How DIGGS Can Help You

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DIGGS
DATA INTERCHANGE FOR GEOTECHNICAL AND GEOENVIRONMENTAL SPECIALISTS

What is DIGGS?

Data Interchange for Geotechnical and Geoenvironmental Specialists

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Data Transfer Standard

- Database interfacing
- Software interfacing
- Data validation through software

The bottom line:
SEAMLESS DATA FLOW

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DIGGS is **NOT**

- A database
- A database standard
- A software program

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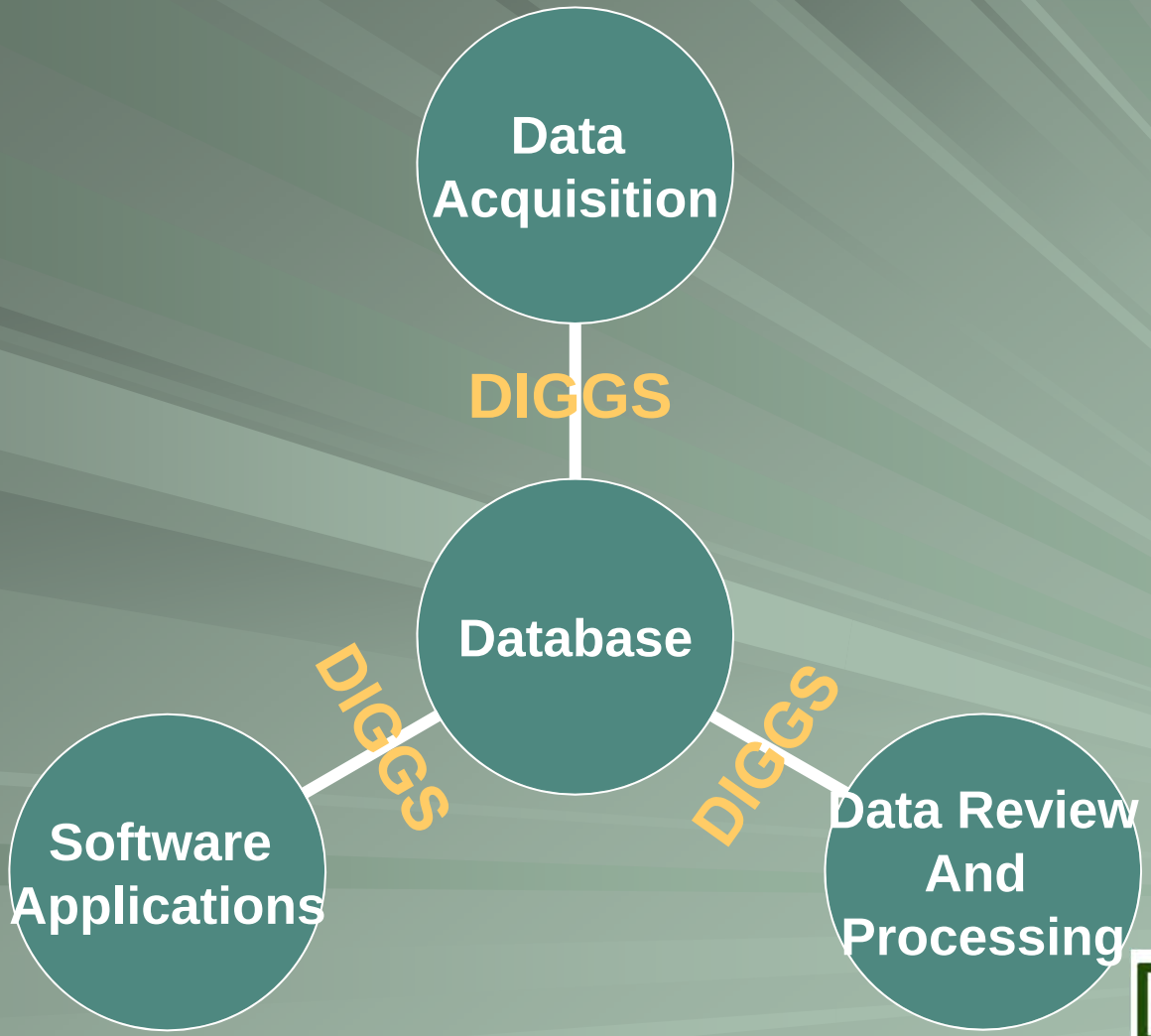
Mapping Databases



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Uses for DIGGS

- Send data to others (lab, client, consultant, others)
- Receive data from others
- Internal for data flow (to different software programs, to different data bases)
- A key component of a geotechnical management system

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Data has value

- Cost to obtain – ODOT $55 million/year
- Value to the project
- Value to future projects

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It costs to move data and information manually.

