



INTERNAL REVIEW

Metro's Track Walking & Track Geometry Vehicle Inspections

In response to the internal review report for Metro's Track Walking & Track Geometry Vehicle Inspections dated April 10, 2017 QICO has coordinated with Operations and Engineering departments to develop four comprehensive CAPs. Each CAP outlines the findings, requirements and recommendations addressed, and a detailed action plan outlining responsible parties and specific actionable items.

EXECUTIVE LEADERSHIP OF RESPONSIBLE PARTIES

Corrective Action Plan (CAP) Commitment

Joseph Leader
Chief Operating Officer (COO)

4/2/17
Date

WMATA INTERNAL OVERSIGHT

Corrective Action Plan (CAP) Acknowledgement

Angel Peña
Managing Director, Quality Assurance, Internal Compliance & Oversight (QICO)

06/07/17
Date

Eric Christensen
Chief, Internal Compliance (INCP)

6/8/17
Date

Paul J. Wiedefeld
General Manager & Chief Executive Officer (GM/CEO)

6/9/17
Date



CORRECTIVE ACTION PLAN

Purpose and Scope

On April 10, 2017 QICO issued a comprehensive report from an internal review into Metro’s track inspection program. This Corrective Action Plan (CAP) has been developed to address the following findings and required action per **QICO-TIP-17-01**.

QICO Finding	QICO Recommendation
F-TIP-17-01: The TGV requires manual dead-reckoning (periodically syncing the vehicle at chain markers).	- Investigate automated solutions to improve vehicle syncing for dead-reckoning.
F-TIP-17-02: Track inspectors do not finish their walks when defects are identified that result in speed restrictions. The system averages 1-2 track speed restrictions per day.	- Establish formal practices for completing track inspections, taking into account the need for correction of defects resulting in speed restrictions.
F-TIP-17-03: The track inspection force lacks specialized training for special trackwork components.	- Complete training for the entire track inspection force on the updated curriculum to improve inspection of special trackwork.
F-TIP-17-04: Half of mainline track inspections examined by QICO did not find any new defects from previous inspections.	- Evaluate improvements to track inspection schedules and territories to reduce the areas covered in a single shift, emphasizing quality of inspection and reporting over quantity (frequency) of inspections.
F-TIP-17-05: Gauge rods are not being removed during the 14-day window.	- Formalize the gauge rod installation/removal process within a governing document (i.e. WMATA-1000, 2000, etc.), to include methods for escalation of defect rating if the established timeframe for correction is exceeded.

Required Action

QICO-TIP-17-01: Implement updated training programs and improvements to inspection schedules and territories to enhance the effectiveness of inspection activities, emphasizing quality over quantity.

(Risk Rating: High) ■

Plan Description

F-TIP-17-01: MOWE will continue explorative research on technologies such as RFID Tags and other technologies. Bi-annual updates on a selection of technology will be provided to QICO.

F-TIP-17-02: Track and Structures has instructed Track Walkers to continue their walks once a speed restriction is put in place (based on the level of the restriction). These instructions will be formalized in an SOP.

F-TIP-17-03: The Track Inspection training program has been revised to include all courses required to effectively train Track Walkers and their Supervisors, refresher/recertification training, as well as "Train-the-Trainer" program, evaluation and certification of WMATA Instructors. The revised training program is modular based with both classroom and field testing at each module (Please Reference FTA-16-4-T1)

F-TIP-17-04: Track and Structures will provide a proposed schedule and locations to reduce the areas covered in a single shift.

F-TIP-17-05: Track and Structures has documented in a Maintenance Bulletin the action that must take place when a gauge rod cannot be removed in a 14-day period.

Business Impact – Budget/Cost Estimate

- **Process Execution** – A current process/procedure exists that meets the QICO Required Action. This initiative does not need additional resources.



