

**CONCEPTUAL MITIGATION PLAN
COMPENSATORY MITIGATION FOR LOSSES
OF AQUATIC RESOURCES**

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Acronyms and Abbreviations

AMP	adaptive management plan
EPA	U.S. Environmental Protection Agency
FEIS	Final Environmental Impact Statement
FHWA	Federal Highway Administration
GBWMB	Greens Bayou Wetland Mitigation Bank
GPA	Grand Parkway Association
HCFC	Harris County Flood Control District
HCTRA	Harris County Toll Road Authority
IH	Interstate Highway
ILF	in lieu fee
KCWMB	Katy-Cypress Wetlands Mitigation Bank
KPC	Katy Prairie Conservancy
MBI	Mitigation Banking Instrument
PEM	palustrine emergent
PFO	palustrine forested
ROW	right-of-way
SH	State Highway
TxDOT	Texas Department of Transportation
US	United States Highway
USACE	U.S. Army Corps of Engineers
USDOT	U.S. Department of Transportation

1.0 INTRODUCTION

This proposed conceptual mitigation plan has been developed for State Highway ("SH") 99 (Grand Parkway) Segment E to address compensatory mitigation for unavoidable impacts to waters of the U.S., including wetlands. In accordance with 33 CFR Part 332, the following conceptual plan is offered in order to establish a preferred alternative mitigation plan prior to developing a detailed mitigation plan. We understand that Part 332 requires specific elements in order to be considered complete; we have endeavored to capture those elements to the degree that details are known or available at this time. As additional details become available, the mitigation plan will be updated and refined to comply fully with 33 CFR 332.

This mitigation plan is presented in two broad sections:

- Section 2.0 Background information on the impact site
- Section 3.0 Required elements as identified in 33 CFR 332.4(c)

2.0 BACKGROUND INFORMATION

2.1 HISTORY

SH 99 was first proposed in 1961 by Harris County and the City of Houston Planning Commission following traffic studies that indicated its need. SH 99 was placed on city maps in 1968. Although the project was sanctioned by the State, funds were not readily available to advance the project. With the development in the Greater Metropolitan Houston area, the Katy area, and other residential and corporate facilities in West Houston, the need for additional transportation planning became more evident. County officials and landowners mapped a proposed route for SH 99 and submitted the plan to the Texas Highway Commission. The State approved the project in 1983 with the requirement that the landowners along the route provide right-of-way ("ROW") and design; the State would then build and operate the facility.

2.2 NEED AND PURPOSE

Transportation improvements provided by the construction of Segment E are needed because there are inefficient connections between suburban communities and major radial roadways, the current and future transportation demand exceeds capacity, many roadways in the study area have a high accident rate, and there is an increasing strain on transportation infrastructure from population and economic growth. The needs are further detailed in the following:

- The current transportation system does not allow for efficient circumferential traffic movement; i.e., it does not provide efficient connections, or linkage, between major suburban communities and major roadways that radiate outward from Houston.
- Transportation demand exceeds the current and future capacity of existing transportation infrastructure.
- Many roadways within the Houston region are characterized by conditions that result in higher accident rates. These roadways have a high number of intersections, traffic signals, and driveways, all of which may contribute to stop-and-go conditions, increased crash rates, and congestion during peak travel times and emergency events.
- The expected growth will continue to strain existing transportation infrastructure, creating a barrier to businesses, commuters, and economic development.

The purpose of the proposed Segment E transportation project is to efficiently link the suburban communities and major roadways, enhance mobility and safety, and respond to economic growth. The

goal is to improve system linkage, address current and future transportation demand, improve safety, and accommodate population and economic growth as detailed in the following:

- The proposed project would improve system linkage, or connectivity, within the existing transportation network.
- The proposed project would address transportation demand, improve the level of mobility, reduce traffic congestion, and provide travel options.
- The proposed project would improve regional and local safety for the traveling public by minimizing conditions that contribute to stop-and-go conditions, increased crash rates, and congestion during peak travel times and emergency events.
- The proposed project would accommodate demographic and economic growth by improving the movement of persons and goods, thereby minimizing barriers between businesses, consumers, and transportation infrastructure.

