Time and Cost Estimate to preapre Fleasibility Study for East Bank Hurricane upgrade

EAST BANK	Alt #	Description	RATES/HR	GS13 113	GS12 95	GS11 75	GS11T 75	Total Cost
1. St Charles Parish	a	Earthen Enlargement(Cat 4.)		1	10			29504
11 Levee section	b	Earthen Enlargement(Cat 5.)		0	10 0	30 0	30 0	0
3 waste pits	c	I-wall (cat 4)		7	15 7	40 20	40 5	21224
1 high strength fabric	d	I-wall (cat 5)		2	15	40	40	
5 DS, 2 R/R gates	e	PS and DS (Cat 4) & GATES		4	20		40	
6 pipelines	f	PS and DS (Cat 5)		43	20 15	50	40 10	50112
Duration 5 months		combination of the above		5	32	100	20	100840
2. Jeff Return levee	a	T-wall & stone dike(cat 4)		0.5	2	5	2	6172
6 design reaches	b	T-wall & stone dike(cat 5)		2	10	40	10	39408
T & I-walls existing								
Duration 5 months		combination of the above		2.5	12	45	12	45580
5a. Citrus Lakefront	a	I-wall & stone dike(cat 4)		0.5	2	35 5	20 2	6172
7 reaches	b	I-wall & stone dike(cat 5)		2	10	35 40	40 10	39408
3 tie-in to PS	c	T-wall & stone dike(cat 4)		1	7	35 15	5	18224
foreshore dike	d	T-wall & stone dike(cat 5)				35		
	e	Pump stations (cat 4)		6	30	100	20	100224
	f	Pump stations (cat 5)		6	31	105	29	109384
Duration 5 months		combination of the above		9.5	49	160	37	164028
5b. NOE Lakefront	a	Earthen enlargement (cat 4)		0.5	2	50.5	2	6172
7 reaches	b	Earthen enlargement (cat 5)		2	10	50 40	10	39408
3 tie-in to PS	c	I-wall & stone dike(cat 4)		1	7	50 20	5	21224
foreshore dike	d	I-wall & stone dike(cat 5)		1	7	50 20	5	21224
Duration 5 months		Combination of the above		4.5	26	85	22	88028
6. SouthP to GIWW	a	Earthen enlargement (cat 4)		0.5	2	40 5	2	6172
6 soil reaches, 2 ramps	b	Earthen enlargement (cat 5)		2	15	40 30	15	40208
4 soil founded drainage	c	I-wall (cat 4)		2	10	45 40	10	39408
strucutes, 1 floodgate	d	I-wall (cat 5)		6	30	45 100	20	100224
	e	DS and FG(cat 4)				75		
	f	DS and FG (cat 5)				75		
Duration 5 months		Combination of the above		10.5	57	175	47	186012
7a. NOE back levee	a	Earthen enlargement (cat 4)		1	15	30	15	39304
13 Levee Sections	b	Earthen enlargement (cat 5)		0	0	30 0	0	0
I -wall at P/L	c	I-wall (cat 4)				30		
another P/L crossing	d	I-wall (cat 5)				30		
	e	Pump stations (cat 4)				10		
	f	Pump stations (cat 5)		0.5	2	10 5	2	6172
Duration 5 months		Combination of the above		1.5	17	35	17	45476

