Brett McMann, PE, CFM
Project Manager, Client Relationship Manager
The Water Institute
1110 River Road S., Suite 200
Baton Rouge, LA 70802
Tel. No. (504) 810 – 6271
Email: bmcmann@thewaterinstitute.org

EDUCATION

University of New Orleans	New Orleans, LA	Civil and Environmental Engineering Graduate certificates in Coastal Engineering and Coastal Sciences (2018, 2019)	MS, 2025
Louisiana State University	Baton Rouge, LA	Civil and Environmental Engineering, minor in Business Administration	BS, 2010

EXPERIENCE SUMMARY

Mr. McMann has experience in the planning and design of flood protection and ecosystem restoration projects along the East and Gulf Coasts, most notably for the Louisiana Coastal Protection and Restoration Authority (CPRA), where he has been involved in the proposal, scoping, execution, and closeout of over 30 task orders spanning both engineering and environmental sciences IDIQ contracts. Mr. McMann presently serves as The Institute's project manager for all Louisiana Watershed Initiative activities, all activities related to CPRA coastal master plans, and all compound flood prediction projects within The Institute. Brett has been consistently tasked over his time at The Institute with managing its largest projects, which account for roughly 25-30% of Institute revenue dating back to 2022. He is an adept team leader and consensus builder, capable of managing up and down organizational charts of highly-capable hydrodynamic modelers, statisticians, mathematicians, and civil engineers in to deliver projects that often push the boundaries of coastal and flood science.

Additionally, Mr. McMann has experience in the planning and design of levees, pump stations, shoreline armoring, marsh creation, streambank restoration, coastal ecosystem restoration, wetlands value assessments, borrow source identification, engineering feasibility and cost-benefit analysis, municipal utility replacement, and field condition assessments of utilities.

RESEARCH INTERESTS

Large-scale coastal restoration and risk reduction planning, engineering design and management, regional sediment management, program and project management, and fluvial/pluvial/coastal flood risk.

PROFESSIONAL EXPERIENCE

The Water Institute	Civil Engineer, Project Manager	2019–Present
Arcadis, U.S., Inc.	Staff Engineer, Task Manager	2013–2019
Brown and Caldwell	Engineering Specialist	2010–2013

PROFESSIONAL SOCIETY MEMBERSHIPS

- Professional Engineer, Civil Water Resources and Environmental, LA No. 39894, 2015–Present
- Professional Engineer, Civil Water Resources and Environmental, TX No. 124465, 2016–Present
- Professional Engineer, Civil Water Resources and Environmental, FL No. 99072, 2024–Present
- Certified Floodplain Manager, US-21-12047, 2021–Present
- American Society of Civil Engineers, 2010–Present
- Louisiana Chapter of the American Society of Civil Engineers' Coasts, Oceans, Ports, and Rivers Institute-Vice President 2020-present
- Louisiana Engineering Society, 2010–Present
- East Baton Rouge Parish Engineering Selection Board 2024-present

HONORS AND AWARDS

2023-2024 Louisiana Engineering Society (Baton Rouge and State-wide awards) James M. Todd Technological Accomplishment Medal. The James M. Todd Medal is awarded annually for Distinguished Service by an Engineer for Technological Advancement or Discoveries as contributions to the advancement of Engineering.

NOTABLE PROJECTS

The Water Institute of the Gulf (2019-present)
Civil Engineer/Project Manager

City of Jacksonville Florida

Building from the City's first-ever resilience strategy, Brett manages a team comprised of The Institute, Deltares, Princeton University, The University of Central Florida, and Halff, who are tasked with performing a compound flood risk assessment for the City of Jacksonville/Duval County. The project consists of developing a hydrodynamic model to generate annual exceedance probability (AEP) flood surfaces accounting for the joint influences of fluvial, pluvial, and coastal (storm surge and wave) flood drivers, a probabilistic suite of tropical and non-tropical rainfall fields, flood consequences modeling, translation of outputs to guide the City's resilience strategy implementation, development of a real-time flood forecasting system for the City, and development of a data and modeling repository for the City.