2.3 PROJECT DESCRIPTION

For planning and design purposes, SH 99 was divided into 11 segments—A through I-2. The proposed SH 99 is a planned scenic highway that would form a 180-mile circumferential highway around the Greater Metropolitan area of Harris County. This proposed highway would be located approximately 25 to 30 miles outside the downtown Houston area and would serve as the outermost loop around the city of Houston. SH 99 consists of 11 separate segments of independent utility, with Segment E representing one of the 11 segments.

A discussion detailing the identification and evaluation of alternative design concepts and the subsequent identification and evaluation of representative alternatives of the preferred design concept is provided in the Grand Parkway Segment E Final Environmental Impact Statement ("FEIS"), dated November 2007, prepared by Michael Baker, Jr., Inc., and PBS&J on behalf of the Grand Parkway Association ("GPA"), the Texas Department of Transportation ("TxDOT"), and the U.S. Department of Transportation ("USDOT") Federal Highway Administration ("FHWA") (USDOT FHWA, 2007). The FEIS also addresses the environmental consequences of each representative alternative in detail. An Alternatives Analysis is also provided as a component of the Section 401 Water Quality Certification provided in the permit package. The Preferred Alignment of Segment E, the focus of this investigation, was developed to alleviate concerns raised by stakeholders relative to potential impacts to physical and biological resources as well as potential effects on economic and social factors.

Preliminary surveys of the alternative alignments were conducted in July 2000 in limited areas where landowner access was granted. After the Preferred Alignment was selected in June 2003, detailed field

surveys for the Preferred Alignment were conducted by qualified field ecologists between December 2003 and January 2004.

In 2006, PBS&J conducted a wetland delineation on behalf of the GPA within a 400-foot ROW (Exhibits A and B) associated with the new toll road facility referred to as Segment E of SH 99 (Grand Parkway). Segment E extends for approximately 15 miles from Interstate Highway ("IH") 10 to United States Highway ("US") 290. Under the original scope of work, the wetland delineation was completed and verified by the U.S. Army Corps of Engineers ("USACE"), Galveston District, on January 5, 2006, as containing 25.70¹ acres of jurisdictional waters of the U.S., including wetlands. This delineation was conducted by PBS&J on behalf of the GPA in support of the FEIS. The FEIS received a Record of Decision on June 9, 2009. Subsequent to the wetland delineation, design modifications have reduced the total acreage of wetlands within the ROW to 36.972 acres, of which 22.772 acres are jurisdictional.

To date, PBS&J has been contracted by the Harris County Toll Road Authority ("HCTRA") to submit an application to dredge and fill waters of the U.S. for development of Segment E. The application includes required detention/mitigation basins and outfall easements for managing stormwater associated with Segment E. HCTRA has been in operation since 1984 and currently manages 100 miles of tolled roadway in Harris County and toll collections for the Fort Bend County Toll Road Authority on the Westpark Toll Road.

PBS&J conducted a wetland delineation of the detention/mitigation basins and outfall easement locations associated with Segment E in May 2009. This delineation identified an additional 44.26 acres of waters of the U.S., including wetlands. The wetland delineation was revised to include these additional areas and was resubmitted to the USACE in June 2009. A summary of wetlands identified within the Segment E project area is provided in Table 1. Impacts from the proposed project were then calculated based on the project design, resulting in a total of 45.63 acres of impacts from the construction of Segment E.

All aquatic resources to be impacted by the project have been identified according to Cowardin, et al. (1979) and evaluated using the 1987 Manual (Environmental Laboratory, 1987). Table 1 provides an accounting by classification, acreage, width, and jurisdiction for each waterbody at the project site. The locations of these resources are identified on Exhibit C.

¹ The USACE verification letter lists a total of 25.72 acres of jurisdictional wetland and waters, which was a calculation error.

