



Introducing the 5E-LAN Joint Venture

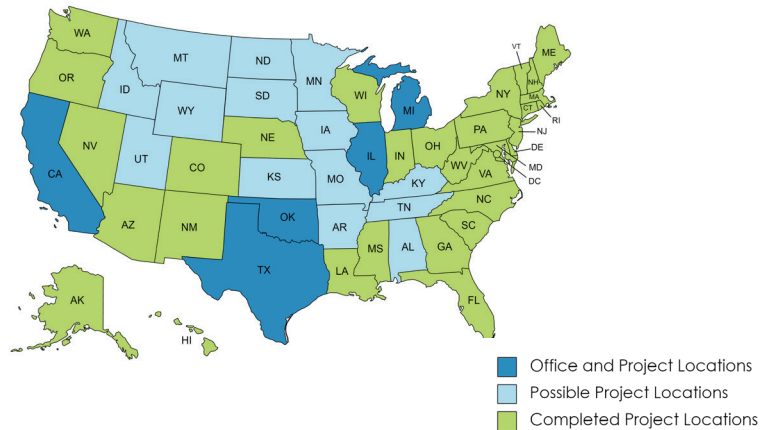
The Fivengineering / Lockwood, Andrews & Newnam (5E-LAN) joint venture is an Small Business Administration (SBA)-approved, mentor-protégé organized to provide engineering, architecture, and planning services to federal agencies. 5E and LAN have previously partnered on numerous water resources and drainage projects throughout the greater Houston area. The 5E-LAN JV is a certified Women Owned Small Business (WOSB) known for civil works projects within USACE's Southwestern Division. This partnership provides a highly experienced WOSB enterprise for Small Business set-aside acquisitions, and the capacity / geographic presence of a large business serving the federal marketplace.

UEID: TALET57J9LE4 | CAGE: 98ZX6

The team has an acceptable accounting system capable of managing various contract types.

SERVICES BOUNDARY

The 5E-LAN JV is based in Texas with offices in Oklahoma, California, Michigan, and Illinois. Our team is capable of providing services throughout the United States.



AREAS OF EXPERTISE

Civil Infrastructure & Facilities

- Water Distribution/Transmission
- Wastewater Collection
- Pipeline Rehabilitation
- Streets
- Storm Sewer
- Erosion Control
- Channel Improvements
- Pump Stations
- Lift Stations
- Treatment Plants
- Detention Basins

Planning

- Watershed/Drainage Master Planning
- 2-Dimensional Modeling
- Hydraulics & Hydrology
- Feasibility Studies
- LOMR/CLOMR Studies
- Water Master Planning
- Wastewater Master Planning
- Pipeline Hydraulic Modeling
- Transient Analysis

Navigation, Ports and Coastal

- Feasibility Studies
- Landside Infrastructure
- Waterfront Structures
- Dredging and Material Disposal

Facility Engineering

- Mechanical Engineering
- Electrical Engineering
- Plumbing Engineering
- Structural Engineering
- Architecture
- Assessment

Support Services

- Geographic Information Systems
- Asset Management
- Capital Improvement Planning
- Project Management
- Construction Phase Services
- Construction Management
- Program Management



Elizabeth Parent, PE, CFM, ENV SP
Cofounder & Owner, 5engineering

- ★ S2G Communications Support PM, USACE Galveston District
- ★ Lake Houston Dam Spillway Improvements
- ★ USACE / DHS / CBP RGV 02 / 03 Border Infrastructure Design Build Construction Project
- ★ Clear Creek Federal Flood Risk Management Analysis
- ★ Sabine to Galveston Pass Coastal Storm Risk Management Project Communications Support



Lars Zetterstrom, PE
VP, Federal Program Manager, LAN

- ★ Retired USACE Colonel
- ★ Halls Bayou Bond Implementation Program Manager
- ★ Houston Ship Channel Expansion & Channel Improvement Project Third Party Design
- ★ North Beach Navigable Canal Study
- ★ Trinity River USACE Planning Coordination & Advisement
- ★ Addicks & Barker Dam New Outlet Construction