Louisiana Watershed Council (Louisiana Office of Community Development):

- Louisiana Watershed Initiative / Statewide (2019-present): After the 2016 floods led to major disaster declarations across 56 parishes, Louisiana's state government decided to fundamentally change its approach to addressing flood risk. To implement holistic approaches statewide, the state established the Louisiana Watershed Initiative (LWI) to improve the way residents and governments understand, address, and respond to flood risk. The program was initially funded with $1.2 billion in federal mitigation funds (CDBG-MIT). Brett, serves as the project manager for the entire Water Institute team (comprised of The Institute, Princeton University, and Michael Baker) supporting OCD in aligning the modeling program with the larger Watershed Initiative by leading all tasks related to (1) managing the Data and Modeling Technical Advisory Group, (2) engaging with local government stakeholders on modeling and other decision support tool use for watershed management projects, (3) ensuring that the models meet the highest standards by serving on the Technical Delivery and Quality (TDQ) team, (4) developing data management procedures for all program modeling, survey, and geospatial deliverables (5) developing state and regional policy recommendations and supporting legislation (6) developing statewide consequence modeling strategies and guidance, a statewide consequence modeling web viewer, and a statewide structure inventory, (7) development of a data and model repository (The Environmental Data and Modeling Catalog, https://lwi.endmc.org/) jointly for CPRA and the LWI, and (7) development of methods for coastwide analysis of joint probability/coastal compound flooding from the combined effects of fluvial, pluvial, wind, and storm surge drivers.
- Coastal Compound Flood task: Brett serves as project manager of a team tasked with building a statewide two-dimensional HEC-RAS model which will be used to generate annual exceedance probability (AEP)

flood surfaces accounting for the joint influences of fluvial, pluvial, and coastal (storm surge and wave) flood drivers, as well as consequence modeling of the AEP surfaces.

United States Army Corps of Engineers - ERDC

- Enhancing Benefits Evaluation for Water Resources Projects Towards A More Comprehensive Approach For Nature-Based Solutions: Planning And Valuation Methods For Case Study Analysis. The USACE EWN® Program partnered with The Water Institute of the Gulf to analyze past and current benefits evaluation approaches to identify practical options for improving federal practice for evaluating the economic, environmental, and social benefits of natural infrastructure and nature-based solutions. The team evaluated completed USACE Feasibility Studies / Chief's Reports to identify opportunities to support comprehensive benefits evaluation for nature-based solutions and infrastructure projects, including factors that may have contributed to prioritizing conventional over natural infrastructure as well as benefits that are not being captured as a part of current practice. These reports encompass navigation, coastal storm risk management, flood risk management, and ecosystem restoration missions within USACE. Brett led a team which reevaluated the Southwest Coastal Louisiana feasibility study and re-calculated the benefit-cost ratios for the NER and NED plans to account more holistically for the combined benefits of ecosystem restoration and flood risk reduction, as well as for carbon capture benefits.

Deepwater Horizon Louisiana Trustee Implementation Group (LA-TIG):

- Guidance for Coastal Ecosystem Restoration and Monitoring to Create or Improve Bird-Nesting Habitat. Statewide, LA (2022-2023): Brett served as an engineering liaison and primary author of a guidance document intended to provide specific and detailed information on designing ecosystem restoration projects to support nesting birds, provided at the scale of an individual ecosystem restoration project. The primary audience is ecosystem restoration project teams, and this guidance is intended to be used during planning, designing, implementing, and monitoring of projects.

Louisiana Coastal Protection and Restoration Authority (CPRA):

- 2029 Coastal Master Plan / Statewide, LA (2023-present): Brett serves as project manager over 4 initial model improvement task orders related to improvements in consequence modeling and upgrades to the Coastal Louisiana Risk Assessment model (CLARA), as well as research into the incorporation of wind damage into hazard predictions and the methods used for estimating annual damages across a range of socioeconomic indicators.
- 2023 Coastal Master Plan / Statewide, LA (2019-2023): Brett was part of the risk analysis team investigating high tide flooding metrics and thresholds as part of the upcoming master plan. In this role, Brett works with others at the Water Institute to characterize both the likelihood and effects that disruptions to access of critical and essential facilities will have on low-lying coastal communities in future decades. this analysis focuses on the changes to access and drive times which coastal communities may have to facilities such as pharmacies, hospitals, emergency response, grocery stores, etc.
- Calcasieu Ship Channel Salinity Control Project (CS-0065, CS-0087) / Cameron Parish, LA (2019-2023): Brett served as the Principal Investigator/Project Manager of this project during its final stages of assessment as a series of salinity control barriers. The objective of this project was to support the evaluation of the structural design, attributes, and influence of the planned project on the lake and regional landscape as well as on navigation channel maintenance and infrastructure. Work on this project included environmental modeling support concerning drainage and hydrology of Calcasieu Lake and the Cameron-Creole watershed, as well as support of CPRA's alternatives re-analysis and decision documentation.

