Next Steps for Data Interchange for Geotechnical and Geoenvironmental Specialists (DIGGS)

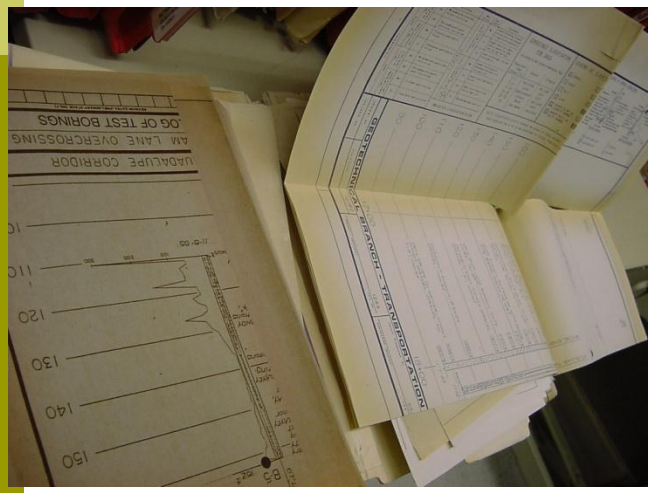
TRB Workshop
Advances in Geotechnical Data Management and Visualization

January 12, 2014

Robert Schweinfurth, PI, ASCE Geo-Institute
Ohio DOT Contract

Caltrans Experience

- 30,000 project files
- 2 million documents
- 300 projects/year
- 80 years of data
- Difficult to access information



DIGGS
DATA INTERCHANGE FOR GEOTECHNICAL AND GEOENVIRONMENTAL SPECIALISTS

Ohio DOT Experience

- 20-30 person hours per week to retrieve information

What is DIGGS?

- XML (Extensible Markup Language), Geography Markup Language (GML) compliant Standard for Geotechnical and Geoenvironmental Data
- Ongoing Effort Since 2005 – Pooled Fund Study
- Partners: USGA, EPA, COSMOS, AGS, UK-HA, UF, GINT, KeyNetix, State DOTs, FHWA, EarthSoft