Table 1
Wetlands and Other Waters of the U.S.

Map ID (Exhibit C)	Length¹ (linear feet)	Non-Forested (acres)	Forested (acres)	Open Water (acres)	Potential Jurisdiction
Natural Features 2003 Preferred Alignment					
Mason Creek	--	0.05	--	0.26	Section 404
South Mayde Creek	--	--	--	0.12	Section 404
Bear Creek	--	--	--	0.08	Section 404
Cypress Creek (2003)	--	0.06	--	0.14	Section 404
Trib. to Cypress Creek (1)	--	--	--	0.15	Section 404
Wet 01E	--	1.565	--	--	Section 404
-2	--	--	--	--	Section 404
Wet 03E	--	0.5	--	--	Section 404
Wet 05E	--	0.18	--	--	Section 404
Wet 06E	--	0.2	--	--	Section 404
Wet 07E	--	0.21	--	--	Section 404
Wet 08E	--	0.33	--	--	None
Wet 09E	--	0.44	--	--	None
Wet 10E	--	0.08	--	--	Section 404
Wet 11E	--	0.11	--	--	None
Wet 12E	--	0.98	--	--	None
Wet 13E	--	0.57	--	--	None
Wet 14E	--	0.7	--	--	None
Wet 15E	--	1.46	--	--	None
Wet 16E	--	1.35	--	--	None
Wet 17E	--	0.831	--	--	Section 404
Wet 18E	--	0.361	--	--	Section 404
Wet 20E	--	0.03	--	--	None
Wet 21E	--	1.54	--	--	None
Wet 22E	--	0.46	--	--	None
Wet 23E	--	0.01	--	--	None
Wet 24E	--	2.851	--	--	Section 404
Wet 25E	--	0.49	--	--	None
Wet 26E	--	0.08	--	--	None
Wet 27E	--	0.1	--	--	None
Wet 28E	--	0.25	--	--	None
Wet 30E	--	3.63	--	--	Section 404
Wet 31E	--	0.871	--	--	Section 404
Wet 32E	--	0.661	--	--	Section 404
Wet 33E	--	4.3	1.84	--	Section 404
Wet 34E	--	2.641	--	--	Section 404
Wet 36E	--	0.07	--	--	None
Wet 37E	--	0.15	--	--	None
Wet 38E	--	0.13	--	--	None
Wet 39E	--	0.04	--	--	None
Subtotal	--	28.281	1.84	0.75	

Map ID (Exhibit C)	Length ¹ (linear feet)	Non-Forested (acres)	Forested (acres)	Open Water (acres)	Potential Jurisdiction
Natural Features					
Detention Basins and Outfall Easements 2009					
Cypress Creek (2009)	--	--	--	0.28	Section 404
Trib. to Cypress Creek (2)	--	--	--	0.09	Section 404
Wet 40E		0.17	--	--	Section 404 ³
Wet 41E	--	0.001	--	--	Section 404 ³
Wet 42E	--	0.42	--	--	Section 404 ³
Wet 43E	--	3.89	--	--	Section 404 ³
Wet 44E	--	1.52	--	--	Section 404 ³
Wet 45E	--	2.49	--	--	Section 404 ³
Wet 46E	--	0.78	--	--	Section 404 ³
Wet 47E	--	0.13	--	--	Section 404 ³
Wet 48E	--	7.91	--	--	Section 404 ³
Wet 49E	--	--	0.28	--	Section 404 ³
Wet 50E	--	--	0.12	--	Section 404 ³
Wet 51E	--	--	1.39	--	Section 404 ³
Wet 52E	--	0.21	--	--	Section 404 ³
Wet 53E	--	0.29	--	--	Section 404 ³
Wet 54E	--	18.5	--	--	Section 404 ³
Wet 55E	--	--	4.57	--	Section 404 ³
Subtotal	--	36.311	6.36	0.37	
Man-made Features					
2003 Preferred Alignment					
Wet 04E	--	0.01	--	--	None
Wet 19E (reservoir)	--	2.4	--	--	None
Wet 29E (reservoir)	--	2.28	--	--	None
Wet 33E (stock tank)	--	0.11	--	0.14	Section 404
Wet 35E (stock tank)	--	2.1	--	0.83	Section 404
U101E	1,247.59	--	--	--	None
Ditch 01E	408.3	--	--	--	None
Ditch 02E	406.69	--	--	--	None
Ditch 03E	415.89	--	--	--	None
Ditch 04E	279.88	--	--	--	None
Ditch 05E	563.8	--	--	--	None
Ditch 06E	996.4	--	--	--	None
Ditch 07E	2,067.48	--	--	--	None
Ditch 08E	336.91	--	--	--	None
Ditch 09E	314.11	--	--	--	None
Ditch 10E	399.96	--	--	--	None
Ditch 11E	437.08	--	--	--	None
Ditch 12E	394.66	--	--	--	None
Ditch 13E	402.28	--	--	--	None
Ditch 14E	301.68	--	--	--	None
Ditch 15E	301.65	--	--	--	None
Ditch 16E	--	--	--	--	None
Ditch 17E	300.09	--	--	--	None
Ditch 18E	300.09	--	--	--	None