7b. Michoud Area	a	T-wall (cat 4)	0.5	2	5	2	6172
assumed 8 sections	b	T-wall (cat 5)	1	5	15	5	16704
existing I- & T-walls							
35.5		Combination of the above	1.5	7	20	7	22876
8. Citrus Back Levee	a	I-wall (cat 4)	0.5	2	5	2	6172
5 levee reaches	b	I-wall (cat 5)	2	5	15	5	17608
assumed 4 p/l	c	T-wall (cat 4)	2	5	15	5	17608
	d	T-wall (cat 5)	0	0	0	0	0
Duration 5 months		Combination of the above	4.5	12	35	12	41388
10a. IHNC to GIWW	a	I-wall (cat 4)	0.5	2	5	2	6172
	b	I-wall (cat 5)	0.5	10	25	5	26052
10 sectors	c	T-wall (cat 4)	2	10	20	10	27408
Ex I-wall	d	T-wall (cat 5)	0	0	0	0	0
T-wall	e	Pump stations (cat 4)			10		
Levee	f	Pump stations (cat 5)	3	15	50	10	50112
Duration 5 months		Combination of the above	6	37	100	27	109744
10b GIWW to Bienv.	a	Earthen enlargement (cat 4)	0.5	2	5	2	6172
assume 8 reaches	b	Earthen enlargement (cat 5)	2	10	20	10	27408
1 P/l and 1 gate	c	I-wall (cat 4)	0	0	0	0	0
—	d	I-wall (cat 5)					
	e	Bienvenue Structure (cat 4)			30		
	f	Bienvenue Structure (cat 5)	3	15	60	10	50112
Duration 5 months		Combination of the above	5.5	27	75	22	83692
11. Chal along MRGO	a	Earthen enlargement (cat 4)	0.5	2	5	2	6172
	b	Earthen enlargement (cat 5)	0	0	0	0	0
assume 8 levee sect's	c	I-wall (cat 4)			50		
3 p/l crossing	d	I-wall (cat 5)			50		
	e	Dupre Structure (cat 4)			30		
	f	Dupre Structure (cat 5)	3	15	50	10	50112
Duration 5 months	4	Combination of the above	3.5	17	55	12	56284
12. MRGO to River	a	Earthen enlargement (cat 4)	0.5	2	5	2	6172
	b	Earthen enlargement (cat 5)	0	0	0	0	0
assumed	c	I-wall (cat 4)			40		
8 levee sects	d	I-wall (cat 5)			40		
1 D.S. &	e	T-wall (cat 4)			40		
2 P/L	f	T-wall (cat 5)			40		
	g	D. structures and F/g's (cat 4)			25		
	h	D. structures and F/g's (cat 5)	3	15	50	10	50112
Duration 5 months		Combination of the above	3.5	17	55	12	56284
13 Barrier Plan	a	Struc. A MRGO/Giww (cat 4)	0.5	2	5	2	6172
Seabrook existing data	b	Struc. A MRGO/Giww (cat 5)	1	7	20	5	21224
MRGO struc new loc	c	Seabrook Structure (cat 4)	1	7	20	5	21224
need borings for	d	Seabrook Structure (cat 5)	1	7	20	5	21224

structure & levees	e	Connecting Levees (cat4)	1	7	20	5	21224
	f	Connecting Levees (cat4)	1	7	20	5	21224
Duration 5 months		Combination of the above	5.5	37	105	27	112292
WEST BANK SUBTOTAL			#REF!	#####	####	#REF!	#REF!

Time and Cost Estimate to preapre Fleasibility Study for East Bank Hurricane upgrade

