

JOINT FLORIDA
Model Task Force & Transportation
Data and Analytics Workshop

FTO FDOT TDA
FORECASTING & TRAFFIC OFFICE TRANSPORTATION DATA & ANALYTICS

Transportation Data Inventory Section Update

Joel Worrell
Transportation Data and Analytics Office

1

1

Section Area Updates



- Roadway Characteristics Inventory (RCI) Program
- Highway Performance Monitoring System
- Quality Assurance Process Review
- Data Collection Technology Research
- Integrated Roadway Asset Identification System (IRAIS) Project

2

2

Roadway Characteristics Inventory (RCI) Program

- RCI Handbook Updates (November 2019)
- RCI Handbook Consolidation
 - RCI Planning Handbook, HPMS Handbook, RCI Features and Characteristics, GIS Handbook, Quality Assurance Handbook.
- Data Training Programs
 - RCI/HPMS – Room B - Wednesday, February 27th – 8:30 – 11:45
- Procedure Updates:
 - Clarified Central Office and District responsibilities
 - Incorporated Road Transfers and Designation Coordination
 - Clarified Quality Management Responsibilities of CO and Districts
 - Added Statewide Model Collection Requirements for Future AADT

3

2

HPMS Scorecard

Score

2015 41
out of 50

Timeliness: 10 out of 10 | Completeness: 16.7 out of 20 | Quality: 14.3 out of 20

The Score is the sum of points received from timeliness, completeness, and quality.

2016 41.1
out of 50

Timeliness: 10 out of 10 | Completeness: 16.6 out of 20 | Quality: 14.5 out of 20

The Score is the sum of points received from timeliness, completeness, and quality.

2017 43.9
out of 50

Timeliness: 10 out of 10 | Completeness: 16.4 out of 20 | Quality: 17.5 out of 20

The Score is the sum of points received from timeliness, completeness, and quality.

2018 44.9
out of 50

Timeliness: 10 out of 10 | Completeness: 16.6 out of 20 | Quality: 18.3 out of 20

The Score is the sum of points received from timeliness, completeness, and quality.

Data Summary

| | 2015 | 2014 |
|--------------------------|-----------|-----------|
| Number of Data Items | 79.00 | 79.00 |
| Number of Routes | 7,088.00 | 7,121.00 |
| Number of Sections | 14,186.00 | 13,939.00 |
| Total Center Line Miles* | 26,756.00 | 26,699.98 |
| Total Lane Miles* | 60,265.73 | 60,016.39 |

*Does not include non-HPMS roads.

Data Summary

| | 2016 | 2015 |
|--------------------------|-----------|-----------|
| Number of Data Items | 79.00 | 79.00 |
| Number of Routes | 7,060.00 | 7,088.00 |
| Pct. Unmatched Routes | 0.16 | 0.55 |
| Number of Sections | 14,147.00 | 14,186.00 |
| Pct. Unmatched Sections | 0.48 | 0.55 |
| Total Center Line Miles* | 26,788.72 | 26,756.00 |
| Total Lane Miles* | 60,042.65 | 60,265.73 |

*Does not include non-HPMS roads.

Data Summary



| | 2017 | 2016 |
|-------------------------|-----------|-----------|
| Number of Data Items | 71.00 | 71.00 |
| Number of Routes | 7,193.00 | 7,215.00 |
| Pct. Unmatched Routes | 7.57 | 7.96 |
| Total Centerline Miles* | 27,587.90 | 27,591.00 |
| Total Lane Miles* | 83,635.50 | 83,339.00 |

*Does not include non-HPMS roads.

Data Summary

| | 2018 | 2017 |
|-------------------------|-----------|-----------|
| Number of Data Items | 71.00 | 71.00 |
| Number of Routes | 7,194.00 | 7,193.00 |
| Pct. Unmatched Routes | 0.08 | 0.07 |
| Total Centerline Miles* | 27,591.30 | 27,587.90 |
| Total Lane Miles* | 83,913.50 | 83,635.50 |



*Does not include non-HPMS roads.

4

HPMS Scorecard

- Timeliness (10 points)
 - Submitted on or before April 15th (PM2 Interstate) and June 15th
- Completeness (20 points)
 - Section data populated per the HPMS Field Manual
- Quality (20 points)
 - Data Outliers
 - Adjacent Sections
 - Year to Year
 - Data distributions

