



TRANSPORTATION DATA QUALITY MANAGEMENT

Quality Assurance Review Handbook

Purpose

The Transportation Data Quality Management Team will perform a Quality Assurance Review with the District office and field processes performed by the District. The QAR will examine the responsibilities related to the policies and procedures outlined in the next section to ensure the FDOT is maintaining the highest level of data quality for state and Federal reporting.

Controlling Documents

FDOT's overall mission is to ensure efficient, safe, and interconnected methods of mobility for those who choose to live, work, and visit Florida.

In recognition of that goal, Florida Legislature mandated Section 334.048(3), Florida Statutes, which states the Department's Central Office will monitor the seven District Offices, Turnpike Enterprise, and Central Office units. The monitoring will include assessing their performance and determining their compliance with all applicable laws, rules, policies, procedures, guidelines, and standards. Additionally, Section 20.23(3)(a), Florida Statutes, outlines FDOT's responsibility to establish a plan that clearly specifies which areas will be monitored, activities and criteria used to measure compliance, and a feedback process that assures that monitored findings are reported and inconsistencies are corrected.

- General Interest Roadway Data, Topic No. 525-020-310
- Road Jurisdiction and Numbering Procedure, Topic No. 525-020-010
- Urban Boundary and Functional Classification of Roadways, Topic No. 525-020-311
- Traffic Monitoring, Topic No. 525-030-150
- Quality Assurance Reporting, Topic No. 260-030-005
- Data Governance, Topic No. 001-325-064
- FHWA-FDOT Stewardship and Oversight Agreement, Procedure No. 700-000-005

Supporting Documents

The current handbook will be the main references used by the Central Office and District staff to guide data collection methods, processes, and requirements. RCI or HPMS Data collected to the requirements listed in legacy RCI handbooks will be reviewed for scoring and compliance. The TDQM will ensure fair practice for this situation during QARs. Data is collected and reviewed according to the data collection guidelines outlined in the following documents:

HPMS Field Manual

The HPMS field manual provides the guidelines for collecting data and reporting requirements used in HPMS reporting. FHWA is required to review HPMS data in four components: program reviews of high priority subject areas, field inventory reviews, annual required reviews, and annual reporting.

<https://www.fhwa.dot.gov/ohim/01guide.htm>

RCI Handbook

This resource covers the following:

- Describes how RCI supports the business data requirements and users of the system
- Documents the processes for establishing and managing the location of roadway assets and multimodal travel ways

- Describes how to collect data and the related features and characteristics of those roadway assets and multimodal travel ways.
- Establishes data governance for RCI features and characteristics data collection; and
- Provides the data quality management processes that maintain the integrity of the data management system.

Urban Boundary and Functional Classification Handbook

This handbook provides guidance for decennial urban boundary and annual functional classification designations. Including, the criteria and methods for classifying roadways.

Transportation Systems Designations and Road Jurisdiction Transfer Handbook

The handbook provides information on how to meet the procedural requirements for designations and road jurisdiction transfers.

Process

The Quality Assurance Review (QAR) process is a joint effort led by the Transportation Data and Analytics Office (TDA Office) from Central Office in Tallahassee, Florida in partnership with the District and Federal partners (FHWA). The District QAR involves a scheduled effort initiated by the TDA Office in coordination with management and staff responsible for managing and performing data and information process outlined in the [controlling documents](#) section. The District QAR is typically performed over five days which may include overnight travel to counties/roadways in the district to verify data and information of Florida roadways owned and/or reported on by FDOT. The success of the review is dependent on the collaboration with staff in the Central, District, and Turnpike Offices with Federal partners to validate data and information representing current field conditions, reviewing data processes and tools, discovering opportunities of improvements, coordinating requirements, and identifying training opportunities. The value of the process is to ensure the FDOT accounting systems and databases are calibrated, quality assured, and maintain the level of official information required to be provided to the Florida Transportation Commission, the Florida Legislature, the Federal Highway Administration, and the public.

QARs support a continuous improvement model to ensure the Department data programs are providing valid and consistent information for analysis, statistics, and reporting purposes. This process supports the data governance principles and initiatives to ensure data is an asset. A report for each QAR will be developed in coordination with the District to document if the appropriate measures of effectiveness of the process review items are compliant or non-compliant and to identify what corrective actions are needed.

