

ST. CHARLES PARISH

DEPARTMENT OF COASTAL ZONE MANAGEMENT

PROFESSIONAL SERVICES AGREEMENT

Mapping Procedures, LAMP001.			
the CONSULTANT to perform the services desc	cribed herein for I	Parish Project <u>Levee</u>	Analysis and
through its President, hereinafter called the CON			1 "
of the Parish, hereinafter called the OWNER and	LONNIE G HAI	RPER & ASSOCIAT	ES herein and
CHARLES PARISH acting herein by and through			
This AGREEMENT made and entered into the	day of	, 2017, by and	l between ST.

1. GENERAL

a. The OWNER engages the CONSULTANT to perform modeling necessary to successfully participate in the LAMP pilot program and Flood Insurance Rate Map Appeal under the consultation of Dr. Joseph Suhayda (LAMP Coordinator) identified and described in the Scope of Services. CONSULTANT services shall conform to the requirements of the OWNER and all participating regulating agencies.

2. SERVICES OF THE CONSULTANT

a. The services consist of the work defined in the following Scope of Services.

b. SCOPE OF SERVICES:

• Complete those tasks included in EXHIBIT A assigned through the OWNER determined to be necessary for the successful participation by St. Charles Parish in the LAMP pilot program and Flood Insurance Rate Map Appeal

3. PERIOD OF SERVICE

- a. The CONSULTANT shall complete and produce all tasks assigned by the OWNER within the time frame and task orders established by the LAMP Coordinator.
- b. In the event that delays are experienced beyond the control of the CONSULTANT, the schedule may be revised as mutually agreed upon by the OWNER and the CONSULTANT.
- c. The contract shall expire on June 30, 2018 unless extended by mutual written agreement by both parties.

4. CONSULTANT'S COMPENSATION

- a) The method of payment for this AGREEMENT is <u>HOURLY</u> based on the Not to Exceed amounts for each task order for services listed in EXHIBIT A or a lower negotiated amount. Fees for the Services shall be charged to Client at an hourly rate charge according to the schedule in EXHIBIT A. Client agrees to pay CONSULTANT for all services that CONSULTANT performs. If the not to exceed sum is exceeded, it will be considered outside the scope of services and upon approval by the OWNER will be billed as additional billable at the appropriate rates.
- b) Reimbursable expenses shall be approved prior to expenditure, fully documented and reimbursed at cost. Mileage reimbursement will be billed at the appropriate IRS Standard Mileage Rate.
- c) Such payment to be made to CONSULTANT within thirty (30) days after receipt of CONSULTANT'S invoice by OWNER.

5. SERVICES OF THE OWNER

- a. OWNER shall assist CONSULTANT in carrying out the Scope of Services by placing at his disposal all existing relevant data and records in its possession.
- b. CONSULTANT shall be responsible for searching said data and records provided and shall request specific clarification of the information as needed.
- c. OWNER guarantees CONSULTANT access to all public property as required in order to complete the Scope of Services.
- d. CONSULTANT shall work with other consultants working on the PROJECT under the direction of the OWNER.

6. TERMINATION

- a. This AGREEMENT may be terminated without cause by either party upon ten (10) days written notice.
- b. Immediately after receiving such notice, the CONSULTANT shall discontinue advancing the services under this AGREEMENT.
- c. CONSULTANT shall invoice an ascertainable sum proportionate to the lump sum fee amount described in Section 4. The percentage of services completed shall be based upon the Scope of Services set forth in Section 2B.
- d. In no event shall the fee exceed what is set forth in Section 4E of the AGREEMENT.
- e. OWNER, upon receiving the completed or partially completed deliverables, and after the final fee is mutually agreed upon, shall make payment within thirty (30) days.
- f. In the event that this contract is terminated, OWNER shall have the option of completing the Scope of Services in house or entering into an AGREEMENT with another party to complete the work.

7. COMPLIANCE WITH LAWS AND ORDINANCES

a. The CONSULTANT hereby agrees to comply with all Federal, State, and Local Laws and Ordinances applicable to the Scope of Services under this AGREEMENT.

8. SUCCESSORS AND ASSIGNS

a. This AGREEMENT is not assignable.

9. INSURANCE

- a. The CONSULTANT shall secure and maintain at his expense such General Liability insurance that will protect him and the OWNER, from claims under the Workmen's Compensation Acts and from claims for bodily injury, death or property damage which may arise from performance of services under this AGREEMENT.
- b. Insurance for bodily injury or death shall be in the <u>unencumbered</u> amount of FIVE HUNDRED THOUSAND DOLLARS (\$500,000.00) for one person and not less than ONE MILLION DOLLARS (\$1,000,000.00) for all injuries and/or deaths resulting from any one occurrence.
- c. The insurance for property damage shall be in the <u>unencumbered</u> amount of FIVE HUNDRED THOUSAND DOLLARS (\$500,000.00) for each accident and not less than ONE MILLION DOLLARS (\$1,000,000.00) aggregate.
- d. CONSULTANT shall also secure and maintain at his own expense professional liability insurance in the <u>unencumbered</u> sum of ONE MILLION DOLLARS (\$1,000,000.00).
- e. All certificates of insurance shall be furnished to the OWNER within five (5) days after execution of the AGREEMENT and shall provide that insurance not be cancelled without ten (10) days prior written notice to the OWNER.

- f. St. Charles Parish shall be named as additional insured on general liability insurance policies.
- g. OWNER may examine all insurance policies.
- h. For all purposes under Louisiana law, the principals of this AGREEMENT shall be recognized as the statutory employer of all contract employees as provided in LSA-R.S. 23:1061.

10. OTHER

- a. CONSULTANT shall indemnify and save harmless the OWNER against any and all claims, demands, suits or judgments for sums of money to any party for loss of life or injury or damages to person or property growing out of, resulting from or by reason of any negligent act by the CONSULTANT, its agents, servants or employees, while engaged upon or in connection with the services required or performed hereunder.
- b. This AGREEMENT constitutes the entire agreement between the parties. There are no understandings, agreements, or representations, oral or written, not specified within this AGREEMENT. This AGREEMENT may not be modified, supplemented or amended, in any manner, except by written agreement signed by both parties.

11. EXCLUSIVE JURISDICTION AND VENUE

a. For all claims arising out of or related to this agreement, CONSULTANT hereby consents and yields to the exclusive jurisdiction and venue of the Twenty-Ninth Judicial District Court for the Parish of St. Charles and expressly waives any (a) pleas of jurisdiction based upon CONSULTANT'S residence and (b) right of removal to Federal Court based upon diversity of citizenship.

IN WITNESS WHEREOF, the parties hereto have executed this AGREEMENT the day, month and year first above mentioned,

ATTEST	ST. CHARLES PARISH
	By: Mr. Larry Cochran Parish President
ATTEST	Lonnie G. Harper & Associates
	By: Lonnie Harper, President

Contract Evaluation Levee Analysis and Mapping Procedures, LAMP001 Lonnie G. Harper & Associates 9/18/2017

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	Task	Budget	% Complete	Balance
Task 1	Flood Threat Assessment	\$237,240.00	100	\$0.00
Task 2	Surge Modeling	\$387,380.00	85	\$58,107.00
Task 3	WHAFIS Modeling	\$107,683.00	40	\$64,609.80
Task 4	Reporting	\$84,968.00	7	\$79,020.24
	Total	\$817,271.00		\$201,737.04
	Invoice #	Amount		
	7499	\$109,859.55		
	7523	\$90,574.65		
	7660	\$210,128.30		
	7752	\$204,971.41		
	Total	\$615,533.91		
	Total Budget	\$817,271.00		
	Remaining	\$201,737.09		

Scope of Work For St. Charles Parish BFE and LAMP Modeling Analysis St. Charles Parish, Louisiana

