January 21, 2026

REGIONAL PLANNING COMMISSION

Statement of Qualifications

RPC Task No: LWICB

Flood Risk Assessment:
Geospatial Dataset Development

halff.com

halff

January 21, 2026

Ms. Joan Rupp
Regional Planning Commission
10 Veterans Memorial Blvd.
New Orleans, LA 70124

RE: RPC Task: LWICB - Flood Risk Assessment: Geospatial Dataset Development

Dear Ms. Rupp and Members of the Selection Committee:

Halff is pleased to present our proposal for the RPC Task: LWICB – Flood Risk Assessment: Geospatial Dataset Development. We fully embrace the project's goals of geospatial dataset development, advanced hydrologic modeling, and robust flood risk analysis to support planning efforts across Louisiana's Region 8 and its surrounding parishes. Halff shares your commitment to enhancing flood resilience for communities, and we stand ready to turn these goals into reality.

With over 75 years of experience, Halff offers a unique combination of technical expertise in GIS and flood risk modeling, coupled with on-the-ground knowledge of Louisiana's flood challenges. We have a proven record of collaborating with the Louisiana Department of Transportation and Development (LADOTD), FEMA, and numerous local parishes on flood mitigation and mapping initiatives. As a longtime consultant to FEMA's National Flood Insurance Program (NFIP) and a longtime Cooperating Technical Partner (CTP) Program, our team has contributed to FEMA's Risk MAP program on dozens of projects across Louisiana and the Gulf Coast. This experience has honed our ability to develop high-quality data and tools that align with federal standards and local needs alike.

Key qualifications and project alignment:

- **Extensive flood risk data expertise:** Halff's team has developed and managed complex geospatial datasets for flood risk assessments nationwide. We have created high-resolution Digital Elevation Models (DEMs), performed detailed hydrologic and hydraulic modeling, and computed runoff coefficients for watershed planning. Halff has even pioneered new metrics such as a Pluvial Flood Risk Index to identify areas prone to severe rainfall-induced flooding, closely aligning with this project's technical scope.
- **Proven collaboration with agencies and communities:** Halff has worked side by side with LADOTD on statewide watershed resilience efforts and served as a trusted FEMA Risk MAP provider. We regularly partner with parish governments and floodplain managers. Halff has over 65 Certified Floodplain Managers (CFMs) on staff, and our solutions are rooted in local insight. This collaborative approach will be valuable in coordinating with Region 8 stakeholders and integrating data from neighboring parishes.
- **Strong local team with ELOS as subconsultant:** Our Louisiana-based professionals in Baton Rouge and Shreveport will lead this effort, providing a continuous local presence. To further strengthen our team, we have engaged ELOS as a subconsultant, bringing additional regional expertise in GIS and water resources. This partnership enables us to hit the ground running and effectively support the Louisiana Watershed Initiative's objectives for Region 8.

Halff is enthusiastic about the opportunity to deliver a successful LWICB Flood Risk Assessment for Region 8. We are confident that our experience with similar NFIP, CTP, and Risk MAP projects, combined with our dedicated team and subconsultant, will result in a comprehensive dataset and modeling framework that empowers flood risk planning across the region. Thank you for your consideration of Halff for this important project. We are committed to exceeding your expectations and helping Region 8's communities become safer and more resilient to flooding.

Halff acknowledges and will comply with all administrative and contractual requirements of the Regional Planning Commission. The designated signing authority identified in the MPO Standard Submittal Form will provide the required Corporate Certified Board Resolution, Disclosure of Ownership Certificate, and Certificates of Authority, as applicable. Halff and its subconsultants will also provide annual independent CPA-audited indirect cost rates in accordance with 23 CFR 172.11(c)(3)(iii) and maintain written affirmative action programs where required. All additional forms requested by the RPC, including required affidavits and certifications, will be executed by the authorized signatory upon request.

Sincerely,

Victor Bivens, PE, CFM | Project Manager | 318.716.6134 | vbivens@halff.com

Jack Young, PE, CFM, PMP | Principal-in-Charge | 214.217.6676 | jyoung@halff.com

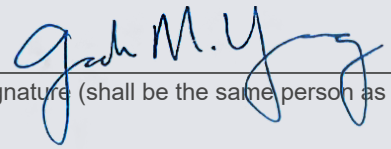
DOTD FORM: 24-102

(Revised December 12, 2024)

PROPOSAL TO PROVIDE CONSULTANT SERVICES

Please read carefully, as this form differs from Standard Form DOTD 24-102. Subconsultants should respond only to questions 1-9 and 16-19, and these responses should be labeled by firm and included as attachments to of the Prime's submittal.

ANY CONSULTANT FAILING TO SUBMIT ANY OF THE INFORMATION REQUIRED ON THE DOTD FORM 24-102, OR PROVIDING INACCURATE INFORMATION ON THE DOTD FORM 24-102, MAY BE CONSIDERED NON-RESPONSIVE.

1.	Contract Name as shown in the advertisement	Flood Risk Assessment: Geospatial Dataset Development
2.	Contract Number(s) as shown in the advertisement	RPC Task: LWICB
3.	Prime consultant name (as registered with the Louisiana Secretary of State where such registration is required by law)	Halff Associates, Inc.
4.	Prime consultant? (Y/N)	Y
5.	Consultant mailing address	4467 Bluebonnet Blvd., Suite B, Baton Rouge, LA 70809
6.	Consultant physical address (existing or to be established, if location is used as an evaluation criteria)	4467 Bluebonnet Blvd., Suite B, Baton Rouge, LA 70809
7.	Name, title, phone number, and email address of consultant's contract point of contact	Victor Bivens, PE, CFM • Project Manager 318.716.6134 • vbivens@halff.com
8.	Name, title, phone number, and email address of the official with signing authority for this proposal	Jack Young, PE, CFM, PMP • Principal-in-Charge 214.217.6676 • jyoung@halff.com
9.	This is to certify that all information contained herein is accurate and true, and that the team presently has sufficient staff to perform these services within the designated time frame. By submitting this proposal, proposer certifies that it is not engaged in a boycott of Israel and it will, for the duration of its contract obligations, refrain from a boycott of Israel. Proposer also certifies and agrees that the following information is correct: In preparing its response, the proposer has considered all proposals submitted from qualified, potential subcontractors and suppliers, and has not, in the solicitation, selection, or commercial treatment of any subcontractor or supplier, refused to transact or terminated business activities, or taken other actions intended to limit commercial relations, with a person or entity that is engaging in commercial transactions in Israel or Israeli-controlled territories, with the specific intent to accomplish a boycott or divestment of Israel. The proposer also has not retaliated against any person or other entity for reporting such refusal, termination, or commercially limiting actions. RPC reserves the right to reject the response of the bidder or proposer if this certification is subsequently determined to be false, and to terminate any contract awarded based on such a false response.	 Signature (shall be the same person as #9) January 21, 2026 Date
10.	If a Disadvantaged Business Enterprise (DBE) goal has been set for this advertisement, indicate which firm(s) will be used to meet the DBE goal and each firm(s)' percentage.	Firm(s): N/A Firm(s)' %:N/A

11 Firm Size

Firm Name	Sub or Prime	DOTD Job Classification	Number of Personnel Committed to this Contract	Total Number of Personnel Available in this DOTD Job Classification (If Needed)
Halff Associates, Inc.	**Prime**	Administrative	2	186
		Architect	0	2
		CADD Technician	0	68
		Chemical Engineer	0	20
		Civil Engineer	0	458
		Computer Programmer	4	33
		Construction Inspector	0	46
		Construction Manager	0	2
		Electrical Engineer	0	17
		Environmental Scientist	3	45
		Geographic Information System Specialist	6	48
		Geologist	0	8
		Land Surveyor	1	110
		Landscape Architect	0	47
		Mechanical Engineer	0	19
		Planner: Urban/Regional	2	31
		Structural Engineer	0	15
		Technician/Analyst	4	93
		Transportation Engineer	0	58
		Water Resources Engineer	5	60
ELOS Environmental, LLC	**Sub**	Environmental Pro	1	4
		GIS Analyst	2	4

12 Organizational Chart

The team structure gives the Regional Planning Commission a clear reporting line and the technical coverage needed for each task. **Jack Young, PE, CFM, PMP** serves as Principal-in-Charge, providing executive oversight, while Project Manager **Victor Bivens, PE, CFM** leads daily coordination and serves as the primary contact. **Ryan Clark, PG** supports him as Deputy Project Manager, directing task execution across disciplines. **Gini Connolly, AICP, GISP, CFM** contributes geospatial and planning guidance, and **Adam Gartleman** provides client liaison and QA/QC support. Discipline leads deliver GIS development, modeling, and data review for the DEM, LDII, runoff modeling, and PFRI components, all reporting through the project management team to keep communication, technical alignment, and accountability tight throughout the contract.

REGIONAL PLANNING COMMISSION

THE HALFF TEAM
1 Halff
2 ELOS

Victor Bivens, PE, CFM[1]
Project Manager

Jack Young, PE, CFM, PMP[1]
Principal-in-Charge

Gini Connolly, AICP, GISP, CFM[1]
Technical Advisor

Ryan Clark, PG[1]
Deputy Project Manager

Adam Gartleman[2]
Client Liaison, Technical Advisor, QA/QC

Services

GIS Technical Lead
Harris Bienn[1]

Geospatial QA/QC
Sam Amoako-Atta, GISP, CFM[1]

Modeling Lead
Sam Sarkar, PE[1]

Modeling Support
Brian Downing, PE, CFM[1]

Modeling QA/QC
Angela Davidson, PE, CFM[1]

GIS Support
JJ Pearsall[2]
Rick Neal[2]

13 Proposal Narrative

Halff is recognized as a leader in Water Resources and GIS work in the southeastern United States with two offices in Louisiana. **Halff has over 50 years of experience understanding flood risk modeling, assessment, planning, project prioritization and implementation** for areas using the latest available technologies and tools. The Halff team is uniquely positioned to support the New Orleans Regional Planning Commission in all aspects of the development of Geospatial Data Sets in the understanding of Pluvial Flood Risk Assessment for the region. **Halff has experience leading complex projects as part of the Louisiana Watershed Initiative such as the Toledo Bend model development and Livingston Parish Drainage Planning Roadmap**.

In approaching this project, we are joined by ELOS Environmental located in Hammond. **With extensive experience in Louisiana's regulatory landscape and deep knowledge of Gulf Coast hydrology, ELOS will provide actionable insights that support informed decision-making.** Our multidisciplinary team combining local experts and national technical leaders is distinctively qualified to deliver quality results on time. In collaboration with the Tampa Bay Regional Planning Council, the team received an Esri Special Achievement Award in 2024 for developing regional flood inundation datasets and configurable tools that enable local entities across the Tampa Bay region to efficiently update flood mapping as new base data becomes available. The majority of the project consisted of modeling, geospatial tool development, and dataset development to support flood vulnerability assessment and development of adaption plans, but stakeholder collaboration and subsequent training really contributed to ultimate project success.

Understanding of Scope and Objectives

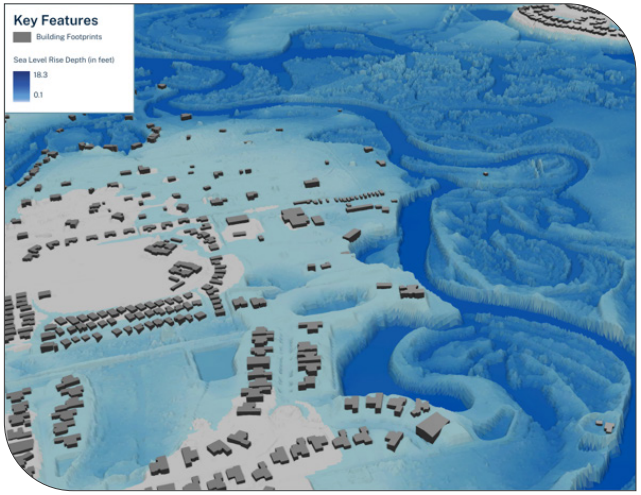
The team understands the devastating impacts of fluvial flooding, pluvial flooding, sea level rise, storm surge, and wind that impact both coastal and inland communities. We realize that the first step in protecting people, property, and ultimately communities in the greater New Orleans area is identifying areas of flood risk. Risk is comprised of the likelihood of the threat, the exposure of people and property to the threat and how vulnerable those exposed elements are to damage. **This project will leverage flood risk data generated by the LWI studies, along with terrain, hydrological, landscape development, and other geospatial datasets, to produce actionable flood geospatial data**. The developed data will provide insights that support flood resilience and empower local officials to make informed, data-driven infrastructure investment decisions.

The team will enhance and clarify both business and technical requirements for geospatial datasets during the **Project Discovery Phase**, allowing all relevant and essential data sources to be identified and gathered. The data will need to be standardized for model input and Digital Elevation Models will need to be developed in a Data Preparation Phase. Once the data is standardized, the **Integrated Flood Analysis Phase** can begin. The Integrated Flood Analysis consists of the development of the Landscape Development Intensity Index, the Runoff Coefficient Model and the Pluvial Flood Risk Index, ultimately producing flood risk assessment datasets that can be used in a variety of applications by different agencies in the future. These are key datasets that can be used for mid-to-long range flood scenario planning, revised when source data gets updated, and consumed in GIS applications as a data-driven planning tool that supports regional flood resilience strategies and projects.

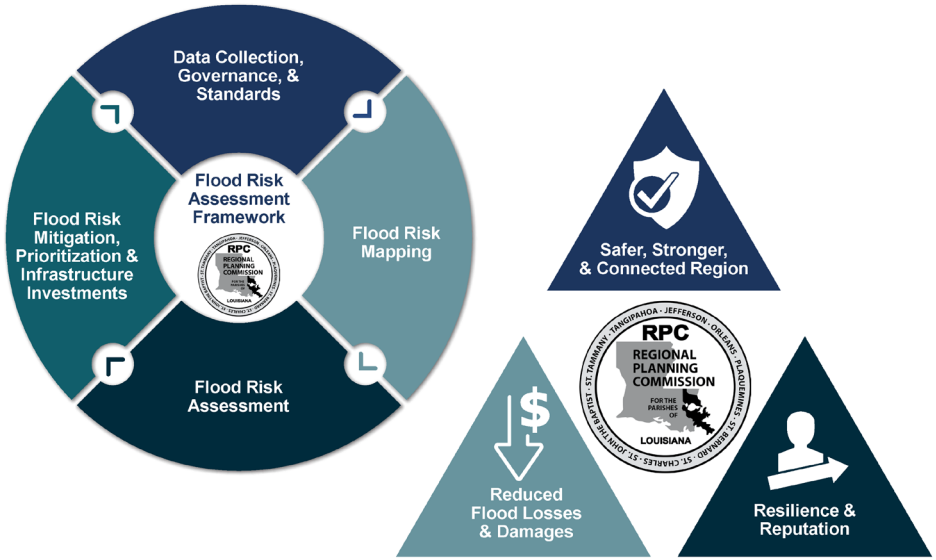
Developing crucial datasets for regional use requires **tenured Quality Assurance and Quality Control processes** put in place for model validation. The team will apply the latest model validation and QA/QC processes to confirm accurate results. **All quality control and quality assurance validation processes and results will be compiled into a report** for reference and use by RPC agencies to understand the development and any potential constraints of the data set. **All produced datasets will be delivered with project compliant metadata and technical documentation**.

Halff Team Approach: Flood Risk Assessment through Geospatial Dataset Development

The project team will develop a proven preliminary flood risk assessment framework that enables community-based planning prioritization. The framework will be:



- ***Data-driven***
- ***Adaptable***
- ***Proactive***
- ***Scalable***



The framework will be a Precipitation and Pluvial Coastal Risk Assessment Flood Tool hereafter code named, P2-CRAFT framework. **The P2-CRAFT framework will encompass a comprehensive back-end repository containing flood data, models, and tools**. It will establish standards for defining flood risk assessment and regional vulnerabilities. The framework will incorporate models such as the Landscape Intensity Index (LDII), the Runoff Coefficient Model and the Geospatial Intensity-Duration Frequency (IDF) Curve Model that support various flood intensities that can be adaptable for existing and future conditions scenarios. This information will be seamlessly integrated into front-end GIS based visualization dashboards to display flood risk assessment results, methodologies, reporting, prioritization tools, recommended indicators, adaptation strategies, and prioritized resilience projects. The proposed P2-CRAFT framework will integrate data to provide a comprehensive picture of flood risk, including flood mapping, exposure, sensitivity, vulnerability, and adaptation strategies that promote community and regional resilience. The delivered framework will be **scalable to accommodate new data, updated models and maps, data enhancement, revised standards, mitigation projects, and evolving RPC priorities**.

The project team will leverage automation, Artificial Intelligence, and Machine Learning (AI/ML) as needed. **Any proprietary tools developed during the project will be made available to the RPC**.

Approach by Phase

The approach is organized into **four phases that follow the technical progression of the P2-CRAFT framework**. The work begins with the **Project Discovery Phase where goals, requirements, and data needs are confirmed**. The Data Development Phase focuses on building the geospatial foundation and elevation models needed for downstream analysis. The **Integrated Flood Risk Assessment Phase applies these datasets to develop the LDII, Runoff Coefficient Model, and Pluvial Flood Risk Index**. The final Review and Documentation Phase compiles quality checks, validation results, and modeling documentation into project-ready deliverables. This phased structure **provides the RPC with a clear roadmap for how the work advances from early coordination through final technical products**.

