Florida Department of
TRANSPORTATION

Aligning Big Data Management with Business Priorities

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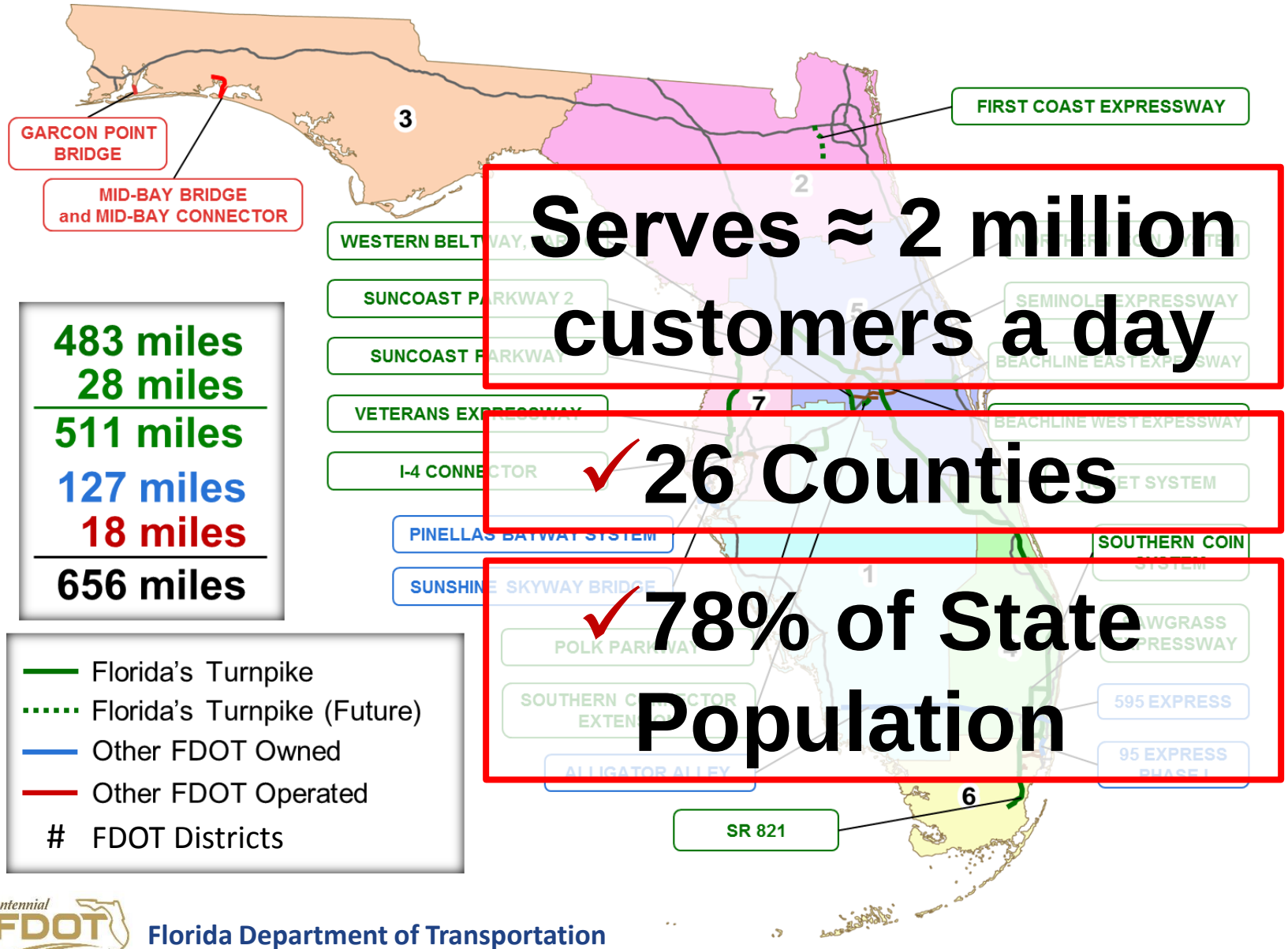
Florida's Turnpike Enterprise
Technology Project Manager

Turnpike System Map



Serves ≈ 2 million customers a day

✓ **26 Counties**

✓ **78% of State Population**

483 miles	
28 miles	
511 miles	
127 miles	
18 miles	
656 miles	

- Florida's Turnpike
- Florida's Turnpike (Future)
- Other FDOT Owned
- Other FDOT Operated
- # FDOT Districts

Study Rationale

Question: Why was this study undertaken?