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Pooled Fund Project TPF-5(111)

- Combine existing geotechnical data interchange standards
- Expand to include other data (i.e. geohazards, geotechnical assets)
- Survey state DOTs and others
- Finalize standards

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GMS Group Members

- CALTRANS
- Connecticut DOT
- Florida DOT
- Georgia DOT
- Indiana DOT
- Kansas DOT
- Kentucky DOT
- Minnesota DOT
- Missouri DOT
- North Carolina DOT
- Ohio DOT
- Tennessee DOT
- FHWA Ohio Division
- FHWA Federal Lands
- United Kingdom Highway Agency
- US Army Corps of Engineers
- USEPA
- USGS

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Participants

- Association of Geotechnical and Geoenvironmental Specialists (AGS)
- Bridge Software Institute at the University of Florida
- Consortium of Organizations for Strong-Motion Observation Systems (COSMOS)
- Construction Industry Research and Information Association (CIRIA)
- Delta Environmental Consultants, Inc.
- EarthSoft
- FHWA
- gINT Software Inc.
- Keynetix Ltd
- Mott MacDonald
- Petrochemical Open Standards Consortium
- United Kingdom Highways Agency (UKHA)
- United States Army Corps of Engineers (USACE)
- United States Environmental Protection Agency (U.S. EPA)
- United States Geological Survey (USGS)
- United States Navy
- University of New Hampshire
- 11 State DOTs

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Standards Subsumed in DIGGS

- AGS (United Kingdom)
- COSMOS (international)
- University of Florida (Florida DOT)
- SEDD (EPA & USACE)

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International Standard

- International cooperation in development
  - US federal agencies
  - AGS
  - CIRIA
  - COSMOS
- Joint Technical Committee 2
  - International Society of Rock Mechanics
  - International Society for Soil Mechanics and Geotechnical Engineering
  - International Association for Engineering Geology and the Environment

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DIGGS Format

- DIGGS format has two parts
  - A Data Dictionary
    - Defined tables and fields
    - User defined tables and fields
  - Transfer Format Rules (Schema)
    - Hierarchy of data (Sample from a hole)
    - Tags (<hole>), data type (string, number) etc
    - Rules to structure and verify the data

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DIGGS Design

- GML Compatible
  - Geography Markup Language
  - International GIS standard compatible with mapping software
- Extensible
  - Has built in methods for local additions
  - Allows profiles (local definitions of acceptable portions of standards – but sharable)

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Version 1.2

- Boreholes
- In-situ tests
- Laboratory tests
- Deep foundations
- Borehole geophysics
- Geoenvironmental

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Advantages to using DIGGS

- Interchange of data between databases
- Interchange of data between software
- Data validation
- Interchange of data with others
- Seamless flow of data from generation, through use, to storage, and reuse
- It is FREE

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The good old days?

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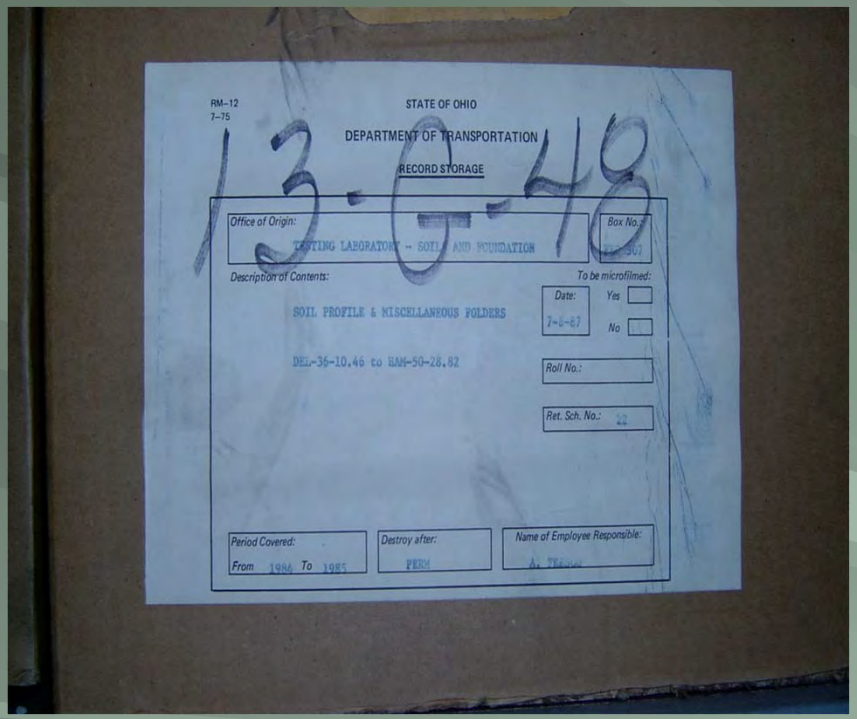
The good old days?



20-30 person hours per week to retrieve information

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Geotechnical Management Savings

- Ohio DOT 10-20% less drilling, savings $12M per year
- Florida DOT fewer borings saving $250,000 - $500,000 on one project
- Missouri DOT a 10-15% fewer borings per bridge
- Missouri DOT $81,000 savings per year in boring log preparation by using electronic data entry in the field

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Moving us from the past to the future

- Past:
  - Paper management of data - fragmented, time consuming and expensive
  - Manual information manipulation and analysis
- Future:
  - Seamless electronic data transfer and management system - efficient, fast and economical
  - Unlimited electronic data manipulation and analysis

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Let DIGGS work for you

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