Map ID (Exhibit C)	Length ¹ (linear feet)	Non-Forested (acres)	Forested (acres)	Open Water (acres)	Potential Jurisdiction
Ditch 19E	891.64	--	--	--	None
Ditch 20E	471.64	--	--	--	None
Ditch 21E	621.74	--	--	--	None
Ditch 22E	4,166.75	--	--	--	None
Ditch 23E	394.13	--	--	--	None
Subtotal	16,319.04	6.9		0.97	
Man-made Features Detention/Mitigation Basins and Outfall Easements					
Ditch 24E	241.25	--	--	--	None
Ditch 25E	1,062.90	--	--	--	None
Ditch 26E	966.72	--	--	--	None
Ditch 27E	150.58	--	--	--	None
Ditch 28E	165.25	--	--	--	None
Ditch 29E	439.62	--	--	--	None
Ditch 30E	724.97	--	--	--	None
Ditch 31E	627.69	--	--	--	None
Ditch 32E	253.94	--	--	--	None
Ditch 33E	178.39	--	--	--	None
Ditch 34E	394.13	--	--	--	None
Ditch 35E	725.48	--	--	--	None
Ditch 36E	249.33	--	--	0.19	Section 404
Ditch 38E	391.14	--	--	--	None
Ditch 39E	302.67	--	--	--	None
Ditch 40E	984.2	--	--	--	None
Ditch 41E	402.79	--	--	--	None
Subtotal	8,261.05			0.19	
Wetlands and Waters Totals	--	71.492	8.2	2.28	--
Isolated Wetlands Totals	--	13.98	--	0.97	--
Potentially Jurisdictional Wetlands Totals	--	57.512	8.2	1.31	--
Total Potential Jurisdictional Wetlands and Waters of the U.S. Within the Segment E Project Area					67.022

*Refer to Exhibit C

The Segment E Preferred Alignment traverses a rural setting amid pastures, agricultural land, and undeveloped grassland communities. The topography is relatively flat and is characterized by Mason Creek, South Mayde Creek, Bear Creek, Cypress Creek, and their extensive floodplains. No roadway construction activities associated with the proposed project occurred within the Preferred Alignment prior to the wetland delineations.

3.0 MITIGATION PLAN 33 CFR 332.4(c)

3.1 OBJECTIVES

The objective of the mitigation plan is to at least replace the aquatic resource functions for aquatic resources impacted by the project and to recognize the value of the impacted wetlands through restoration and creation of wetlands on the Katy Prairie. The majority of wetlands impacted within the project footprint are palustrine emergent marsh ("PEM"); there is less than 1 acre of impacted palustrine forested wetland ("PFO"). A total of 45.63 acres of waters of the U.S., including wetland impacts, would result from the construction of Segment E. Impacts to jurisdictional wetlands from the proposed project are included in Table 2.