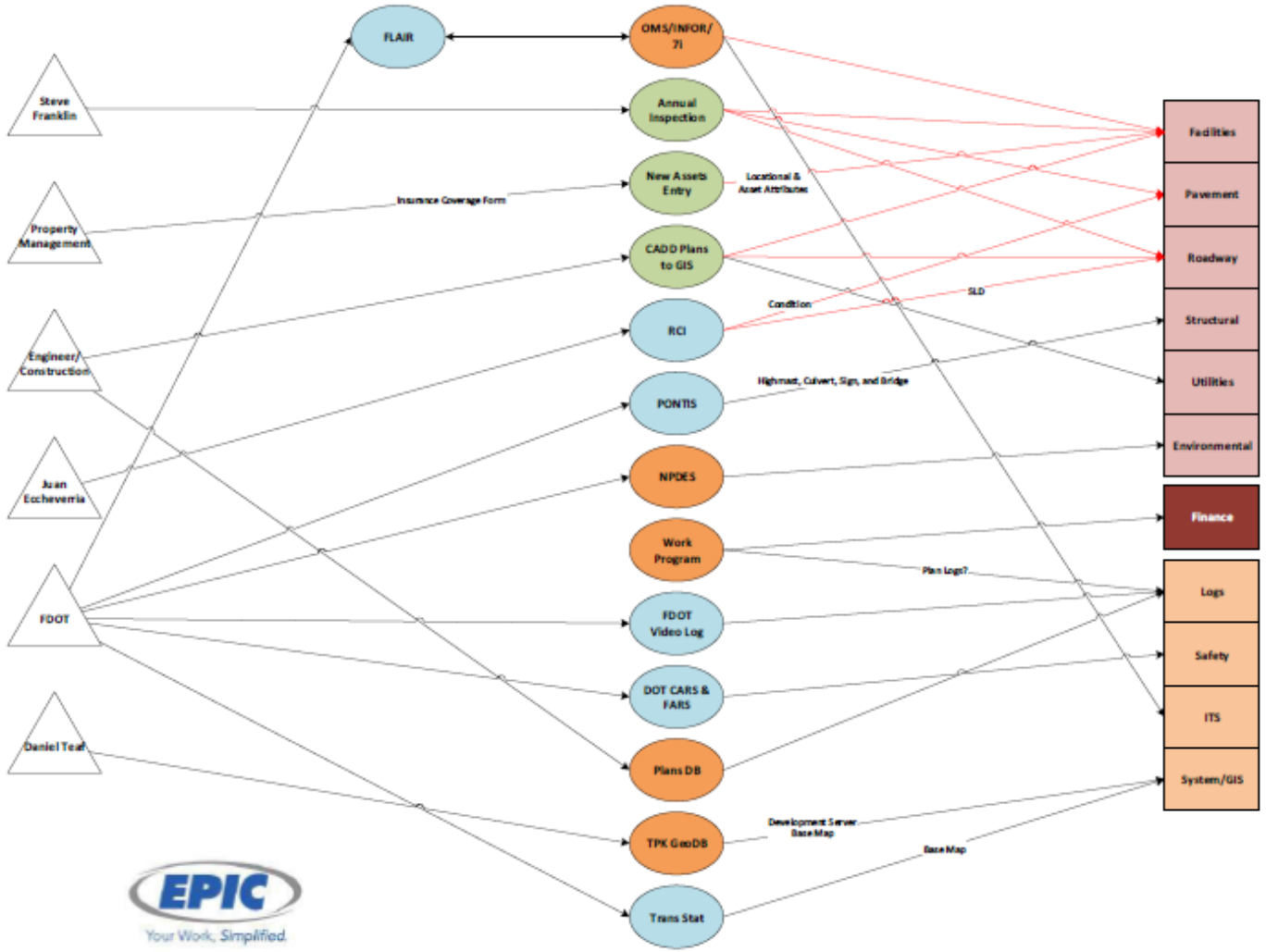
Answer: **Business Drivers & Recurring Themes**