EAST BANK	Alt #	Description	GS13 RATES/HR 113	GS12 95	GS11 75	GS11T 75	Total Cost
1. St Charles Parish	a	Earthen Enlargement(Cat 4.)	1	10	50	20	50504
11 Levee section	b	Earthen Enlargement(Cat 5.)	1	10	50	20	50504
3 waste pits	c	I-wall (cat 4)	2	15	50	20	55208
1 high strength fabric	d	I-wall (cat 5)	2	15	50	20	55208
5 DS, 2 R/R gates	e	PS and DS (Cat 4)	4	40	180	20	154016
6 pipelines	f	PS and DS (Cat 5)	4	40	180	20	154016
Duration 5 months		combination of the above	14	130	560	120	**519456**
2. Jeff Return levee	a	T-wall & stone dike(cat 4)	1	10	30	15	35504
6 design reaches	b	T-wall & stone dike(cat 5)	1	10	30	15	35504
T & I-walls existing							
Duration 5 months		combination of the above	2	20	60	30	**71008**
5a. Citrus Lakefront	a	I-wall & stone dike(cat 4)	1	10	35	15	38504
7 reaches	b	I-wall & stone dike(cat 5)	1	10	35	15	38504
3 tie-in to PS	c	T-wall & stone dike(cat 4)	1	10	35	15	38504
foreshore dike	d	T-wall & stone dike(cat 5)	1	10	35	15	38504
	e	Pump stations (cat 4)	1	5	15	5	16704
	f	Pump stations (cat 5)	1	5	15	5	16704
Duration 5 months		combination of the above	5	45	155	65	170720
5b. NOE Lakefront	a	Earthen enlargement (cat 4)	1	10	40	20	44504
7 ?? reaches	b	Earthen enlargement (cat 5)	1	10	40	20	44504
3 tie-in to PS	c	I-wall & stone dike(cat 4)	1	10	40	20	44504
foreshore dike	d	I-wall & stone dike(cat 5)	1	10	40	20	44504
Duration 5 months		Combination of the above	4	40	160	80	178016
6. SouthP to GIWW	a	Earthen enlargement (cat 4)	1	10	40	15	41504
6 soil reaches, 2 ramps	b	Earthen enlargement (cat 5)	1	10	40	15	41504
4 soil founded drainage	c	I-wall (cat 4)	1	10	45	15	44504
strucutes, 1 floodgate	d	I-wall (cat 5)	1	10	45	15	44504
	e	DS and FG(cat 4)	1	10	75	10	59504
	f	DS and FG (cat 5)	1	10	75	10	59504
Duration 5 months		Combination of the above	6	60	320	80	291024
7a. NOE back levee	a	Earthen enlargement (cat 4)	1	8	30	15	33984
13 Levee Sections	b	Earthen enlargement (cat 5)	1	8	30	15	33984
I -wall at P/L	c	I-wall (cat 4)	1	8	30	15	33984
another P/L crossing	d	I-wall (cat 5)	1	8	30	15	33984
	e	Pump stations (cat 4)	1	3	10	5	12184
	f	Pump stations (cat 5)	1	3	10	5	12184
Duration 5 months		Combination of the above	6	38	140	70	160304

7b. Michoud Area	a	T-wall (cat 4)	1	5	20	5	19704
assumed 6 sections	b	T-wall (cat 5)	1	5	20	5	19704
existing I- & T-walls							
62		Combination of the above	2	10	40	10	39408
8. Citrus Back Levee	a	I-wall (cat 4)	1	10	40	10	38504
5 levee reaches	b	I-wall (cat 5)	1	10	40	10	38504
assumed 4 p/l	c	T-wall (cat 4)	1	10	40	10	38504
	d	T-wall (cat 5)	1	10	40	10	38504
Duration 5 months		Combination of the above	4	40	160	40	154016
10a. IHNC to GIWW	a	I-wall (cat 4)	1	10	50	12	45704
10 section	b	I-wall (cat 5)	1	10	50	12	45704
existing I and T-walls	c	T-wall (cat 4)	1	10	50	12	45704
existing levee	d	T-wall (cat 5)	1	10	50	12	45704
	e	Pump stations (cat 4)	1	3	10	3	10984
	f	Pump stations (cat 5)	1	3	10	3	10984
Duration 5 months		Combination of the above	6	46	220	54	204784
10b GIWW to Bienv.	a	Earthen enlargement (cat 4)	1	10	40	10	38504
assume 8 reaches	b	Earthen enlargement (cat 5)	1	10	40	10	38504
1 P/l and 1 gate	c	I-wall (cat 4)	1	10	40	10	38504
	d	I-wall (cat 5)	1	10	40	10	38504
	e	Bienvenue Structure (cat 4)	1	10	30	10	32504
	f	Bienvenue Structure (cat 5)	1	10	30	10	32504
Duration 5 months		Combination of the above	6	60	220	60	219024
Subt Orleans Parish							**1417296**
11. Chal along MRGO	a	Earthen enlargement (cat 4)	1	10	50	12	45704
	b	Earthen enlargement (cat 5)	1	10	50	12	45704
assume 7 levee sect's	c	I-wall (cat 4)	1	10	50	12	45704
3 p/l crossing	d	I-wall (cat 5)	1	10	50	12	45704
	e	Dupre Structure (cat 4)	1	10	30	12	33704
	f	Dupre Structure (cat 5)	1	10	30	12	33704
Duration 5 months		Combination of the above	6	60	260	72	250224
12. MRGO to River	a	Earthen enlargement (cat 4)	1	10	40	10	38504
	b	Earthen enlargement (cat 5)	1	10	40	10	38504
assumed 6 levee	c	I-wall (cat 4)	1	10	40	10	38504
sections, 1 DS & 2 P/L	d	I-wall (cat 5)	1	10	40	10	38504
	e	T-wall (cat 4)	1	10	40	10	38504
	f	T-wall (cat 5)	1	10	40	10	38504
	g	D. structures and F/g's (cat 4)	1	10	25	10	29504
	h	D. structures and F/g's (cat 5)	1	10	25	10	29504
Duration 5 months		Combination of the above	8	80	290	80	290032
Subt Orleans Parish							540256