Project Team: Lonnie G. Harper & Associates, Woods Hole Group, Ransom Consulting

	Firm	Staff	Hours .	Rate/hr	Cost		
	LGH	Sr. Principal	4	\$213.40	\$853.60		
	LGH	Sr. Project Coordinator	8	\$187.10	\$1,496.80		
Specify engineering and technical procedures that	LGH	Engineering Intern II	0	\$114.00	\$0.00		
be used in the re-mapping effort, including data	WHG	Project Mgr	16	\$175.00	\$2,800.00		
and modeling approach	WHG	Coastal Engr/Modeler IV	16	\$135.00	\$2,160.00		
		Total A	Anticipated Co	st for Task 1.1:	\$7,310.40		
	LGH	Sr. Principal	2	\$213.40	\$426.80		
	LGH	Sr. Project Coordinator	12	\$187.10	\$2,245.20		
Analyze causes of historic flooding including storm ge, backwater, and rainfall	LGH	Engineering Intern II	16	\$114.00	\$1,824.00		
	WHG	Project Mgr	8	\$175.00	\$1,400.00		
	WHG	Coastal Engr/Modeler IV	40	\$135.00	\$5,400.00		
		Total A	Anticipated Co.	st for Task 1.2:	\$11,296.00		
rrance Study for the parish in terms of the data sused, the joint probability and storm tracks, the m surge modeling, the WHAFIS modeling and the ermination of the DFIRM zones and elevations.		(See Sub-task Ma	nhour Estima	tes, Below)			
and task breakdown, below,							
1.3 Sub-Task Manhour Estimates			Anticipated Co.	st for Task 1.3:	\$218,633.6		
1.3 Sub-Task Manhour Estimates 1.3.1 Collect and review all engineering data	,	sed in developing the DFIRMs.			\$218,633.6		
	LGH	sed in developing the DFIRMs. Sr. Principal	0	\$213.40	\$0.00		
	LGH LGH	sed in developing the DFIRMs. Sr. Principal Sr. Project Coordinator	0 2	\$213.40 \$187.10	\$0.00 \$374.20		
1.3.1 Collect and review all engineering data	LGH LGH LGH	sed in developing the DFIRMs. Sr. Principal Sr. Project Coordinator Engineering Intern II	0 2 2 2	\$213.40 \$187.10 \$114.00	\$0.00 \$374.20 \$228.00		
1.3.1 Collect and review all engineering data 1.3.1 Intermediate Data Submission Report	LGH LGH LGH LGH	Sed in developing the DFIRMs. Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III	0 2 2 2	\$213.40 \$187.10 \$114.00 \$0.00	\$0.00 \$374.20 \$228.00 \$0.00		
1.3.1 Collect and review all engineering data	LGH LGH LGH LGH WHG	Sed in developing the DFIRMS. Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr	0 2 2 0 8	\$213.40 \$187.10 \$114.00 \$0.00 \$175.00	\$0.00 \$374.20 \$228.00 \$0.00 \$1,400.00		
1.3.1 Collect and review all engineering data 1.3.1 Intermediate Data Submission Report	LGH LGH LGH LGH WHG	Sed in developing the DFIRMs. Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler III	0 2 2 0 8 8 8	\$213.40 \$187.10 \$114.00 \$0.00 \$175.00 \$135.00	\$0.00 \$374.20 \$228.00 \$0.00 \$1,400.00 \$1,080.00		
1.3.1 Collect and review all engineering data 1.3.1 Intermediate Data Submission Report	LGH LGH LGH LGH WHG	Sed in developing the DFIRMS. Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr	0 2 2 0 8	\$213.40 \$187.10 \$114.00 \$0.00 \$175.00	\$0.00 \$374.20 \$228.00 \$0.00 \$1,400.00		
1.3.1 Collect and review all engineering data 1.3.1 Intermediate Data Submission Report	LGH LGH LGH LGH WHG WHG	sed in developing the DFIRMs. Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler III Coastal Engr/Modeler IV	0 2 2 0 8 8 8	\$213.40 \$187.10 \$114.00 \$0.00 \$175.00 \$135.00 \$110.00	\$0.00 \$374.20 \$228.00 \$0.00 \$1,400.00 \$1,080.00 \$440.00		
1.3.1 Collect and review all engineering data 1.3.1 Intermediate Data Submission Report	LGH LGH LGH LGH WHG WHG	Sed in developing the DFIRMS. Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler III Coastal Engr/Modeler IV Sr. Principal	0 2 2 0 8 8 8 4	\$213.40 \$187.10 \$114.00 \$0.00 \$175.00 \$135.00 \$110.00	\$0.00 \$374.20 \$228.00 \$0.00 \$1,400.00 \$1,080.00 \$440.00		
1.3.1 Collect and review all engineering data 1.3.1 Intermediate Data Submission Report	LGH LGH LGH WHG WHG WHG	sed in developing the DFIRMs. Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler III Coastal Engr/Modeler IV Sr. Principal Sr. Project Coordinator	0 2 2 0 8 8 8 4	\$213.40 \$187.10 \$114.00 \$0.00 \$175.00 \$135.00 \$110.00	\$0.00 \$374.20 \$228.00 \$0.00 \$1,400.00 \$440.00 \$213.40 \$748.40		
1.3.1 Collect and review all engineering data 1.3.1 Intermediate Data Submission Report	LGH LGH LGH WHG WHG WHG LGH LGH	Sed in developing the DFIRMS. Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler III Coastal Engr/Modeler IV Sr. Principal Sr. Project Coordinator Engineering Intern II	0 2 2 2 0 0 8 8 8 4 4 11 4 4 116	\$213.40 \$187.10 \$114.00 \$0.00 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$114.00	\$0.00 \$374.20 \$228.00 \$0.00 \$1,400.00 \$1,080.00 \$440.00 \$213.40 \$748.40		
1.3.1 Collect and review all engineering data 1.3.1 Intermediate Data Submission Report	LGH LGH LGH LGH WHG WHG WHG	Sed in developing the DFIRMS. Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler III Coastal Engr/Modeler IV Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III	0 2 2 2 0 0 8 8 8 4 4 1 1 4 4 1 1 1 1 1 1 1 1 1 1 1	\$213.40 \$187.10 \$114.00 \$0.00 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$114.00 \$0.00	\$0.00 \$374.20 \$228.00 \$0.00 \$1,400.00 \$1,080.00 \$440.00 \$213.40 \$748.40 \$1,824.00 \$0.00		
1.3.1 Collect and review all engineering data 1.3.1.1 Intermediate Data Submission Report (IDS) I and II	LGH LGH LGH LGH WHG WHG WHG LGH LGH LGH LGH	Sed in developing the DFIRMS. Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler III Coastal Engr/Modeler IV Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr	0 2 2 0 8 8 8 4 4 16 16 2 8 8	\$213.40 \$187.10 \$114.00 \$0.00 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$114.00 \$0.00 \$175.00	\$0.00 \$374.20 \$228.00 \$0.00 \$1,400.00 \$1,080.00 \$440.00 \$213.40 \$748.40 \$1,824.00 \$0.00 \$1,400.00		
1.3.1 Collect and review all engineering data 1.3.1.1 Intermediate Data Submission Report (IDS) I and II	LGH LGH LGH WHG WHG WHG WHG WHG WHG	Sed in developing the DFIRMS. Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler III Coastal Engr/Modeler IV Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler III	0 2 2 0 0 8 8 8 4 4 16 16 2 8 8 32	\$213.40 \$187.10 \$114.00 \$0.00 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$114.00 \$0.00 \$175.00 \$135.00	\$0.00 \$374.20 \$228.00 \$0.00 \$1,400.00 \$1,080.00 \$440.00 \$213.40 \$748.40 \$1,824.00 \$0.00 \$1,400.00 \$4,320.00		
1.3.1 Collect and review all engineering data 1.3.1.1 Intermediate Data Submission Report (IDS) I and II	LGH LGH LGH LGH WHG WHG WHG LGH LGH LGH LGH	Sed in developing the DFIRMS. Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler III Coastal Engr/Modeler IV Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr	0 2 2 0 8 8 8 4 4 16 16 2 8 8	\$213.40 \$187.10 \$114.00 \$0.00 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$114.00 \$0.00 \$175.00	\$0.00 \$374.20 \$228.00 \$0.00 \$1,400.00 \$1,080.00 \$440.00 \$213.40 \$748.40 \$1,824.00 \$0.00 \$1,400.00		
1.3.1 Collect and review all engineering data 1.3.1.1 Intermediate Data Submission Report (IDS) I and II	LGH LGH LGH WHG WHG WHG WHG WHG WHG	Sed in developing the DFIRMS. Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler III Coastal Engr/Modeler IV Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler III	0 2 2 0 0 8 8 8 4 4 16 16 2 8 8 32	\$213.40 \$187.10 \$114.00 \$0.00 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$114.00 \$0.00 \$175.00 \$135.00	\$0.00 \$374.20 \$228.00 \$0.00 \$1,400.00 \$1,080.00 \$440.00 \$213.40 \$748.40 \$1,824.00 \$0.00 \$1,400.00 \$4,320.00		
1.3.1 Collect and review all engineering data 1.3.1.1 Intermediate Data Submission Report (IDS) I and II	LGH LGH LGH WHG WHG WHG WHG WHG WHG WHG WHG	sed in developing the DFIRMs. Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler III Coastal Engr/Modeler IV Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler III Coastal Engr/Modeler III Coastal Engr/Modeler III Coastal Engr/Modeler III Coastal Engr/Modeler IV	0 2 2 0 0 8 8 8 4 4 11 4 4 16 6 2 8 32 8 8	\$213.40 \$187.10 \$114.00 \$0.00 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$114.00 \$0.00 \$175.00 \$135.00 \$110.00	\$0.00 \$374.20 \$228.00 \$0.00 \$1,400.00 \$1,080.00 \$440.00 \$213.40 \$748.40 \$1,824.00 \$0.00 \$1,400.00 \$4,320.00 \$880.00		
1.3.1 Collect and review all engineering data 1.3.1.1 Intermediate Data Submission Report (IDS) I and II	LGH LGH LGH WHG WHG WHG LGH LGH LGH LGH LGH LGH LGH LGH LGH L	Sed in developing the DFIRMS. Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler III Coastal Engr/Modeler IV Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler III Coastal Engr/Modeler III Sr. Principal Sr. Project Mgr Coastal Engr/Modeler III Coastal Engr/Modeler IV	0 2 2 2 0 0 8 8 8 4 4 16 2 8 8 32 8 8	\$213.40 \$187.10 \$114.00 \$0.00 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$114.00 \$0.00 \$135.00 \$114.00 \$213.40	\$0.00 \$374.20 \$228.00 \$0.00 \$1,400.00 \$1,080.00 \$440.00 \$213.40 \$748.40 \$1,824.00 \$0.00 \$1,400.00 \$4,320.00 \$880.00		
1.3.1 Collect and review all engineering data 1.3.1.1 Intermediate Data Submission Report (IDS) I and II 1.3.1.2 Technical Support Data Notebook	LGH LGH LGH WHG WHG LGH LGH LGH LGH LGH LGH LGH LGH LGH L	Sed in developing the DFIRMS. Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler III Coastal Engr/Modeler IV Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler III Coastal Engr/Modeler III Sr. Project Mgr Coastal Engr/Modeler III Coastal Engr/Modeler IV Sr. Principal Sr. Project Coordinator	0 2 2 2 0 0 8 8 8 4 4 16 16 2 8 8 32 8 8	\$213.40 \$187.10 \$114.00 \$0.00 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$114.00 \$0.00 \$175.00 \$135.00 \$110.00	\$0.00 \$374.20 \$228.00 \$0.00 \$1,400.00 \$1,080.00 \$440.00 \$213.40 \$748.40 \$1,824.00 \$0.00 \$1,400.00 \$4,320.00 \$880.00		
1.3.1 Collect and review all engineering data 1.3.1.1 Intermediate Data Submission Report (IDS) I and II	LGH LGH LGH WHG WHG WHG LGH LGH LGH LGH LGH LGH LGH LGH LGH L	Sed in developing the DFIRMS. Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler III Coastal Engr/Modeler IV Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler III CAD Technician III Project Mgr Coastal Engr/Modeler IV Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Coastal Engr/Modeler IV Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr	0 2 2 2 0 0 8 8 8 4 4 16 16 2 8 8 32 8 8 1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	\$213.40 \$187.10 \$114.00 \$0.00 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$114.00 \$0.00 \$175.00 \$135.00 \$110.00	\$0.00 \$374.20 \$228.00 \$0.00 \$1,400.00 \$1,080.00 \$440.00 \$213.40 \$748.40 \$1,824.00 \$0.00 \$4,320.00 \$4,320.00 \$4,320.00 \$4,496.80 \$0.00		
1.3.1 Collect and review all engineering data 1.3.1.1 Intermediate Data Submission Report (IDS) I and II 1.3.1.2 Technical Support Data Notebook	LGH LGH LGH WHG WHG WHG LGH LGH LGH LGH LGH LGH LGH LGH LGH L	Sed in developing the DFIRMS. Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler III Coastal Engr/Modeler IV Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler III CAD Technician III Sr. Principal Sr. Project Coordinator Engineering Intern II Coastal Engr/Modeler III	0 2 2 2 0 0 8 8 8 4 4 16 2 8 8 32 8 8 1	\$213.40 \$187.10 \$114.00 \$0.00 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$114.00 \$0.00 \$175.00 \$135.00 \$114.00 \$135.00 \$114.00 \$135.00 \$114.00 \$135.00 \$114.00	\$0.00 \$374.20 \$228.00 \$0.00 \$1,400.00 \$1,080.00 \$440.00 \$213.40 \$748.40 \$1,824.00 \$0.00 \$1,400.00 \$4,320.00 \$4,320.00 \$4,320.00 \$0.00 \$0.00		