Business Drivers

- **Compliance with Bond Requirements**
  - Investor Confidence
  - Excellent Rating
- **Program Level Funding Development**
  - Where, When and How much $$$
- **Improving Data and Asset Management**
  - GASB34 Std. Compliance

State of the Data

Data Owners | Data Sources | User Interface



Recurring Themes

- **Multiple Data Sources**
- **Confidence in the Data**
- **Issues with Data Access**
- **Undefined “Sources of Truth”**

Case Study Overview

Assessment & Optimization of FTE's Asset Data Collection and Management Processes

- Stage 1: Preliminary Assessment (3 months)
  - Inventory
  - High-level recommendations
- Stage 2: Detailed Assessment (6 months)
  - Document priority data systems
  - Business processes mapping
  - Solution recommendations

Case Study Overview

Project Leaders

- **FDOT/FTE Staff**

- **FTE General Engineering Consultants (GECs)**

ATKINS HNTB

- **FTE Consultant**

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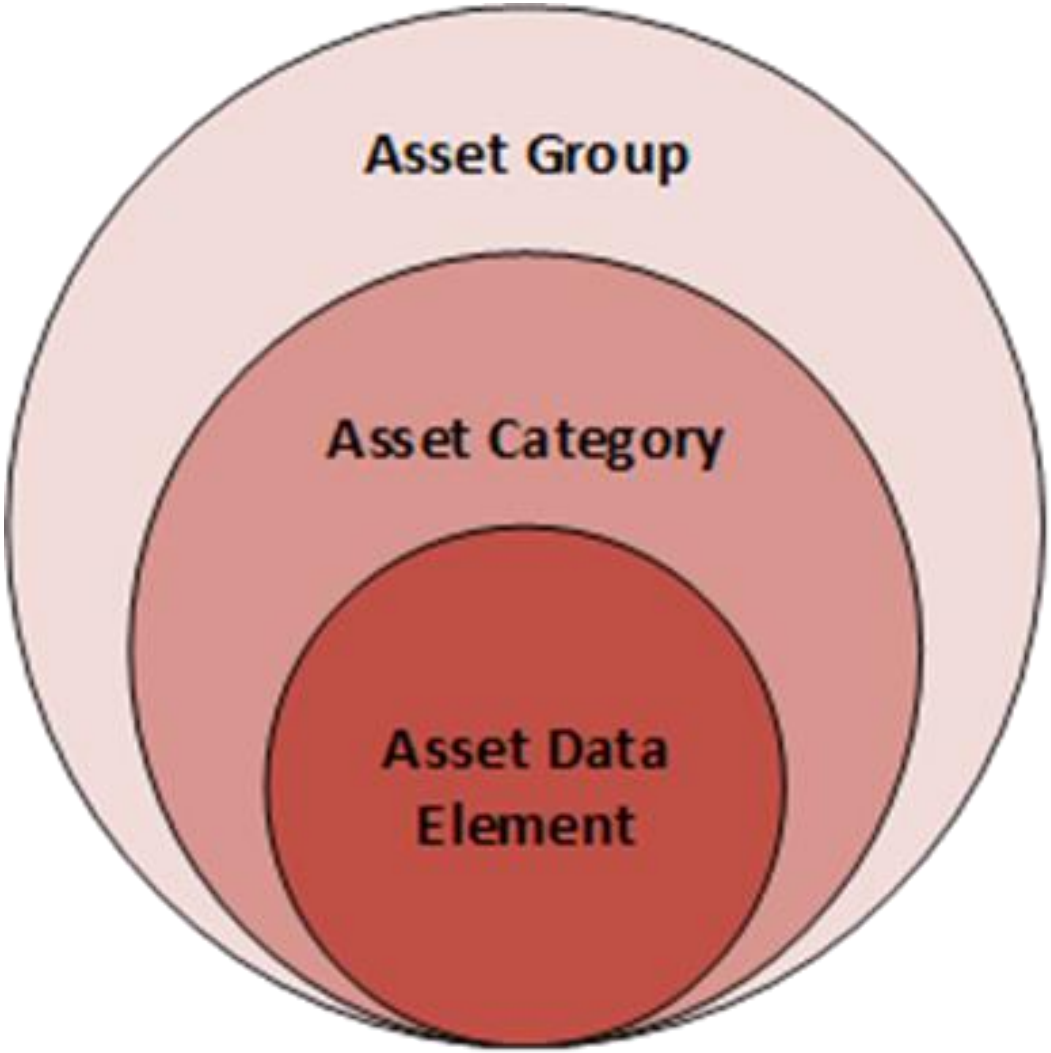
Key Project Program Areas/Units