PLAN SCHEDULE

Actionable Items		Description	Responsible Party*	Estimated Start	Estimated Completion
1	Alternative Technology Research	Maintenance-of-Way Engineering (MOWE) will provide semi-annual updates for ongoing research and selection of alternative technologies, such as RFID tags.	Ravi Amin (MOWE)	05/10/17	06/28/18
2	Track Walkers	Track and Structures will complete revision of SOP 208-12 (Implementation/Removal/Upgrade Speed Restriction) to include direction for Track Walkers to complete walking inspections based on the level of speed restriction.	Michael Davis (TRST)	05/10/17	06/30/17
3	Track Inspection Training Program	Training modules and associated classroom/field testing for the Track Walker Training Program will be coordinated with efforts underway as part of FTA-16-4-T1.	Linda Stoffregen (OPMS)	08/01/17	11/17/17
4	Maintenance Bulletin – Gauge Rod Installation	Track and Structures maintenance bulletin to reinforce requirements to ensure that gauge rods are temporary and are removed no later than 14 days from installation.	Michael Davis (TRST)	05/10/17	06/30/17
5	Gauge Rod Tracking	Maintenance logs indicating the date of installation and removal of gauge rods.	Michael Davis (TRST)	06/30/17	06/28/18
6	QICO CAP Verification Report	QICO will evaluate actionable items submitted to confirm there is reasonable evidence that the findings and this required action have been resolved, taking into account the actionable item descriptions and performance measures.	QICO	06/28/18	08/31/18

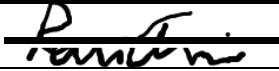
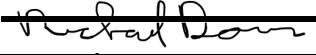
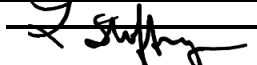
*In the event of personnel or departmental changes, responsibilities for actionable items shall transfer to the new leadership.

COMPLETION DOCUMENTATION

Performance Measures

- 100% of Track Walkers receive training on updated speed restriction procedures.
- 90% of gauge rods removed within the 14-day window based on tracking reports.

RESPONSIBLE PARTIES

MOWE	Ravi Amin	
TRST	Michael Davis	
OPMS	Linda Stoffregen	

SECOND LEVEL RESPONSIBILITY

AGM RAIL	Andrew Off	
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CORRECTIVE ACTION PLAN

Purpose and Scope

On April 10, 2017 QICO issued a comprehensive report from an internal review into Metro’s track inspection program. This Corrective Action Plan (CAP) has been developed to address the following findings and required action per **QICO-TIP-17-02**.

QICO Finding	QICO Recommendation
F-TIP-17-06: The track walking inspection database, as displayed in Optram, contains a series of duplicate, orphaned, and open work orders, with mis-categorized defect codes.	- Develop methods to improve the quality of defect records contained in the enterprise asset management database (Maximo), clearly defining the use of component and defect codes to be used for track inspection purposes
F-TIP-17-07: Photographic evidence of red and black defects identified during inspections is inconsistently captured in the enterprise asset management database (Maximo).	- Establish written requirements for capturing and storing photographs when red and black conditions are discovered during walking track inspections.
F-TIP-17-08: The track walking inspection database visualization tool (Optram) is underutilized, with an unclear role as part of WMATA’s asset management strategy.	- Improve the utilization of the linear visualization tool (Optram) through the implementation of training on the capabilities and proper use of the system.

Required Action

QICO-TIP-17-02: Document and implement a strategy to improve and maintain the quality of the defect database so that it can be relied upon by maintenance decision-makers.

(Risk Rating: Elevated) ■

Plan Description

- F-TIP-17-06:** TRST will continue developing a Maximo team to improve the quality of defects records in the enterprise asset management database (Maximo),
- F-TIP-17-07:** Track Walkers currently are not required to take photographic evidence of red and black defects because they are not issued cameras nor work phones to captures pictures. TRST is examining options to provide the necessary tools to Track Walkers so they may be able to capture photographic evidence of defects.
- F-TIP-17-08:** MOWE to revise process of capturing track assessment info in Optram. MOWE’s consultant will provide regular training for all track related departments including TRST staff. Retraining will also be provided for TRST staff who have been already trained.

Business Impact – Budget/Cost Estimate

- **Process Execution** – A current process/procedure exists that meets the QICO Required Action, This initiative does not need additional resources.