Bold

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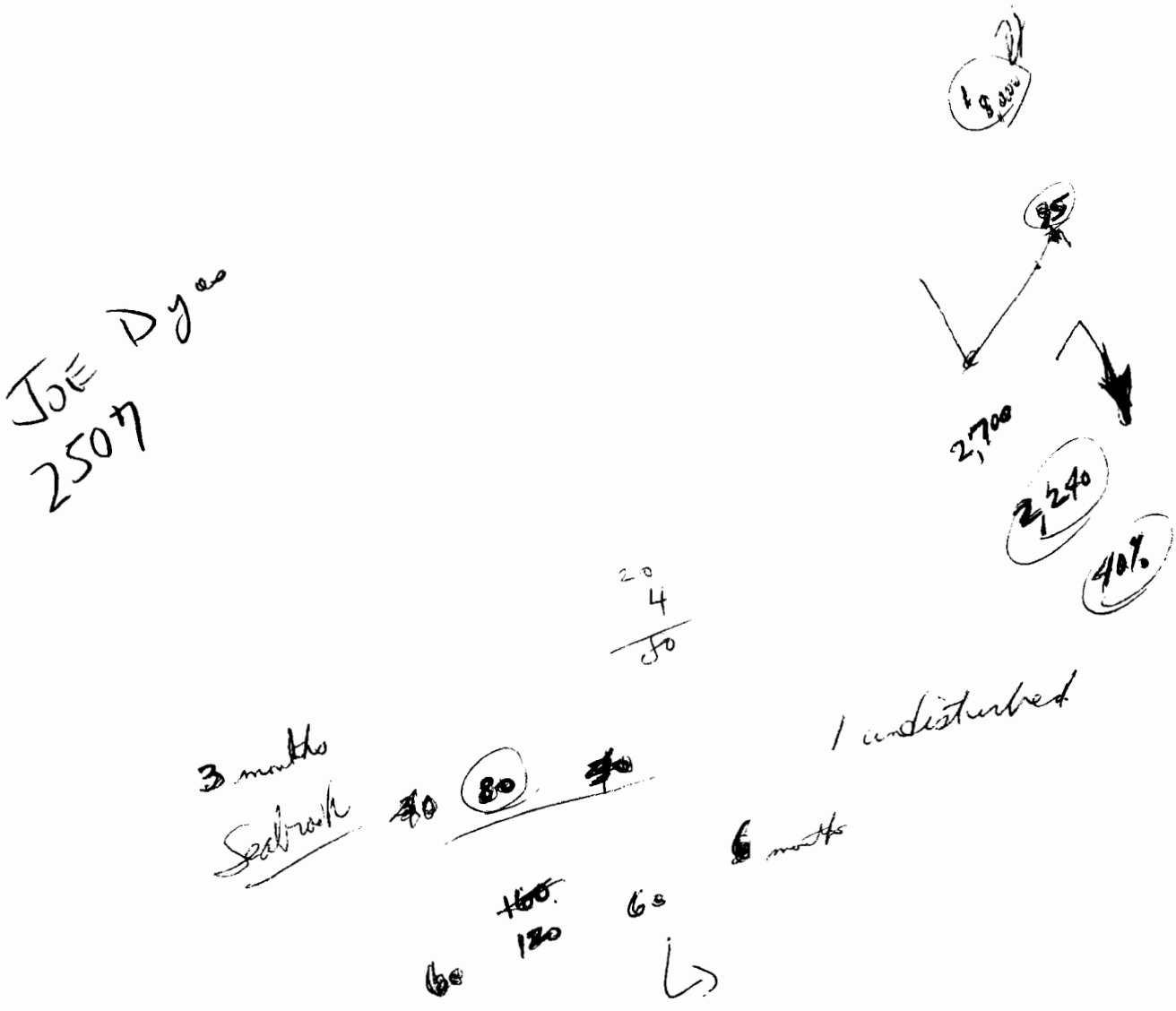
13 Barrier Plan	a	Struc. A MRGO/Giww (cat 4)	0.5	2	5	2	6172
Seabrook existing data	b	Struc. A MRGO/Giww (cat 5)	1	7	20	5	21224
MRGO struc new loc	c	Seabrook Structure (cat 4)	1	7	20	5	21224
need borings for	d	Seabrook Structure (cat 5)	1	7	20	5	21224
structure & levees	e	Connecting Levees (cat4)	1	7	20	5	21224
	f	Connecting Levees (cat5)	1	7	20	5	21224
Duration 5 months		Combination of the above	5.5	37	105	27	112292
SUBTOTAL			#REF!	#####	####	#REF!	#REF!