Discovery Phase

- **Task 1** - Project Management
- **Task 2** - Data and Model Architecture
- **Task 3** - Data Aggregation of Acquisition

Data Development Phase

- **Task 4** - Geographic Base Layer Inputs and Standardization
- **Task 5** - Digital Elevation Model (DEM)
- **Task 6** - Road and Bridge Digital Elevation Model

Integrated Flood Risk Assessment Phase

- **Task 7** - Landscape Development Intensity Index (LDII)
- **Task 8** - Runoff Coefficient Model
- **Task 9** - Pluvial Flood Risk Index

Review and Documentation

- **Task 10** - Quality Assurance, Quality Control (QA/QC), and Statistical Validation

DISCOVERY PHASE

Task 1 - Project Management

The first tasks of any project set the foundation for project success. Diligent Project Management will occur throughout the project starting with a **kick-off meeting** to establish clear points of contact on the RPC side and the consultant team. The project schedule and communication plan will be established at project onset in a **Project Management Plan**. Scope and expectations will be confirmed during the kick-off meeting, as well as the timeline for milestones and deliverables. Kick-off meeting summary and minutes will be provided as well as **monthly progress reports** and invoices.

Deliverables: Project Management Plan, Kick-off Meeting Summary, monthly progress reports, invoices, and archive of all project-related files and data

Task 2 - Data and Model Architecture

The Consultant team will work with the RPC to define the ultimate **business and technical requirements** for the various outputs and the final Runoff Coefficient Model and Pluvial Flood Risk Index. They will be thoroughly documented before model development to verify the components are clearly defined and aligned with project goals. Inputs, outputs and data types for each model and/or index will be confirmed and documented. Related validation criteria will be specified. This provides transparency in process and the ability to reproduce any methods. A **Model Architecture Report** will summarize these requirements, approach and outputs.

Deliverables: Draft and final Model Architecture Report, presentation summarizing the model architecture and development approach

Task 3 - Data Aggregation of Acquisition

If any data gaps are identified from the Model Architecture Report findings that could hinder model accuracy or completeness, the team will acquire necessary data within the budget and timeframe of the project. Our team has a wide range of data resources to access. We have local survey crews if any ground survey is necessary. **Datasets will be properly licensed and documented.** Any exceptions or issues will be incorporated into the Model Architecture Report.

Deliverables: All datasets aggregated or purchased under this contract, documentation of data sources and licensing terms, exceptions documentation in the Model Architecture Report

DATA DEVELOPMENT PHASE

Task 4 - Geographic Base Layer Inputs and Standardization

The objective will be to produce **adaptable GIS datasets** that can widely be utilized across the region that meet the demands of each specific community and jurisdiction. The Halff team will compile, standardize, and document the GIS datasets required for the development of the proposed **P2-CRAFT framework**. These base GIS layers in the P2-CRAFT framework serves as the platform for integrating environmental, infrastructure hydrological, and hydraulics data.

Developing models and indices requires data preparation and standardization. We know that good, valid data used as input results in quality output data sets. Throughout this task, **quality checks** will be performed to confirm spatial coverage, accuracy, data integrity, completeness, granularity of detail, and logical consistency. **Metadata and technical documentation** describing data sources, processing steps and quality control procedures will be provided for all data compiled.

Deliverables: Standardized geographic base layers in GIS compatible formats, project compliant metadata for each dataset, technical documentation describing data sources, processing steps and quality control procedures

Task 5 - Digital Elevation Model (DEM)

The Halff team will generate a seamless **Digital Elevation Model (DEM)** for the New Orleans Region using RPC-provided lidar that meets FEMA and USACE specifications. This DEM will be hydro-enforced for hydrology and hydraulic modeling. The lidar data used will be reviewed for data gaps, coverage extent, voids, elevation anomalies, accuracy, and completeness. As the DEM is developed, the Halff team will apply thorough **classification and accuracy checks** including datum reviews and horizontal and vertical accuracy assessments. **Derivative data products** such as flow direction, flow accumulation, watershed boundaries, slope, and aspect will be produced for use in subsequent modeling. Metadata and technical documentation will be developed for the DEM and all derivative products.

Deliverables: Hydrologically conditioned DEM covering full RPC region, derivative products (slope, aspect, flow direction, flow accumulation, watershed boundary layers), metadata and technical documentation describing data sources, processing steps and quality control procedures

Task 6 - Road and Bridge Digital Elevation Model

A specialized **Road and Bridge Digital Elevation Model (R-DEM)** will be created to account for transportation infrastructure in the developed terrain. Transportation features from RPC will be reviewed and incorporated into the DEM to reflect impacts on the flow of water. The modified R-DEM will be validated through GIS analysis and field-verified elevation data as applicable. Attention will be paid to elevation profiles of roads and associated hydraulic structures so that hydrologic connectivity is preserved without creating artificial flow barriers. **Flow direction and accumulation** will be updated to reflect infrastructure influence. **Metadata and technical documentation** will be created describing methodology and validation.

Deliverables: Hydrologically conditioned R-DEM with embedded transportation features, updated flow direction and accumulation rasters, seamless raster DEM incorporating roads and bridges, derived watershed and sub-watershed boundaries, metadata and technical documentation describing methodology and validation

INTEGRATED FLOOD RISK ASSESSMENT PHASE

The project team proposes the **P2-CRAFT framework** be utilized for the Flood Risk Assessment. The framework integrates a Landscape Development Intensity Index model, Runoff Coefficient Model, and Pluvial Flood Risk Index in order to identify and quantify floodprone areas in the RPC region.

Task 7 - Landscape Development Intensity Index (LDII)

A **Landscape Development Intensity Index (LDII)** will be created to quantify development throughout the region to serve as a key input for runoff modeling and risk assessment by identifying areas of high impermeability and urbanization. Land cover, impervious surface data, population density and available building footprints will be classified and combined at a scalable, consistent geography to assign LDII values. These values representing development intensity will be validated through a combination of aerial imagery, local data and/or field verification.

This will be developed as a **geospatial model** to calculate the LDII values for defined geographies. **Lookup tables** will be created to link LDII categories to runoff coefficients. Ultimately, these values will be correlated to runoff coefficients to support scenario-based flood risk analysis. The Halff team will produce maps and statistics summarizing development intensity across the region. **Metadata and technical documentation** describing methodology, assumptions and limitations of the LDII will be produced.

Deliverables: LDII GIS layer, LDII-Runoff Coefficient lookup table, summary maps and statistics, metadata and technical documentation describing methodology, assumptions and limitations

Task 8 - Runoff Coefficient Model

The Halff team will develop a geospatial **Runoff Coefficient Model** to quantify surface runoff across the New Orleans RPC region. Runoff coefficients will be calculated at a consistent polygon level that will capture variability in runoff potential based on land cover, soil type, slope, vegetation and environmental conditions. This model will serve as the **core analytical tool** for assessing rain-induced flood risk. Scenario-based testing and planning can be accomplished by changing land use and precipitation values.

The GIS-based Runoff Coefficient modeling framework integrates previously compiled and developed data:

- Hydrologically conditioned DEM and derived slope/aspect layers
- Land cover and impervious surface data
- Hydrologic soil group classifications
- Vegetation and evapotranspiration data
- Precipitation IDF curves
- Landscape Development Intensity Index (LDII)
- Transportation infrastructure

Deliverables: GIS layer containing polygon-level runoff coefficients, attribute tables linking coefficients to LDII, land cover, soil type, slope and vegetation, derived hydrologic layers. Technical documentation detailing methodology, assumptions and validation procedures, project compliant metadata

Task 9 - Pluvial Flood Risk Index

A **Pluvial Flood Risk Index (PFRI)** will be developed to identify areas within the New Orleans RPC region that are the most vulnerable to rain-induced, pluvial flooding. This will be combined from runoff potential and development intensity at a granular level, identifying flood-prone areas at the block group scale. Data inputs will be normalized and weighted to produce the **composite risk score**. The results will be able to be aggregated to sub-watershed, parish, and regional levels.

A tool will be created to evaluate the impact of land use and infrastructure on flood vulnerability. Scenario maps showing flood risk under different rainfall and development conditions will be produced as visualization tools. Compliant **metadata and technical documentation** detailing methodology, assumptions and limitations will be delivered with this task.

Deliverables: GIS-based Pluvial Flood Risk Index, scenario maps, analytical tables, summary statistics, metadata and technical documentation detailing methodology, assumptions and limitations

REVIEW AND DOCUMENTATION

Task 10 - Quality Assurance, Quality Control (QA/QC) and Statistical Validation

Excellence and Quality is a core value that defines the Halff team, and we achieve that through our collective attention to detail and our commitment to our **QA/QC processes**. Throughout this project, we will be conducting **QA/QC on datasets** for completeness, consistency and spatial accuracy. **QA/QC processes and results** will be documented to describe error detection methods, corrective actions, and quality assurance protocols.

Because we have an integrated team of experts, we are able to perform **independent reviews** of the work within the team, saving valuable time. **Our team believes that quality review is an essential component of our workflow that cannot be missed.** QA/QC staff will be involved in all phases of the study from the beginning kick-off meeting through preparation of the final report. Our shared QA/QC plan will:

- Establish consistent QA/QC policies and requirements for each respective study phase
- Identify QA leaders that will manage QC teams for each task
- Formulate applicable criteria to be implemented
- Establish methodology to be implemented in preparing the project/preparation of deliverables
- Establish engineering review dates, including peer review conducted by engineers not involved with the project
- Establish project schedules with milestone dates
- Identify interdisciplinary milestones and the exchange of key data to support coordination across all modeling and GIS tasks

For the RPC deliverables, we will develop and implement a **Validation Plan** that documents all data and model analysis to confirm accuracy, reliability, and usability of all datasets and model outputs created as part of this project. The plan will include calibration details and independent validation techniques and sources. Sensitivity analysis will be conducted and included to document which variables were more influential, and uncertainty analysis will be conducted and included to document overall uncertainty in model output. Performance evaluation will include **Nash-Sutcliffe Efficiency (NSE), Percent Bias (PBIAS) and Root Moot Square Error (RSME)**. The report will be delivered electronically as a Microsoft Word draft initially, summarizing validation parameters, performance metrics, and preliminary results. The report will then be finalized with comprehensive documentation of final validation results and conclusions.

The Halff **QA/QC Plan** defines the responsibility and accountability of each member of the production team and the independent review team. Halff has established a toolbox of quality control best practices and lessons learned, which have evolved from our long history of delivering H&H Modeling and watershed planning. Quality reviews will be conducted throughout the project with the goals of minimizing delays, avoiding budget overruns, reducing conflict, and supporting high-quality deliverables. **Our QA/QC approach provides a structured, repeatable process that gives the RPC a dependable framework for technical consistency across all tasks.**

Task 11 - Documentation

We know that documentation is the cornerstone of excellent, usable products. We will provide **complete documentation of the P2-CRAFT framework**, model development process including data sources, methodologies, validation procedures, and operational guidance for the products delivered. All modeling components such as inputs, processing steps, and outputs will be documented, as well as estimation procedures, validation methods, and assumptions. The intent of the documentation is to promote **transparency and reproducibility** across all modeling components.

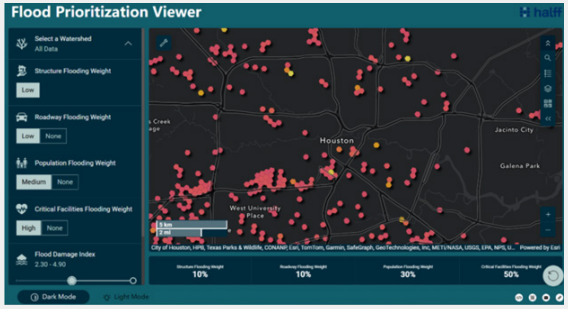
A **User Guide** will be provided with talking points on communicating tool and data usage, limitations and constraints. This step is paramount in success of the project, opening up the results to the larger RPC constituency. **Project compliant metadata** will be provided for all outputs provided, to increase awareness and understanding of the available deliverables.

> Halff has demonstrated their technical expertise, innovative use of technology, and significant experience working with local, state and federal agencies. The success of Halff projects can be attributed to a wealth of talent from within the organization and their extensive outreach efforts to engage multiple stakeholders at all levels by clearly defining the benefits for all end-users.
>
> **Clint Garza, Executive Director of Countywide Operations / Chief of Staff** | Hays County

HALFF BENEFIT AND APPROACH
ADDITIONAL COMPONENTS

TECHNICAL EXPERTISE AND SUPPORT

The Halff team has the expertise and resources to develop the Geospatial Flood Risk Assessment, tools, models, data, and metadata where the overall framework (P2-CRAFT) can be revised, updated, and refined as needed over time. The Flood Risk Assessment results can be delivered as a “flood-fabric” for the region at various resolutions, where “flood-fabric” refers to a strategy that combines flood risk data with impact information tied to specific geographic locations; and Flood Resilience Project Prioritization, where the flood risk analysis data will be aggregated to community levels to create community-level “flood-prints.” These community-level “flood-prints” can include information identifying not just estimated flood risk and associated damages and losses, but also community mitigation measures to bolster prioritizing mitigation projects and adaptation strategies.



The Halff team has the expertise to leverage FEMA’s HAZUS Program to generate quantitative estimates of expected losses of function from flood and hurricane winds for the region. Additionally, we will consider the current resilience of the parishes by leveraging FEMA’s 2021 Resilience Analysis and Planning Tool (RAPT) and Social Vulnerability Index (SVI) data to assess the susceptibility of social groups to the adverse impacts of flood hazards. Combined with the results from the Integrated Flood Risk Assessment phase, geospatial autocorrelation techniques will be applied to create a composite flood risk index for the region.

Technical support will be provided via on-site training, phone or web-based conference calls, and email. Additionally, Halff will assist the RPC with future enhancements to support new technology and functionality as needs change.

EXISTING RELATIONSHIPS WITH FLOOD MODELING EXPERTS

Through our work on flood modeling efforts across Louisiana, members of the Halff team have established working relationships that support coordination across all tasks of this project. Relevant experience includes Louisiana Watershed Initiative regional watershed modeling, FEMA Risk MAP and Base Level Engineering development, regional flood basin modeling using HEC-HMS and HEC-RAS, and urban pluvial flood modeling using InfoWorks ICM and GIS-based runoff analysis tools.

ABILITY TO MEET SCHEDULE IN TIMELY MANNER

Halff is committed to meet the schedule and budget requirements established by the RPC. Having worked with numerous public and private clients during our many years in practice, Halff is acutely aware of the importance of completing assignments within budget constraints. We have developed specific steps to maintain control of project budgets from initiation through completion. Halff will work closely with staff to develop a clear and detailed scope of work. We utilize a web-based program to track all charges on projects. This data is updated weekly, thus allowing current budget reports/details to be monitored by the project manager and provided to the RPC at any time.

ALLOCATION OF RESOURCES

As our organizational chart reflects, staff selected for this project were identified based on individual areas of expertise related to respective project phases. By approaching this project from the lenses of multiple disciplines, our team is in a position to verify that all process steps and deliverables are handled in a timely and resource-efficient manner. We have developed specific steps to maintain control of project scheduling and budgets from initiation through completion. Halff will work closely with the RPC to develop a clear and detailed scope of work.

HALFF BENEFIT AND APPROACH
ADDITIONAL COMPONENTS *continued*

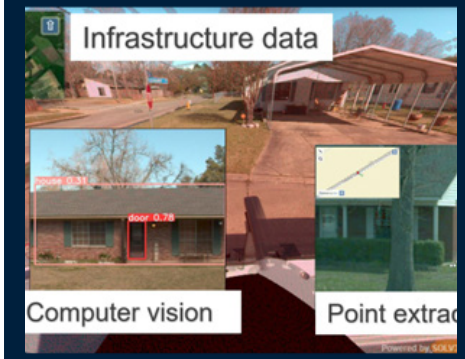
INNOVATIONS AND VISUALIZATION

By harnessing the power of cutting-edge technology and fostering interdisciplinary synergy, the Halff team is dedicated to delivering the highest quality H&H analysis. We will combine well-established methodologies with innovative enhancements to streamline these critical analyses, confirming schedule compliance while safeguarding the integrity and precision required for accurate results. Halff's innovation strategy focuses on the use of Artificial Intelligence using Deep Learning to extract decision-support and location information from unstructured data (3D point clouds, images, video). We also develop next-level, Machine Learning models of historical and work order data to better understand high-priority assets and mitigate unplanned failure. These technologies help to increase safety of our communities, as well as save time and money.

Halff's automation strategy focuses on internal technology: providing tools, processes, workflows and systems to streamline repeated tasks associated with daily design, study and management activities for projects. The Halff team will employ advanced technology, such as developing Python scripts to assist with editing H&H models and extracting results from output files for evaluation.

