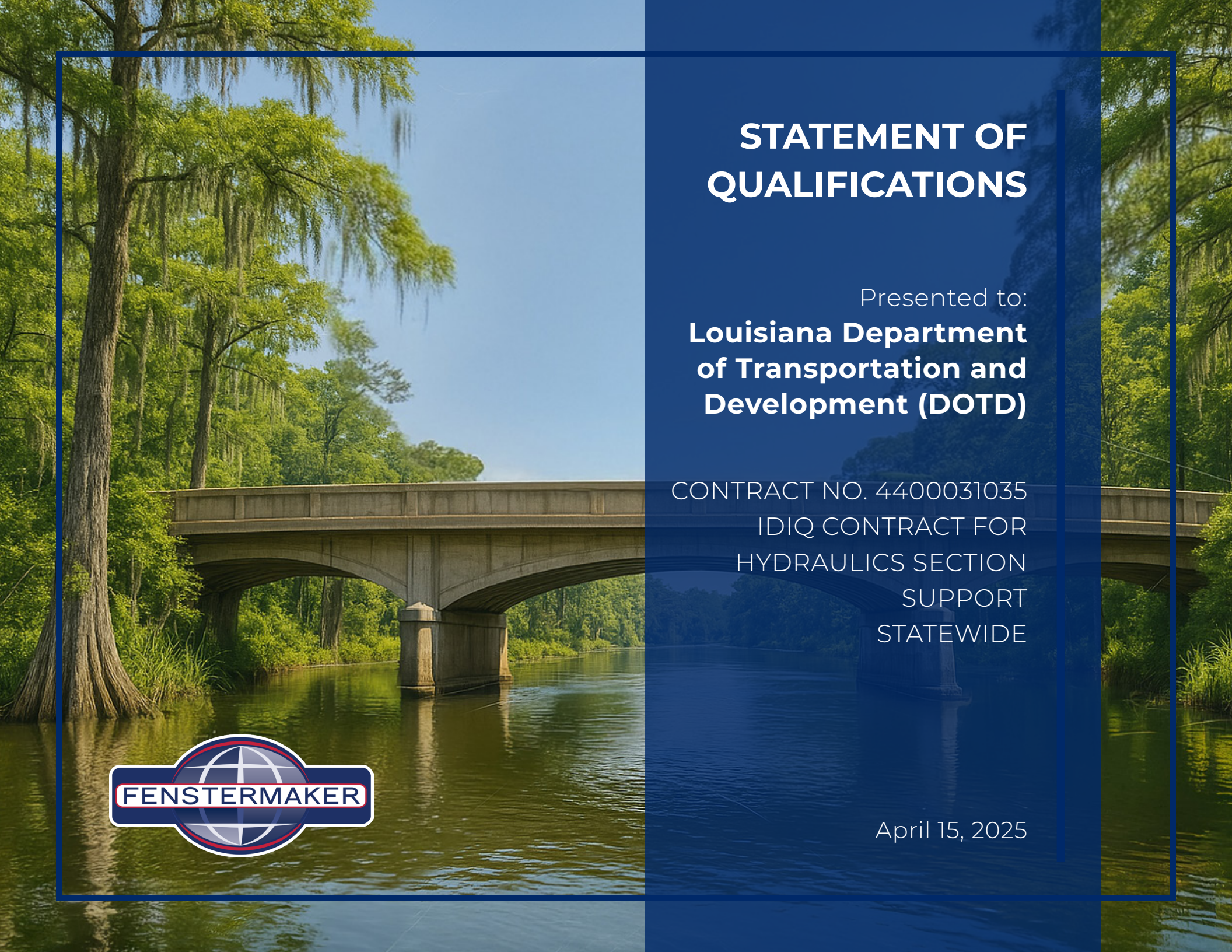


STATEMENT OF QUALIFICATIONS

Presented to:

Louisiana Department of Transportation and Development (DOTD)

CONTRACT NO. 4400031035
IDIQ CONTRACT FOR
HYDRAULICS SECTION
SUPPORT
STATEWIDE

FENSTERMAKER

April 15, 2025

Transmitted via Email
DOTDConsultantAds80@la.gov

April 15, 2025

Louisiana Department of Transportation and Development
1201 Capital Access Road
Baton Rouge, LA 70802

RE: Contract No. 4400031035 IDIQ Contract for Hydraulics Section Support Statewide

Dear Sir or Madam:

C. H. Fenstermaker & Associates, L.L.C., is pleased to submit our statement of qualifications for the Louisiana Department of Transportation and Development's IDIQ Contract for Hydraulics Section Support Statewide. Fenstermaker's Water Resources team has extensive experience with hydraulics and hydrologic (H&H) projects of varied scope and complexity, from modeling a proposed subdivision's potential impacts to a Parish's drainage capacity to leading major statewide H&H studies, like the **Louisiana Watershed Initiative**. Fenstermaker currently has **six (6) certified floodplain managers** on staff. The proposed Project Manager for this contract**, Jeanne Arceneaux Hornsby, M.S., P.E., is Fenstermaker's Water Resources Director** and obtained her experience and expertise by working on a variety of projects, from regional HUC 4 models to detailed HUC 12 models. Within these systems she has completed numerical modeling analyses on inland and coastal systems, floodplain mapping, stormwater planning, hydraulic design, environmental impact studies, field reconnaissance, hydrologic and hydraulic data collection, and flood mitigation projects.

Fenstermaker intends to team with two respected firms to provide LADOTD with a full portfolio of services. **Michael Baker International, Inc,** will lead all **Bridge Hydraulic Modeling & Scour Analysis** tasks and will assist with **LADOTD Hydraulics Section Manual updates**. **WSP USA, Inc.,** will lead **Watershed Modeling** for this contract.

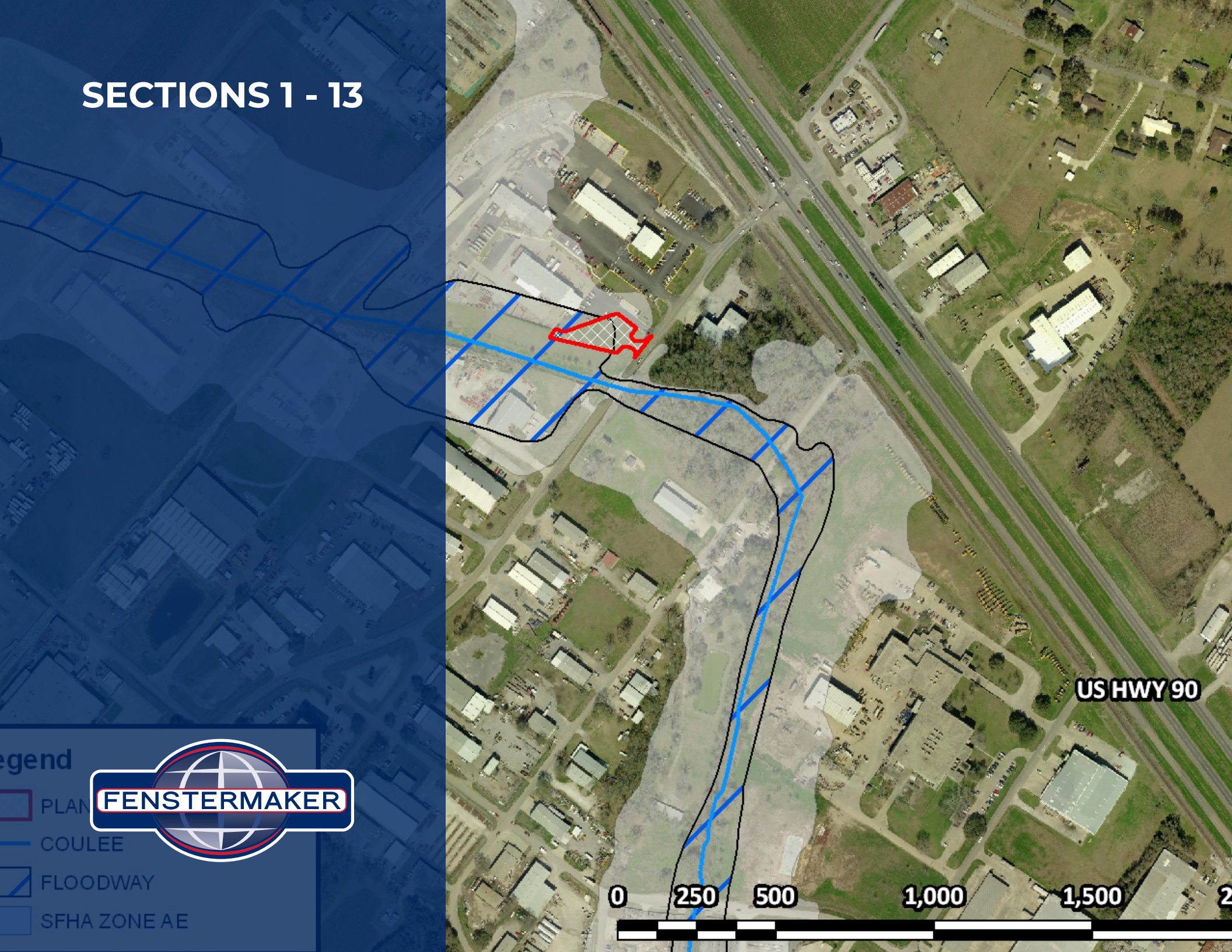
Thank you for the opportunity to present our qualifications. If you have any questions regarding our submittal or qualifications, please contact **project Principal Dax Douet** at (337) 237-2200. Angelle Guilbeau is authorized by Fenstermaker to contractually obligate the firm.

FENSTERMAKER

Dax Douet, P.E.
Director, Engineering
dax@fenstermaker.com

Angelle Guilbeau
Chief Administrative Officer
angelleg@fenstermaker.com

SECTIONS 1 - 13



FENSTERMAKER

DOTD FORM: 24-102

(Revised December 12, 2024)

PROPOSAL TO PROVIDE CONSULTANT SERVICES

Prime consultant shall complete the DOTD Form 24-102 without altering the Form's text; however, the instruction and/or guidance for Sections 12 through 23 can be removed but do not remove Section title and number.

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	CONTRACT NO. 4400031035 IDIQ CONTRACT FOR HYDRAULICS SECTION SUPPORT STATEWIDE
2. Contract Number(s) as shown in the advertisement	CONTRACT NO. 4400031035
3. State Project Number(s), if shown in the advertisement	Not applicable
4. Prime consultant name **(name must match exactly as registered with the Louisiana Secretary of State (SOS) where such registration is required by law; including punctuation; include screenshot from SOS at the end of Section 20)**	C. H. Fenstermaker & Associates, L.L.C.
5. Prime consultant license number (as registered with the Louisiana Professional Engineering and Land Surveying Board (LAPELS) if registration is required under Louisiana law)	LA EF.0000311 (Engineering) LA VF.0000154 (Survey)
6. Prime consultant mailing address	135 Regency Square Lafayette, LA 70508
7. Prime consultant physical address (existing or to be established, if location is used as an evaluation criteria)	135 Regency Square Lafayette, LA 70508
8. Name, title, phone number, and email address of prime consultant's contract point of contact	Jeanne Arceneaux Hornsby, Director, Engineering (337) 237-2200 jeanne@fenstermaker.com
9. Name, title, phone number, and email address of the official with signing authority for this proposal	Angelle Guilbeau, Chief Administrative Officer (337) 237-2200 angelleg@fenstermaker.com

10. 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. DOTD 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.

Pursuant to Act No. 581 of the 2024 Louisiana Legislature Regular Session, proposer further certifies that it does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association based solely on the entity's or association's status as a firearm entity or firearm trade association. In addition, proposer certifies it will not discriminate against a firearm entity or firearm trade association during the term of the contract based solely on the entity's or association's status as a firearm entity or firearm trade association.

Angelle Guilbeau

Signature above shall be the same person listed in Section 9:

April 15, 2025

Date:

11. 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):	Firm(s)' %:
	NO DBE GOAL	

12. Discipline Table:

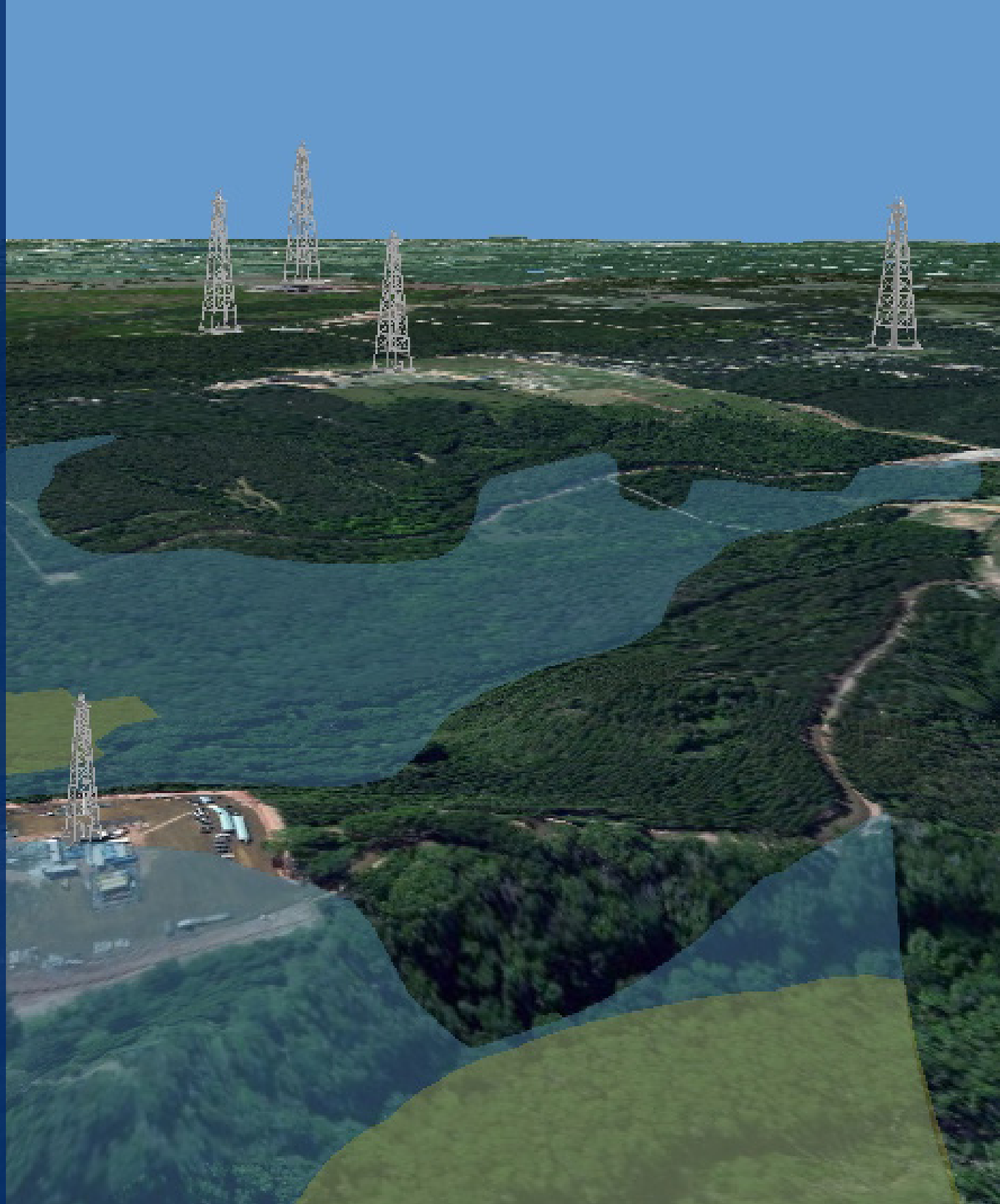
Discipline(s)	% of Overall Contract	Prime C. H. Fenstermaker & Associates, L.L.C.	Firm B Michael Baker International, Inc.	Firm C WSP USA, Inc.	Each discipline must total to 100%
Other (Watershed Modeling)	10%	30%	30%	40%	**100%**
Other (Bridge Hydraulic Modeling & Scour Analysis)	20%	40%	60%	0%	**100%**
Other (NFIP No-Rise Review)	10%	100%	0%	0%	**100%**
Other (Hydraulics Section Manual Updates)	15%	60%	40%	0%	**100%**
Other (General H&H Analysis)	20%	40%	30%	30%	**100%**
Other (CLOMR & LOMR)	15%	60%	0%	40%	**100%**
Other (Data Management & Mapping)	5%	100%	0%	0%	**100%**
Other (Hydraulic Software Programming)	5%	100%	0%	0%	**100%**
Identify the percentage of work for the overall contract to be performed by the prime consultant and each sub-consultant.					
Percent of Contract	**100%**	**57%**	**27%**	**16%**	

13. Firm Size:

Firm name	DOTD Job Classification	Number of personnel committed to this contract	Total number of personnel available in this DOTD Job Classification (if needed)
C. H. Fenstermaker & Associates, L.L.C.	Supervisor - Eng	3	3
	Engineer	10	16
	Engineer Intern	3	10
	GIS Analyst	1	6
Michael Baker International	Clerical	1	1
	Engineer	2	5
	Engineering-Aide	1	2
	Engineer - Other	1	5
	Environmental Pro	1	3
	GIS Analyst	1	1
	Principal	1	2
	Senior Technician	1	1
	Supervisor - Eng	1	3
	Technician	1	5
WSP USA, Inc.	Supervisor - Eng	5	5
	Engineer	5	8
	Engineer - Other	7	42
	GIS Analyst	5	20

	CADD Technician	2	5
	Engineer Intern	18	27

SECTIONS 14 - 16



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14. Organizational Chart:

C. H. Fenstermaker & Associates, L.L.C.
Michael Baker International, Inc.
WSP USA, Inc.

Principal
Dax Douet, P.E.

Project Manager
Jeanne Hornsby, M.S, P.E., CFM

Deputy Project Manager
Austin Doucet, P.E.

Bridge Hydraulic Modeling & Scour Analysis
L.R. "Eric" Erikson, P.E., CFM *lead*
Mark McBroom, P.E.
Achutam Baral, P.E., CFM
Justin West, P.E., CFM
Tanveer Ahmed
Afaq Ahmad Durrani, EI, CFM
Rhett Hebert, P.E., CFM

Hydraulics Section Manual Updates
Ian Trahan, P.E. *lead*
Rhett Hebert, P.E., CFM.
Luke Hebert, P.E., CFM
Anna Doucet, P.E.
Andrew Sellers, P.E., CFM
Nick Castille, P.E.
L.R. "Eric" Erikson, P.E., CFM

Hydraulic Software Programming
Sean Micek, P.E. *lead*
Coy LeBlanc, M.S., PWS, GISP

Watershed Modeling
Masoud Meshkat, PhD., P.E., CFM *lead*
R. Scott Taylor, P.E.
Ashwini Kashelikar, P.E., CFM
Austin Doucet, P.E.
Edwin Watkins, P.E., VP
Peyton Bailey, EI
Kevan Lee Lum, P.E.
Brooke Newlin, P.E., CFM
Ashley Wylie, P.E.
Tyler Young, M.S., P.E.
Paul Simmons, P.E.
Mallory Rodrigue, P.E.
Rehal Kharel, P.E.
Carly Philips, EI, CFM

NFIP No-Rise Review
Anna Doucet, P.E. *lead.*
Tyler Young, M.S., P.E.
Mallory Rodrigue, M.S., P.E.
Andrew Sellers, P.E., CFM

CLOMR & LOMR
Rhett Hebert, P.E., CFM *lead.*
Brooke Newlin, P.E., CFM
Tyler Young, M.S., P.E..
Mallory Rodrigue, P.E.
Carly Phillips, EI, CFM
Andrew Sellers, P.E., CFM

General H&H Analysis
Luke Hebert, P.E., CFM *lead.*
Sean Micek, P.E.
Tyler Young, M.S., P.E.
Mallory Rodrigue, P.E.
Nick Castille, P.E.
Andrew Sellers, P.E., CFM
Aimee Latiolais, P.E.

Data Management & Mapping
Coy LeBlanc, M.S., PWS, GISP *lead*

15. Minimum Personnel Requirements:

MPR No. Do not insert wording from ad	Personnel being used to meet the MPR (Individual(s) may not satisfy more than one MPR unless specifically allowed by Attachment B of the advertisement)	Firm employed by	Type of license and discipline meeting MPR/ certification & number (Ex: PE # - Civil)	State of license	License / certification expiration date
1	Dax Douet, P.E.	C. H. Fenstermaker & Associates, L.L.C.	PE.0030170 – Civil	LA	09/30/2026
2	Dax Douet, P.E.	C. H. Fenstermaker & Associates, L.L.C.	PE.0030170 – Civil	LA	09/30/2026
3	Jeanne Hornsby, M.S., P.E., CFM	C. H. Fenstermaker & Associates, L.L.C.	PE.0036717 – Civil	LA	3/31/2026
4.	L.R. “Eric” Erikson, P.E., CFM	Michael Baker International, Inc.	PE.0031061 – Civil	LA	03/31/2026
5.	Luke Hebert, P.E., CFM	C. H. Fenstermaker & Associates, L.L.C.	PE.0034715 – Civil	LA	09/30/2025

16. Staff Experience:

Firm employed by	C. H. Fenstermaker & Associates, L.L.C.		
Name	Dax Douet, P.E.	Years of relevant experience with this employer	27
Title	Director, Engineer	Years of relevant experience with other employer(s)	1
Degree(s) / Years / Specialization	B.S. / 1997 / Civil Engineering		
Active registration number / state / expiration date	PE.0030170 / LA / 09-30-2025		
Year registered	2002	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities	Principal. **Mr. Douet meets MPRs #1 and 2.**		

Experience dates

Dax Douet is an Engineering Director at Fenstermaker with extensive professional civil engineering experience in design, planning, construction oversight, and project management. He has served as the lead design engineer and project manager on a wide range of transportation projects including local, collector, and arterial roadways, as well as large interstate interchange projects. Mr. Douet has expertise in roadway design, transportation corridor studies, line and grade studies, roundabout design, environmental assessments, open channel and subsurface drainage systems, **large one and two-dimensional hydrologic numerical modeling**, municipal engineering, public speaking, and project management of large complex, multi-disciplinary projects. Mr. Douet has managed the preparation of over thirteen Stage 0 feasibility studies for LADOTD and led the preparation of geometric line and grade studies to support more than five Environmental Assessment documents in accordance with the National Environmental Policy Act (NEPA) guidelines. Mr. Douet completed the FHWA-NHI-142005 NEPA and Transportation Decision Making in 2005.

10/20-ongoing **Project #1**	**Louisiana Watershed Initiative Region 4 (De Soto, Sabine, Vernon, Rapides, Beauregard, Allen, Jefferson Davis, Calcasieu, and Cameron Parishes)** Mr. Douet served as one of the Project Managers for the Louisiana Watershed Initiative Region 4 modeling project, an unprecedented project that will manage the future flood risk in the State of Louisiana through watershed-based solutions. Mr. Douet was responsible for the project management and oversight to complete an interactive, usable, and manageable hydraulic and hydrologic Region 4, which encompasses De Soto, Sabine, Vernon, Rapides, Beauregard, Allen, Jefferson Davis, Calcasieu, and Cameron Parishes in the State of Louisiana. These models will consider the degree to which communities within a watershed are hydraulically and hydrologically connected and will guide decisions regarding the coordination and implementation of land use, policy, and infrastructure improvements to effectively manage flood risk at the watershed level.
09/17-ongoing **Project #4**	**Verot School Road Interchange at U.S. Highway 90 (Lafayette Parish, LA)** Mr. Douet was the Lead Design Engineer responsible for the widening of existing Verot School Road from Pinhook Road (LA 182) to existing US 90 from a 2-lane to a median separated 4-lane roadway facility. Mr. Douet was one of two lead design engineers responsible for the development of a project line and grade study aimed at developing strategies to widen this corridor to reduce right of way and impacts to existing infrastructure. Mr. Douet was also the lead design engineer of a multi-lane roundabout intersection at the new Verot School Rd intersection with South College Rd. In addition, Mr. Douet led the public outreach by coordinating and hosting a public meeting which followed the procedures set forth by the **LADOTD**.
08/17-08/22	**2017 Iberia Parish Drainage Improvements (Iberia Parish, LA)** Iberia Parish contracted Fenstermaker to evaluate several drainage maintenance alternatives and prioritize them based on hydraulic benefit. This was completed using 2D modeling (Mike

	Flood) to determine the sensitivity of each alternative based on the recommended maintenance plan by the Parish. Fenstermaker completed a more detailed model to determine the downstream impacts of maintenance alternatives and fine-tuned the design parameters. In addition, Fenstermaker completed the plans and permitting for the top prioritized alternatives. Mr. Douet served as the project manager and was responsible for several tasks including coordinating the project's survey work, reviewing plans, preparing submittals, processing invoices, drafting project specifications for bidding, drafting the Louisiana GOHSEP HMGP grant application and report, attending meetings with GOHSEP, the Parish, and the regional Municipal Planning Organization (MPO), calculating the opinion of probable cost (OPC), and coordinating all permitting and environmental service activities.
01/11-12/13	**Upper Red River Basin – HUC 8 Watershed Modeling (Northwest Louisiana)** Mr. Douet assisted in the creation of 3 - HUC 8 watershed models within the Red River Watershed (Black Lake Bayou, Bayou Pierre, and Middle Red/Coushatta) to determine base flood elevations and perform impact assessments for thousands of well site locations for a variety of clients. The models were setup following FEMA standards using HEC-HMS and HEC-RAS 1D unsteady modeling. The models have been approved by FEMA and areas have been utilized to update FEMA Region 6 Digital Flood Insurance Rate Maps. Sections of the Red River Model have been turned over to the USACE and utilized as a basis for Red River Modeling being performed at ERDIC in Vicksburg, MS. These models are still being used today for permitting by both oil and gas companies as well as government agencies.
04/12-02/16	**Tete Bayou and Bayou Parc Perdu Watershed Study and Regional Detention Implementation (Iberia Parish, LA)** Mr. Douet, the drainage engineer for Iberia Parish, led the design and construction management for the cleaning of the channel in the Tete Bayou and Bayou Parc Perdu watersheds. He also prepared a **FEMA Letter of Map Revision (LOMR)** to update the existing FEMA FIRM maps and establish new base flood elevations, as well as revised Flood Zone "A" designations to "AE." Additionally, For the Bayou Parc Perdu project, Mr. Douet developed a funding application through the FEMA Region VI Hazard Mitigation Grant Program to implement a regional detention pond for Bayou Parc Perdu to mitigate potential flooding and provide a more efficient drainage outfall to lower regions of Lafayette Parish and portions of Vermilion Parish. He was responsible for all numerical modeling, engineering hydraulic design, preparation of construction plans, construction management, and overall project management.
01/11-12/13	**Nueces River 2D Modeling (3 – HUC 8 Watersheds) (South Texas)** Mr. Douet aided in the development of a coupled 1D – 2D numerical model of the Nueces River in South Texas and surrounding tributaries (5,000 square miles). This model was developed to provide private oil and gas companies with the tools needed to determine flood risk and acquire flood permits within various counties of South Texas as part of the Eagleford Shale play. The modeled area covers 3 HUC 8 watersheds with terrain modeling but encompasses 7 total HUC 8 watersheds at various tiered levels. He aided in the calibration, validation, review, and approval by FEMA Region 6 for the governing bodies to utilize for permitting and regulating purposes.
9/15-03/16	**Live Oak LNG Drainage Impact Analysis & LOMR (Calcasieu Parish, LA)** Live Oak LNG contracted Fenstermaker to complete a required Drainage Impact Analysis (DIA) for an LNG export terminal facility development in Calcasieu Parish. The DIA report served to identify and mitigate the drainage impacts to surrounding properties associated with the project. This effort was based on the standards required to satisfy the Calcasieu Parish Police Jury's Drainage Ordinance. Mr. Douet was responsible for project management and QA/QC tasks, including reviewing the execution plan, having biweekly calls with the client, leading the first phase of plan production, and checking monthly invoices.

Firm employed by	C. H. Fenstermaker & Associates, L.L.C.		
Name	Jeanne Arceneaux Hornsby, M.S., P.E., CFM	Years of relevant experience with this employer	18
Title	Director, Engineer	Years of relevant experience with other employer(s)	2
Degree(s) / Years / Specialization	B.S. / 2005 / Civil Engineering M.S. / 2007 / Hydraulics and Environmental Engineering		
Active registration number / state / expiration date	PE.0036717 / LA / 03-31-2026		
Year registered	2011	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities	Ms. Hornsby will serve as Project Manager. **Ms. Hornsby meets MPRs #3 and 5.**		

Experience dates

Ms. Hornsby is an Engineering Director at Fenstermaker with engineering design and project management experience. Her main responsibilities include managing, designing, and completing quality control on multi-million-dollar projects that range from roadway design and construction to coastal and storm water management for both the public and private sectors. Ms. Hornsby currently leads Fenstermaker's Water Resources Team, and her expertise has developed through the successful completion of several numerical modeling analyses, roadway drainage designs, and stormwater master plans. She has also worked closely with LADOTD on roadway design projects and Environmental Impact Statements. She currently serves as Calcasieu Parish's consulting drainage engineer responsible for development of the Parish's watershed master plan which includes large-scale numerical models and BCA developments.

06/20-ongoing **Project #1**	**Louisiana Watershed Initiative Region 4 (De Soto, Sabine, Vernon, Rapides, Beauregard, Allen, Jefferson Davis, Calcasieu, and Cameron Parishes)** Ms. Hornsby serves as the Lead Hydrologic & Hydraulic Engineer for the Louisiana Watershed Initiative Region 4, an unprecedented project that will manage the future flood risk in the State of Louisiana through watershed-based solutions. Ms. Hornsby was responsible for the oversight of all hydrologic and hydraulic tasks, data collection, model development, and engineering to successfully complete an interactive, usable, and manageable hydraulic and hydrologic model of Region 4. These models will consider the degree to which communities within a watershed are hydraulically and hydrologically connected and will guide decisions regarding the coordination and implementation of land use, policy, and infrastructure improvements to effectively manage flood risk at the watershed level.
04/18-04/24 **Project #2**	**Calcasieu Parish Regional Watershed Modeling & Planning (Calcasieu Parish, LA)** Ms. Hornsby was the lead client contact, project manager, and lead hydraulic modeler directly responsible for all aspects of the project including developing one- and two-dimensional watershed models (Using HEC-HMS and HEC-RAS), developing future planned conditions, developing floodplain and watershed management ordinances, evaluating mitigation projects utilizing the Deltares Dynamic Adaptive Pathways and Policies (DAPP) process, completing a detailed hydraulic inventory, updating their flood alert system, generating a drainage report card, and conducting all public and agency meetings. Unique to this Master Plan, Calcasieu Parish requested Ms. Hornsby's Team to develop a parish-wide structure inventory leveraged against modeling data to then perform consequence modeling in order to determine which potential projects provide the most benefit on an HMA Grant Application. HMA grant applications share similar requirements with Louisiana Watershed Initiative (LWI) applications regarding demonstrating cost-effectiveness, showing eligible mitigation and activity types, and preparing detailed H&H analyses and data to support Benefit Cost Analyses (BCA). As the project manager, Ms. Hornsby successfully coordinated efforts among all subconsultants to ensure a timely project delivery that exceeded the client's expectations.