The following program's critical processes that will be part of the QAR include:

- Roadway Characteristics Inventory Data Collection
- Highway Performance Management System Data Collection
- Transportation System Designation Coordination and Data Entry
- Traffic Monitoring
- MyFloridaLRS Package Process

Participants

The participants listed here are expected to be present the week of the QAR to review processes and perform field visits effectively and safely. As part of the FHWA Division responsibilities per the FHWA/FDOT Stewardship agreement, FHWA staff may be present to monitor FDOT's quality assurance processes for Division reports.

- Transportation Data and Analytics Quality Management Team (TDQMT)
- District Statistics Administrator (DSA) or Responsible District Management
- District RCI Coordinator
- District Data Collection Staff
- District Traffic Coordinator
- FHWA Division HPMS Liaisons
- Additional District Staff involved in RCI, SLD, HPMS, RCI/LRS Packages

Schedule

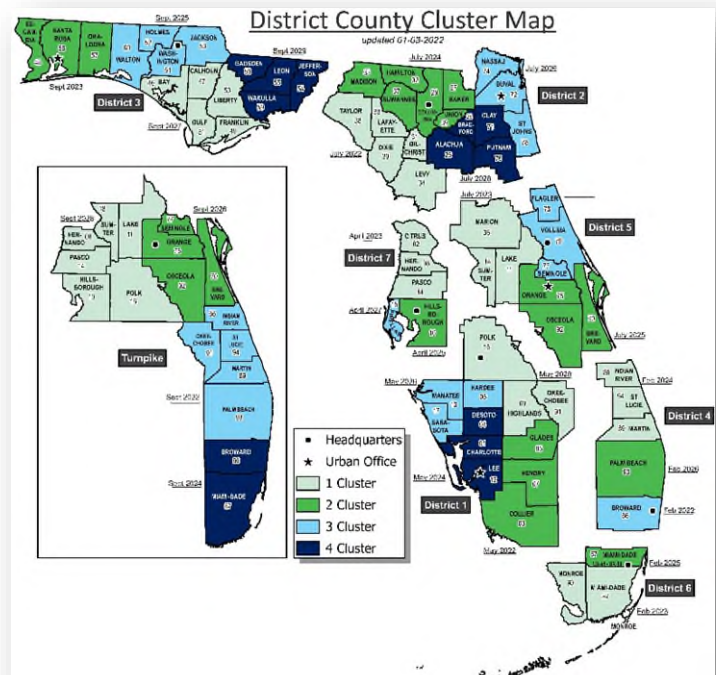
District QAR cycles are performed in a biennial cycle with four QARs to be held each year.

Year A: Districts 1, 2, 4, & Turnpike Enterprise

Year B: Districts 3, 5, 6, & 7

QARs are scheduled in advance for the calendar year in coordination with District schedules between the months of January – September. All QARs are scheduled between the TDA and the District office primarily responsible for managing and collecting data related to RCI planning data responsibilities. Due to the size of the Districts, TDA has divided each district into manageable clusters used to restrict QARs to compact and efficient geographical areas. The clusters are rotated with each biennial QAR to ensure even sampling of roadways across the districts. The map below shows the current District County Cluster Map with forecasted dates of review. In the event a field QAR cannot be conducted due to natural disaster or other extenuating circumstances an office QAR will be performed.

*Please note that Turnpike counties Clay and Duval are missing from the map



QAR Activities

The activities listed in the table below is an outline of the general schedule for a QAR, this schedule does not include travel for CO or District Staff and may need to be accounted for when determining the final schedule. The TDA quality management team plan for the costs of travel and will acquire the appropriate approvals before executing the review.

