HUGH J. ROBERTS, PE

THE WATER INSTITUTE OF THE GULF

Company Role
Senior Vice President/ Chief Operating Officer

Education
M.S.
Civil Engineering, Notre Dame, 2004

B.S.
Civil Engineering, Notre Dame, 2002

Areas of Expertise
- Urban and Coastal Resiliency
- Flood Risk
- Compound Flooding
- Numerical Modeling
- Project Management

Registration / Certification
- Professional Engineer: LA

Experience Profile
Hugh J. Roberts, Senior Vice President and Chief Operating Officer with The Water Institute of the Gulf, is a civil engineer with nearly two decades of experience in applied research focused on flood risk, climate change adaptation, and ecosystem restoration.

Roberts has led climate adaptation and long-term planning studies around the country, with specific technical expertise in coastal, riverine, and urban flood risks. Prior to joining the Institute, Hugh was the national leader for Urban and Coastal Resilience at Arcadis, where he worked with communities facing climate change driven by economic, societal, and environmental risks. Roberts has had the opportunity to work closely with city, state and federal officials to implement community resilience practices to manage coastal flood risk, combat nuisance flooding, reduce impacts of urban heat threats, plan for a changing climate, incorporate natural infrastructure solutions into planning, and strive for equitable solutions within communities.

He played key roles in flood risk management design post Hurricane Katrina; the development of New York City's Special Initiative for Rebuilding and Resiliency post Hurricane Sandy; Climate Ready Boston, an initiative to create a systematic and comprehensive framework for combating climate change; the San Francisco Embarcadero Seawall Resilience Program, planning for the city's seismic and coastal flooding challenges along its iconic waterfront; and recently the development of compound flood risk methodologies for state-scale flood study application in Texas and Louisiana.

Professional Experience
The Water Institute of the Gulf 2019-Present
- *Flood Risk and Resilience Expert | Senior Vice President*

ARCADIS 2005-2019
- *Urban and Coastal Resiliency Practice Leader*
- *Numerical Modeling Practice Leader*
- *Project Engineer and Associate Project Manager*

Selected Projects **(continued on page 2)**

Resilient Houston. Rockefeller Foundation, the City of Houston (2018-2020)
Technical Advisor. The Institute oversaw a multidisciplinary team of experts in the development of a comprehensive resilience strategy for Houston. A companion document, Living with Water Houston, was developed concurrently, bringing together Dutch, Louisiana, national and local experts to develop flood risk reduction recommendations at the regional, city, bayou, and neighborhood scales.

Climate Ready Boston (2016)
Project manager and technical lead to assess the city's vulnerabilities related to climate change. The study advanced specific strategies and actions to help Boston plan for the end-of-century effects of climate change and supported the city's ambitious and comprehensive Climate Action Plan released in 2014.

2023 Coastal Louisiana Master Plan Model Improvement (Ongoing)
Flood risk and mitigation team lead for the 2023 Coastal Master Plan. This effort includes flood hazard modeling for current and future conditions, with and without project implementation scenarios, as well as coordinating with other coastal flood risk model users (LSU, USACE) to create a single set of models to be used across studies within the state.

2012 and 2017 Coastal Louisiana Master Plans (2010-2017)
Flood risk and mitigation team lead for the development of both the 2012 and 2017 Coastal Master Plans. The master plans are the foundation of the states 50-year, $50 billion-dollar plan for coastal restoration and protection, as well as determine the funding for annual spending in the state.

City of Charleston Dutch Dialogues™
Urban resilience and flood risk subject matter expert supporting the implementation of the resilience planning process. Following the resilience planning effort, Charleston City Council unanimously adopt the Dutch Dialogues™ recommendations to guide future water management and land-use actions.

Embarcadero Seawall Resiliency Project (2019)
Led the development of the multi-hazard risk assessment (MHRA) to prioritize the $5 billion redevelopment of the San Francisco waterfront from Fisherman's Wharf to AT&T Park. The Embarcadero Seawall supports over $100 billion in assets and annual economic activity along the waterfront and many of the city's iconic destinations. The Seawall also supports key utility and transportation infrastructure including BART, Muni, and ferry networks, and serves as a critical emergency response and recovery area. The MHRA process was structured to transparently weigh multiple hazards (seismic and flood including climate change) and life safety, economic, environmental, societal, and governance risks to prioritize program sequencing and prioritization.

Louisiana Watershed Initiative (Ongoing)
Team lead for the development of model guidelines and standards for compound flooding effects (fluvial and coastal) in the flood transition zone. The model guidelines in the compound flooding transition zone include consideration of model integration (e.g., coupling HEC-RAS and ADCIRC), selection of coincident events for simulation, and the creation of the joint probability framework. In addition to transition zone lead, a lead program advisor supporting modeling and data related aspects, as well as supporting the evaluation of various flood risk management policies.

GLO Combined River Basins Flood Studies (Ongoing)
Coastal and compound flood risk lead in the initial phases of the program, working with USACE to develop standard operating procedures for HEC-HMS and HEC-RAS model development and flood recurrence analysis procedures. Technical advisor supporting coastal and compound flood model development and flood mitigation project evaluation.

Resilient Bridgeport (2017)
Design lead and project manager for the HUD funded resiliency design projects funded through the Rebuild by Design (RBD) and National Disaster Resilience Competition (NDRC) including a MS4 system and stormwater park as part of the RBD design and raised roadways, berms and green infrastructure opportunities as part of the NDRC design.

Ohio Creek Watershed Transformation (2017)
Flood risk planning technical expert for the HUD funded resiliency design project ongoing in Norfolk, VA focused on coastal protection, green infrastructure, and community connectivity.

East Side Coastal Resilience (2019)
Urban reliance and flood risk technical expert for coastal protection initiative, jointly funded by the City of New York and the federal government (HUD), aimed at reducing flood risk due to coastal storms and sea level rise on Manhattan's East Side. The project design integrates flood protection into the community fabric, improving waterfront open spaces and access, rather than walling off the neighborhood.

Living Breakwaters (2016)
Numerical modeling and wave hazard reduction lead for the initial conceptual design phases of the HUD funded RBD project in Staten Island, NY. Living Breakwaters is an innovative coastal green infrastructure project that aims to increase physical, ecological, and social resilience through breakwaters designed to reduce risk and provide habitat for local marine life including oyster restoration.

Research Plan to Advance Coastal Green Infrastructure Strategies in New York City (2015)
The lead author in the development of a research plan to further the understanding of green infrastructure strategies in coastal resiliency and assess (1) their ability to reduce wave, surge and erosion under both normal and stormy conditions, and (2) their ecological benefit relative to non-GI strategies that achieve same storm risk reduction benefits.