09/11-09/18 **Project #5**	**Coulee Ile des Cannes Watershed Study (HUC 10) & Physical Map Revision (Lafayette Parish, LA)** Fenstermaker was contracted to develop a hydrologic and hydraulic numerical model and map the flood zones and floodways of the Ile de Cannes Watershed. Ms. Hornsby developed an unsteady HEC-RAS model, calibrated and validated the model using data collected from two different storm events, and then used the model to determine the 100-year flood extents. She also assisted in the preparation of the Letter of Map Revision (LOMR) submittal to FEMA which resulted in a Physical Map Revision (PMR) that impacted 11 Flood Insurance Rate Maps (FIRM) panels. **This effort is estimated to be the largest LOMR prepared in the U.S.**
07/08-08/08	**City of New Iberia FEMA FIRM Map and Models Review and Appeal (Iberia Parish, LA)** Fenstermaker worked with Iberia Parish Government and the City of New Iberia to finalize the Parish's FEMA flood maps. Ms. Hornsby assisted in the review of the preliminary FEMA flood maps and models, the completion of the field investigation and structure inventory, and the development of the FEMA appeals. Ms. Hornsby also reviewed FEMA's response and adjustments to the models and maps based on the appeal.
03/10-07/13	**Assessment of the FEMA Flood Insurance Rate Maps and Models for Lafayette Parish (Lafayette Parish, LA)** Fenstermaker performed an assessment of the FEMA Preliminary Flood Insurance Rate Map (FIRM) for Lafayette Consolidated Government. Ms. Hornsby served as the project manager and was responsible for researching and reviewing the Parish's FEMA model, calculating and reviewing the floodways, preparing and delivering progress reports to the Parish, and preparing the appeal document for the Parish.
01/12-04/20	**Tete Bayou (HUC 12) and Bayou Parc Perdu (3-HUC 12) Watershed Study and Regional Detention Implementation (Iberia Parish, LA)** Ms. Hornsby assisted the project manager in developing a funding application through the FEMA Region VI Hazard Mitigation Grant Program (HMGP) from the presidentially declared disaster (LA-4277), which impacted Iberia Parish in August of 2016. The application was for a project to aid mitigating flood risk within Bayou Parc Perdu during significant storm events through the implementation of a regional detention pond to help in mitigating potential flooding of properties within the parish as well as to provide a more efficient drainage outfall to the lower regions of south Lafayette Parish and portions of Vermilion Parish. Ms. Hornsby is the lead technical numerical modeler for the development of a one and two dimension hydrologic and hydraulic models using both HEC-HMS and HEC-RAS to develop inundation maps for various storm events for both existing conditions and proposed project conditions to perform a benefit/cost analysis. Ms. Hornsby aided in the determination of all sub-basin hydrologic characteristics such as SCS runoff curve numbers, lag time, and stream routing criteria. Ms. Hornsby aided the lead technical engineer in setting up both an HEC-HMS and HEC-RAS one-dimension numerical model used for all existing computation hydraulics. The computation hydraulics was used to estimate the effects of cleaning the banks of the channels as part of Iberia Parish's drainage maintenance program. In addition, Ms. Hornsby aided in the preparation of a FEMA Letter of Map Revision (LOMR) to update the existing FEMA FIRM maps in areas within the basin identified as having a Flood Zone "A" designation by establishing new base flood elevations and revising these "A" zones to "AE."
01/19-05/20	**Coulee Ile des Cannes Lateral L8C Westward Heights Subdivision Provost Pond (Lafayette Parish, LA)** Fenstermaker was contracted by the City of Scott to set up a hydrologic and hydraulic model for screening the feasibility of various regional detention ponds to mitigate flooding. Fenstermaker was also responsible for calculating Benefit Cost Analyses (BCAs) and ensuring that all HMGP applications were completed. Once funds were secured, Fenstermaker completed the drainage impact analysis and pond design. Ms. Hornsby served as the project manager. She also reviewed the required permit applications and the Drainage Impact Analysis (DIA) report.

Firm employed by	C. H. Fenstermaker & Associates, L.L.C.		
Name	Austin Doucet, P.E.	Years of relevant experience with this employer	7
Title	Manager, Engineer	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		B.S. / 2019 / Civil Engineering	
Active registration number / state / expiration date		PE.0048642 / LA / 09-30-2026	
Year registered	2024	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities		Mr. Doucet will serve as Deputy Project Manager and assist with Watershed Modeling.	

Experience dates

Austin Doucet, P.E., serves as the Engineering Office Manager of Fenstermaker's Lake Charles office. Mr. Doucet brings seven years of civil engineering experience to the city where he was born and raised. His varied skill set, enabling seamless transitions from complex analyses to client management and community engagement, has allowed Mr. Doucet to make a deep impact on water resources projects throughout the state. Austin's energy and multifaceted talents have made him a standout contributor in many key projects.

07/20-ongoing **Project #1**	**Louisiana Watershed Initiative Region 4 (De Soto, Sabine, Vernon, Rapides, Beauregard, Allen, Jefferson Davis, Calcasieu, and Cameron Parishes)** The Louisiana Watershed Initiative is an unprecedented project that will manage the future flood risk in the State of Louisiana through watershed-based solutions. For Region 4, Fenstermaker is performing hydrologic and hydraulic tasks, data collection, model development, and engineering to successfully complete an interactive, usable, and manageable hydraulic and hydrologic of the region. These models will consider the degree to which communities within a watershed are hydraulically and hydrologically connected and will guide decisions regarding the coordination and implementation of land use, policy, and infrastructure improvements to effectively manage flood risk at the watershed level. Mr. Doucet served as the Program Manager for Region 4 of the Louisiana Watershed Initiative. His main responsibility included leading the project teams for the 6 HUC-8 watersheds to develop H&H numerical models for the Louisiana Department of Transportation and Development. He assisted the region-wide Project Manager and Technical Modeling Lead in all efforts including developing technical guidance for H&H models, managing the project teams and budget, and coordinating between project teams, subconsultants, and the client.
08/18-04/24 **Project #2**	**Calcasieu Parish Regional Watershed Modeling and Planning (Calcasieu Parish, LA)** Mr. Doucet assisted with the Stormwater Master Plan developed for Calcasieu Parish. His main responsibilities included data collection and inventory, H&H numerical modeling, creating a Drainage Infrastructure Watershed Report Card, and Master Plan Development, Implementation and Monitoring. He assisted with the development of hydrologic and hydraulic models which are now used to analyze the current and future flood risk and vulnerability of the Parish, and to determine the effectiveness of proposed drainage improvements.
05/17-07/18 **Project #5**	**Coulee Ile des Cannes Watershed Study (HUC 10) and Physical Map Revision (Lafayette Parish, LA)** Fenstermaker was contracted through a cooperative agreement between the City of Scott and the Lafayette Consolidated Government (LCG) to develop a hydrologic and hydraulic numerical model and to map the flood zones and floodways of the Ile de Cannes Watershed in Lafayette, LA. Mr. Doucet used Ile des Cannes data to work on the City of Scott's CRS renewal, updated the City's Drainage and Maintenance Improvement Plan, and combined building permits with elevation certificates for the FEMA Model Review portion of the project.

05/17-ongoing	**Coulee Mine Branch and Tributaries: Hydraulic Re-Study (Lafayette Parish, LA)** Fenstermaker was requested by the Lafayette Consolidated Government (LCG) to provide professional hydraulic modeling, hydrologic monitoring, and topographic surveying services to revise the effective Flood Insurance Rate Map data for Coulee Mine Branch and Tributaries. Mr. Doucet assisted in the hydrologic and hydraulic numerical modeling of the Coulee Mine Branch watershed, which included a concrete lined channel through a highly urbanized area.
05/18-12/18	**Bayou Teche Watershed 2D Regional (HUC 8) Model – Areas of Mitigation Interest (St. Martin Parish, LA)** Fenstermaker was contracted to create an Areas of Mitigation Interest (AOMI) dataset in collaboration with St. Martin Parish Government and FEMA Region 6 for the Louisiana Silver Jacket Team, headed by the USACE – New Orleans District. The AOMI dataset is a tool to support flood reduction opportunities and/or success stories. Mr. Doucet assisted with collaboration in the modeling of the potential mitigation actions using 1-D and 2-D hydraulic numerical models.
06/19-03/20	**City of Scott Drainage Improvement Plan (Lafayette Parish, LA)** This project consisted of collecting inventory of all drainage infrastructure within the City limits and evaluating them based on several metrics for condition of the infrastructure. This project also required hydrologic and hydraulic modeling throughout the City to evaluate the infrastructure based on hydraulic capacity as well. Mr. Doucet. Assisted with developing the plan's report card, preparing exhibits for public meetings, performing QC of drainage improvement plan models, and reviewing and revising the ESRI Story Map.
06/20-07/20	**Perrin Ferry Road Improvements (Livingston Parish, LA)** The project will raise the elevation along the segment of Perrin Ferry Road to provide ingress and egress for the residents along the roadway during large rain events. For this project, Mr. Doucet delineated basins and created terrain for the RAS model and ran the HMS model for a 100-year storm event.
07/21-02/22	**Green Pond Gully Watershed Analysis (Jefferson County, TX)** There was concern with the existing drainage patterns within the Green Pond Gully Watershed about whether the drainage control dam, levees, and hydraulic structures north of FM 365 near the conservation area are having an impact on these drainage patterns. As a sub-consultant to Fitz & Shipman, Inc., Fenstermaker provided H&H modeling services in two phases. During the first phase, Fenstermaker evaluated historic data and assessed the base-level engineering. Mr. Doucet reviewed the available LiDAR data, set up the 2D RAS model, drafted the technical memorandum, and prepared information for meetings with clients. He also assisted with project management tasks such as invoicing and coordinating deliverables.
07/23-ongoing	**Coulee Ile des Cannes L8C Regional Detention Facilities (Lafayette Parish, LA)** The City of Scott selected Fenstermaker to provide professional engineering services for the L8C detention facilities project. These services included data gathering, technical analysis, completion of an H&H study, the development of design documents, project permitting, and the completion of an Environmental Assessment (EA) to determine project eligibility for HMGP funding. Mr. Doucet coordinated the plan production, H&H model development, the NEPA categorical exclusion (CATEX), the culvert design, dual pipes design, and the drainage servitude and utilities survey. He also drafted the project's schedule and list of required deliverables, worked on the Benefit Cost Analysis (BCA), and the USACE 404 permit application. He finalized the H&H model report and the phase one deliverables.

Firm employed by	C. H. Fenstermaker & Associates, L.L.C.		
Name	Ian Trahan, P.E.	Years of relevant experience with this employer	35
Title	Manager, Engineer	Years of relevant experience with other employer(s)	24
Degree(s) / Years / Specialization		B.S. / 1997 / Civil Engineering	
Active registration number / state / expiration date		PE.0031410 / LA / 03-31-2027	
Year registered	2004	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities		Mr. Trahan will serve as Lead for Hydraulics Section Manual Updates.	

Experience dates

Ian B. Trahan, P.E., obtained his Bachelor of Science degree in Civil Engineering in 1997 (Magna Cum Laude). Mr. Trahan has a diverse portfolio of engineering experience he has accumulated throughout his career. Prior to coming to Fenstermaker, Mr. Trahan was the Louisiana Department of Transportation and Development (DOTD) Program Manager for DOTD's participation in the Louisiana Watershed Initiative (LWI). Mr. Trahan oversaw the DOTD/LWI Statewide Modeling Program and served as a Project Manager for four of seven modeling teams across the entire State of Louisiana. He participated in various LWI Technical Advisory Groups, represented DOTD on the LWI Working Group, and represented DOTD on the LWI Technical Design and Quality (TDQ) Team. Mr. Trahan has worked in both private and government sectors of the engineering industry and brings a wealth of knowledge and practical experience to Fenstermaker.

01/19-01/21	**Louisiana Watershed Initiative Statewide Modeling Program** Mr. Trahan was the program manager overseeing and managing LADOTD's statewide hydrologic and hydraulic (H&H) modeling program for the LWI, which is an effort between several state agencies to coordinate efforts to develop a new approach to reduce flood risk throughout the state. He was also tasked with managing regional modeling consultant contracts and task orders associated with LWI/DOTD statewide hydrologic and hydraulic modeling program and associated topographic and bathymetric surveying. Defined project task order scope and goals while predicted resources needed to reach objectives and manage those resources in an effective and efficient manner. He prepared budgets based on task order scope of work. He developed and managed detailed project schedules and associated Gantt charts in Microsoft Project. He provided LWI/DOTD statewide modeling updates on a consistent basis to the section head, immediate supervisor, regional steering committees, and stakeholders. Reviewed flood mitigation project applications received through the LWI. He participated as a member of the LWI Working Group representing DOTD, Technical Advisory Groups for Data and Modeling, and the Technical Design and Quality Team. He oversaw the regional modeling consultants and the regional steering committee coordination related to regional flooding issues and mitigation efforts. Mr. Trahan Provided technical based oversight to ensure that LWI flood mitigation projects do not create additional adverse flooding impacts in the watershed. He participated in LWI project in LWI project development by reviewing plans and specifications ensure that projects follow LWI program requirements and department policies.
06/21-ongoing **Project #2**	**Calcasieu Parish Regional Watershed Modeling and Planning (Calcasieu Parish, LA)** The Parishwide Watershed Planning and Strategic Analysis Project is an effort of the Calcasieu Parish Police Jury to develop a Calcasieu Parish Watershed Master Plan (CPWMP). Fenstermaker is responsible for providing engineering, modeling, and planning services for the project. The generation of the CPWMP will be completed over a five-year contract term by analyzing the eleven (11) watersheds located within Calcasieu Parish. This project includes one and two-dimensional hydrologic and hydraulic numerical modeling (using HEC-RAS and HEC-HMS), website development (which encompasses a GIS mapping engine), project management, pre-planning activities (including the development of a process to document key stakeholder insights, a clear mission and goals for the desired future drainage conditions, and a watershed selection matrix), benchmarking, preparation of a drainage infrastructure

	watershed report card, master plan development, implementation and monitoring, and development of street level drainage projects. Mr. Trahan served as the project manager and was responsible for the project's overall success and communicating with the Parish on project progress.
12/04-12/07	**Sugar Mill Pond - Phase I thru V (Lafayette Parish, LA)** Sub-consultant tasked with the design of the roadway and storm drainage for Phase I (48-acre 140-Lot), Phase II (19.3 acres, 97-Lots), Phase III (8.2 acres, 56-Lots), Phase IV (11.5 acres, 4-commercial parcels for Rouses), and Phase V (17.5 acres, 71-Lots) of the Traditional Neighborhood Development located in Youngsville, Louisiana. The required Drainage Impact analysis, for the entire 206-acre development, was performed utilizing HEC-HMS, HEC-RAS and HydroCAD. HEC-HMS was utilized to determine watershed hydrographs and hydrologic routing to be used in HEC-RAS to model Bayou Parc Perdue – Lateral 8A and determine the affects the development would have on the upstream/downstream portions of the Bayou from its origination within the development to the Chemin Metairie Parkway crossing. The model was updated with each design phase of the project to assure conformity with the original design study.
01/11-10/12	**Jordan Estates (Lafayette Parish, LA)** Development and design of a 21.27-acre 99-lot residential subdivision located off Albertson Parkway in Broussard, Louisiana. Basic services for the Project include design/development and preparation of subdivision plats, construction documents, construction staking and bidding assistance. Design responsibilities included lot layout, storm sewer, sanitary sewer, potable water, roadway design, and permitting with the proper agencies. The rear portion of the development was in Flood Zone A and HEC-RAS was utilized to analyze Coulee Lasalle (Cypress) Lateral 4C, Watershed 21 to determine a base flood elevation for the development and define the floodway limits to assure the development would not encroach into the floodway and/or affect the hydraulic capacity of the coulee.
09/21-08/22	**Coulee Mine East Regional Detention Facility (Lafayette Parish, LA)** Lafayette Consolidated Government (LCG) obtained $4.7 million through the Louisiana Watershed Initiative for its Coulee Mine East Regional Detention Facility, a 40-acred detention pond along Coulee Mine East with a control structure to limit the discharge to the coulee and hold storm water in the pond during heavy rain events. LCG contracted Fenstermaker to finalize the evaluation of the detention facility west of Pelican Park from conceptual design to final construction plans for public bidding. Mr. Trahan was responsible for the modeling of the coulee and reviewing the project's technical memorandum, the environmental exhibit, the USACE exhibit, and the preliminary modeling results. Additionally, he coordinated the creation of the wetland delineation shapefile and revised and re-submitted the technical memorandum. He reviewed revised detention facilities, recommended an action plan for the bike paths, and worked on the proposed recreation area. Mr. Trahan also assisted with the Prejean Road gas line relocation, reviewed preliminary plans, coordinated survey control points, and revised invoices and progress reports.
05/23-ongoing	**Coulee Ile des Cannes-L8C Regional Detention Facilities Phase 1 (Lafayette Parish, LA)** The City of Scott selected Fenstermaker to provide professional engineering services for the L8C detention facilities project. These services included data gathering, technical analysis, completion of an H&H study, the development of design documents, project permitting, and the completion of an Environmental Assessment (EA) to determine project eligibility for HMGP funding. Mr. Trahan reviewed the project's drainage design and contributed to the Benefit Cost Analysis (BCA). He also reviewed HydroCAD models showing hydrology and hydraulics (H&H) of stormwater runoff scenarios. Mr. Trahan drafted portions of the H&H report and assisted with preparing final plans, quantities, specifications, and cost estimates.

Firm employed by	C. H. Fenstermaker & Associates, L.L.C.			
Name	Luke Hebert, P.E., CFM	Years of relevant experience with this employer	20	
Title	Director, Engineer	Years of relevant experience with other employer(s)	1	
Degree(s) / Years / Specialization		B.S. / 2003 / Civil Engineering		
Active registration number / state / expiration date		P.E.0034715 / LA / 09-30-2025		
Year registered	2009	Discipline	Civil Engineer	
Contract role(s) / brief description of responsibilities		Mr. Hebert will serve as Lead for General H&H Analysis and assist with Hydraulics Section Manual Updates.		

Experience dates	
Luke Hebert is an Engineering Director at Fenstermaker with experience in engineering design, planning, and project management. During his career, Mr. Hebert has been part of many different types of designs ranging from various roadway types (i.e., local, collector, arterial and freeway), surface and sub-surface drainage systems, water and sewer distribution system and water and sewer treatment. In 2013 Mr. Hebert was appointed by the Mayor of Carencro as the engineer for the City. One of his main focuses is working with developers on new commercial and residential developments. Since 2013 Mr. Hebert has been involved with over 20 new developments located within the City of Carencro and has managed them through planning, construction, and final acceptance. Mr. Hebert is proficient in Bentley Software such as MicroStation, Storm and Sanitary, and InRoads, and LADOTD's HYDRWIN and AutoTurn.	
10/22-ongoing **Project #3**	**Infrastructure Investment and Jobs Act (IIJA) Off-System Bridge Program District 03 (Acadia, Evangeline, Iberia, Lafayette, St. Landry, St. Martin, St. Mary, and Vermilion Parishes, LA)** The Louisiana Department of Transportation and Development selected Fenstermaker to provide all necessary engineering services required for development plans for the replacement of 14 bridges in District 03. Fenstermaker's services include researching eligible structures, coordinating with local stakeholders, and selecting structures for inclusion in the IIJA Off-System Bridge Program. Mr. Hebert is serving as an engineer on the design team and has planned stakeholder meetings for Parishes within District 03. He has also assisted with preliminary and 30% design plans and bridge layouts. Mr. Hebert is also serving as Quality Control (QC) Document manager for all project work.
10/09-09/12	**LA 92 at LA 89 Roundabout (Lafayette Parish, LA)** Mr. Hebert served as project manager for the redesign of the intersection of LA 89 and LA 92 for the City of Youngsville. This area was a source for traffic congestion within the City. Fenstermaker was tasked to design a rotary roundabout intersection for greater safety, capacity and operational efficiency. Fenstermaker developed final plans, provided construction administration, construction inspection, and any additional engineering consultation. The roadway drainage design and layout included subsurface drainage and roadside ditches.
09/10-12/13	**Lafayette Parish Sheriff's Office Public Safety Complex (Lafayette Parish, LA)** Mr. Hebert served as the Deputy Project Manager and Lead Site/Civil Engineer for the build consisting of five hybrid construction structures consisting of structural steel, pre-engineered metal buildings, and concrete tilt wall construction. The team implemented Rammed Aggregate Piers to improve the building foundations, providing significant cost savings over traditional foundation methods. In the design for site/ civil support, Fenstermaker considered a 100-year floodplain mitigation, detention pond design, parking and grading, potable water, gravity sewer and force main. Pre-and-post drainage analyses were completed.
09/12-08/19	**Acadiana Regional Airport (ARA) Access Roadway (Iberia Parish, LA)**

	Mr. Hebert served as the project manager and oversaw roadway and drainage design. Fenstermaker was responsible for designing a 2-lane roadway that will connect LA 3212 and LA 675 with room for a future 4-lane roadway. The design included drainage roadside ditches and cross drains. Fenstermaker was also responsible for bid and contract administration, construction engineering and inspection services. Additionally, Fenstermaker assisted the city in obtaining capital outlay funding for this project.
08/12-05/17	**LSU Recreation Center (East Baton Rouge Parish, LA)** Mr. Hebert served as Project Manager for Louisiana State University's new Recreation Center. Fenstermaker assisted Grace Hebert Architects with Site and Civil design for two new parking areas for the Louisiana State University. One parking area was for the Student Recreation Fields along River Road. This parking area includes the addition of 84 new parking stalls. The estimated construction cost for site work was $400,000.00. The other parking area was for the UREC renovation, including the addition of 400 new parking stalls. The estimated construction cost for this site work was $2,000,000. Both designs included the layout of the parking area in accordance with the LSU Design Guidelines. Other design work associated with this project included drainage design, grading layout, and sidewalk layout. The drainage design required pipe size determining pipe sizes, locating catch basins, and investigating the overall local drainage of the existing parking lot and structures.
05/13-10/17	**US 90 (I-49 South) Albertson Pkwy to Ambassador Caffery Design-Build (Lafayette Parish, LA)** As the Lead Roadway Design Engineer for James Construction Group's Design-Build project, Mr. Hebert played a crucial role in the transformation of a section of US 90 in Lafayette Parish into a six-lane controlled access facility. His responsibilities encompassed the design of roadway enhancements, including improvements to the east and westbound frontage road system, a new six-lane US 90 overpass spanning both Albertson Parkway and the existing BNSF railroad facility, as well as the construction of necessary US 90 mainline ramps to connect these structures and frontage roads. Mr. Hebert's contributions involved the design of horizontal and vertical roadway alignments, typical sections, sequencing of construction, geometric detailing, cross sections, erosion control, and quantity tabulation for the contractor. Furthermore, he oversaw the layout of Mechanically Stabilized Earth Walls (MSEW), concrete panels essential for keeping all US 90 mainline enhancements within the existing right of way. Mr. Hebert also oversaw the roadway drainage design which included roadside ditches, cross drains, subsurface drainage. elevated drainage layout, and design at two overpasses.
01/09-08/18	**East Pont des Mouton Phases I & II - Roadway Widening & Water / Sewer (Lafayette Parish, LA)** Mr. Hebert was the Lead Design Engineer for roadway widening improvements of East Pont des Mouton, Phase II commencing at the Interstate 49 for Lafayette Consolidated Government. This project entailed the widening of a 2-lane asphalt road into a 5-lane, concrete urban arterial road. Mr. Hebert was responsible for all horizontal and vertical alignments, typical sections, utility relocation, geometric detailing, intersection design, drainage design, sequencing of construction, quantity calculations, and the production of plans and specifications. The project also included roadway drainage design and subsurface drainage design. Mr. Hebert also acted as the Lead Construction Engineer.

Firm employed by	C. H. Fenstermaker & Associates, L.L.C.		
Name	Coy LeBlanc, M.S., PWS, GISP	Years of relevant experience with this employer	12
Title	Remote Sensing Scientist	Years of relevant experience with other employer(s)	6
Degree(s) / Years / Specialization	B.S. / 2006 / Environmental and Sustainable Resources M.S. / 2019 / Coastal Ecology and Advanced Technologies		
Active registration number / state / expiration date	Not applicable		
Year registered	Not applicable	Discipline	Not applicable
Contract role(s) / brief description of responsibilities	Mr. LeBlanc will serve as Lead for Data Management & Mapping and assist with Hydraulic Software Programming.		

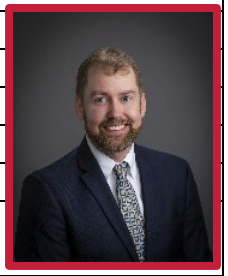
Experience dates

As a Remote Sensing Scientist, Coy LeBlanc's duties include data gathering, database management, and distribution of all spatial data. This includes the management and transformation of raster and shapefiles associated with individual engineering projects. Mr. LeBlanc is currently pursuing a Ph.D, in Biology, with concentrations in remote sensing of coastal ecosystems. This includes collecting spatial data using UAV technologies and processing and development of spatial algorithms to further monitor coastal ecosystems. Mr. LeBlanc has also been a part of the CRMS (Coastwide Reference Monitoring System) project; these efforts conducted in Louisiana require monitoring the effectiveness of individual projects as well as monitoring the cumulative effects of all projects in restoring, creating, enhancing, and protecting the coastal landscape. Mr. Leblanc's other responsibilities included Wetland Delineations and Section 404 permitting with the U. S. Army Corps of Engineers and the Louisiana Department of Natural Resources Coastal Zone, Predischarge Notification permits with the U. S. Environmental Protection Agency, organizing agency liaison meetings, correspondence with regulatory agencies, Phase I Environmental Site Assessments, reviewing public documentation at the Louisiana Department of Environmental Quality, and preparing descriptive proposals and competitive cost estimates for projects.

06/20-ongoing **Project #1**	**Louisiana Watershed Initiative Region 4 (De Soto, Sabine, Vernon, Rapides, Beauregard, Allen, Jefferson Davis, Calcasieu, and Cameron Parishes)** Mr. LeBlanc served as the Data Management and GIS Lead for the Louisiana Watershed Initiative Region 4, an unprecedented project that will manage the future flood risk in the State of Louisiana through watershed-based solutions. Mr. LeBlanc was responsible for the management and oversight to source, collect, organize, and distribute data to successfully complete an interactive, usable, and manageable hydraulic and hydrologic Region 4. These models will consider the degree to which communities within a watershed are hydraulically and hydrologically connected and will guide decisions regarding the coordination and implementation of land use, policy, and infrastructure improvements to effectively manage flood risk at the watershed level.
05/20-04/24 **Project #2**	**Calcasieu Parish Regional Watershed Modeling and Planning (Calcasieu Parish, LA)** Mr. LeBlanc was responsible for data collection and management of this regional watershed planning project. He built Fenstermaker's Survey123 application for the organization of all GIS data. He is also responsible for the processing of data as it was collected. Fenstermaker was contracted by Calcasieu Parish Police Jury (CPPJ) to update their existing models by migrating 1D models to coupled 1D/2D HEC-HMS and HEC-RAS models and expand the modeling domain to encompass all the watersheds within the Parish. The model domain includes four HUC 8 watersheds tiered to the HUC-12 level. The goal of the project is to develop an adaptive plan that includes projects, programs, and policies that are being screened utilizing the Deltares Dynamic Adaptive Policy Pathways (DAPP) approach by analyzing various future conditions that account for relative sea level rise, future development, and increased storm intensities. This approach allows the Parish to make informed decisions on managing their watersheds.

08/20-9/23	**Cameron Parish Post Hurricane Laura Damage Assessment (Cameron Parish, LA)** Immediately after Hurricane Laura passed, Fenstermaker deployed filed crews to locate road blockage for restoration crews. Using UAV's, Fenstermaker was able to gather photos and videos. After completing the initial road blockage survey, Fenstermaker surveyed all homes and critical infrastructure in Cameron Parish. Photos and videos were uploaded to ArcGIS Online and/or YouTube nightly. All data was delivered to Cameron Parish in a single webpage run on ESRI's Dashboard application, which gave residents and first responders a real-time look into the damage on the ground and allowed them to plan recovery efforts. Mr. LeBlanc was the Project Manager responsible for all field and data preparation.
09/20-10/20	**CPPJ Emergency Traffic Control Device Monitoring Services (Calcasieu Parish, LA)** Fenstermaker performed emergency traffic control device monitoring services for Calcasieu Parish Police Jury following the aftermath of Hurricane Laura on September 27th, 2020. After the storm passed, it quickly became evident that the Parish faced the challenge of unsafe roadways due, not only to fallen debris, but also to traffic signals being out, and traffic signs being mangled, fallen, or completely missing. Fenstermaker was tasked with assessing, repairing, and verifying over 11,000 traffic control devices. Assessments consisted of evaluating the condition of signs by digitally logging information into Fenstermaker's Survey123 application. Mr. LeBlanc was responsible for setting up ArcGIS ESRI accounts, developing the Survey 123 device data collection application, and performing database management.
09/21-11/22	**RR021 Central City Group A (Orleans Parish, LA)** The City of New Orleans Department of Public Works selected Fenstermaker to provide baseline and topographic survey, roadway design, and construction administration for streets in the Central City neighborhood. Mr. LeBlanc was responsible for creating front-end data collection processes to expedite field data collection. He also created dashboards and monitoring tools for both internal and external project progress and processing data and created reports from GIS data.
11/21-10/22	**Mermentau Inundation Relief (Cameron Parish, LA)** Parishes located within the Mermentau Basin are continually threatened with flooding during significant rainfall events. The Mermentau Basin Inundation Relief project will link existing drainage laterals along La. Hwy. 82 to convey stormwater north of the highway, widen downstream channels, install new gates at the East End Locks and include other drainage features. The project will divert water into surrounding marshes, improve water quality, sustain fish and wildlife habitat, and reduce area flood risk. Mr. LeBlanc developed the Survey 123 data input dashboard and the project map dashboard, assisted with coordinating survey tasks for data collection, and worked on terrain modifications.
07/22-08/22	**Four-Mile Bayou Road (St. Martin Parish, LA)** Fenstermaker was contracted by St. Martin Parish Government to convert 1.5 miles of this roadway from an aggregate to asphalt pavement roadway. Mr. LeBlanc was responsible for creating front-end data collection processes to expedite field data collection. He also created dashboards and monitoring tools for both internal and external project progress and processing data and created reports from GIS data.
11/22-12/22	**Kaliste Saloom Road Widening & Intersection Improvements - LA3073 to LA733 (Lafayette Parish, LA)** This road widening project is a $34 million construction project designed to be a walkable urban thoroughfare with shared bicycle lanes and 8-ft wide sidewalks. Fenstermaker both recommended and developed a line and grade study to the client to analyze optimal alignment and widening options based upon minimizing impacts and costs. Mr. LeBlanc was responsible for creating front-end data collection processes to expedite field data collection. He also created dashboards and monitoring tools for both internal and external project progress and processing data and created reports from GIS data.

Firm employed by	C. H. Fenstermaker & Associates, L.L.C.		
Name	Andrew Sellers, P.E., CFM	Years of relevant experience with this employer	18
Title	Director, Engineer	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		B.S. / 2007 / Civil Engineering	
Active registration number / state / expiration date		PE.0037694 / LA / 09-30-2025	
Year registered	2013	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities		Mr. Sellers will assist with Hydraulics Section Manual Updates, NFIP No-Rise Review, General H&H Analysis, and CLOMR & LOMR.	



Experience dates

Andrew Sellers, P.E., CFM is a member of Fenstermaker's Lafayette Engineering group and assists with civil projects for municipal and parish clients. Mr. Sellers currently serves as the Engineer for the City of Carencro and manages several engineering services and contracted projects, including the design and improvement of drainage systems, Base Flood Elevation (BFE) determinations, roadway design, utility design, site design, construction administration, and plan review. He has led in the preparation of design plans and construction specifications on various projects. As a Certified Floodplain Manager, Mr. Sellers works clo sely with the City of Carencro's planning department to manage and administer the floodplains within the City limits, and he assists the City with the annual recertification of their participation in the National Flood Insurance Program's Community Rating System. Mr. Sellers assists to secure flood mitigation project funding through FP&C, HMGP, CDBG, and other grant programs and works as the agency coordinator for these projects. In addition to his engineering experience during his time at Fenstermaker, Mr. Sellers spent over three years as a Surv360 Specialist. While in this position, his responsibilities included processing and analyzing our underwater acoustic data, and he was responsible for managing all data processing tasks, procedures, and daily activities of the Surv360 Technicians assigned to complete the tasks during the production of deliverables for a DOTD statewide bridge and dam inspection projects. Mr. Sellers is also proficient in ArcGIS/3D Analyst, HEC-RAS, HEC-HMS, MicroStation, Bentley InRoads, and MS Office Suite. Mr. Sellers has completed formal HEC-RAS 2D training through West Consultants.

02/08-06/09	**Calcasieu Parish Stormwater Master Plan (Calcasieu Parish, LA)** Fenstermaker was contracted to develop a Stormwater Master Plan for Calcasieu Parish, covering the Parish's major waterways and drainage basins. The project included data collection, researching prior studies researching prior studies, hydraulic and hydrologic (H&H) numerical modeling, an analysis of known flood prone areas and watershed deficiencies, the development and modeling of watershed improvements, and GIS mapping. Mr. Sellers assisted with topographic and bathymetric surveying, hydrologic and hydraulic model setup, the development of the GIS database, and preliminary and final stormwater master plan development.
11/09-06/11	**Choupique Sulfur Stormwater Master Plan (Calcasieu Parish, LA)** A Stormwater Master Plan was developed for the Choupique Sulphur Basins, which included the towns of Sulphur and Westlake. As part of this drainage plan, Fenstermaker set up, calibrated, and validated detailed hydrologic and hydraulic models. The model results were used to develop drainage alternatives to help relieve existing flooding problems. Fenstermaker recommended a maintenance plan and public outreach program. Stakeholder meetings were held to review over project progress and to determine what areas were historically prone to flooding and which alternatives were most feasible. Mr. Sellers was responsible for several H&H modeling tasks, including delineating area basins, setting up hydraulic models, processing cross section and structure data, modeling storm events, setting up and calibrating geometries and watershed models, and creating maps. He also contributed to the Drainage Impact Analysis (DIA) report and assisted with developing the project's GIS database.