	LGH	Sr. Principal	1	\$213.40	\$213.40
	LGH	Sr. Project Coordinator	4	\$187.10	\$748.40
	LGH	Engineering Intern II	4	\$114.00	\$456.00
	LGH	CAD Technician III	8	\$0.00	\$0.00
3.1.4 DFIRM Map Panels	WHG	Project Mgr	1	\$175.00	\$175.00
	WHG	Coastal Engr/Modeler III	4	\$110.00	\$440.00
	WHG	Coastal Engr/Modeler IV	16	\$135.00	\$2,160.00
		0,			72,200.00
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	LGH	Sr. Principal	0	\$213.40	\$0.00
	LGH	Sr. Project Coordinator	2	\$187.10	\$374.20
	LGH	Engineering Intern II	0	\$114.00	\$0.00
.3.1.5 ADCIRC Computer Files	LGH	CAD Technician III	0	\$0.00	\$0.00
	WHG	Project Mgr	2	\$135.00	\$270.00
	WHG	Coastal Engr/Modeler III	12	\$110.00	\$1,320.00
	WHG	Coastal Engr/Modeler IV	8	\$135.00	\$1,080.00
·	LGH	Sr. Principal	0	\$213.40	\$0.00
	LGH	Sr. Project Coordinator	2	\$187.10	\$374.20
	LGH	Engineering Intern II	0	\$114.00	\$0.00
L.3.1.6 STWAVE Computer Files	LGH	CAD Technician III	0	\$0.00	\$0.00
	WHG	Project Mgr	2	\$175.00	\$350.00
	WHG	Coastal Engr/Modeler III	8	\$110.00	\$880.00
	WHG	Coastal Engr/Modeler IV	4	\$135.00	\$540.00
	J				
	LGH	Sr. Principal	2	\$213.40	\$426.80
	LGH	Sr. Project Coordinator	24	\$187.10	\$4,490.40
	LGH	Engineering Intern II	8	\$114.00	\$912.00
	LGH	CAD Technician III	24	\$0.00	\$0.00
.3.1.7 WHAFIS Computer Files	WHG	Project Mgr	4	\$175.00	\$700.00
	WHG	Coastal Engr/Modeler IV	40	\$135.00	\$5,400.00
	WHG	Coastal Engr/Modeler III	16	\$110.00	\$1,760.00
	11110	Joseph Lings, model of the		72.00	ψ2), σσισσ
	LGH	Sr. Principal	2	\$213.40	\$426.80
	LGH	Sr. Project Coordinator	4	\$187.10	\$748.40
	LGH	Engineering Intern II	4	\$114.00	\$456.00
.3.1.8 FEMA guidelines, manuals, reports	LGH	CAD Technician III	0	\$0.00	\$0.00
, , ,	WHG	Project Mgr	4	\$175.00	\$700.00
	WHG	Coastal Engr/Modeler III	8	\$110.00	\$880.00
	WHG	Coastal Engr/Modeler IV	8	\$135.00	\$1,080.00
	J			<u> </u>	
	LGH	Sr. Principal	0	\$213.40	\$0.00
	LGH	Sr. Project Coordinator	2	\$187.10	\$374.20
	LGH	Engineering Intern II	4	\$114.00	\$456.00
2.1.9 Pavious all axisting survey data	LGH	CAD Technician III	8	\$0.00	\$0.00
.3.1.9 Review all existing survey data	WHG	Project Mgr	8	\$175.00	\$1,400.00
	WHG	Coastal Engr/Modeler III	16	\$110.00	\$1,760.00
	WHG	Coastal Engr/Modeler IV	16	\$135.00	\$2,160.00
	<u> </u>				
		Total Antic	ipated Cost j	for Task 1.3.1:	\$51,703.40
.3.2 Collect and review the data used in the and locations.	FIS includ	ling bathymetry, topography,	land cover, a	ind roadway ar	nd levee elevatio
	Firm	Staff	Hours	Rate/hr	Cost
		Sr. Principal		\$213.40	\$0.00
	LGH	Jan Childiput			
3.2.1 Review the DEM used in preparing the	LGH LGH	Sr. Project Coordinator	2	\$187.10	\$374.20
3.2.1 Review the DEM used in preparing the DFIRMs (does is meet the FEMA mapping criteria			1	\$187.10 \$175.00	\$374.20 \$175.00
	LGH	Sr. Project Coordinator			