- Finance
- Design
- Engineering
- Toll Systems
- Transportation Operations
- ITS (Intelligent Transportation System)
- Facilities/Roadway Maintenance

Project Methodology

- **Program Area /Unit Group Interviews**
  - Collecting information on current/as-is state:
    - Data sets used
    - Data systems used
    - Data management processes (creation, updates, etc.)
  - Collecting information for future/to-be state:
    - Data needs
    - Data systems needs (functionality)
    - Data management process improvements

Project Methodology



Facilities

Buildings

Generators, Elevators, Fuel Tanks, Fire Extinguishers

Findings & Responses

Challenges Encountered:

- What's in it for me?
- Skepticism of a "top-down mandate"
- We know what needs to be done and how to do it
- We have no challenges

Response to Challenges:

- Clearly communicate project goals
- Establish alignment between data/system needs and business needs
- Explain the benefits of reliable and accessible data
- Engage end-users to increases solution acceptance

Recommendations

Project Recommendations:

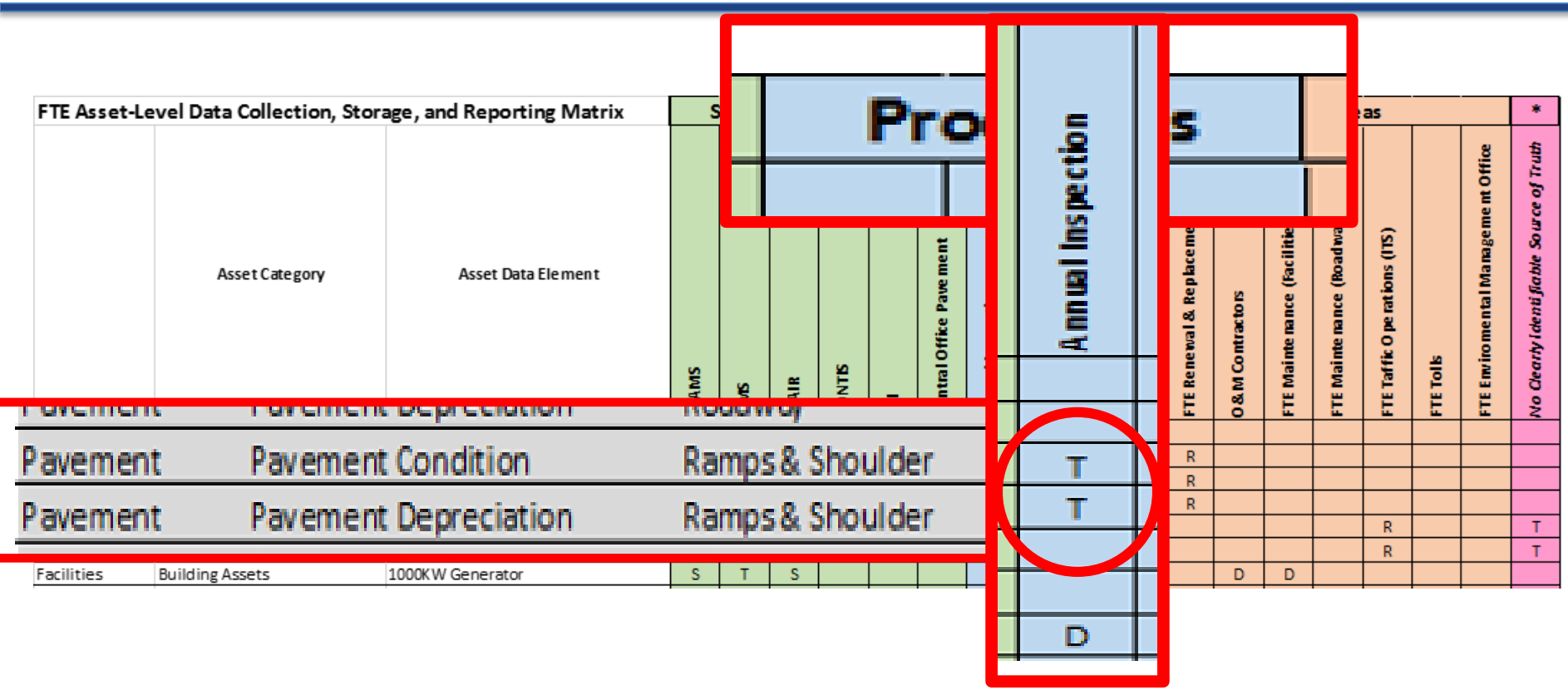
- Big Data needs to be GOOD Data
- Big Data needs to be ACCESSIBLE
- Big Data needs to align to BUSINESS NEEDS