PLAN SCHEDULE					
Actionable items		Description	Responsible Party*	Estimated Start	Estimated Completion
1	TRST Maximo Team Update	Track and Structures (TRST) will provide quarterly updates of process improvements and work flow charts to improve the quality of defects recorded in Maximo.	Michael Davis (TRST)	05/10/17	12/28/17
2	Maximo Data Business Plan	Maintenance-of-Way Engineering (MOWE) will establish a track assessment business plan and flow chart to direct collection, analysis, and storage of data, including staff responsibilities for MOWE and TRST.	Laura Mason (MOWE)	05/10/17	06/30/17
3	Optram Training	Curriculum and schedule for the Optram, including sign-in sheets for staff who have completed the training.	Ravi Amin (MOWE)	05/10/17	09/28/17
4	QICO CAP Verification Report	QICO will evaluate actionable items submitted to confirm there is reasonable evidence that the findings and this required action have been resolved, taking into account the actionable item descriptions and performance measures.	QICO	12/29/17	01/29/18


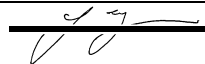
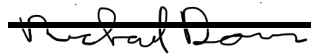
*In the event of personnel or departmental changes, responsibilities for actionable items shall transfer to the new leadership.

COMPLETION DOCUMENTATION

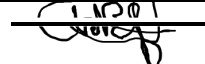
Performance Measures

- 100% of TRST Supervisors complete Optram training.

RESPONSIBLE PARTIES

MOWE	Ravi Amin	
MOWE	Laura Mason	
TRST	Michael Davis	

SECOND LEVEL RESPONSIBILITY

AGM RAIL	Andrew Off	
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CORRECTIVE ACTION PLAN

Purpose and Scope

On April 10, 2017 QICO issued a comprehensive report from an internal review into Metro’s track inspection program. This Corrective Action Plan (CAP) has been developed to address the following findings and required action per **QICO-TIP-17-03**.

QICO Finding

QICO Recommendation

F-TIP-17-10: Roadway access for walking track inspections is dependent on other rail operations throughout the system, where priorities may conflict.

- Develop a process to determine which groups receive precedence or priority for track access to maximize time available to complete critical inspection activities.

F-TIP-17-14: The ambiguity of the language in the SOP #30, “Speed Restriction for the Mainline” allows for different interpretations of the boundaries to be communicated by wayside personnel (inspectors) to Rail Operations Control Center (ROCC) and Maintenance Operations Center (MOC).

- Clearly define within SOP #30 of the Metrorail Safety Rules and Procedures Handbook the roles of wayside personnel reporting speed-restrictable conditions (inspectors) and ROCC/MOC controllers with regards to communicating speed restriction boundaries around a defective area.

Required Action

QICO-TIP-17-03: Establish a process to determine the precedence and priority of track access for essential inspection activities, reinforcing safety standards for field activities.

(Risk Rating: Elevated)

Plan Description

F-TIP-17-10: Given the complex challenges of working on an operating railroad and numerous issues that can disrupt planned work, the key metrics tracked with respect to PMI and inspections are the completed percentage of work (measured monthly) and the quality of those inspections. MOWE will establish a weekly meeting to review incidents, trends and MOWE initiatives. Once a month, this meeting will review the PMI and inspection percentage completed and determine if any group needs additional resources or prioritization for ROW to complete inspections. This prioritization will also include assessment of planned capital and preventive maintenance work.

F-TIP-17-14: SOP # 30 will be revised to clearly define the roles of the Track Walkers and ROCC controllers when notifying ROCC of a condition on the roadway that will lead to a speed restriction.

Business Impact – Budget/Cost Estimate

- **Process Execution** – A current process/procedure exists that meets the QICO Required Action, This initiative does not need additional resources.



PLAN SCHEDULE

Actionable items		Description	Responsible Party*	Estimated Start	Estimated Completion
1	Update SOP #30	Clearly define within SOP #30 of the Metrorail Safety Rules and Procedures Handbook the roles of the wayside personnel and ROCC/MOC controllers with regards to communicating speed restriction boundaries around a defective area.	Deltrin Harris (ROCC)	05/10/17	09/28/17
2	Roadway Access – PMI Monthly Meeting Minutes	Monthly meetings will include a review of ongoing track inspection and Preventative Maintenance Inspection (PMI) activities to determine the needs of maintenance and inspection groups and establish prioritization for ROW access.	Laura Mason (MOWE)	07/27/17	10/30/17
3	QICO CAP Verification Report	QICO will evaluate actionable items submitted to confirm there is reasonable evidence that the findings and this required action have been resolved, taking into account the actionable item descriptions and performance measures.	QICO	10/30/17	12/13/17

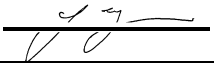
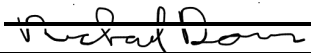
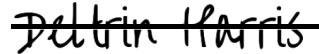
**In the event of personnel or departmental changes, responsibilities for actionable items shall transfer to the new leadership.*

COMPLETION DOCUMENTATION


Performance Measures

- 90% of track inspectors and controllers trained on SOP #30 once updated
- ROCC tracking for track access requests indicates number of approved vs. denied requests.