	LGH	Sr. Principal	4	\$213.40	\$853.60
400011111111111111111111111111111111111	LGH	Sr. Project Coordinator	16	\$187.10	\$2,993.60
1.3.2.2 Verify the accuracy of the DEM (statewide	LGH	Engineering Intern II	24	\$114.00	\$2,736.00
benchmarks were unreliable).	LGH	CAD Technician III	24	\$89.20	\$2,140.80
	LGH	Sr. Project Coordinator	1	\$187.10	\$187.10
1.3.2.3 Verify that the ADCIRC topography	WHG	Project Mgr	2	\$175.00	\$350.00
matches the DEM.	WHG	Coastal Engr/Modeler IV	8	\$135.00	\$1,080.00
	WHG	Coastal Engr/Modeler III	8	\$110.00	\$880.00
	L				.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	LGH	Sr. Principal	4	\$213.40	\$853.60
3.2.4 Verify that the WHAFIS topography	LGH	Sr. Project Coordinator	24	\$187.10	\$4,490.40
natches the DEM.	LGH	Engineering Intern II	32	\$114.00	\$3,648.00
materies die DeM.	LGH	CAD Technician III	32	\$89.20	\$2,854.40
	L				
	LGH	Sr. Project Coordinator	8	\$187.10	\$1,496.80
	LGH	Engineering Intern II	24	\$114.00	\$2,736.00
4.2.2.5. Ventilabetalia 140 (2000)	LGH	CAD Technician III	12	\$89.20	\$1,070.40
1.3.2.5 Verify that the WHAFIS topography	WHG	Project Mgr	8	\$175.00	\$1,400.00
matches the ADCIRC topography.	WHG	Coastal Engr/Modeler IV	16	\$135.00	\$2,160.00
	WHG	Coastal Engr/Modeler III	16	\$110.00	\$1,760.00
	LGH	Sr Principal	4	\$212 AD T	¢oes co
1376 Chack validity of the hathwater used in the		Sr. Principal		\$213.40	\$853.60
1.3.2.6 Check validity of the bathyetry used in the		Sr. Project Coordinator Engineering Intern II	16	\$187.10	\$2,993.60
ADCIDC model (many course data are data		icupineenng intern (i	1 8 1	\$114.00	\$912.00
ADCIRC model (many source data are decades	LGH				40
ADCIRC model (many source data are decades old).	LGH	CAD Technician III	24	\$89.20	\$2,140.80
	LGH	CAD Technician III Total Antic	24 ipated Cost f		\$2,140.80 \$41,679.90
old).	LGH	CAD Technician III Total Antic	24 ipated Cost f	\$89.20	
old).	LGH WAVE con	CAD Technician III Total Antic mputer models used in the FIS	ipated Cost f	\$89.20 or Task 1.3.2:	\$41,679.90
old).	UGH WAVE con	CAD Technician III Total Antic mputer models used in the FIS Staff	ipated Cost f	\$89.20 For Task 1.3.2:	\$41,679.90 Cost
old). 1.3.3 Review the set-up of the ADCIRC and ST	WAVE con	CAD Technician III Total Antic mputer models used in the FIS Staff Sr. Principal	ipated Cost f	\$89.20 For Task 1.3.2: Rate/hr \$213.40	\$41,679.90 Cost \$0.00
old). 1.3.3 Review the set-up of the ADCIRC and ST 1.3.3.1 Check to see if ADCIRC and STWAVE	WAVE con	CAD Technician III Total Antic mputer models used in the FIS Staff Sr. Principal Sr. Project Coordinator Project Mgr	ipated Cost f	\$89.20 For Task 1.3.2: Rate/hr \$213.40 \$187.10 \$175.00	Cost \$0.00 \$374.20 \$1,400.00
old). 1.3.3 Review the set-up of the ADCIRC and ST 1.3.3.1 Check to see if ADCIRC and STWAVE model topographic grids omitted key manmade	WAVE con Firm LGH LGH WHG	CAD Technician III Total Antic mputer models used in the FIS Staff Sr. Principal Sr. Project Coordinator	24 ipated Cost f	\$89.20 For Task 1.3.2: Rate/hr \$213.40 \$187.10	\$41,679.90 Cost \$0.00 \$374.20
1.3.3 Review the set-up of the ADCIRC and ST 1.3.3.1 Check to see if ADCIRC and STWAVE model topographic grids omitted key manmade and natural levee/ridge structures (do grids	WAVE con Firm LGH LGH WHG	CAD Technician III Total Antic mputer models used in the FIS Staff Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV	24 ipated Cost f	\$89.20 For Task 1.3.2: Rate/hr \$213.40 \$187.10 \$175.00 \$135.00	Cost \$0.00 \$374.20 \$1,400.00 \$4,320.00
1.3.3 Review the set-up of the ADCIRC and ST 1.3.3.1 Check to see if ADCIRC and STWAVE model topographic grids omitted key manmade and natural levee/ridge structures (do grids	WAVE con Firm LGH LGH WHG WHG	CAD Technician III Total Antic mputer models used in the FIS Staff Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler III	24 ipated Cost f	\$89.20 For Task 1.3.2: Rate/hr \$213.40 \$187.10 \$175.00 \$135.00 \$110.00	Cost \$0.00 \$374.20 \$1,400.00 \$4,320.00 \$880.00
1.3.3 Review the set-up of the ADCIRC and ST 1.3.3.1 Check to see if ADCIRC and STWAVE model topographic grids omitted key manmade and natural levee/ridge structures (do grids properly represent the actual field conditions).	WAVE con Firm LGH WHG WHG	CAD Technician III Total Antic mputer models used in the FIS Staff Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal	24 ipated Cost f Hours 2 8 32 8	\$89.20 For Task 1.3.2: Rate/hr \$213.40 \$187.10 \$175.00 \$135.00 \$110.00	\$41,679.90 Cost \$0.00 \$374.20 \$1,400.00 \$4,320.00 \$880.00
1.3.3 Review the set-up of the ADCIRC and ST 1.3.3.1 Check to see if ADCIRC and STWAVE model topographic grids omitted key manmade and natural levee/ridge structures (do grids properly represent the actual field conditions).	WAVE con Firm LGH LGH WHG WHG	CAD Technician III Total Antic mputer models used in the FIS Staff Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Principal Sr. Project Coordinator	24 ipated Cost f Hours 2 8 32 8 2	\$89.20 For Task 1.3.2: Rate/hr \$213.40 \$187.10 \$175.00 \$135.00 \$110.00	\$41,679.90 Cost \$0.00 \$374.20 \$1,400.00 \$4,320.00 \$880.00 \$0.00 \$374.20
1.3.3 Review the set-up of the ADCIRC and ST 1.3.3.1 Check to see if ADCIRC and STWAVE model topographic grids omitted key manmade and natural levee/ridge structures (do grids properly represent the actual field conditions). 1.3.3.2 Verify that inland water features are modeled according to actual dimensions of width	LGH Firm LGH WHG WHG WHG WHG WHG WHG	CAD Technician III Total Antic mputer models used in the FIS Staff Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Principal Sr. Project Coordinator Project Mgr	24	\$89.20 For Task 1.3.2: Rate/hr \$213.40 \$187.10 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$175.00	\$41,679.90 Cost \$0.00 \$374.20 \$1,400.00 \$4,320.00 \$880.00 \$0.00 \$374.20 \$700.00
1.3.3 Review the set-up of the ADCIRC and ST 1.3.3.1 Check to see if ADCIRC and STWAVE model topographic grids omitted key manmade and natural levee/ridge structures (do grids properly represent the actual field conditions).	WAVE con Firm LGH LGH WHG WHG	CAD Technician III Total Antic mputer models used in the FIS Staff Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Principal Sr. Project Coordinator	24 ipated Cost f Hours 2 8 32 8 2	\$89.20 For Task 1.3.2: Rate/hr \$213.40 \$187.10 \$175.00 \$135.00 \$110.00	Cost \$0.00 \$374.20 \$1,400.00 \$4,320.00 \$880.00 \$0.00 \$374.20 \$700.00 \$1,080.00
1.3.3 Review the set-up of the ADCIRC and ST 1.3.3.1 Check to see if ADCIRC and STWAVE model topographic grids omitted key manmade and natural levee/ridge structures (do grids properly represent the actual field conditions). 1.3.3.2 Verify that inland water features are modeled according to actual dimensions of width	LGH WAVE con Firm LGH LGH WHG WHG WHG LGH LGH LGH	CAD Technician III Total Antic mputer models used in the FIS Staff Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler IV	24 ipated Cost f	\$89.20 For Task 1.3.2: Rate/hr \$213.40 \$187.10 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$175.00 \$135.00 \$135.00	\$41,679.90 Cost \$0.00 \$374.20 \$1,400.00 \$4,320.00 \$880.00 \$0.00 \$374.20 \$700.00
1.3.3 Review the set-up of the ADCIRC and ST 1.3.3.1 Check to see if ADCIRC and STWAVE model topographic grids omitted key manmade and natural levee/ridge structures (do grids properly represent the actual field conditions). 1.3.3.2 Verify that inland water features are modeled according to actual dimensions of width	LGH Firm LGH LGH WHG WHG WHG WHG WHG WHG WHG WHG	CAD Technician III Total Antic mputer models used in the FIS Staff Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler IV	24 ipated Cost f	\$89.20 For Task 1.3.2: Rate/hr \$213.40 \$187.10 \$175.00 \$110.00 \$213.40 \$187.10 \$110.00	\$41,679.90 Cost \$0.00 \$374.20 \$1,400.00 \$4,320.00 \$880.00 \$0.00 \$374.20 \$700.00 \$1,760.00
1.3.3 Review the set-up of the ADCIRC and ST 1.3.3.1 Check to see if ADCIRC and STWAVE model topographic grids omitted key manmade and natural levee/ridge structures (do grids properly represent the actual field conditions). 1.3.3.2 Verify that inland water features are modeled according to actual dimensions of width	LGH LGH LGH LGH LGH WHG WHG WHG	CAD Technician III Total Antic. mputer models used in the FIS Staff Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler III	24	\$89.20 Fate/hr \$213.40 \$187.10 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$175.00 \$110.00	\$41,679.90 Cost \$0.00 \$374.20 \$1,400.00 \$4,320.00 \$880.00 \$0.00 \$1,700.00 \$1,080.00 \$1,760.00
1.3.3 Review the set-up of the ADCIRC and ST 1.3.3.1 Check to see if ADCIRC and STWAVE model topographic grids omitted key manmade and natural levee/ridge structures (do grids properly represent the actual field conditions). 1.3.3.2 Verify that inland water features are modeled according to actual dimensions of width	LGH Firm LGH WHG WHG WHG WHG WHG WHG LGH WHG WHG WHG	CAD Technician III Total Antic. mputer models used in the FIS Staff Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler IV Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler III Sr. Principal Sr. Principal Sr. Principal	24	\$89.20 Fate/hr \$213.40 \$187.10 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$175.00 \$135.00 \$135.00 \$110.00	\$41,679.90 Cost \$0.00 \$374.20 \$1,400.00 \$4,320.00 \$880.00 \$0.00 \$1,080.00 \$1,760.00 \$0.00 \$1,760.00
1.3.3 Review the set-up of the ADCIRC and ST 1.3.3.1 Check to see if ADCIRC and STWAVE model topographic grids omitted key manmade and natural levee/ridge structures (do grids properly represent the actual field conditions). 1.3.3.2 Verify that inland water features are modeled according to actual dimensions of width and depth.	LGH LGH WHG WHG WHG WHG WHG WHG WHG WHG WHG W	CAD Technician III Total Antic mputer models used in the FIS Staff Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler IV Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Principal Sr. Project Coordinator Project Mgr	24	\$89.20 Fate/hr \$213.40 \$187.10 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$175.00 \$135.00 \$110.00	\$41,679.96 Cost \$0.00 \$374.20 \$1,400.00 \$4,320.00 \$880.00 \$700.00 \$1,080.00 \$1,760.00 \$0.00 \$1,760.00
1.3.3 Review the set-up of the ADCIRC and ST 1.3.3.1 Check to see if ADCIRC and STWAVE model topographic grids omitted key manmade and natural levee/ridge structures (do grids properly represent the actual field conditions). 1.3.3.2 Verify that inland water features are modeled according to actual dimensions of width and depth. 1.3.3.3 Verify that grid resolution is detailed enough to accurately model storm surge over	LGH LGH WHG WHG WHG WHG WHG WHG WHG WHG WHG W	CAD Technician III Total Antic. mputer models used in the FIS Staff Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler IV	24 Hours 2 8 32 8 2 4 8 16 1 2 8 8	\$89.20 For Task 1.3.2: Rate/hr \$213.40 \$187.10 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$175.00 \$135.00 \$135.00 \$135.00 \$135.00 \$135.00 \$135.00 \$135.00 \$135.00 \$135.00 \$135.00	\$41,679.90 Cost \$0.00 \$374.20 \$1,400.00 \$4,320.00 \$880.00 \$0.00 \$700.00 \$1,760.00 \$1,760.00 \$1,760.00 \$1,760.00 \$1,760.00 \$1,760.00
1.3.3 Review the set-up of the ADCIRC and ST 1.3.3.1 Check to see if ADCIRC and STWAVE model topographic grids omitted key manmade and natural levee/ridge structures (do grids properly represent the actual field conditions). 1.3.3.2 Verify that inland water features are modeled according to actual dimensions of width and depth. 1.3.3.3 Verify that grid resolution is detailed	LGH LGH WHG WHG WHG WHG WHG WHG WHG WHG WHG W	CAD Technician III Total Antic mputer models used in the FIS Staff Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler IV Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Principal Sr. Project Coordinator Project Mgr	24	\$89.20 Fate/hr \$213.40 \$187.10 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$175.00 \$135.00 \$110.00	\$41,679.90 Cost \$0.00 \$374.20 \$1,400.00 \$4,320.00 \$880.00 \$0.00 \$1,080.00 \$1,760.00 \$0.00 \$187.10 \$350.00
1.3.3 Review the set-up of the ADCIRC and ST 1.3.3.1 Check to see if ADCIRC and STWAVE model topographic grids omitted key manmade and natural levee/ridge structures (do grids properly represent the actual field conditions). 1.3.3.2 Verify that inland water features are modeled according to actual dimensions of width and depth. 1.3.3.3 Verify that grid resolution is detailed enough to accurately model storm surge over	LGH LGH WHG WHG WHG WHG WHG WHG WHG WHG WHG W	CAD Technician III Total Antic. mputer models used in the FIS Staff Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler IV	24 Hours 2 8 32 8 2 4 8 16 1 2 8 8	\$89.20 For Task 1.3.2: Rate/hr \$213.40 \$187.10 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$175.00 \$135.00 \$135.00 \$135.00 \$135.00 \$135.00 \$135.00 \$135.00 \$135.00 \$135.00 \$135.00	\$41,679.90 Cost \$0.00 \$374.20 \$1,400.00 \$4,320.00 \$880.00 \$374.20 \$700.00 \$1,080.00 \$1,760.00 \$4,350.00 \$1,760.00
1.3.3 Review the set-up of the ADCIRC and ST 1.3.3.1 Check to see if ADCIRC and STWAVE model topographic grids omitted key manmade and natural levee/ridge structures (do grids properly represent the actual field conditions). 1.3.3.2 Verify that inland water features are modeled according to actual dimensions of width and depth. 1.3.3.3 Verify that grid resolution is detailed enough to accurately model storm surge over	LGH LGH LGH WHG WHG WHG WHG WHG WHG WHG WHG WHG W	CAD Technician III Total Antic mputer models used in the FIS Staff Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler III Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler IV	24 Hours 2 8 32 8 2 4 8 16 1 2 8 8	\$89.20 For Task 1.3.2: Rate/hr \$213.40 \$187.10 \$175.00 \$110.00 \$213.40 \$187.10 \$110.00 \$213.40 \$187.10 \$175.00 \$135.00 \$135.00 \$110.00	\$41,679.90 Cost \$0.00 \$374.20 \$1,400.00 \$4,320.00 \$880.00 \$0.00 \$1,080.00 \$1,760.00 \$1,080.00 \$1,760.00 \$1,080.00 \$1,080.00 \$1,080.00
1.3.3.1 Check to see if ADCIRC and STWAVE model topographic grids omitted key manmade and natural levee/ridge structures (do grids properly represent the actual field conditions). 1.3.3.2 Verify that inland water features are modeled according to actual dimensions of width and depth. 1.3.3.3 Verify that grid resolution is detailed enough to accurately model storm surge over small scale topographic features.	LGH LGH WHG WHG WHG WHG WHG WHG WHG WHG WHG W	CAD Technician III Total Antic mputer models used in the FIS Staff Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler III Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler III	24 Hours	\$89.20 For Task 1.3.2: Rate/hr \$213.40 \$187.10 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$175.00 \$135.00 \$110.00	\$41,679.90 Cost \$0.00 \$374.20 \$1,400.00 \$4,320.00 \$880.00 \$0.00 \$1,760.00 \$1,760.00 \$1,760.00 \$1,760.00 \$1,760.00 \$1,760.00
1.3.3.1 Check to see if ADCIRC and STWAVE model topographic grids omitted key manmade and natural levee/ridge structures (do grids properly represent the actual field conditions). 1.3.3.2 Verify that inland water features are modeled according to actual dimensions of width and depth. 1.3.3.3 Verify that grid resolution is detailed enough to accurately model storm surge over small scale topographic features.	LGH LGH LGH WHG WHG WHG WHG WHG WHG WHG WHG WHG W	CAD Technician III Total Antic mputer models used in the FIS Staff Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler III Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Principal Sr. Principal	24 Hours Hours 2 8 32 8 16 1 2 8 16 1 2 2 8 16 2 2 2 2 2 3 3 3 3	\$89.20 Fate/hr \$213.40 \$187.10 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$175.00 \$135.00 \$110.00	\$41,679.90 Cost \$0.00 \$374.20 \$1,400.00 \$4,320.00 \$880.00 \$700.00 \$1,760.00 \$1,760.00 \$1,760.00 \$1,760.00 \$1,760.00
1.3.3.1 Check to see if ADCIRC and STWAVE model topographic grids omitted key manmade and natural levee/ridge structures (do grids properly represent the actual field conditions). 1.3.3.2 Verify that inland water features are modeled according to actual dimensions of width and depth. 1.3.3.3 Verify that grid resolution is detailed enough to accurately model storm surge over small scale topographic features.	LGH LGH WHG WHG WHG WHG WHG WHG WHG WHG WHG W	CAD Technician III Total Antic mputer models used in the FIS Staff Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Project Coordinator Project Mgr Sr. Principal Sr. Project Coordinator	24 Hours Hours 2 8 32 8 16 1 2 8 16 1 2 2 2 2 2 2	\$89.20 Fate/hr \$213.40 \$187.10 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$175.00 \$135.00 \$135.00 \$135.00 \$135.00 \$135.00 \$135.00 \$135.00 \$135.00	\$41,679.90 Cost \$0.00 \$374.20 \$1,400.00 \$4,320.00 \$880.00 \$0.00 \$1,760.00 \$1,760.00 \$1,760.00 \$1,760.00 \$1,760.00 \$1,760.00 \$1,760.00
1.3.3.1 Check to see if ADCIRC and STWAVE model topographic grids omitted key manmade and natural levee/ridge structures (do grids properly represent the actual field conditions). 1.3.3.2 Verify that inland water features are modeled according to actual dimensions of width and depth. 1.3.3.3 Verify that grid resolution is detailed enough to accurately model storm surge over small scale topographic features.	LGH LGH LGH WHG WHG WHG WHG WHG WHG WHG WHG WHG W	CAD Technician III Total Antic mputer models used in the FIS Staff Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler III Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler III Sr. Principal Sr. Principal Sr. Principal	24 Hours Hours 2 8 32 8 16 1 2 8 16 1 2 2 8 16 2 2 2 2 2 3 3 3 3	\$89.20 Fate/hr \$213.40 \$187.10 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$175.00 \$135.00 \$110.00 \$213.40 \$187.10 \$175.00 \$135.00 \$110.00	\$41,679.90 Cost \$0.00 \$374.20 \$1,400.00 \$4,320.00 \$880.00 \$700.00 \$1,760.00 \$1,760.00 \$1,760.00 \$1,760.00 \$1,760.00