01/11-12/18	**Nueces River 2D Modeling (3 – HUC 8 Watersheds) (South TX)** Mr. Sellers assisted in the development of a coupled 1D – 2D numerical model of the Nueces River and surrounding tributaries in South Texas. This modeling allowed oil and gas companies to determine flood risk and acquire flood permits as part of the Eagleford Shale play. The model detail covers 3 HUC 8 watersheds with terrain modeling but encompasses 7 total HUC 8 watersheds at various tiered levels. Mr. Sellers worked with calibration, validation, review, and approval by FEMA Region 6 for the governing bodies to utilize for permitting and regulating purposes.
03/17-09/17	**Lafayette Parish FEMA Model Analysis and Review; FEMA Community Rating System (CRS) Management (Lafayette Parish, LA)** Fenstermaker has been working with the Lafayette Consolidated Government, as well as the Cities of Youngsville and Carencro, to finalize the Lafayette Parish FEMA flood maps. Mr. Sellers assisted in the review of the preliminary FEMA flood maps and models, the completion of the field investigation and structure inventory. Mr. Sellers assisted the City of Carencro in their participation in the FEMA Community Rating System Program. As part of this program, Fenstermaker managed their maintenance activities, developed maintenance plans, monitored the completion of elevation certificates, completed public outreach projects, and completed yearly audits and five-year renewals.
11/18-12/18	**Bayou Teche Watershed 2D Regional Model – Areas of Mitigation Interest (St. Martin Parish, LA)** Fenstermaker was sub-contracted to create an Areas of Mitigation Interest (AOMI) dataset in collaboration with St. Martin Parish Government and Federal Emergency Management Agency Region 6 for the Louisiana Silver Jacket Team, headed by the USACE – New Orleans District. The AOMI dataset will be a tool to support flood reduction opportunities and/or success stories. Mr. Sellers assisted project modelers with support in processing geospatial data using ArcGIS.
11/20-10/23	**Oak Villas Development Review (Lafayette Parish, LA)** This City of Carencro subdivision construction project included the installation of all components of water, sewer, drainage, and asphalt roadway. Fenstermaker was responsible for reviewing the engineer of record's Drainage Impact Analysis report and construction plans. During construction, Fenstermaker provided inspection services, reviewed construction submittals, and worked with the engineer of record to resolve conflicts. Mr. Sellers served as the project manager and was responsible for reviewing the final plats and closeout documents, coordinating the final project walkthrough, drafting and finalizing the punch list, and finalizing the closeout documents.
02/22-ongoing	**St. Peter & Church Street Sidewalks (Lafayette Parish, LA)** Fenstermaker prepared plans and specifications for ADA-compliant improvements to approximately 950 feet of sidewalks on both sides of East St. Peter Street from North University Avenue/LA 182 to North Church Street; the reconstruction of sidewalks on the east side of North Church Street from East St. Peter Street to Veterans Drive; the reconstruction of the curb ramps at the intersection of East St. Peter Street and North University Avenue/LA 182; and the replacement of old, cast-iron water infrastructure. Fenstermaker will also provide construction administration and inspection for the project. Mr. Sellers is the project manager and client contact. He was the engineer of record for a water main relocation and coordinated with Acadiana Metropolitan Planning Organization and the Office of Community Development (Water Sector) to fund the sidewalk and water portions of the project respectively.

Firm employed by	C. H. Fenstermaker & Associates, L.L.C.		
Name	Mallory Rodrigue, M.S., P.E.	Years of relevant experience with this employer	8
Title	Engineer	Years of relevant experience with other employer(s)	6
Degree(s) / Years / Specialization	B.S. / 2008 / Civil & Environmental Engineering M.S. / 2010 / Civil Engineering: Water Resources Engineering		
Active registration number / state / expiration date	PE.0038168 / LA / 09-30-2025		
Year registered	2013	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities	Ms. Rodrigue will assist with Watershed Modeling, NFIP No-Rise Review, General H&H Analysis, and CLOMR & LOMR.		

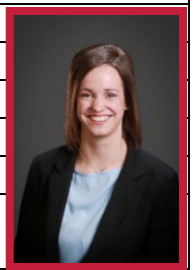
Experience dates

Mallory Rodrigue, M.S., P.E., is a Professional Engineer registered in the state of Louisiana specializing in hydraulics and hydrology for the Water Resources Group of the Engineering Division. She has experience with project management, numerical modeling, drainage design, roadway design, civil site design, permitting, and the analysis of riverine, estuarine, and coastal systems. She has gathered field data, developed hydrologic, hydraulic, and ecologic numerical models, helped numerically analyze natural and man-made drainage systems, designed open-channel and sub-surface drainage features, designed aggregate roads and berms, provided flood-proofing and drainage design recommendations, and obtained permits from various agencies. Ms. Rodrigue studied river hydrodynamics, including the effects of relative sea level rise, channel modifications, ad proposed freshwater diversions, while working on her master's degree. She is proficient in MS Office Suite, Berkeley Madonna, Fortran, HEC-RAS, HEC-GeoRAS, HEC-HMS, HEC-GeoHMS, ArcHydro, ArcGIS, HYDRWIN, EPA SWMM, and MicroStation (including InRoads & AutoTURN).

03/22-ongoing **Project #1**	**Louisiana Watershed Initiative Region 4 (De Soto, Sabine, Vernon, Rapides, Beauregard, Allen, Jefferson Davis, Calcasieu, and Cameron Parishes)** Fenstermaker was the prime consultant for this unprecedented project that will manage the future flood risk in Louisiana through watershed-based solutions. Fenstermaker is responsible for various tasks including data collection, data gap analysis, surveying, drone imaging, and GIS services to successfully complete interactive, usable, and manageable hydraulic and hydrologic models for Region 4. Ms. Rodrigue was responsible for the 1D and 2D modeling and analysis of the Upper Calcasieu watershed.
03/13-03/13 **Project #5**	**Coulee Ile des Cannes Watershed Study (HUC 10) & Physical Map Revision (Lafayette Parish, LA)** Fenstermaker was contracted to develop a hydrologic and hydraulic numerical model and map the flood zones and floodways of the Ile de Cannes Watershed. Ms. Rodrigue assisted with the development of an unsteady HEC-RAS model, calibration and validation of the model using data collected from two different storm events and then using the model to determine the 100-year flood extents. She also assisted in the preparation of the Letter of Map Revision (LOMR) submittal to FEMA which resulted in a Physical Map Revision (PMR) that impacted 11 Flood Insurance Rate Maps (FIRM) panels. This effort is estimated to be the largest LOMR prepared in the U.S.
03/13-07/13	**Marais des Cannes Community Development Model (Lafayette Parish, LA)** Ms. Rodrigue was responsible for estimating the retention and detention rates of proposed storage ponds for a development in Lafayette Parish near the City of Scott, LA. Ms. Rodrigue, along with the help of Dr. McCorquodale of UNO, developed an EPA SWMM model to simulate the inflow and runoff patterns occurring with and without the proposed storage ponds. Her model's outputs were used to estimate the removal efficiency of total suspended solids and a representative pollutant. Ms. Rodrigue was also responsible for creating the channel cross-sections for the connections to the storage ponds from the Coulee Ile des Cannes, as well as creating sections of the final report.

08/13-08/15	**Louisiana's 2017 Coastal Master Plan (Southwest Coastal Parishes, LA)** The CPRA updates their Coastal Master Plan every 5 years. As the Project Manager for the 2017 Plan, Ms. Rodrigue was requested by the Coastal Protection and Restoration Authority (CPRA) via the Water Institute of the Gulf to oversee the creation of a new domain, to test and debug the new Python/Fortran code, to calibrate the stage and salinity, to participate in several sensitivity and uncertainty analyses, and to perform a number of production simulations to inform the CPRA of the effects of proposed restoration and protection projects in the Chenier Plain. Ms. Rodrigue was also responsible for overseeing the Pontchartrain-Barataria Basin compartment revisions, the testing and debugging of the new Python/Fortran code, the stage and salinity calibration, the sensitivity and uncertainty analyses, and the production simulations that informed the CPRA of the effects of proposed restoration and protection projects in the Pontchartrain-Barataria Basin. She also contributed to sections of the final report.
09/15-12/15	**Bechtel LNG - Mississippi River Drainage Impact Analysis & LOMR (Plaquemines Parish, LA)** Mississippi River LNG, LLC contracted Fenstermaker to complete a required Drainage Impact Analysis (DIA) for an LNG export terminal facility development in Plaquemines Parish. Ms. Rodrigue reviewed and drafted execution plans and researched Plaquemines Parish. She also worked on data mining and participated in bi-weekly conference calls with Bechtel. She processed and worked with various types of data in GIS and ArcHydro Tools, including land cover, soil, and topo/bathy data. Ms. Rodrigue also worked on HMS and RAS models and revised them based on project meetings and discussions with colleagues. She reviewed project status and created task lists for future modeling.
12/20-1/21	**Derby Heights - Duplantis Design Group (DDG) (Lafayette, LA)** The Derby Heights Subdivision was inundated during and following the August 2016 Flood. A HEC-RAS model was developed by DDG to simulate proposed alternatives to reduce the potential flooding impact on the Subdivision, thereby preventing additional property damage. Ms. Rodrigue was responsible for implementing and modeling four new proposed alternatives in the 1D model, including a floodwall, concrete-lined channel, and an additional outfall culvert. The results were compared to the existing conditions and will help inform LCG of the best path forward to prevent future flooding.
01/21-04/21	**LA 22 Drainage Improvements - Duplantis Design Group (DDG) (Ascension Parish, LA)** DDG was tasked with performing hydrodynamic model simulations to assess the effects of implementing the Laurel Ridge Levee Extension along with LA Highway 22 improvements to benefit conveyance in the region. The improvements include digging two channels under LA 22 and other excavation in the Acy area, as well as turning sections of LA 22 into bridges. Ms. Rodrigue was responsible for implementing these improvements in an existing HEC-RAS model, along with adding existing culverts along the Amite River Diversion Canal. She ran the existing and proposed conditions simulations, created analysis maps, and drafted the technical report for submittal to GSA.
02/21-03/21	**Bayou Boyle Detention Pond – Duplantis Design Group (DDG) (Ascension Parish, LA)** Gonzales, LA has seen much growth and development over the years with more still to come. The area currently experiences nuisance flooding, road overtopping, and structural inundation, which has highlighted the need for drainage improvements. DDG was tasked with performing hydrodynamic model simulations to assess the effects of implementing a 42.5-acre detention pond along Bayou Boyle in the Gonzales area to improve drainage conditions in the region. Ms. Rodrigue was responsible for implementing the proposed pond and its auxiliary structures in an existing 2D HEC-RAS model. She ran the existing and proposed conditions simulations, created analysis maps, and drafted the technical report for submittal to GSA.

Firm employed by	C. H. Fenstermaker & Associates, L.L.C.		
Name	Anna Doucet, P.E.	Years of relevant experience with this employer	10
Title	Manager, Engineer	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		B.S. / 2014 / Civil Engineering	
Active registration number / state / expiration date		PE.0043469 / LA / 09-30-2025	
Year registered	2019	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities		Ms. Doucet will serve as Lead for NFIP No-Rise Review and assist with Hydraulics Section Manual Updates.	



Experience dates	
Anna Doucet, P.E., is a highly experienced Professional Engineer with expertise in various areas such as roadway design, hydrologic and hydraulic modeling, project management, and construction management for both water resource and transportation projects. She has worked on various civil design projects for different clients including Calcasieu Parish Police Jury, Sasol, Lafayette Consolidated Government, and the City of Scott. She has also coordinated with several agencies, including LADOTD, FEMA, GOHSEP, and several local municipalities. Ms. Doucet has served as project manager and deputy project manager on multi-million-dollar projects for both the public and private sector. Ms. Doucet's primary responsibilities include serving as a project manager-engineer for various projects such as roadway and hydraulic modeling. She has completed several water resources projects, including numerical hydrologic and hydraulic modeling for the use of floodplain mapping, FEMA No-Rise, and FEMA LOMR. She has also utilized numerical modeling to evalu ate future conditions of drainage basins and proposing economical projects that would benefit individual watersheds. Ms. Doucet has proficient experience in various software and services such as HEC-HMS, HEC-RAS (both 1D and 2D), LADOTD's HYDRWIN, MicroStation (which includes InRoads and AutoTURN), and HydroCAD. She also has experience with ArcGIS, ESRI Applications such as StoryMap and Collector, community outreach, public education, and website development. She has completed formal HEC-RAS training on two-dimensional modeling through West Consultants.	
04/20-04/21 **Project #1**	**Louisiana Watershed Initiative Region 4 (De Soto, Sabine, Vernon, Rapides, Beauregard, Allen, Jefferson Davis, Calcasieu, and Cameron Parishes)** Ms. Doucet served as a regional hydrologic and hydraulic lead modeler for the Louisiana Watershed Initiative Region 4, an unprecedented project that will manage the future flood risk in the State of Louisiana through watershed-based solutions. Ms. Doucet was also responsible for assisting with data collection, modeling inputs, cost estimates, stakeholder outreach, and other engineering tasks to successfully complete an interactive, usable, and manageable hydraulic and hydrologic Region 4. These models will consider the degree to which communities within a watershed are hydraulically and hydrologically connected and will guide decisions regarding the coordination and implementation of land use, policy, and infrastructure improvements to effectively manage flood risk at the watershed level.
04/18-04/24 **Project #2**	**Calcasieu Parish Regional Watershed Modeling and Planning (Calcasieu Parish, LA)** This project included one and two-dimensional hydrologic and hydraulic numerical modeling (using HEC-RAS and HEC-HMS), website development (which encompasses a Geographic Information System (GIS) mapping engine), project management (which include public and stakeholder meetings), pre-planning activities (including the development of a process to document key stakeholder insights, a clear mission and goals for the desired future drainage conditions, and a watershed selection matrix), benchmarking, preparation of a drainage infrastructure watershed report card, master plan development, implementation and monitoring, and development of street level drainage projects. Ms. Doucet assisted with modeling several Calcasieu Parish laterals in HEC-RAS, project management activities, assisted with the inventory task utilizing GIS, and managed the implantation on the street level drainage projects. Ms. Doucet utilized both 1D and 2D numerical hydraulic modeling for this project.

05/17-11/20 **Project #5**	**Coulee Ile des Cannes Watershed Study (HUC 10) and Physical Map Revision (Lafayette Parish, LA)** Ms. Doucet modeled several alternatives in HEC-RAS to determine the sensitivity of the hydraulic model. Ms. Doucet also modeled future scenarios to analyze floodplain extents with the hydrologic basins completely developed out and to analyze a heavier rainfall using current NOAA Atlas 14 rainfall data.
05/17-11/20	**Lafayette Parish FEMA Model Analysis and Review; FEMA Community Rating System (CRS) Management (Lafayette Parish, LA)** Ms. Doucet completed a feasibility analysis for a regional detention pond along Coulee Mine East. This included modeling several scenarios in HEC-RAS and producing a technical memorandum as the final deliverable.
08/17-11/20	**Coulee Mine Branch and Tributaries: Hydraulic Re-Study (Lafayette Parish, LA)** Fenstermaker was requested by the Lafayette Consolidated Government (LCG) to provide professional hydraulic modeling, hydrologic monitoring, and topographic surveying services to revise the effective Flood Insurance Rate Map data for Coulee Mine Branch and Tributaries. Ms. Doucet completed the hydraulic modeling that met FEMA's requirements for an Enhanced Study (Detailed Riverine) Hydraulic Model. Ms. Doucet was responsible for submitting digital Map Products (floodplain and floodway boundaries, flood risk tabulations) which meet FEMA's requirements for Digital Flood Insurance Rate Map (DFIRM) production and will coordinate with LCG for the Letter of Map Revisions (LOMR) process with FEMA.
03/18-07/19	**Rossingol Road Bridge Replacement (Calcasieu Parish, LA)** Fenstermaker provided professional engineering services related to the replacement of the bridge located on Rossignol Road. Fenstermaker utilized Louisiana Department of Transportation and Development's drainage design standards for bridge structures, as well as their familiarity with HEC-RAS and HEC-HMS software to analyze the effect of the proposed bridge structure, including any backwater effects. For this project, Fenstermaker analyzed drainage requirements by modeling the effect of the design storm on the surrounding topography, assessed any effects from the proposed bridge design on the water surface profile, provided recommendations on bridge deck height and scour potential, and designed drainage improvements and ditch stabilization required for related roadway work. Ms. Doucet performed hydrologic and hydraulic modeling, scour analysis, drainage design and construction engineering.
08/21-10/21	**Green Pond Gully Watershed Analysis (Jefferson County, TX)** There was concern with the existing drainage patterns within the Green Pond Gully Watershed about whether the drainage control dam, levees, and hydraulic structures north of FM 365 near the conservation area are having an impact on these drainage patterns. As a sub-consultant to Fitz & Shipman, Inc., Fenstermaker provided hydrologic and hydraulic modeling services in two phases. During the first phase, Fenstermaker evaluated historic data and assessed the base-level engineering. Ms. Doucet updated the model with Annual Exceedance Probability (AEP) storm and rainfall data and reviewed the technical memorandum.
02/22-11/22	**Discovery NFIP CTP (Statewide, LA)** As a subconsultant to Halff, Fenstermaker prepared Pre-Discovery maps in GIS format, conducted a community assessment with local officials to discuss local needs, and documented all attempted and successful communications. Fenstermaker also captured community snapshot summaries and figures for each parish and incorporated this data in each of the three Discovery watersheds. Fenstermaker's GIS Services team prepared the Discovery Coordinated Needs Management Strategy geospatial database. Ms. Doucet met with Allen Parish to discuss local needs. She reviewed deliverables created for all watersheds included in the task order and summarized comments from communities.

Firm employed by	C. H. Fenstermaker & Associates, L.L.C.			
Name	Aimee Latiolais, P.E.	Years of relevant experience with this employer	9	
Title	Engineer	Years of relevant experience with other employer(s)	1	
Degree(s) / Years / Specialization		B.S. / 2014 / Civil Engineering		
Active registration number / state / expiration date		PE.0042932 / LA / 03-31-2027		
Year registered	2018	Discipline	Civil Engineer	
Contract role(s) / brief description of responsibilities		Ms. Latiolais will assist with General H&H Analysis.		

Experience dates	
Ms. Latiolais is a Professional Engineer with experience in design, planning, and construction oversight. Ms. Latiolais's experience is in roadway design, both open channel and subsurface drainage systems, traffic studies, line and grade studies, commercial site design, and design of roundabouts. She has served as a design engineer for a multitude of transportation projects ranging from urban local to collector and arterial roadways. Her responsibilities at Fenstermaker include utility design, analysis of hydraulic systems, site design, and roadway design. Her experience includes the development of various transportation, drainage, and construction documents. Ms. Latiolais is proficient in Bentley Software such as MicroStation, Storm and Sanitary, and InRoads; Transoft Solution's AutoTURN; LADOTD's HYDRWIN; and SIDRA INTERSECTION. She has attended the ATTSA Traffic Control Technician, Traffic Control Supervisor, and Certified Flagger training courses.	
02/17-ongoing **Project #4**	**Verot School Road Interchange at U.S. Highway 90 (Lafayette Parish, LA)** Ms. Latiolais is a Design Engineer responsible for the widening of existing Verot School Road from Pinhook Road (LA 182) to existing US 90 from a 2-lane roadway to a median separated 4-lane roadway facility. She is designing horizontal and vertical roadway elements, intersection improvements to include a multi-lane roundabout, and open channel and subsurface drainage along Verot School Road, South College Road, Hugh Wallis Road, and the Service Road. The project faced major challenges hydraulically at the future interstate outfalls that required major redesign, as well as the creation of new outfalls in order to meet LADOTD and BNSF standards for all relevant design storms. Ms. Latiolais also aided in the project line and grade study and hosted the public meeting which followed the procedures set forth by LADOTD.
01/15-11/20	**Frem Boustany Drive Extension Phases 1 &2 (Lafayette Parish, LA)** The Frem Boustany Drive Extension project in Lafayette Parish, LA involved the construction of a new 0.25 mile, 2-lane median-divided boulevard roadway with dedicated bike lanes and curb adjacent sidewalks. Fenstermaker was contracted by Lafayette Consolidated Government to perform preliminary and final plans, right of way plats, construction survey work and inspection during construction. During phase 1, Ms. Latiolais was involved in the project from the beginning, assisting with project management, roadway design, and drainage design. She also played a role in the subsurface hydraulic design, construction document preparation, bidding process, and construction administration services. Ms. Latiolais was responsible for managing the construction effort and oversaw the successful completion of the project. Phase 1 was completed in 2020. During the second phase, Ms. Latiolais served as the project manager.
09/15-06/23	**Kaliste Saloom Road Widening & Intersection Improvements - LA3073 to LA733 (Lafayette Parish, LA)** Ms. Latiolais oversaw the construction of this $35 million project. Ms. Latiolais served as the Design Engineer for the widening of approximately 1.7 miles of Kaliste Saloom Road, an over-capacity major arterial roadway located in the center of Lafayette, Louisiana. Ms. Latiolais was responsible for the subsurface drainage design for the entire project and utility relocations at the roundabout intersection, as well as creating the official Opinion of Probable Cost and necessary construction documents. She also assisted in permitting and agency coordination with LCG, LADOTD, and DHH. Ms. Latiolais contributed to the roundabout

	study, optimized the roundabout design, reviewed and revised the drainage design, and was responsible for designing the Temporary Traffic Control (TTC) signage. She also worked on the roadway striping, finalized the project's quantities, and reviewed plan sets.
10/15-ongoing	**VA Outpatient Clinic (Calcasieu Parish, LA)** Fenstermaker, as a sub-consultant to Michael Baker, was contracted to do civil and site work for a new outpatient clinic in Lake Charles, Louisiana. Ms. Latiolais designed the parking lots, site grading plan, utility service lines, and hydraulic system for the VA Outpatient Clinic. In addition, she assisted with construction services such as review of submittals and construction related Requests for Information (RFI's).
03/16-03/24	**Apollo Rd (LA 93) Extension to Dulles Drive (Lafayette Parish, LA)** Ms. Latiolais was the Lead Design Engineer and Engineer of Record for Phase 3 of the new 2.2-mile, 4-lane boulevard roadway in Scott, Louisiana. The design included paved gutter drains, roadside ditches, and evaluation of proposed and existing outfalls to the adjacent coulee system. She was responsible for the design of approximately 0.75 miles of the urban arterial roadway and open channel hydraulics. At the request of the project owners, Ms. Latiolais also produced an informal line and grade study for a multi-lane roundabout intersection with Apollo Road and the future Eraste Landry Road extension.
05/17-02/21	**City of Natchitoches Sports Complex (Natchitoches Parish, LA)** A 100-acre sports complex was constructed for the City of Natchitoches. The park includes a public park gathering area, 5-baseball fields in a pinwheel shape having artificial turf grass infields and natural grass outfields, 4-soccer natural grass fields, concession stand structures, fishing ponds, walking trails, pavilions, covered batting cages, and many more site amenities. Fenstermaker was the lead sub-consultant and engineer of record for all improvements outside of the vertical building structures. Ms. Latiolais assisted with the design of the parking lots and driveways, overall site grading plan, hydraulic design, and utility service lines. The hydraulic design included subsurface drainage, open ditches, pond, and outfall designs. She also assisted in the production of quantities and cost estimates, as well as assisted with construction services such as creating bidding documents and review of submittals.
09/21-11/24	**Gerald Drive Coulee (Lafayette Parish, LA)** Lafayette Consolidated Government (LCG) asked Fenstermaker to prepare engineering plans for the installation of box culverts in Gerald Drive Coulee. Ms. Latiolais served as the engineer of record for the drainage design, H&H modeling, and the drainage report. She also worked with Fenstermaker's survey team on rights-of-way and servitudes within the project area, and assisted with utility coordination and needed utility relocations.

Firm employed by	C. H. Fenstermaker & Associates, L.L.C.		
Name	Sean Micek, P.E.	Years of relevant experience with this employer	3
Title	Engineer	Years of relevant experience with other employer(s)	3
Degree(s) / Years / Specialization		B.S. / 2016 / Civil Engineering	
Active registration number / state / expiration date		P.E.0048248 / LA / 03-31-2026	
Year registered	2023	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities		Mr. Micek will serve as Lead for Hydraulic Software Programming and assist with General H&H Analysis.	

Experience dates	
Sean Micek, P.E. holds a Bachelor of Science degree in Civil Engineering and is a licensed Professional Engineer. His experience includes H&H modeling, production software development, training and facilitating projects. Specifically, he is most comfortable with watershed studies and large-scale master drainage plans. Before joining the large and growing H&H team at CHF, he has always leveraged tools from the software development and automation world to scale up the capacity of very small teams to create large hydraulic models and drainage designs without sacrificing detail, accuracy, or schedule. He has advanced knowledge in the following software applications: HEC-RAS, HEC-HMS, XPSWMM, PCSWMM, ArcGIS, QGIS, Python, and JavaScript, and proficiency in AutoCad Civil 3D/Subassembly Composer, HEC-MetVue, HEC Vortex, PostGIS, and VBA.	
12/21-ongoing **Project #1**	**Louisiana Watershed Initiative, Region 4 (De Soto, Sabine, Vernon, Rapides, Beauregard, Allen, Jefferson Davis, Calcasieu, and Cameron Parishes)** Mr. Micek performed H&H analyses and generated models for the Louisiana Watershed Initiative Region 4, an unprecedented project that will manage the future flood risk in the State of Louisiana through watershed-based solutions. Data collected for this project informs the development of models that show how communities within a watershed are hydraulically and hydrologically connected, an d will inform decisions regarding land use, policy, and infrastructure.
01/22-03/22 **Project #2**	**CPPJ Regional Watershed Planning (Calcasieu Parish, LA)** Fenstermaker was contracted by Calcasieu Parish Police Jury (CPPJ) to update its existing watershed models and to develop an adaptive master plan including projects, programs, and policies that allows the Parish to make informed decisions on managing their watersheds. Mr. Micek was responsible for reviewing the Sulphur model.
01/19-12/20	**Aberdeen Green, Meadow Hill, and Parkway Mobile Homes Subdivision Drainage Analysis (Harris County, TX)** Mr. Micek Assisted in the development of 1D/2D XPSWMM hydraulic models for 3 post-Harvey bond studies. Once existing conditions were established and calibrated, proposed alternatives were explored. Once several beneficial projects were identified, the model results for the selected projects were presented to Harris County Engineering Department (HCED) and the public. He developed a tool in Excel, VBA, and Python that creates and manages Malcolm's Small Watershed Method synthetic hydrographs for 4 AEP storms and up to 500 drainage areas, and automates the importing of these into an XPSWMM, PCSWMM, or HEC-RAS model.
01/20-12/21	**IOOS Compliance Checker** Mr. Micek worked with the Ocean Sciences division in Rhode Island on their software maintenance contract for the US Integrated Ocean Observing System (IOOS). The Compliance Checker is a utility that validates NetCDF data against the CF specification. NetCDF is an industry standard for earth sciences for n-dimensional, spatiotemporal datasets. The CF spec defines legal data structures and metadata conventions to allow collaboration and data aggregation between organizations. Mr. Micek's contributions to the project include upgrading the test suite's framework from the legacy Unittest to Pytest, replacing boilerplate

	code with parameterized functions, fixtures, and marks, creating documentation for the software and CF spec for the on-boarding of new developers, and adding support for datasets in the modern, cloud-optimized Zarr format.
01/20-12/21	**FloodMap - Framework for visualizing 2D model results on the web** Mr. Micek developed a web-map application with 2 colleagues, which takes 2D model results out of the HEC-RAS desktop software and onto an interactive online map, supported on any device with internet connection. Features included full quality inundation depths and other results layers, real-time USGS rain gauge data plots and precipitation radar visualization, velocity vector particle-tracing animation, and mode to interactively swipe between model scenarios for comparison. Mr. Micek developed an application to extract 2D model output from HEC-RAS and visualize it in novel and intuitive ways. He developed the application's data-processing pipeline in Python to process TB of hydraulic data in a time and memory-efficient manner. He then created the backend PostGIS database and Python web server to slice spatiotemporal data for dynamically styling hundreds of thousands of vector features on the fly or querying a timeseries plot of any hydraulic output variable at any point the user clicks. Mr. Micek also collaborated on the creation of the GUI, which uses only free and open-source JavaScript libraries. The live public instance of the app can be found at this link: https://floodmap.app/.
01/20-12/21	**Galveston County Master Drainage Plan Update (Galveston County, TX)** The update included building county-wide models and prioritizing recommended projects. Mr. Micek worked on the building and stabilization of the 1D/2D HEC-RAS and HEC-HMS models and built the precipitation model for the Upper Coastal region. The new models included ATLAS 14 rainfall data, 2018 HGAC LiDAR and other updated flood impact data. The latest frequency storm tidal surge timeseries data from USACE Galveston District was used as the 1D/2D model's downstream boundary condition. Mr. Micek used Python to automate the MAAPNext level hydrology calculations (BDF Method), streamline the existing conditions model build, perform terrain modifications for 2D-modeled proposed projects, compare proposed projects, and automate the creation of the report's 100+ GIS exhibits. He also utilized corridor modeling in AutoCAD Civil3D and Subassembly Composer to programmatically define flexible proposed channel modifications for the 2D model portion.
01/20-12/21	**City of Bunker Hill Village Model and Master Drainage Plan Update (City of Bunker Hill, TX)** Mr. Micek was the modeler tasked with building and maintaining a 1D/2D SWMM model for the city's MDP update in PCSWMM. He performed updated ATLAS-14 hydrology to route flows to appropriate delineated drainage areas. Existing data utilized included geometry from an existing 1D XPSWMM model, TNRIS LiDAR, and Civil3D as- builts. He was able to import the as-built systems verbatim by way of LandXML. Stability was achieved as an inlet level model, with inlet capacity defined by rating curves. The model included storm sewer, EPA open channel, bridges, and detention, with a total of 23,000 entities. PCSWMM's native support of SQL, GIS, and IronPython was leveraged to streamline both the hydrology calculations and the hydraulic model build. Mr. Micek was involved as a beta tester for a new PCSWMM-integrated cloud computing service, which was utilized for model runs. He worked with the community to help them understand model results, and refine the model based on their priorities. He later utilized the existing model to size in-line detention system as part of a separate design-build contract.
08/24-09/24	**Isaac Verot Coulee Lateral L7 Revisions (Lafayette Parish, LA)** Lafayette Consolidated Government (LCG) asked Fenstermaker to provide professional hydrologic and hydraulic modeling and topographic surveying services in order to revise the effective Flood Insurance Rate Map data for Lateral L7 of the Issac Verot watershed. The scope of the study includes hydraulic modeling and re-mapping of the regulatory floodplain, base flood elevation, and floodway. Mr. Micek reviewed and finalized the HMS-RAS model.

Firm employed by	C. H. Fenstermaker & Associates, L.L.C.		
Name	Brooke Newlin, P.E., CFM	Years of relevant experience with this employer	6
Title	Engineer	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization		B.S. / 2018 / Civil Engineering	
Active registration number / state / expiration date		PE.0047837 / LA / 09-30-2025	
Year registered	2023	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities		Ms. Newlin will assist with Watershed Modeling and CLOMR & LOMR.	