Table 2
Impacts to Wetlands and Other Waters of the U.S.

Jurisdictional Area	Excavation	Dirt Fill	Structural Fill	PFO Conversion	Temporary Impact	Avoided	Total Area
Mason Creek	--	--	--	--	--	0.26	0.26
Mason Creek Fringe	--	--	--	--	--	0.05	0.05
Wetland 1	0.28	1.28	0.005	--	--	--	1.565
Wetland 3	0.20	0.30	--	--	--	--	0.50
Wetland 5	0.17	0.01	--	--	--	--	0.18
Wetland 6		0.20	--	--	--	--	0.20
Wetland 7	0.02	0.19	--	--	--	--	0.21
Wetland 10	--	0.08	--	--	--	--	0.08
South Mayde Creek	--	--	--	--	--	0.12	0.12
Wetland 17	0.23	0.05	0.001	--	0.20	0.35	0.831
Wetland 18	0.02	--	0.001	--	0.06	0.28	0.361
Bear Creek	--	--	--	--	--	0.08	0.08
Wetland 24	0.52	0.13	0.002	--	0.45	1.75	2.852
Wetland 30	1.19	1.18	0.001	--	0.24	0.48	3.421
Cypress Creek	--	--	--	--	--	0.14	0.14
Cypress Creek Fringe	--	--	--	--	--	0.06	0.06
Wetland 31	0.27	--	0.001	--	0.14	0.46	0.871
Wetland 32	0.27	--	0.001	--	0.14	0.25	0.661
Wetland 33	0.82	0.54	0.06	0.92	0.67	3.13	6.14
Wetland 34	0.57	1.27	0.001	--	0.20	0.60	2.641
Wetland 35	0.26	1.84	--	--	--	--	2.10
Wetland 33 Stock Tank	--	--	--	--	--	0.11	0.11
Cypress Creek Tributary	--	0.11	0.05	--	--	--	0.16
Wetland 40	--	--	--	--	--	0.17	0.17

Jurisdictional Area	Excavation	Dirt Fill	Structural Fill	PFO Conversion	Temporary Impact	Avoided	Total Area
Wetland 41	--	0.001	--	--	--	--	0.001
Wetland 42	0.32	0.08	--	--	--	--	0.40
Wetland 43	0.86	0.92	--	--	--	--	1.78
Wetland 44	0.71	0.19	--	--	--	--	0.90
Wetland 45	0.85	0.84	--	--	--	--	1.69
Wetland 46	0.28	0.21	--	--	--	--	0.49
Wetland 47	0.04	--	--	--	--	--	0.04
Wetland 48	3.27	2.94	--	--	--	--	6.21
Wetland 49	0.12	0.09	--	--	--	--	0.21
Wetland 50	--	0.02	--	--	--	--	0.02
Wetland 51	0.08	0.15	--	--	--	--	0.23
Wetland 52	--	--	--	--	--	0.21	0.21
Wetland 53	0.03	0.03	--	--	--	--	0.06
Wetland 54	2.87	2.87	--	--	--	--	5.74
Wetland 55	2.44	1.52	--	--	--	--	3.96
Ditch 36E	0.11	0.06					0.17
Cypress Creek Tributary (2)	0.06	0.03	--	--	--	--	0.09
Total	16.86	17.131	0.125	0.92	2.10	8.50	45.63

3.2 SITE SELECTION

The most recent mitigation rule from the USACE (33 CFR Part 332) and U.S. Environmental Protection Agency ("EPA") (40 CFR 230) requires evaluation of mitigation alternatives with a stated preference for mitigation banks, in lieu fee ("ILF"), and applicant-responsible mitigation, in that order. There are a limited number of mitigation banks in the Galveston District and fewer with service areas that include the project location or that are available to the regulated public.