The Halff team will draw on our experience, knowledge, innovation, and collaboration with RPC partners to support the evaluation of computational infrastructure, software, numerical models, computer systems, automation process and Artificial Intelligence/Machine Learning (AIML) to connect various data input/output produced as part of the RPC study.

Halff implemented AIML to predict the stormwater conveyance level-of-service for more than 1,600 miles of the City of Dallas' storm drain network.



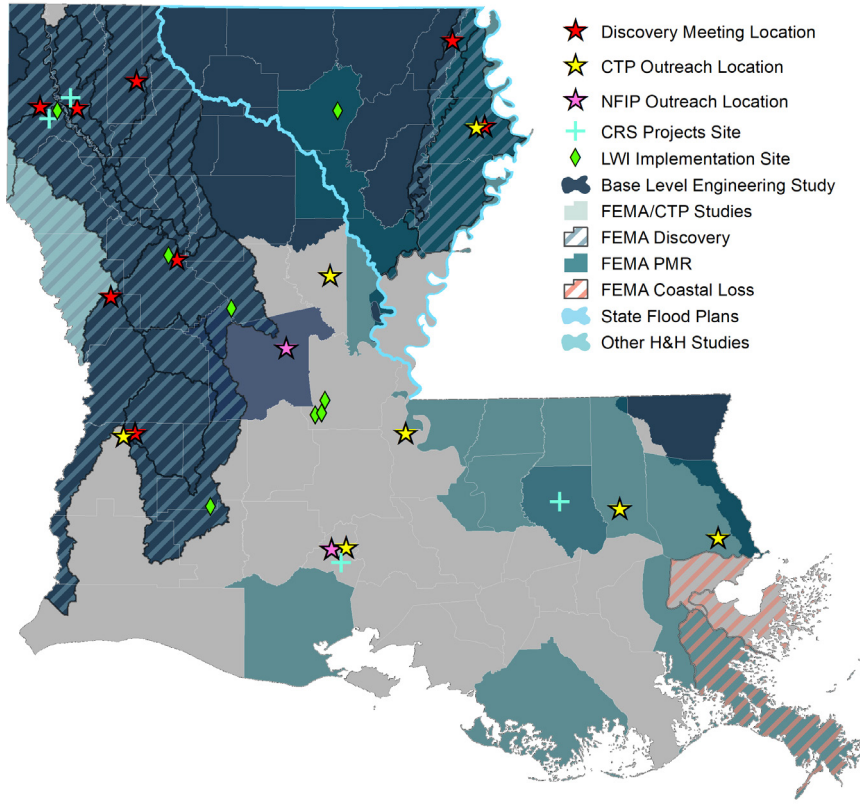
Halff trained AI technology to predict flood risks of existing structures and finished floor elevations.

Halff developed Python scripts to download and statistically assess climate model data, predicting future rainfall changes to support vulnerability assessments across Florida.

Halff developed Smart Likelihood of Failure (LOF) using AI/ML to predict failure probabilities for uninspected assets, potentially saving the City of Fort Worth 15- 25% through proactive maintenance.

Demonstrated ability, both qualitative and quantitative, to work with planners, GIS staff, state agencies, local governments, and regional planning organizations

The Halff team has a **proven track record of success** in working with planners, GIS staff, state agencies, local governments, and regional planning organizations. Throughout our many decades of providing professional engineering and planning services to both public and private clients, each of the personnel identified in our organizational chart are highly experienced in working on collaborative projects that stretch across disciplines, jurisdictional boundaries, and sectors. These team members have an in-depth understanding of how flood modeling is evaluated and will combine their industry experiences to all elements of this project.



Halff's CTP and NFIP Footprint in Louisiana

PEOPLE
We transform the lives of the people we serve. Our ideas serve the people who use them through an informed understanding of their needs and desires for moving forward.

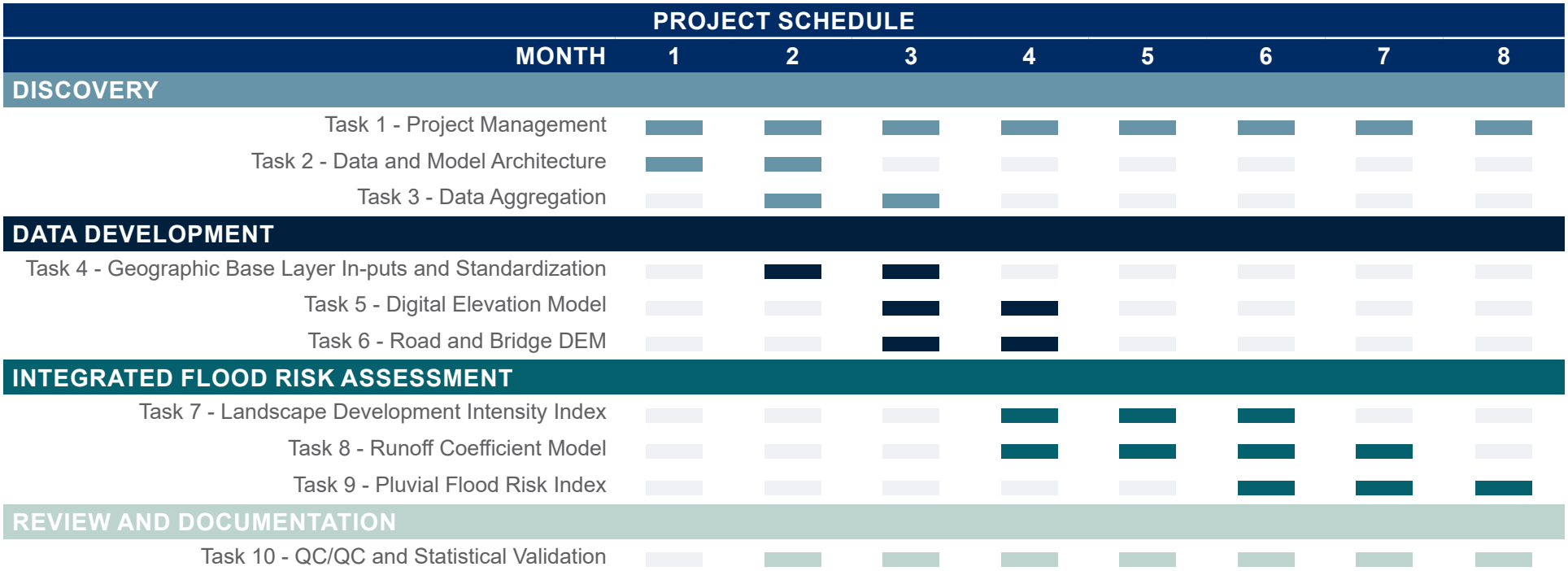
PLACE
Our legacy is embodied in the places we bring to life. Our ideas create inspiring and usable places which foster strong, lasting connections for the people who use them.

PLANET
We are stewards of our environment. Our ideas preserve and conserve our most valued assets and focus on creating sustainable and resilient outcomes.

PROSPERITY
An enduring future must also be fiscally-sustaining. Our ideas embrace the difficult decisions necessary to create opportunities to grow and create lasting value.

14 Project Schedule

The project schedule outlines a clear path from early discovery through data development, integrated flood risk analysis, and final validation. The sequencing is built to give the RPC steady visibility into progress while allowing technical teams to coordinate modeling, GIS development, and documentation without rework. Each task is timed to keep data inputs, modeling phases, and QA/QC efforts in sync so the P2-CRAFT framework advances in a logical, efficient order. This schedule reflects the workload capacity and staffing commitments presented in our proposal and gives the RPC a reliable roadmap for how the work will be delivered over the eight-month period.



15 Cost and Budget

Cost and Budget by Task including labor, travel, proposed profit, and major costs.			
	Halff	**ELOS**	**Total by Task**
Discovery Phase			
1-Project Management	$30,000	$15,000	$45,000
2-Data and Model Architecture	$30,000	$10,000	$40,000
3-Data Aggregation	$15,000	$10,000	$25,000
Data Development Phase			
4-Geographic Base Layer Inputs and Standardization	$10,000	$10,000	$20,000
5-Digital Elevation Model	$25,000		$25,000
6-Road and Bridge DEM	$25,000		$25,000
Integrated Flood Risk Assessment			
7-Landscape Development Intensity Index	$75,000		$75,000
8-Runoff Coefficient Model	$100,000		$100,000
9-Pluvial Flood Risk Index	$50,000		$50,000
10-QA/QC and Statistical Validation	$18,000	$27,000	$45,000
Totals	$378,000	$72,000	$450,000

16 Staff Experience

Firm Employed By	Halff Associates, Inc.		
Name	Victor Bivens, PE, CFM	**Years of Relevant Experience with this Employer**	7
Title	Water Resources Team Leader	**Years of Relevant Experience with Other Employer(s)**	0
Degree(s) / Years / Specialization	MS / 2020 / Civil Engineering BS / 2018 / Civil Engineering		
Discipline	Professional Engineer, Civil; Certified Floodplain Manager	**Certifications**	PE: 47761 / LA / 9/30/25 | CFM: US-24-13061 / US / 1/31/26
Contract Role(s) / Brief Description of Responsibilities	Project Manager / Responsible for communications, responsiveness, and project management.		

Bio: Victor serves as Deputy Project Manager for the LADOTD CTP program, bringing a unique blend of technical leadership and statewide project delivery experience. He has led over 15 Discovery projects across Louisiana and managed a complex multi-jurisdictional flood risk identification effort that included 2D modeling, stakeholder coordination, and FEMA Risk MAP product development. Victor has also delivered both in-person and virtual training sessions as part of LADOTD's Tiered State Framework goals and played a lead role in the pilot for FEMA's Substantial Damage Estimate (SDE) tool. A skilled modeler and project leader, Victor has deep experience in Base Level Engineering using 1D and 2D HEC-RAS models to evaluate mitigation alternatives. Before his floodplain focus, he led public works design projects including storm drainage, roadway improvements, and subdivision infrastructure, giving him a well-rounded understanding of flood risk from both policy and engineering standpoints.

05/21 - Ongoing	**LADOTD CTP & NFIP Statewide Program Support | Statewide, LA.** *Deputy Project Manager.* Responsible for direct oversight of flood risk identification and Risk MAP product development across the state. He has led over 15 Discovery efforts, engaging local communities and FEMA partners to assess watershed needs, validate CNMS data, and lay the foundation for Base Level Engineering and mitigation prioritization. Victor also managed a technically complex flood risk identification project involving 2D modeling, product delivery, and regulatory coordination. He led the pilot implementation of FEMA's Substantial Damage Estimate (SDE) tool in Louisiana, helping LADOTD build internal capacity for post-disaster response. In support of the state's Tiered State Framework (TSF) goals, Victor delivered multiple online and in-person training sessions to local officials and floodplain administrators, reinforcing LADOTD's leadership in community assistance and risk communication. His combined technical and engagement expertise has made him a key driver of the program's success.
06/21 - 10/25	**FEMA Region VI, Compass PTS | FEMA Region VI.** *Deputy Project Manager.* Victor has played a central role in Halff's FEMA Risk MAP work in Louisiana under the Compass PTS contract, contributing to every BLE project completed by Halff across the state. His responsibilities have grown from hands-on modeling and analysis to serving as a regional leader overseeing the full delivery of Base Level Engineering studies across Northern Louisiana. In his current role as Project Manager, Victor is responsible for supervising teams executing 2D BLE modeling, coordinating regulatory and non-regulatory product development, and aligning BLE deliverables with FEMA's evolving technical standards. He regularly collaborates with FEMA Region VI, LADOTD, and local officials to make sure BLE studies meet Discovery outcomes, CNMS status updates, and Risk MAP production schedules. Victor's progression from technical execution to strategic oversight demonstrates his comprehensive knowledge of FEMA methodologies and his trusted leadership in one of the most active regions for BLE development.
08/22 - 03/25	**Rapides Area - Integrated Transportation/Stormwater Resiliency Study Through Stormwater Mitigation | LA.** *Project Manager.* Responsible for leading team in 2D model enhancement through improving land use, terrain, precipitation, and other base file incorporation as well as surveyed structure implementation within the model at hydraulically significant structures. He led stakeholder coordination and outreach efforts to gain local knowledge of flood risk and historic damages caused by flooding. Project objectives were 2D detailed model creation and utilization to assess stormwater mitigation alternatives for transportation resiliency improvements within the Metropolitan Planning Area. These alternatives will be analyzed and submitted for grant pursuit.
12/23 - 09/25	**LWI Round 2 Hydrology & Hydraulics Design Support | Rapides Parish, LA.** *Team Leader.* Responsible for providing detailed hydrology and hydraulics design support for five separate projects that were funded through the LWI Round 2 project selection and funding program. Preliminary scope documents show the potential for flood mitigation benefits from channel, structure, storage, and pump station improvements within residential areas of four small communities in central Louisiana.

Firm Employed By	Halff Associates, Inc.		
Name	Ryan Clark, PG	**Years of Relevant Experience with this Employer**	3
Title	Team Leader, Water Resources	**Years of Relevant Experience with Other Employer(s)**	20
Degree(s) / Years / Specialization	MS / 2003 / Earth and Environmental Science BS / 1996 / Geology		
Discipline	Professional Geologist	**Certifications**	PG: 607 / LA / 3/10/26
Contract Role(s) / Brief Description of Responsibilities	Deputy Project Manager / Responsible for project support and coordination.		

Bio: As a 40-year resident of southeast Louisiana, Ryan has an unparalleled understanding of the local environment and its challenges. From his roots in Slidell, Louisiana and throughout his career, Ryan has remained dedicated to addressing flooding issues across Louisiana. Ryan has extensive experience in water resources science, data management, and business development. He also has extensive project management experience, with a focus in management of transdisciplinary teams on large, complex research and development projects. Ryan is Water Resources Team Leader for southern Louisiana, accustomed to working with both government and private sector clients, ensuring the delivery of high-quality products in a timely manner.

09/2023-10/2025	**Compass Zone 2 - FEMA HQ Coastal Loss Development | FEMA Regions 4 and 6, Various Coastal States.** *Deputy Task Order Manager.* Served as Deputy Task Order Manager (DTOM) for the development of methods to calculate coastal losses to building values due to impacts from coastal (tropical and non-tropical) storms. The project area includes the coastal areas of TX, LA, MS, AL, FL, GA, SC, and NC. The methods developed in this project will be used to determine coastal losses nationwide. Responsible for coordination with FEMA HQ staff, project management, and preparation of deliverables.
6/2015-9/2022	**FEMA Region 6 and LADOTD Cooperating Technical Partners (CTP) Program | LA.** *Technical Leader.* Responsibilities included interfacing with FEMA Region 6 and LDOTD staff, attendance at CTP workshops and training, organizing and performing outreach projects, writing proposals and work plans for projects and Special Projects, and program management. Performed outreach Special Projects.
9/2022-9/2023	**Texas General Land Office (GLO)/Lower Rio Grande Valley (LRGV) Flood Study, Work Order #3A | Cameron County, TX.** *Program Manager.* Program Manager responsible for the LRGV region and supporting as the lead for the Eastern and Central regions, overseeing regional coordination efforts. Served as the lead author for the Eastern Region Data Management Plan, which required extensive coordination with the Central Region authors to verify consistency and alignment. Leads the LRGV work group in coordinating with the Texas Disaster Information System (TDIS) to structure and transfer region-specific data. This role involves significant collaboration with key stakeholders such as the GLO, regional vendors, USACE, TWDB, TIFF, CHARM, and other partners to achieve smooth data management and integration across multiple regions.
9/2023-9/2024	**Texas General Land Office (GLO)/Flood Planning Study, Work Order #2 | Hidalgo County, TX.** *Project Manager.* Responsible for a multi-year flood basin study for counties and municipalities to determine cost-effective mitigation and abatement strategies that reduce the impact of flooding disasters. The study analyzes regional and local solutions to promote sound, long-term recovery and maximize the use of CDBG-DR funding to rebuild communities to be stronger and more resilient.
1/2020-9/2022	**Capital Area Groundwater Conservation Commission and Louisiana Coastal Protection and Restoration Authority Greater Baton Rouge Strategic Water Plan | Baton Rouge, LA.** *Technical Co-Lead.* Performing the ongoing strategic planning process for the state commission responsible for confirming a sustainable groundwater supply for the Baton Rouge area. Responsible for engaging with commissioners and stakeholders, identifying technical alternatives, calculation of groundwater supply, technical engagement with United States Geological Survey and Louisiana State University, and technical writing.
8/2016-2/2017	***National Science Foundation RAPID Program and the Charles Lamar Family Foundation, Geomorphic Changes to the Amite River and Floodplain Induced by the August 2016 Flood in Louisiana.** *Co-Proposal Lead and Analysis Lead.* Responsible for this effort that aimed to quantify the reshaping of the Amite River channel and its floodplain associated with the unprecedented flood of 2016. The objective was to conduct rapid response field operations in the mid and upper Amite Basin to gather data while the effects of the flood were undisturbed. These are critical to understanding the river's response to this event, for ground truthing remote sensing imagery that were obtained to document channel changes, and to develop numerical models to analyze the event and predict river response to future events.