National Fish and Wildlife Federation (NFWF):

- Partnership for Our Working Coast / Lafourche Parish, LA (2019-2022): The Greater Lafourche Port Commission (GLPC) operates Port Fourchon. The port services more than 90 percent of all U.S. Gulf of Mexico Deepwater oil and gas exploration and production activities. Energy industry partners Chevron, Shell, and Danos along with GLPC and The Water Institute of the Gulf came together to form the Partnership for Our Working Coast which takes a science-based approach to maximizing the benefits of coastal restoration efforts to protect energy assets and critical infrastructure as a vital component of industry's risk management and sustainability business drivers. The GLPC is pursuing plans to obtain federal regulatory approval to deepen Belle Pass at the mouth of Bayou Lafourche to a target depth of -50 feet. This large-scale dredging project will generate tens of millions of cubic yards of material over its

lifespan. Brett served as project manager for the multi-disciplinary team developing nature-based defense projects to address the challenges of coastal evolution, improvement in community resilience, and evaluating the potential of blue carbon sequestration through coastal and wetland restoration projects. The Institute developed a suite of Delft-based ecosystem assessment models to help stakeholders prioritize the proposed solutions. Coupled with the modeling suite development, The Institute used a unique stakeholder-advised participatory modeling process to inform the inputs and outputs to the modeling process.

ARCADIS, U.S. Inc. 2013-2019
Staff Engineer/Task Manager

City of Norfolk, VA

- CDBG National Disaster Resilience Competition-Ohio Creek Watershed Transformation Plan (2017-2019): Brett served as co-lead for all civil design of flood protection, living shoreline, and coastal engineering tasks of a $200M flood risk resiliency system funded via HUD's NRDC grant competition. Brett supervised a staff of roughly a dozen design engineers and draftsmen across the geotechnical, structural, site-civil, and coastal disciplines to generate final plans and specifications which resulted in a plan set of over 600 sheets. Brett coordinated with an interdisciplinary architectural and engineering team to synthesize storm water, living shoreline, green infrastructure, and public use spaces within the resiliency design.

Louisiana Coastal Protection and Restoration Authority (CPRA):

- 2023 Coastal Master Plan / Statewide, LA (2018-2019): Brett lead Arcadis' effort to develop a new database system for streamlining both the project attribute generation system as well as for data handoffs between various end-user model groups.
- 2017 Coastal Master Plan / Statewide, LA (2015-2017): Brett lead Arcadis' effort to develop attributes for several hundred ecosystem restoration and hurricane protection projects to facilitate numeric modeling and prioritization analysis. This effort included GIS analysis, cost estimation, planning-level design, data and document production automation, and regular interdisciplinary team coordination of roughly 20 internal staff and countless external partners such as The Water Institute of the Gulf, the RAND Corporation, USGS, academia, and local governmental partners. Brett also assisted in planning and executing numerous public outreach engagements with local and regional stakeholders. Brett was part of a 12-member delivery team that oversaw more than 100 other technical analysts and support team members from within CPRA and other agencies across the three-year 2017 Master Plan effort. The team produced 6,000 pages of documentation, conducted more than 200 meetings with internal advisory groups and external stakeholder groups, and used state-of-the-art integrated predictive models to deliver a 50-year, $50 billion Coastal Master Plan that forecasts building or maintaining more than 800 square miles of land and reduce expected damages by $8.3 billion annually. Additionally,
- Program Management for the Calcasieu Ship Channel Salinity Control project (CS-65), Cameron and Calcasieu Parishes, LA (2017-present): Mr. McMann served as a program manager tasked with overall project management, scheduling, scoping, risk analysis, procurement strategy, engineering design QA/QC, and public outreach strategy for a team of engineers and scientists executing $150M in salinity control features.
- Final Design and Construction Administration for the Cut-Off/Pointe Aux Chene Levee (TE-78, Reach L of Morganza to the Gulf), Lafourche Parish, LA (2017-2019): Brett currently served as the project engineer overseeing the design, procurement, and implementation of roughly two miles of levee construction on behalf of CPRA.
- Southwest Coastal Louisiana Feasibility Study/ Calcasieu, Cameron, and Vermilion Parishes, LA (2014-2015): Brett was the project engineer for the planning-level design and cost estimation for roughly $2 billion of features for a proposed flood protection system across St. Mary and Iberia Parishes. The analysis considered a range of flood control features and alignments to best balance cost-benefit ratios with public safety for storm surge and precipitation as well as joint probability events.
- South Central Coastal Planning Study (TV-54), Phases I and II / Iberia and Saint Mary Parishes, LA (2014-2017): Brett was the project engineer for the planning-level design and cost estimation for roughly $4

