Alabama - using LiDar Data for resurfacing - relative not controlled
- drones → fixed wing & rotors

Mo - Collecting data for achiving purposes historical documentation for structures major
Concept Station to overlay ditigal photos on the point cloud

OH - Concept Station for preliminary design
Context Capture → upload mobile pictures to the model (Bentley - easy to use)
State Patrol - capture accident data / scenes

OpenRoads - early stages of development

Drone licensing - moving target w/ regulations

Bridge Inspection - supplemental use for bridge inspections;

Models - useful for cultural resources showing impacts; also useful for younger engineers determine environmental footprints

Outputs to construction - Machine Contr standaridize?

BY _____ DATE _____ ANALYSIS _____ SHEET NO. _____ OF _____

CHKD BY _____ DATE _____ _____ UPN NO. _____

PROJECT _____

~~Delta Man~~ James Combs
Montana

Discussion - Data Management

- common need for National guidance & standards for data management
- common challenges to centralize data features w/in an & agency. ~~Agencies are~~
- common challenges to centralize data information and use common feature identification w/in an agency
- common ~~desire~~ desire for ~~one~~ one-time data entry. ~~The~~ There is common practice of management systems agencies having multiple databases. There are challenges w/ different ~~inform~~ data management systems communicating together.
- Maryland is using Enterprise GIS as a collective inventory of all assets for shared use. Metadata includes ownership of the data if there are follow-up questions.
- Engineers are not data managers. There is a need w/in agencies for data management professionals. Data management professionals should be trained to work w/ engineers. Decisions need to be made how to package data to make it useful.

Session 2 New technologies

- Ponds of potential collaboration, solutions
- Bridge inspections By drone survey VS BSE mapping archeology, 2 Drones — must license them
- Fillable I Pads in Field.
- Asset Mangemt no photography in house can also get LiDAR. for Pavement condition
- Offer Locals for their Survey
- Information regarding signs/etc. culverts
- Getting more Geospatial

NE- Wetland Predictive Models Based on LiDAR FHWA OK with, Doing Feasability Regarding how old the Data - Wetland pre determined Risk Factors - on Website

Eco system mitigation Program
Look @ Private Sector Bankers

NH DEIS - Look @ other ways to mitigate always consider Functions or Resource

Emerging Bulk mitigation - Impact Functions

NJ - GIS software for UTILITIES

Ontario - GIS Drone + TABLETS - inventory of trees + Vegetation survey
Android + Replaceable

NC - UNDERWATER Drones -

MD - TMDL Totally maximum Daily LOAD - Nitrogen Chesapeake Bay, Sudium or chlorider

FL - Sharing information Between Environmental + design
- Commitments + how to track + sign off on
- Co-application with Design-Builder

ND - Environmt office permitting

Main Topics:

→ drones for data collection, bridge inspection (aerial + underwater),

→ laser bridge paint removal for potential to reduce cost + time for bridge painting while reducing environmental impacts associated w/ lead paint removal

→ Getting buy-in from agencies like USACE to be willing to use innovative technology data for environmental features

Questions that emerged

→ can drone technology be used to capture wetlands / stream mapping + other env. features.

Issues

→ FAA regulations that can allow drones to fly over live traffic to gather existing R/W data that can be used to establish No-build alternative.

or

→ Fed Regulations requiring hands on bridge inspections therefore possibly limiting the ability to use data collected by drones to address short/long-term bridge needs

→ What is the position of resource agencies on using innovative technology data to inform decision making

SCOE/SCOD Joint Meeting: Discussion on Priority Issues Notes Sheet

Tuesday, July 18, 2017

Session 1 Discussions: 10:15 to 11 a.m. | Session 2 Discussions: 11 to 11:45 a.m.

Topic #1: Technology in Design and Environmental: New Uses for Technology and Design Tools

This topic includes issues related to new technologies (lidar, drones, etc.) and design tools to speed up alternative development (concept stations, etc.).

Please assign one or two members of your table to take general notes throughout the discussion, which could include the following items:

1. Main topics of conversation
2. Questions that emerged
3. Issues of concern, commendation, and mutual interest
4. Points of potential collaboration between SCOD and SCOE
5. Any tangible next steps

What's the goal of these discussions? Notes from all the tables in the room will be collated and presented during the Joint Closing Session on Thursday from 10:15 a.m. to Noon.