Firm Employed By	Halff Associates, Inc.		
Name	Sam Sarkar, PE	**Years of Relevant Experience with this Employer**	3
Title	Senior Project Manager	**Years of Relevant Experience with Other Employer(s)**	11
Degree(s) / Years / Specialization	MS / 2007 / Environmental Engineering and Science BS / 2009 / Civil Engineering		
Discipline	Professional Engineer, Civil; Numerical Modeling	**Certifications**	PE: 137702 / TX / 3/31/26
Contract Role(s) / Brief Description of Responsibilities	Modeling Lead / Responsible for providing technical and automation support.		

Bio: Sam specializes in the development and application of numerical and computational models to create solutions for water resources and water quality issues. He has extensive experience supporting federal, state, and municipal governments in watershed-based planning, stormwater management, flood mitigation planning, TMDL development, BMP implementation and evaluation, and resiliency analysis. Sam is an expert in applying hydrology, hydraulics, and water quality models, including EPA-SWMM, XP-SWMM, SUSTAIN, HEC-HMS, HEC-RAS, SWAT, APEX, HSPF, LSPC, and PRMS.

6/22 - 4/24	**Louisiana Water Initiative Region 4 Modeling Contract | LA.** *Continuous Hydrology Modeling Lead.* Responsible for supporting the development of baseline flood models for Region 4 through LWI's effort to reduce flood risk and increase resilience in Louisiana. In addition to detailed event-based HEC-HMS and 2D HEC-RAS models, we have developed continuous hydrology models for the Upper Sabine River to address the value-added objectives of LWI. These continuous hydrology models were developed using HEC-HMS. The HEC-HMS models use hourly precipitation and evapotranspiration developed using publicly available gridded products. They are calibrated against observed daily streamflow data at multiple locations throughout the watershed. Additionally, a Riverware model for the Upper Sabine River was developed to assess the impacts of operations and management of major reservoirs in the watershed on long-term hydrology.
01/22 - 04/23	**Tampa Bay Regional Inundation Coordination (TBRIC) | Tampa Bay Regional Planning Council (TBRPC), FL.** *Geospatial Mapping Tool Development Lead.* The TBRIC was funded by a grant from the Florida Department of Environmental Protection (FDEP) Resilient Florida Grant Program to develop a unified approach to mapping inundation for vulnerability assessments for Citrus, Hernando, Hillsborough, Manatee, Pasco, Pinellas and Sarasota counties. Python toolbox was developed in ArcGIS Pro that assimilates data from H&H models in GIS format (vector and raster) to generate water surface elevation (WSE) and flood depth rasters based on a user-provided terrain. Cleanup of flood data products was also implemented in the toolbox to account for disconnected areas and cutoff depths. WSE and depth rasters for 1% annual exceedance probability (AEP) riverine and storm surge (with and without sea level rise) were generated for the study region using the mapping toolbox.
02/24 - 04/25	**Lower Rio Grande Valley Flood Study | Cameron County, TX.** *Lead Engineer.* Responsible for the multi-year flood study intended to assist counties and municipalities in determining cost-effective mitigation and abatement strategies that reduce the impact of flooding disasters and increase resiliency. Leading detailed HEC-HMS hydrology and 2D HEC-RAS hydraulic model development for the Lower Rio Grande Valley Region that includes Starr, Hidalgo, Cameron and Willacy counties. Model development includes sensitivity assessment, representation of major hydraulic structures, calibration for historic events and assessment of compound flooding for coastally influenced areas. Modeling follows Standard Operating Procedure developed through a collaborative process with the GLO and USACE.
06/23 - 04/25	**Louisiana RAPC | Alexandria, LA.** *Automation Lead. T*he Rapides Area Planning Commission partnered with Halff in June 2021 to integrate stormwater mitigation and flood prevention strategies into regional transportation planning, supported by advanced 2D HEC-RAS modeling and FEMA BLE enhancements. Rigorous calibration and stakeholder-driven evaluations maintained accurate flood risk identification and prioritized resilient design solutions aligned with community needs and funding opportunities. An automation framework and user-interface was created using Python to run inter-connected HEC-RAS model and results evaluation.

Firm Employed By	Halff Associates, Inc.		
Name	Jack Young, PE, CFM, PMP	**Years of Relevant Experience with this Employer**	17
Title	Deputy Practice Leader, Water Resources	**Years of Relevant Experience with Other Employer(s)**	0
Degree(s) / Years / Specialization	BS / 2008 / Civil Engineering		
Discipline	Certified Floodplain Manager	**Certifications**	PE: 43134 / LA / 3/31/27; 113401 / TX / 9/30/25. CFM: 1504-08N / 12/31/25. PMP: 2648514 / 10/17/26.
Contract Role(s) / Brief Description of Responsibilities	Principal-in-Charge / Responsible for firm commitment.		

Bio: Jack serves as the strategic planning lead for Halff's FEMA and LADOTD programs, where he guides policy alignment, NFIP compliance coordination, and advancement of Louisiana's Tiered State Framework (TSF) capabilities. With over 15 years of experience in flood risk management and FEMA program delivery, Jack has helped shape the Region VI CTP landscape—overseeing technical guidance, ordinance consistency initiatives, and BLE standardization across multiple states. Under the LADOTD contract, he supports ordinance and programmatic policy review, strategic TSF planning, and integration of FEMA tools into Louisiana's permitting and outreach workflows. Jack has led the development of NFIP compliance roadmaps, advised state partners on Tier 3/4 capability benchmarks, and contributed to cross-agency efforts to align regulatory, non-regulatory, and local risk data products.

05/21 - Ongoing	**LADOTD CTP & NFIP Statewide Program Support | Statewide, LA.** *Programmatic Planning and Strategic Advisor.* Responsible for support of LADOTD's CTP and NFIP initiatives. In this leadership role, Jack worked closely with state staff and community stakeholders to develop LADOTD's long-term business plan for FEMA engagement, aligning funding strategies, community needs, and regulatory objectives. His responsibilities included supporting the identification and prioritization of statewide investments, helping LADOTD translate local and regional challenges into scoped, fundable projects. Jack played a central role in designing and launching new initiatives—most notably leading the strategic development of Louisiana's pilot Substantial Damage Estimate (SDE) project—and supported its transition from concept to implementation. He also helped shape the program's internal structure by guiding LADOTD's delivery strategy and ensuring consistency, responsiveness, and technical alignment across all task orders and support staff. In addition to strategic oversight, Jack led multiple in-person and virtual trainings for local floodplain administrators, delivering FEMA-aligned content that strengthened local NFIP implementation and positioned LADOTD to progress within the Tiered State Framework.
03/15 - Ongoing	**FEMA Risk MAP Production and Technical Services (PTS) A&E Contract | Nationwide.** *Regional Production Manager.* Responsible for overseeing the full suite of FEMA Risk MAP activities across FEMA Region VI. In this role, he directed all technical production efforts that align with Cooperating Technical Partner (CTP) responsibilities, including Discovery, Base Level Engineering (BLE), hydrologic and hydraulic (H&H) analysis, floodplain mapping, levee analysis under LAMP, and MT-2 (LOMR/CLOMR) processing. He managed production workflows in the Mapping Information Platform (MIP), coordinated project delivery schedules, and verified quality assurance across all regulatory and non-regulatory FEMA products. Jack also led the FEMA Region VI Regional Support Center (RSC), a multi-disciplinary team of subject matter experts that provided day-to-day technical and programmatic assistance to FEMA staff. Under his leadership, the RSC supported numerous NFIP-aligned functions, including CNMS updates, ordinance and compliance reviews, and permit file assessments. The team also provided technical support to FEMA's Floodplain Management and Insurance (FM&I) Branch in preparation for Community Assistance Visits (CAVs) and Community Assistance Contacts (CACs), as well as direct technical assistance to communities undergoing those visits. The RSC was further responsible for managing LOMR-related issues and offering regulatory guidance throughout Region VI. In addition to technical and operational leadership, Jack played a key role in developing and delivering both internal and external training. He facilitated virtual and in-person sessions for FEMA staff, state partners, and local officials on topics including BLE data usage, regulatory mapping workflows, FEMA systems (MIP/Citrix), risk communication, and post-disaster floodplain permitting. His ability to distill complex FEMA guidance into actionable, community-relevant material made him a trusted trainer and advisor across multiple states. Jack also served as the Financial Performance Lead for Compass, overseeing earned value management and performance tracking across all six FEMA regions supported by the joint venture. He also supported system integration and performance reporting through FEMA's Mapping Information Platform (MIP), helping to track project status and funding progress in alignment with FEMA metrics.

Firm Employed By	Halff Associates, Inc.		
Name	Gini Connolly, AICP, GISP, CFM	**Years of Relevant Experience with this Employer**	5
Title	GIS Director	**Years of Relevant Experience with Other Employer(s)**	22
Degree(s) / Years / Specialization	MA / 2002 / City and Regional Planning BA / 1998 / French		
Discipline	GIS Professional; Planning; Certified Floodplain Manager	**Certifications**	AICP: 34526 / 12/31/25; GISP: 33699 / 3/25/27; CFM: 4201-22N / TX / 12/31/25
Contract Role(s) / Brief Description of Responsibilities	Technical Advisor / Responsible for technical geospatial coordination.		

Bio: Gini brings GIS and planning experience to the project team. As the previous Development Director and GIS Manager for the City of Hurst for 15 years, Gini has a wide variety of local government GIS knowledge specializing in the collection and use of geographic utility data, and the implementation of software applications utilizing geographic data, including asset management and land planning applications. As the GIS Director at Halff, Gini effectively manages multi-disciplinary projects that support planning, design, and infrastructure projects. Gini specializes in GIS strategy, data integration, and technology solutions that enhance decision-making and operational efficiency. Gini was born in Louisiana, and her dad lives in New Orleans.

6/21 - 12/24	**Lower Red RFPG State Flood Plan | Bowie County, TX.** *GIS Lead.* Responsible for coordinating GIS efforts through the state flood planning process. GIS tasks included determining and assembling best available existing conditions, defining future conditions and related regional flood exposures and vulnerability. This involved writing related parts of the Flood plan. Coordinated public input web maps and other public input. This project involved preparing a regional flood plan under the direction of the Region 2 RFPG that contains the elements needed for the state plan. This also included the design and implementation of public involvement activities including conducting public meetings, reviewing and responding to public comments, and developing educational materials on regional flood planning issues for presentation to both technical and non-technical audiences in the region.
07/21 - 08/22	**Brazos River Authority Property Master Plan | Palo Pinto County, TX.** *Task Leader.* Responsible for coordinating the requirements and design of the property geodatabase and associated web maps as the first phase of a Property Master Plan. Requirements for a GIS-based property database were gathered to capture and inventory BRA property interests to be used in the subsequent Property Master Plan. The property geodatabase was designed from this input, and review of over 2,000 files including the QA clean-up and creation of over 100 legal descriptions. New key contours were created for the three major reservoirs.
03/22 - 10/24	**GLO LRGV Pedestrian Egress Study | Austin, TX.** *GIS Specialist.* This project involved an evaluation of how populations in vulnerable, flood prone areas can evacuate to shelters on foot or by alternative means of mobility during high-rainfall, flash flood, and high-tide events. The project included land use collection and assessments, mobility networks, transportation infrastructure, socioeconomic data, traffic count and emergency responder data.
11/22 - 12/24	**2023 EPA Lead/Copper Revision Compliance | Carrollton, TX.** *Project Manager.* Responsible for developing a comprehensive service line inventory for approximately 40,000 service line connections for the City of Carrollton. Coupled with appraisal district data from the three corresponding counties for the City and the U.S. Army Corps of Engineers (USACE) National Structure Inventory, Halff was able to determine material for the service lines for all of the utility service lines and a portion of the customer side material inventory through the review of the historical records. An online Customer Materials survey was developed with Esri's Survey123 application and shared through the City website and newsletter to solicit the service line materials from customers. Field survey applications and a web map were developed for City staff to conduct field investigations of the remaining unknown materials, which was summarized into a Field Verifications Plan.

Firm Employed By	ELOS Environmental, LLC		
Name	Adam Gartleman	**Years of Relevant Experience with this Employer**	13
Title	Project Management	**Years of Relevant Experience with Other Employer(s)**	15
Degree(s) / Years / Specialization	MS / 2022 / Oceanography and Coastal Sciences BA / 2019 / Mathematics BS / 2017 / Geosciences		
Discipline	N/A	**Certifications**	Remote Drone Pilot
Contract Role(s) / Brief Description of Responsibilities	Client Liaison, Technical Advisor, QA/QC		

Bio: Adam brings more than 15 years of experience supporting coastal planning, GIS analysis, and geospatial data development for parishes and regional agencies across south Louisiana. His work has focused on integrating technical mapping, backend data development, and field-verified spatial information into planning and restoration projects. Adam has supported coastal plans, shoreline resilience projects, and wetlands delineation efforts, where he contributed geospatial analysis, project documentation, and GIS products used in decision-making. His background in oceanography, coastal sciences, mathematics, and geosciences provides a strong foundation for interpreting complex datasets and supporting multidisciplinary teams. In his role on this project, Adam contributes project management support, GIS expertise, and technical QA/QC.

04/25 – Ongoing	**Ascension Parish Coastal Plan | Ascension Parish LA.** *Technical Advisor.* ELOS was contracted to develop and produce a coastal plan for Ascension Parish. Adam was brought into the project's backend and provided technical advice, editing, and formatting of the document. Additionally, he worked with the GIS department, editing images for the project development section of the plan.
12/22 – 03/26	**Jefferson Parish Bucktown Living Shoreline | Jefferson Parish LA.** *GIS Analysis.* Bucktown Living Shoreline Project, which is situated in Jefferson Parish, Louisiana. This ambitious project, with a $1.7 million budget, has been funded by the parish government and the Environmental Protection Agency (EPA). Adam helped with GIS figures and maps.
12/24 – 05/25	**St. Bernard Bayou Ter Aux Beoufs Monitoring | St. Bernard Bayou, LA.** *GIS Analysis.* ELOS was contracted to provide the wetlands delineation and permitting for 20,420 linear feet of armoring of the Bayou Terre Aux Boeufs Ridge Restoration Project in Delacroix, LA. Adam used GPS points to organize a GIS database, allowing ELOS to share the data by way of shapefiles and map displays that are accurate at sub-meter resolution.

Firm Employed By	ELOS Environmental, LLC		
Name	JJ Pearsall	**Years of Relevant Experience with this Employer**	1
Title	GIS Manager	**Years of Relevant Experience with Other Employer(s)**	18
Degree(s) / Years / Specialization	BA / 2004 / Geography		
Discipline	N/A	**Certifications**	Remote Drone Pilot
Contract Role(s) / Brief Description of Responsibilities	GIS Support		

Bio: JJ has more than 18 years of experience providing GIS services to parishes, watershed programs, and environmental projects across south Louisiana. His work ranges from developing GIS plan views, dredging layers, and access maps to preparing soil datasets, wetland composites, and permit-level figures for complex restoration and drainage projects. JJ has supported coastal master plans, stormwater pollution prevention plans, watershed initiative projects, and long-term drainage maintenance programs, producing hundreds of maps and analysis products used for permitting, planning, and environmental review. His background in geography and extensive field-informed GIS work give him a strong understanding of how local conditions, infrastructure, and environmental data must come together in project-ready datasets. JJ will contribute GIS services and mapping support for this study.

04/24 - Ongoing	**Bayou Manchac Cleanout | Bayou Manchac, LA.** **GIS Specialist.** ELOS is contracted to perform environmental services for a two-phase project to clear and snag Bayou Manchac and then dredge it from the Amite River to Nicholson Drive. JJ has worked on a GIS plan view to create a dredging layer, completed figures showing access points and cross-sections, completed topo vicinity maps, researched public datasets for the soils and aerials available, and combined wetlands and water data.
04/24 – 08/25	**Tangipahoa Parish Coastal Master Plan | Tangipahoa Parish, LA.** **GIS Specialist.** ELOS has been contracted to prepare the Parish's master plan to develop a comprehensive and actionable coastal resilience, protection, and sustainable development strategy. JJ has created maps and figures to illustrate the coastal master plan.
04/24 - Ongoing	**DDB Freshwater Bayou Locks | LA.** **GIS Specialist.** ELOS has been contracted to provide general consulting services for project design and permitting, and to create a Stormwater Pollution Prevention Plan for construction activities. JJ has created figures to illustrate the Stormwater Pollution Prevention Plan, soil and topo vicinity maps, and erosion and sediment control site plans.
03/25- Ongoing	**Tangipahoa Parish LA Watershed Initiative | Tangipahoa Parish, LA.** **GIS Specialist.** Round 2, CDBG-MIT- ELOS is contracted to manage two projects in the Louisiana Watershed Initiative program that include constructing a detention pond, replacing bridges, upgrading culvers, and cleaning waterways. JJ has created hundreds of permit figures and maps and provided supporting documentation for the environmental review record.
12/24- Ongoing	**Ascension Parish Drainage Maintenance Projects | Ascension Parish, LA.** **GIS Specialist.** ELOS has been under contract with the Ascension Parish Government's East Ascension Drainage District No. 1 (Drainage District) over the last 10 years to provide permitting assistance and wetland delineation services for the maintenance of drainage canals throughout the Parish. JJ provides project management and completed GIS figures for permit applications.