billion of features for a proposed flood protection system across St. Mary, Iberia, and Vermillion Parishes in Louisiana as a follow-on effort to the Southwest Coastal Louisiana Feasibility Study. The analysis similarly considered a range of flood control features and alignments to best balance cost-benefit ratios with public safety for storm surge and precipitation as well as joint probability events.

- Upper Barataria Basin Risk Reduction / Lafourche, St Charles, St James, St John and Assumption Parishes. (2015): Brett Organized QA/QC efforts to assess proposed project costs and features of various consultant teams. Brett synthesized various cost calculation methodologies for CPRA to enable equitable assessment of the various proposed alignments in accordance with CPRA methodology.

City of Boston, MA

- CDBG National Disaster Resilience Competition-South Boston Resiliency Plan (2017-2018): Mr. McMann served as a team lead for the planning and prioritization of a flood risk resiliency system funded via HUD's NRDC grant competition to enable South Boston to continue to redevelop and redefine itself in the face of future sea level rise. He oversees cost estimation, alternative development, and feature definition for the project. This work has spurred several offshoot projects, such as FEMA grant applications for implementation and further planning efforts with the Barr Foundation.

Texas General Land Office (TX GLO)

- Gulf Coast Community Protection & Restoration District 6 Counties Flood Protection Study, Phases I, II, and III/ Orange, Jefferson, Chambers, Harris, Galveston, Brazoria Counties, TX (2016-2018): Brett assisted to define storm surge risk reduction alternative measures by leading the alignment layout, quantities calculation, and cost estimation for various alternatives spanning approximately 50 miles of the Texas coast. Brett led the effort to establish a universal project planning framework across various consultants and entities for uniform reporting.

New York City Department of Design and Construction

- East Side Coastal Resiliency Design, Borough of Manhattan (2016): Brett helped establish planning level cost estimating tools for a multimillion-dollar urban flood resiliency project which comprises part of the "Big U" scheme to protect lower Manhattan from future flooding.

Plaquemines Parish Government (PPG):

- Design and program management for the USACE's Beneficial Use of Dredged Material (BUDMAT) West Bay (2014-2015) and Spanish Pass (2015-2017): Brett assisted in developing project alternatives, feature design, cost optimization, land rights, and environmental constraint identification for two projects which placed over 5 million cubic yards of dredged material to create approximately 200 acres of wetlands and emergent marsh in the lower Mississippi River Delta.
- Restoration Program Management (2015): Mr. McMann served as a project engineer for the conceptual design management and programmatic permitting of the Plaquemines Parish Vegetative Ecosystem Restoration Program. During the conceptual design and layout, Arcadis worked with multiple consultants to determine least impacts, cost effective alignments considering constructability, mitigation, and synergy with other projects.

West Feliciana Parish Government (partnered with FEMA)

- Bayou Sara streambank armoring and hydrodynamic modelling (2016-2017): Mr. McMann was the civil design task lead for a FEMA HMGP project, which aimed to prevent future bank line erosion from threatening multiple points of local critical infrastructure including the town of St. Francisville's sewerage treatment facilities and the West Feliciana Parish ferry landing access. Brett lead a team of civil designers to assess flows and generate solutions which not only addressed the issue but were sensitive to nearby historic archeological sites.