	LGH	Sr. Principal		\$213.40	\$0.00
	LGH	Sr. Project Coordinator	2	\$187.10	\$374.20
1.3.3.5 Verify the accuracy of the ADCIRC model	WHG	Project Mgr	4	\$175.00	\$700.00
predictions for Hurricane Rita and Gustav.	WHG	Coastal Engr/Modeler IV	8	\$135.00	\$1,080.00
	WHG	Coastal Engr/Modeler III	24	\$110.00	\$2,640.00
		Total Antic	ipated Cost	for Task 1.3.3:	\$22,623.90
1.3.4 Review the joint probability analysis an	d storm t	racks used in the FIS surge mo	del.		
	Firm	Staff	Hours	Rate/hr	Cost
	LGH	Sr. Principal	2	\$213.40	\$426.80
2.4.1 Chook statistics for storm probabilities	LGH	Sr. Project Coordinator	2	\$187.10	\$374.20
L.3.4.1 Check statistics for storm probabilities used in JPM runs.	WHG	Project Mgr	4	\$175.00	\$700.00
	WHG	Coastal Engr/Modeler IV	8	\$135.00	\$1,080.00
	LGH	Sr. Principal	2	\$213.40	\$426.80
.3.4.2 Check JPM storm surge runs for locations	LGH	Sr. Project Coordinator	2	\$187.10	\$374.20
and tracks.	WHG	Project Mgr	4	\$175.00	\$700.00
IIIO LIBERS.	WHG	Coastal Engr/Modeler IV	8	\$135.00	\$1,080.00
	I				
	LGH	Sr. Principal	2	\$213.40	\$426.80
	LGH	Sr. Project Coordinator	2	\$187.10	\$374.20
1.3.4.3 Verify 1% SWEL for parish.	WHG	Project Mgr	8	\$175.00	\$1,400.00
	WHG	Coastal Engr/Modeler IV	16	\$135.00	\$2,160.00
			1	1	
		Total Antic	ingted Cost	for Tack 1 2 A	Ć0 522 00
				for Task 1.3.4:	\$9,523.00
1.3.5 Review the set-up of the WHAFIS wave roadways.	forecastii				
	<i>forecastii</i> Firm				
		ng computer model used in the	FIS includin	g the treatmen	t of levees and
	Firm	ng computer model used in the	FIS includin	g the treatmen	t of levees and
1.3.5.1 Check that the vegetation parameters	Firm LGH	ng computer model used in the Staff Sr. Principal	Hours 4	g the treatment Rate/hr \$213.40	Cost \$853.60
roadways.	Firm LGH LGH	Staff Sr. Principal Sr. Project Coordinator	Hours 4 24	Rate/hr \$213.40 \$187.10	Cost \$853.60 \$4,490.40
1.3.5.1 Check that the vegetation parameters used in the WHAFIS model are correct and	Firm LGH LGH LGH	Staff Sr. Principal Sr. Project Coordinator Engineering Intern II	Hours 4 24 24	Rate/hr \$213.40 \$187.10 \$114.00	Cost \$853.60 \$4,490.40 \$2,736.00
1.3.5.1 Check that the vegetation parameters used in the WHAFIS model are correct and	Firm LGH LGH LGH	Staff Sr. Principal Sr. Project Coordinator Engineering Intern II	Hours 4 24 24	Rate/hr \$213.40 \$187.10 \$114.00	Cost \$853.60 \$4,490.40 \$2,736.00
3.5.1 Check that the vegetation parameters used in the WHAFIS model are correct and epresent actual field conditions.	Firm LGH LGH LGH LGH	Staff Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III	Hours 4 24 24 24	Rate/hr \$213.40 \$187.10 \$114.00 \$89.20	Cost \$853.60 \$4,490.40 \$2,736.00 \$2,140.80
1.3.5.1 Check that the vegetation parameters used in the WHAFIS model are correct and represent actual field conditions.	Firm LGH LGH LGH LGH	Staff Sr. Project Coordinator CAD Technician III Sr. Project Coordinator Sr. Project Coordinator	Hours 4 24 24 24 24	Rate/hr \$213.40 \$187.10 \$314.00 \$89.20 \$187.10	Cost \$853.60 \$4,490.40 \$2,736.00 \$2,140.80
a.3.5.1 Check that the vegetation parameters used in the WHAFIS model are correct and epresent actual field conditions.	Firm LGH LGH LGH LGH LGH	Staff Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Project Coordinator Engineering Intern II	Hours 4 24 24 24 24 24 24 16	Rate/hr \$213.40 \$187.10 \$114.00 \$89.20 \$187.10 \$114.00	Cost \$853.60 \$4,490.40 \$2,736.00 \$2,140.80 \$374.20 \$1,824.00
a.3.5.1 Check that the vegetation parameters used in the WHAFIS model are correct and epresent actual field conditions.	Firm LGH LGH LGH LGH LGH	Staff Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Project Coordinator Engineering Intern II	Hours 4 24 24 24 24 24 24 16	Rate/hr \$213.40 \$187.10 \$114.00 \$89.20 \$187.10 \$114.00	Cost \$853.60 \$4,490.40 \$2,736.00 \$2,140.80 \$374.20 \$1,824.00
a.3.5.1 Check that the vegetation parameters used in the WHAFIS model are correct and epresent actual field conditions. 3.5.2 Check WHAFIS transect start point and nitial wave height.	Firm LGH	Staff Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Project Coordinator Engineering Intern II CAD Technician III	Hours 4 24 24 24 24 24 4 4 4	Rate/hr \$213.40 \$187.10 \$114.00 \$89.20 \$187.10	Cost \$853.60 \$4,490.40 \$2,736.00 \$2,140.80 \$374.20 \$1,824.00 \$356.80
3.5.1 Check that the vegetation parameters used in the WHAFIS model are correct and epresent actual field conditions. 3.5.2 Check WHAFIS transect start point and nitial wave height.	Firm LGH	Staff Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Principal	P FIS includin Hours 4 24 24 24 24 16 4	Rate/hr \$213.40 \$187.10 \$114.00 \$89.20 \$114.00 \$89.20 \$213.40	Cost \$853.60 \$4,490.40 \$2,736.00 \$2,140.80 \$374.20 \$1,824.00 \$356.80
3.5.1 Check that the vegetation parameters used in the WHAFIS model are correct and epresent actual field conditions. 3.5.2 Check WHAFIS transect start point and nitial wave height.	Firm LGH	Staff Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Principal Sr. Project Coordinator	P FIS includin Hours 4 24 24 24 16 4 4 24	Rate/hr \$213.40 \$187.10 \$114.00 \$89.20 \$213.40 \$187.10 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00 \$114.00	Cost \$853.60 \$4,490.40 \$2,736.00 \$2,140.80 \$374.20 \$1,824.00 \$356.80 \$853.60 \$4,490.40
3.5.1 Check that the vegetation parameters used in the WHAFIS model are correct and epresent actual field conditions. 3.5.2 Check WHAFIS transect start point and nitial wave height.	Firm LGH	Staff Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Principal Sr. Project Coordinator Engineering Intern II	P FIS includin Hours 4 24 24 24 16 4 4 24 16	Rate/hr \$213.40 \$187.10 \$114.00 \$89.20 \$213.40 \$187.10 \$114.00 \$89.20	Cost \$853.60 \$4,490.40 \$2,736.00 \$2,140.80 \$374.20 \$1,824.00 \$356.80 \$4,490.40 \$1,824.00
3.5.1 Check that the vegetation parameters used in the WHAFIS model are correct and epresent actual field conditions. 3.5.2 Check WHAFIS transect start point and nitial wave height.	Firm LGH	Staff Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Principal Sr. Principal Sr. Principal	P FIS includin Hours 4 24 24 24 16 4 4 24 16	Rate/hr \$213.40 \$187.10 \$114.00 \$89.20 \$187.10 \$114.00 \$89.20 \$213.40 \$187.10 \$114.00 \$89.20 \$213.40 \$187.10 \$114.00 \$89.20 \$213.40 \$187.10 \$114.00 \$89.20 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$	Cost \$853.60 \$4,490.40 \$2,736.00 \$2,140.80 \$374.20 \$1,824.00 \$356.80 \$4,490.40 \$1,824.00
3.5.1 Check that the vegetation parameters used in the WHAFIS model are correct and epresent actual field conditions. 3.5.2 Check WHAFIS transect start point and nitial wave height.	Firm LGH	Staff Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III	Hours 4 24 24 24 24 4 4 4 4 4 4 24 16 24	Rate/hr \$213.40 \$187.10 \$187.10 \$114.00 \$89.20 \$213.40 \$187.10 \$114.00 \$89.20	Cost \$853.60 \$4,490.40 \$2,736.00 \$2,140.80 \$374.20 \$1,824.00 \$356.80 \$4,490.40 \$1,824.00 \$2,140.80
3.5.1 Check that the vegetation parameters used in the WHAFIS model are correct and epresent actual field conditions. 3.5.2 Check WHAFIS transect start point and nitial wave height. 3.5.3 Check WHAFIS transect segments for type and accuracy.	Firm LGH	Staff Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Principal Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III	Hours 4 24 24 24 24 4 4 4 24 16 4 24 24 24 24 24 24 24 24 24 24 24 24 2	Rate/hr \$213.40 \$187.10 \$114.00 \$89.20 \$187.10 \$114.00 \$89.20 \$213.40 \$187.10 \$114.00 \$89.20 \$213.40 \$187.10 \$114.00 \$89.20 \$213.40 \$187.10 \$114.00 \$89.20 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$213.40 \$	Cost \$853.60 \$4,490.40 \$2,736.00 \$2,140.80 \$374.20 \$1,824.00 \$356.80 \$4,490.40 \$1,824.00 \$2,140.80
3.5.1 Check that the vegetation parameters used in the WHAFIS model are correct and epresent actual field conditions. 3.5.2 Check WHAFIS transect start point and nitial wave height. 3.5.3 Check WHAFIS transect segments for type and accuracy.	Firm LGH	Staff Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Principal	2 Hours 4 24 24 24 24 24 16 24 16 24 24 28 8	Rate/hr \$213.40 \$187.10 \$114.00 \$89.20 \$213.40 \$187.10 \$114.00 \$89.20 \$213.40 \$187.10 \$114.00 \$89.20	Cost \$853.60 \$4,490.40 \$2,736.00 \$2,140.80 \$374.20 \$1,824.00 \$356.80 \$4,490.40 \$1,824.00 \$2,140.80
3.5.1 Check that the vegetation parameters used in the WHAFIS model are correct and epresent actual field conditions. 3.5.2 Check WHAFIS transect start point and nitial wave height. 3.5.3 Check WHAFIS transect segments for type and accuracy.	Firm LGH	Staff Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Principal Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III	2 Hours 4 24 24 24 24 16 24 16 24 24 24 24 24 16 24 24 24 24 24 24 24 24 24 24 24 24 24	Rate/hr \$213.40 \$187.10 \$114.00 \$89.20 \$213.40 \$187.10 \$114.00 \$89.20 \$213.40 \$187.10 \$114.00 \$89.20 \$213.40 \$187.10 \$114.00 \$89.20 \$213.40 \$187.10 \$175.00 \$175.00	\$374.20 \$374.20 \$1,824.00 \$2,140.80 \$2,140.80 \$374.20 \$1,824.00 \$356.80 \$4,490.40 \$1,824.00 \$2,140.80 \$1,824.00 \$2,140.80
1.3.5.1 Check that the vegetation parameters used in the WHAFIS model are correct and	Firm LGH	Staff Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Principal Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Sr. Principal Sr. Project Coordinator Project Mgr Coastal Engr/Modeler IV Coastal Engr/Modeler III	P FIS including Hours 4 24 24 24 24 4 4 4 4 4 4 4 4 4 4 4 32	Rate/hr \$213.40 \$187.10 \$114.00 \$89.20 \$213.40 \$187.10 \$114.00 \$89.20 \$213.40 \$187.10 \$114.00 \$89.20 \$213.40 \$187.10 \$114.00 \$89.20 \$213.40 \$187.10 \$114.00 \$89.20 \$213.40 \$187.10 \$135.00 \$135.00 \$135.00	\$374.20 \$374.20 \$1,824.00 \$4,490.40 \$2,140.80 \$374.20 \$1,824.00 \$356.80 \$4,490.40 \$1,824.00 \$2,140.80 \$426.80 \$1,496.80 \$700.00 \$540.00