Firm Employed By	ELOS Environmental, LLC		
Name	Rick Neal	**Years of Relevant Experience with this Employer**	6
Title	GIS Analyst	**Years of Relevant Experience with Other Employer(s)**	3
Degree(s) / Years / Specialization	BS / 2015 / Biology		
Discipline	N/A	**Certifications**	Part 107 Remote Pilot
Contract Role(s) / Brief Description of Responsibilities	GIS Support		

Bio: Rick is a GIS analyst with nine years of experience supporting flood forecasting, watershed planning, environmental monitoring, and infrastructure studies across south Louisiana. His work includes building GIS datasets for real-time flood risk dashboards, compiling land-use and infrastructure data for regional planning studies, and supporting biological monitoring programs through mapping and data management. Rick has also contributed to watershed program implementation, culvert surveys, and drainage easement reviews, producing thousands of drainage servitude drawings and GIS figures used for project permitting and planning. His background in biology and his experience with data collection, elevation processing, and remote drone operations give him a strong foundation for supporting the geospatial components of this study.

8/24 - Ongoing	**Tangipahoa Parish Flood Forecasting System Preliminary Phase | Tangipahoa Parish, LA.** *GIS Analyst.* ELOS was contracted to create a real-time flood risk monitoring and emergency management dashboard for the Tangipahoa Parish Government. ELOS will work with the Parish and a contractor to build the real-time flood risk monitoring and emergency management dashboard with existing Parish datasets. Mr. Neal analyzed the data to input elevation data to create models.
9/22 – 9/23	**Lake Maurepas Seismic Monitoring Project | Lake Maurepas, LA.** *GIS Analyst.* ELOS was contracted to provide Biological Monitoring services for the project. As part of this effort, Rick kept progress and fish mortality maps up to date. He also created and published online maps for field crews to use for data collection.
08/24-Ongoing	**New Orleans RPC East Tangipahoa Firetower Road | New Orleans, LA.** *GIS Analyst.* ELOS is contracted to lead a multidisciplinary team to study an area located east of the Tangipahoa River, west of the Tangipahoa/St. Tammany Parish line, south of U.S Highway 190, and north of LA Highway 22. Rick compiled land-use and infrastructure data into GIS maps.
11/20-Ongoing	**Tangipahoa Parish Government CDBG-MIT Watershed | Tangipahoa Parish, LA.** *GIS Analyst.* ELOS is contracted to manage two projects in the Louisiana Watershed Initiative program that include constructing a detention pond, replacing bridges, upgrading culvers, and cleaning waterways. Rick worked on the culvert survey and edited the Tangipahoa Parish Floodplain Restoration and Enhancement Project map series.
3/22 - 4/24	**Ascension Parish ADAPT | Ascension Parish, LA.** *GIS Analyst.* ELOS was contracted to review parcels along the Parish's drainage easements. In total, ELOS reviewed 3,605 parcels along the canals. Mr. Neal drew drainage servitudes for the parcels. ELOS drew a total of 1034 drainage servitudes.

Firm Employed By	Halff Associates, Inc.		
Name	**Harris Bienn, GISP**	**Years of Relevant Experience with this Employer**	1
Title	GIS Technical Lead	**Years of Relevant Experience with Other Employer(s)**	12
Degree(s) / Years / Specialization	BS, 2018, Environmental Engineering		
Discipline	N/A	**Certifications**	N/A
Contract Role(s) / Brief Description of Responsibilities	GIS Technical Lead / Responsible for data aggregation and data development.		

Bio: Harris brings leadership experience in environmental research and development of geospatial solutions. Currently serving as a Technical Manager at Halff, Harris leverages over a decade of expertise in data science, GIS applications, and water resource management to deliver innovative solutions. With prior roles spanning research, engineering, and military leadership, Harris brings a unique perspective to his work, combining analytical rigor with strong team management skills. He is familiar with geospatial modeling, stakeholder engagement, and the integration of cutting-edge technologies, such as machine learning and remote sensing, into projects.

03/25-Ongoing	**Livingston Parish Stormwater Master Plan | Livingston Parish, LA.** *GIS Leader.* Responsible for designing and implementing the parish-wide storm-water asset inventory and GIS framework to support long-term stormwater asset management and capital planning. Led development of the stormwater asset geodatabase and data dictionary (including domains, topology rules, and QA/QC procedures) to standardize pipes, ditches, crossings, ponds, and structures across multiple data sources and built workflows and tools for geospatial data quality control, topology validation, and spatial analysis to identify problem areas and prioritize projects. Advised on public engagement mapping tools and supported creation of web maps, story maps, and other map-based deliverables for public meetings and stakeholder workshops, ensuring technical results were clearly communicated to both staff and the public.
09/23-10/25	**FEMA Region VI, Compass PTS (FEMA Region VI).** *Technical Manager.* Responsible for leading the geospatial analytics and technical implementation for a task order quantifying building-level coastal flood losses for residential structures across the South Atlantic and Gulf coasts. Work includes devel-oping workflows to integrate coastal inundation and wave hazard data with building inventories, managing QA/QC of depth–damage and annualized loss calculations, and coordinating delivery of datasets and mapping products that support actuarially sound NFIP rating and local risk communication.
09/23 - 07/25	**Pasco County, Resilient Pasco Project | New Port Richey, FL.** *GIS Leader.* Responsible for a comprehensive initiative focused on establishing priori-ties for resilience and sustainability, developing a risk and vulnerability assessment, producing a resilience and sustainability action plan, and developing a living shorelines plan. Halff is currently in the process of developing a comprehensive inventory of critical and regionally significant assets in support of the vulnerability assessment. Environmental scientists and field surveyors are evaluating options and strategies for integrating nature-based solutions and living shorelines into local sites that are publicly owned and maintained.
10/23 - 10/25	**Capital Area Groundwater Conservation District, Technical Support Services | Baton Rouge, LA.** *Deputy Project Manager.* Responsible for develop-ing geospatial analysis techniques to evaluate water quantity and quality in a critical regional aquifer system. Halff is designing GIS methods to analyze water level changes during extended drought conditions to provide data-driven insights for sustainable long-term water management. Additional work focused on advancing geospatial methodologies to enhance groundwater assessment and evaluating model-based guidelines for setting pumping limits to prevent additional saltwater intrusion into drinking water sources.

Firm Employed By	Halff Associates, Inc.		
Name	Samuel Amoako-Atta, GISP, CFM	**Years of Relevant Experience with this Employer**	21
Title	GIS Team Leader	**Years of Relevant Experience with Other Employer(s)**	5
Degree(s) / Years / Specialization	MS / 2005 / Computer Science and Geographic Information Systems BS / 2000 / Geomatic Engineering		
Discipline	GIS Professional; Certified Floodplain Manager	**Certifications**	GISP: 57065 / US / 4/25/26. CFM: 1132-07N / TX / 12/31/25.
Contract Role(s) / Brief Description of Responsibilities	Geospatial Subject Matter expert for FEMA Risk Mapping Assessment and Planning.		

Bio: Sam has a deep understanding of FEMA's guidelines and specifications related to floodplain mapping and flood risk products and provides technical leadership across multiple CTP and PTS projects in FEMA Region VI. Sam also serves as senior technical lead on several Region Flood Planning projects across multiple watersheds, cities, and counties using GIS to translate complex flood risk assessment data into actional insights.

03/15 - Ongoing	**FEMA Risk MAP PTS A&E Contract - Compass JV | FEMA Region VI.** *GIS Program Lead.* Responsible for leading all GIS-related efforts across Halff's FEMA Region VI portfolio, including floodplain mapping, BLE product development, and DFIRM database generation. Sam has overseen the production of all 1D and 2D BLE flood risk datasets completed by Halff under the Compass contract. He developed internal delivery processes and data standards that were later adopted into FEMA Region VI's official BLE guidance documentation. Sam also leads the development of flood risk databases including HAZUS multi-hazard loss estimations, areas of mitigation interest and mapping products for all Flood Risk Identification projects, ensuring consistency with FEMA's Data Capture Standards (DCS) and regional QA protocols. He performs final quality control reviews prior to product submission, supporting defensibility and regulatory acceptance. In addition to BLE and Flood Risk Identification work, Sam manages all Physical Map Revision (PMR) efforts delivered by Halff. His responsibilities include DFIRM database development, Preliminary DFIRM panel creation, and oversight of all post-preliminary due process tasks such as CCO meetings, appeals resolution, Federal Register coordination, and final map submission. Sam played a key role in the coordination and release of a multi-county PMR in North Texas, partnering with FEMA Region VI over a two-year period to consolidate and advance outstanding CTP study areas. His leadership and technical expertise help Compass deliver consistent, high-quality geospatial products that support FEMA's mission across the region.
12/24 - Ongoing	**Regions 3 and 9 Regional Flood Planning - TWDB | Texas.** *GIS Lead.* This project involved preparing a Regional Flood Plan under the direction of the Regions 3 and 9 Flood Planning Group. The flood planning included the design and implementation of public involvement activities including conducting public meetings, reviewing and responding to public comments, and developing educational materials on regional flood planning issues for presentation to both technical and non-technical audiences in the regions. Responsible for all GIS portions of the Regional Flood Plan that will be rolled into State Flood Plan. GIS tasks included data collection, spatial development for existing and future floodplains, flood risk vulnerability assessment, community outreach through web maps and in-person presentations, final reports, QA/QC, and verifying data delivery according state guidelines
02/23 - 06/23	**Tampa Bay Regional Inundation Coordination (TBRIC) | Tampa Bay Regional Planning Council (TBRPC), FL.** *GIS SME and QA/QC Lead.* Flood matrix and geoprocessing application technical lead responsible for providing advanced technical support to the TBRPC in developing a coordinated regional flood inundation mapping framework. Led the identification and implementation of Best Management Practices for conducting vulnerability assessments across multiple jurisdictions within the Tampa Bay region. Directed the design and development of a GIS-based geoprocessing application, enabling member counties and municipalities to efficiently perform vulnerability assessments in compliance with Section 380.093 of the Florida Statutes. Collaborated closely with local agencies to confirm the tool supports consistent, scalable, and data-driven approaches to flood risk management, regulatory compliance, and regional resilience planning.

Firm Employed By	Halff Associates, Inc.		
Name	Brian Downing, PE, CFM	**Years of Relevant Experience with this Employer**	11
Title	Project Manager	**Years of Relevant Experience with Other Employer(s)**	0
Degree(s) / Years / Specialization	BS / 2015 / Civil Engineering		
Discipline	Professional Engineer, Civil; Certified Floodplain Manager	**Certifications**	PE: 43772 / LA / 3/31/26; 133682 / TX / 12/31/25
Contract Role(s) / Brief Description of Responsibilities	Modeling Support / Responsible for providing modeling support.		

Bio: Brian is a Halff Water Resources team leader with extensive experience in flood mitigation studies and municipal master drainage plans. Brian leads projects of various scales that require collaborating with local, state and federal agencies to navigate regulatory landscapes and deliver impactful solutions in both local and regional floodplain management.

09/19 - 3/21	**FEMA Risk MAP PTS A&E Contract - Compass JV | TX.** *Engineer.* Responsible for creating streams, basins, and calculated discharges for each stream. Created, refined, and validated HEC-RAS models. Ran error checks and floodplain mapping automated tools. Lower Trinity-Tehuacana - Study Manager. Responsible for the delivery of the Lower Trinity-Tehuacana HUC 8 watershed 1D BLE.
	FEMA, Region 6 FY21 Regional Task Order | FEMA Region 6. *Project Manager.* Responsible for overseeing HEC-RAS 2D model development of over 5,000 square miles and over 4,000 stream miles within the Red River basin. The study area covered the City of Wichita Falls and extended in to the Texas Panhandle. The hydrologic study included a gauge analysis of multiple USGS gauges and HEC-HMS model development for 15,000 square miles of contributing drainage area utilizing PeakFQ and HEC-DSS.
07/21 - 10/25	**Atlas 14 Salado and Berry Creek | Williamson County, TX.** *Project Engineer.* Responsible for quality control reviews of hydrologic and hydraulic models. The project involved the Atlas 14 Floodplain Modeling and Mapping updates for Salado Creek, Upper Little River, and Stillhouse Hollow basins. The project includes matching grant funding from TWDB and was implemented to update existing floodplain models and mapping across the County with the most recent NOAA Atlas 14 rainfall.
06/24 - 11/25	**LADOTD / Louisiana Watershed Initiative (LWI) Region 4 Modeling Contract | LWI Region 4, LA.** *Project Advisor.* Responsible for providing project schedule and modeling guidance. This project involved developing HUC 8 models to aid in coordination of funds, data, and resources which will help reduce flood risk through a watershed-based approach within the state of Louisiana. The Toledo Bend watershed drains approximately 2,368 square miles and encompasses 59 main streams in addition to the Sabine River. Drainage within the Toledo Bend watershed generally flows from northwest to south into the Toledo Bend Reservoir. Hydrologic and hydraulic models were prepared in accordance with the approved work plan and modeling guidelines provided by the Technical Design and Quality Team (TDQ).

Firm Employed By	Halff Associates, Inc.		
Name	Angela Davidson, PE, CFM	**Years of Relevant Experience with this Employer**	21
Title	Water Resources Quality Assurance Manager	**Years of Relevant Experience with Other Employer(s)**	0
Degree(s) / Years / Specialization	ME / 2004 / Environmental Engineering BS / 2004 / Environmental Engineering		
Discipline	Professional Engineer, Environmental; Certified Floodplain Manager	**Certifications**	PE: (LA) 2022, (TX) 2008; CFM: 2005
Contract Role(s) / Brief Description of Responsibilities	QA/QC Reviewer / Responsible for internal implementation and external deliverables.		

Bio: Angela brings over 15 years of experience in flood risk management, with deep expertise in hydrologic and hydraulic modeling, regulatory mapping, and quality assurance. As Halff's Water Resources Practice QA/QC Lead, she is responsible for reviewing technical deliverables for FEMA and LADOTD projects, ensuring compliance with agency standards and defensible methodologies. Angela has led independent QA/QC on 1D and 2D HEC-RAS modeling, Base Level Engineering, and DFIRM deliverables across FEMA Region VI. She has extensive hands-on experience with HEC-HMS, HEC-RAS, SWMM, and other flood modeling platforms, and understands the complexities of guiding projects through FEMA's Mapping Information Platform (MIP) process. Angela's technical depth and attention to detail make sure that every project meets the highest quality expectations while addressing the local regulatory landscape.

12/20 - 8/21	**Louisiana Water Initiative Region 4 Modeling Contract | LA.** *Lead Engineer.* Responsible for developing HUC 8 models to aid in coordination of funds, data, and resources which will help reduce flood risk through a watershed-based approach within the state of Louisiana. The Toledo Bend watershed drains approximately 2,368 square miles and encompasses 59 main streams in addition to the Sabine River. Drainage within the Toledo Bend watershed generally flows from northwest to south into the Toledo Bend Reservoir. Hydrologic and hydraulic models were prepared in accordance with the approved work plan and modeling guidelines provided by the Technical Design and Quality Team (TDQ), The U.S Army Corps of Engineers (USACE) Hydrologic Engineering Center's (HEC)-Hydrologic Modeling System (HEC-HMS) Version 4.11 was used to develop new hydrologic rainfall-runoff models to simulate subbasin responses to meteorological events. For the Toledo Bend Reservoir-Middle Sabine watersheds, the model design approach adhered to guidance and review comments provided by the LWI TDQ, leveraged the team's engineering and survey experience and expertise, incorporated existing data, and put a focus on local needs. The model used a tiered modeling approach making use of different resolutions as necessary depending on key data drivers such as population, National Flood Insurance Program (NFIP) flood claims, social vulnerability, and other hydrologic and hydraulic drivers within the watershed.
3/19 - 4/21	**FEMA CTP Risk MAP | North Central Texas.** *Project Manager.* Responsible for assisting with the Flood Risk Identification study for the Mary's Creek Watershed in Parker County through a multi-year contract with NCTCOG. The project included a detailed survey, hydrology, hydraulics, and floodplain mapping for the 18.2 square mile watershed to develop regulatory and non-regulatory flood risk projects that will be used to ultimately update the FEMA Flood Insurance Study (FIS) for Parker County.
05/13 - 05/14	**FEMA CTP FY16 | Fort Worth, TX.** *Project Manager.* Responsible for the project areas including a total of 37 stream miles draining a total land area of 279 square miles with an estimated affected population of 119,000 people. Tasks included terrain development, survey, detailed hydrology, detailed hydraulics, floodplain mapping, and non-regulatory product development. The Little Dosier, Clear Fork, and Henrietta watersheds included the development of new detailed hydrology, hydraulics, and floodplain mapping. Cottonwood, Overton, and Tonys Creek were leveraged for this study and used to develop FEMA regulatory products.
10/13 - 9/15	**FEMA CTP FY17 Clear Fork | Benbrook, TX.** *Project Engineer.* Responsible for assisting with updating and identifying flood risks to revise the effective FEMA Flood Insurance Study (FIS) and Digital Flood Insurance Rate Maps (DFIRM) for Clear Fork Tributary 5, Bellaire Creek, and Mont Del Creek in Benbrook, Texas. The project included developing detailed hydrologic modeling for the Stream CF-5 watershed, hydraulic modeling for the three study streams, and floodplain mapping of 2.2 stream miles. The study also included a 2D analysis of overflow. This study involved collaborative efforts with NCTCOG and FEMA.