DIGGS
DATA INTERCHANGE FOR GEOTECHNICAL AND GEOENVIRONMENTAL SPECIALISTS

DIGGS Schema Includes…

- Borehole Location and Site Information

- Borings & Sampling

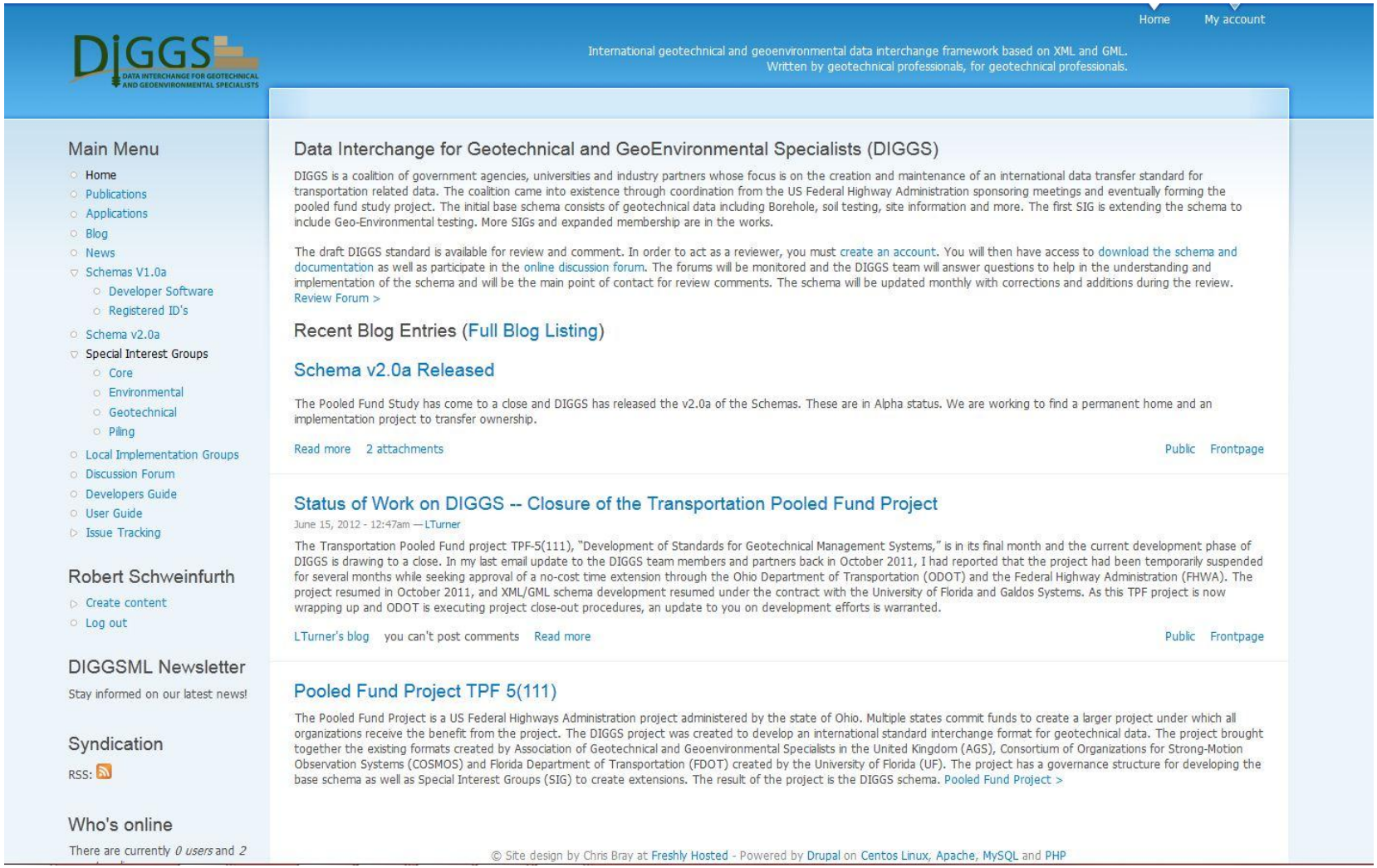
DIGGS
DATA INTERCHANGE FOR GEOTECHNICAL AND GEOENVIRONMENTAL SPECIALISTS

DIGGS Schema Includes…

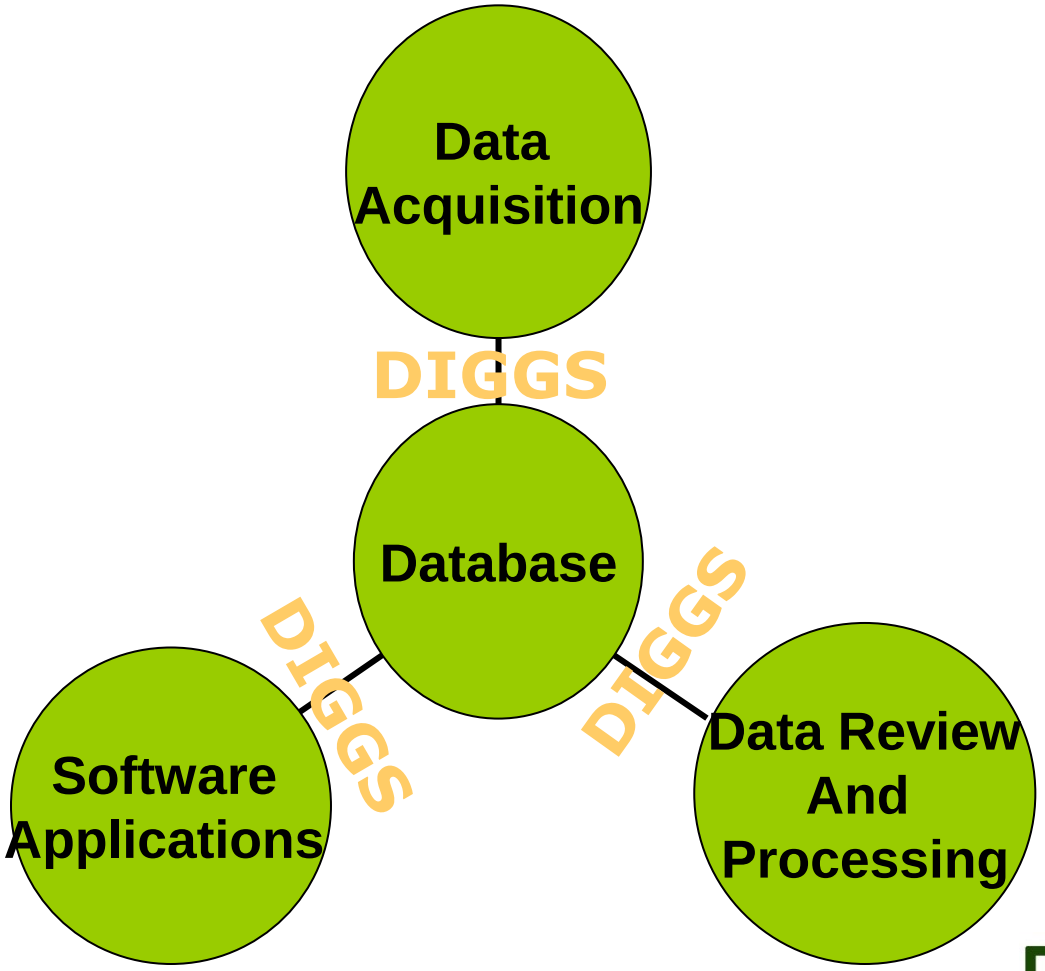
- Test pits
- In-situ testing
- Borehole Geophysics
- Laboratory Data
- Geoenvironmental
- Groundwater