Experience dates	
Brooke Newlin is a Professional Engineer registered in the state of Louisiana and a Certified Floodplain Manager (CFM). Her main responsibilities include developing numerical models for the Calcasieu Parish Regional Watershed Master Plan and contributing to drainage projects for several Parishes and municipalities. Ms. Newlin developed a GIS website that is used to present the Calcasieu Parish Watershed Master Plan drainage information to the public through visual mapping tools. She also assists with hydrologic and hydraulic model analyses, developing future planned conditions, floodplain mapping, and reviewing repetitive loss locations. Ms. Newlin is proficient in the suite of USACE HEC software and Geographic Information System (GIS) mapping. In addition, she has experience in other modeling, mapping, and visualization software including ArcGIS, 3D Analyst, Spatial Analyst, and MicroStation. She has recently completed formal HEC-RAS 2D training through West Consultants. Ms. Newlin has proficient experience in the use of the following software and services: HEC-HMS, HEC-RAS, HEC-WAT, and reviewing flood ordinances.	
06/20-ongoing **Project #1**	**Louisiana Watershed Initiative Region 4 (De Soto, Sabine, Vernon, Rapides, Beauregard, Allen, Jefferson Davis, Calcasieu, and Cameron Parishes)** The Louisiana Watershed Initiative is an unprecedented project that will manage the future flood risk in the State of Louisiana through watershed-based solutions. For Region 4, Fenstermaker is performing hydrologic and hydraulic tasks, data collection, model development, and engineering to successfully complete an interactive, usable, and manageable hydraulic and hydrologic of the region. These models will consider the degree to which communities within a watershed are hydraulically and hydrologically connected and will guide decisions regarding the coordination and implementation of land use, policy, and infrastructure improvements to effectively manage flood risk at the watershed level. Ms. Newlin's responsibilities on the LWI Region 4 project involved various tasks related to data management, model development, and peer review. Ms. Newlin was instrumental in the process of integrating previously completed studies into the ongoing LWI models. She ensured previous model data was documented, verified, and met the standards of the statewide project. Ms. Newlin also wrote detailed guidance documents to effectively teach and communicate to the entire project team ensuring quality and consistency across the board. She participated in meetings regarding model setup, terrain modification, 1D2D connection, and peer review. Ms. Newlin reviewed and coordinated peer review comments and inquiry about survey evaluation forms/images for the Lower Calcasieu model and the West Fork Peer 1D model. Additionally, she peer-reviewed the Whisky Chitto model, reviewed structures in the model, and performed RAS Model Setup quality control (QC).
12/18-04/24 **Project #2**	**Calcasieu Parish Regional Watershed Modeling and Planning (Calcasieu Parish, LA)** Ms. Newlin assisted with developing the Calcasieu Parish Watershed Master Plan by providing engineering, modeling, and planning services. Her main responsibilities include developing and analyzing hydrologic and hydraulic models (using HEC-RAS and HEC-HMS), analyzing known flood prone areas and watershed deficiencies, website development, data collection and inventory, developing a Drainage Infrastructure Watershed Report Card. She also developed a website for Calcasieu Parish

	which will provide the public with easy access to information related to the Watershed Master Plan. The website includes interactive GIS maps and other helpful resources related to the project.
12/18-ongoing	**Total Drainage – MapAnalyst and ESRI Story Mapping (Calcasieu Parish, LA)** Fenstermaker's MapAnalyst team has created both public and internal websites that include various levels of functionality from cutting cross sections utilizing 1-meter x 1-meter LiDAR terrain, as well as inventories of channel networks, watershed basin limits, flood extents, historic high-water marks, detailed H&H studies, and hydraulic structure inventories that include photos and pertinent structure information. Ms. Newlin developed a GIS interactive website which will be used to present the Calcasieu Parish Watershed Master Plan drainage information to the public through visual mapping tools.
07/20-11/22	**Cameron Parish Flood and Surge Protection Berm (Cameron Parish, LA)** The area of Cameron Parish locally known as Big Burn has long been impounded by the spoil bank of the Gulf Intercoastal Waterway (GIWW) to the north, the right descending bank of the Mermentau River to the east, Louisiana Hwy 27 to the west and Louisiana Hwy 82 to the south. Using HMGP funds, Fenstermaker performed a study of the area, that would create a hydrologic model of existing conditions, model one of the significant flood events, consult with landowners, stakeholders, state and federal agencies to develop alternative solutions to alleviate flooding, evaluate the alternative solutions using the hydrologic model, determine the preferred suite of alternatives and develop a conceptual level cost estimate. Ms. Newlin performed H&H modeling for the project and contributed to the H&H report. She also assisted with the Benefit Cost Analysis (BCA) model documentation and other documentation for the project's HMGP grant application.
03/22-ongoing	**Mermentau Inundation Relief (Cameron Parish, LA)** Parishes located within the Mermentau Basin are continually threatened with flooding during significant rainfall events. The Mermentau Basin Inundation Relief project will link existing drainage laterals along La. Hwy. 82 to convey stormwater north of the highway, widen downstream channels, install new gates at the East End Locks and include other drainage features. The project will divert water into surrounding marshes, improve water quality, sustain fish and wildlife habitat, and reduce area flood risk. Ms. Newlin contributed to the development of the 2D modeling by reviewing current datasets to determine the extent of the model and to inform the project's survey services. She also digitized channels and structures and evaluated the project area, basing her assessment on LiDAR elevations. She reviewed RAS files of the regional model and provided input on various structures. She assisted with terrain modifications, reviewed the H&H model, and assisted with drafting the H&H modeling report. Ms. Newlin's work also included conducting the capacity analysis.
06/21-02/22	**City of Baker Channel Improvements (East Baton Rouge Parish, LA)** Ms. Newlin assisted with the quality control of the hydrologic (HEC-HMS) and hydraulic (HEC-RAS) models developed for North Canal in the City of Baker. This model was used to identify issues, to implement and analyze alternatives to improve current conditions, and to develop engineering plans. This project was funded through the FEMA Hazard Mitigation Grant Program (HMGP).

Firm employed by	C. H. Fenstermaker & Associates, L.L.C.		
Name	Peyton Bailey, E.I.	Years of relevant experience with this employer	3
Title	Engineer Intern	Years of relevant experience with other employer(s)	2
Degree(s) / Years / Specialization		B.S. / 2022 / Civil Engineering	
Active registration number / state / expiration date		PE.0035160 / LA / 09-30-2026	
Year registered	2022	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities		Mr. Bailey will assist with Watershed Modeling.	

Experience dates

Peyton Bailey, E.I., received his Bachelor of Science degree in Civil Engineering in May 2022. His undergraduate intern experience includes working with structural engineers on steel, concrete, and foundation design; assisting engineers with environmental, hydrological, and structural municipality projects; and working with land surveyors on engineering surveys. His software experience includes AutoCAD, AutoCAD Civil 3D, QGIS, ArcGIS Pro, HEC-RAS, HEC-HMS, MATLAB, and Python. At Fenstermaker, he currently is responsible for the Lower Calcasieu HEC-RAS model in LWI Region 4. He has been exposed to many different aspects of the civil engineering profession including structural, environmental, municipal, hydrological, and hydraulic projects. His experiences include data management and analysis and hydrological and hydraulic model development.

01/22-ongoing **Project #1**	**Louisiana Watershed Initiative Region 4 (De Soto, Sabine, Vernon, Rapides, Beauregard, Allen, Jefferson Davis, Calcasieu, and Cameron Parishes)** The Louisiana Watershed Initiative is an unprecedented project that will manage the future flood risk in the State of Louisiana through watershed-based solutions. For Region 4, Fenstermaker is performing hydrologic and hydraulic tasks, data collection, model development, and engineering to successfully complete an interactive, usable, and manageable hydraulic and hydrologic of the region. These models will consider the degree to which communities within a watershed are hydraulically and hydrologically connected and will guide decisions regarding the coordination and implementation of land use, policy, and infrastructure improvements to effectively manage flood risk at the watershed level. Mr. Bailey developed a 2D HEC-RAS model for the Lower Calcasieu HUC 8 watershed within Region 4. His duties included developing the MEC-Surface & Hydrology (mesh) coupled land-surface and hydrological model, modifying terrains, prioritizing structures within the watershed, modeling structures, setting up RAS models, processing rain gauge data, conducting model sensitivity analyses, and preparing reports and exhibits.
09/21-11/22 **Project #2**	**Calcasieu Parish Regional Watershed Modeling and Planning (Calcasieu Parish, LA)** From 2006 to 2010 Fenstermaker completed seven watershed master plans for Calcasieu Parish Police Jury (CPPJ) that included detailed 1D hydrologic (HEC-HMS) and hydraulic (HEC-RAS) modeling as well as project identification and feasibility. In 2018, Fenstermaker was contracted by CPPJ to update their existing models by migrating 1D models to coupled 1D/2D HEC-HMS and HEC-RAS models and expand the modeling domain to encompass all the watersheds within the Parish. The model domain includes four HUC 8 watersheds tiered to the HUC-12 level. Mr. Bailey assisted with the development of the flood-forecasting watershed models by selecting calibration and validation events and managing all related data. He also aided in QA/QC for the various watersheds.
09/21-09/21	**Jaxon Sound Subdivision Development Review (Lafayette Parish, LA)** Fenstermaker conducted a development review of the Jaxon Sound Subdivision for the City of Carencro. Mr. Baily was responsible for reviewing the no-rise certification, which included a detailed review of all model parameters as well as continuity between the construction plans and modeled improvements.

08/22-10/22	**Mermentau Inundation Relief (Cameron Parish, LA)** Fenstermaker is providing engineering, grant application, and project management services to determine the scope of this project; prepare the full Louisiana Watershed Initiative (LWI) application; perform the preliminary engineering; prepare permits; provide surveying services; prepare final engineering plans, specifications, and bid packages; and provide construction administration and inspection of the project in compliance with the both the LWI and the Community Development Block Grant - Mitigation (CDBG-MIT) program. The objectives of the Mermentau Basin Inundation Relief Project are to reduce prolonged periods of inundation and relieve flooding stress to the following parishes within the Basin: Cameron, Calcasieu, Vermilion, Acadia, Evangeline, Lafayette, Jefferson Davis, Allen, and St. Landry. Mr. Bailey processed Louisiana Coastwide Reference Monitoring System (CRMS) state data and Multi-Radar/Multi-Sensor System (MRMS) data.
02/23-08/23	**City of Carencro Drainage Improvements (Lafayette Parish, LA)** Fenstermaker provides professional engineering and survey services on retainer for the City of Carencro. Fenstermaker has designed roads, lift station upgrades, water treatment plants, and wastewater treatment plants for the City. Fenstermaker has also performed ordinance reviews for residential and commercial development in the City. Mr. Bailey's work on the City's Drainage Improvements included a no-rise analysis of Dan Dabaillon Coulee modeling flooding on North University Avenue.
03/24-04/24	**First Solar Project (Iberia Parish, LA)** First Solar selected the grounds of the Acadiana Regional Airport in Iberia Parish for the location of its fifth U.S. solar panel manufacturing facility plant. The new facility will encompass more than 2 million square feet. Rudolph Libbe, Inc., the project's general contractor, tasked Fenstermaker with performing civil engineering services for the facility. The scope of services also included a total turnkey survey (topographic), environmental services (permitting), traffic impact analysis, and construction administration. Mr. Bailey conducted the project's storm surge vulnerability assessment, prepared the Coastal Flood Risk Memorandum, and drafted the Coastal Flooding and Sea Level Rise Technical Memorandum.

Firm employed by	C. H. Fenstermaker & Associates, L.L.C.			
Name	Nicholas Castille, P.E.	Years of relevant experience with this employer	5	
Title	Engineer	Years of relevant experience with other employer(s)	0	
Degree(s) / Years / Specialization		B.S. / 2019 / Civil Engineering		
Active registration number / state / expiration date		PE.0048009 / LA / 09-30-2025		
Year registered	2023	Discipline	Civil Engineer	
Contract role(s) / brief description of responsibilities		Mr. Castille will assist with Hydraulics Section Manual Updates and General H&H Analysis.		

Experience dates	
Nicholas Castille is a licensed Professional Engineer and has experience in design, planning, and hydraulic modeling. His core experience is in hydrologic and hydraulic modeling, open channel drainage systems, and subsurface drainage systems. He assists with various engineering design tasks including roadway plan and preparation, horizontal geometric design, inspections, design of geotechnical features, design of open and closed drainage systems, and hydrologic and hydraulic modeling. In his previous role, he served as an engineer intern, responsible for the supervision of lab and field technicians, assisting in the design of shallow and deep foundations, pavement design, and geotechnical construction materials testing and reporting.	
12/19-07/20 **Project #2**	**Calcasieu Parish Regional Watershed Modeling and Planning (Calcasieu Parish, LA)** Mr. Castille was responsible for aspects of data management, input, edits to and creation of geographic information systems data, and terrain modification for use in 2-dimensional hydraulic models. Mr. Castille additionally developed HEC-RAS one-dimensional hydraulic models utilizing previously obtained survey information once conditioned for use in HEC-RAS.
10/20-02/22 **Project #4**	**Verot School Road Interchange at U.S. Highway 90 (Lafayette Parish, LA)** As a sub-consultant to Huval & Associates, Fenstermaker performed engineering design services for improvements to the existing intersection of U.S. Highway 90 (US 90) (Future I-49 South) and Verot School Road. Mr. Castille worked on the roadway striping plans and quantities tables and reviewed drainage patterns and designs.
12/19-01/21	**Apollo Road (LA 93) Extension to Dulles Drive (Lafayette Parish, LA)** Fenstermaker was selected to provide engineering services to the City of Scott, Louisiana to extend Apollo Road to Dulles Drive. This fifteen-million-dollar construction project includes two miles of a four-lane boulevard and six-foot sidewalks. The new roadway intersects LA 93, which was designed for a roundabout. Mr. Castille worked on the project drainage areas, roadside channel design, and roadway inlet spacing as well as construction quantity calculations and plan production.
06/20-12/22	**Upper West Fork Cypress Bayou Environmental Assessment (Bossier Parish, LA)** Mr. Castille was responsible for many aspects of the project's hydrology and hydraulic design in addition to economic analysis and technical assessment of results. He delineated drainage areas and determined flow and watershed characteristics to develop HEC-HMS and HEC-RAS 2-dimensional numerical models. These models were used to quantify the impacts and most appropriate course of action for hazardous dam classification remediation. He managed the tasks and schedules of multiple subconsultants and ensured project deliverables were satisfactory for inclusion in overall plan document. Mr. Castille prepared a technical assessment (in NEPA accordance) of the watershed and all associated hydrologic and hydraulic characteristics as well as the environmental and economic impacts of these proposed rehabilitation measures.
06/21-ongoing	**Alcide Bonin Coulee – Bayou Portage Drainage Study and Improvement Project (St. Martin Parish, LA)** St. Martin parish routinely receives drainage complaints in the areas near and around Cecilia High School and residences along Louisiana

	Highway 347. The Parish tasked Fenstermaker with the preparation of plans and specifications to clean out the Alcide Bonin Coulee and upgrade cross drains throughout the coulee from 2-6'x6' Reinforced Concrete Box Culverts to 2-8'x6' RCBC's. Mr. Castille's responsibilities consisted of H&H modeling, reviewing and revising the Drainage Impact Analysis (DIA) report, reviewing existing ordinances, reviewing generated plan sets, and assisting with utility coordination and project permitting**.**
09/21-10/21	**Coulee Mine East Regional Detention Facility (Lafayette Parish, LA)** Lafayette Consolidated Government (LCG) obtained $4.7 million through the Louisiana Watershed Initiative for its Coulee Mine East Regional Detention Facility, a 40-acred detention pond along Coulee Mine East with a control structure to limit the discharge to the coulee and hold storm water in the pond during heavy rain events. LCG contracted Fenstermaker to finalize the evaluation of the detention facility west of Pelican Park from conceptual design to final construction plans for public bidding. Mr. Castille performed the quality control review of the GIS files, the H&H design files, and the HydroCAD model.
09/21-01/23	**Improvements to Duchamp Road (St. Martin Parish, LA)** Fenstermaker provided professional engineering, survey, and construction administration services for the improvements to the Duchamp Road in St. Martin Parish. The engineering team prepared the roadway and drainage designs. Mr. Castile drafted cost estimates, created graphics and details for the Drainage Impact Analysis (DIA) report, assisted with the survey plan, and reviewed and revised permit drawings.
09/21-11/24	**Gerald Drive Coulee (Lafayette Parish, LA)** Lafayette Consolidated Government (LCG) asked Fenstermaker to prepare engineering plans for the installation of box culverts in Gerald Drive Coulee. Mr. Castille was primarily responsible for large portions of the drainage design, H&H modeling, and the drainage report. He worked with Fenstermaker's survey team on rights-of-way and servitudes within the project area and assisted with utility coordination and needed utility relocations. Additionally, he reviewed, revised, and finalized the plan sets, specifications, and bidding documents; assisted with the bid opening meeting; and assisted with the project's construction administration tasks.
10/21-ongoing	**S.P. No. H.014560: LA 94: Vermilion River Bridge Repl. Hydraulic and Scour Analysis** Mr. Castille was responsible for updating an effective 1D HEC-RAS model created by FEMA to determine water surface elevations and depths of scour at the site of the proposed bridge replacement. Mr. Castille prepared a technical assessment detailing the impacts of the proposed bridge replacement to the existing Vermilion River as it relates to governing regulations**.**
11/23-ongoing	**First Solar Plant- Topo/Civil/Environmental (Iberia Parish, LA)** First Solar selected the grounds of the Acadiana Regional Airport in Iberia Parish for the location of its fifth U.S. solar panel manufacturing facility plant. The new facility will encompass more than 2 million square feet. Rudolph Libbe, Inc., the project's general contractor, tasked Fenstermaker with performing civil engineering services for the facility. The scope of services also included a total turnkey survey (topographic), environmental services (permitting), traffic impact analysis, and construction administration. Mr. Castille is responsible for drainage design and H&H study/analysis for stormwater management of the project area.

Firm employed by	C. H. Fenstermaker & Associates, L.L.C.		
Name	Rhett Hebert, P.E., CFM	Years of relevant experience with this employer	4
Title	Engineer	Years of relevant experience with other employer(s)	1
Degree(s) / Years / Specialization		B.S. / 2020 / Civil Engineering	
Active registration number / state / expiration date		PE.0049084 / LA / 09-30-2026	
Year registered	2024	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities		Mr. Hebert will serve as Lead for CLOMR & LOMR and assist with Hydraulics Section Manual Updates and Bridge Hydraulic Modeling & Scour Analysis.	

Experience dates

Rhett Hebert, P.E., CFM is a licensed Professional Engineer with specialization and expertise in drainage design. He has been involved in the development and analyses of both small and large-scale hydrologic and hydraulic numerical models, design of drainage systems, benefit-cost-analyses (BCAs) and grant funding applications. He is proficient in the use of HEC-HMS, HEC-RAS, Hydro CAD, ArcGIS, and LADOTD's hydraulic programs.

04/20-current **Project #1**	**Louisiana Watershed Initiative Region 4 (De Soto, Sabine, Vernon, Rapides, Beauregard, Allen, Jefferson Davis, Calcasieu, and Cameron Parishes)** The Louisiana Watershed Initiative is an unprecedented project that will manage the future flood risk in the State of Louisiana through watershed-based solutions. For Region 4, Fenstermaker is performing hydrologic and hydraulic tasks, data collection, model development, and engineering to successfully complete an interactive, usable, and manageable hydraulic and hydrologic model. These models will consider the degree to which communities within a watershed are hydraulically and hydrologically connected and will guide decisions regarding the coordination and implementation of land use, policy, and infrastructure improvements to effectively manage flood risk at the watershed level. Mr. Hebert led a team of engineers that developed 1D and 2D models of the West Fork and Upper Calcasieu watersheds, delineated sub basins, developed and populated structure datasheets, worked on cross sections, and modified terrain data.
07/20-01/25 **Project #2**	**Calcasieu Parish Regional Watershed Modeling and Planning (Calcasieu Parish, LA)** This project includes one and two-dimensional hydrologic and hydraulic numerical modeling (using HEC-RAS and HEC-HMS), website development (which encompasses a GIS mapping engine), project management, pre-planning activities (including the development of a process to document key stakeholder insights, a clear mission and goals for the desired future drainage conditions, and a watershed selection matrix), benchmarking, preparation of a drainage infrastructure watershed report card, master plan development, implementation and monitoring, and development of street level drainage projects. Mr. Hebert oversaw the development of a hydrologic and hydraulic numerical model for a large scale (23mi2) watershed. The parish intends to use the model for regional project planning and evaluation to ensure efficient use of public and community funds.
11/22-ongoing **Project #3**	**Infrastructure Investment and Jobs Act (IIJA) Off-System Bridge Program District 03 (Acadia, Evangeline, Iberia, Lafayette, St. Landry, St. Martin, St. Mary, and Vermilion Parishes, LA)** The Louisiana Department of Transportation and Development selected Fenstermaker to provide all necessary engineering services required for development plans for the replacement of 14 bridges in District 03. Fenstermaker's services include the engineering design of each bridge and all other required services, including H&H modeling, no-rise analyses, scour analyses, surveying, and permitting. Mr. Hebert is currently serving as the project manager and is overseeing and working on several tasks

	for each bridge concurrently. These tasks include performing the H&H modeling for all 14 bridges and preparing the H&H reports, conducting any needed no-rise or scour analyses, designing roadway and drainage elements, and reviewing plan sets. He has also assisted with permit applications, including those for USACE. As the project manager, he is Fenstermaker's point of contact with LADOTD and other stakeholders within the district and provides reports on the project's progress.
07/21-ongoing	**Coulee Mine East Regional Detention Facility (Lafayette Parish, LA)** Lafayette Consolidated Government (LCG) obtained $4.7 million through the Louisiana Watershed Initiative for its Coulee Mine East Regional Detention Facility, a 40-acred detention pond along Coulee Mine East with a control structure to limit the discharge to the coulee and hold storm water in the pond during heavy rain events. LCG contracted Fenstermaker to finalize the evaluation of the detention facility west of Pelican Park from conceptual design to final construction plans for public bidding. Mr. Hebert completed two funding applications for this project (LADOTD Statewide Flood Control Program and Louisiana Watershed Initiative). Both grant applications were approved for funding, allowing the client to select their preferred funding. Mr. Hebert was also responsible for creating survey requests, coordinating with project teams, and conducting utility coordination. He also reviewed survey data to determine flow directions. He worked on modeling proposed drainage systems, analyzing pond flows, calculating revised pond volumes, and updating RAS models with revised pond layouts. Mr. Hebert also took on the role of project manager.
09/23-10/23	**First Solar Project (Iberia Parish, LA)** First Solar selected the grounds of the Acadiana Regional Airport in Iberia Parish for the location of its fifth U.S. solar panel manufacturing facility plant. The new facility will encompass more than 2 million square feet. Rudolph Libbe, Inc., the project's general contractor, tasked Fenstermaker with performing civil engineering services for the facility. The scope of services also included a total turnkey survey (topographic), environmental services (permitting), traffic impact analysis, and construction administration. Mr. Hebert worked on delineating the drainage basin, reviewing existing drainage basins, and developing a 2D HEC-RAS model to analyze a realigned channel within the project site.
01/24-ongoing	**Isaac Verot Coulee Lateral L7 Revisions (Lafayette Parish, LA)** Lafayette Consolidated Government (LCG) asked Fenstermaker to provide professional hydrologic and hydraulic modeling and topographic surveying services in order to revise the effective Flood Insurance Rate Map (FIRM) data for Lateral L7 of the Issac Verot watershed. The scope of the study includes hydraulic modeling and re-mapping of the regulatory floodplain, base flood elevation, and floodway. Mr. Hebert is currently serving as the project manager for this FIRM data revision. He created the project plan and schedule and is overseeing and managing all tasks associated with the project. He is also responsible for communicating with LCG and FEMA as the project progresses and ensuring that all work is in accordance with FEMA's strict guidelines for model development and map revisions. He also conducted the floodway analysis.
02/25-ongoing	**Coulee Ile Des Cannes LOMR (Lafayette Parish, LA)** Lafayette Consolidated Government asked Fenstermaker to provide professional hydrologic and hydraulic modeling and topographic surveying services to revise the effective Flood Insurance Rate Map data for Coulee Ile Des Cannes and Lateral L8C. Mr. Hebert is currently serving as the project manager for this LOMR revision. He created the project plan and schedule and is overseeing and managing all tasks associated with the project.

Firm employed by	C. H. Fenstermaker & Associates, L.L.C.		
Name	Tyler Young, M.S., P.E.	Years of relevant experience with this employer	3
Title	Engineer	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization	B.S. / 2018 / Civil Engineering M.S. / 2022 / Engineering		
Active registration number / state / expiration date	PE.0050041 / LA / 09-30-2025		
Year registered 2025	Discipline: Civil Engineer		
Contract role(s) / brief description of responsibilities	Mr. Young will work on Watershed Modeling, NFIP No-Rise Review, General H&H Analysis, and CLOMR & LOMR.		

Experience dates

Tyler Young, M.S., P.E., is a Professional Engineer registered in the state of Louisiana and received his Bachelor of Science in Civil Engineering in December of 2018. Since that time, he has worked as an Undergraduate Research Assistant, Graduate Teaching Assistant, and Graduate Research Assistant at the University of Louisiana at Lafayette where his research focused on water quality and hydraulic modeling in the Atchafalaya River Basin. He joined Fenstermaker's Lafayette Engineering office in January of 2022 and currently works on the Water Resources team. His work focuses on hydrologic and hydraulic (H&H) modeling of watersheds, and he has contributed to the Louisiana Watershed Initiative, a statewide project with the goal of reducing flood risk and improving floodplain management across Louisiana.

01/22-ongoing **Project #1**	**Louisiana Watershed Initiative Region 4 Task Orders No. 2 & 3 (Acadia, Allen, Beauregard, Calcasieu, Cameron, Sabine, and Vernon Parishes, LA)** LADOTD contracted Fenstermaker for this project that will manage the future flood risk in the State through watershed-based solutions. Fenstermaker provided engineering and survey services and oversaw all hydrologic and hydraulic tasks, data collection, model development, and engineering to complete interactive, usable, and manageable hydraulic and hydrologic models. Mr. Young's responsibilities in Task Order 1 included assisting with the development of watershed boundaries for Whiskey Chitto, cross-section delineation for Whiskey Chitto 1D RAS models, development of an automated Boundary Condition Generator spreadsheet, development of the RAS Bridge Structures in the Whiskey Chitto 1D model and performed QA checks on various HMS and RAS components for Whiskey Chitto. As to Task Order 2, he developed the HUC 8 Level Hydrologic model for the West Fork Calcasieu watershed using HEC HMS software, delineated watershed boundaries West Fork Calcasieu, assisted with development of watershed boundaries for Upper Calcasieu, collected/organized observed stage/discharge data from USGS stations within West Fork Calcasieu and Upper Calcasieu Regions, developed a method for stream centerline delineation to be used for Reach centerline delineation for all LWI RAS models, delineated centerlines/banklines for West Fork Calcasieu and Upper Calcasieu models, assisted in Cross-section delineation for West Fork Calcasieu and Upper Calcasieu 1D RAS models, assisted in the development of an automated Bridge deck Generator spreadsheet for RAS structures, and performed QA checks on HMS and RAS components for West Fork and Upper Calcasieu.
08/22-10/24 **Project #2**	**Calcasieu Parish Regional Watershed Modeling and Planning (Calcasieu Parish, LA)** Fenstermaker was contracted to perform the following tasks for this project: one and two-dimensional hydrologic and hydraulic numerical modeling (using HEC-RAS and HEC-HMS), website development (which encompasses a GIS mapping engine), project management (which includes public and stakeholder meetings), pre-planning activities (including the development of a process to document key stakeholder insights, a clear mission and goals for the desired future drainage conditions, and a watershed selection matrix), inventory of various drainage attributes and data (which include a GIS parish wide floodplain

	extents database, watershed land use, LIDAR and topographic data collection, receptive loss and flooded properties inventory, previous studies and projects, future projects, water quality and asset inventory), benchmarking, preparation of a drainage infrastructure watershed report card, master plan development, implementation and monitoring, and development of street level drainage projects. Mr. Young served as a modeler and worked on several parts of this project, including conducting consequence analyses of Prien Lake and Sulphur; developing alternatives for the Lake Charles and Kayouchee coulees; reviewing models; developing drainage structure and channel report cards for each watershed; preparing report card exhibits; contributing to the project's overall report; performing drainage analyses; and assisting with the development of the Master Plan.
02/22-02/23	**City of Scott Drainage (Lafayette Parish, LA)** Fenstermaker has provided drainage general engineering services for City of Scott since 2011. Under this contract Fenstermaker has worked with the City on a variety of tasks including the development and implementation of a drainage improvement plan, their FEMA Community Rating System (CRS), funding acquisition for roadway and drainage projects, regional detention design and construction, right of way coordination, annexations, and development reviews. Fenstermaker manages the City's Infrastructure Inventory including all roads, sidewalks, water, sewer, floodplain, and landuse layers. Mr. Young developed the HMGP Westward Heights 2D model and analyzed the model results. He assisted with the BCA analysis for the Westward Heights project, attended the City's public drainage meeting in March of 2022, and prepared all model information included in the City's GOSEP/HMGP submittal.
09/24-ongoing	**Louisiana Avenue Pond Model Update (Calcasieu Parish, LA)** Fenstermaker is updating the existing Lake Charles watershed model for the Louisiana Avenue Regional Detention Pond in Lake Charles. Mr. Young has completed upgrades of the 2D watershed model.
02/25-ongoing	**2021 CoLC BRIC High Priority Drainage (Calcasieu Parish, LA)** Fenstermaker is providing professional services to the City of Lake Charles for flood mitigation, public safety, and citywide resilience projects funded through BRIC and identified within the City's 2021 Critical Drainage Improvement Plan high priority ditches and culverts list. Mr. Young performed portions of the project's H&H analysis and contributed to the future planning of the project area. He set up the modeling and ran several storm scenarios in standard H&H software programs. He also analyzed the hydraulics and hydrology of proposed project alternatives.

Firm employed by	C. H. Fenstermaker & Associates, L.L.C.		
Name	Carly Phillips, E.I, CFM	Years of relevant experience with this employer	2
Title	Engineer Intern	Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization	B.S. / 2021 / Civil Engineering M.S. / 2023 / Civil Engineering: Water Resources		
Active registration number / state / expiration date	EI.0034980 / LA / 03-31-2026		
Year registered	2021	Discipline	Civil Engineering
Contract role(s) / brief description of responsibilities	Ms. Phillips will assist with Watershed Modeling and CLOMR & LOMR.		

Experience dates	
Ms. Phillips is a member of Fenstermaker's Water Resources Team. She earned her B.S. in Civil Engineering in 2021 and continued her education to earn her M.S. in Civil Engineering with a concentration in Water Resources. She now assists with hydraulic and hydrologic modeling on projects for local and state clients, including LADOTD, Calcasieu Parish, and City of Carencro.	
06/23-ongoing **Project #1**	**Louisiana Watershed Initiative Region 4 (De Soto, Sabine, Vernon, Rapides, Beauregard, Allen, Jefferson Davis, Calcasieu, and Cameron Parishes)** The Louisiana Watershed Initiative is an unprecedented project that will manage the future flood risk in the State of Louisiana through watershed-based solutions. For Region 4, Fenstermaker is performing hydrologic and hydraulic tasks, data collection, model development, and engineering to successfully complete an interactive, usable, and manageable hydraulic and hydrologic of the region. These models will consider the degree to which communities within a watershed are hydraulically and hydrologically connected and will guide decisions regarding the coordination and implementation of land use, policy, and infrastructure improvements to effectively manage flood risk at the watershed level. Ms. Phillips worked on the 2D RAS Upper Calcasieu model and the modeling report.
06/23-04/24 **Project #2**	**Calcasieu Parish Regional Watershed Modeling and Planning (Calcasieu Parish, LA)** From 2006 to 2010 Fenstermaker completed seven watershed master plans for Calcasieu Parish that included detailed 1D hydrologic and hydraulic modeling as well as project identification and feasibility. In 2018, Fenstermaker was contracted by Calcasieu Parish to update their existing models. The goal of the project is to develop an adaptive plan that includes projects, programs, and policies that are being screened utilizing the Deltares Dynamic Adaptive Policy Pathways (DAPP) approach by analyzing various future conditions that account for relative sea level rise, future development, and increased storm intensities. This approach allows the Parish to make informed decisions on managing their watersheds. Ms. Phillips reviewed the master plan, the Kayouche coulee model report, and modified the terrain for the 2D Lake Charles model.
06/23-ongoing **Project #3**	**Infrastructure Investment and Jobs Act (IIJA) Off-System Bridge Program District 03 (Acadia, Evangeline, Iberia, Lafayette, St. Landry, St. Martin, St. Mary, and Vermilion Parishes, LA)** The Louisiana Department of Transportation and Development selected Fenstermaker to provide all necessary engineering services required for development of plans for the replacement of 14 bridges in District 03. Fenstermaker's services include researching eligible structures, coordinating with local stakeholders, and selecting structures for inclusion in the IIJA Off-System Bridge Program. Ms. Phillips contributed to the hydraulic studies and completed the basin delineations, discharge calculations, and prepared the hydraulic modeling reports.
11/22-ongoing	**City of Carencro Comprehensive Plan (Lafayette Parish, LA)**

	Fenstermaker is working with the City of Carencro to develop and draft a comprehensive master plan. Fenstermaker is leading the effort and providing overall project management, public engagement, vision planning, and plan component evaluation to produce an implementable plan that will guide the City for the next 20 years. Ms. Phillips conducted interviews with stakeholders, met with the steering committee, and worked on developing the Plan's website, including selecting content entered into the project's dashboard.
07/23-ongoing	**Beiber Road Over Nezpique Bayou Evaluation and Rehabilitation (Evangeline Parish, LA)** Fenstermaker performed engineering and related services required for the replacement of an LADOTD off-system bridge in District 03, Beiber Road Over Nezpique Bayou. Ms. Phillips delineated the basin and reviewed runoff calculations.
09/23-ongoing	**Solid Wastewater Road Over Bayou Boeuf Bridge Evaluation and Rehabilitation (St. Landry Parish, LA)** Fenstermaker performed engineering and related services required for the replacement of an LADOTD off-system bridge in District 03, Solid Wastewater Road Over Bayou Boeuf. Ms. Philips assisted with the RAS model setup.
01/24-ongoing	**Isaac Verot Coulee Lateral L7 Revisions (Lafayette Parish, LA)** Lafayette Consolidated Government (LCG) asked Fenstermaker to provide professional hydrologic and hydraulic modeling and topographic surveying services to revise the effective Flood Insurance Rate Map data for Lateral L7 of the Issac Verot watershed. The scope of the study includes hydraulic modeling and re-mapping of the regulatory floodplain, base flood elevation, and floodway. Ms. Phillips reviewed the existing FEMA model and documentation, compared the existing cross sections to the Flood Insurance Study (FIS), prepared maps, delineated the sub-basin, set up the HMS-RAS models, and reviewed and edited reports and other project documentation.
02/25-ongoing	**Coulee Ile Des Cannes LOMR (Lafayette Parish, LA)** Lafayette Consolidated Government asked Fenstermaker to provide professional hydrologic and hydraulic modeling and topographic surveying services in to revise the effective Flood Insurance Rate Map data for Coulee Ile Des Cannes and Lateral L8C. Ms. Phillips researched and reviewed the existing FEMA documentation, set up GIS files and prepared data for analysis in HEC-RAS, worked on the initial models of the L8C lateral, and set up geometries for the no-rise analysis.