Time and Cost Estimate to preapre Fleasibility Study for East Bank Hurricane upgrade

EAST BANK	Alt #	Description	GS13 RATES/HR 113	GS12 95	GS11 75	GS11T 75	Total Cost
1. St Charles Parish	a	Earthen Enlargement(Cat 4.)	1	10	30	30	44504
11 Levee section	b	Earthen Enlargement(Cat 5.)	1	10	30	30	44504
3 waste pits	c	I-wall (cat 4)	2	15	40	40	61208
1 high strength fabric	d	I-wall (cat 5)	2	15	40	40	61208
5 DS, 2 R/R gates	e	PS and DS (Cat 4)	4	40	240	50	190016
6 pipelines	f	PS and DS (Cat 5)	4	40	240	50	190016
Duration 5 months		combination of the above	14	130	560	240	591456
2. Jeff Return levee	a	T-wall & stone dike(cat 4)	1	10	30	15	35504
6 design reaches	b	T-wall & stone dike(cat 5)	1	10	30	15	35504
T & I-walls existing							
Duration 5 months		combination of the above	2	20	60	30	71008
5a. Citrus Lakefront	a	I-wall & stone dike(cat 4)	1 0.5	10 2	35	15 2	24172
7 reaches	b	I-wall & stone dike(cat 5)	1 2	10	35	15 10	36408
3 tie-in to PS	c	T-wall & stone dike(cat 4)	1 1	10 7	35	15 5	30224
foreshore dike	d	T-wall & stone dike(cat 5)	1	10	35	15	
	e	Pump stations (cat 4)	1 8	5 30	15 10	5 20	46224
	f	Pump stations (cat 5)	1 5.5	5 39	15 10	5 47	68812
Duration 5 months		combination of the above	9.5	49	150	37	158028
5b. NOE Lakefront	a	Earthen enlargement (cat 4)	1 0.5	10 2	40 50	20 2	33172
7 reaches	b	Earthen enlargement (cat 5)	1 2	10 10	40 50	20 10	45408
3 tie-in to PS P/L	c	I-wall & stone dike(cat 4)	1 1	10 7	40 50	20 5	39224
foreshore dike	d	I-wall & stone dike(cat 5)	1 1	10 7	40 50	20 5	39224
Duration 5 months		Combination of the above	4.5	26	200	22	157028
6. SouthP to GIWW	a	Earthen enlargement (cat 4)	1 0.5	10 2	40	15 2	27172
6 soil reaches, 2 ramps	b	Earthen enlargement (cat 5)	1 2	10 15	40	15 15	46208
4 soil founded drainage	c	I-wall (cat 4)	1 2	10 10	45	15 10	42408
strucutes, 1 floodgate	d	I-wall (cat 5)	1 8	10 30	45	15 20	67224
	e	DS and FG(cat 4)	1	10	75	10	
	f	DS and FG (cat 5)	1	10	75	10	
Duration 5 months		Combination of the above	10.5	57	320	47	273012
7a. NOE back levee	a	Earthen enlargement (cat 4)	1 1	8 15	30	15	39304
13 Levee Sections	b	Earthen enlargement (cat 5)	1 0	8 0	30	15 0	18000
I -wall at P/L	c	I-wall (cat 4)	1	8	30	15	
another P/L crossing	d	I-wall (cat 5)	1	8	30	15	
	e	Pump stations (cat 4)	1	3	10	5	
	f	Pump stations (cat 5)	1 0.5	3 2	10	5 2	9172
Duration 5 months		Combination of the above	1.5	17	140	17	108476