DIGGS
DATA INTERCHANGE FOR GEOTECHNICAL AND GEOENVIRONMENTAL SPECIALISTS

http://diggsml.com – Website



The DIGGS Advantage
Interoperability



DIGGS
DATA INTERCHANGE FOR GEOTECHNICAL AND GEOENVIRONMENTAL SPECIALISTS

DIGGS Advantages

- Share Data within states between different databases Saving $Millions
  - Allows investigators to do work in best manner, but share required information
- Transfer of Data to Other Users, States, FHWA
- New uses for existing data

Cost Savings

- Ohio DOT:
  - 10-20% less drilling, savings $12-24M per year
- Florida DOT:
  - Fewer borings saving $250,000 - $500,000 on one project
- Missouri DOT:
  - 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
- California DOT:
  - 20% savings ($200k/year) with laboratory data management system implementation

DIGGS
DATA INTERCHANGE FOR GEOTECHNICAL AND GEOENVIRONMENTAL SPECIALISTS

DIGGS Current Status

- DIGGS Version 2.0α - July 2012
  - Update of Data Dictionary
  - Update of Schema
  - Creation of "DIGGS to Excel" Tool
  - Creation of "DIGGS to KML" Tool
  - DIGGS Website Update

DIGGS
DATA INTERCHANGE FOR GEOTECHNICAL AND GEOENVIRONMENTAL SPECIALISTS

Next Steps
DIGGS Implementation

- ODOT Contract with Geo-Institute-2 years
  - October 2013 – October 2015

- Goals of Contract
  - Finalization of DIGGS Schema standard from 2.0α to 2.0β and Public Release of DIGGS 2.0
  - Transition of ownership to Geo-Institute
  - Development of Long Term Business Plan, Management Structure, and Adoption Strategy

DIGGS
DATA INTERCHANGE FOR GEOTECHNICAL AND GEOENVIRONMENTAL SPECIALISTS

DIGGS Implementation

- Engagement of DIGGS Advisory Board
- Survey of DIGGS User Community
- DIGGS Training Materials
- Pilot Testing of DIGGS 2.0α
  - State DOTs & EPA, Software/Hardware Vendors, Federal Agency
- Update XML/GML Schema and Data Dictionary

DIGGS
DATA INTERCHANGE FOR GEOTECHNICAL AND GEOENVIRONMENTAL SPECIALISTS

DIGGS Tools Development

- Refining of existing “DIGGS to Excel”, and “DIGGS to KML”
- AGS 4.3 to DIGGS
- Excel to DIGGS
- Validation

DIGGS
DATA INTERCHANGE FOR GEOTECHNICAL AND GEOENVIRONMENTAL SPECIALISTS

Implementation Timeline

- Community Survey – Jan/Feb 2014
- Training Materials – Webinars
  - Jan-March 2014 – High Level and DIGGS Structure
  - Pilot Testers Training Webinar – How to Use DIGGS and Do Pilot
- Tool Development – February-July 2014

DIGGS
DATA INTERCHANGE FOR GEOTECHNICAL AND GEOENVIRONMENTAL SPECIALISTS

Implementation Timeline

- Pilot Testing – July-November 2014
- Release to User Community for Review – January-May 2015
- Management, Business, and Adoption Strategies Development - February 2014–July 2015
- Final Release of DIGGS 2.0 – Nov. 2015

DIGGS
DATA INTERCHANGE FOR GEOTECHNICAL AND GEOENVIRONMENTAL SPECIALISTS

Questions

DIGGS
DATA INTERCHANGE FOR GEOTECHNICAL AND GEOENVIRONMENTAL SPECIALISTS