RESPONSIBLE PARTIES

MOWE	Laura Mason	
TRST	Michael Davis	
ROCC	Deltrin Harris	

SECOND LEVEL RESPONSIBILITY

AGM RAIL	Andrew Off	
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CORRECTIVE ACTION PLAN

Purpose and Scope

On April 10, 2017 QICO issued a comprehensive internal review into Metro’s Track Walking & Track Geometry Vehicle (TGV) Inspections. This Corrective Action Plan (CAP) has been developed to address the following findings and required action per **QICO-TIP-17-04**.

QICO Finding	QICO Recommendation
F-TIP-17-11: The Operations Administration Policy (OAP) does not reflect where TGV data is stored, and the Standard Operating Procedure (SOP) does not pinpoint the location of calibration rails.	- Update TGV policies and procedures to include specific requirements for the storage of data collected and the location of calibration rails on the yard maps.
F-TIP-17-12: There is no requirement for an engineering assessment of track inspection data.	- Establish written requirements for periodic assessments of track inspection data by Track Engineering (MOWE), incorporating a combination of track inspection reports, field inspection, and historical data.
F-TIP-17-13: The TGV gauge defects are reviewed manually.	- Develop methods for post-run scripts that can process and validate the data to reduce the amount of manual data entry required.

Required Action

QICO-TIP-17-04: Establish and update processes to better utilize the potential of the TGV, outlining requirements for engineering review of data it produces.

(Risk Rating: Elevated)

Plan Description

F-TIP-17-11: Existing TGV polices will be updated to include specific requirements for the storage of collected data within 60 days of this dated response. The current SOP contains a description of the location of calibration rails at each rail yard with photo, and map. The SOP will be strengthened to show the location of the calibration rails on the yard map.

F-TIP-17-12: MOWE/TRST will develop a Track Assessment business plan and flow chart on collection, analysis, and storage of data, with staff responsibilities. Currently MOWE has two Position Control Numbers (PCNs) to be hired and the Assistant General Manager (AGM) for Rail Operations is working to provide the staffing needed.

F-TIP-17-13: The current process of manual review of the TGV’s computer generated defect exceptions is valid and is currently the most efficient method. The random attributes of false exceptions and other non-applicable data requiring editing can be identified and corrected by trained staff. Reliance on scripting may be too complex due to the random nature of the non-applicable data. WMATA IT is planning to evaluate whether the editing processes can be automated through algorithms.

Business Impact – Budget/Cost Estimate

- **Process Improvement** – A current process/procedure needs to be optimized to address the QICO Required Action. This initiative does not need additional resources because current manpower will be used to improve the process.



PLAN SCHEDULE

Actionable items		Description	Responsible Party	Estimated Start	Estimated Completion
1	Updated TGV polices	Policies will be updated to include specific requirements for the storage of collected data within 60 days.	Ravi Amin (MOWE)	05/10/17	09/28/17
2	MOWE Organization Chart	MOWE organizational structure, to include open positions yet to be staffed.	Ravi Amin (MOWE)	05/10/17	05/30/17
3	Maximo Data Business Plan	Maintenance-of-Way Engineering (MOWE) will establish a track assessment business plan and flow chart to direct collection, analysis, and storage of data, including staff responsibilities for MOWE and TRST.	Laura Mason (MOWE)	05/10/17	06/30/17
4	Data Validation Update	Results from research into alternate methods of TGV defect data analysis.	Ravi Amin (MOWE)	05/10/17	12/28/17
5	QICO CAP Verification Report	QICO will evaluate actionable items submitted to confirm there is reasonable evidence that the findings and this required action have been resolved, taking into account the actionable item descriptions and performance measures.	QICO	12/28/17	01/30/18



**In the event of personnel or departmental changes, responsibilities for actionable items shall transfer to the new leadership.*

COMPLETION DOCUMENTATION

Performance Measures

- 100% of TGV data collected is stored in accordance with updated policies.

RESPONSIBLE PARTIES

MOWE	Ravi Amin	
MOWE	Laura Mason	

SECOND LEVEL RESPONSIBILITY

AGM RAIL	Andrew Off	
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