17 Firm Experience

Firm Name	Halff Associates, Inc.			
Project Name	**Louisiana Department of Transportation and Development FEMA CTP and NFIP**		Firm Responsibility	Prime
Project Number	**1**	Owner's Name	Louisiana Department of Transportation and Development	
Project Location	Statewide, LA		Owner's Project Manager	Pamela Lightfoot
Owner's Address, Phone, Email	PO Box 94245, Baton Rouge, Louisiana 70804 | 225.379.1200 | pam.lightfoot@la.gov			
Services commenced by this firm (mm/yy)	09/21		Total consultant contract cost ($1,000s)	$2,697
Services completed by this firm (mm/yy)	Ongoing		Cost of consultant services provided by this firm ($1,000s)	$2,697
Staff Involved: Ryan Clark, Jack Young, Victor Bivens, Sam Amoako-Atta				

Description

Halff serves as LADOTD's prime contractor for FEMA CTP and NFIP services, **delivering 23 task orders across over 14 watersheds—impacting over half the state.** Our work spans every phase of the Risk MAP lifecycle, including Discovery, BLE, flood risk identification, MIP/CNMS support, outreach, training, ordinance review, and program planning.

RiskMAP Leadership and Innovation

We lead statewide Discovery (Phase 1) and Flood Risk Assessment (Phase 2) production, providing updated flood risk data to underserved communities and building FEMA's investment roadmap for Louisiana. In Rapides Parish, we delivered Region VI's first BLE enhancement study—a scalable model for transforming BLE into regulatory-quality data. Our web-based Discovery approach, developed in response to COVID, enables community input across 14 watersheds without requiring attendance at Discovery meetings.

FEMA Systems Coordination

As LADOTD's MIP coordinator, Halff manages the agency's entire FEMA portfolio, maintaining earned value compliance and ensuring funding continuity. We oversee project lifecycle tracking and task enrollment in close coordination with FEMA Region VI. Our team also leads LADOTD's CNMS update efforts, providing validated inputs that support FEMA's study status monitoring and investment decisions.

Technical Solutions and Statewide Impact

Halff is known for pioneering tools that solve real-world challenges. Our Finished Floor Elevation (FFE) Pilot uses machine learning and remote sensing to estimate structure elevations at scale—helping communities prepare SDE data without costly field inspections. We're also helping LADOTD integrate LWI model data into FEMA mapping strategy, reinforcing the state's leadership in innovation.

Training, Outreach, and Capacity Building

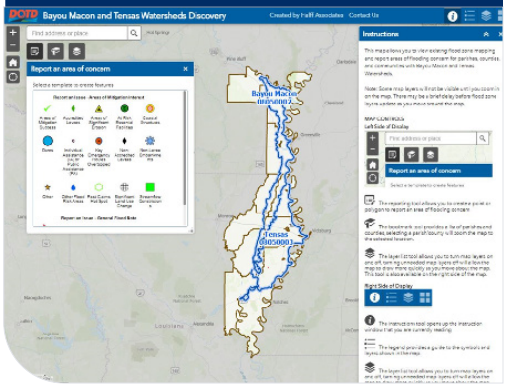
We've delivered year-long training curricula, supported ordinance modernization, and represented DOTD at FEMA workshops, EMI, and state/national conferences. Our outreach efforts, both virtual and in-person, have reached all 64 parishes.

Strategic Partnerships and Program Recovery

As trusted advisors, Halff works side-by-side with LADOTD staff, helping develop program strategy, avoid pitfalls, and maintain DOTD's reputation as Region VI's CTP leader. When another contractor struggled to deliver on a FEMA-funded task, Halff stepped in to recover the work, preserving FEMA's trust in the program. Our combination of technical depth, statewide presence, and FEMA fluency enables us to deliver unmatched support to LADOTD.

Project Relevance

- » Statewide flood risk mapping and data development across multiple watersheds.
- » Experience producing BLE, Discovery, and H&H products comparable to regional pluvial and runoff modeling needs.
- » Long-term coordination with FEMA, LADOTD, and parish partners on mapping, training, and program support.



Firm Name	Halff Associates, Inc.			
Project Name	**Louisiana Watershed Initiative (LWI) Region 4 Modeling Contract**		Firm Responsibility	Subconsultant
Project Number	**2**	Owner's Name	C.H. Fenstermaker & Associates, LLC	
Project Location	LWI Region 4, LA		Owner's Project Manager	Dax Douet, PE
Owner's Address, Phone, Email	135 Regency Square, Lafayette, LA 70508 | 337.237.2200 x1173 | dax@fenstermaker.com			
Services commenced by this firm (mm/yy)	01/22		Total consultant contract cost ($1,000s)	$679
Services completed by this firm (mm/yy)	10/24		Cost of consultant services provided by this firm ($1,000s)	$609

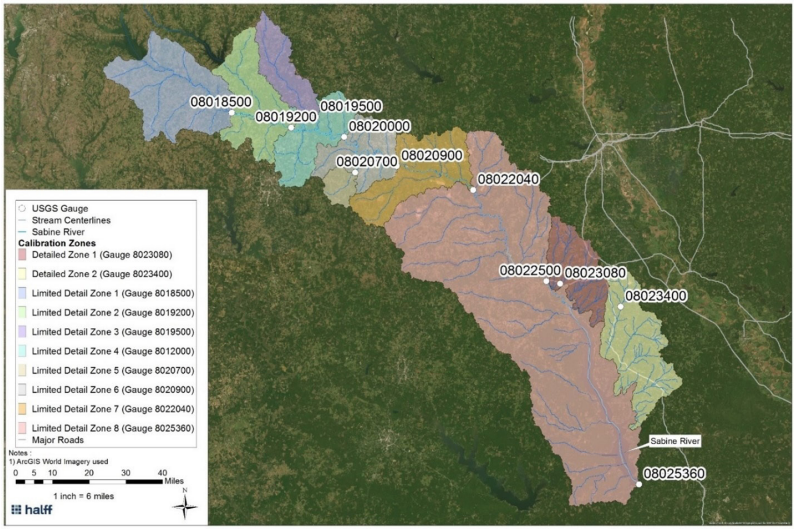
Staff Involved: Sam Sarkar, Jack Young, Angela Davidson

Description

The purpose of this project was to develop HUC 8 models to aid in coordination of funds, data, and resources which will help reduce flood risk through a watershed-based approach within the state of Louisiana. The Toledo Bend watershed drains approximately 2,368 square miles and encompasses 59 main streams in addition to the Sabine River. Drainage within the Toledo Bend watershed generally flows from northwest to south into the Toledo Bend Reservoir. Hydrologic and hydraulic models were prepared in accordance with the approved work plan and modeling guidelines provided by the Technical Design and Quality Team (TDQ).

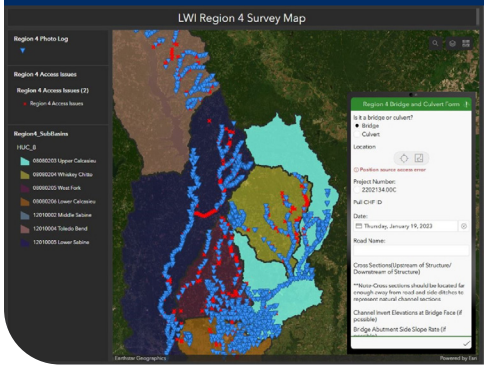
The U.S Army Corps of Engineers (USACE) Hydrologic Engineering Center's (HEC)-Hydrologic Modeling System (HEC-HMS) Version 4.11 was used to develop new hydrologic rainfall-runoff models to simulate subbasin responses to meteorological events. For the Toledo Bend Reservoir-Middle Sabine watersheds, the model design approach adhered to guidance and review comments provided by the LWI TDQ, leveraged the team's engineering and survey experience and expertise, incorporated existing data, and put a focus on local needs. The model used a tiered modeling approach making use of different resolutions as necessary depending on key data drivers such as population, National Flood Insurance Program (NFIP) flood claims, social vulnerability, and other hydrologic and hydraulic drivers within the watershed.

This effort spanned multiple parishes and waterways across watershed regions around the state and used topographic, bathymetric and laser scanning to provide refined topography for modeling purposes. These models investigated the degree to which communities within a watershed are hydraulically and hydrologically connected. The models will guide decisions regarding land use, policy, and how infrastructure must be coordinated, made, and implemented at the watershed level for the effective management of flood risks. In addition to developing a modeling approach for each watershed, Halff coordinated with local government officials and stakeholders, and assisted in the data gap analysis. Scalable HEC-HMS hydrologic and coupled 1D-2D HEC-RAS hydraulic models were developed and can be modified to support the future needs of the State.



Project Relevance

- Large-scale watershed modeling using HEC-HMS and tiered data resolution, directly applicable to regional pluvial and runoff analysis.
- Integration of hydrologic, hydraulic, and socioeconomic datasets to support watershed-based flood risk reduction strategies.
- Experience delivering models consistent with statewide technical guidelines and multi-agency coordination requirements.



Firm Name	Halff Associates, Inc.			
Project Name	**Texas General Land Office (GLO) / Lower Rio Grande Valley Watershed Study**		Firm Responsibility	Prime
Project Number	**3**	Owner's Name	Texas General Land Office	
Project Location	LRGVDC		Owner's Project Manager	Shonda Mace
Owner's Address, Phone, Email	1700 North Congress Avenue, Austin, TX 78701 | 512.463.5370 | shonda.mace.glo@recovery.texas.gov			
Services commenced by this firm (mm/yy)	08/24		Total consultant contract cost ($1,000s)	$10,000
Services completed by this firm (mm/yy)	01/26 (est.)		Cost of consultant services provided by this firm ($1,000s)	$8,500

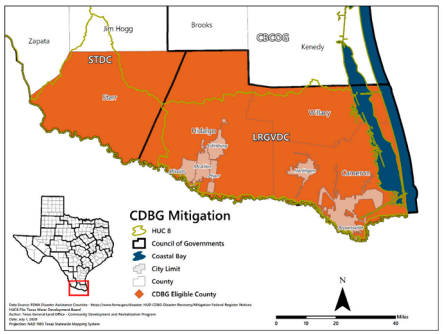
Staff Involved: Sam Sarkar, Angela Davidson, Brian Downing, Ryan Clark

Description

The Texas General Land Office (GLO) selected Halff to lead a multi-year, multi-phased flood basin study to assist the counties of Cameron, Hidalgo, Starr, and Willacy and the municipalities within the counties to determine cost-effective mitigation and abatement strategies to reduce the impact of flooding disasters. The study analyzes regional and local solutions with community representatives to promote sound, long-term recovery actions and maximize the use of Community Development Block Grant Disaster Recovery (CDBG-DR) funding to rebuild communities to be stronger and more resilient.

The study is broken into five phases:

- Phase 1: Kick-off meeting with selected study vendors, stakeholder engagement plan, and data collection plan
- Phase 2A: Federal, state, regional, and local partner outreach and assessment
- Phase 2B: Federal, state, regional, and local data collection and review
- Phase 3: Engineering modeling (technical services and products)
- Phase 4: Project narrative, alternatives analysis, and cost-benefit analysis
- Phase 5: Recommendations and pursuit of additional funds Texas GLO is an active partner, facilitating collaboration with active federal and state efforts. Under direct leadership of the GLO's Community Development and Revitalization Program (GLO-CDR) Managers, Halff collected information about current flood hazards to perform a hydrologic and hydraulic study of the watersheds of the four counties.



Halff developed and analyzed regional and local solutions with community representatives to promote sound, long-term recovery actions. The team recommended alternatives and provided technical guidance that helped the local communities maximize the use of CDBG-DR funding to rebuild stronger and more resilient.

In Phases 1 and 2, Halff planned and executed extensive outreach and data collection efforts to capture the best available data of the communities for use in the flood models. Halff also coordinated with the three GLO River Basin teams (Eastern Region, Central Region, and Western Region) and the United States Army Corps of Engineers (USACE) to develop a comprehensive Flood Model Development Plan (FMDP). The FMDP spells out the process necessary to build baseline existing conditions model for the region. Halff also collaborated with the Texas Water Development Board (TWDB), Federal Emergency Management Agency (FEMA), Texas Division of Emergency Management (TDEM), Texas Department of Transportation (TxDOT), National Weather Service (NWS), and Regional Flood Planning Groups.

In Phase 3, Halff developed the baseline existing conditions models to support the alternatives analysis that will happen in Phase 4. Phase 5 will include the recommendation of mitigation solutions paired with funding opportunities, application documentation, and training.

Project Relevance

» Large-scale watershed assessment integrating regional, county, and municipal data for coordinated flood mitigation planning.

» Extensive stakeholder engagement and data collection comparable to collaborative processes needed for regional GIS and modeling efforts.

» Development of baseline hydrologic and hydraulic conditions to support alternatives analysis and long-term resilience planning.

Firm Name	Halff Associates, Inc.			
Project Name	**ARPC Regional Vulnerability Assessment**		Firm Responsibility	Prime
Project Number	**4**	Owner's Name	Apalachee Regional Planning Council	
Project Location	Counties of Calhoun, Franklin, Gadsden, Gulf, Jackson, Jefferson, Leon, Liberty, and Wakulla, FL		Owner's Project Manager	Josh Adams, Regional Environmental Planner
Owner's Address, Phone, Email	2507 Callaway Road, Suite 100, Tallahassee, FL 32303 | 850.488.6211 Ext. 104 | jadams@thearpc.com			
Services commenced by this firm (mm/yy)	March 2022		Total consultant contract cost ($1,000s)	$247
Services completed by this firm (mm/yy)	June 2022		Cost of consultant services provided by this firm ($1,000s)	$247
Staff Involved: Sam Sarkar				

Description

Halff was awarded a contract in March of 2022 to develop a regional climate vulnerability assessment for the nine-county Apalachee Region. In supporting the Apalachee Regional Planning Council (ARPC) with implementation steps of a Regional Resilience Entity grant awarded by the FDEP Resilient Florida Program, the focus of the project was to comprehensively evaluate current and future climate vulnerabilities across the region and the risks presented by those vulnerabilities to critical and regionally significant assets.

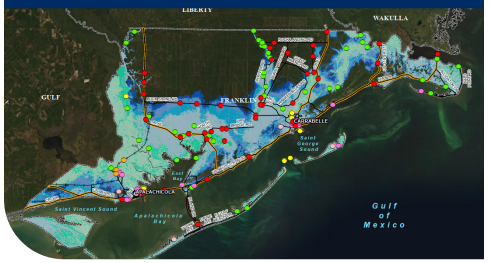
Halff identified critical and regionally significant assets across the region, developed a comprehensive GIS interface to inventory those assets, and then obtained climate hazard data related to flooding, storm surge, sea level rise, precipitation, and compound flooding. Once asset and climate datasets were obtained, a team of coastal engineers and water resource experts then evaluated the spatial extent of different climate scenarios and the intersections of those climate scenarios with a broad range of critical and regionally significant assets. Additionally, site condition analyses were conducted for 36 individual assets across the region to ground the results of the assessment in locally applicable context and conditions.

A guiding objective of the entire process was to confirm that 380.093 F.S. requirements were integrated into every step of the assessment. Moving forward, local counties and municipalities across the Apalachee Region will utilize the results of the assessment to inform future coastal and inland vulnerability assessments, infrastructure priorities, and fiscal decisions.

Through this regional project, Halff obtained the most up-to-date data and information related to climate hazard scenarios and critical asset information, including recently published 2022 NOAA Sea Level Rise Projections.

Project Relevance

- » Coastal and Inland Flood Hazard Scenarios
- » Geospatial Mapping & Analysis
- » Compliance with Florida Statute Requirements
- » Regional Vulnerability Assessment – Intergovernmental Coordination
- » Advanced Goals and Objectives of Regional Resilience Collaborative
- » Stakeholder Engagement



Firm Name	Halff Associates, Inc.			
Project Name	**Tampa Bay Regional Planning Council/Tampa Bay Regional Inundation Coordination (TBRIC): Creating a Unified Approach and Inundation Models to Support Local Assessments**		Firm Responsibility	Prime
Project Number	**5**	Owner's Name	Tampa Bay Regional Planning Council (TBRPC)	
Project Location	Citrus, Hernando, Hillsborough, Manatee, Pasco, Sarasota. and Pinellas Counties, FL		Owner's Project Manager	Ashley Mott, GIS Manager
Owner's Address, Phone, Email	4000 Gateway Centre Blvd., Suite 100, Pinellas Park, FL 33782 | 727.570.5151 Ext. 70 | ashley@tbrpc.org			
Services commenced by this firm (mm/yy)	01/23		Total consultant contract cost ($1,000s)	$179
Services completed by this firm (mm/yy)	06/25		Cost of consultant services provided by this firm ($1,000s)	$175
Staff Involved: Sam Sarkar, Sam Amoako-Atta				

Description

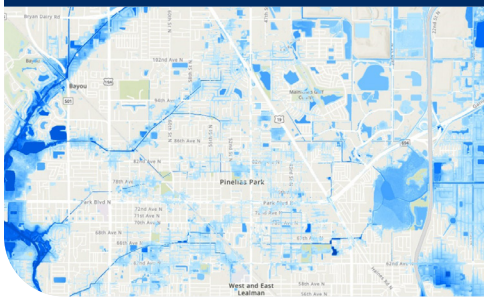
Halff supported the Tampa Bay Regional Planning Council (TBRPC) in 2023 to develop a coordinated regional approach to flood inundation mapping across the Tampa Bay area, advancing consistency, technical rigor, and compliance with Section 380.093, Florida Statutes. The project began with an in-depth research phase in which Halff conducted interviews with more than a dozen leading experts from government, academia, and the private sector. These discussions helped identify statewide strengths, persistent gaps, and priority opportunities to improve flood modeling and mapping practices. This foundational analysis shaped a clear roadmap for building a regional framework that could support local governments in producing defensible and actionable Vulnerability Assessments (VAs).