7b. Michoud Area	a	T-wall (cat 4)	0.5	2	20	2	15172
assumed 6 sections	b	T-wall (cat 5)	1	5	20	5	19704
existing I- & T-walls							
55.5		Combination of the above	1.5	7	40	7	34876
8. Citrus Back Levee	a	I-wall (cat 4)	0.5	2	40	2	27172
5 levee reaches	b	I-wall (cat 5)	1	5	40	5	32608
assumed 4 p/l	c	T-wall (cat 4)	1	5	40	5	32608
	d	T-wall (cat 5)	0	0	40	0	24000
Duration 5 months		Combination of the above	4.5	12	160	12	116388
10a. IHNC to GIWW	a	I-wall (cat 4)	0.5	2	50	2	33172
10 section	b	I-wall (cat 5)	0.5	10	50	5	41052
existing I and T-walls	c	T-wall (cat 4)	2	10	50	10	45408
existing levee	d	T-wall (cat 5)	0	0	50	0	30000
	e	Pump stations (cat 4)	1	3	10	3	
	f	Pump stations (cat 5)	3	15	10	10	26112
Duration 5 months		Combination of the above	6	37	220	27	181744
10b GIWW to Bienv.	a	Earthen enlargement (cat 4)	0.5	2	40	2	27172
assume 8 reaches	b	Earthen enlargement (cat 5)	2	10	40	10	39408
1 P/l and 1 gate	c	I-wall (cat 4)	0	0	40	0	24000
	d	I-wall (cat 5)	1	10	40	10	
	e	Bienvenue Structure (cat 4)	1	10	30	10	
	f	Bienvenue Structure (cat 5)	3	15	30	10	38112
Duration 5 months		Combination of the above	5.5	27	220	22	170692
11. Chal along MRGO	a	Earthen enlargement (cat 4)	0.5	2	50	2	33172
	b	Earthen enlargement (cat 5)	0	0	50	0	30000
assume 7 levee sect's	c	I-wall (cat 4)	1	10	50	12	
3 p/l crossing	d	I-wall (cat 5)	1	10	50	12	
	e	Dupre Structure (cat 4)	1	10	30	10	
	f	Dupre Structure (cat 5)	3	15	30	10	38112
Duration 5 months		Combination of the above	3.5	17	260	12	179284
12. MRGO to River	a	Earthen enlargement (cat 4)	0.5	2	40	2	27172
	b	Earthen enlargement (cat 5)	0	0	40	0	24000
assumed 6 levee	c	I-wall (cat 4)	1	10	40	10	
sections, 1 DS & 2 P/L	d	I-wall (cat 5)	1	10	40	10	
	e	T-wall (cat 4)	1	10	40	10	
	f	T-wall (cat 5)	1	10	40	10	
	g	D. structures and F/g's (cat 4)	1	10	25	10	
	h	D. structures and F/g's (cat 5)	3	10 15	25	10 10	35112
Duration 5 months		Combination of the above	3.5	17	290	12	197284
13 Barrier Plan	a	Struc. A MRGO/Giww (cat 4)	0.5	2	5	2	6172
Seabrook existing data	b	Struc. A MRGO/Giww (cat 5)	1	7	20	5	21224
MRGO struc new loc	c	Seabrook Structure (cat 4)	1	7	20	5	21224
need borings for	d	Seabrook Structure (cat 5)	1	7	20	5	21224