Recommendations

Big Data needs to be GOOD Data

- Eliminate redundancy
  - creation
  - capture
  - storage
- **Solution:** Establish “Source of Truth” for key datasets

Documenting Sources of Truth



FTE Asset-Level Data Collection, Storage, and Reporting Matrix

Asset Category	Asset Data Element	Annual Inspection	FTE Renewal & Replacement	O&M Contractors	FTE Maintenance (Facilities)	FTE Maintenance (Roadway)	FTE Traffic Operations (ITS)	FTE Tolls	FTE Environmental Management Office	*
Pavement	Pavement Condition	T	R							
Pavement	Pavement Condition	T	R							
Pavement	Pavement Depreciation		R							
Pavement	Pavement Depreciation						R			T
Pavement	Pavement Depreciation						R			T
Facilities	Building Assets	D		D	D					

D = Asset data is collected by assigned workgroup or data collection activity

S = Data Storage location for the asset data element

T = *Source of Truth* for the asset data element

R = Reporting is performed by the assigned workgroup on the asset data element

Recommendations

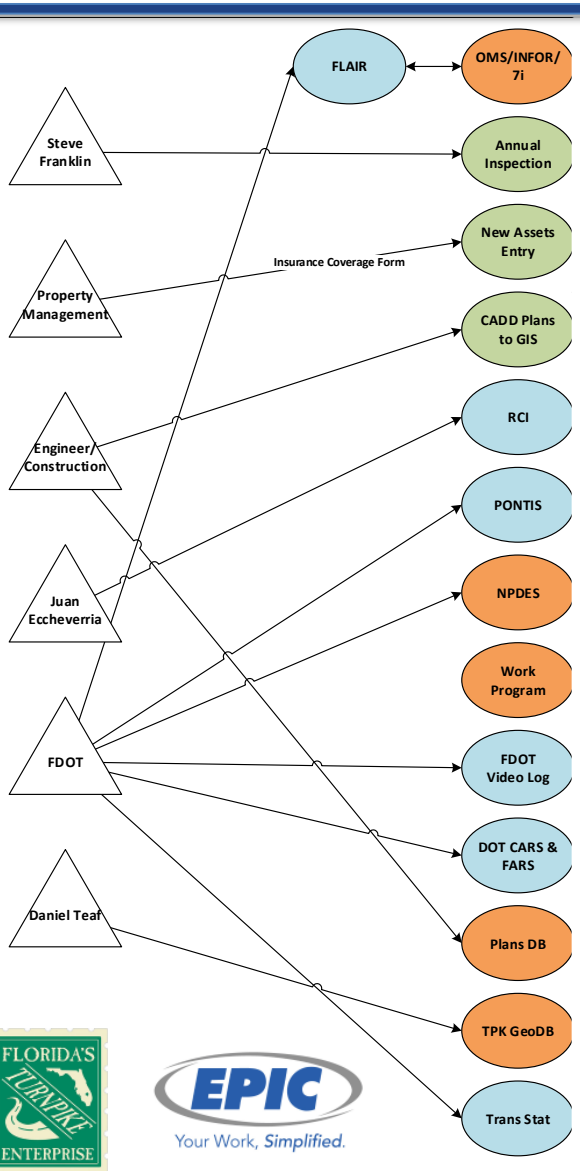
Big Data needs to be ACCESSIBLE

- Easy to Find
- Easy to Use
- Map-based Interface

Solution: Enterprise Data Repository (EDR)