Building on this research, Halff led a robust and collaborative stakeholder engagement process to confirm the project reflected both the technical and policy needs of counties and municipalities throughout the Tampa Bay region. Input from planners, GIS professionals, engineers, and emergency management partners directly informed the structure and functionality of the inundation mapping tool. This engagement confirmed alignment with regional objectives, increased local buy-in, and strengthened the long-term applicability of project outcomes.

Leveraging this guidance, the team developed a flexible GIS geoprocessing application capable of integrating inundation layers from diverse public and private sources to produce consistent, high-quality flood risk maps. Key deliverables included the mapping application, comprehensive flood hazard datasets, and a detailed data source matrix for use in future VAs. The University of Florida conducted a rigorous third-party review, further validating the reliability and usability of the tool. This project was nationally recognized for its innovation when TBRPC and Halff received Esri's 2024 National Special Achievement in GIS Award.

Project Relevance

- Regional-scale flood modeling and mapping framework aligned across multiple jurisdictions.
- GIS-based tools and geoprocessing workflows comparable to the P2-CRAFT approach.
- Stakeholder-driven development of inundation layers, data standards, and map products for planning use.
- Experience integrating diverse datasets into a unified regional flood risk platform.



Firm Name	Halff Associates, Inc.			
Project Name	**Statewide Regional Flood Plans**		Firm Responsibility	Subconsultant
Project Number	**6**	Owner's Name	Texas Water Development Board (TWDB)	
Project Location	Staewide, Texas		Owner's Project Manager	Reem Zoun, PE, CFM
Owner's Address, Phone, Email	P.O. Box 13231, Austin, Texas 78711 | 512.475.1546 | Reem.Zoun@twdb.texas.gov			
Services commenced by this firm (mm/yy)	01/21		Total consultant contract cost ($1,000s)	$7,274
Services completed by this firm (mm/yy)	12/23		Cost of consultant services provided by this firm ($1,000s)	$7,274

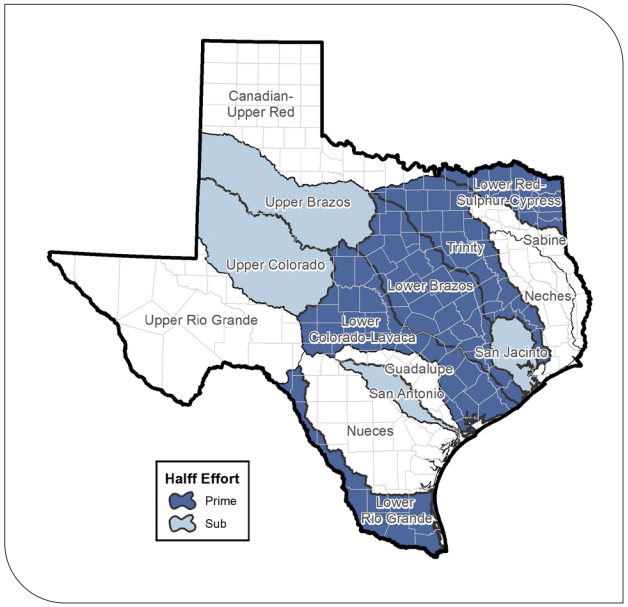
Staff Involved: Sam Amoako-Atta, Sam Sarkar, Jack Young, Angela Davidson

Description

In 2019, the Texas Legislature enacted Senate Bill (SB) 8 directing the Texas Water Development Board (TWDB) to prepare the first-ever State Flood Plan and defined a planning process modeled on the "bottom-up" regional approach used for water supply planning in Texas for over 20 years – regional flood plans would first be prepared, and then a State Flood Plan would be prepared based on the regional plans.

As the prime consultant for five of the fifteen regions and serving as a significant subconsultant on three regions, Halff is responsible for providing all capabilities and resources required to perform all tasks prescribed by the TWDB administrative rules and technical guidelines for preparing the Regional Flood Plan. The entire regional flood planning process has been underpinned by a robust public and stakeholder outreach and engagement effort, particularly outreach to local entities with drainage and flood risk reduction responsibilities. The first cycle of Regional Flood Planning was completed and adopted into a State Flood Plan in 2024. The second cycle of Regional Flood Planning is in-progress and will be completed and adopted into the State Plain in 2028.

This has included information and GIS data gathering to support various technical analyses as well as direct engagement with local sponsors to develop recommended studies and projects. The Halff Team developed an online portal to collect information and a web map to collect problem areas across the large planning region. A flood "quilt" was assembled that included the best available flood risk data for each area. A regional vulnerability assessment was conducted by intersecting the flood risk data with the critical infrastructure data in the region to understand who and what would be impacted by flooding in each region. Social vulnerability was analyzed to understand how well communities could recover from flooding. The information from the detailed analyses was used to develop areas for evaluation and mitigation projects. Interactive maps were developed for public comments on the established flood extents and potential projects.

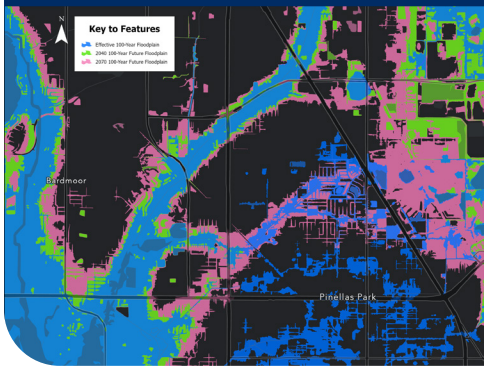


Project Relevance

» Development of regional flood planning datasets and GIS frameworks supporting large-scale flood risk assessment.

» Integration of hydrologic analysis, geospatial data, and stakeholder input to inform regional flood mitigation priorities.

» Experience translating regional flood modeling results into planning-ready products used by state and local agencies.



Firm Name	ELOS Environmental, LLC			
Project Name	North Carolina EWP Service and Permitting		Firm Responsibility	Prime
Project Number	7	Owner's Name	Robeson County Government	
Project Location	Robeson County, NC		Owner's Project Manager	Kellie Blue
Owner's Address, Phone, Email	550 N Chestnut St, Lumberton, NC 28358 | 910-671-3022 | Kellie.Blue@robesoncountync.gov			
Services commenced by this firm (mm/yy)	12/24		Total consultant contract cost ($1,000s)	$791
Services completed by this firm (mm/yy)	10/25		Cost of consultant services provided by this firm ($1,000s)	$539
Staff Involved: Rick Neal, JJ Pearsall				

Description

ELOS is contracted to perform damage survey assessments and permitting for up to 394 miles of waterways in Robeson County and surrounding counties in North Carolina. The GIS mapping that was created showed not only the waterway characteristics but also the debris estimates and locations. ELOS completed damage assessments via drone, boat, and pedestrian methods, collecting photologs, and documenting the debris quantities, GPS coordinates, waterway characteristics, approximate depths, access points, and other helpful information in determining how the debris could be effectively removed to return the natural water flow of waterways throughout the county. The damage assessment also includes ELOS' professional opinion of the means and methods for removing the debris based on state and federal environmental regulations.

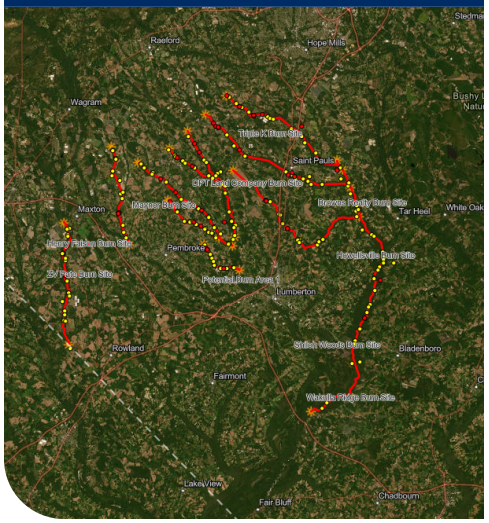
Each waterway was mapped, debris photos (overhead and within the waterway) were collected, and a spreadsheet summarizing the GPS locations for each obstruction was developed. To date, 28 damage assessment packets have been developed for three phases of debris removal covering approximately 242 miles of waterways. Disaster assessments for an additional 85 miles are being compiled.

Project Relevance

» Large-scale debris and obstruction mapping to support flood risk reduction.

» GIS-based field data collection and analysis for waterways and drainage systems.

» Experience managing extensive datasets with consistent documentation and spatial accuracy.



Firm Name	ELOS Environmental, LLC			
Project Name	**OLHC Roadway Improvements**		Firm Responsibility	Prime
Project Number	**8**	Owner's Name	Office of Highway Construction	
Project Location	Louisiana Statewide		Owner's Project Manager	Archie Chaisson
Owner's Address, Phone, Email	1201 Capitol Access Rd., Baton Rouge, LA 70802 | 225.379.1513 | Archie.Chaisson@LA.GOV			
Services commenced by this firm (mm/yy)	09/25		Total consultant contract cost ($1,000s)	$250
Services completed by this firm (mm/yy)	Ongoing		Cost of consultant services provided by this firm ($1,000s)	$250

Staff Involved: Rick Neal, JJ Pearsall

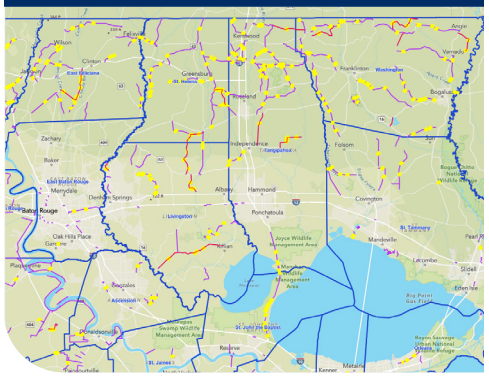
Description

ELOS is contracted to provide Geographic Information System (GIS) services to support the Office of Louisiana Highway Construction and the Louisiana Department of Transportation and Development (LADOTD) in improving Louisiana's transportation infrastructure planning and management. ELOS is assisting with developing, maintaining, analyzing, visualizing, and integrating spatial data, along with offering environmental services, to aid transportation planning, asset management, operations, and decision-making. This encompasses approximately 5,100 miles of Non-Federal Aid (NFA) roads, around 1,600 bridges, about 111,000 street signs, and roughly 220 street signals.

ELOS is delivering customized interactive web maps, dashboards, and specific visual representations of data for various purposes as requested by LADOTD. They are updating and maintaining essential geospatial datasets, including, but not limited to, information on roads, bridges, traffic signs, and signal locations. This involves ensuring data accuracy, consistency, and relevance by following standardized procedures for data entry and updates. ELOS is implementing and following strict quality assurance/quality control (QA/QC) protocols to verify the integrity and quality of geospatial data. This includes cross-referencing datasets, conducting automated checks, and manual reviews to maintain data reliability. ELOS uses advanced spatial analysis techniques, such as buffer creation, overlay processing, routing calculations, and hotspot analysis, to extract valuable insights from geospatial data for specific projects or inquiries. They are analyzing transportation infrastructure using network and linear referencing methods to understand relationships and dependencies within the transportation system.

Project Relevance

- Extensive GIS data development and maintenance for transportation networks.
- QA/QC workflows for verifying geospatial accuracy, consistency, and reliability.
- Spatial analysis and mapping techniques applicable to regional infrastructure and planning datasets.



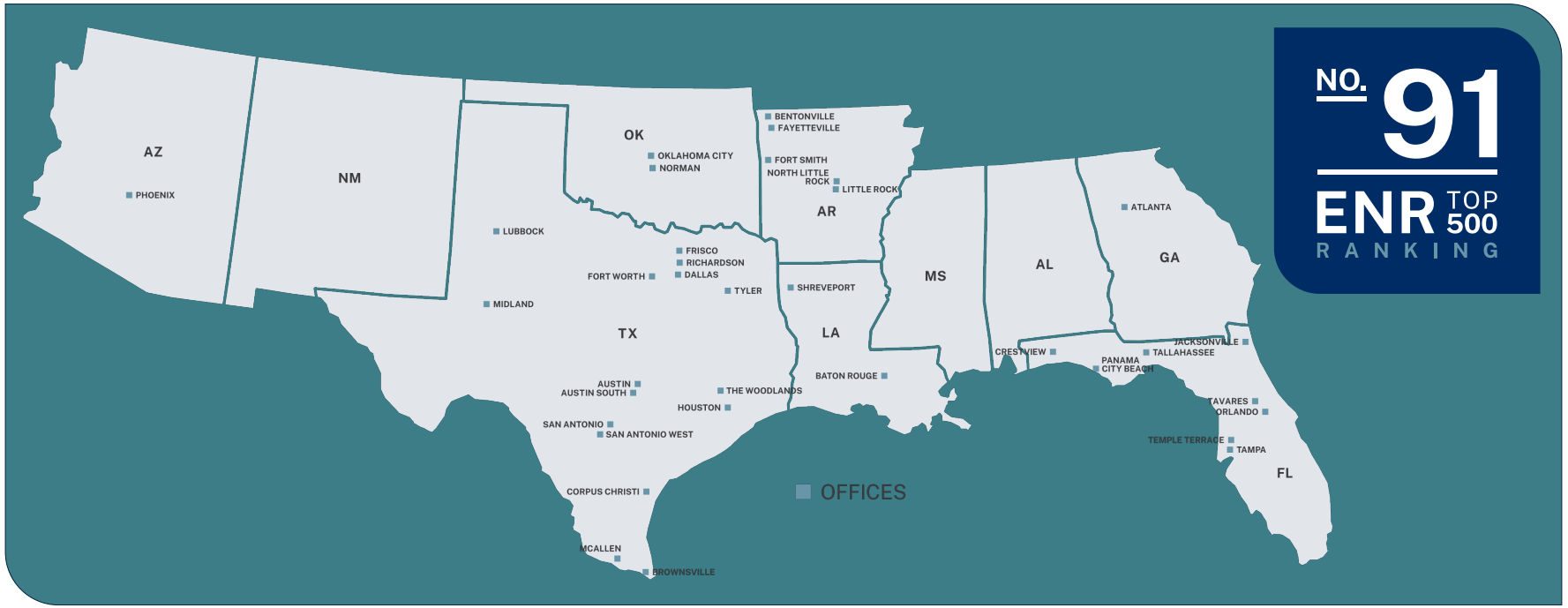
18 Workload

Firm	Project Name	Client/Contracting Entity	Remaining Unpaid Balance	Estimated Time to Completion
Halff Associates, Inc.	Monroe Airport	City of Monroe	$1,420,000	12/31/2026
	LADOTD CTP/NFIP IDIQ	Louisiana DOTD	No effort remaining on existing Task Orders	5/14/2026
	Ockley Basin Storage Improvement	City of Shreveport	$40,000	2/27/2026
	LWI Region 3 Watershed Plan	Ouachita Parish Police Jury	$25,000	12/31/2025
	Texas Water Development Board (TWDB) - Regional Flood Planning - Regions 3 and 9	TWDB	$1,836,000	10/30/2028
	City of Anna Maria, Florida - Flood Vulnerability Assessment	City Anna Maria	$312,000	9/30/2026
	TWDB 2D Base Level Engineering Study	TWDB	$1.428,000	10/31/2026
	FEMA Production and Technical Services Contract - Compass PTS JV	FEMA	$300,000	10/31/2027
	St Helena Environmental Site Assessment & Restoration	Amite River Basin Commission	$9,500	12/31/2025
ELOS Environmental, LLC	Firetower Rd – LA 445 Corridor Study	New Orleans Regional Planning Commission	$89,902.00	04/25

19 Staffing Plan

Halff will maintain the staffing levels and capacity needed to support steady progress throughout the project. A dedicated team of qualified professionals will be assigned, each bringing specialized expertise aligned with the project scope and schedule. Resource planning will be proactive, with personnel availability matched to key milestones and deliverables to support timely execution. As shown in Section 17, some key personnel are currently supporting other regional flood and watershed projects; however, those assignments are either nearing completion or have defined workloads that allow sufficient availability for this effort, supported by designated backup staff and internal workload balancing. Halff routinely maintains backup staff for critical roles, allowing the team to remain responsive to changing project needs and unforeseen availability issues without disrupting progress.