	Firm	Staff	Hours	Rate/hr	Cost
And the second s	LGH	Sr. Principal	4	\$213.40	\$853.60
	LGH	Sr. Project Coordinator	16	\$187.10	\$2,993.60
1 2 C 1)/if - DEF -lti	LGH	Engineering Intern II	24	\$114.00	\$2,736.00
1.3.6.1 Verify BFE elevations were mapped	LGH			\$89.20	\$2,854.40
properly.	WHG	Project Mgr	4	\$175.00	\$700.00
	WHG	Coastal Engr/Modeler IV	24	\$135.00	\$3,240.00
	Ticu	Co. Deinsteal		6242.40	ć0=2.c0
	LGH LGH	Sr. Principal	4	\$213.40	\$853.60
	LGH	Sr. Project Coordinator Engineering Intern II	30	\$187.10 \$114.00	\$4,490.40 \$3.420.00
1.3.6.2 Verify Flood Hazard Zones were mapped	LGH	CAD Technician III	24	\$89.20	\$2,140.80
properly.	WHG	Project Mgr	4	\$175.00	\$700.00
	WHG	Coastal Engr/Modeler IV	24	\$135.00	\$3,240.00
	Wild	Coasta Engl/Modeler IV	24	\$133.00	73,240.00
	•	Total Antic	pated Cost f	or Task 1.3.6:	\$28,222.40
1.3.7 Identify the scientific and technical def	Firm	f the FIS work Staff	Hours	Rate/hr	Cost
	LGH	Sr. Principal	16	\$213.40	\$3,414.40
	LGH	Sr. Project Coordinator	32	\$187.10	\$5,987.20
4274 2	LGH	Engineering Intern II	16	\$114.00	\$1,824.00
1.3.7.1 Prepare text, tables and figures to	LGH	CAD Technician III	24	\$89.20	\$2,140.80
illustrate the deficiencies revealed during the	LGH	Administrative/Clerical II	24	\$48.20	\$1,156.80
review.	WHG	Project Mgr	48	\$175.00	\$8,400.00
	WHG	Coastal Engr/Modeler IV	32	\$135.00	\$4,320.00
	WHG	Coastal Engr/Modeler III	32	\$110.00	\$3,520.00
	1			· · · · · · · · · · · · · · · · · · ·	
	LGH	Sr. Principal	8	\$213.40	\$1,707.20
	LGH	Sr. Project Coordinator	16	\$187.10	\$2,993.60
1.3.7.2 Present results of review to the parish.	LGH	Engineering Intern II	4	\$114.00	\$456.00
	LGH	Administrative/Clerical II	4	\$48.20	\$192.80
		Total Antici	nated Cost f	or Task 1.3.7:	\$36,112.80
		TOTAL PARTIE	patea cost j	57 TUSK 1.5.7.	730,112.00
		Total Ar	nticipated Co	st for Task 1:	\$237,240.00
	Tas	k 2. Surge Modeling	***		
obtain new environmental data from the parish to sed for remapping BFEs including topography, ymetry, vegetation, cultural features, landscape ires, non-levee barriers, and levees.		See Attached Summary Woods Ho	for Sub-task m		es
		Total A	nticipated Co	st for Task 2.1:	\$78,600.00
et-up new model grids for existing (2014) and e conditions (2064).		See Attached Summary t Woods Ho	for Sub-task m le Group/Ran:		es
			nticipated Co		