Confidential Client: Vulnerability Assessment/ LA and TX Coastal Zones.

- (2015-2016) Brett served as a staff engineer as part of an effort to assess the vulnerability of coastal oil and gas pipeline infrastructure to episodic threats such as storm-induced scour, anthropogenic threats such as spud anchors etc., and duration-based threats such as land loss/subsidence.

Brown and Caldwell 2010-2013
Engineering Specialist

Louisiana Coastal Protection and Restoration Authority (CPRA)

- 2012 Master Plan Update/ Statewide, LA (2010-2012). Similar to the 2017 Coastal Master Plan, Brett was part of a multidisciplinary team which evaluated over $300 billion of proposed projects in order to prioritize $50 billion of ecosystem restoration and flood resiliency projects across Louisiana's coast.

Ecosystem Investment Partners

- Restoration Feasibility and Wetlands Value Assessment of Orleans Land Bridge Mitigation Bank/ Orleans Parish, LA (2011): Brett served as a staff engineer for the project, which included evaluation of restoring approximately 17,000 acres of brackish marsh in Southeastern Louisiana as compensatory mitigation for unavoidable impacts to waters of the United States, including wetlands, resulting from activities authorized under Section 404 of the Clean Water Act (Section 404) and Section 10 of the Rivers and Harbors Act of 1899 (Section 10) and/or LA. R.S. 49:214.21-214.41. Tasks included preparing a Wetlands Value Assessment based on the Coastal Wetlands Planning, Protection, and Restoration Act Wetlands Value Assessment Methodology using coastal marsh Community Models.

East Baton Rouge Parish Dept. of Public Works

- Florida Boulevard Pump Stations Project/ East Baton Rouge Parish, LA (2013-2014): Brett served as a staff engineer for the project which facilitated the upgrades to/construction of 10 pump stations with peak future flows ranging from 763 to 21,236 gpm. Brett assisted with pump and wet well sizing calculations.

New Orleans Sewerage and Water Board

- Paths to Progress Water Line Replacement Civil Design, Construction Inspection for Water Line Replacement / Orleans Parish, LA (2014): Brett server as a staff engineer for the replacement and relocation of municipal waterlines damaged during Hurricane Katrina. Duties included QA/QC of survey data, relocation troubleshooting, construction inspection, and water line design for approximately 30 city blocks.

United States Naval Facilities and Engineering Command (NAVFAC)

- Pensacola Naval Base SSES Program (2014): Brett served as a staff engineer on this project, which included a field condition assessment of all base wastewater conveyance infrastructure, electronic documentation and database compilation of defects, system testing, and GIS mapping of the NAS Pensacola wastewater system.

PUBLISHED WORKS

Bartlett, M. S., Geldner, N., Cobell, Z., Partida, L., Diaz, O., Johnson, D. R., Kim, H., McMann, B., Villarini, G., Misra, S., Roberts, H. J., & Narayanaswamy, M. (2025). *Extending the joint probability method to compound flooding: Statistical delineation of transition zones and design event selection* (Manuscript submitted for publication). Water Resources Research. https://arxiv.org/submit/6958392

Hemmerling, S. A., DeMyers, C., Parfait, J., Piñero, E., Baustian, M. M., Bregman, M., Di Leonardo, D., Esposito, C., Georgiou, I. Y., Grismore, A., Jung, H., McMann, B., & Miner, M. D. (2023). A community-informed transdisciplinary approach to coastal restoration planning: Maximizing the social and ecological co-benefits of wetland creation in Port Fourchon, Louisiana, USA. *Frontiers in Environmental Science*, *11*.

Kirshen, P., Borrelli, M., Byrnes, J., Chen, R., Lockwood, L., Watson, C., Starbuck, K., Wiggin, J., Novelly, A., Uiterwyk, K., Thurson, K., McMann, B., Foster, C., Sprague, H., Roberts, H. J., Bosma, K., Jin, D., & Herst, R. (2020). Integrated assessment of storm surge barrier systems under present and future climates and comparison to alternatives: A case study of Boston, USA. *Climatic Change*.

