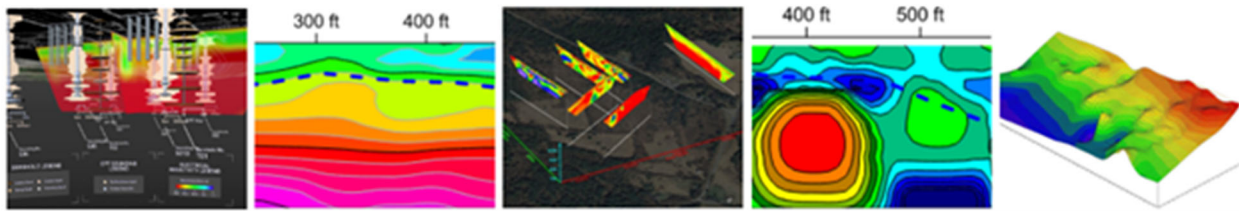


## FHWA Geotechnical Data Management Workshop

8:30 AM – 12:00 PM



### Facilitators:

Mary Nodine, PE, FHWA Resource Center

Derrick Dasenbrock, PE, D.GE, FHWA Resource Center

## Workshop Overview

In this interactive workshop we will discuss trends in geotechnical data workflow, including tools, methods, processes, and deliverables at US State Departments of Transportation (DOTs). With recent and anticipated DOT upgrades to newer geotechnical software products and services, and the increasing industry adoption of BIM and digital project delivery, geotechnical data management and interoperability issues are coming to the forefront. Furthermore, the AASHTO provisional standard “Standard Practice for Digital Interchange of Geotechnical Data” (PP 102-20) requires that data be provided to DOTs in the DIGGS data-exchange format; as this standard becomes more widely adopted, increasing interest in digital geotechnical workflow among DOTs and their partners is anticipated.

This half-day session will include background information on data management principles, practical guidance on implementing workflow and software changes and adopting a standardized data schema, and exploration of applications for geotechnical data in the world of BIM and digital project delivery. We will invite discussion on various geotechnical data management topics, engaging our participants in discussion about current practices, trends, concerns, and solutions. The goal is to share ideas and identify needs, challenges, and opportunities, as we collaborate and advance the state of practice within the geotechnical community - with the end goal of process improvement.

## Why Attend?

Changes in geotechnical software, DOT specifications requiring digital data from consultants, and improvements in quality and efficiency are all good reasons to improve data management and shift to a digital workflow in your organization. However, there are even more compelling reasons to make this shift as a geotechnical practitioner.

Subsurface site characterization, evaluation of representative geomaterial properties in 2D and 3D, and visualization are particularly relevant as transformative project delivery technologies are being introduced in the transportation design and construction industry. DOTs are beginning to embrace digital models for design— supplementing, or wholly replacing traditional drawings— adopting 3D models as legal documents (MALD) for infrastructure construction. Today, these models often contain limited (or no) information below the ground surface. Geotechnical data management will be a critical

component and important driver in advancing the change from providing discrete borings and geotechnical data reports to providing comprehensive geotechnical models as part of a fully integrated 3D infrastructure design package. In the future, these packages may be used in a digital twin environment for maintenance and operations and for future construction projects.

In this shifting landscape of project delivery, it is critical that those in the geotechnical field take advantage of the technology available to advance our data management and data sharing processes.

## **Preliminary Workshop Agenda**

*Within several topic areas, the workshop moderators will provide background as a basis for discussion and then open the floor for interactive conversation, sharing of ideas, and collaboration. Discussions will help inform the development of future conference sessions and FHWA training.*

**8:30-8:45**

### **INTRODUCTION: DIGITAL DELIVERY AND GEOTECHNICAL DATA**

1. What is digital delivery?
2. Progress on digital delivery for Southwest states – overview and discussion
3. What does all this have to do with geotechnical data?

**8:45-9:15**

### **PART 1**

#### **GEOTECHNICAL DATA PURPOSE, TYPES, AND COLLECTION**

1. Geotechnical data types
2. Why do we collect data?
3. What types of data do we collect?
4. How do we collect data?
5. How do we use the data we collect? Do we re-use data?
6. Geotechnical process workflow: Investigation, Analysis, Design, Reporting, Archiving
7. What we mean by “geotechnical data management”
8. Concepts for good geotechnical data management

**9:15-10:15**

### **PART 2**

#### **DIGITAL DATA WORKFLOW**

1. Geotechnical data as an asset
2. Electronic data acquisition, transmission and reporting – common formats and software
3. DIGGS – a standard schema for geotechnical data – what, why, and how
4. A future with large data sets: storage, access, and visualization
5. Benefits of a digital workflow

**10:15-10:30**

**BREAK**

**10:30-11:00**

**Short Software Vendor Presentations**

**11:00-11:40**

**PART 3**

**DATA INFORMATICS: THE POWER OF DATA SHARING**

1. Drivers for and impediments to sharing geotechnical data
2. Who needs the data? Designers, contractors, inspectors....
3. Data Interoperability: the [near] future
4. Geotechnical deliverables in a world of digital delivery

**11:40-12:00**

**CLOSING DISCUSSION**

1. Where is your organization in the geotechnical workflow/process?
2. What benefits do you see for your agency with improved geotechnical data management?
3. What concerns do you have?
4. What additional resources are needed?