3.2.1 Mitigation Banks

Both the Blue Elbow Swamp Mitigation Bank and the Coastal Bottomlands Mitigation Bank are solely for TxDOT use. The Neches River Cypress Swamp Preserve and Palacios Mitigation Bank service areas do not accommodate Harris County.

Both the Greens Bayou Wetland Mitigation Bank ("GBWMB") and Katy-Cypress Wetlands Mitigation Bank ("KCWMB") service areas can accommodate Segment E. Segment E is located squarely in the Cypress Creek watershed, although not entirely; although other drainages may be more urbanized (being closer to IH 10 and US 290), they are considered to be within the Katy Prairie. Although both banks include at least portions of Harris County in their service area, only the KCWMB is located within the Cypress Creek watershed. Service area descriptions read as follows:

KCWMB service area – "... service area includes the watersheds associated with Cypress Creek, the Brazos River, the Trinity River and Buffalo Bayou. This service area is inclusive of the Katy Prairie and similar prairie and low-quality forested (with agency approval) ecosystems located within Harris, Chambers, Galveston, Brazoria, Fort Bend, Matagorda, Calhoun, Wharton (east of the Colorado River), Austin, Waller, Montgomery, and Liberty Counties."

Although the KCWMB would fit from a service area perspective, it lacks sufficient credit capacity to accommodate the entire suite of Segment E impacts. The KCWMB Mitigation Banking Instrument ("MBI") uses a qualitative assessment method, resulting in impacted wetlands being scored as low-, medium-, or high-quality habitat. There are only 11.5 credits remaining in the KCWMB. Using an estimated low-quality WET II score value of 0.5, the KCWMB could accept approximately 23 acres of the wetland impacts from Segment E.

GBWMB service area – "Harris County excluding riparian corridors under saline influence and all brackish or saline wetlands."

GBWMB is approximately 30 miles east of the Segment E alignment within the Greens Bayou watershed. Flows from both Cypress Creek and Greens Bayou ultimately discharge to the San Jacinto watershed. Non-tidal open-water impacts associated with the proposed project will be compensated for at GBWMB according to the MBI methodology for GBWMB. The proposed mitigation bank includes the purchase of credits at the GBWMB to mitigate for 0.92 acre of PFO wetland impacts and 21.71 acres of PEM wetland impacts. Wetland impacts associated with the proposed project will be compensated for according to the 1995 Memorandum of Agreement between the Harris County Flood Control District ("HCFCD") and the members of the Mitigation Bank Review Team, consisting of the USACE, the EPA, the United States Fish and Wildlife Service, the National Marine Fisheries Service, Texas Parks and Wildlife Department, Texas General Land Office, and the Texas Commission on Environmental Quality.

3.2.2 In Lieu Fee Mitigation

In accordance with the mitigation rule issued by the USACE and EPA, mitigation was evaluated using the recommended sequencing, which prioritizes the use of mitigation banks, where available. Since mitigation banks are available to accomplish compensatory mitigation for the proposed project, In Lieu Fee Mitigation was not evaluated.

3.2.3 Applicant Responsible Mitigation

In accordance with the mitigation rule issued by the USACE and EPA, mitigation was evaluated using the recommended sequencing, which prioritizes the use of mitigation banks, where available. Since mitigation banks are available to accomplish compensatory mitigation for the proposed project, Applicant Responsible Mitigation was not evaluated.

3.3 SITE PROTECTION INSTRUMENT

The KCWMB is an existing bank authorized in February 1996 with an MBI. It is operated by Mr. Lieven J. Van Riet. The GBWMB is an existing bank authorized by the USACE Galveston District in July 1995. It is operated by the HCFCFCD, a state-legislated conservation district.

Should HCTRA be required to execute an ARM (applicant-responsible mitigation) project of its own accord, a site protection instrument will be included as part of that development effort.

3.4 BASELINE INFORMATION

The wetland delineation (PBS&J, 2004) provides detailed descriptions of the aquatic resources within the Segment E ROW, detention/mitigation basins and outfall easements. A table detailing those resources is provided in Section 2.0, Background Information, of this mitigation plan (Table 1), and a summary is provided in Section 3.1, Objectives (Table 2).

