Enterprise LRS & Business System Integration

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Louisiana Department of Transportation and Development
Where LaDOTD Began

- Got PAPER???
- Pencils???
- Ruler???
- French curve???
- Pounce???
Where LaDOTD Began

Highlighted roads that flooded
Handwritten water levels
Where LaDOTD Began

Computer Aided Design (CAD) Microstation

Around 1990 the department used CAD for District and Parish maps

City maps were still hand drawn
Where LaDOTD Began - Life of a GIS

- 1999: The department began development of GIS data using GeoMedia around 1999
- 2002: Transitioned to ESRI's ArcGIS in 2002
- 2004–2016: Between 2004-2016, developed LRS IDs from Control Sections +
- 2014: Kicked-Off R&H Implementation Project
- 2017: R&H went into production
- 2018: and beyond – Integration with other business systems
Road attributes (1970 – 2015)

- **Mainframe System**
  - Outdated
  - Not easily edited or modified
  - Very time consuming for otherwise minor edits
  - Segmented by all assets
    - A new “segment” required if change to any one asset

- DB2 Table
- Linked to Mainframe
- Segmented by all assets
- Includes Domains
- Eliminates need for manual entry of calculated or duplicate fields
# Roads 2003

## Control Section Routes

## Table

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^a Shape type variations: PointIn, LineIn, PolyIn.
Legacy LRS (2004-2016)
LRS ID Routes
Legacy LRS (2004-2016)
Highway NEEDs
Legacy LRS (2004-2016)
Surface Type Log
Production Roads & Highways

- Two Route Networks
- New Statewide Route Based LRS
- Legacy LRSID Control Section Based Routes
Production Roads & Highways

- Two Route Networks
- New Statewide Route Based LRS
- Legacy LRSID Control Section Based Routes
  - State routes have a 12 digit ID
  - Local routes have a 18 digit ID
## Legacy LRS Event / Route Network

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Statewide Routes – LRSID_Event – LRSID_Routes

- State Route is the base
- LRSID Event is edited and maintained on the State Route
- Use geoprocessing tool to create a LRSID Route from the Event(s)
Challenges of two LRS Route Networks (LRMs)

- Process to edit and maintain both route networks
  - We edit the legacy LRS as an event on the StatewideRoutes network
  - We use a geoprocessing tool to create the LRSID route which will be run periodically
    - Until the tool is run, LRSIDs only exist as an event with Begin and End Logmiles as attributes
  - Data owners of external business systems are not familiar with StatewideRoutes
  - If LRS Routes are not up to date, some data will not locate since the LRSID records are missing in LRSID Routes
Benefits of how we maintain two LRS Route Networks (LRMs)

- Same centerline geometry
- Both LRMs are basically edited at the same time
- Can use TranslateLRM tool to switch data between LRMs rather easily
Beginning Integration with Business Systems

- **TrafficServer**
  - Business system of record for Traffic monitoring
    - Traffic count stations and traffic segments are stored in R&H and are edited through Event Editor (RCE) that is available through TrafficServer's web application
    - Traffic data is stored in TrafficServer
    - This is currently only in a test environment
Beginning Integration with Business Systems

• BrM – Bridge Management
  • Bridge locations are stored in R&H as events
  • BrM stores and manages attributes of a bridge
  • The connection between the two is the Recall number so that maps of bridge data can be created through joins and relates
Future Integration with Business Systems

- Integration patterns to other business systems are being developed
  - Probable integration:
    - Deighton dTIMS – Pavement Management System – requires an upgrade
    - AgileAssets – Asset Management of features such as guardrails, sound walls, traffic signal inventory, cable barriers…etc – requires an upgrade
    - Project Systems – SAP – requires opening a firewall connection to SAP
Publication of Services

- https://giswebnew.dotd.la.gov/arcgis/rest/services
Questions?

Contact Information

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