SELEC TECHNICAL REPORTS

Fischbach, J. R., McMann, B., Diaz, O., Kane, P. B., Di Leonardo, D., Bregman, M. C., & Johnson, D. R. (2025). *A coastwide risk reduction hindcast: 2005 to present*. The Water Institute. Prepared for and funded by the Coastal Protection and Restoration Authority. Baton Rouge, LA.

Bartlett, M., Misra, S., Roberts, H., Geldner, N., McMann, B., Saharia, A., Zou, S., Johnson, D., Villarini, G., Kim, H., Yuill, B., Wang, Y., Georgiou, I., Fischbach, J., Nadal-Caraballo, N., & Schmied, L. (2023). *Compound flood transition zone pilot study for the Amite River Basin* (p. 132) [Final]. Louisiana Watershed Institution.

Kane, P., McMann, B., Penuela Cantor, L., Tebyanian, N. (2024). *LWI Watershed Modeling Appendix D: Consequence Modeling Guidance. Baton Rouge, Louisiana.* Louisiana Watershed Initiative.

The Water Institute. (2023). *LWI Watershed Modeling Appendix B: Data Governance and Standards. Baton Rouge, Louisiana.* Louisiana Watershed Initiative.

McMann, B., Hemmerling, S. A., Bienn, H., Fischbach, J., Ellis, D., & Wang, Y. (2023). *2023 Coastal Master Plan: Attachment H3: High Tide Flooding Report. Version I*. (p. 214). Baton Rouge, Louisiana: Coastal Protection and Restoration Authority.

The Water Institute. (2023). *Lowermost Mississippi River Management Program: Regional Sediment Management Below Venice. The Water Institute.* Prepared for and funded by the Coastal Protection and Restoration Authority under Task Order 69. Baton Rouge, LA.

McMann, B., Schulze, M., Sprague, H., & Smyth, K. (2017). *2017 Coastal Master Plan* (Louisiana's Comprehensive Master Plan for a Sustainable Coast, p. 109) [Version Final]. Coastal Protection and Restoration Authority.

SELECT CONFERENCE PROCEEDINGS AND PRESENTATIONS

McMann, B., Fischbach, J., Bartlett, M. S., Jr., Narayanaswamy, M., Kane, P., Cobell, Z., Tebyanian, N., Bregman, M., Diaz, O., Panakkal, P., & Khalid, A. (2025, December). *Advanced methods to evaluate compound flood risk and forecast flooding in real-time for the City of Jacksonville* (Abstract 1880668) [Conference presentation abstract]. *AGU25 Annual Meeting*, New Orleans, LA, United States

Di Leonardo, D., McMann, B., Baustian, M., Bregman, M., Esposito, C., Georgiou, I., Hemmerling, S., Jung, H., & Miner, M. (2023). *A community-informed transdisciplinary approach to beneficial use of sediment for wetland restoration in Louisiana, USA*. Proceedings of Coastal Sediments Conference.

Georgiou, I. Y., Baustain, M. M., Cobell, Z., Courtois, A., Bregman, M., Dalyander, P. S., Di Leonardo, D., Esposito, C. R., Hemmerling, S. A., Jung, H., Liu*, B., Foster-Martinez, M., McMann, B., Messina, F., Miner, M., Parfait, J., & Yuill, B. (2021, December). Coastal evolution and resiliency management for a working coast: Data and model integration for a transgressive headland: Port Fourchon, Louisiana, USA.* American Geophysical Union (AGU) fall meeting.

Kane PB, Tebyanian N, Gilles D, McMann B and Fischbach JR (2024) *Key drivers of vulnerability to rainfall flooding in New Orleans.* Front. Clim. 6:1303951. doi: 10.3389/fclim.2024.1303951

B McMann, P Tschirky, M Schulze, E Mesehle. 2016. Beneficial Use of Mississippi River Navigation Dredged Material. *Proceedings of Ports 2016: 14th Triennial International Conference of the American Society of Civil Engineers.* June 13-15, 2016. New Orleans, LA.

RELEVANT COURSEWORK

Sediment Transport and Dredging, Design of Coastal and Hydraulic Structures, Ocean and Coastal Engineering, Coastal Geomorphology, Coastal Processes, Coastal Restoration and Management, Sustainability Principles in Engineering.

Thesis: Private Sand Mining in the Mississippi River:
Sediment Budget and Morphology Implications between Baton Rouge and Belle Chasse, Louisiana