Firm employed by **Michael Baker International, Inc.**			
Name	**L.R. "Eric" Erikson, PE, CFM**	Years of relevant experience with this employer	**2**
Title	Department Manager – Water Resources	Years of relevant experience with other employer(s)	**24**
Degree(s) / Years / Specialization		M.S. / 2003 / Engineering and Technology Management, Louisiana Tech University B.S. / 1999 / Civil Engineering, Louisiana Tech University	
Active registration number / state / expiration date		PE.0031061 / Louisiana / 03/31/2026 PE.0019275 / Mississippi / 12/31/2025 PE.0052502 / Alabama / 12/31/2025 PE.0151318 / Texas / 12/31/2025 CFM US-23-12645 / 07/31/2025	
Year registered	2004 2023 (CFM)	Discipline	Civil
Contract role(s) / brief description of responsibilities		**H&H ANALYSIS TASK MANAGER.**	

Mr. Erikson has served as the Project Manager for several LADOTD sponsored projects. He has experience working with several members of the LADOTD Public Works section as well as the LADOTD Hydraulics section and has successfully completed several water resource and hydraulic projects with LADOTD. He has many years experience with LADOTD hydraulic guidelines, specifications, pay items, regulations, and software. Mr. Erikson will fill the role as task manager for the team while also ensuring QA/QC for any hydraulic analysis tasks that may be required.

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
01/23 - Ongoing	**Louisiana Watershed Initiative (LWI) Region 6, Louisiana | DOTD.** Deputy Project Manager. Responsible for providing contract administration and assisting the project manager in general project management duties such as resource allocation, scheduling, coordination of team members, and financial analysis. Michael Baker supplemented data collection and analysis, continued stakeholder engagement services, and performed topographic, bathymetric, and channel surveys. Specifically, Mr. Erikson completed project management duties such as being a point of contact for the LADOTD Project Manager, directed resource management to complete all task orders, provided QA/QC on all deliverables, and provide stakeholder engagement in the form of presentations to various stakeholders. This task includes 4 HUC8 Watershed models.
01/23 – 12/2024	**Louisiana Watershed Initiative (LWI) Region 1, Louisiana | DOTD.** Deputy Project Manager. Responsible for the contract administration and assisting the project manager in general project management duties such as resource allocation, scheduling, team coordination, and financial analysis. This task includes 3 HUC8 Watershed models. Mr. Erikson assisted in the QA/QC of deliverables, directed resource management to complete all required tasks.
01/23 – 12/2024	**Louisiana Watershed Initiative (LWI) Region 4, Louisiana | DOTD**. Deputy Project Manager. Responsible for contract administration and assisting the project manager with general project management duties such as resource allocation, scheduling, team coordination, and financial analysis. This task includes 1 HUC8 Watershed model.
11/22 – 12/2024	**Parish Comprehensive Drainage Plan, St. Tammany Parish, Louisiana | St. Tammany Parish**. Deputy Project Manager. Responsible for contract administration and assisting with general project management duties, such as resource allocation, team coordination, scheduling, and financial analysis. Attending public outreach meetings and assisted the public in understanding the project objective and goals. Provided review and QC of the Phase 1 final report, community outreach at two public meetings, and scoping of future phases.

11/22 – 12/2024	**IIJA Bridge Replacement Program Region 7, Louisiana	DOTD**. Task Manager. Responsible for directing the completion of 12 Bridge Replacement Structure Hydraulic Studies in accordance with LADOTD regulations. Studies included 2D HEC-RAS models, replacement alternative analysis, scour analysis, and "No-Rise" Certificates where required. Mr. Erikson provided overall production oversight , task management and QA/QC of the final reports.
11/22 – 12/2024	**LWI/SPP Group 1 Bundick Lake Flood Surcharge Management, Beauregard Parish, Louisiana	DOTD**. Project Manager. Responsible for the overall execution of the project, contract administration, and general project management duties, which include resource allocation, team coordination, sub-consultant coordination, scheduling, and financial analysis. Specifically, Mr. Erikson completed the PFM, and SQRA assessments, and provided QA/QC for all modeling. The project will determine improvements to Bundick Lake outlet works in order to reduce flooding within the watershed.
11/22 – 12/2024	**LWI/SPP Group 1 Anacoco Creek Watershed upper and Lower, Vernon Parish, Louisiana	DOTD**. Project Manager. Responsible for the overall execution of the project, contract administration, and general project management duties, which include resource allocation, team coordination, sub-consultant coordination, scheduling, and financial analysis. Specifically, Mr. Erikson completed the PFM, and SQRA assessments, and provided QA/QC for all modeling. The project will determine improvements to both Vernon Lake and Anacoco Lake outlet works in order to reduce flooding within the watershed.
7/23 – 12/2024	**LWI/SPP Group 1 Three Mile Lake, St. Landry Parish, Louisiana	DOTD**. Project Manager. Responsible for the overall execution of the project, contract administration, and general project management duties, which include resource allocation, team coordination, sub-consultant coordination, scheduling, and financial analysis. Specifically, Mr. Erikson completed the on-site inspection, improvement alternatives strategy, and provided QA/QC for all modeling. The project will determine improvements to infrastructure around Three Mile Lake in order to reduce backwater flooding from the Atchafalaya Floodway.
7/23 – 12/2024	**Little Bogue Falaya Regional Detention Pond, St. Tammany Parish, Louisiana	St. Tammany Parish**. Project Manager. Responsible for the overall execution of the project, contract administration, and general project management duties, which include resource allocation, team coordination, sub-consultant coordination, scheduling, and financial analysis. Specifically, Mr. Erikson completed the overall strategy for modeling of several pond locations and sizes, QA/QC 2D HEC-RAS models, QA/QC Preliminary Engineering Report, Provide oversight and final review of cost estimates, and reviewed damage calculations for BCA calculations.
01/23 - Ongoing	**Jones Creek Regional Detention Pond, Baton Rouge, Louisiana	City Parish of East Baton Rouge DPW**. H&H Task Manager. Responsible for the overall execution of the H&H portion of the project, contract administration, and general task management duties, which include H&H resource allocation, H&H team coordination, scheduling, and financial analysis. Specifically, Mr. Erikson completed the overall strategy for modeling of the detention pond configurations, QA/QC 2D HEC-RAS models, QA/QC Preliminary Engineering Report, and provided QA/QC review of preliminary construction plans.

Firm employed by **Michael Baker International, Inc.**			
Name	**Mark McBroom, PE**	Years of relevant experience with this employer	**20**
Title	Technical Manager – Water Resources	Years of relevant experience with other employer(s)	**1**
Degree(s) / Years / Specialization		M.S. / 2005 / Environmental Engineering, Montana State University-Bozeman B.S. / 2004 / Civil Engineering, Montana State University-Bozeman	
Active registration number / state / expiration date		PE 12010 / Alaska / 11/14/2025 PE 43692 / Colorado / 10/10/2025	
Year registered	2008	Discipline	Civil
Contract role(s) / brief description of responsibilities		**SMS Modeling Technical Advisor**	

Mr. McBroom will serve as Technical Advisor for all SMS Modeling efforts for this project given his breadth of experience providing hydraulic analysis and design support for many state and private entities across the nation, including LADOTD. He will provide support in project scoping, troubleshooting, and providing incremental and final QA/QC of hydraulic modeling and design. His extensive knowledge of the SMS platform used by FHWA and several state DOT's will be an asset to the team.

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
11/20 - Ongoing	**Louisiana Watershed Initiative (LWI) Region 6, Louisiana | DOTD.** Hydraulic Lead. Responsible for data acquisition (TO1), HUC-8 hydrologic and hydraulic (H&H) modeling of the Region 6 watersheds (TO2&3), and technical support for the Design Storm Phase (TO4). Mr. McBroom was the initial lead modeler for the Eastern Louisiana Coastal and East Central Louisiana Coastal watersheds, before overseeing the final development and deployment of these models. He was coauthor of associated technical reports and deliverables and collaborated with other contractors to coordinate methods and assumptions with adjacent watersheds. Mr. McBroom also provided development support and QAQC of the Lower Grand and West-Central Louisiana Coastal watershed models and deliverables. He continues to be involved in the Preparation of Design Storms under Task Order 4 as Technical Advisor.
10/23 - Ongoing	**Alaska Highway Bridge Replacements, Alaska | AKDOT&PF.** Lead Hydraulic Engineer. Responsible for hydraulic analysis and design support for temporary construction infrastructure and permanent bridge replacement at three glacial watershed bridges. Mr. McBroom has performed all aspects of hydrologic analysis, considering future conditions, and hydraulic analysis using SMS/SRH-2D, to include scour analysis and countermeasure design. Michael Baker is serving as both CMGC and hydraulic lead for this project, coordinating directly with the client, bridge engineers, environmental, and construction contractor to optimize design, cost, and schedule.
08/24 – Ongoing	**Stebbins Airport Rehabilitation, Alaska | AKDOT&PF.** Senior Hydraulic Engineer. Responsible for H&H analysis of the coastal village of Stebbins, AK to assess the impact of proposed airport access road and apron on hydraulic on rainfall runoff and coastal surge flooding, as well as establishing design flood elevation, culvert sizing, and erosion countermeasures. Mr. McBroom performed coastal surge height frequency analysis, considering sea level rise, and developed design surge hydrographs. Design surge and rainfall runoff were modeled using HEC-RAS 2D. Wave analysis and runway armament design was also performed to mitigate advancing coastal erosion.
04/21 - Ongoing	**Master Service Agreement (MSA) for As-needed Hydro Engineering, Alaska | AKDOT&PF.** Senior Hydraulic Engineer. Responsible for H&H analysis, including 1D and 2D hydraulic modeling, in support of railroad bridge replacements and bank stabilization design across Alaska. Work includes flood plain permit support, no-rise certifications and CLOMR/LOMR package development, and design support. Such projects have included SMS/SRH-2D modeling of the Knik River for rehabilitation of two bridges parallel with ADOT&PF bridges, alternatives analysis of

	revetment and spur dikes to mitigate bank erosion using SMS/SRH-2D, HEC-RAS 1D and 2D modeling of FEMA mapped Zone AE w/ floodway reaches in support of floodplain permitting and bridge design.
07/20 – 12/23	**Bridge Scour Technical Services Agreement (TSA) TO1, Alaska | AKDOT&PF.** Senior Hydraulic Engineer. Responsible for detailed SMS/SRH-2D model development and analysis of two scour critical bridges impacted by coastal storm surge near Nome, Alaska. Work included scour analysis and conceptual countermeasure design. Mr. McBroom also provide QA/QC support for the hydraulic analysis of three scour critical piers under this contract.
02/20 – 7/20	**Route 50 Bridge Over Cedar Swamp Creek, New Jersey | NJDOT.** Hydraulic Engineer. Responsible for advancing H&H analysis and design support using SMS/SRH-2D to simulate combined coastal surge and rainfall runoff hydraulics for the replacement of an emergency relief bridge. Mr. McBroom provided rapid development of an SMS/SRH2D model and coastal surge hydrology to incorporate complex hydraulics of a critical evacuation bridge in a coastal transition zone. He also provided scour analysis in support of the new bridge design.
09/20 – 12/20	**Hurricane Florence Recovery Bridge Replacements at Marine Corps Base Camp LeJeune, North Carolina | NAVFAC Mid-Atlantic.** Hydraulic Engineer. Responsible for analysis and design support of the proposed Single-leaf bascule bridge, specifically scour and countermeasure analyses. Michael Baker is providing engineering and design services for the design-build replacement of three bridges damaged by Hurricane Florence.
03/20 - Ongoing	**Snow River Hydrology and Hydraulics, Alaska | Alaska Railroad Corporation.** Lead Hydraulic Engineer. Responsible for advancing USGS-developed SMS/SRH-2D model in support of railroad track raise and bridge replacements impacted by recent glacial lake outburst flooding. Mr. McBroom coordinated closely with USGS to obtain existing data and advance modeling in support of infrastructure analysis and design, including the rehabilitation and replacement of five bridges. This included alternatives analysis, scour analysis. and countermeasure design to address impacts of a rapidly changing hydrologic regime.
09/22 - Ongoing	**FEMA Professional and Technical Services (PTS), Nationwide | FEMA.** Subject Matter Expert and Innovations Technical Lead. Largely responsible for providing technical and engineering services to support Zone 1 regions and performing evaluative modeling and analysis under the Continuous Improvement Program (CIP). Mr. McBroom has specifically provided detailed review and guidance support to FEMA Regions and HQ, as well as acting PTS lead for collaborative studies with USACE and other PTS contractors. Mr. McBroom also coauthored FEMA's current ice jam analysis and mapping guidance.
04/05 - Ongoing	**Colville River Delta Studies, Alaska | ConocoPhillips Alaska, Inc.** Lead Hydraulic Engineer. Mr. McBroom has been involved in every aspect of Michael Baker's long standing H&H support in arctic Alaska, providing annual hydrometric monitoring, geomorphic analyses, flood frequency analysis, detailed SMS/SRH-2D modeling of a deltaic system, analyzing hydraulic impacts to existing and proposed infrastructure, and mitigative design. He currently provides scoping, senior review, troubleshooting, and complex analysis.
12/21 - 07/22	**ARRC MP379-380 H&H Eval TO6, Alaska | Alaska Railroad Corporation.** Lead Engineer. Developed comparative SRH-2D models for an alternatives analysis to address the protection of Railroad infrastructure from bank erosion along the Nenana River. Alternatives included revetment and spur dikes. Preliminary 30% design of revetment and spur dikes was performed, to include layout, stone sizing, and volume calculations. Additional work included a geomorphological analysis to assess bank erosion rates relative to proposed realignment alternatives.

Firm employed by **Michael Baker International, Inc.**			
Name	**Justin West, PE, CFM**	Years of relevant experience with this employer	**2**
Title	Civil Engineer	Years of relevant experience with other employer(s)	**3**
Degree(s) / Years / Specialization		BS / 2019 / Environmental Engineering / Louisiana State A&M University	
Active registration number / state / expiration date		PE.0049277 / Louisiana / 3-31-2025 CFM US-22-12180 / 01-31-2026	
Year registered	2024	Discipline	Civil
Contract role(s) / brief description of responsibilities		**HYDROLOGY AND HYDRAULIC ANALYSIS / MODELING**	

Mr. West will serve as an Hydraulic Modeler for large and small scale H&H models for this contract. Mr. West has successfully prepared 2D H&H models for several watersheds for structure replacement analysis, flood reduction analysis, dam and reservoir modeling, backwater flooding analysis.

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract, *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
01/23 – 12/2024	**IIJA Off System Bridge Replacement, District 07 Parishes | DOTD**. Hydraulics Modeler. Mr. West assisted in the technical QA/QC process through reviewing the hydraulic and hydrologic models completed for several of the watersheds delineated within the project area and the associated hydraulic reports.
04/23 – Ongoing	**Louisiana Watershed Initiative (LWI) Region 6, Louisiana | DOTD**. HEC-RAS Modeler. Mr. West is the Lead modeler for the Eastern Central Louisiana Coastal (Region 6) HEC-RAS model. Mr. West developed the loss method for infiltration, soils, and land use data. Mr. West created centerlines for the major streams in the watershed by filtering out small streams from the National Hydrology Database. Mr. West developed the hydraulic models' break lines, bridge structures, and mesh geometry, and simulated storms within the HEC-RAS models and adjusted calculated values to calibrate and validate the model.
04/23 – 12/2024	**Louisiana Watershed Initiative Modeling Contract – Region 1, Louisiana. DOTD.** HEC-RAS Modeler. Mr. West was the lead modeler for Black Lake Bayou (Region 1) HEC-RAS model and technical QC reviewer for Lower Sabine. He developed the loss method for infiltration, soils, and land use data. I created centerlines for the major streams in the watershed by filtering out small streams from the National Hydrology Database and the hydraulic models' break lines, bridge structures, and 1-D geometry. He simulated storms within the HEC-RAS models and adjusted calculated values to calibrate and validate the model.
04/24-Ongoing	**St. Tammany Parish Comprehensive Drainage Plan | St. Tammany Parish Government.** Assistant Project Manager and Lead Modeler. Mr. West is responsible for assisting with general project management duties, such as resource allocation, team coordination, scheduling, and financial analysis. Mr. West attended public outreach meetings and assists the public in understanding the project objective and goals. Mr. West completed the existing models for the parish consisting of 12 models.
4/23 – 12/2024	**LWI/SPP Group 1 Bundick Lake Flood Surcharge Management, Beauregard Parish, Louisiana | DOTD.** Hydraulic Modeler. Responsible for the overall execution of the project, contract administration, and general project management duties, which include resource allocation, team coordination, sub-consultant coordination, scheduling, and financial analysis. Specifically, Mr. West provided HEC-RAS troubleshooting and QA/QC for the models, as well as inundation mapping. The project will determine improvements to Bundick Lake outlet works to reduce flooding within the watershed.

4/23 – 12/2024	**LWI/SPP Group 1 Anacoco Creek Watershed upper and Lower, Vernon Parish, Louisiana | DOTD.** Hydraulic Modeler. Responsible for the overall execution of the project, contract administration, and general project management duties, which include resource allocation, team coordination, sub-consultant coordination, scheduling, and financial analysis. Specifically, Mr. West provided HEC-RAS troubleshooting and QA/QC for the models and provided inundation mapping. The project will determine improvements to both Vernon Lake and Anacoco Lake outlet works to reduce flooding within the watershed.
7/23 – 12/2024	**LWI/SPP Group 1 Three Mile Lake, St. Landry Parish, Louisiana | DOTD**. Hydraulic Modeler. Responsible for the overall execution of the project, contract administration, and general project management duties, which include resource allocation, team coordination, sub-consultant coordination, scheduling, and financial analysis. Specifically, Mr. West completed all HEC_RAS modeling of the watershed basin, provided on-site inspection, improvement alternatives modeling, and provided inundation mapping. The project will determine improvements to infrastructure around Three Mile Lake to reduce backwater flooding from the Atchafalaya Floodway.
02/22 – 02/23	**LCG Stormwater Master Plan, Lafayette Parish | Lafayette Consolidated Government**- Mr. West analyzed multiple watersheds with 2D hydraulic modeling in HEC-RAS. Mr. West completed the existing conditions model for one of the watersheds in this project. Mr. West assisted with the proposed alternatives to mitigate flooding for the basin that was also developed for the client. Mr. West was responsible for the proposed and existing models. Using the outcome of the proposed projects to establish mitigation alternatives for stormwater management. Mr. West reviewed the results and drafted a report highlighting the conclusions made
02/22 – 02/2023	**LCG Residential Buyout Plan, Lafayette Parish | Lafayette Consolidated Government** - Mr. West used GIS programming to create a structure map of Lafayette Parish to locate at-risk structures for a buyout program. Using the outcome of the proposed locations to establish a mitigation plan that distinguished houses that would be the most at-risk alternatives from stormwater flooding. Mr. West reviewed the results and drafted a report highlighting the conclusions made.
05/22 – 02/23	**RESTORE Parish Matching Grant Program | CPRA The CPRA** Parish Matching Program was designed to help coastal parishes that received RESTORE funds prioritize Coastal Master Plan projects while also recognizing and responding to the needs of parishes to implement projects that may not be contained in the Coastal Master Plan. Mr. West is responsible for the Existing and proposed models completed in the USACE HEC-RAS modeling program. Using the projects to establish non-structural mitigation alternatives for stormwater management. Mr. West reviewed the results and drafted a report highlighting the conclusions made.
02/22 – 02/23	**Chennault Stormwater Plan | Calcasieu Parish Public Works** Mr. West analyzed the Chennault Airport's existing drainage conditions with 2D hydraulic modeling in HEC-RAS. Proposed alternatives to mitigate flooding for the Airport were also developed for the client. Mr. West was responsible for the proposed models. Using the outcome of the proposed projects to establish mitigation alternatives for stormwater management. Mr. West reviewed the results and drafted a report highlighting the conclusions made
05/22 – 02/23	**Comite River Improvements Feasibility Study | East Baton Rouge Parish Department of Transportation and Drainage**. For the Comite River improvements, it was proposed that the removal of debris from the Comite River would improve drainage for the channel. Mr. West was the lead modeler for the project which consisted of a review of all video data received from an aerial drone survey, marking and sizing obstructions made, an existing model consisting of over 200 impacted channel locations, a proposed model, and the associated technical report. Mr. West created presentations and assisted in stake holder meetings.
06/20 – 02/21	**Steady Flow 1D HEC-RAS Model, Beaver Creek, and Long-Slash Branch Watersheds.** Mr. West completed 1D hydraulic and hydrologic models for the Bever Creek and Long-Slash Branch watersheds. These studies involved the hydrologic and hydraulic analysis of drainage structures and drainage areas within the watersheds. Existing conditions and proposed conditions models were created along with a benefit-cost analysis for the improvements proposed in the proposed conditions model.

Firm employed by **Michael Baker International, Inc.**			
Name	**Afaq Ahmad Durrani, EI, CFM**	Years of relevant experience with this employer	**2**
Title	Civil Associate	Years of relevant experience with other employer(s)	**1**
Degree(s) / Years / Specialization		M.S.E / 2022 / Civil Engineering / University of Louisiana at Lafayette	
Active registration number / state / expiration date		EI.0035541 / LA / 03-31-2026	
Year registered	2023	Discipline	Civil
Contract role(s) / brief description of responsibilities		**HYDROLOGY AND HYDRAULIC ANALYSIS / MODELING**	

Mr. Durrani will provide support to hydrologic / hydraulic modeling tasks. Mr. Durrani's experience includes H&H modeling, designing, and completing quality control on multi-million-dollar projects that range from large watershed modeling to individual bridge replacement hydraulic studies. Mr. Durrani is well versed in a variety of hydrologic and hydraulic software including the USACE HEC suite (HEC-HMS, HEC-RAS, HEC-DSSVue, HEC-FIA), ArcGIS Pro, ArcMap, Go Consequence and LADOTD HydrWin suite.

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract, *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
05/23 – Ongoing	**IIJA Off System Bridge Replacement, District 07 DOTD.** Hydraulics Engineer/Modeler. Performed hydrological and hydraulic analysis and modeling in HEC-RAS. Hydraulic calculations were also performed in HYDRWIN. The hydraulic analysis consisted of HEC-RAS 1D and 2D models where applicable to identify existing hydraulic performance of each structure and recommend an equivalent structure that meets or improves the hydraulic capacity of the existing structure. Mr. Durrani also performed scour analysis and no-rise analysis for proposed structures. Prepared the final Hydraulic reports that were submitted to LA DOTD for approval. This project program requires Michael Baker International to deliver 12 bridge replacements within the 30.3 million dollars allocated for District 07.
01/23-12/24	**Louisiana Watershed Initiative Modeling Contract – Region 1, Louisiana. DOTD.** Hydraulics Modeler. Modeler for Black Lake Bayou HUC08 HEC-RAS model. Created a coupled 1D/2D hydraulic model along with developing break lines, refinement regions, culverts, bridge structures, cross sections, and mesh geometry in the hydraulic model. Simulated storms within the HEC-RAS models and adjusted calculated values for calibration and validation of the model. Prepared hydraulics and structure logbook for Black Lake Bayou. Mr. Afaq created 1D models for other HUC 08s in region 1, which include Saline Bayou and Bodcau Bayou.
01/23 –12/24	**Louisiana Watershed Initiative Modeling Contract – Region 4, Louisiana. DOTD.** Hydraulics Modeler Served as a Hydraulic modeler for Lower Sabine located in Region 4 of the Louisiana Watershed Initiative. Responsibilities included calibrating and validating the hydraulic model for Lower Sabine and helped in preparing the modeler's logbook. Similar to the LWI Region 1 project above, these models will be instrumental in providing future stormwater management decisions regarding land use, policy, and infrastructure.
05/24 - Ongoing	**Little Bogue Falaya Pond, St. Tammany Parish, Louisiana.** Hydraulics Engineer/Modeler. Currently performing the Hydrological and Hydraulic analysis for this project. Little Bogue Falaya is located in Covington, St Tammany Parish. Identified and developed project alternatives by running multiple detention pond scenarios with different design details to ensure the most efficient pond characteristics are identified. Conceptual layouts of the different alternatives will be provided, as well as a Preliminary Engineering report and BCA, that summarizes the hydrologic and hydraulic analysis efforts and their results.

Firm employed by **Michael Baker International, Inc.**			
Name	**Achutam Baral, PE, CFM**	Years of relevant experience with this employer	**1.5**
Title	Civil Engineering- Water	Years of relevant experience with other employer(s)	**4.5**
Degree(s) / Years / Specialization		M.Eng.Sc., 2019, Water Resources Engineering, University of Louisiana at Lafayette B.S.E., 2012, Civil Engineering, Tribhuvan University, Nepal	
Active registration number / state / expiration date		PE 0048564 /Louisiana / 09/30/26 CFM/ US-24-13247 / 1/31/2026	
Year registered	2024	Discipline	Civil
Contract role(s) / brief description of responsibilities		**HYDROLOGY AND HYDRAULIC ANALYSIS / MODELING**	

Mr. Baral is a Water Resources Engineer with a background and a strong passion for hydrologic and hydraulic (H&H) modeling. His proficiency extends to hydrodynamic modeling software, including HEC-RAS, HEC-HMS, and ArcGIS. In addition, he possesses skills in programming languages such as MATLAB and Python, enabling him to conduct thorough data analysis, create complex models, and develop innovative algorithms to address real-world H&H challenges. Mr. Baral's dedication to solving water resources problems using cutting-edge technology and analytical expertise has been a driving force throughout his career. He is currently leveraging Large Language Model (LLM) for H&H modeling automation.

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
05/23 - Ongoing	**IIJA Off System Bridge Replacement, District 07 DOTD.** Hydraulic Engineer. Performed hydraulic analysis of existing bridges and compared results to multiple bridge replacement alternative structures. Hydraulic analysis has been performed under LaDOTD hydraulic guidelines utilizing HEC-RAS as well as LADOTD Hydrwin software. This project program requires Michael Baker to deliver 12 bridge replacements within the 30.3 million dollars allocated for District 07. LADOTD issued NTP for additional services in May 2023. In addition to traditional Bridge Hydraulic Reports and scour analysis, Mr. Baral Also conducted No Rise Certifications for structures located in the
05/23 – 12/24	**Louisiana Watershed Initiative (LWI) Region 1 IDIQ, Louisiana. LADOTD.** Civil Associate. Addressed issues related to hydrological and hydraulic analysis of the watershed, including 1D/2D H&H modeling, and provided technical guidance to the team. Performed statistical analysis of the model results to identify parameter sensitivity to improve overall model results. Performed validation of the model utilizing multiple historical events.
05/23 - Ongoing	**Louisiana Watershed Initiative Modeling Contract - Region 6, Louisiana. LADOTD**. Hydraulic Engineer / Modeler. Michael Baker is providing engineering and modeling services to the LADOTD for Region 6 for the LWI. The LWI project was launched in 2018 and introduced a watershed-based approach to reducing flood risk. It is organized by seven modeling regions, each encompassing multiple HUC-8 watersheds. For the contract, Michael Baker is providing hydrologic and hydraulic modeling, data collection and analysis, stakeholder engagement, and surveying.
01/22 – 05/23	**Comprehensive H&H RAS 2D Modeling Project, Calcasieu Parish, Louisiana.** Engineer In Training (EIT). The project's objective is to enhance and safeguard the drainage infrastructure within the Parish and ultimately ensure the protection of human life and private property. Part of the water resources team that developed an H&H model and provided drainage solutions to the Calcasieu Parish government. Analyzed the field survey data and created the cross-sections for the major channel within the Parish. Additionally, generated spatial value of the SCS curve number based on the land-use and soil type dataset. Also modified the natural channel to capture bathymetry using field survey data of the Vinton Region within a Parish. Lastly, performed H&H modeling and floodplain analysis of the Vinton Region and presented the Stormwater Master Plan to the Parish government.

Firm employed by **Michael Baker International, Inc.**			
Name	**Tanveer Ahmed**	Years of relevant experience with this employer	**1**
Title	Civil Associate	Years of relevant experience with other employer(s)	**3**
Degree(s) / Years / Specialization		B.S.E., 2015, Water Resource Engineering, Bangladesh University of Engineering and Technology (BUET) M.S., 2022, Civil Engineering, University of Louisiana at Lafayette	
Active registration number / state / expiration date		N/A	
Year registered	N/A	Discipline	N/A
Contract role(s) / brief description of responsibilities		**HYDROLOGY AND HYDRAULIC ANALYSIS / MODELING**	

Mr. Ahmed is a Water Resources Engineer with an extensive background of hydrologic and hydraulic (H&H) modeling and a strong passion for data analytics. He is proficient in hydrodynamic modeling software, including HEC-RAS, HEC-HMS, and ArcGIS. In addition, he possesses skills in programming languages such as MATLAB and Python, enabling him to conduct thorough data analysis for large data sets, to assist in watershed level modeling challenges.

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; *i.e.*, "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the time specified in the applicable MPR(s).
08/22 - Ongoing	**Louisiana Watershed Initiative Modeling Contract - Region 6, Louisiana. LADOTD** H&H Modeler. Responsible for assisting the task manager in modeling of several design storms scenarios, including Atlas 14 Everywhere with Area Reduction Factors (ARF's), and BV-SST where SST precipitation analysis is combined with statistically appropriate storm surge to result in a tropical design storm. In addition to these tasks, Mr. Ahmed conducted a Flood Frequency analysis of available gauges in the watershed basin to further the Design storm analysis. Mr. Ahmed also conducted a HEC-RAS version analysis where he ran all 4 HUC's in Region 6 using multiple versions of HEC-RAS to ensure usability from users.
11/22 – Ongoing	**Little Bogue Falaya Detention Project. St. Tammany Parish Dept. of Engineering. St. Tammany Parish.** Michael Baker is providing hydraulic and hydrologic modeling for the proposed 70-acre regional detention pond located near Covington, Louisiana in St. Tammany Parish. The project consisted of evaluating several pond locations, sizes, outfall configurations to ensure the most benefit in reducing water surface elevations in the Little Bogue Falaya Watershed. Mr. Ahmed assisted in troubleshooting H&H modeling issues.
11/21 – Ongoing	**Parish Comprehensive Drainage Plan, *St. Tammany Parish, Louisiana.* Hydraulic Modeling/Calculations.** Responsible for helping with community and public outreach presentations. Assisted with data acquisition and processing to determine areas of high flood risk and reports. Michael Baker conducted a comprehensive drainage plan for the Saint Tammany Parish located on the north shore of Lake Pontchartrain. The plan evaluated the existing state of drainage in the parish including flood risk, water quality and development guidelines, recommended capital projects, and potential policy changes that would lead to reduced flood damage and increased safety. The Michael Baker team provided data gathering efforts, ranked a list of problem areas, and provided four in-person public and stakeholder outreach throughout Phase I of this project. Mr. Ahmed prepared break out H&H models for several watershed in the parish.

Firm employed by	WSP USA, Inc.			
Name	**Ashley Wylie**		Years of relevant experience with this employer	6.56
Title	**Consultant, Water Resources Engineering**		Years of relevant experience with other employer(s)	0
Degree(s) / Years / Specialization			Bachelor of Science in Civil Engineering, University of Alabama at Birmingham / 2019	
Active registration number / state / expiration date			PE53602 / Alabama / 12/31/2025	
Year registered	2023	Discipline	Civil Engineering	
Contract role(s) / brief description of responsibilities			**Watershed Modeling**	

Experience dates (mm/yy–mm/yy)	Experience and qualifications relevant to the proposed contract; i.e., "designed drainage", "designed girders", "designed intersection", etc. Experience dates should cover the years of experience specified in the applicable MPR(s).
Experience dates	Experience and qualifications relevant to the proposed contract;
01/21- ongoing	**State of Alabama LOMR/CLOMR - Case Reviewer** / reviewed detailed hydrologic models including HEC-HMS, gage analysis, and regression equations, reviewed detailed 1D and 2D HEC-RAS models, reviewed mapping and required document submittal for LOMR/CLOMR cases
07/19- 05/24	**State of Alabama RiskMAP Watersheds – Modeler** / developed detailed and approximate 1D HEC-RAS hydraulic models, developed detailed and approximate hydrologic models using ArcMap, ArcGIS Pro and regression equations
06/23-04/24	**City of Muscle Shoals, Muscle Shoals LOMR, Muscle Shoals, AL** Project Engineer. Ms. Wylie assisted in drafting a LOMR submittal package for multiple connected sinkholes. Ashley used the PCSWMM results to determine floodplain and floodway extents and coordinated with community officials to notify impacted property owners and update the regulatory flood maps for the community.
09/21-11/24	**CSX Transportation, Culvert and Bridge Replacement, Multiple Locations:** Ms. Wylie developed hydrologic and 1-D hydraulic models using rational method, WinTR-55, regression equations, HEC-RAS and HY8 to determine appropriate proposed culvert and bridge geometries and feasibility for multiple CSX project sites, as well summary H&H reports for the client.
11/22-07/23	**Southern Company, Plant Barry Connector Road Project, Mobile, AL:** Project Engineer. Ms. Wylie assisted in determining appropriate hydrologic discharges and building a 2D HEC-RAS model to evaluate bridge and culvert options for a flood-prone site. She also assisted in determining the recommended alternative and writing the final report on the project findings.
06/24 - Ongoing	**State of New York, PTS Region 2 Production, NY:** Project Engineer. Ms. Wylie developed detailed 2-D HEC-RAS rain-on-mesh models with structure survey incorporation, floodway development, and rainfall data development.
06/23 - Ongoing	**State of Alabama, 2-D BLE Watersheds, AL:** Project Engineer for Bear, Cahaba, Lower Choctawhatchee, Upper Choctawhatchee, and Sipsey Fork watersheds in Alabama. Ms. Wylie developed 2-D HEC-RAS models using rain-on-mesh unsteady flow simulations.

