CTDOT Right-of-Way Map Mosaic Pilot Project

Implementation and Details
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Agenda

• Collaboration
• Image Records Management System (IRMS)
• Issues Addressed by ROW Map Mosaic Project
• ConnDOT ROW Plans
• Geodatabase Elements
  • Vector Data
  • Mosaic
• ArcGIS Online Web Application Demo
• Next Steps
Our Consultant, MetroCog, and several CONNDOT units contributed to making the IRMS/GIS and the Mosaic projects a success:
CTDOT ROW Technology Issues in the 1990’s:

**IMAGING ISSUES:**
- Bureau Records Center (BRC)

**GEOSPATIAL ISSUES:**
- Property Management (Excess Property)
  - Billboard Permits
  - Acquisitions (Project Management)
ConnDot’s Bureau Records Center (BRC):
Current and Future Solutions:

Image Records Management System (IRMS)
  • Document Scanning and Indexing
  • Project Management/GIS link

GIS Applications in Rights of Way
  • Excess Property Inventory
  • Billboard Inventory (OASIS)
  • Property map conversion from Microstation design files to GIS formatted files
Overview of the Image Records Management System:
Search IRMS Database for Parcel Files:
IRMS Details
IRMS Details
Linked Documents: Survey Property ("Transaction") Maps
Existing GIS Integration with the IRMS
Finding ROW Survey Plans
ROW Plan Search
Pulling it together:
Issues Addressed by Mosaic Pilot Project

• Lack of Accessibility To ROW Vector Line Work
  • ROW Maps Not Geo-Referenced
  • ROW Line Not Maintained
Lack of Accessibility To ROW Vector Line Work
ROW Maps Scanned But Not Geo-Referenced
ROW Line Not Maintained
ConnDOT ROW Data Sources

- Varying Quality
  - Coordinated vs Non-Coordinated
  - Sketched in “updates”
  - Vintage

- Scanned ROW Sheets

- “Transactions”: Acquisitions and Releases
Coordinated ROW Plans

- Interstates and Highways
- “Modern” Projects
- NAD 27 or NAD 83
- Relatively easy to utilize as source
Uncoordinated ROW Plans

- Other State Routes
  - Mostly 1920's/1930's
  - 2 or 3 sections per map
  - Prone to angular measurement errors
  - Somewhat challenging to utilize as source
CT DOT ROW Map Mosaic Geodatabase Elements

• Survey Control Points
• Rights-of-Way Lines
• Rights-of-Way Polygons
• Topology
• Georeferenced ROW Maps
• Mosaic of Non-Overlapping Georeferenced Maps
• PDF Link to Source Maps
Survey Control Points

- Attribution
  - Control #
  - Map #
  - X,Y Location
- Only on Coordinated Plans
- NAD 27 transformed to NAD 83
- Field GPS work on Uncoordinated Plans
- Hyperlink to source map
ROW Lines

- Control Lines
- ROW Boundary
- Match Lines
- Historic Lines
ROW Polygons

- Constructed from Lines
- Attribution
  - Parcel ID = project number
  - Ownership = DOT
  - Common Name = Road Name & Route
  - SourceMapID = ROW Sheet #
- Hyperlink to source map
Georeferenced ROW Maps

- To be added to Mosaic Dataset
- Overlaps with adjoining sheets
- Cumbersome to use as a group
Three Maps
Five Maps
ArcGIS Mosaic Dataset

• Native ESRI Geodatabase format
  - Collection of images presented as a single image
  - Image management / catalog
  - Image property functions
  - Image geometry
    - Individual Footprints
    - Collection Boundary

• Seamless Mosaic
  - Image displayed through footprint
  - Edit footprints to create seamless appearance
  - Publish as Tile Cache
• Demo
Next Steps:

• Central Surveys to go into production.
• ROW vector line work integration with Microstation.
Thank You!

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