Timeline	Activity	Responsible
60 working days before QAR	TDA holds coordination meeting with District. TDA selects roadways for review.	TDA & District
30 working days before QAR	District Receives 15 of each On/Off -System Randomly Selected Roadways to choose QAR sections/samples	TDA
14 working days before QAR Day 1	TDA develops QAR agenda provides to the District. District Provides TDA with 10 + 2 of each On/Off-system selected roadways for review and Route Plan.	District
Day 1 QAR	Audit	TDA & District
Day 2 QAR	Field Review	TDA & District
Day 3 QAR	Field Review	TDA & District
Day 4/5 QAR*	Field Review Closing Meeting	TDA & District
5 working days from last Field Review	Post Meeting of Findings & Send Draft Report	TDA & District
10 working days from Post Meeting	District response to Draft Report and Improvement Plan due.	TDA
10 working days from Draft Report	Provide FINAL QAR Report to District	TDA
60 calendar days from FINAL QAR Report	Deadline for District to correct QAR inconsistencies.	District

* Field Review day may not be required depending on field review.

Field QAR Planning

There are several activities that are preformed to prepare for the QAR:

- **60 working days before scheduled QAR**
 - TDA holds coordination meeting with District.
 - Meeting topics include:
 - Confirm the QAR dates and cluster for review
 - Travel Arrangements for Central Office
 - If travel is required for the District, hotel and travel arrangements will be coordinated.
 - Meeting Space (If cluster is far from District main office a space at an operations office will need to be reserved)
 - Main Vehicle & Attenuator Vehicle
 - FHWA Staff and Travel arrangements
 - TDA randomly select roadways for District review.

The Transportation Data Quality Management Team creates a list of 15 RCI and 15 HPMS samples within the district review cluster for Districts selection.

- Prepare roadway spreadsheet with chosen roadways.
 - Email roadways to TDA staff to begin office review.
 - Pull current Straight-Line Diagrams of roadways for office review.
- **30 working days before QAR**
 - District receives 15 of each On/Off -System Randomly Selected Roadways to choose QAR sections/samples
 - The Statewide Quality Assurance Coordinator will email the District Data Collection Manager an excel spreadsheet of the selected RCI/HPMS to choose QAR roadways.
 - **14 working days before QAR**
 - District receives Agenda
The Statewide Quality Assurance Coordinator will email the District and FHWA staff the detailed QAR Agenda.
 - A contact from the District will email the Statewide Quality Assurance Coordinator the finalized list of roadways chosen for the District QAR including 10 RCI Segments and 2 RCI Alternates and 10 HPMS Samples and 2 HPMS alternates.
 - The District will also provide an expected QAR route plan and a list of any roadway closures or local road construction that may affect any roadways from the sample set.

Executing the QAR

The QAR is conducted with the TDQM team and the District staff and is approximately a four to five day process. FHWA staff may be in attendance throughout the process which will be determined in the QAR Planning process. It is expected for District staff to be present throughout the week to support the review and coordinate with other District staff. Travel days for TDA and District staff are not included in this schedule.

Day 1 QAR

The TDQMT will perform an office process review with the District, meet with responsible staff designated to support the processes listed in the controlling documents, review the District Quality Control Plan, and plan and schedule activities during the field review. The TDQMT will review the following information with the District.

- Can the District provide information how the RCI program is managed and supported?
- (This broad question is intended for CO to understand the level of organization of the program to the District, including roles and responsibilities, division organization, reporting structure)
- Does the District value the program data for District transportation planning, operations, or financial means?
- Can the District provide information on staff, contracts, and resources District has to support with RCI, HPMS, and Traffic data collection?
 - (If the Districts utilize contracts, the TDQMT will review the District contract materials)

- Does the District maintain a work plan to schedule and plan for RCI, HPMS, Traffic inventory, and RCI/LRS reconciliation?
- Can the District provide information on what data collection methods are utilized to collect physical RCI data?
- Does the District perform any quality control practices verifying data is appropriately collected and entered into RCI and the LRS?
- Does the District maintain process to review and coordinate with local stakeholders on Functional Classification changes?
- Does the District maintain a process to coordinate with FDOT stakeholders when RCI roadway section changes occur? (Work Program, Programming requests, Realignments, inactivation, deletion, road jurisdiction transfers)
- Does the District require any needs to support data collection efforts?
- Can the District provide any suggestions to improve the RCI, HPMS, Traffic, or RCI/LRS reconciliation requirements?
- Can the TDQMT observe any District best practices or innovative practices?