① Florida GIS Tools
- 2 - Events During ETDM — Planning / Programming
- Doesn't Replace Consultation

② Online Public Involvement
- Iowa DOT
- Directed to a Meeting Room / Skype

③ Alabama (Data Base)
- Online Data Base for Resources? (Nebraska has one)
- Archaelogical
- Florida has a system (SWEPT) for Document Respository (Coordination)
  - ↑ Statewide Project Tracker

④ Florida
- 1 Re-eval per Project (Atleast)
- Has Sharepoint Site for Prioritizing Permits w/ Corps of Eng.

⑤ Alabama (LiDar)
- Uses Mobile Lidar w/ Good Success
- [redacted]

⑥ File Sharing
- Providing Consultant Access to Data Sources

⑦ ~~Ala~~ Clash Detection

⑧ Environmental / Survey and Mapping Data Prior to ROW.

⑨ Storm Water
- Alabama does it in Design
- Nebraska has it in Env. & Design as a split

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GIS/
LACK OF DATA - PARTNERSHIPS W/ AGENCIES, MOTIVATED TO GET DATA CHEAPER THROUGH IT MAY TAKE LONGER & BOT ACCEPT IT B/C ITS THEIRS
OPPORTUNITIES W/ UNIVERSITIES. ESRI LISCENCES
→ESRI VS. OTHER COMPANIES - B/C WHERE DATA IS? FOR MOST DOES SEEMS SO.
NOT MEETING NEEDS B/C WHERE OTHERS USE ESRI
BENTLY - ALLOWED QUICK DESIGN, GETS TO LEVEL OF DETAIL THAT HELPS PUBLIC INVOLVEMENT. 3D DESIGN AND CAN EASILY CHANGE
PERSPECTIVE - REDUCES CONTROVERSY. RE-TAYLORING FOR ENVTAL
SOFTWARE - CONCEPTSTATIONS, BRINGS IN ALL DATA LAYERS

POST-CONSTRUCTION GIS? USE FOR AS BUILT BY ONE STATE, ANOTHER USES IT FOR UTILITIES - JUST STARTED.

FILE MANAGEMENT? FILE SOFTWARE, DATABASE
ALL STARTED PROJECT WISE
UNIQUE NAME B/C ENVTAL TOUCHES EVERYTHING
SECURITY ISSUES - CANT GO TO OUTSIDE SERVER
GIVING CONSULTANTS ACCESS -
↳ DIFFERENT INTERFACE
↳ PERMISSIONS
CLOUDS? - DOT HAS SECURITY CONCERNS
FEDERAL GOVT HAS CERTIFICATION PROGRAM "FEDRAMP"
THEN CAN PROVIDE CLOUD SERVICE, SOME STATES ADOPTING

3D DESIGN - IS THIS FOR EASE OF CONSTRUCTION? YES. REDUCES COST FOR CONTRACTOR. HURDLES? EDUCATION OF DESIGNERS
APPLICATION FOR STORM H2O - B/C TRY TO DESIGN BMPS W/O KNOWING TOPO.
HELPS DESIGNER VISUALIZE CONSTRUCTABILITY - TERRAIN AS CHANGE DURING CONSTRUCTION
REDUCES CHANGE ORDERS & NEED TO LOOK @ ENVTAL, WHICH SOME STATES STRUGGLE WITH

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- Traffic engineering - Mobile data - cell phone data for origin & destination
  - Street light software, years of data
  - Determine if road is regional or more local
  - Airsage software also
  - Also for bike & Ped counts
  - Blyncsy software - real time construction delays
    - correlate real data with models
    - performance based spec development
  - Evaluate on an interim basis to see impacts to travel patterns as project is constructed
  - with cameras for tolling, you can have different price structures so that impacts are less to groups such as EJ populations
- Design tools - Concept Station to do quick quantity calculations, visualizations, early reports to estimate project costs.
- Smart forms for CE, review data for CE when data is placed into form. Intelligent form so that it correctly develops the CE based on the information given.
- Bluebeam for electronic review, makes it easier to see comments in real time, begin looking at comments before everything is finalized, helpful for construction as-built drawings. Uses cloud for collaboration.

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1. SIMPLE BUT EFFECTIVE, RESOURCE LAYERS AVAILABLE BY MOBILE APP ON PHONE, SHOWS PA ENV. FEATURES, MAPS RPO'S CAN ACCESS. PUBLIC CAN ACCESS, TAKES INFO OFF OUR SYSTEMS AND DISPLAYS TO THE PUBLIC.
2. Develop a simplified version of the FHWA TNM to integrate with ArcGIS to develop simple screening technology

Traffic noise model