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including Katrina, Rita, Gustav, and Issac.	for Sub-task i le Group/Rar	nanhour estimate nsom	es		
		Total A	Anticipated Co	ost for Task 2.3:	\$14,840.00
 4 Compute new 1% still water elevations (SWELs) for existing and future conditions. 		See Attached Summary Woods Ho	for Sub-task i le Group/Rar		2 \$
		Total A	Anticipated Co	ost for Task 2.4:	\$43,900.00
2.5 Model Calibration and Verification		See Attached Summary Woods Ho	for Sub-task i lle Group/Rar		2S .
	<u></u>	Total A	Anticipated Co	ost for Task 2.5:	\$65,900.00
2.6 Production Simulations and Statistical Model Development		See Attached Summary Woods Ho	for Sub-task រ le Group/Rar		es
		Total A	Anticipated Co	ost for Task 2.6:	\$154,900.00
		Total A	nticipated C	ost for Task 2:	\$387,380.00
					-
	Task	3. WHAFIS Modeling			
	Firm	Staff	Hours	Rate/hr	Cost
	LGH	Sr. Principal Sr. Project Coordinator	24	\$213.40 \$187.10	\$1,707.20 \$4,490.40
.1 Determine number and location of wave transects		Engineering Intern II	32	\$114.00	\$3.648.00
needed and identify topography, bathymetry,	LGH	CAD Technician III	40	\$89.20	\$3,568.00
regetation, cultural features, landscape features, and	WHG	Project Mgr	16	\$175.00	\$2,800.00
	WHG	Coastal Engr/Modeler IV	0	\$135.00	\$0.00
	-	Total	Anticipated Co	ost for Task 3.1:	\$16,213.60
non-levee barriers to be included in the WHAFIS runs.	1	i otui r			
	L			4345 4- 1	An
	LGH	Sr. Principal	16	\$213.40	\$3,414.40
	LGH	Sr. Principal Sr. Project Coordinator	80	\$187.10	\$14,968.00
ion-levee barriers to be included in the WHAFIS runs.	LGH LGH	Sr. Principal Sr. Project Coordinator Engineering Intern II	80 200	\$187.10 \$114.00	\$14,968.00 \$22,800.00
on-levee barriers to be included in the WHAFIS runs. 3.2 Set-up and run WHAFIS program for the selected	LGH LGH LGH	Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III	80 200 80	\$187.10 \$114.00 \$89.20	\$14,968.00 \$22,800.00 \$7,136.00
ion-levee barriers to be included in the WHAFIS runs.	LGH LGH	Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr	80 200	\$187.10 \$114.00	\$14,968.00 \$22,800.00
on-levee barriers to be included in the WHAFIS runs. 3.2 Set-up and run WHAFIS program for the selected	LGH LGH LGH WHG	Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler IV	80 200 80 24 0	\$187.10 \$114.00 \$89.20 \$175.00 \$135.00	\$14,968.00 \$22,800.00 \$7,136.00 \$4,200.00 \$0.00
on-levee barriers to be included in the WHAFIS runs. 3.2 Set-up and run WHAFIS program for the selected	LGH LGH LGH WHG	Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler IV	80 200 80 24 0	\$187.10 \$114.00 \$89.20 \$175.00	\$14,968.00 \$22,800.00 \$7,136.00 \$4,200.00
on-levee barriers to be included in the WHAFIS runs. 3.2 Set-up and run WHAFIS program for the selected	LGH LGH LGH WHG	Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler IV	80 200 80 24 0	\$187.10 \$114.00 \$89.20 \$175.00 \$135.00	\$14,968.00 \$22,800.00 \$7,136.00 \$4,200.00 \$0.00
on-levee barriers to be included in the WHAFIS runs. 3.2 Set-up and run WHAFIS program for the selected	LGH LGH LGH WHG WHG	Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler IV Total A	80 200 80 24 0	\$187.10 \$114.00 \$89.20 \$175.00 \$135.00 st for Task 3.2:	\$14,968.00 \$22,800.00 \$7,136.00 \$4,200.00 \$0.00 \$52,518.40 \$1,707.20 \$7,484.00
3.2 Set-up and run WHAFIS program for the selected transects.	LGH LGH WHG WHG	Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler IV Total A Sr. Principal Sr. Project Coordinator Engineering Intern II	80 200 80 24 0 Anticipated Co	\$187.10 \$114.00 \$89.20 \$175.00 \$135.00 st for Task 3.2: \$213.40 \$187.10 \$114.00	\$14,968.00 \$22,800.00 \$7,136.00 \$4,200.00 \$0.00 \$52,518.40 \$1,707.20 \$7,484.00 \$9,120.00
3.2 Set-up and run WHAFIS program for the selected transects. 3.3 Determine new Base Flood Elevations (BFEs) and	LGH WHG WHG WHG WHG LGH LGH LGH	Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler IV Total A Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III	80 200 80 24 0 Anticipated Co	\$187.10 \$114.00 \$89.20 \$175.00 \$135.00 set for Task 3.2: \$213.40 \$187.10 \$114.00 \$89.20	\$14,968.00 \$22,800.00 \$7,136.00 \$4,200.00 \$0.00 \$52,518.40 \$1,707.20 \$7,484.00 \$9,120.00 \$17,840.00
3.2 Set-up and run WHAFIS program for the selected transects. 3.3 Determine new Base Flood Elevations (BFEs) and Special Flood Hazard Areas (SFHAs) for the west bank	LGH LGH WHG WHG LGH LGH LGH LGH LGH LGH WHG	Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler IV Total A Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr	80 200 80 24 0 Anticipated Co 8 40 80 200 16	\$187.10 \$114.00 \$89.20 \$175.00 \$135.00 ost for Task 3.2: \$213.40 \$187.10 \$114.00 \$89.20 \$175.00	\$14,968.00 \$22,800.00 \$7,136.00 \$4,200.00 \$0.00 \$52,518.40 \$1,707.20 \$7,484.00 \$9,120.00 \$17,840.00 \$2,800.00
3.2 Set-up and run WHAFIS program for the selected transects. 3.3 Determine new Base Flood Elevations (BFEs) and	LGH WHG WHG WHG WHG LGH LGH LGH	Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler IV Total A Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III	80 200 80 24 0 Anticipated Co	\$187.10 \$114.00 \$89.20 \$175.00 \$135.00 set for Task 3.2: \$213.40 \$187.10 \$114.00 \$89.20	\$14,968.00 \$22,800.00 \$7,136.00 \$4,200.00 \$0.00 \$52,518.40 \$1,707.20 \$7,484.00 \$9,120.00 \$17,840.00
3.2 Set-up and run WHAFIS program for the selected transects. 3.3 Determine new Base Flood Elevations (BFEs) and Special Flood Hazard Areas (SFHAs) for the west bank	LGH LGH WHG WHG LGH LGH LGH LGH LGH LGH WHG	Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler IV Total A Sr. Principal Sr. Project Coordinator Engineering Intern II CAD Technician III Project Mgr Coastal Engr/Modeler IV	80 200 80 24 0 Anticipated Co 8 40 80 200 16 0	\$187.10 \$114.00 \$89.20 \$175.00 \$135.00 ost for Task 3.2: \$213.40 \$187.10 \$114.00 \$89.20 \$175.00	\$14,968.00 \$22,800.00 \$7,136.00 \$4,200.00 \$0.00 \$52,518.40 \$1,707.20 \$7,484.00 \$9,120.00 \$17,840.00 \$2,800.00

