Visualizing Project Documentation Plus Great Dashboard Usage

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Topics

1. Transportation Technology Strategic Plan
2. Overview of GIS Platforms
3. Overview of EDMS Document Mapping
4. System of Engagement
5. Operational Dashboards
FDOT Technology Strategic Plan

“Meet the challenges of a rapidly changing landscape in transportation, which enables FDOT to meet their goals and objectives, and delight the customer base with Information Technology (IT) service and delivery.”
FDOT Technology Strategic Plan

Drivers

- Alignment with IT and OT
- Investments in New Technology
- Interviews with Leadership, Staff & Districts
- 2014 TSP Review for Gaps
- Research in Future Technology
Florida Department of Transportation

FDOT Technology Strategic Plan

Pillars of TSP

Florida Department of Transportation Technology Strategic Goals

- Enable FDOT to meet their Goals and Objectives
- Prepare for the New Transportation Landscape
- Delight the Client and Improve Delivery

Core Platforms
- Implement Core Platforms to service Transportation
- Create Platforms in a flexible, extensible, enterprise architecture
- Drive Future Functionality into Core Platforms through its extensible architecture

Data Driven
- Collect and process Transportation Data through connected devices
- Harmonize data assets to drive data insights to enable Transportation
- Participate in the data exchange supporting the Transportation ecosystem

Mobile Enabled
- Drive productivity and improve efficiency through Mobile Enabled solutions
- Contribute to mobile solutions to improve the transportation experience
- Launch FDOT mobile apps to drive the connected experience to the consumer

Process Optimized
- Engineer processes to be nimble and agile to rapidly evolving environment
- Drive maximum utilization of all of FDOT's resources
- Continuously learning & improving to deliver results
FDOT Technology Strategic Plan

Core Platforms

- Financial Mgmt – Work Program Integration Initiative (WPII)
- Program Mgmt – Premavera Portfolio Mgt software
- Asset Mgmt – Roadway Characteristics Inventory (RCI)
- Geospatial Mapping – System of Engagement
- EDMS – Electronic Document Management System
FDOT Technology Strategic Plan

Core Platforms

- Financial Mgmt – Work Program Integration Initiative (WPII)
- Program Mgmt – Premavera Portfolio Mgmt software
- Asset Mgmt – Roadway Characteristics Inventory (RCI)
- Geospatial Mapping – System of Engagement
- EDMS – Electronic Document Management System
Overview of GIS Platform

On-Premise

Diagram showing server setups and connections for Florida Department of Transportation's GIS platform.
Overview of GIS Platform

Azure
Overview of EDMS Document Mapping

Project Description

➢ Find out how to leverage enormous, project related, documents database.

➢ Utilize or create geospatial document information.

➢ Provide mappable EDMS documents through map/feature services or web apps.

➢ Performance must be fast to be usable.
Overview of EDMS Document Mapping

What is EDMS?

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- Provides Search, Security, Version control.
Overview of EDMS Document Mapping

Document Categories have Inherent Geospatial Properties

- As Built Plans
- Construction Docs
- Inspection Videos
- Value Engineering
- Drainage Plans
- Soil Boring Surveys
- Right of Way Plans
- Permits
- Vehicle Crash Reports
Overview of EDMS Document Mapping

Work Program Table

- Work Program Table Containing Project Information.
- Contains Item/Segment, Roadway, Begin, End Data.
- EDMS FINPROJ Field Contains the Item/Segment.
- Dramatically Increases The Number of Mappable Documents.
Overview of EDMS Document Mapping

Mappable EDMS Documents

- Must have a FINPROJ.
- FINPROJ must be found in Table 15.
- Must survive data checks within Table 15.
- ~21 Million EDMS Documents
- ~9 Million are “Mappable”
Overview of EDMS Document Mapping

Challenges

• Document Geolocation Fields are not Dependable.

• Map Service with 9 Million Features, 25 Attributes.

• Processing was SLOW.

• Performance was poor.

• Update Cycle was Long and Cumbersome
Overview of EDMS Document Mapping

Solutions

• Pulled Geolocation information from Table 15.

• Map Services Created by Document Group.

• Spatial SQL Query is FAST

• Performance was fast.

• Update Cycle now handled through Scheduled Tasks
Overview of EDMS Document Mapping

Raw EDMS Data from DB2

Event Layer Process using Table 15
To add Geometry Field

Spatial SQL Query used to Create a Registered View
Overview of EDMS Document Mapping

- EDMS As Built Plans by Type DEV
  - All Plan Sets
  - Architectural Plans
  - ITS Plans
  - Landscaping Plans
  - Lighting Plans
  - Miscellaneous Plans
  - Perm. Traffic Monitor Site Plans
  - Roadway Plans
  - Shop Drawings
  - Signalization Plans
  - Signing and Pavement Plans
  - Structures Plans
  - Toll Facility Plans
  - Utility Plans

As Built Plans (~75,000 docs)
Overview of EDMS Document Mapping

What’s Next

• Value Engineering Documents (~2,200)
• Drainage Documents (~22,000).
• Right-of-Way Map Documents (~3,200).
• Soliciting Other Needs from Districts
System of Engagement

- Leverages ArcGIS Enterprise, AGOL, Desktop and Pro
- Reorganization of GIS Data to meet Data Governance requirements and leverage BI/DW Tools
- Offloading heavy maintenance of highly customized apps due to Enterprise Agreement Support
- Operational Dashboards are becoming a large part of our engagement
Operational Dashboards

Construction Crash Reporting

Count All Crashes | Major Crash | Fatal Crashes | Police Reported Crashes
---|---|---|---
23 | 9 | 3 | 11
Operational Dashboards

Damage Assessment
Operational Dashboards

Motor Carrier Size and Weight (MCSAW) Inventory
Operational Dashboards

Materials – Acceptance Data

- Average IRI: 50
- Min IRI: 18
- Max IRI: 360

- Total Miles: 11,111
- Total Lots: 114,115
Operational Dashboards

Materials– Falling Weight Deflectometer (FWD)
Operational Dashboards

District 5 – Work Program
Questions?

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