Firm employed by	WSP USA, Inc.		
Name	**Ashwini Kashelikar, PE, CFM**	Years of experience with this firm/employer	15
Title	**Project Manager**	Years of experience with other firm(s)/employer(s)	0
Degree(s) / Years / Specialization	MS/2009/Environmental Engineering, BS/2005/Chemical Engineering		
Active registration number / state / expiration date	Professional Engineer: PE.0043642-LA 2026,116903-TX 2020, Certified Floodplain Manager		
Year registered	2014	Discipline	Civil Engineer (Water Resources)
Contract role(s) / brief description of responsibilities	**Watershed Modeling** Ms. Kashelikar will be a Project Manager and Engineer. She will manage a team of project engineers and other staff to perform the required effort. She has experience with ESRI GIS software, HEC-DSS, HEC-SSP, HEC-RAS, HEC-HMS, HEC-ResSim, USGS PeakFQ, PCSWMM, InfoSWMM, FLO-2D, and ICPR.		

Experience dates	Experience and qualifications relevant to the proposed contract;
11/20 - Ongoing	**Louisiana Department of Transportation (LaDOTD) Louisiana Watershed Initiative Region 3 Modeling Services** Ms. Kashelikar is managing the development of hydrologic and hydraulic models in four watersheds in northeast Louisiana – Boeuf River, Bayou Macon, Bayou Cocodrie and Tensas River – adding up to over 5800 square miles. The full scope of this effort has involved conducting a data gap analysis and development of detailed methodologies to model each watershed. The modeling contract also includes scoping, public outreach, hydrologic and hydraulic analyses, consequence modeling and floodplain mapping. The watershed-scale models developed by WSP for the LWI program will serve as the basis for analysis of future developments, flood mitigation feasibility studies, watershed management strategies and consequence and risk assessment. The extensive hydraulic modeling effort will include development of a combination of 1-dimensional and 2-dimensional models using HEC-RAS and covering over 4,900 square miles.
01/09 – 05/17	**USACE Vicksburg District, MMC Program, Nationwide:** Project Task Manager/Engineer for dam breach analysis of high hazard dams utilizing unsteady-state HEC-RAS modeling techniques, HEC-GeoRAS for mapping and HEC-DSSvue for calculating duration exceedance curves. Five scenarios depicting various water levels in the reservoir were modeled according to the procedural guidelines.
08/10 – 05/19	**Southwestern Illinois Flood Prevention District Council - SW Illinois Levee Certification on Mississippi River tributary streams:** Project Task Lead/Project Engineer for interior drainage analysis utilizing PCSWMM along 16 miles of the Metro East Sanitary District Levee system in St. Clair and Madison counties, Illinois. The analysis also included a probabilistic coincident frequency analysis to determine the water surface elevations in the low-lying areas adjacent to the levees. Ms. Kashelikar also developed HEC-HMS and HEC-RAS models for Mississippi River tributary streams and performed embankment protection analysis in support of certification of levees in Madison County, IL.
03/13 – 03/15	**State of Alabama ADECA OWR - Upper Alabama and Middle Coosa Watershed Risk MAP, Montgomery, AL**: Project Task Manager/Engineer performed detailed hydraulics studies (HEC-RAS) for streams in Elmore and Autauga counties. Ms. Kashelikar also developed a FLO-2D model to route overflow from Mill Creek in Elmore County, AL and determine the resulting extent and depth of flooding within the City of Millbrook. In Talladega County, Ms. Kashelikar supervised the development of HEC-HMS, regression and HEC-RAS studies and managed the production of non-regulatory flood risk products associated with FEMA's RiskMAP projects.
03/14 – 05/18	**USACE Vicksburg District, USACE MMC Production Center - Corps Water Management System (CWMS) Model Development:** Watershed Lead/Project Engineer. Supervised the development of HEC-HMS, HEC-RAS, HEC-ResSim, HEC-FIA models and integration into CAVI in Thames River and Chemung River watersheds. As a project engineer, developed and calibrated HEC-RAS models in the Big Sandy River and Blackstone River watersheds and refined the HEC-ResSim model in the Yazoo River watershed.
11/15 – 06/22	**State of Missouri Emergency Management Agency – Watershed RiskMAP Services, Statewide, MO:** Project Manager leading a team of engineers, surveyors and geographic information systems personnel in performing field survey, developing hydrologic (HEC-HMS, regression, gage analyses) and hydraulic models (1D and 2D HEC-RAS) for over 2,000 miles of streams in several HUC-8 watersheds, performing floodplain mapping and developing Risk MAP products. Ms. Kashelikar coordinates the modeling and mapping effort, manages the time and budget and assists with outreach activities including flood study review meetings and stakeholder engagement. She also serves as a technical reviewer for these studies.

Firm employed by	WSP USA, Inc.		
Name	**Edwin W. Watkins, PE, VP**	Years of experience with this firm/employer	29
Title	**Program Manager**	Years of experience with other firm(s)/employer(s)	2
Degree(s) / Years / Specialization		MS/1993/ Civil Engineering / BS/1991/Civil Engineering	
Active registration number / state / expiration date		Professional Engineer: 103725-TN/2020, 22888-AL/2020	
Year registered	**1997**	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities	**Watershed Modeling** Mr. Watkins will serve as the Program Manager for this contract. He will coordinate staffing between projects; oversee the Project Managers; and ensure all contract/client needs are met. He will handle the administrative components of the program in close coordination with the Principal Engineer and the LA DOTD.		

Experience dates	Experience and qualifications relevant to the proposed contract;
11/20 - Ongoing	**LaDOTD Louisiana Watershed Initiative (LWI) Region 3 Modeling Services** Principal-in-Charge for a regional modeling contract in northeast Louisiana. Mr. Watkins oversaw the development of four HUC-8 watershed models that included detailed survey, 1D and 2D H&H modeling, floodplain mapping, and consequence analysis. WSP utilized the newest versions of HEC-RAS and HEC-HMS including full 2D analysis/ rain on-grid methodologies to model highly complex drainage networks with multiple levees and other hydraulic structures.
10/04 - Ongoing	**State of Alabama ADECA OWR - Map Modernization, Risk MAP, and Support Services** Principal-in-Charge for a state-wide program for DFIRM Map Modernization, Risk MAP and updates. Mr. Watkins has overseen the execution of over 100 task orders (valued at over $50m) that include hydrologic and hydraulic modeling using HEC-RAS and HEC-HMS, map production, website development, business plan formulation and program management guidance. Under this contract WSP has prepared modeling and mapping projects for over 47 counties in Alabama and facilitated the review of hundreds of LOMR applications.
7/15 - Ongoing	**Mississippi Department of Transportation (MDOT) – Hydraulic Master Contract** Principal-in-Charge for the contract that has included 12 Work Orders valued at $1.8M. Responsible for overall company service, responsiveness, and manpower assignments. Work scopes include one and two-dimensional hydraulic modeling, hydraulic design, scour assessments, alternative analysis, conceptual bridge design, and preliminary construction plans.
3/04 – 6/12	**Mississippi DOT (MDOT), Scour Evaluation for Yalobusha River Bridges at I-55, Grenada County, MS** Principal-in-Charge for the completion of a Phase I and Phase II Bridge Scour Evaluation of the I-55 bridges over the Yalobusha River. Overseeing the Phase I scour evaluation, collected all pertinent data for the scour evaluation and complete qualitative analysis. An SRH-2d model was developed to analyze the hydraulics of the riverine system.
10/04-3/15	**Project Manager Training, Internal Course Instructor** Course Instructor for a 2-day project management course taught at Wood. Conducted over 20 sessions with over 400 employees. Course topics included client communications, project objective definition, scope development, change management, schedule management, financial management, invoicing, project closeout and client care.

Firm employed by	WSP USA, Inc.		
Name	**Kevan Lee Lum**	Years of relevant experience with this employer	6
Title	**Senior Consultant, Water Resources Engineering**	Years of relevant experience with other employer(s)	4
Degree(s) / Years / Specialization		MS/2019/Geoinformatics, BS/2014/ Civil Engineering	
Active registration number / state / expiration date		PE.0047651/LA/2025; 125190/TN/2026;	
Year registered	2022	Discipline	Civil Engineer
Contract role(s) / brief description of responsibilities		**Watershed Modeling** Mr. Lee Lum will serve as a Project Engineer for this contract. He has experience leading complex hydrologic and hydraulic analyses by utilizing a variety of modeling software, including HEC-RAS, HEC-SSP, and SMS SRH-2D.	

Experience dates	Experience and qualifications relevant to the proposed contract;
11/23-Ongoing	**Hamilton County, Herkimer County and Mohawk River Corridor, NY FEMA PTS Region 2**. Lead engineer to update FEMA Risk MAP studies using 2D HEC-RAS rain-on-mesh models. Led engineering for 4,500 square miles of BLE-C and 300 miles of BLE-E streams including 2D floodway development.
11/21-Ongoing	**Louisiana Watershed Initiative Modeling Region 3, LaDOTD**: Lead engineer for the Bayou Cocodrie watershed. Developed streams and survey scope and led hydraulics task. Hydraulic modelling performed using 2D rain-on-grid methodologies in HEC-RAS. Calibrated and validated model to several historical events. Developed procedure and python script for downloading gridded rainfall data. Reviewed hydraulic models and prepared technical reports. Wrote Quick Guide for the watershed that provides step-by-step directions for model usage.
06/21 – 10/21	**St.Louis, MO No-Rise Analysis near Baumgartner Road, MO** Project Manager for a No-Rise analysis for fill in the Missouri river floodplain in St Louis MO near Baumgartner Rd. Leveraged a preliminary 1-D FEMA effective model to model the existing and proposed conditions to compare any changes in resulting WSE.
2/22 - Ongoing	**MDOT Bridge Replacement and Scour Analysis, Numerous Bridge Crossings**. Developed and reviewed SMS SRH-2D models for No-Rise analysis and Scour Analysis for multiple bridge crossings in Mississippi, including the Yalobusha River, and Biloxy Back Bay.
05/21 – 01/23	**BP pipeline crossings scour analysis, multiple locations**: Scour analysis for pipeline crossings including the Mississippi River near Ft Madison IA, Mad River near Dayton, OH, Arkansas River near Tulsa, OK, and the Kankakee River near Wilmington IL. Used the results from a HEC-RAS hydraulic model of the area and estimated scour depths based on general scour and local scour using a Depth of Cover study. Potential locations of span were identified based on the scour calculations.
08/20 – 10/22	**North Carolina Emergency Management Dam Breach Analysis**. Developed and reviewed 2D HECRAS dam breach models for dams in North Carolina. Froehlich equations used to compute dam breach hydrograph. Flows obtained from effective studies or regression equations. Prepared technical memos and results datasets such as inundation boundaries and arrival time rasters. Task lead for over 100 dam breach models across several counties in North Carolina

Firm employed by	WSP USA, Inc.		
Name	**Masoud Meshkat, PhD, PE, CFM**	Years of experience with this firm/employer	24
Title	**Principal Engineer**	Years of experience with other firm(s)/employer(s)	7
Degree(s) / Years / Specialization	PhD/1997/Biosystems and Agricultural Engineering, MS/1985/& BS/1982 Agricultural Engineering		
Active registration number / state / expiration date	Professional Engineer: 43299-LA/2025, TN, OK Certified Floodplain Manager		
Year registered	2002	Discipline	Civil Engineer

Contract role(s) / brief description of responsibilities	**Watershed Modeling** Dr. Meshkat will serve as the Principal Engineer for this contract with oversight of all modeling effort. He has over 26 years of experience as a Water Resources Engineer. He has performed hydrologic and hydraulic simulation of unsteady and steady state flow modeling in natural and artificial streams using one- and two-dimensional models. He has extensive experience with application of a variety of surface water modeling techniques and software including HEC-CAVI, HEC-ResSim, HEC-HMS, HEC-RAS, HEC-DSSVue, HEC-SSP. He has trained many engineers on modeling techniques.
Experience dates	Experience and qualifications relevant to the proposed contract;
11/20-Ongoing	**LaDOTD, Louisiana Watershed Initiative Region 3 Modeling Services: Technical advisor and quality assurance principal leading a team of engineers and geospatial analysts in performing watershed wide study for LWI Region 3 for four watersheds in northeastern Louisiana. Dr. Meshkat has developed modeling methodologies, spearheaded tool development, performed reviews, and developed novel solutions to accurately model the unique topography of this region.**
02/20 – 05/22	**Mississippi Department of Transportation (MDOT) - Scour Evaluation for I-55 Bridges over the Yalobusha River, Grenada County, MS, United States** Lead Engineer involved in the Phase I and Phase II bridge scour evaluations for four bridges along I-55 over the Yalobusha River in Grenada County, MS. Two of the bridges span the Yalobusha River and the other two are relief/overflow bridges. Project involved hydrographic survey of the bridges and development of an SRH-SMS 2-D hydraulic model. Scour estimation was performed in accordance with FHWA's publications HEC-18 and HEC-20 using SRH-2D and the FHWA Hydraulic Toolbox.
06/14 – 12/20	**USACE Vicksburg District, USACE MMC Production Center - Corps Water Management System (CWMS) Model Development:** Principal technical lead and modeler for CWMS model development that integrates HEC-HMS, HEC-RAS, HEC-ResSim, and HEC FIA into the CWMS CAVI (HEC-WAT). Dr. Meshkat performed H&H modeling using HEC products on multiple HUC-8 watersheds including the Cape Fear watershed, lower portion of Arkansas River, Chemung, Mainstem Susquehanna, Ouachita, Yazoo River, Licking River, Chemung River, Mainstem Susquehanna, Red River and Ouachita, Yazoo and Licking Creek watershed projects. Dr. Meshkat presented the comprehensive package of models in HEC-CAVI to the managing USACE districts - Wilmington, Arkansas, Baltimore, Vicksburg and Louisville districts and trained water control staff on executing the models during real-time forecasting conditions.
05/17 – 12/17	**USACE Vicksburg District, CWMS Mississippi River & Tributaries (MR&T) Flowline Assessment:** Independent External Peer reviewer (IEPR) for the MR&T Flowline Assessment project. As a subject matter expert in hydraulic modeling, reviewed the Mississippi River hydraulic HEC-RAS model developed by USACE for the reach from Chester, Illinois to Gulf of Mexico and evaluated inputs, modeling assumptions and other scientific and engineering tools/methodologies used to inform the decision-making process.
03/19 – 12/21	**MDOT - Scour Evaluation for I-110 Bridges over Biloxi Back Bay and Keegan Bayou, Biloxi, Harrison County, MS:** Lead Engineer involved in the Phase I and Phase II bridge scour evaluations for seven bridges along I-110 over Biloxi Back Bay and Keegan Bayou in Harrison County, MS. Project involved coastal hydraulic modelling on Biloxi Back Bay, and a HEC-RAS and SRH-SMS 2-D hydraulic model for Keegan Bayou. Riverine and coastal scour estimation were performed per FHWA's publications HEC-18 and HEC-20 using SRH-2D and the FHWA Hydraulic Toolbox.
04/14 – 06/17	**Drainage Design Services, Kentucky Transportation Cabinet, Marshall County Kentucky, United States:** Project manager responsible for developing and submitting CLOMR and LOMR application packages to FEMA in support of Little John Creek flood study to assess proposed transportation improvement near I-24 and Julian Carroll Parkway in Marshall County, Kentucky. Task involved performing field survey, hydrologic and hydraulic modelling, updating the regulatory floodway, base flood elevations, and special flood hazard areas for flood insurance rate maps, completion of FEMA MT-2 forms, communication with local floodplain administrators, and public notifications.

Firm employed by	WSP USA, Inc.		
Name	**Paul Simmons, PE**	Years of experience with this firm/employer	8
Title	**Project Engineer**	Years of experience with other firm(s)/employer(s)	0
Degree(s) / Years / Specialization	MS/2014/ Environmental Engineering, University of Tennessee; BS/2012/ Civil Engineering, Auburn University		
Active registration number / state / expiration date	Professional Engineer: 119219-TN/2026		
Year registered	2015	Discipline	Civil Engineer (Water Resources)
Contract role(s) / brief description of responsibilities	**Watershed Modeling** Mr. Simmons will be a Project Engineer for this contract. He will prepare HEC-RAS and HEC-HMS models. He is proficient in several computer programs including HEC-RAS, HEC-HMS, HEC-DSS, RAS Mapper, PCSWMM, and ArcGIS.		

Experience dates	Experience and qualifications relevant to the proposed contract;
10/14 - Ongoing	**State of Alabama – MT-2 Review Program, Statewide, AL** Project Manager. Mr. Simmons is the project manager for the Alabama CLOMR and LOMR (MT-2) Review Team, where he has served in some capacity over multiple Task Orders since 2018. This role is responsible for the technical review, mapping, and regulatory compliance of all, non-coastal, MT-2 requests for the State of Alabama. This role requires exposure and understanding of many different modeling approaches, strong grasp of regulatory requirements, and ability to communicate with local floodplain practitioners.
10/18 – Ongoing	**State of Alabama, Alabama Risk MAP Program, AL,** Project Manager for the Lower Tallapoosa, Sipsey Base Level Engineering (BLE), Middle Tombigbee-Lubbub BLE, Middle Chattahoochee-Walter F. George BLE, Upper Conecuh BLE, Patsaliga BLE, Lower Choctawhatchee BLE< Middle Chattahoochee-Lake Harding BLE, Upper Choctawhatchee BLE, Lower Chattahoochee BLE watersheds, and 5 independent QA projects; engineering lead for Lower Tallapoosa, Mulberry Fork watersheds; and a project engineer for Baldwin County Coastal, Cahaba River, Lake Guntersville, Locust Fork, Lower Coosa, Lower Tallapoosa, Mobile County Coastal, Pickwick Lake, and Wheeler Lake Watersheds. This role has demanded experience in many different modeling suites including: HEC-RAS (1D and 2D), HEC-HMS, PCSWMM (1D and 2D), and statistical methodologies, understanding of local and federal regulations, and significant communication and outreach.
10/17 – 04/22	**State of Alabama - Lower Coosa Risk MAP, Montgomery, AL** Project engineer for the production of hydrologic and hydraulic modeling, DFIRM mapping, non-regulatory product development, preliminary map production for over 1,000 miles of approximate flood studies and over 600 miles of detailed flood studies. Developed two complex 1D-2D HEC-RAS models for this project. This effort also included serving as a technical reviewer for detailed hydraulic (HEC-RAS) analyses and completing community outreach tasks.
02/19 - Ongoing	**State of Missouri Emergency Management Agency – Watershed RiskMAP Services, Statewide, MO:** Project engineer and modeler developing 2D hydraulic rain-on-grid approximate HEC-RAS models for the State of Missouri Risk MAP project.
04/14 – 09/16	**USACE Vicksburg District - Water Management System (CWMS), Nationwide, USA** Project engineer for the CWMS development program over several project cycles for the Blackstone, Cape Fear, Pecos, Susquehanna, and Thames River Basins. This consisted of developing parameters for, constructing, and calibrating highly complex gridded hydrologic (HEC-HMS) models, 1D & 2D unsteady hydraulic (HEC-RAS) models, and reservoir (HEC Res-sim) models to be implemented by the Corps for real time forecasting events.
02/15 – 04/16	**Mississippi Department of Transportation (DOT), Various Projects, Various, MS** Project engineer on multiple projects for the Mississippi DOT. These included bridge scour analyses using HEC-RAS, HEC-18, and HEC-20 methodologies; and developing HEC-RAS models with various scenarios for proposed roadway constructions.
01/15 – 04/15	**Mississippi Soil & Water Conservation Commission -Mississippi Watershed Dams, Various, MS** Project engineer responsible for the development of unsteady dam breach HEC-RAS hydraulic models and breach inundation mapping for 4 dams in Mississippi.

Firm employed by	WSP USA, Inc.		
Name	**Rehal Kharel**	Years of experience with this firm/employer	4
Title	**Project Engineer**	Years of experience with other firm(s)/employer(s)	6
Degree(s) / Years / Specialization	BS/2015/Civil Engineering, Georgia Tech; BS/2015/Physics, Georgia Tech		
Active registration number / state / expiration date	PE-050623/GA/2025; PE-0047965/LA/2025; PE-054924/NC/2025		
Year registered	2022	Discipline	Civil Engineer (Water Resources)
Contract role(s) / brief description of responsibilities	**Watershed Modeling** Mr. Kharel is a hydrologic and hydraulic modeling specialist with experience leading large watershed studies and supervising engineering teams. He is skilled in 1D (unsteady) and 2D-Rain-On-Mesh HEC-RAS modeling, HEC-HMS, PCSWMM, and HEC-SSP, with expertise in H&H analysis. His work supports FEMA and DOT projects involving LOMRs, no-rise, infrastructure design, regulatory compliance, and QA/QC. He has delivered modeling solutions across diverse hydrologic settings, including low-relief Louisiana watersheds and mountainous or karst regions, focusing on resilient, data-driven strategies for flood risk reduction and stormwater planning.		

Experience dates	Experience and qualifications relevant to the proposed contract;
9/21 - Ongoing	**LaDOTD, Louisiana Watershed Initiative – Boeuf River Watershed** Led the hydraulics task in one of Louisiana's largest and most hydrologically complex watersheds, managing 1D unsteady and 2D Rain-On-Mesh HEC-RAS modeling across low-gradient terrain with perched channels, levee systems, and extensive backwater effects. Responsibilities included model setup, calibration, design storm simulations, proof-of-concept evaluations, and consequence analyses. Supervised junior engineers, developed SOPs, and managed workflows for both rural and urban environments, while coordinating with GIS teams to integrate terrain data, hydrologic boundaries, and structural attributes - addressing complex features such as pump stations and diversion flows. Conducted research to support regional modeling parameter development, coincidence frequency analysis, and synthetic rating curve creation in collaboration with the hydrology team. Also applied remote sensing and supervised machine learning to classify land use/land cover across Region 3, supporting flood modeling and model input development. Work contributed to QA/QC, client coordination, and documentation for regulatory mapping and statewide flood mitigation planning.
7/21 – 8/23	**Suwannee River Water Management District (SRWMD) - Santa Fe River Watershed, Live Oak, FL** Served as Project Engineer supporting FEMA's flood risk mapping efforts for a Zone AE stream along the Santa Fe River. Led the development of a detailed 1D HEC-RAS model spanning 89 river miles across six counties to evaluate regulatory flood behavior and support risk identification. Performed statistical flood frequency analyses using Bulletin 17C and contributed to the integration of groundwater/surface water interaction techniques within the karst-influenced watershed, an innovative approach later presented at a national conference.
10/22 – 11/22	**IL-75 Bridge Replacement Project – IDOT, Rockton, IL** Served as Project Engineer responsible for QA/QC of HEC-RAS models supporting the IL-75 bridge replacement over the Rock River, including review of both existing and proposed hydraulic conditions. The analysis assessed potential floodway impacts and verified compliance with FEMA regulations and IDOT hydraulic design criteria to ensure no adverse effects on upstream or downstream properties. Technical recommendations were provided to confirm that the proposed bridge design maintained conveyance capacity and met regulatory performance under the 100-year flood event.
10/22 – 11/22	**Levee Breach Analysis – FEMA, Ventura/Los Angeles Counties, CA** Performed hydrologic and hydraulic analysis for 2D levee breach modeling along the Santa Clara River, utilizing levee geometry sourced from the National Levee Database (NLD). Synthetic hydrographs were developed by scaling flow data from nearby regulated gages to represent flood scenarios throughout Ventura and Los Angeles counties. Five levee breach scenarios were simulated in HEC-RAS to evaluate potential flood extents and impacts, supporting FEMA's levee failure risk assessment process.

Firm employed by	WSP USA, Inc.		
Name	**R. Scott Taylor, PE**	Years of experience with this firm/employer	31
Title	**Project Manager**	Years of experience with other firm(s)/employer(s)	0
Degree(s) / Years / Specialization	MS/1992/ Civil Engineering; BS/1991/Civil Engineering; BS/1990/Physical Science		
Active registration number / state / expiration date	Professional Engineer: 13644-MS/2026, SC, FL, VA, GA, TN, TX, and MO		
Year registered	1994	Discipline	Civil Engineer (Water Resources)
Contract role(s) / brief description of responsibilities	**Watershed Modeling** Mr. Taylor will be a project engineer, overseeing modeling efforts. He is an expert in hydrologic and hydraulic modelling, which includes HEC-DSS, HEC-SSP, HEC-1, HEC-2, HEC-RAS, HEC-HMS, detailed flood map development, public involvement and outreach, dam evaluations and design, and regulatory compliance.		

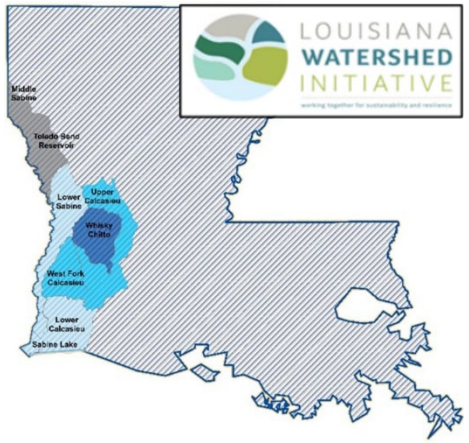
Experience dates	Experience and qualifications relevant to the proposed contract;
02/18 – Ongoing	**Mississippi Soil & Water Conservation Commission - Rocky Carter Levee Planning and Environmental Assessment, Yazoo River** Project Manager responsible for development of Environmental Assessment and exploration of Yazoo River Levee alignment options and the impacts of headwater and tailwater flooding, wetlands, cultural resources, and public perception/coordination. The Yazoo River is influenced heavily by the Mississippi River backwater levels and subjects local cropland/homes to frequent inundation. Scott is responsible for production of complex hydrologic and hydraulic models (HEC-HMS, HEC-RAS 1d and 2d) involving multiple upstream dams and relief canals with tricky tailwater influences. Visualized Risk for levee alignments to satiate environmental assessment reporting and stakeholder engagements. Preliminary design including geotechnical analysis of the levee is the final component of this project.
03/13 – 06/15	**YCI – H&H Model/Geotech, AMEC Paragon Inc., St. James Parish, LA**: Project Manager responsible for the development of the of a hydrologic and hydraulic model to evaluate the current and proposed hydrologic and hydraulic conditions for the Yuhuang Chemical, Inc. (YCI) project site. The study included alternative analysis for stormwater infrastructure design. The objective of the study was to provide post-construction runoff conditions to a level less than or equal to existing conditions while minimizing flood impacts to neighboring properties. The computer software, XP-SWMM, was used to develop the existing site conditions and proposed stormwater collection system model.
02/19-08/22	**MDOT, Scour Evaluation for Yalobusha River Bridges at I-55, Grenada County, MS:** Project Manager for the completion of a Phase I and Phase II Bridge Scour Evaluation of the I-55 bridges over the Yalobusha River. Overseeing the Phase I scour evaluation, collected all pertinent data for the scour evaluation and complete qualitative analysis. An SRH-2d model was developed to analyze the hydraulics of the riverine system.
09/17 – 08/18	**MDOT - SR-178 over Lockes Creek East Branch, Union County, MS:** Project Manager for the hydraulic analyses for the bridge replacement improvements to SR 178 near Myrtle, MS. The 160 ft existing timber bridge with two travel lanes, one in each direction, was programmed to be replaced. The bridge crossing was approximately 75 feet downstream of an existing 100 ft BNSF RR Bridge. The floodplain through the project area was skewed approximately 40 degrees from perpendicular to the roadway. Both HEC-RAS and SRH-2D were utilized to model the system.
05/17 – 05/18	**MDOT 1-10 Wolf River Widening, Mississippi Department of Transportation, Jackson, MS:** Project Manager for performing Hydraulic analysis and bridge scour assessment on I-10 over Wolf River bridge in south Mississippi. Responsibilities included field inspection; hydraulic analysis, including reproducing a FEMA effective model using HEC-RAS; scour estimation in accordance with the FHWA's publications HEC-18 and HEC-20 using both HEC-RAS and SRH-2D. This projection included a FEMA no-rise analysis, hydraulic size analysis and design, scour analysis, and associated documentation of the impact to the floodplain elevations and floodway widths resulting from the proposed bridge widening.
10/14 – 6/17	**TDOT, Roadway Drainage Design for State Route 247 (Duplex Road), Spring Hill, TN** Project Manager for the hydraulic design of proposed crossings over the McCutcheon Creek, Grassy Branch, and Aenon Creek on the proposed widened section of State Route (SR 247 - Duplex Road) in Spring Hill, TN. The project included a FEMA no-rise analysis, hydraulic size analysis and design, scour analysis, and associated documentation of the impact to the floodplain elevations and floodway widths resulting from the proposed modified crossings

SECTION 17

17. Firm Experience:

Firm name	C. H. Fenstermaker & Associates, L.L.C.	Discipline(s)*	Other (Watershed Modeling), Other (General H&H Analysis), Other (Data Management & Mapping)
Project name	Louisiana Watershed Initiative Region 4	Firm responsibility (prime or sub?)	Prime
Project number	State Contract No. 4400017090	Owner's name	Louisiana Department of Transportation and Development
Project location	DeSoto, Sabine, Vernon, Rapides, Beauregard, Allen, Calcasieu, Jefferson Davis, and Cameron Parishes	Owner's Project Manager	Billy Williamson
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, LA, 70802, (225) 379-3023, Billy.williamson@la.gov		
Services commenced by this firm (mm/yy)	04/20	Total consultant contract cost ($1,000's)	$13,000
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)	$3,263

Project Description: LADOTD selected Fenstermaker to provide engineering, surveying, and consulting services for this unprecedented project that will manage the future flood risk in the State of Louisiana through watershed-based solutions. Fenstermaker oversaw all hydrologic and hydraulic tasks, data collection, model development, and engineering to complete interactive, usable, and manageable hydraulic and hydrologic models. Fenstermaker also performed surveys at structure and channel locations throughout regions 4 to support hydrologic and hydraulic modeling. 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, Fenstermaker coordinated with local government officials and stakeholders, performed a data gap analysis, and provided survey services including verifying the existing data, ensuring the data met FEMA standards, and obtaining new data. 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.



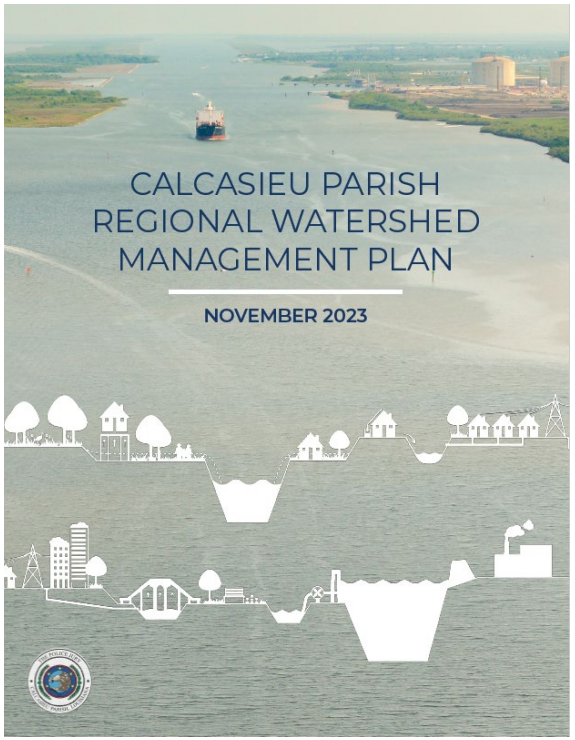
Additionally**, as a sub-consultant to Michael Baker International, Inc.,** Fenstermaker performed surveys at structure and channel locations throughout **Region 6**. This effort spanned multiple parishes and waterways across watershed regions around the state and used topographic, bathymetric and laser scanning to provide refined topography for modeling purposes.

Staff to be used in this proposal: Anna Doucet | Austin Doucet | Dax Douet | Rhett Hebert | Jeanne Hornsby | Coy LeBlanc | Sean Micek Brooke Newlin | Carly Phillips | Mallory Rodrigue | Tyler Young

CHALLENGE: Getting the appropriate contact information for the various stakeholders within LWI Region 4.
SOLUTION: Fenstermaker created a Stakeholder Survey using ESRI Survey 123 to contact the appropriate personnel to obtain existing conditions data.