Prepare final report describing results of	LGH	Sr. Principal	20	\$213.40	\$4,268.00
	LGH	Sr. Project Coordinator	120	\$187.10	\$22,452.00
modeling and re-mapping work containing the	LGH	Engineering Intern II	120	\$114.00	\$13,680.00
new BFE and Special Flood Hazard Areas maps.	LGH	CAD Technician III	40	\$89.20	\$3,568.00
and compare the results with the preliminary	LGH	Administrative/Clerical II	80	\$175.00	\$14,000.00
DFIRMs.	WHG	Project Mgr	80	\$135.00	\$10,800.00
Drinivis.	WHG	Coastal Engr/Modeler IV	120	\$135.00	\$16,200.00

Woods Hole	Group/Ransom	Modeler	Project Ma	nager		
task 2.1	2.1.1 obtain storm set	4	2	\$790.00	\$790.00	
	2.1.2 validate stats	32	8	\$4,920.00	\$4,920.00	
	2.1.3 eval uncertainty	8	4	\$1,580.00	\$1,580.00	
	2.1.4 future climate set	2	1	\$395.00	\$395.00	
	2.1.5 obtain hindcast met	2	4	\$920.00	\$920.00	
task 2.1 tota		48	19	\$8,605.00	\$8,605.00	\$78,605.00
task2.2	2.2.1 obtain review topobathy	16	8	\$3,160.00	\$3,160.00	· · · · · ·
	2.2.2 identify topobathy gaps	12	4	\$2,020.00	\$2,020.00	
	2.2.3 draw topo polylines	20	4	\$2,900.00	\$2,900.00	
	2.2.4 draw bathy polylines	20	4	\$2,900.00	\$2,900.00	
	2.2.5 prep DEMs	40	16	\$7,200.00	\$7,200.00	
	2.2.6 control structures	16	8	\$3,160.00	\$3,160.00	
	2.2.7 modify 4 future	40	20	\$7,900.00	\$7,900.00	
task 2.2 tota		164	64	\$29,240.00	\$29,240.00	\$29,240.00
task 2.3	2.3.1 obtain veg data	16	8	\$3,160.00	\$3,160.00	₩ 25,240,00
COSK 2.15	2.3.2 identify veg gaps	12	4	\$2,020.00	\$2,020.00	· · · · · · · · · · · · · · · · · · ·
	2.3.3 prep grids	32	8	\$4,920.00	\$4,920.00	
	2.3.4 mod 4 future	24	12	\$4,740.00	\$4,740.00	
task 2.3 tota		84	32	\$14,840.00	\$14,840.00	\$14,840.00
task 2.4	2.4.1 develop Coarse Grid	40	20	\$7,900.00	\$7,900.00	314,640.00
1d5K 2.4	2.4.2 develop Fine Grid	140	60	\$25,900.00	\$25,900.00	
	2.4.3 modify 4 future	60				
task 2.4 tota		240	20 100	\$10,100.00	\$10,100.00	Ć42 000 00
task 2.4 tota		12	2	\$43,900.00 \$1,670.00	\$43,900.00	\$43,900.00
Lask 2.5	2.5.1 Obtain/review WL obs. 2.5.2 obtain/review wave obs.	12	2	\$1,670.00	\$1,670.00	
					\$1,670.00	
	2.5.3 Coarse sensitivity/stability	20	10	\$3,950.00	\$3,950.00	
	2.5.4 Validate Coarse	20	4	\$2,900.00	\$2,900.00	
	2.5.5 Fine sensitivity/stability	100	40	\$18,000.00	\$18,000.00	
	2.5.6 calibrate Fine	100	40	\$18,000.00	\$18,000.00	
	2.5.7 verify Fine	24	8	\$4,040.00	\$4,040.00	
	2.5.8 Fine parametric error	24	8	\$4,040.00	\$4,040.00	
task 2.5 tota		312	114	\$54,270.00	\$54,270.00	\$65,902.50
task 2.6	2.6.1.1 Coarse initial screen	4	12	\$2,540.00	\$2,540.00	
	2.6.1.2 sims	24	16		\$5,440.00	
	2.6.1.3 check	20	8	\$3,600.00	\$3,600.00	
	2.6.1.4 Coarse CDF	4	4	\$1,140.00	\$1,140.00	
	2.6.1.5-6 select & verify	24	16	\$5,440.00	\$5,440.00	
	2.6.2.1 50 sims	40	20	\$7,900.00	\$7,900.00	
	2.6.2.2 rsm	20	80	\$16,200.00	\$16,200.00	
	2.6.2.3 1st eval	32	16	\$6,320.00	\$6,320.00	
	2.6.2.4 50 more sims re-eval	50	80	\$19,500.00	\$19,500.00	
	2.6.2.5 full response	8	16	\$3,680.00	\$3,680.00	
	2.6.2.6 Fine CDF	24	16	\$5,440.00	\$5,440.00	
	2.6.3 Future	120	60	\$23,700.00	\$23,700.00	
task 2.6 tota	1	370	344	\$100,900.00	\$100,900.00	\$154,900.00

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