Several of Halff's current workload commitments are nearing completion, including the LADOTD CTP/NFIP IDIQ, Ockley Basin Storage Improvement, and LWI Region 3 Watershed Plan projects. As these efforts conclude, key staff will be available to support this eight-month schedule and maintain momentum across all phases of work. In coordination with ELOS as a subconsultant, Halff provides redundancy across all required services and access to a combined pool of more than 1,400 professionals should additional capacity be needed. This staffing structure allows the team to adapt to shifting priorities while maintaining consistent attention to quality, coordination, and schedule.



20 Subconsultant Information

Firm Name	Address	Point of Contact and Email Address	Phone Number
ELOS Environmental, LLC	607 West Morris Blvd, Hammond, LA 70403	Lucas Watkins, President | lwatkins@elosenv.com	985.662.5501

Attachment ELOS Environmental, LLC Modified DOTD Form: 24-102

(questions 1-9 and 16-19)

MODIFIED DOTD FORM: 24-102
RPC REQUEST FOR PROPOSALS (RFP)

PROPOSAL TO PROVIDE CONSULTANT SERVICES

Please read carefully, as this form differs from Standard Form DOTD 24-102. **Subconsultants should respond only to questions 1-9 and 16-19, and these responses should be labeled by firm and included as attachments to of the Prime's submittal.**

ANY CONSULTANT FAILING TO SUBMIT ANY OF THE INFORMATION REQUIRED ON THE DOTD FORM 24-102, OR PROVIDING INACCURATE INFORMATION ON THE DOTD FORM 24-102, MAY BE CONSIDERED NON-RESPONSIVE.

Prime consultant should enter the firm name in the footer at the bottom of this page. (It will carry over to subsequent pages.)

1. Contract title as shown in the advertisement	Flood Risk Assessment: Geospatial Dataset Development
2. Contract number(s) as shown in the advertisement	RPC Task: LWICB
3. Prime consultant name (as registered with the Louisiana Secretary of State where such registration is required by law)	Halff Associates, Inc.
4. Prime consultant? (Y/N)	N
5. Consultant mailing address	607 West Morris Blvd Hammond, LA 70403
6. Consultant physical address (existing or to be established, if location is used as an evaluation criteria)	607 West Morris Blvd Hammond, LA 70403
7. Name, title, phone number, and email address of consultant's contract point of contact	Lucas Watkins, President 985-662-5501

Page 1 of 21 Prime consultant name: **Halff**

	lwatkins@elosenv.com
8. Name, title, phone number, and email address of the official with signing authority for this proposal	
9. This is to certify that all information contained herein is accurate and true, and that the team presently has sufficient staff to perform these services within the designated time frame. By submitting this proposal, proposer certifies that it is not engaged in a boycott of Israel and it will, for the duration of its contract obligations, refrain from a boycott of Israel. Proposer also certifies and agrees that the following information is correct: In preparing its response, the proposer has considered all proposals submitted from qualified, potential subcontractors and suppliers, and has not, in the solicitation, selection, or commercial treatment of any subcontractor or supplier, refused to transact or terminated business activities, or taken other actions intended to limit commercial relations, with a person or entity that is engaging in commercial transactions in Israel or Israeli-controlled territories, with the specific intent to accomplish a boycott or divestment of Israel. The proposer also has not retaliated against any person or other entity for reporting such refusal, termination, or commercially limiting actions. RPC reserves the right to reject the response of the bidder or proposer if this certification is subsequently determined to be false, and to	Signature (shall be the same person as #9):  Date: December 3, 2025

terminate any contract awarded based on such a false response.	
10. If a Disadvantaged Business Enterprise (DBE) is participating in the project team, indicate which firm(s) are DBEs and their percentage of the contract. If a firm is not certified as a DBE in Louisiana, please indicate the state where they are certified.	Firm(s): Firm(s)' %:

11. Firm(s) Size:

For all firms that are part of this team, indicate the approximate number of personnel to be committed to this contract, by DOTD Job Classification and the total number of personnel within the firm that could provide support, if needed. If a specialized job classification is required and not included on the DOTD job classification list, specify "Other (xxxx)" and include the classification title inside the parentheses. The DOTD Job Classification(s) to be used can be found at the following link:

http://wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Engineering/CCS/Job_Qualification/Job%20Classifications%20with%20Descriptions.pdf

(Italicized examples are provided, please delete and replace):

Firm name	Sub or Prime	DOTD Job Classification	Number of personnel committed to this contract	Total number of personnel available in this DOTD Job Classification (if needed)
ELOS Environmental, LLC	Sub	Environmental Pro	1	4
ELOS Environmental, LLC	Sub	GIS Analyst	2	4

(Add rows as needed)

16. Staff Experience:

Résumés shall be provided for all personnel listed in Sections 12 of the proposal. Résumés of personnel not identified in Section 12 of the proposal should not be included and will not be evaluated. Résumés should be limited to 2 pages per person.

Firm employed by ELOS Environmental, LLC					
Name	Adam Gartleman			Years of relevant experience with this employer	3
Title	Project Management			Years of relevant experience with other employer(s)	15
Degree(s) / Years / Specialization			MS/2022/Oceanography and Coastal Sciences BA/2019/ Mathematics BS/2017/ Geosciences		
Discipline	N/A	Certifications	N/A		
Contract role(s) / brief description of responsibilities			Project Management, GIS, Geophysical and Geospatial Analysis		

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to this study:
04/25 – Ongoing	*Ascension Parish Coastal Plan* - ELOS was contracted to develop and produce a coastal plan for Ascension Parish. Mr. Gartleman was brought into the project's backend and provided technical advice, editing, and formatting of the document. Additionally, he worked with the GIS department, editing images for the project development section of the plan.
12/22 – 03/26	*Jefferson Parish Bucktown Living Shoreline* - Bucktown Living Shoreline Project, which is situated in Jefferson Parish, Louisiana. This ambitious project, with a $1.7 million budget, has been funded by the parish government and the Environmental Protection Agency (EPA). Mr. Gartleman helped with GIS figures and maps.
12/24 – 05/25	*St. Bernard Bayou Ter Aux Beoufs Monitoring* – ELOS was contracted to provide the wetlands delineation and permitting for 20,420 linear feet of armoring of the Bayou Terre Aux Boeufs Ridge Restoration Project in Delacroix, LA. Mr. Gartlemen used GPS points to organize a GIS database, allowing ELOS to share the data by way of shapefiles and map displays that are accurate at sub-meter resolution.

(Add rows as needed)

Firm employed by ELOS Environmental, LLC					
Name	JJ Pearsall		Years of relevant experience with this employer	1	
Title	GIS Manager		Years of relevant experience with other employer(s)	18	
Degree(s) / Years / Specialization			BA, 2004, Geography		
Discipline	N/A	Certifications	Remote Drone Pilot		
Contract role(s) / brief description of responsibilities			GIS Services		

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to this study:
04/24 - Ongoing	*Bayou Manchac Cleanout* - ELOS is contracted to perform environmental services for a two-phase project to clear and snag Bayou Manchac and then dredge it from the Amite River to Nicholson Drive. Mr. Pearsall has worked on a GIS plan view to create a dredging layer, completed figures showing access points and cross-sections, completed topo vicinity maps, researched public datasets for the soils and aerials available, and combined wetlands and water data.
04/24 – 08/25	*Tangipahoa Parish Coastal Master Plan* - ELOS has been contracted to prepare the Parish's master plan to develop a comprehensive and actionable coastal resilience, protection, and sustainable development strategy. Mr. Pearsall has created maps and figures to illustrate the coastal master plan.
04/24 - Ongoing	*DDB Freshwater Bayou Locks* - ELOS has been contracted to provide general consulting services for project design and permitting, and to create a Stormwater Pollution Prevention Plan for construction activities. Mr. Pearsall has created figures to illustrate the Stormwater Pollution Prevention Plan, soil and topo vicinity maps, and erosion and sediment control site plans.
03/25- Ongoing	*Tangipahoa Parish LA Watershed Initiative: Round 2, CDBG-MIT*- ELOS is contracted to manage two projects in the Louisiana Watershed Initiative program that include constructing a detention pond, replacing bridges, upgrading culvers, and cleaning waterways. Mr. Pearsall has created hundreds of permit figures and maps and provided supporting documentation for the environmental review record.
12/24- Ongoing	*Ascension Parish Drainage Maintenance Projects* - ELOS has been under contract with the Ascension Parish Government's East Ascension Drainage District No. 1 (Drainage District) over the last 10 years to provide permitting assistance and wetland delineation services for the maintenance of drainage canals throughout the Parish. Mr. Pearsall provides project management and completed GIS figures for permit applications,

Firm employed by ELOS Environmental, LLC				
Name	Rick Neal		Years of relevant experience with this employer	6
Title	GIS Analyst		Years of relevant experience with other employer(s)	3
Degree(s) / Years / Specialization			BS, 2015, Biology	
Discipline	N/A	Certifications	Part 107 Remote Pilot	
Contract role(s) / brief description of responsibilities			GIS Services	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to this study:
8/24 - Ongoing	*Tangipahoa Parish Flood Forecasting System Preliminary Phase* - ELOS was contracted to create a real-time flood risk monitoring and emergency management dashboard for the Tangipahoa Parish Government. ELOS will work with the Parish and a contractor to build the real-time flood risk monitoring and emergency management dashboard with existing Parish datasets. Mr. Neal analyzed the data to input elevation data to create models.
9/22 – 9/23	*Lake Maurepas Seismic Monitoring Project* - ELOS was contracted to provide Biological Monitoring services for the project. As part of this effort, Mr. Neal kept progress and fish mortality maps up to date. He also created and published online maps for field crews to use for data collection.
08/24-Ongoing	*New Orleans RPC East Tangipahoa Firetower Road* - ELOS is contracted to lead a multidisciplinary team to study an area located east of the Tangipahoa River, west of the Tangipahoa/St. Tammany Parish line, south of U.S Highway 190, and north of LA Highway 22. Mr. Neal compiled land-use and infrastructure data into GIS maps.
11/20-Ongoing	*Tangipahoa Parish Government CDBG-MIT Watershed* - ELOS is contracted to manage two projects in the Louisiana Watershed Initiative program that include constructing a detention pond, replacing bridges, upgrading culvers, and cleaning waterways. Mr. Neal worked on the culvert survey and edited the Tangipahoa Parish Floodplain Restoration and Enhancement Project map series.
3/22 - 4/24	*Ascension Parish ADAPT* – ELOS was contracted to review parcels along the Parish's drainage easements. In total, ELOS reviewed 3,605 parcels along the canals. Mr. Neal drew drainage servitudes for the parcels. ELOS drew a total of 1034 drainage servitudes.

17. Firm Experience:

Identify the team's project experience **most relevant** to the scope in the advertisement. The projects should be limited to a total of 5, If more than 5 projects are identified, all projects identified after the first 5 will not be evaluated. Include no more than one page per project. Projects identified shall only include work performed by firms on the team. The projects identified do not need to have been RPC projects. RPC staff may contact the contracting entity to discuss project performance.

Project name	North Carolina EWP Service and Permitting			Firm responsibility (prime or sub?)	Prime
Project number	NA	Owner's name	Robeson County Government		
Project location	Robeson County, NC		Owner's Project Manager	Kellie Blue	
Owner's address, phone, email	550 N Chestnut St Lumberton, NC 28358 910-671-3022 Kellie.Blue@robesoncountync.gov				
Services commenced by this firm (mm/yy)	12/24	Total consultant contract cost ($1,000's)	$791		
Services completed by this firm (mm/yy)	10/25	Cost of consultant services provided by this firm ($1,000's)	$539		

Describe the project including the firm's role and members involved. (Highlight staff to be used in this proposal.)

ELOS is contracted to perform damage survey assessments and permitting for up to 394 miles of waterways in Robeson County and surrounding counties in North Carolina. The GIS mapping that was created showed not only the waterway characteristics but also the debris estimates and locations. ELOS completed damage assessments via drone, boat, and pedestrian methods, collecting photologs, and documenting the debris quantities, GPS coordinates, waterway characteristics, approximate depths, access points, and other helpful information in determining how the debris could be effectively removed to return the natural water flow of waterways throughout the county. The damage assessment also includes ELOS' professional opinion of the means and methods for removing the debris based on state and federal environmental regulations.

Each waterway was mapped, debris photos (overhead and within the waterway) were collected, and a spreadsheet summarizing the GPS locations for each obstruction was developed. To date, 28 damage assessment packets have been developed for three phases of debris removal covering approximately 242 miles of waterways. Disaster assessments for an additional 85 miles are being compiled.

GIS Personnel Involved: Richard Neal and JJ Pearsall

Project name	OLHC Roadway Improvements			Firm responsibility (prime or sub?)	Prime
Project number	NA	Owner's name	Office of Highway Construction		
Project location	Louisiana Statewide		Owner's Project Manager	Archie Chaisson	
Owner's address, phone, email	1201 Capitol Access Rd Baton Rouge, LA 70802 225-379-1513 Archie.Chaisson@LA.GOV				
Services commenced by this firm (mm/yy)	09/25	Total consultant contract cost ($1,000's)		$250	
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)		$250	

Describe the project including the firm's role and members involved. (Highlight staff to be used in this proposal.)

ELOS is contracted to provide Geographic Information System (GIS) services to support the Office of Louisiana Highway Construction and the Louisiana Department of Transportation and Development (LADOTD) in improving Louisiana's transportation infrastructure planning and management. ELOS is assisting with developing, maintaining, analyzing, visualizing, and integrating spatial data, along with offering environmental services, to aid transportation planning, asset management, operations, and decision-making. This encompasses approximately 5,100 miles of Non-Federal Aid (NFA) roads, around 1,600 bridges, about 111,000 street signs, and roughly 220 street signals.

ELOS is delivering customized interactive web maps, dashboards, and specific visual representations of data for various purposes as requested by LADOTD. They are updating and maintaining essential geospatial datasets, including, but not limited to, information on roads, bridges, traffic signs, and signal locations. This involves ensuring data accuracy, consistency, and relevance by following standardized procedures for data entry and updates. ELOS is implementing and following strict quality assurance/quality control (QA/QC) protocols to verify the integrity and quality of geospatial data. This includes cross-referencing datasets, conducting automated checks, and manual reviews to ensure data reliability. ELOS uses advanced spatial analysis techniques, such as buffer creation, overlay processing, routing calculations, and hotspot analysis, to extract valuable insights from geospatial data for specific projects or inquiries. They are

analyzing transportation infrastructure using network and linear referencing methods to understand relationships and dependencies within the transportation system.

GIS Personnel Involved: JJ Pearsall and Rick Neal

Project name	Firetower Rd-LA 445 Corridor Study			Firm responsibility (prime or sub?)	Prime
Project number	TPFIRE25	Owner's name	New Orleans Regional Planning Commission		
Project location	Tangipahoa Parish		Owner's Project Manager	Nelson Hollings	
Owner's address, phone, email	10 Veterans Boulevard New Orleans, LA 70124 504-483-8525 nhollings@norpc.org				
Services commenced by this firm (mm/yy)	08/24	Total consultant contract cost ($1,000's)	$275		
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)	$275		

Describe the project including the firm's role and members involved. (Highlight staff to be used in this proposal.)

ELOS has been contracted to perform a Stage 0 Feasibility Study for Firetower Road in Tangipahoa Parish, which involves defining the project's purpose and need, assessing feasibility, and identifying potential improvements to enhance safety and mobility. This initial phase will include gathering traffic data, crash history, and roadway conditions to evaluate existing issues and constraints. Preliminary environmental and right-of-way considerations will be reviewed to determine potential impacts. Conceptual alternatives will be explored, such as roadway widening, intersection upgrades, or drainage improvements, with a focus on cost-effectiveness and community benefit. A rough order-of-magnitude cost estimate and preliminary schedule will be developed to guide future stages. The findings will be documented in a Stage 0 report, which will include recommendations and stakeholder input to secure approval for advancing to detailed design and engineering.

GIS will be utilized to compile the collected data into a structured, machine-readable geospatial spreadsheet format, accompanied by detailed maps and graphics illustrating infrastructure and utilities within the study area.

Personnel Involved: Adam Gartelman and Rick Neal

18. Workload:

For all contracts where a contract was executed by the consultant and the contracting entity by the date the advertisement for this proposal was posted, list all work for which the firm is currently under contract and that are staffed by key personnel proposed for this study.

List only the portion of the fees attributable to your firm.

Project name	Client/Contracting Entity	Remaining Unpaid Balance	Estimated Time to Completion
Firetower Rd – LA 445 Corridor Study	New Orleans Regional Planning Commission	89,902.00	5 months

(Add rows as needed)

19. Staffing Capacity:

Referencing Section 17 where appropriate (i.e., where key personnel would be working on multiple projects simultaneously) describe how your firm will ensure that sufficient staffing and capacity will be made available for the conduct of this project.

ELOS is committed to maintaining optimal staffing and capacity to ensure the successful execution of this project. We will assign a dedicated team of four highly qualified professionals, each bringing specialized expertise and proven experience relevant to the project scope. Our resource planning process will be proactive and comprehensive, aligning personnel availability with critical milestones and deliverables to avoid delays. In addition, we will implement robust contingency strategies, including cross-training and access to supplementary resources, to address any unexpected challenges or workload fluctuations.

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