Firm name	C. H. Fenstermaker & Associates, L.L.C.	Discipline(s)*	Other (Watershed Modeling), Other (General H&H Analysis), Other (Data Management & Mapping)
Project name	Calcasieu Parish Regional Watershed Modeling and Planning	Firm responsibility (prime or sub?)	Prime
Project number	Not applicable	Owner's name	Calcasieu Parish Police Jury
Project location	Calcasieu Parish	Owner's Project Manager	Terry Frelot, P.E.
Owner's address, phone, email	1015 Pithon Street, Lake Charles, LA 70601, (337) 721-3700, tfrelot@calcasieu.gov		
Services commenced by this firm (mm/yy)	04/18	Total consultant contract cost ($1,000's)	$9,900
Services completed by this firm (mm/yy)	04/24	Cost of consultant services provided by this firm ($1,000's)	$7,401

Project Description: From 2006 to 2010 Fenstermaker completed seven watershed master plans for Calcasieu Parish Police Jury (CPPJ) that included detailed 1D hydrologic (HEC-HMS) and hydraulic (HEC-RAS) modeling as well as project identification and feasibility. In 2018, Fenstermaker was contracted by Calcasieu Parish Police Jury (CPPJ) to update their existing models by migrating 1D models to coupled 1D/2D HEC-HMS and HEC-RAS models and expand the modeling domain to encompass all the watersheds within the Parish. The model domain includes four HUC 8 watersheds tiered to the HUC-12 level. The goal of the project is to develop an adaptive plan that includes projects, programs, and policies that are being screened utilizing the Deltares Dynamic Adaptive Policy Pathways (DAPP) approach by analyzing various future conditions that account for relative sea level rise, future development, and increased storm intensities. This approach allows the Parish to make informed decisions on managing their watersheds. Fenstermaker's tasks and deliverables included:



- Hydraulic and Hydrological Modeling for 12 watersheds
- ESRI Story Mapping website
- Pre-planning discovery research including stakeholder meetings
- Channel, pond, and hydraulic structure inventory
- Database that inventories parish drainage attributes and data
- Drainage infrastructure watershed report card
- Master plan development
- Drainage project prioritization
- CRS-compliant Standard Operating Procedure document
- Design review & construction of $15 million in drainage projects

Staff to be used in this proposal:

Anna Doucet	Jeanne Hornsby
Austin Doucet	Brooke Newlin
Ian Trahan	Coy LeBlanc
Rhett Hebert	Nick Castille
Peyton Bailey	Sean Micek
Tyler Young	Carly Phillips

CHALLENGE: Setting criteria for future conditions.
SOLUTION: Tied this watershed initiative to other statewide and regional plans such as the LA Coastal Master Plan, the Southwest Coastal Study, and the Lake Area Regional Growth Plans. This information helped us set low, moderate, and high values for sea level rise, subsidence, growth, and increased rainfall. This information was used to screen projects for future benefits and determine if they could be designed with these future conditions in mind, for example, future expansion to pumping stations along Calcasieu Lake.

Firm name	C. H. Fenstermaker & Associates, L.L.C.	Discipline(s)*	Other (Bridge Hydraulic Modeling & Scour Analysis), Other (General H&H Analysis)
Project name	Infrastructure Investment and Jobs Act (IIJA) Off-System Bridge Program District 03	Firm responsibility (prime or sub?)	Prime
Project number	State Contract No. 4400025023	Owner's name	Louisiana Department of Transportation and Development
Project location	Acadia, Evangeline, Iberia, Lafayette, St. Landry, St. Martin, and Vermilion Parishes	Owner's Project Manager	Brian Allen
Owner's address, phone, email	1201 Capitol Access Road, Baton Rouge, LA, 70802, (225) 379-1840, brian.allen@la.gov		
Services commenced by this firm (mm/yy)	09/22	Total consultant contract cost ($1,000's)	$2,850
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)	$2,775

Project Description: The Louisiana Department of Transportation and Development selected Fenstermaker to evaluate and select bridge crossings for replacement from a list of approximately 60 eligible structures. Fenstermaker followed a strict screening process to select 14 projects that achieve the goals of the program and maximize the impacts of the available funds. Fenstermaker's services include the engineering design and plan development of each bridge and all other required services, including hydraulic analyses, scour analyses, environmental review and permitting, boundary and topographic survey services, and right-of-way map creation. Fenstermaker is currently in the final plan design phase for 9 bridges and the preliminary design phase for 5 bridges. Completed tasks include H&H modeling and assessing potential structures to develop an understanding of the physical, engineering, and environmental features of each bridge. Fenstermaker is also researching and obtaining copies of all available as-built highway plans including existing rights-of-way maps and associated property documentation. Within one year's time, we have started and delivered up to 100% preliminary plans on 9 separate bridge projects illustrating our quality and timely delivery of services to our client.

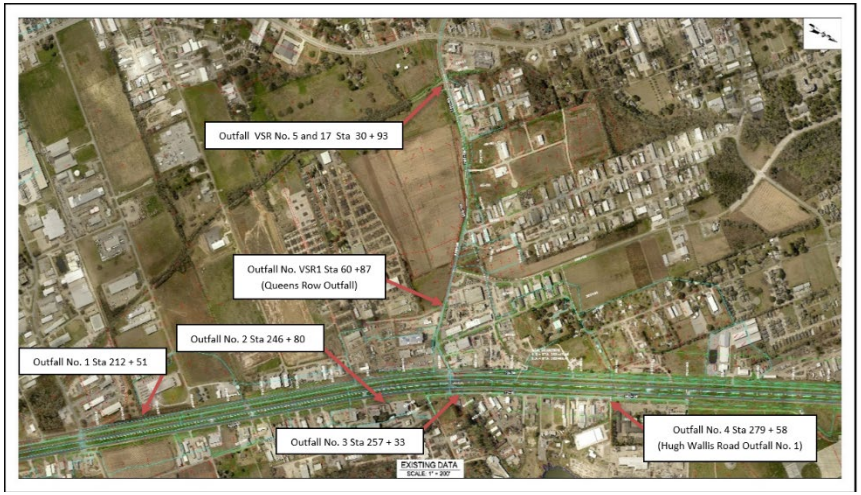
Fenstermaker's water resources team is handling the hydraulic analysis for each bridge structure. These modeling studies involve conducting alternative analyses to determine the most hydraulically appropriate structure design that adheres to local, state, and federal guidelines, and includes a no-rise analysis for structures located in FEMA-designated floodways. Fenstermaker is also designing the roadside drainage to tie into the existing open ditch or subsurface drainage features. Proposed improvements include the design of side and storm drain outfall pipes, and storm drainpipe tie-ins to proposed box culverts. Furthermore, Fenstermaker is performing scour analyses and providing recommendations for channel erosion protection measures. All data is analyzed using HEC-HMS, HEC-RAS, and the **LADOTD HYDRWN** software.

Staff to be used in this proposal: Luke Hebert | Rhett Hebert | Carly Phillips | Tanner Shaddox

CHALLENGE: Fenstermaker discovered that parishes within the District supplied hydraulics information of varying levels of quality.
SOLUTION: Fenstermaker communicated with the LADOTD Hydraulics Section to ensure the hydraulic information used for design followed sound engineering practices and more conservative designs were used for replacement of each structure.

Firm name	C. H. Fenstermaker & Associates, L.L.C.	Discipline(s)*	Other (General H&H Analysis), Road
Project name	Verot School Road Interchange at U.S. Highway 90	Firm responsibility (prime or sub?)	Sub
Project number	Contract No. 400005673 State Project No. H.011235.5	Owner's name	Huval & Associates, Inc.
Project location	Lafayette Parish	Owner's Project Manager	Corey Landry, P.E.
	922 West Pont des Mouton Road, Lafayette, LA 70507, (225) 379-1889, corey.landry@la.gov		
Services commenced by this firm (mm/yy)	05/18	Total consultant contract cost ($1,000's)	$1,163
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)	$1,156

Project Description: I-49 South at Verot School Rd. (LA 339) is part of the upgrade of US 90 through Lafayette Parish to a fully controlled access facility meeting. The goal of the project is to construct 2.1 miles of mainline freeway and an elevated interchange at the intersection of US 90 (I-49 South) and East Verot School Road. The design brings this segment of the highway to interstate standards as part of the effort to extend the I-49 South Corridor. The existing six-lane highway will be upgraded to a six-lane controlled access highway. The project also includes one-way frontage roads on both east/west sides of the mainline roadway and a two-way collector service road east of the mainline roadway.



A sub-consultant to Huval & Associates, Fenstermaker performed engineering design services for improvements to the existing intersection of U.S. Hwy 90 (US 90) (Future I-49 South) and Verot School Road. These improvements included a new access-controlled interchange consisting of a re-alignment for the Verot School Road approach to Future I-49 South and a bridge structure over the existing BNSF railroad and mainline of Future I-49 just north of the existing Verot School Road alignment. **Fenstermaker performed analyses and prepared the project's drainage report, a detailed discussion of the urban drainage design analysis, procedures, and methods used for this project**. Fenstermaker followed the design guidelines and procedures detailed in **LADOTD's 2011 Hydraulics Manual** to analyze both existing drainage conditions and outfalls and the potential impacts of the proposed design, including cross drains, median drains, side drains, storm sewer systems, outfalls, and open ditches included in the project's footprint. Fenstermaker used **LADOTD's HYDR1120, HYDR1140, HYDR6000, and HYDR6020 system programs** for its analysis.

Staff to be used in this proposal: Dax Douet | Aimee Latiolais | Nick Castille | Tanner Shaddox

CHALLENGE: Minimizing impacts to existing Frank's Casings infrastructure. Frank's Casings is an international business located in Lafayette Parish.
SOLUTION: Prior to starting the project, Fenstermaker performed a laser scan, prepared a 3-dimensional plot of the existing infrastructure, and modeled various roadway corridors to optimize minimal impacts. Fenstermaker then met with executives of the business, shared the findings, and came to an agreement. The outcome consisted of implemented solutions that assured agreement with the landowner and minimized right-of-way acquisition costs.

Firm name	C. H. Fenstermaker & Associates, L.L.C.	Discipline(s)*	Other (General H&H Analysis), Other (CLOMR & LOMR), Other (Data Management & Mapping), Other (NFIP No-Rise Review)
Project name	Coulee Ile des Cannes Watershed Study and Physical Map Revision	Firm responsibility (prime or sub?)	Prime
Project number	Not applicable	Owner's name	City of Scott
Project location	Lafayette Parish	Owner's Project Manager	Jan-Scott Richard
Owner's address, phone, email	125 Lions Club Road, Scott, LA 70583, (337) 349-7591, jrichard@cityofscott.org		
Services commenced by this firm (mm/yy)	08/11	Total consultant contract cost ($1,000's)	$129
Services completed by this firm (mm/yy)	01/19	Cost of consultant services provided by this firm ($1,000's)	$129

Project Description: The Ile de Cannes Watershed is a large watershed that drains into the Vermillion River. It is in Lafayette, Louisiana and covers 33,500 acres. The watershed includes 39 miles of channels and passes through three parishes. Fenstermaker was contracted through a cooperative agreement between the City of Scott and the Lafayette Consolidated Government (LCG) to develop a hydrologic and hydraulic numerical model to map the FEMA Flood Hazard Areas of the Watershed. Fenstermaker set up an unsteady HEC-RAS model, calibrated and validated it using data collected from two separate storm events, and used the model to determine the 100-year flood extents.

This model was used to assess various channel improvement projects along the laterals including channel widening, channel dredging, and regional detention facilities. The final channel section was increased from 6 ft to a 20 ft bottom width, 2:1 side slope, and 75 ft top width. Upon final design and construction, a letter of Map Revision was submitted to FEMA, changing 11 Flood Insurance Rate Map (FIRM) panels and the Flood Insurance Study (FIS). This project removed approximately 3,400 acres from the FEMA floodplain and approximately 1,175 structures. The project also showed base flood reductions as much as 3.5 feet.

Largest LOMR approved by FEMA in the U.S. to date.

The total cost of the project was $7 million, which was funded by three grant programs: CDBG, HMGP, and the Louisiana Department of Transportation and Development.

Fenstermaker received the 2020 2020 American Council of Engineering Companies of Louisiana (ACEC-L) Engineering Excellence Awards' Grand Award for Category A: Studies, Research, and Consulting for this project.

Staff to be used in this proposal: Anna Doucet | Jeanne Hornsby | Mallory Rodrigue | Austin Doucet

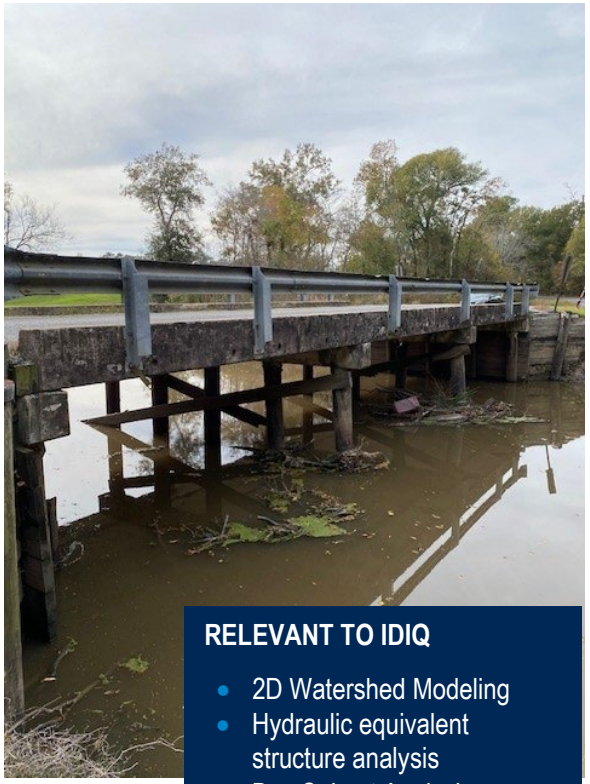
CHALLENGE: HEC-RAS can overestimate floodways when unsteady modeling is used.
SOLUTION: The model was calibrated as an unsteady model, converted to a steady state model, and floodways were determined. These encroachments were put back into the unsteady model. Additional adjusting of encroachments was required, especially around structures.

Firm name	Michael Baker INTERNATIONAL	Past Performance Evaluation Discipline(s)*	Road, Bridge, Environmental
Project name	**Infrastructure Investment and Jobs Act (IIJA) Off-System Bridge Program – District 07**	Firm responsibility (prime or sub?)	Prime
Project number	H.015338	Owner's name	Louisiana Department of Transportation and Development
Project location	District 07 Parishes, Louisiana	Owner's Project Manager	Kurt Brauner, PE
Owner's address, phone, email	1201 Capitol Access Road Baton Rouge, Louisiana 70802 | 225-379-1338 | kurt.brauner@LA.GOV		
Services commenced by this firm (mm/yy)	10/22	Total consultant contract cost ($1,000's)	$2,450
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)	$1,450

Michael Baker was selected by DOTD to provide bridge, roadway and environmental services for the replacement of off-system bridges in the five parishes (Allen Parish, Beauregard Parish, Calcasieu Parish, Cameron Parish and Jefferson Davis Parish) located in DOTD District 07. This off-system bridge program is being 100% funded by the recently passed IIJA bill. DOTD allocated $30.3 million of funding for District 07 for the implementation cost (construction, design, mitigation, right-of-way acquisition and utility relocation) for the replacement of bridges in this district. Structures will be replaced with Culvert(s), Box Culvert(s), or Slab Span Bridges that are available in DOTD Standard Plan catalog. The first phase of the project determined that 12 bridges within the region soulc be replaced within the budget.

Michael Baker received NTP in May 2023 for Additional Services that includes the construction plan preparation of 12 bridges for District 07. Additional work includes Topographic Surveys, ROW mapping, Stream Hydraulics/Hydrology, determine bridge structure (slab span, box culvert, or culvert) based on hydraulic analysis, Preliminary and Final Plans, along with Environmental Clearance. Program delivery is expected to follow compressed timeline with removal of some of the traditional submittals that will follow very similar to this IDIQ contract.

All 12 structures required an in-depth hydraulic analysis that consisted of a bridge replacement alternative analysis that determined hydraulically equivalent options for each of the bridges earmarked for replacement. Michael Baker chose to use both 1D and 2D watershed modeling instead of the usually 1D limited HEC-RAS model that is customarily performed. By performing a more in-depth 2D analysis, backwater effects, which are common in this region of the State, are more clearly identified. Additional analysis that was required during this project included "No Rise" Certifications, Scour analysis for bridges and box culverts as well as verification of FEMA BLE mapping. 2D and 1D HEC-RAS Modeling was used in the watershed modeling for bridge and box culvert analysis. HYDRWIN software was used for design flow verification as well as box culvert scour calculations.



RELEVANT TO IDIQ

- 2D Watershed Modeling
- Hydraulic equivalent structure analysis
- Box Culvert Analysis
- Scour Analysis
- No-Rise Certifications
- LADOTD HYDRWIN
- LAODOTD Guidelines
- Roadway Drainage

LADOTD PROJECT EXPERIENCE

Firm members involved include: **Eric Erikson, PE, CFM | Justin West, PE, CFM | Afaq Durrani, EI, CFM | Achutam Baral, P.E., CFM**

Firm name	Michael Baker INTERNATIONAL		Past Performance Evaluation Discipline(s)*	Other – Water Resources
Project name	**Louisiana Watershed Initiative H&H Modeling Contract - Region 6**		Firm responsibility (prime or sub?)	Prime
Project number	4400017092	Owner's name	Louisiana Department of Transportation and Development	
Project location	Statewide, Louisiana		Owner's Project Manager	Jie Gu, P.E.
Owner's address, phone, email	1201 Capitol Access Road Baton Rouge, Louisiana 70802 | 225-379-1338 | kurt.brauner@LA.GOV			
Services commenced by this firm (mm/yy)	11/20	Total consultant contract cost ($1,000's)	$9,000 (Est.)	
Services completed by this firm (mm/yy)	Ongoing	Cost of consultant services provided by this firm ($1,000's)	$7,000 (Est.)	

Michael Baker is providing engineering and modeling services for the Louisiana Watershed Initiative. The project was launched in 2018 and introduced a watershed-based approach to reducing flood risk in Louisiana. It is organized by seven modeling regions, each of which encompasses multiple HUC-8 watersheds.

Task Order 1: For the first task-order of the contract, Michael Baker collected existing watershed datasets, models, and studies for 4 HUC- 8 watersheds in southeast Louisiana, developed and proposed a detailed modeling design approach with schedules and cost estimates, and prepare a data gap analysis and collection report. Michael Baker developed the methodology for modeling flood risks in the transition zone (where both coastal and riverine flood risk exist.) Michael Baker also developed a HUC-8 modeling design approach for H&H studies in the 4 HUC-8 watersheds based on historical information and prepared a data management plan for organizing and reporting the data it collected.

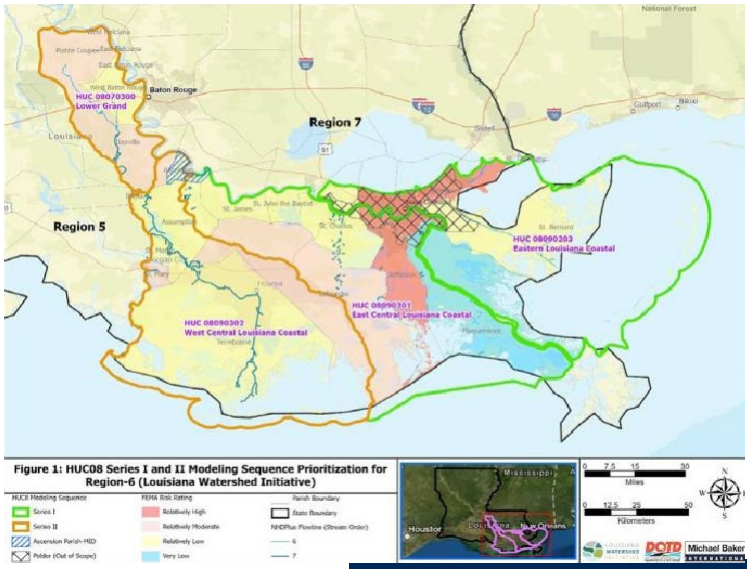


Figure 1: HUC08 Series I and II Modeling Sequence Prioritization for Region-6 (Louisiana Watershed Initiative)

Task Order 2 & 3: Michael Baker performed HUC-8 hydrologic and hydraulic modeling for the Eastern Louisiana Coastal (ELC), East Central Louisiana Coastal (ECLC), Western Central Louisiana Coastal (WCLC), and Lower Grand (LG) watersheds . For these tasks, MBI supplemented the data collection and data gap analysis completed in Task Order 1, provided quality control and assurance, continued stakeholder engagement efforts including holding any necessary public meetings, continue reviewing historic storm events to adjust data collection and analysis, and perform topographic, bathymetric, and channel surveys. The Western Central Louisiana Coastal, Eastern Louisiana Coastal and East-Central Louisiana Coastal watersheds include transition and coastal zones. Michael Baker developed a tiered modeling design plan for H&H studies for these zones and developed internal and external boundary conditions. The tiered modeling structure recommended detailed studies in areas of higher need (greater losses, unconfined flooding and areas prone to development.) Michael Baker developed rain-on-grid analyses using HEC-RAS 6.0 and calibrated the models using large and recent storm events. Deliverables included a technical report, a quick-training guide to support future modeling, and an update to the data management plan.

Task Order 4: Michael Baker was contracted to determine AEP design storms for all 4 HUC08's in Region 6 using two separate Methodologies, applying Atlas 14 precipitation data across the watershed, and a Bivariate-Stochastic Storm Transposition, (BV-SST) approached where storm surge is accounted for during tropical events. Consequence Analysis, Proof of Concept project evaluations, and stakeholder engagement and training were also performed under this task.

RELEVANT TO IDIQ

- LWI Coastal 2D / 1D Watershed Modeling
- LWI Guidelines and Criteria
- High Level Tropical and non-Tropical Hydrologic & Hydraulic Modeling
- Hydraulic Modeling QA/QC
- Proof of Concept project Evaluations
- Design Storms

LADOTD PROJECT EXPERIENCE

Firm members involved include: **Eric Erikson, PE, CFM | Mark McBroom, P.E. | Justin West, PE, CFM | Afaq Durrani, EI, CFM | Achutam Baral, P.E., CFM | Tanveer Ahmed**

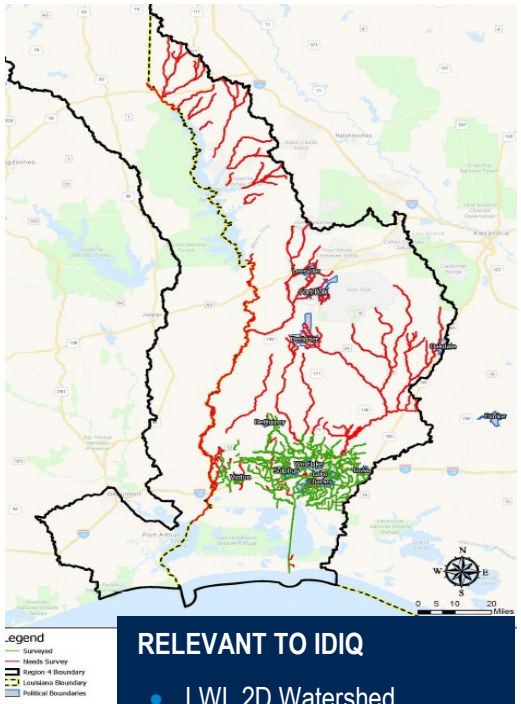
Firm name	Michael Baker INTERNATIONAL		Past Performance Evaluation Discipline(s)*	Other – Water Resources
Project name	**Louisiana Watershed Initiative H&H Modeling Contract - Region 4**		Firm responsibility (prime or sub?)	Sub
Project number	4400017092	Owner's name	Louisiana Department of Transportation and Development	
Project location	Statewide, Louisiana		Owner's Project Manager	Jie Gu, P.E.
Owner's address, phone, email	1201 Capitol Access Road Baton Rouge, Louisiana 70802 | 225-379-1338 | kurt.brauner@LA.GOV			
Services commenced by this firm (mm/yy)	11/20	Total consultant contract cost ($1,000's)	Unknown	
Services completed by this firm (mm/yy)	12/24	Cost of consultant services provided by this firm ($1,000's)	$1,200 (Est.)	

Michael Baker, as a sub-consultant to C.H. Fenstermaker LLC, is providing engineering and modeling services for the Louisiana Watershed Initiative. The project was launched in 2018 and introduced a watershed-based approach to reducing flood risk in Louisiana. It is organized by nine modeling regions, each of which encompasses multiple HUC-8 watersheds.

The Louisiana Watershed Initiative aims to enhance floodplain management and risk-reduction planning across the state. Region 4, located across Louisiana and Texas, is a crucial area in this effort, encompassing watershed like the Lower Sabine. The model, designed for primary objectives such as flood mitigation and risk assessment, serve as baseline for future added value goals.

Task Order 2 & 3: Michael Baker performed HUC-8 hydrologic and hydraulic modeling for the Lower Sabine watershed. For these tasks, MBI supplemented the work plan report and data in Task Order 2, provided modeling methodology, data gap analysis report, data management plan guide, hydrometeorology report and QA/QC plan and continued co-ordination efforts with prime consultant.

Lower Sabine watershed, approximately 1700 sq. mi., is located in the western Louisiana and encompasses portions of Sabine, Vernon, Beauregard, and Calcasieu Parishes. The watershed is greatly influence by Toledo Bend Reservoir, which is located upstream. The study involves hydrologic and hydraulic model tailored to achieve accuracy and efficiency in capturing complex watershed dynamics. Michael Baker developed a tiered modeling design plan for H&H studies for the watershed and established internal and external boundary conditions. The tiered modeling structure recommended detailed studies in areas of higher need (greater losses, unconfined flooding and areas prone to development). Michael Baker developed rain-on-grid analyses using HEC-RAS 6.3.1 and calibrated the models using large and recent storm events. Deliverables included a technical report, a quick-training guide to support future modeling, and an update to the data management plan.



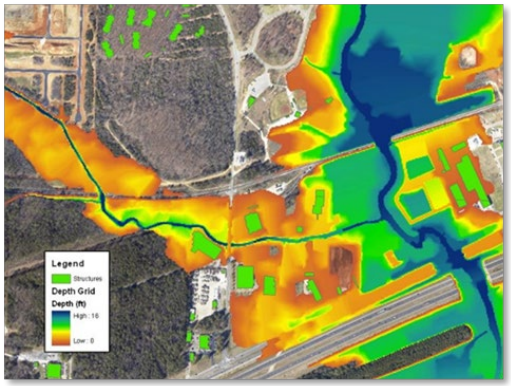
Firm members involved include:
Eric Erikson, PE, CFM | Justin West, PE, CFM | Afaq Durrani, EI | Achutam Baral, P.E. |

RELEVANT TO IDIQ

- LWI 2D Watershed Modeling
- LWI Guidelines and Criteria
- High Level Historical Storm Hydrologic & Hydraulic Modeling.
- Rain-on-grid precipitation
- Hydraulic Modeling QA/QC

LADOTD PROJECT EXPERIENCE

Firm name	WSP USA, Inc.		Discipline(s)*	Other (Risk Assessment)	
Project name	State of Alabama, MT-2 Review Program			Firm responsibility (prime or sub?)	Prime
Project number	Not applicable	Owner's name	ADECA - OWR		
Project location	Statewide		Owner's Project Manager	Casie Pritchard, EI, CFM	
Owner's address, phone, email	ADECA P.O.Box 5690 Montgomery, AL 36103; casie.pritchard@adeca.alabama.gov; 334-353-5650				
Services commenced by this firm (mm/yy)		07/2010	Total consultant contract cost ($1,000's)		$2,700
Services completed by this firm (mm/yy)		Ongoing	Cost of consultant services provided by this firm ($1,000's)		$2,700



Since 2004, WSP has assisted Alabama Office of Water Resources (OWR) in the identification and management of flood risk through their CTP with FEMA. WSP's support has included program management, community outreach, hydrologic and 1- and 2-D hydraulic modeling of over 1,800 miles using regression analysis, HEC-1, HEC-2, HEC-HMS, HEC-RAS, PCSWMM, and FLO-2D. WSP has performed coastal flood modeling, including overland wave analysis, for 211 miles of Alabama coastline.

Through the same contract, since July 2010, WSP has served as the lead consultant managing the MT-2 Review Program on behalf of FEMA and OWR. In this role, WSP is responsible for the technical review and processing of all Conditional Letters of Map Revision (CLOMRs) and Letters of Map Revision (LOMRs) submitted to the state, ensuring compliance with FEMA's Standards and Guidelines and maintaining high standards of technical accuracy.

To date, WSP has processed a total of 276 cases. Of these, 234 have received FEMA approval with final determinations issued. An additional 8 cases are currently on track for approval, while 34 have been suspended. The case load encompasses both revisions to existing hydrologic and hydraulic studies as well as updates to modeling data to reflect recent development and construction activities. These submittals have included a wide range of complexity, utilizing various modeling techniques and software platforms.

WSP has also placed a strong emphasis on community engagement throughout the duration of this contract. The team collaborates closely with all applicants to ensure that submittals are technically sound and FEMA compliant, while also supporting stakeholder education on the MT-2 process and associated best practices. This proactive approach has resulted in improved submittal quality and greater efficiency in future reviews.

Additionally, WSP has conducted numerous MT-2 training sessions across Alabama, both virtually and in person. The audiences for these trainings have ranged from curious community officials to experienced and frequent applicants, reinforcing WSP's commitment to capacity building and stakeholder support across the state. Staff Involved: Edwin Watkins, Paul Simmons, Ashley Wylie

Firm name	WSP USA, Inc.		Discipline(s)*	Bridge	
Project name	MDOT Hydraulics Master Contract: Scour Evaluation, Yalobusha River at I-55, Grenada County, MS		Firm responsibility (prime or sub?)	Prime	
Project number	Not applicable	Owner's name	Mississippi Department of Transportation		
Project location	Statewide		Owner's Project Manager	Van Wilson	
Owner's address, phone, email	P.O. Box 1850 Jackson, Mississippi 39215-1850; vwilson@mdot.ms.gov; 604-359-7285				
Services commenced by this firm (mm/yy)	07/2020	Total consultant contract cost ($1,000's)	$106		
Services completed by this firm (mm/yy)	12/2022	Cost of consultant services provided by this firm ($1,000's)	$90		

Since 2015, WSP has held a contract with MDOT to provide statewide hydraulic engineering services including bridge and roadway hydraulic studies and design, as well as scour analysis, countermeasure design, FEMA analysis and coordination, and other related services such as geotechnical, surveying, and construction management. Under this contract, WSP has performed:

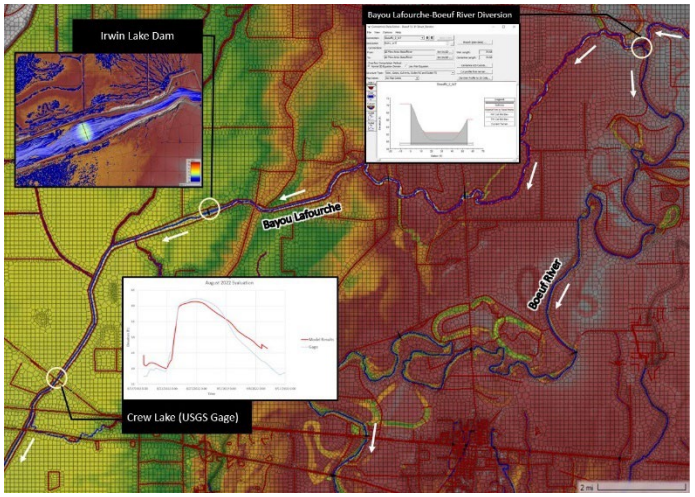
- Four Phase A bridge replacement analyses with multiple openings utilizing both 1D and 2D (SRH-2D) hydraulic analyses
- Two Phase III and IV Scour Evaluations with countermeasures involving structural analysis of structures with remediation alternatives evaluated
- Two Scour Analyses on complex hydraulic scenarios involving multiple openings/pumps/levee integration
- Coastal and Riverine Scour Analysis on a bay bridge spanning over a mile in length combining 2D (SRH-2D) with coastal analysis

For the Yalobusha River project, WSP completed the Phase I and Phase II Bridge Scour Evaluation of the Interstate 55 bridges over the Yalobusha River in Grenada County, MS. During the Phase I scour evaluation, the WSP Team collected all pertinent data for the scour evaluation and completed qualitative analysis. Additional items included collecting and providing the hydraulic survey data and the evaluation of the interaction of the relief bridges to the main channel bridges.

The Phase II scour evaluation included hydrologic, hydraulic, and scour analyses. A combination of gauge data, former studies, and regional regression was used to represent the hydrology of the system. Grenada Dam, located less than two miles upstream of the bridges, presented a unique situation hydrologically for the bridges. An SRH-2d model was developed to analyze the hydraulics of the riverine system. WSP was also responsible for collecting soil samples and performing grain size analysis for use in the scour evaluation.