structure & levees	e	Connecting Levees (cat4)	1	7	20	5	21224
	f	Connecting Levees (cat4)	1	7	20	5	21224
Duration 5 months		Combination of the above	5.5	37	105	27	112292
SUBTOTAL			#REF!	#####	####	#REF!	#REF!

DEVELOPMENT OF GEOTECHNICAL DESIGN FOR THE EAST & WEST BANK OF ST. CHARLES PARISH PROJECT STUDY PLAN FOR ST. CHARLES PARISH URBAN FLOOD STUDY

GEOTECHNICAL BRANCH (ED-F)
Organization Code: KX (B2L0310)

What: **Engineering Coordination**. Supervision of Geotechnical Design Section's input to the subject project.

Why: To assure Branch goals and objectives are met.

Who: One GS-14 Branch Chief and one GS-5 Secretary.

When: During all phases of the project requiring Geotechnical Design Section input.

How: Review of input for existing conditions and all alternatives considered during this study. This work will be accomplished through meetings and oral, written, and electronic communications.

Time and Cost: $80,000 Duration = Duration of Study Plan

ENCLOSURE 1

KX - Structure Foundations Section (ED-FS)

What: **MONTZ WATERSHED (GRAVITY)**
E&D of Montz watershed improvements. Improvements include adding concrete box culvert under Airline Highway (3 locations); adding backflow preventers on culverts; cleaning the existing canals (40,000 lin ft) and the culverts through the KCSRR embankment and install another trestle in the KCSRR system; and adding a pump station.

Why: To provide feasibility scope geotechnical engineering designs for ~~watershed drainage~~ improvements.

Who: GS-13 Supervisory Civil Engineer
GS-12 Civil Engineers
GS-11 Civil Engineering
GS-11 Civil Engineering Technician

When: We will start this task after we receive the plan and cross-sections from Civil/Design Services Branch.

How: Research and compile existing geotechnical data. Take three (3)- 80'and two (2)- 90'undisturbed soil borings. Soil borings will be taken at the culvert locations (3), at the trestle and at the pumping station. Soil samples from the borings will be tested and analyzed. Using soil test data and geotechnical design standards, all relevant geotechnical designs will be performed, i.e. excavation stability analyses, settlement analysis, deep-seated stability analysis, and pile capacity curves. Geotechnical write-up with design plates will be prepared for inclusion into the feasible report.

Time & Cost: $101,000 Duration: 5 months

KX - Structure Foundations Section (ED-FS)

What: **NORCO WATERSHED (PUMPED)** E&D of Norco watershed improvements. Improvements include general cleaning of culverts and canals; improvements to Engineers Canal and West Canal (25,000 linear feet); adding 2- 60" RCPs under KCSRR to Clayton Pond; and adding 2 pump stations.

Why: To provide feasibility scope geotechnical engineering designs for watershed drainage improvements.

Who: GS-13 Supervisory Civil Engineer
GS-12 Civil Engineers
GS-11 Civil Engineering
GS-11 Civil Engineering Technician

When: We will start this task after we receive the plan and cross-sections from Civil/Design Services Branch.

How: Research and compile existing geotechnical data. Forty (40) – 60 foot general-type, ten (10) – 70 foot undisturbed type, one (1) – 80 foot undisturbed type and two (2) – 90 foot undisturbed soil borings will be taken for our analysis/design. The two (2) - 90 foot undisturbed soil borings will be taken for the 2 new pump stations and the one (1) – 80 foot undisturbed soil boring for the new culvert. Boring requirements for channel improvements were based on borings taken on 500-foot centers with 2500 foot spacing between undisturbed soil borings. Soil samples from the borings will be tested and analyzed. Using soil test data and geotechnical design standards, all relevant geotechnical designs will be performed, i.e. channel slope stability, excavation slope analysis, settlement analyses, deep-seated stability analysis, and pile capacity curves. Geotechnical write-up with design plates will be prepared for inclusion into the feasible report.

