.e., Pre-Impact)	
				c) For each Assessment Area, Input the predicted TXRAM Score after the proposed impacts would occur (i.e., Post-Impact)	
				d) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Assessment Area associated with the proposed impact	
				2) Describe the proposed mitigation used to offset proposed impacts:	
				a) For each Mitigation Area and Type, using only the gray boxes, input the date at which time the proposed mitigation would take place (i.e., Year Started)	
				b) For each Mitigation Area and Type, input the predicted year at which when the mitigation project would the time at which the predicted At Maturity TXRAM Score would be achieved (i.e., Year Matured).	
				c) Input the estimated Risk of Failure for the each proposed mitigation activity (Mitigation Area and Type)	
				d) For each proposed mitigation activity, input the baseline TXRAM Score, the predicted TXRAM Score at the end of the USACE monitoring period (Release of Monitoring) and the predicted TXRAM Score at the year fully matured (At Maturity).	
				e) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Mitigation Area associated with the proposed compensation, indicate the linear distance of the proposed mitigation offered to offset proposed impacts	
				f) If necessary, (indicated by a balance > 0 in Column P), continue with additional mitigation sites	
				Use a separate spreadsheet for each Assessment Area (aquatic resource of one given type with homogenous baseline conditions) .	

[illegible]

Inputs		Time Horizon:	75	Proposed Impact Site				Proposed Mitigation Site																					
Project #:		SWF-		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM ScoreDivided by 100			Mitigation														
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units		Units		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)	
Assessment Area and Impact Type				WAA-25 Recreation		0.53		0.00		0.01		0		Restoration BVP 60		2029		2030		15%		0.00		0.68		0.75		0.01	

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Inputs		Time Horizon: 75		Proposed Impact Site				Proposed Mitigation Site																							
Project #:		SWF-		Impact Year: 2017		TXRAM Score Divided by 100		Balance		Mitigation Work Timing & Risk of Failure				TXRAM Score Divided by 100																	
Project Name:		Dallas Floodway Project		Baseline Condition		Post-Impact		Units Ac or LF		Units Ac or LF		Mitigation Area & Type		Year Started		Year Matured		Failure Risk		Baseline		Release of Monitoring		At Maturity		Mitigation Required		Mitigation Proposed (Ac or LF)			
Assessment Area and Impact Type				WAA-50 Recreation		0.60		0.00		0.15				Restoration BVP 1		2020		2050		20%		0.00		0.71		0.81		0.12		0.12	
Outputs				Compensation Ratios																		Instructions									
				Ratio																		1) Describe the project impacts:									
				Mitigation :																		a) For each Assessment Area (aquatic resource of one given type with homogenous baseline conditions), using only the gray boxes, indicate when the impact(s) would occur (i.e., Impact Year)									
				Impact																		b) For each Assessment Area (aquatic resource of one given type with homogeneous baseline conditions) input the baseline TXRAM Score (i.e., Pre-Impact)									
				M vs I (1)																		c) For each Assessment Area, Input the predicted TXRAM Score after the proposed impacts would occur (i.e., Post-Impact)									
																						d) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Assessment Area associated with the proposed impact									
																						2) Describe the proposed mitigation used to offset proposed impacts:									
																						a) For each Mitigation Area and Type, using only the gray boxes, input the date at which time the proposed mitigation would take place (i.e., Year Started)									
																						b) For each Mitigation Area and Type, input the predicted year at which when the mitigation project would the time at which the predicted At Maturity TXRAM Score would be achieved (i.e., Year Matured).									
																						c) Input the estimated Risk of Failure for the each proposed mitigation activity (Mitigation Area and Type)									
																		d) For each proposed mitigation activity, input the baseline TXRAM Score, the predicted TXRAM Score at the end of the USACE monitoring period (Release of Monitoring) and the predicted TXRAM Score at the year fully matured (At Maturity).													
																		e) Using acres (AC) for wetlands and linear feet (LF) for streams, input the units of measure for each Mitigation Area associated with the proposed compensation, indicate the linear distance of the proposed mitigation offered to offset proposed impacts													
																		f) If necessary, (indicated by a balance > 0 in Column P), continue with additional mitigation sites													
																		Use a separate spreadsheet for each Assessment Area (aquatic resource of one given type with homogenous baseline conditions) .													

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