



MYLES MCMANUS, PE

Research Scientist

Myles McManus, Research Scientist, is a professional civil engineer with nine years of experience in Hydrology, Hydraulics, and Water Management. The first seven years of McManus' career were with the Corps of Engineers where he became a subject matter expert in hydrologic and hydraulic modeling, real-time flood forecasting, data and database management, multi-objective reservoir optimization, period of record statistical modeling, and software development. McManus was the project lead for the development of the Java software HEC-DSSVue, The JavaScript React based web data application CWMS Mobile, was the lead for Jython scripting, and was a team member of the Corps Water Management (CWMS). He has been routinely involved in and taught classes on database applications for water management enterprise data retrieval, input, editing, and posting using both SQL and non-SQL database schemas. More recently in the private industry, McManus served as a lead hydrologist and provided automation techniques for developing flood frequency hydrologic models in HEC-HMS. McManus received a bachelor's degree and master's degree in civil engineering at the University of Alabama at Birmingham.

COMPANY ROLE

Research Scientist

PROJECT ROLE / FOCUS AREAS

Water management

Hydrology

Software development

Civil engineering

EDUCATION

MSc Civil Engineering,
University of Alabama
at Birmingham, 2012

BSc Engineering
University of Alabama
at Birmingham, 2011

PROFESSIONAL MEMBERSHIP

Professional Engineer:
OK

PROFESSIONAL EXPERIENCE

2022-Present: Water Resources Engineer/ Research Scientist, The Water Institute

2021: Science Senior Water Resources Engineer, RPS Group

2020-2021: Senior Water Resources Engineer, Stantec Consulting

2017-2020: GS-12 Senior Hydraulic Engineer, U.S. Army Corps of Engineers,
Hydrologic Engineering Center

2013-2017: GS-12 Hydraulic Engineer, U.S. Army Corps of Engineers, Tulsa
District



SELECTED PROJECTS

Louisiana Flood Forecast System. *Louisiana Coastal Protection and Restoration Authority and Louisiana Trustee. (2022). Technical Lead.* Real-time Forecasting Software System - Develop Joint Compound Flood Alert System for the state of Louisiana. Includes HEC-RAS riverine flooding and ADCIRC storm surge flooding along the coast. The system requires expertise across disciplines in hydrology, hydraulics, ocean modeling, geospatial databases, data automation, and JavaScript web application development.

Texas Government Land Office. *RPS Group. (2021-2022). Technical Lead.* The lead hydrologist for the Neches River Basin. The intent of the program was to develop flood protection projects that best helped communities with the region. This project required knowledge in meteorology, hydrology, hydraulics to develop frequency storm models to design proposed flood protection systems throughout a large portion of Eastern Texas.

Web-based Inundation Mapping Framework. *RPS Group. (2021-2022). Lead Developer.* Lead developer for a web app displaying the results of hydraulic models in an interactive environment. The map allows interactive feedback of flood levels. This capability will better enable decision makers to understand flood stages or hydraulic model output down to zoom levels not found in other publicly available inundation map platforms such as FEMA, USGS, or USACE.

Orange County Coastal Storm Risk Management Project. *Stantec Group (2020-2021). Lead Hydrologist.* Orange County Coastal Storm Risk Management Project – I was the principal hydrologic modeler for the project of building a coastal flood-wall levee system in Orange County, Texas. This project required modeling the interior drainage portion of the levee to optimize levee designs and ensure construction would not exacerbate flooding within city centers.

Folsom Dam Raise, Sacramento District. *USACE HEC (2018-2020). Subject Matter Expert.* Lead Technical Reviewer for the new water management plan as needed due to the construction of a dam raise at Folsom Dam. This includes reviewing Probable

Maximum Flood used in the design of the spillways, and the subsequent management of the spillways for induced surcharge operations.

Columbia River Treaty, Northwest Division. *USACE HEC. (2019). Modeler.* Modeling of the Willamette basin as part of a larger study on the Columbia River Basin and the international treaty between U.S. and Canada involving flood benefits from Dams located in Canada.

Forecast Modeling U.S. Army Corps of Engineers, Tulsa District. (2013-2017). Lead Forecaster. Developed HEC-HMS models for 9 watersheds including 14 flood control reservoirs for the Corps Water Management System CWMS implementation. This represents roughly 50% of the district's hydrologic modeling needs by area.

Riverware Period of Record Modeling. *U.S. Army Corps of Engineers, Tulsa District. (2016). Modeler.* Updated and extended the period of record Riverware model for the North Canadian watershed. This was the first period of record extension performed on these models since their original implementation. This work was documented to provide a guide for the other period of record models in the district to be updated.