Day 2-5 QAR

The TDQM team and District staff will perform the RCI and HPMS field Review. The field review process allows the TDQM team to review the accuracy of RCI compared to what is found in the field. Additionally, this gives the team to learn more about coding concerns and best practices that the District may identify and discuss. To maintain a safe QAR and to avoid congestion in the field, an appropriate amount will be determined between the TDQM and the District staff.

The District assisting the TDQM team will provide the following:

- A vehicle with approved safety equipment (i.e. strobes, lights) that is able to accommodate a minimum of 4 passengers.
- Attenuator vehicle with driver for use on heavy traffic roadways
- An approved distance measuring instrument (DMI)
- A licensed driver
- A person knowledgeable of the route plan and beginning and ending points of all sections and samples.
- Calibrated measuring instruments

The field review will be conducted using the AMES video data collection tool. Section/samples will be driven and recorded in inventory and non-inventory direction. The TDQM team will review SLD and feature data along the roadway and will identify an area for field measurements. The TDQM team will identify a point for measurement for every roadway.

Draft Report: 5 working days from last Field Review

The TDQM team will hold a meeting to present the findings, inconsistencies, and best practices from the field review and video data. Following this meeting TDA Management will provide the draft report of the findings to the District Statistics Administrator, RCI data coordinator, and any appropriate District Management

District Response: 10 working days from Draft Report

After receiving the report, the district will have 10 working days to review the findings and provide a response of agree/disagree with supporting explanation.

Final QAR Report: 10 working days from District Response

The TDQM team will review the district response and prepare the final report for Distribution to Central Office and District leadership. The TDA Cost-Center Manager will provide the Final QAR Report to the District Secretary and other District Management. The District is required to correct/follow-up on the inconsistencies from this report within 60 calendar days and notify TDQMT of completion.

QAR Corrections: 60 calendar days from FINAL QAR Report

The District will correct any inconsistencies stated in the Final QAR Report within 60 calendar days from the day of Final QAR Report.

QAR Scoring

The following matrices detail the activities and criteria used to measure compliance for the District during the QAR. Each measure will be reviewed, and a report detailing the areas of compliance and non-compliance will be sent out as stated in the section above.

There are two types of scores present in the QAR Measures Matrix below:

- Percentage: The district must meet or exceed the minimum percentage to achieve compliance for these measures. If the district earns a percentage that is less than the score required for compliance the district will be Non-Compliant for that measure.
- Y/N: The district can receive a rating of: Compliant (Y) or Non-compliant (N). If the district earns a score of Non-compliant (N)

RCI Planning Data Measures				
Measure	Details	Compliance	Responsible for Review	Office/Field
Roadways selected for QAR review have physical features and characteristics which are at least 90% accurate	Verify Review selected sections in field for physical feature and characteristic accuracy. Features include: Through Lanes, Intersections, Auxiliary Lanes, Medians, Shoulders (Inside/Outside), Sidewalks, and Bike Lanes.	> 90% Compliance	TDQM will review in Field Review	Field
Roadways selected for QAR review have met all Inventory timeliness requirements (15/90/120-day)	Verify Inventory date information of the selected sections through RCI/RITA for compliance with the 5-year update requirements.	Y/N	TDQM review	Office
District Quality Control Practices	Verify District maintains a quality control plan which documents the organization and management of District RCI staff, RCI inventory work plans and data collection methods, RCI data quality control methods, utilized tools and resources, and activities performed to coordinate District and Central Office stakeholders of RCI data changes. The documentation of the organization and activities are performed according to the District quality control plan.	Y/N	TDQM will review in District Audit	Office