Time & Cost: $164,000 Duration: 8 months

KX - Structure Foundations Section (ED-FS)

What: **NEW SARPY WATERSHED (PUMPED)** E&D of New Sarpy watershed improvements. Improvements include general cleaning of culverts and canals; improvements to New Sarpy East Canal, New Sarpy Mid Canal, New Sarpy Mid West Canal, and New Sarpy West Canal (20,000 lin. feet of improvements); add two (2) - 48" RCPs under the ICGRR embankment near Schexnaydre Canal West of Ormond Meadows; add 48" RCP under the ICGRR embankment at the end of Riverpoint Dr; and add capacity to the New Sarpy and Schexnaydre pump stations.

Why: To provide feasibility scope geotechnical engineering designs for watershed drainage improvements.

Who: GS-13 Supervisory Civil Engineer
GS-12 Civil Engineers
GS-11 Civil Engineering
GS-11 Civil Engineering Technician

When: We will start this task after we receive the plan and cross-sections from Civil/Design Services Branch.

How: Research and compile existing geotechnical data. Thirty-two (32) – 60 foot general-type, eight (8) – 70 foot undisturbed-type, two (2) – 80 foot undisturbed-type and two (2) – 90 foot undisturbed-type soil borings will be taken for our analysis/design. The two (2) –80 foot undisturbed-type soil borings will be taken for the new box culverts (2 locations) and the two (2) – 90 foot undisturbed-type soil borings will be taken for the for the pumping station improvements. Boring requirements for channel improvements were based on borings taken on 500 foot centers with 2500 foot spacing between undisturbed soil borings. Soil samples from the borings will be tested and analyzed. Using soil test data and geotechnical design standards, all relevant geotechnical designs will be performed i.e. channel slope stability, excavation slope analysis, settlement analyses, deep-seated stability analysis, and pile capacity curves for use by others. Geotechnical write-up with design plates will be prepared for inclusion into the feasible report.

Time & Cost: $188,000 Duration: 9 months

KX - Structure Foundations Section (ED-FS)

What: **ORMOND WATERSHED (PUMPED)** E&D of Ormond watershed improvements. Improvements include general cleaning of culverts and canals; adding 60" RCP under the ICGRR embankment south of Murray Hill Dr., south of Destrehan Dr., and south of Longwood Dr. (3 locations for culvert); Improvement Dunleith Canal and other canal (20,000 lin feet of canal improvements); and adding capacity to Destrehan I and Destrehan II pump stations.

Why: To provide feasibility scope geotechnical engineering designs for watershed drainage improvements.

Who: GS-13 Supervisory Civil Engineer
GS-12 Civil Engineers
GS-11 Civil Engineering
GS-11 Civil Engineering Technician

When: We will start this task after we receive the plan and cross-sections from Civil/Design Services Branch.

How: Research and compile existing geotechnical data. Thirty-two (32) – 60 foot general-type, eight (8) – 70 foot undisturbed-type, three (3) – 80 foot undisturbed-type, and two (2) – 90 foot undisturbed-type soil borings will be taken for our analysis/design. The three (3) –80 foot undisturbed-type soil borings will be taken for the new box culverts (3 locations) and the two (2) 90 foot undisturbed-type soil borings will be taken for the existing pumping stations improvements. Boring requirements for channel improvements were based on borings taken on 500-foot centers with 2500 foot spacing between undisturbed soil borings. Soil samples from the borings will be tested and analyzed. Using soil test data and geotechnical design standards, all relevant geotechnical designs will be performed i.e. channel slope stability, excavation slope analysis, settlement analyses, deep-seated stability analysis, and pile capacity curves for use by others. Geotechnical write-up with design plates will be prepared for inclusion into the feasible report.

Time & Cost: $186,000 Duration: 9 months