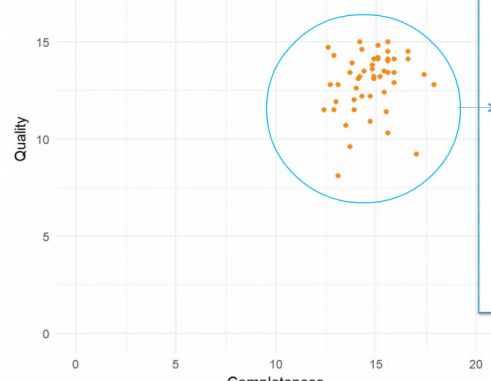



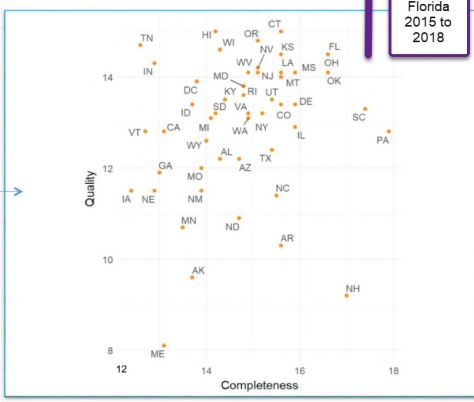
5



HPMS Scorecard

DVC_Scorecard_Presentation_DRAFT4.pptx

If we leave out Timeliness, we see two things:
 1. Nobody is perfect.
 2. There is slightly more spread in data quality than in data completeness.





6



Quality Assurance Process Review

Quality Assurance Reviews

- New Measures of Effectiveness Development

District Quality Evaluations

- Reviewing Objectives 4
 - Video Log Utilization
 - District Scoring Model



Data Collection Technology Research

- Remote Sensing and Mapping Request for Information (RFI) Issued
 - 20 Vendor Responses
- District 2 Lake City LiDAR/Video Pilot
- Field Data Collection Solutions
 - Straight Line Diagram Update Business Case



Lake City Pilot Area

A satellite map from Google Earth showing the Lake City area in Florida. A yellow rectangular box highlights a specific route through the city. A yellow arrow points from this box to a smaller inset map in the bottom right corner, which shows the entire Lake City region. The main map includes labels for various locations like Wellborn, Mulustee, and Ocala. At the bottom of the slide, there is a navigation bar with icons for a road, a truck, a map, a car, and a turn sign, along with the FDOT logo.

Data Collection Technology Research

- 17 Miles Collected of LiDAR and Video
 - Riegl VMQ-1HA (LiDAR)
 - Ladybug 5 (Video)
- Data Acquisition Considerations
 - Spatial Accuracy
 - Point Cloud Deviation
 - Random Noise Determination
 - Point Density
 - GPS Coverage
 - Collection/Extraction Quality
 - Storage Requirements

A point cloud visualization of a road, showing a dense collection of light blue points forming the road's shape against a black background. The points are arranged to show the three-dimensional structure of the road surface and its edges. At the bottom of the slide, there is a navigation bar with icons for a road, a truck, a map, a car, and a turn sign, along with the FDOT logo.

