

# **CHAPTER 1 INTRODUCTION**

## **GEOTECHNICAL DESIGN MANUAL**

*January 2019*



**Table of Contents**

<b><u>Section</u></b>		<b><u>Page</u></b>
1.1	Introduction.....	1-1
1.2	Revision Process.....	1-1



# CHAPTER 1

## INTRODUCTION

### 1.1 INTRODUCTION

The South Carolina Department of Transportation (SCDOT) Geotechnical Design Manual (GDM) has been established to provide uniform guidance for the development of field explorations, resistance factors ( $\phi$ ), performance limits, design processes and project deliverables. The GDM applies to all projects on the SCDOT system when required by SCDOT. The engineer should meet all criteria and practices presented in the GDM, while fulfilling SCDOT's operational and safety requirements. However, the criteria presented in the GDM shall not be considered as a standard that must be met in all circumstances. Engineers must consider economic impacts, aesthetics, and the social and cultural resources of the project area, and other factors as appropriate and shall request modifications to the criteria in writing to the appropriate Preconstruction – Geotechnical Design Section (PC/GDS) and shall include a technical justification as to why the modification is necessary. The GDM presents most of the information normally required in the geotechnical design of transportation projects; however, because it is impossible to address every issue that geotechnical engineers will encounter, sound engineering judgment must be exercised when conditions arise that are not specifically covered in the GDM. Frequently, geotechnical engineers must be innovative in their approach to geotechnical design. This may require, for example, additional research into geotechnical literature. Any questions concerning the applicability or interpretation of any procedure, analysis, or method contained in the GDM shall be directed to the Preconstruction Support – Geotechnical Design Section (PCS/GDS) for review and comment.

For this Manual, the Geotechnical Engineer-of-Record (GEOR) includes the Regional Production Group – Geotechnical Design Section (RPG/GDS), the Geotechnical Engineering Consultant (GEC) whether for design-bid-build or a design build team.

The current version of the GDM was prepared based on the 8<sup>th</sup> Edition of the American Association of State Highway and Transportation Officials (AASHTO) LRFD Bridge Design Specifications (2017) (AASHTO LRFD Specifications) and shall be used whenever the GDM refers to the AASHTO LRFD Specifications. The applicability of future editions and interims shall be determined by the PC/GDS in conjunction with the PCS/GDS when requested in writing from the GEOR.

### 1.2 REVISION PROCESS

The GDM is intended to provide current geotechnical design policies and procedures for use in developing State highway projects. To ensure that the GDM remains up-to-date and appropriately reflects changes in SCDOT's needs and requirements, its contents will be updated on an ongoing basis. Updates and revisions released between editions of the GDM will be published as *Geotechnical Design Bulletin (GDB)* and made available on the SCDOT website. It is the responsibility of the GDM holder to keep their copy of the GDM updated.

It is important that users of the GDM inform SCDOT of any inconsistencies, errors, need for clarification, or new ideas to support the goal of providing the best and most up-to-date information practical. Comments may be forwarded to the PCS/GDS.