



# RESEARCH PROJECT CAPSULE [16-1GT]

November 2016

TECHNOLOGY TRANSFER PROGRAM

## Geotechnical Design Manual

### JUST THE FACTS:

**Start Date:**

October 6, 2016

**Duration:**

15 months

**End Date:**

January 5, 2018

**Funding:**

TT-Fed/TT-Reg

**Principal Investigator:**

Eduardo A. Tavera, P.E.

President, GeoStellar Engineering, LLC

**Administrative Contact:**

Tyson Rupnow, Ph.D., P.E.

Associate Director, Research

225-767-9124

**Technical Contact:**

Gavin P. Gautreau, P.E.

Geotechnical Research Manager

225-767-9110

Louisiana Transportation  
Research Center  
4101 Gourrier Ave  
Baton Rouge, LA 70808

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### POINTS OF INTEREST:

Problem Addressed / Objective of  
Research / Methodology Used  
Implementation Potential

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### PROBLEM

The Louisiana Department of Transportation and Development (DOTD), through its Pavement and Geotechnical Design section, has developed policies and procedures over the years utilizing its own methods and those incorporated from others (AASHTO, FHWA, other states, etc.). The Geotechnical Design group has a formal Geotechnical Engineering Design Guide (GEDG) No. 8, Mechanically Stabilized Earth Wall (MSEW), but does not have guides that document other issues (i.e., subsurface exploration, piles, drilled shafts, slopes, etc.).

A comprehensive Geotechnical Design Manual (GDM) will assist the Geotechnical Design group by formally establishing policy and providing guidance in production activities. The manual will also help clarify current design policy, ease the training of new employees, and serve as a valuable reference for the Geotechnical Design group, other DOTD sections, and consultants.

Implementation of a GDM will establish procedures for handling comments and/or recommendations regarding potential revisions so they can be effectively addressed. Benefits of a GDM include efficiency and clarity of having the policy online as well as creating confidence and transparency for all actions and design decisions.

### OBJECTIVE

The objective of this project is to create a GDM that documents the current processes utilized by the DOTD Geotechnical Design group, with hyperlinks and references to the supporting policy, design methodology, and test procedures. Project development, coordination, and management processes will also be explained.

### METHODOLOGY

Initially, the researcher will meet with DOTD geotechnical personnel to develop an understanding of previous and existing practices. A detailed work plan will be developed, outlining a recommended approach and tasks required to accomplish the project objectives. The work plan will include a proposed schedule with milestones for deliverables.

The researcher will provide recommendations for augmenting subject matter in the GDM. Subject matter enhancements may include incorporation of updates/revisions to the AASHTO LRFD bridge design specifications and matters identified during technical meetings with the Geotechnical Design group.

An important aspect of a GDM is the ability to adapt and change when items that should be clarified or improved are discovered. The ability to issue updates in between major revisions is important and must be considered.

### IMPLEMENTATION POTENTIAL

Implementation of this research will impact the geotechnical services provided by DOTD and its consultants. The development of a GDM will document geotechnical design policy, practices, and procedures for use on all DOTD projects. The GDM will help clarify issues and establish a state-of-practice concerning the conduct of geotechnical design, field subsurface exploration, laboratory testing, and geotechnical construction support. Training regarding the use and applicability of the GDM will be needed.