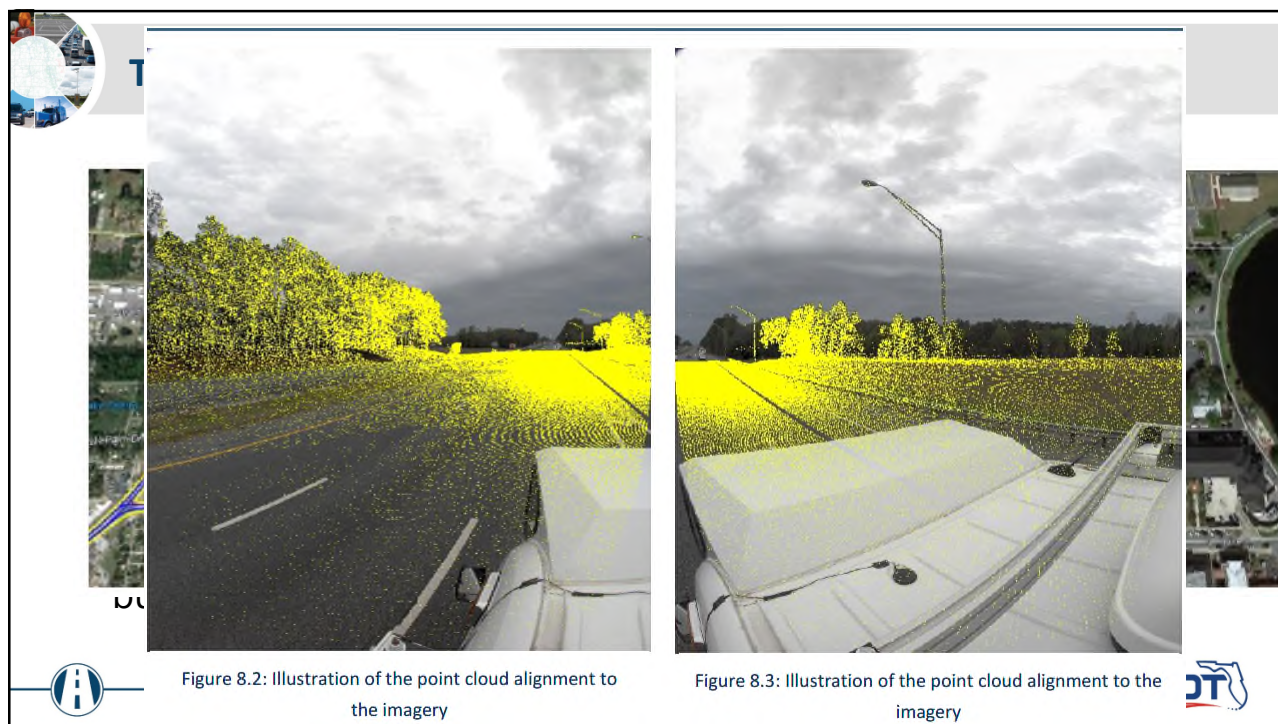
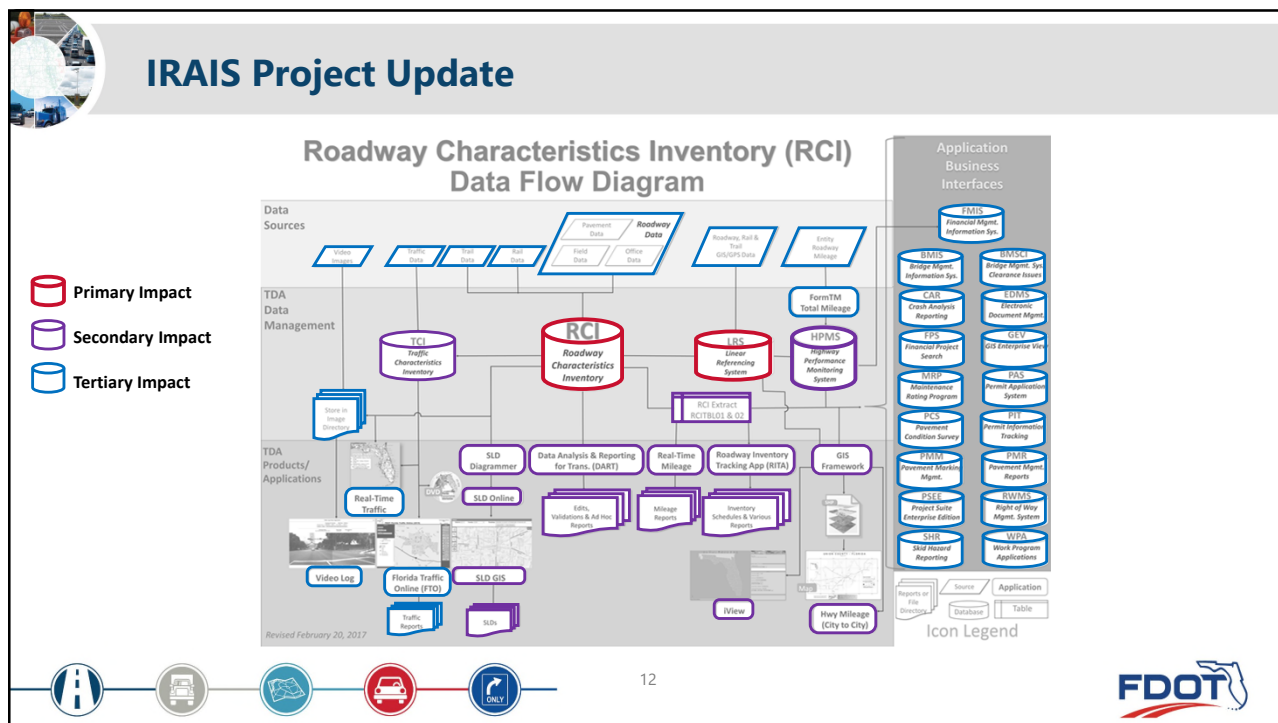




Figure 8.2: Illustration of the point cloud alignment to the imagery


Figure 8.3: Illustration of the point cloud alignment to the imagery




Survey Results – The Numbers

 **180** Survey Recipients
120 Survey Responses



 **4** Out Of **5** Respondents were FDOT employees

 *About 9 out of 10 respondents recognize that IRAIS business process changes may be beneficial*

75% Of respondents acknowledge that a change in how the route milepoints are calculated may significantly impact their work

 *90% of respondents realize persisting a historical log of LRS & RCI edits would benefit business processes*


3/5 Respondents would like to be regularly or heavily engaged with IRAIS


13


13



7

IRAIS Project Update



| | | | | | | |
|----------|-----------------------|-----------------------|----------------------|-------------------|----------------------|---------------------------|
| Task | Task 1 | Task 2 | Task 3 | Task 4 | Task 5 | Task 6 |
| Phase | Initiation & Kick-Off | Discovery & Prototype | Modeling & Condition | Gaps & System Dev | Testing & Refinement | Final Migration & Go-Live |
| Duration | Month 1 | Months 2 – 4 | Months 5 – 7 | Months TBD | Months TBD | Months TBD |
| Release | - | Release 1 | Release 2 | Releases 3 & 4 | Release 5 | Release 6 |

In the process of determining remaining schedule


14


14



IRAIIS Project Update

- Project Benefits and Business Risks
- Project Activities
- Data Model Findings
 - RCI/LRS business rule impacts
 - Roadway ID
 - Road Geometry Changes
 - Nomenclature Changes
 - FDOT Data Model Changes
 - Data System Maintenance and Utilization
- Downstream Data User Impacts



Thank You!

Joel Worrell
Transportation Data Inventory
Section Manager
Joel.Worrell@dot.state.fl.us