USACE/DHS/CBP – SLSO (DESIGN/BUILD) RGV 02/03 BORDER INFRASTRUCTURE DESIGN/BUILD CONSTRUCTION PROJECT McAllen, TX

- ★ 5 Wall segments for 7.84 miles of levee
- ★ Hydraulic analysis to determine levee elevation

The RGV-02 project consists of the design-build delivery of 7.84 miles of levee for five border wall segments located south of Alamo, Donna, Weslaco, Progreso, and Mercedes, Texas (within Hidalgo County). The RGV-03 project lies within the McAllen Station area of responsibility and totals 5.4 miles. **5E** completed hydraulic analysis to determine the max levee elevation based on USIBWC provided storm event/flow. The team worked closely with USIBWC and USACE on review and approvals of our analysis and design, through DRChecks. Early USACE and River Authority involvement were critical to the success of the project.

CLEAR CREEK FEDERAL FLOOD RISK MANAGEMENT PROJECT Houston, TX

- ★ 1D-2D modeling and structural flooding counts

This \$270M federal flood risk reduction and channel conveyance design project is a partnership between HCFCD and USACE (Galveston District) with HCFCD as lead Partner. HCFCD entered into a Project Partnership Agreement (PPA) with USACE as the Non-Federal Sponsor for design and construction using BBA 2018 funds and local funds. The **5E** team was contracted to support 1D-2D modeling and structural flooding counts for various alternatives. The team wrote a Python script to account for structural benefits / impacts for the without project, GRR, and proposed scenario runs for 8 frequencies of USGS and Atlas 14 rainfall. The team created profile plots for Clear Creek, Turkey Creek, Mud Gully, and Mary's Creek, and supported reporting efforts with exhibits and tables.

5E's PM, Elizabeth Parent, co-presented a paper for the Texas Floodplain Management Association in April 2022, "Evaluation of the Clear Lake 2nd Outfall Channel and Gate Operations" that was widely attended.

SABINE TO GALVESTON PASS COASTAL STORM RISK MANAGEMENT PROGRAM - COMMUNICATIONS SUPPORT USACE Galveston District

The **5E** team is currently providing communications support for the S2G CSR Program. The team has created 3d graphics, videos, fact sheets, outlined key messaging and facilitated both virtual and public meetings.

“

"You set the standard for the Enterprise on how to successfully engage stakeholders. Thank you so much. World class all the way."

Galveston District Feedback



HALLS BAYOU WATERSHED STUDY/BOND IMPLEMENTATION PROGRAM Harris County, TX

- ★ Substantial modeling quantifying scenarios to maximize hydraulic benefits, subject to cost and ROW constraints
- ★ Strategic combination of natural stable channel improvements

LAN is program manager for an accelerated flood damage reduction program for 45 square miles of the Halls Bayou watershed, serving as the accepted comprehensive regional plan for providing flood risk mitigation. This Vision Plan consists of a strategic combination of natural stable channel improvements across more than 20 miles of channel network and more than 10,000 acre-feet of proposed detention broken into manageable phases of improvements. The Watershed study involved a substantial modeling effort by **LAN** to quantify various combinations of Vision Plan scenarios that maximize hydraulic benefits, subject to cost and Right-of-Way (ROW) constraints. **LAN** is managing 14 projects valued at \$400M in various stage of study, design and construction.

HOUSTON SHIP CHANNEL EXPANSION & CHANNEL IMPROVEMENT THIRD PARTY DESIGN REVIEW Houston, TX

LAN performed a multi-discipline design and constructibility review of nine design packages from two different EORs for the Port of Houston in partnership with USACE Galveston for the widening and deepening of the Houston Ship Channel.

DALLAS FLOODWAY PUMP STATIONS VE STUDY Dallas, TX, USACE Fort Worth

- ★ Recommended > \$11.1 million in potential construction savings

LAN performed a value engineering evaluation on two USACE pump stations in Dallas with multiple concrete volute, and high capacity low-head pumps housed in concrete facilities. The Trinity Portland station includes two 125,000 gpm pumps and Charlie 2 station includes three 75,000 gpm pumps. The value engineering effort included a detailed review of the proposed design, with **LAN** recommending more than \$11.1 million in potential construction savings. Comments were provided to reduce potential construction risk and the quality of bids received.