- Everyone sees same data (as much as needed)
- Everyone accesses data from same system
- Leverages FDOT GEV (GIS) framework

Proposed EDR Concept



FLORIDA'S TURNPIKE ENTERPRISE

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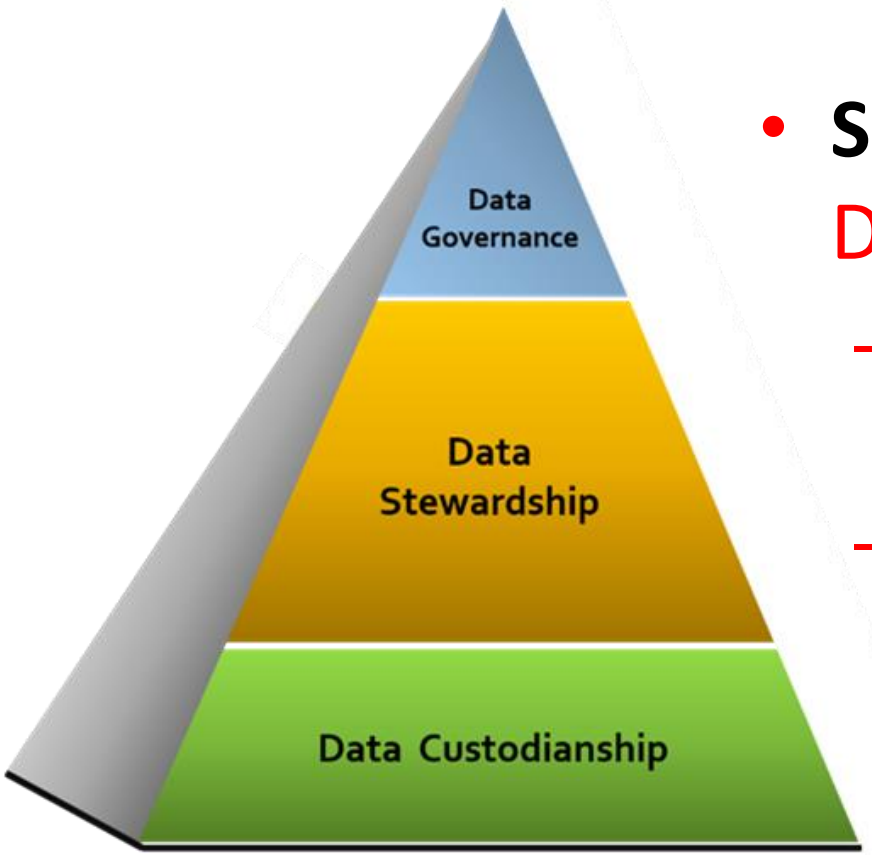
= ?!

Recommendations

Big Data needs to align to BUSINESS NEEDS

- Identify Priority Areas
  - Modular Approach
    - Crawl, Walk, Run
  - Business Priorities Drive Solution
- Support decision making
  - Spatially integrated data visualization
  - Better business decisions and improved program funding

Recommendations



- **Solution:** Establish Asset Data Governance Plan
  - Focused on Turnpike Asset Data
  - Aligned with FDOT's ROADS Initiative (Reliable, Organized and Accurate Data Sharing)

Collaboration

- Communication with FDOT's Business Systems Support Office (BSSO)
- Shares ROADS Objectives
- Leverage existing FDOT resources
  - GEV framework
- Open Data
  - FTE-specific data
  - District-specific data
  - Shared Data
- Shared solution

Closing Thoughts

- FTE believes in Big Data Analytics
- Big Data management requires strategic vision
- Support is required from executive level
- Big Data is not a one-time investment
- Big Data initiatives must be seen as *business priorities and not IT priorities*

Closing Thoughts

"Vision of the Future - Better Data, Smarter Decisions"
– Jim Boxold