Staff involved: Scott Taylor, Edwin Watkins, Masoud Meshkat, Kevan Lee Lum

Firm name	WSP USA, Inc.		Discipline(s)*	Other (Flood Modeling)	
Project name	LaDOTD – Louisiana Watershed Initiative Modeling Services, Region 3		Firm responsibility (prime or sub?)	Prime	
Project number	Contract No. 4400017069	Owner's name	Louisiana Department of Transportation (LaDOTD)		
Project location	Northeast Louisiana		Owner's Project Manager	Jie Gu, PE	
Owner's address, phone, email	PO Box 94245 Baton Rouge, LA 70804; jie.gu2@la.gov; 225-379-1483				
Services commenced by this firm (mm/yy)		11/2020	Total consultant contract cost ($1,000's)		$12,000
Services completed by this firm (mm/yy)		Ongoing	Cost of consultant services provided by this firm ($1,000's)		$9,500



In 2019, WSP was awarded the contract by LaDOTD to model Region 3 (Region) as a part of the Louisiana Watershed Initiative (LWI) statewide modeling effort. This Region encompasses four HUC8 watersheds east of the Ouachita River in northeast Louisiana, including the Boeuf River, Tensas River, Bayou Cocodrie, and Bayou Macon. Over the course of this contract, the WSP Team has developed HEC-HMS and 2D rain-on-mesh HEC-RAS models, performed consequence assessment, developed ArcGIS tools, performed public outreach and training, developed detailed technical reports and SOPs.

The first part of this modeling effort included data gap analysis and development of detailed methodologies to model each watershed. Northeast Louisiana is characterized by a flat topography with little relief, resulting in large swaths of unconfined floodplains. Additionally, multiple diversions, weirs and other flood control structures make for very complex flow patterns.

WSP has developed two HEC-HMS models, and four large scale HUC8-wide HEC-RAS 2D rain-on-mesh models in Region 3. These watershed areas range from 500 to 2,000 square miles and are characterized by large rivers (Boeuf River, Tensas River, Bayou Macon, Youngs Bayou, Joes Bayou etc.), over 60 weirs and diversions, over 1,000 bridge and culvert crossings, and multiple levee outlet structures. Several complex USACE water control structures were also modeled in these basins. The models were calibrated to six historic events and validated against two events. The calibrated models were used to perform design storm analysis for seven rainfall frequencies and five durations.

WSP coordinated with local stakeholders for input and verification of model results to improve model accuracy. Several novel methodologies were developed to overcome lack of sufficient gage data, extensive backwater influence affecting model boundary conditions, and limitations within the early versions of the modeling software. WSP developed multiple tools to aid in incorporation of survey data, topography modifications, and rainfall data development.

Staff Involved: Edwin Watkins, Ashwini Kashelikar, Masoud Meshkat, Kevan Lee Lum, Rehal Kharel

SECTION 18

18. Approach and Methodology:

UNDERSTANDING:
Fenstermaker, in collaboration with Michael Baker International (MBI) and WSP, is pleased to submit our Approach and Methodology for LADOTD's IDIQ Contract for Hydraulics Section Support Statewide. The Louisiana Department of Transportation and Development (DOTD) Hydraulics IDIQ is a critical program requiring a team of experts who understand the complex hydrologic and hydraulic challenges across the state. With our team's extensive experience in hydrologic and hydraulic modeling, FEMA compliance, and DOTD-specific standards, we are uniquely equipped to meet the needs of this contract. Our team combines local expertise and national experience with technical proficiency and a deep understanding of Louisiana's hydrologic systems, ensuring we deliver accurate, reliable, and efficient solutions for every project.

We understand that the scope of this project is multifaceted, requiring a comprehensive approach that balances regulatory compliance, technical precision, and timely delivery. Our team, having successfully worked with the hydraulics staff on projects such as the Off-System Bridge Program, Louisiana Watershed Initiative, and the Louisiana CTP program, have a great understanding of the importance of efficient and streamlined processes, as well as the importance of compliance and high-quality design work. Each of the potential scoping tasks listed in the RFQ demands a tailored methodology that considers LADOTD's specific requirements, including state and federal standards, best practices in hydrology and hydraulics, and the need for documentation to support FEMA applications and compliance.

Our team is committed to delivering innovative solutions that address the complexities of these tasks while ensuring a clear and efficient process. We bring a deep understanding of the challenges involved, including:

- Managing a large volume of projects with strict deadlines driven by funding and external pressures.
- The need to update the Hydraulics Section Manual to reflect evolving FEMA standards and NOAA rainfall data.
- Performing advanced watershed modeling and ensuring the models meet regulatory criteria for floodplain management and infrastructure design and to better capture LADOTD's standards and practices .
- Addressing the technical challenges of no-rise analysis, particularly for bridge and roadway projects in flood-prone areas.
- Coordinating with FEMA and local stakeholders for successful CLOMR and LOMR applications.
- Employing cutting-edge tools, such as SMS for 2D bridge modeling and scour analysis, to ensure bridge designs meet both hydraulic performance and safety standards.

Understanding the nature of the IDIQ contract requires a team of highly skilled professionals who can adapt to a diverse set of needs and deliver consistently high-quality results. This is why we have carefully assembled a team of experts, each bringing specialized knowledge to the table. Key team members include Jeanne Hornsby, MS, PE, CFM, whose expertise in floodplain management and hydrology ensures that our solutions are both technically sound and in compliance with FEMA and state regulations, and Erik Erickson, whose experience in hydrologic modeling and infrastructure design provides invaluable insight into complex projects. We also bring unique skillsets, such as Brooke Newlin, P.E., CFM, who has led some of the latest watershed master planning efforts in Calcasieu Parish, and Mark McBroom, our SMS specialist, who has worked on five SRH-2D modeling projects in the past 12 months alone. Our team also brings national experience working with DOTs in GA, SC, CA, CO, AK, NJ, UT, TX, and MS, to name a few. Together, our team's depth of experience and technical proficiency will enable us to effectively meet the challenges of the IDIQ contract and deliver superior outcomes for DOTD.

APPROACH & METHODOLOGY: This proposal outlines our proven methodology, highlighting how our experience, technical expertise, and collaborative approach will lead to successful project outcomes.

Hydraulics Section Manual Updating: Fenstermaker has significant experience working on LADOTD projects, such as I-49, the Off-System Bridge Program, or Verot School Road, where our staff have applied the current Hydraulics Manual on several projects and has had to meet FEMA no-rise compliance standards. As discussed with DOTD staff, our team is familiar with the known limitations of the existing manual and has successfully identified areas for improvement. These areas include:

- Migrating rainfall data to the NOAA Atlas data for more accurate storm event modeling.
- Incorporating NFIP FEMA standards, particularly in regard to allowable head differentials and their implications for LOMR/CLOMR applications.
- Aligning fill mitigation and Pre/Post analysis with local standards.
- Introducing alternative structure designs such as conspans and subsurface detention systems.

- Updating design criteria related to storm events, bridge hydraulics, and 1D/2D modeling guidelines.
- Updating hydraulics software to address issues such as rainfall data and cross slopes and ensuring alignment with the roll out of Open Roads.

Our approach includes close coordination with LADOTD engineers and staff, collecting feedback on the manual's limitations and incorporating best practices from other states. We will draft recommended updates, incorporate software modifications to align with new standards (such as the inclusion of NOAA Atlas data), and release draft versions for feedback. With our staff of modelers, engineers, programmers, and software developers, our team is set up to not only update the manual but also assist the state with updates to the Hydraulics Software. Our process will also include training sessions and videos for LADOTD staff and engineers to ensure proper adoption of the updated manual and software. The ultimate goal is to generate a Hydraulics Manual that is comprehensive, practical, and user-friendly.

HEC-RAS 1D and 2D Watershed Modeling: Our team has extensive experience utilizing HEC-RAS software for comprehensive watershed modeling on both large- and small-scale projects. Our team also has one of the strongest HEC-RAS modeling teams, with experience working on the Louisiana Watershed Initiative, where each of our team members is a prime modeling consultant for the state. Our teams process includes a structured approach to data gap analysis, model setup, calibration, and validation to ensure accuracy. Our approach involves the following steps:

- **Data Gap Analysis:** Identifying missing or incomplete data that could impact the model's accuracy.
- **Model Objectives:** Defining the key questions the model is meant to answer, such as flood risk evaluation, project impact analysis, and no-rise assessments.
- **Model Guidelines:** Establishing the model type (1D/2D), selection of methods, data inventory, and storm event criteria.
- **Model Data Collection:** Our Fenstermaker team is well versed in all methods of data collection including topographic and bathymetric surveying in compliance with modeling guidelines.
- **Model Setup:** Using available terrain and hydrologic data to configure the model, ensuring all relevant parameters are captured.
- **Model Calibration and Validation:** Ensuring the model is consistent with observed data to improve predictive accuracy.
- **Storm Analysis:** Analyzing the effects of various storm events to support decision-making and design adjustments.
- **Model Output Evaluation:** Extracting data from the models to develop flood maps, determine impact assessment, generate FEMA application for LOMR or CLOMRs, FEMA mapping, or no rise analyses.

By incorporating comprehensive data analysis, programing, and advanced modeling techniques, our team ensures that the results from HEC-RAS modeling support LADOTD's project objectives, as well as are developed as efficiently as possible.

Performance and Technical Review of NFIP No-Rise Applications:
The Fenstermaker team has extensive experience in conducting NFIP No-Rise analyses and reviews. This includes bridge, roadway, levee, and development projects, all in compliance with FEMA's Code of Federal Regulations (CFR) 60.3. We have also reviewed no-rise applications for several local governments, including Lafayette and Carencro, ensuring that all modifications comply with local and federal standards. It is imperative to note that experience completing and reviewing no-rise analysis in Louisiana is imperative to the overall success of this project, as no-rise compliance is much more robust in Louisiana due to our unsteady models and flat topography, that increase the difficulty of these analyses. Our approach for completing a no-rise includes:

- **Data Gap Analysis:** Reviewing local ordinances, available FEMA data (models, flood insurance studies, LOMRs), and determining whether an existing model is available or if a new model is needed. In Louisiana there are many cases where a floodway exists, however the model that developed this floodway was either a HEC-2 model or the evaluation data is only available as micro-fiche data, and therefore a new model must be developed.
- **Effective Model:** If the model is available this effective model should be compared with the latest FEMA maps and Flood Insurance Study (FIS).
- **Duplicate Effective Model**: The model should be ran to determine if the model reflects similar results as the effective model. HEC-RAS software versions can be something that may impact the results.
- **Corrected Effective Model:** If there are elements that are not properly captured in the effective model are identified the model may be updated with such information. This may include new developments, LOMRs, or bridges/culverts not included in the effective model.
- **Project Evaluation:** The project is put into the model to determine its impact or rise in the model.
- **Mitigation:** If a rise is determined in either the base 100-year model or the floodway model, then various mitigation measures may be evaluated such as channel modifications, channel protection, or detention.

- **No Rise Certificate and Report:** A report and no rise certificate are completed and signed by a registered professional engineer and submitted to the local floodplain manager for review and approval.

A review process can also be established based on the above. Fenstermaker has generated similar review processes for various municipalities that includes a review checklist that streamlines the review process and allows for quicker and more consistent reviews, along with a sample report submittal that outlines the sections and documentation that must be submitted for review. By focusing on thorough data analysis and clear documentation, we help ensure that all no-rise applications are compliant with FEMA standards, streamlining the approval process.

CLOMR and LOMR Applications for Bridge Projects: Fenstermaker has experience in preparing CLOMR and LOMR applications, including completing the largest Physical Map Revision (PMR) in Louisiana, which changed 11 panels due to a LADOTD Flood Control Project in Lafayette Parish. In addition, WSP is solely responsible for the review of all LOMRs and CLOMRs produced in the state of Alabama. This experience in both completing the model and map revisions, as well as reviewing them has helped us to outline the following approach to CLOMR/LOMR applications:

- **Objective Identification**: Working with stakeholders to clearly define the goals of the CLOMR/LOMR (e.g., floodplain boundary changes, base flood elevation adjustments) and determining the limits of the study are essential to keeping the project on schedule and satisfying stakeholders.
- **Stakeholder Coordination**: Organizing meetings with local parishes/municipalities, DOTD, and FEMA to ensure all requirements are understood and met.
- **Data Collection and Setup**: Gathering necessary hydrologic and hydraulic data, modifying models to reflect proposed project changes.
- **Model Calibration**: Ensuring the model reflects existing conditions before submitting modifications for FEMA review.
- **MT-2 Packet Preparation**: Preparing all necessary documentation for FEMA submission, including hydrologic and hydraulic reports.
- **Public Notification and Agency Coordination**: Ensuring public engagement and coordination with FEMA to facilitate the approval process. This includes the approval of the local agency who will have to sign off on the LOMR or CLOMR in their area.

Some of the steps in our process have been developed based on previous projects experiences. These include the importance of understanding when the CLOMR or LOMR are required based on model tolerances, or what changes outside of the project itself may further impact the LOMR or CLOMR, like local development, rainfall changes, or even HEC-RAS model version impacts.

2D Bridge Hydraulic Modeling and Scour Analysis Using SMS Software: Fenstermaker, in collaboration with Michael Baker International (MBI) and WSP, brings extensive experience and technical proficiency in using SMS software for 2D bridge hydraulic modeling and scour analysis. Our team has utilized SMS since 2005 and SRH-2D since 2015, completing numerous projects for state and federal agencies. This experience, combined with our knowledge of Louisiana's hydrologic systems, ensures we can provide accurate and reliable results for DOTD's needs.

- **Project Scope and Objectives:** Identifying the objectives of model development are important. This may include model use for flood simulations, scour analysis, or design recommendations. It is also important to understand what local, state or federal regulations are to be met, and ensure the model is set up to those standards.
- **Data Preparation and Model Setup:** We begin by collecting and analyzing necessary data, including hydrologic data, topographic surveys, and bridge design specifications. Using SMS, we generate meshes with appropriate resolution for complex bridge geometries and floodplain modeling. When developing the mesh we consider monitoring line, observation line, and bridge scour coverage to align elements. We set boundary conditions based on design flows (steady/unsteady), stage or flow outflow, and internal boundary (bridges – pressure flow only and culverts – HYDRWIN, HY-8, or internal conditions).
- **Hydraulic Modeling and Scour Analysis:** Using SMS, we model the hydraulic performance of the bridge and analyze scour potential. This involves:
    - Bridge Geometry Setup: Detailed modeling of the bridge and its surroundings.
    - Scour Evaluation: Analyzing flow interactions around bridge piers and abutments.
    - Calibration: Ensuring the model aligns with observed data, adjusting parameters like Manning's n as needed.
- **Results Analysis and Reporting:** We evaluate the model results for flow depths, velocities, and scour potential. Visualization tools within SMS allow us to clearly present the findings and recommend mitigation

measures if necessary. We also generate comprehensive reports detailing the model setup, results, and any required countermeasures.

This approach along with our experience in working in both HEC-RAS and SMS allows us an understanding of each software and their benefits and limitations. Where SMS is the preferred software for modeling complex bridge interactions, allowing for precise representations of bridge structures and their impact on flow and scour, it is important to determine what other analysis may be required for the structure in question. For example, does a no-rise or LOMR need to be completed, or is there already an existing FEMA model.

General Hydrologic and Hydraulic Analysis: Fenstermaker, MBI, and WSP bring a comprehensive skillset in upland and coastal modeling settings. Our experience spans FEMA CTP partnerships and a variety of statewide projects, offering valuable insights into hydrologic and hydraulic modeling for floodplain management, stormwater systems, and infrastructure design. In addition, we can provide support in reviewing statewide flood control program applications or generating updates to the statewide watershed master plan (blue book). We are also well versed in the design and review of roadway hydraulics and have completed many DOTD projects over the last several decades.

Innovation: As technology continues to advance, the Fenstermaker team has worked to stay at the forefront regarding advancements in hydraulics and hydrology. Some examples of these that could be further utilized under this IDIQ include:

- AI and programming to enhance model performance (programming to ensure the most efficient model run time)
- AI and machine learning for model, plan, and drainage report reviews based on codes, standards, and ordinances
- Dashboard generation to visual evaluate model results for calibration and validation
- Dashboards to track project status updates
- Data collection using scanning, LiDAR, and unmanned aerial videography

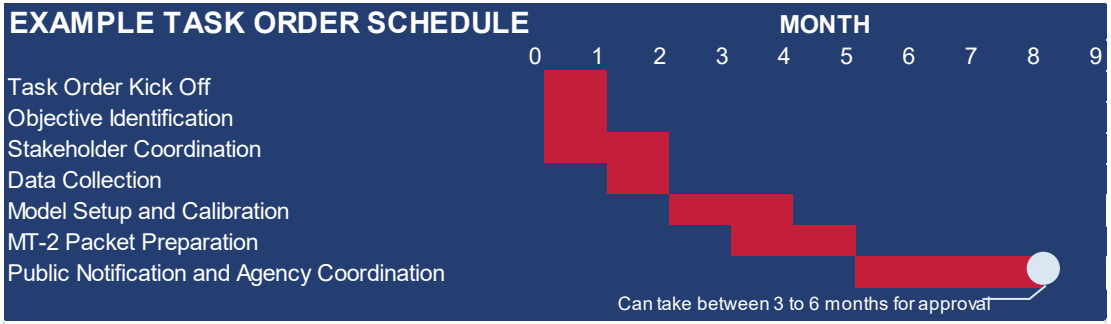
Schedule: The development of schedules will be dependent upon task order scope, complexity, and time expectations discussed at the scoping meeting. The development of schedules will include each of the defined project delivery milestones and a minimum 2–3-week DOTD review period. We have included an example task order schedule created for a medium-sized project absent any DOTD review time of deliverables.

Quality Control: We will prepare and deliver a QA/QC plan to DOTD within 10 business days of award. **Dax Douet, PE.,** a long-tenured design engineer, will be responsible for verifying the completeness of the QA/QC Plan and auditing compliance with that program. **Luke Hebert, P.E., CFM,** will manage our QA/QC activities. They will be responsible for verifying the completeness of the QA/QC Plan and auditing compliance with that program. We will perform quality control, constructability reviews, and design reviews prior to all submittals.

Commitment and Why Our Team: Fenstermaker's team, combined with our partners at Michael Baker International and WSP, brings extensive experience and a proven track record in hydraulics and hydrology, particularly in the context of transportation hydraulic infrastructure. With years of experience and involvement in projects across multiple states, we are well-equipped to deliver high-quality, efficient, and regulatory-compliant solutions for LADOTD. We are committed to working closely with LADOTD to ensure the success of each task outlined in this RFQ.

Our team's depth of knowledge, state-of-the-art tools, and proactive approach to collaboration make us the ideal partner for this project.

WORKLOAD AND AVAILABILITY OF RESOURCES Fenstermaker has the resources available to dedicate to this contract and the support of a strong team of sub-consultants to assist with task orders.



Note: Schedule reflects an average complexity LOMR appliction and may vary depending on context of project scope, review times, etc.

SECTIONS 19 - 23

19. Workload:

Firm(s) **ALL FIRMS** MUST BE REPRESENTED IN THIS TABLE	Discipline(s) *	Contract Number and State Project Number	Project Name	Remaining Unpaid Balance**
C.H. Fenstermaker & Associates, L.L.C.	Road	Contract No. 400005673 State Project No. H.011235.5	I-49 South @ Verot School Road US 90	$16,514
	Road	Contract No. 4400020291 State Project No. H.012869	LA 182 (UNIV) @ LA 723(RENAUD) Roundabout LA 182 and LA 723	$167,950
	Bridge	Contract No. 4400025023 State Project No. H.015513	Infrastructure Investment and Jobs Act (IIJA) Off-System Bridge Program District 03 Elenor Road Over Coulee	$55,550
	Bridge	Contract No. 4400025023 State Project No. H.015335	Infrastructure Investment and Jobs Act (IIJA) Off-System Bridge Program District 03 Puma Road Over Coulee	$82,800
	Bridge	Contract No. 4400025023 State Project No. H.015516	Infrastructure Investment and Jobs Act (IIJA) Off-System Bridge Program District 03 Bieber Road Over Nezpique Bayou	$1,855
	Bridge	Contract No. 4400025023 State Project No. H.015512	Infrastructure Investment and Jobs Act (IIJA) Off-System Bridge Program District 03 Mullins Road Over Tete Bayou	$57,000
	Bridge	Contract No. 4400025023 State Project No. H.015511	Infrastructure Investment and Jobs Act (IIJA) Off-System Bridge Program District 03 E. Martial Ave. Over Coulee	$27,500
	Bridge	Contract No. 4400025023 State Project No. H.015515	Infrastructure Investment and Jobs Act (IIJA) Off-System Bridge Program District 03 Andover Road Over Indian Bayou Lateral	$66,400
	Bridge	Contract No. 4400025023 State Project No. H.015514	Infrastructure Investment and Jobs Act (IIJA) Off-System Bridge Program District 03 Sarah Dee Pkwy. Over Coulee	$82,000
	Bridge	Contract No. 4400025023 State Project No. H.015505	Infrastructure Investment and Jobs Act (IIJA) Off-System Bridge Program District 03 Solid Waste Water Road Over Bayou Boeuf	$2,500

C.H. Fenstermaker & Associates, L.L.C.	Bridge	Contract No. 4400025023 State Project No. H.015510	Infrastructure Investment and Jobs Act (IIJA) Off-System Bridge Program District 03 Phillip Street Over Drainage Bayou	$69,400
	Bridge	Contract No. 4400025023 State Project No. H.015509	Infrastructure Investment and Jobs Act (IIJA) Off-System Bridge Program District 03 Huval Street Over True Canal	$64,900
	Bridge	Contract No. 4400025023 State Project No. H.015508	Infrastructure Investment and Jobs Act (IIJA) Off-System Bridge Program District 03 Adam Guidry Road Over Coulee	$121,400
	Bridge	Contract No. 4400025023 State Project No. H.015507	Infrastructure Investment and Jobs Act (IIJA) Off-System Bridge Program District 03 Minos Road Over Coulee	$68,600
	Bridge	Contract No. 4400025023 State Project No. H.015506	Infrastructure Investment and Jobs Act (IIJA) Off-System Bridge Program District 03 Aristide Road Over Coulee	$70,350
	Bridge	Contract No. 4400025023 State Project No. H.015517	Infrastructure Investment and Jobs Act (IIJA) Off-System Bridge Program District 03 Guegnon Street Over Youngs South Coulee	$112,300
	Road	Contract No. 4400025625 State Project No. H.014622.2	St. Nazaire Road Ext: LA 96 – Corne Road	$236,481
	Environmental	Contract No. 4400027474	IDIQ Contract for Environmental Permitting and Biological Services Task Order No. 1 MS4 Permitting Support East Baton Rouge Parish District 61	$2,348
Michael Baker International, Inc.	Road Bridge	Contract No. 4400021519 S.P. No. H.012030.5 F.A.P. No. H012030	US 371: KCS RR Overpasses HBI	$100,000 (Rd) $115,372 (B)
	Road Bridge	Contract No. 4400025026 S.P. No. H.015338 F.A.P. No. H015338	Infrastructure Investment and Jobs Act (IIJA) Off-System Bridge Program – District 07, Supplemental Agreement No. 1	$244,556 (Rd) $244,000 (B)

Michael Baker International, Inc.	Road Bridge Environmental	Contract No. 4400019379 S.P. No. H.013797 F.A.P. No. H013797	LA 30: EBR PL-I-10	$84,000 (Rd) $75,000 (B) $150,475 (En)
	Environmental	Contract No. 4400005484 S.P. No. H.005168 F.A.P. No. DE-9208 (500)	NORG EIS, New Orleans, Louisiana	$349,225
	Environmental	Contract No. 4400005484 S.P. No. H.005168	NORG – Avondale PEL Study, New Orleans, Louisiana Supplemental Agreement	$339,573
	Other (Water Resource)	Contract No. 4400017092 Task Order No. 4	Collection of Existing Watershed Datasets, Models, and Studies; and Proposition of Modeling Design Approach, Schedule and Costs, Region 6	$1,000,000
	Other (Aviation)	Contract No. 4400019130 Task Order No. 1	IDIQ Contract for Statewide Aviation Program Update – Phase II Statewide	N/A
	CE&I/OV	Contract No. 4400025536 Task Order No. 1 S.P. No. H.013997 F.A.P. No. H013997	IDIQ Contract for Construction Engineering and Inspection Services in District 61, Loc Rd. over Borrow Pit (Blind RV BT LNCH), St. James Parish	$98,868
	CE&I/OV	Contract No. 4400025536 Task Order No. 2 S.P. No. H.012936 F.A.P. No. H012936	IDIQ Contract for Construction Engineering and Inspection Services in District 61, LA 78: US 190-LA 1	$2,787
	CE&I/OV	Contract No. 4400025536 Task Order No. 3 S.P. No. H.013458 F.A.P. No. H013458	IDIQ Contract for Construction Engineering and Inspection Services in District 61, Manchac Acres & HH Wilson Rd Bridges	$9,911
	Other (Aviation)	Contract No. 4400019130 Task Order No. 1	IDIQ Contract for Statewide Aviation Program Update – Phase II Statewide	N/A

Michael Baker International, Inc.	CE&I/OV	Contract No. 4400025536 Task Order No. 1 S.P. No. H.013997 F.A.P. No. H013997	IDIQ Contract for Construction Engineering and Inspection Services in District 61, Loc Rd. over Borrow Pit (Blind RV BT LNCH), St. James Parish	$98,868
	CE&I/OV	Contract No. 4400025536 Task Order No. 2 S.P. No. H.012936 F.A.P. No. H012936	IDIQ Contract for Construction Engineering and Inspection Services in District 61, LA 78: US 190- LA 1	$2,787
	CE&I/OV	Contract No. 4400025536 Task Order No. 3 S.P. No. H.013458 F.A.P. No. H013458	IDIQ Contract for Construction Engineering and Inspection Services in District 61, Manchac Acres & HH Wilson Rd Bridges	$9,911
	CE&I/OV	Contract No. 4400025536 Task Order No. 4 S.P. No. H.015604 F.A.P. No. H015604	IDIQ Contract for Construction Engineering and Inspection Services in District 61, Pear St. at LA 1: Drainage	$162,004
	CE&I/OV	Contract No. 4400025536 Task Order No. 5 S.P. No. H.012057 F.A.P. No. H012057	IDIQ Contract for Construction Engineering and Inspection Services in District 61, LA 431: Villar Canal and Drainage Bridges	$734,079
	CE&I/OV	Contract No. 4400025536 Task Order No. 6 S.P. No. H.013956 F.A.P. No. H013956	IDIQ Contract for Construction Engineering and Inspection Services in District 61, Beamon Rd over Bayou Maringouin	$20,821
	CE&I/OV	Contract No. 4400025536 Task Order No. 7 S.P. No. H.014319 F.A.P. No. H014319	IDIQ Contract for Construction Engineering and Inspection Services in District 61, Cedarcrest Avenue over Wiener Creek	$141,738
	CE&I/OV	Contract No. 4400025536 Task Order No. 9 S.P. No. H.016026 F.A.P. No. H.016026	IDIQ Contract for Construction Engineering and Inspection Services in District 61, Grosse Tete Emergency Project	$380,720

	CE&I/OV	Contract No. 4400025536 Task Order No. 10 S.P. No. H.014088.6 F.A.P. No. H.014088	IDIQ Contract for Construction Engineering and Inspection Services in District 61, US 61: INT. Improvements at LA 427	$336,795
Michael Baker International, Inc.	CE&I/OV	Contract No. 4400024660 Task Order No. 1 H.013958.6 S.P. No. H.013958.6	IDIQ Contract for Construction Engineering and Inspection Services (CE&I) with Majority of Work in District 03 Carpenter Bridge Rd over Whisky Chitto Creek	$244,374
	CE&I/OV	Contract No. 4400024660 Task Order No. 2 H.014415.6 S.P. No. H.014415.6	IDIQ Contract for Construction Engineering and Inspection Services (CE&I) with Majority of Work in District 03 LA 352 Drainage Improvement	$189,157
	CE&I/OV	Contract No. 4400024660 Task Order No. 3 H.009629.6 S.P. No. H.009629.6	IDIQ Contract for Construction Engineering and Inspection Services (CE&I) with Majority of Work in District 03 US 90 RR-Pinhook_ LA 92-LA 88	$462,165
	CE&I/OV	Contract No. 4400024660 Task Order No. 4 S.P. No. H.005967.6 F.A.P. H.005967	IDIQ Contract for Construction Engineering and Inspection Services (CE&I) with Majority of Work in District 03 Nelson Rd Ext & Bridge	$523,709
	CE&I/OV	Contract No. 4400024660 Task Order No. 5 S.P. No. H.005967.6 F.A.P. H.005967	IDIQ Contract for Construction Engineering and Inspection Services (CE&I) with Majority of Work in District 03 I-10: JEFF DAV PL-I-49(OGFC/SLAB REPAIR)	$492,896
WSP USA, Inc.	Other (Modeling Services)	Contract No. 4400017069	LWI Region 3 Task Order 4	$204,713

20. Certifications/Licenses:

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Name	Type	City	Status
C. H. FENSTERMAKER & ASSOCIATES, L.L.C.	Limited Liability Company	LAFAYETTE	Active

Previous Names

C. H. FENSTERMAKER & ASSOCIATES, INC. (Changed: 12/31/2011)

Business: C. H. FENSTERMAKER & ASSOCIATES, L.L.C.
Charter Number: 33922270K
Registration Date: 8/10/1982

Domicile Address

135 REGENCY SQUARE
LAFAYETTE, LA 70508

Mailing Address

P.O. BOX 52106
LAFAYETTE, LA 70505

Status

Status: **Active**
Annual Report Status: **In Good Standing**
File Date: 8/10/1982
Last Report Filed: 7/17/2024
Type: Limited Liability Company

Registered Agent(s)

Agent: WILLIAM H. FENSTERMAKER
Address 1: 135 REGENCY SQUARE
City, State, Zip: LAFAYETTE, LA 70508
Appointment Date: 8/12/1993

Officer(s) Additional Officers: No

Officer: W. H. FENSTERMAKER
Title: Manager, Member
Address 1: 135 REGENCY SQUARE
City, State, Zip: LAFAYETTE, LA 70508

Louisiana SECRETARY OF STATE NANCY LANDRY

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Name	Type	City	Status
MICHAEL BAKER INTERNATIONAL, INC.	Business Corporation (Non-Louisiana)	PITTSBURGH	Active

Previous Names

MICHAEL BAKER, JR., INC. (Changed: 7/6/2015)

Business: MICHAEL BAKER INTERNATIONAL, INC.
Charter Number: 30035020F
Registration Date: 12/29/1972

Domicile Address

500 GRANT STREET
SUITE 5400
PITTSBURGH, PA 15219

Mailing Address

100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108

Principal Business Office

500 GRANT STREET
SUITE 5400
PITTSBURGH, PA 15219

Registered Office in Louisiana

3867 PLAZA TOWER DR.
BATON ROUGE, LA 70816

Principal Business Establishment in Louisiana

2600 CITIPLACE DRIVE
SUITE 450
BATON ROUGE, LA 70808

Status

Status: **Active**
Annual Report Status: **In Good Standing**
Qualified: 12/29/1972
Last Report Filed: 12/4/2024
Type: Business Corporation (Non-Louisiana)

Registered Agent(s)

Agent: C T CORPORATION SYSTEM

Louisiana SECRETARY OF STATE NANCY LANDRY

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Name	Type	City	Status
WSP USA INC.	Business Corporation (Non-Louisiana)	NEW YORK	Active

Previous Names

PARSONS BRINCKERHOFF, INC. (Changed: 5/2/2017)
PB AMERICAS, INC. (Changed: 11/3/2011)
PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, INC. (Changed: 12/14/2006)

Business: WSP USA INC.
Charter Number: 29600510F
Registration Date: 10/1/1971

Domicile Address

ONE PENN PLAZA, 4TH FLOOR
NEW YORK, NY 10119

Mailing Address

ONE PENN PLAZA, 4TH FLOOR
NEW YORK, NY 10119

Principal Business Office

ONE PENN PLAZA, 4TH FLOOR
NEW YORK, NY 10119

Registered Office in Louisiana

3867 PLAZA TOWER DR.
BATON ROUGE, LA 70816

Principal Business Establishment in Louisiana

1100 POYDRAS ST.
STE. 1175
NEW ORLEANS, LA 70163

Status

Status: **Active**
Annual Report Status: **In Good Standing**
Qualified: 10/1/1971
Last Report Filed: 9/4/2024
Type: Business Corporation (Non-Louisiana)

Registered Agent(s)

Agent: C T CORPORATION SYSTEM
Address 1: 3867 PLAZA TOWER DR.
City, State, Zip: BATON ROUGE, LA 70816

21. QA/QC Plan:

22. Sub-consultant information:

Firm Name (Name must match exactly as registered with Louisiana's Secretary of State (SOS): including punctuation, include screenshot(s) from SOS at the end of Section 20)	Address	Point of Contact and email address	Phone Number
Michael Baker International, Inc.	2600 Citiplace Court, Suite 450 Baton Rouge, LA 7088	L. R. "Eric" Erikson, P.E. Eric.erikson@mbakerintl.com	(225) 266-5335
WSP USA Inc.	One Penn Plaza, 4th Floor, New York, NY 10119	Ashwini Kashelikar ashwini.kashelikar@wsp.com	(906) 370-7630

23. Location:

C. H. Fenstermaker & Associates, L.L.C.