HPMS Program Measures				
Measure	Details	Compliance	Responsible	Office/Field
HPMS samples selected for QAR review have an extent accuracy of 100% per field review	Verify beginning and ending extents of HPMS samples selected for the QAR roadways are accurate.	100% compliance	TDQM review	Field
HPMS Samples selected for QAR review have administrative features and characteristics which are 100% accurate	Verify HPMS Samples have a 100% accuracy rate of expected administrative features and characteristics. Including:	100% compliance	TDQM review	Office
HPMS Samples selected for QAR review have physical feature and characteristics which are at least 90% accurate	Verify HPMS Samples have a 90% accuracy rate of expected physical features and characteristics. Including: Intersections, Medians, Shoulders, Speed Limits, Aux Lanes, Widening Obstacles, Through lanes	>90% Compliance	TDQM review	Field
HPMS Samples selected for QAR review have met all Inventory timeliness requirements.	Verify Inventory date information of the selected HPMS Samples through RCI/RITA for compliance with the 3-year update requirements	100% compliance	TDQM review	Office
HPMS Sample Inventory Process	Verify District processes are compatible with procedures and handbooks.	Y/N	TDQM review	Office
District Quality Control Practices	Verify District maintains a quality control plan which documents the organization and management of District HPMS staff, HPMS Sample work plans and data collection methods, HPMS data quality control methods, utilized tools and resources, and activities performed to coordinate District and Central Office stakeholders of HPMS data changes. The documentation of the organization and activities are performed according to the District quality control plan.	Y/N	TDQM will review in District Audit	Office

Transportation System Designation and Road Jurisdiction Transfer Measures				
Measure	Details	Compliance	Responsible	Office/Field
Roadways selected for QAR review have administrative features and characteristics which are at least 100% accurate	Verify Review selected sections in field for administrative feature and characteristic accuracy. Features include: State Road System, Federal System, AASHTO, Local System, Functional Classification, Facility Classification, Urban Classification, Roadway Realignment, Section Status Exception, Stationing Exceptions.	100% Compliance	TDQM will review in Office Review	Office
Functional Classification Process	Verify the District process to coordinate and review transfers are compatible with procedures and handbooks.	Y/N	TDQM will review in District Audit	Office
Road Jurisdiction Transfers Process	Verify the District process to coordinate and review transfers are compatible with procedures and handbooks.	Y/N	TDQM will review in District Audit	Office
District Quality Control Practices	Verify District maintains a quality control plan which documents the organization and coordination activities performed of District staff responsible for coordinating Transportation System Designations and Road Jurisdiction Transfers. The documentation of the organization and activities are performed according to the district quality control plan.	Y/N	TDQM will review in District Audit	Office

Traffic Data Collection Measures				
Measure	Details	Compliance	Responsible	Office/Field
Segments/Samples selected for QAR review have physical feature and characteristics which are at least 90% accurate	Verify HPMS Samples have a 90% accuracy rate of expected physical features and characteristics. Including: Traffic Station Number, Traffic Station Type,	>90% Compliance	TDQM review	Field
Segments/Samples selected for QAR review have administrative feature and characteristics which are at least 90% accurate	Verify HPMS Samples have a 90% accuracy rate of expected administrative features and characteristics. Including: Traffic Flow Break Station, AADT Date, AADT Type	100% Compliance	TDQM review	Field

RCI/LRS Reconciliation Process Measures				
Measure	Details	Compliance	Responsible	Office/Field
District MyFloridaLRS Package Quality Control Practices	Verify District maintains a quality control plan which documents the organization and management of District MyFloridaLRS Package supporting staff, MyFloridaLRS package data and data quality control methods, utilized tools and resources, and activities performed to coordinate District and Central Office stakeholders of RCI and LRS data changes. The documentation of the organization and activities are performed according to the District quality control plan.	Y/N	TDQM will review in District Audit	Office

Straight Line Diagrams & Key Sheets				
Measure	Details	Compliance	Responsible	Office/Field
Accuracy of District On-System Roadway Section SLDs	Verify 95% of District On-System roadway section features and characteristics represented on the SLD reflect the RCI database.	>95% Compliance	TDQM will review in District Audit	Field/Office
Timeliness of District On-System Roadway Section SLDs	Verify 100% District On-System roadway section SLDs selected for the QAR are updated within 120 days of any RCI data changes.	100% Compliance	TDQM will review in District Audit	Office
Timeliness of District Roadway Section Key Sheets	Verify 100% District Key Sheets are updated within 120 days of any RCI data changes.	100% Compliance	TDQM will review in District Audit	Office
District Quality Control Practices	Verify District maintains a quality control plan which documents the organization and management of District staff responsible for developing, maintaining, and coordinating District SLDs, SLD data quality control methods, utilized tools and resources, and activities performed to coordinate District and Central Office stakeholders of SLD changes. The documentation of the organization and activities are performed according to the District quality control plan.	Y/N	TDQM will review in District Audit	Office