KCWMB and GBWMB baseline information will be collected during the WET 2.0 analysis as required in the MBI protocol.

No protected species (PBS&J, April 2009) or cultural resource (PBS&J, May 2009) issues were identified within the preferred alignment.

3.5 DETERMINATION OF CREDITS

KCWMB and GBWMB use a modified WET II technique to calculate a score based on an assessment of wetland functions for both the impact site and the bank site. The WET II will be completed at the project site following approval of the mitigation concept utilizing KCWMB and GBWMB. Conversations with the KCWMB manager in July 2009 indicates that the bank has approximately 11.5 credits available. Assuming the wetlands yield a low score of 0.5 from the WET II evaluation, 23 acres will be available for mitigation at the KCWMB, and the number of available credits will easily be utilized by Segment E.

GBWMB uses a modified WET 2.0 technique to calculate a score based on an assessment of wetland functions for both the impact site and the bank site. WET 2.0 will be completed at the project site following approval of the mitigation concept utilizing the GBWMB. Conversations with the HCFCFCD GBWMB manager, Michele Wilkins (pers. comm. February 11, 2009), indicates that the bank has available credits to accommodate the Segment E project impacts.

The preferred mitigation option for this project is:

1. Purchase of credits at KCWMB for 23 acres of impact

2. Purchase of credits at GBWMB for 22.63 acres of impact

3.6 MITIGATION WORK PLAN

The detailed mitigation work plan is pending approval of the mitigation concepts. Generally, both mitigation sites (KCWMB and GBWMB) have established successes to facilitate development of a work plan.

For KCWMB and GBWMB, the approved work plan is a procurement of the credits on a straight ratio of 1:1, impact acreage to KCWMB/GBWMB credit. KCWMB and GBWMB use a modified WET II analysis after the credit sale to facilitate the mechanics of credit/debit accounting as required by the MBI. With only 11.5 credits remaining at the KCWMB and a low quality ratio of 0.5, a maximum of 23 acres of impacted Segment E wetlands could be accommodated by KCWMB (11.5 credits available/0.5 low quality value = 23 acres). WET 2.0 will be completed at the project site following approval of the mitigation concept utilizing the GBWMB which will determine the amount of credits.

3.7 MAINTENANCE PLAN

A maintenance plan has already been prepared for KCWMB and GBWMB as part of the MBI approval process.

3.8 PERFORMANCE STANDARDS

Performance standards are already established for KCWMB and GBWMB through the approved MBI.

3.9 MONITORING REQUIREMENTS

Monitoring requirements are already established for KCWMB and GBWMB through the approved MBI.

3.10 LONG-TERM MANAGEMENT PLAN

A long-term management plan has already been established for KCWMB and GBWMB through the approved MBI.

3.11 ADAPTIVE MANAGEMENT PLAN

An adaptive management plan ("AMP") is not appropriate in the context of mitigation bank use. Credits are debited at a specific time based on the assessment protocol established in the MBI. No adaptive management should be required for the KCWMB or GBWMB components of this mitigation plan.

3.12 FINANCIAL ASSURANCES

For the KCWMB component, applicants are charged a fee based on the credit-acres required to mitigate impacts. Given that there are only 11.5 credits available, a maximum of 23 acres of low-quality wetlands could be mitigated at KCWMB. The cost per acre is \$19,000 for any impacts over 1 acre. Total cost for KCWMB is estimated to be \$437,000.

For the GBWMB component, applicants are charged a fee based on the acres impacted at the project site. HCFCD does the functional assessment to determine the debit. The remaining project impacts require 22.63 acres. The cost per acre is \$20,000 for any impacts over 3 acres. Total cost for GBWMB is estimated to be \$452,600.

Total mitigation cost is estimated to be \$889,600. As this figure is an estimate and the concepts are yet unapproved, this figure is a planning number for consideration.

4.0 REFERENCES

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