METROLINX

Overview

On February 2, 2026, at approximately 08:05, GO 3009 derailed at low speed while operating revenue service westbound near Mile 0.30, within the John Street Interlocking. One (1) coach and one (1) locomotive derailed. There were no injuries to passengers or crew and approximately 108 customers were safely transferred to a rescue train. The derailment caused significant disruption across the GO network during the morning peak rush hour service, with delays of up to 90 minutes.

The investigation applied Failure Mode and Effects Analysis (FMEA) and a systems-based review (Safety Control Structure and Safety Dynamic Model) to examine both technical failures and surrounding controls. The derailment was caused by a degraded and non-compliant rail fastening system that permitted the track to spread (a "wide gauge" condition) under train loading. No mechanical, wheel, or crew-performance controls contributed to the occurrence. Corrective actions include strengthening infrastructure inspection and verification, improving how updated track standards are applied to existing infrastructure, enhancing evidence retention and improving incident response and recovery processes.

Incident Details

GO Train 3009 (Union Station to Bramalea GO) departed Union Station and was operating westbound on Track A1, advancing toward the South Ladder within the John Street Interlocking under "Slow to Clear" signal indications at approximately 11MPH. While traversing toward the South Ladder, the train derailed at approximately 08:05:55. The crew of an eastbound UP Express train observed the abnormal movement and transmitted an emergency broadcast advising that GO 3009 had derailed and was fouling the adjacent track. The incident train was brought to a controlled stop at 08:07:01.

The 12-coach consist was operating with the cab car leading and the locomotive trailing. The coach positioned directly ahead of the locomotive, together with the locomotive itself, derailed. The derailment fouled tracks A1 and A2 and caused damage to the train, to track infrastructure, and to wayside signaling equipment, including a severed signal asset.

Approximately 108 customers were safely transferred to a rescue train through a controlled train-to-train transfer, completed by 09:21. No passengers or crew injuries were reported. Conditions at the time were clear with good visibility and an ambient temperature of approximately -11°C; an extreme cold weather advisory was in effect for the period, but conditions did not meet the thresholds requiring cold-weather track inspections or speed restrictions.

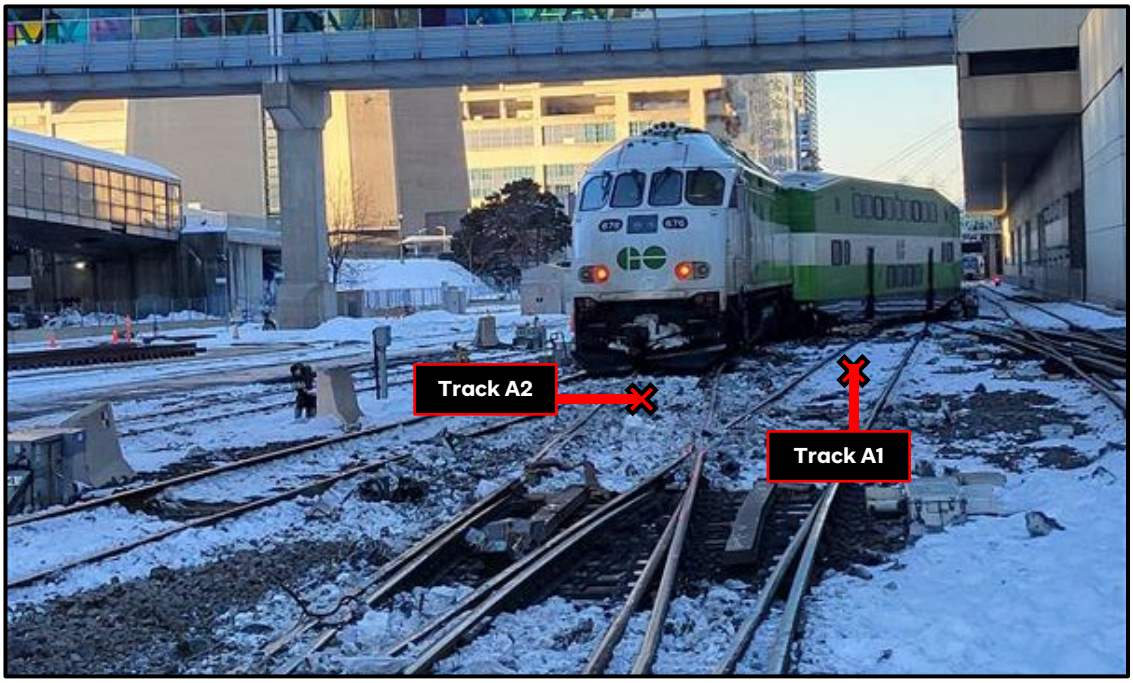

Figure 1: Derailment of GO 3009 within the USRC (Westward View)

The occurrence disrupted service across multiple corridors during morning peak service, including Lakeshore West, Lakeshore East, Kitchener, Milton, Barrie, Stouffville corridors, and the USRC resulting in delays, service modifications, platform changes, and temporary suspensions due to restricted track capacity. Several Union Station platforms were temporarily unavailable, and a Heavy Winter Contingency Plan was implemented to support service reliability. Recovery was scheduled around the evening peak to minimize disruption. The locomotive was re-railed at 20:34 and the coach at 22:10, with the consist moved to the Willowbrook Maintenance Facility for inspection early the following morning.

Root Cause

The derailment was caused by a loss of effective lateral rail fastening at the occurrence location. The rail fastening configuration did not meet the lag screw occupancy required by the Metrolinx Track Standard (MTS), as two (2) lag screws per plate were installed, where four (4) were required. Across nine (9) consecutive timber ties, the lag screws that were present were in a degraded condition – broken, loose, or missing.

With the fastening system unable to hold the rail in position under repeated train loading, the south rail shifted laterally by approximately 1⅛ inches, producing a wide gauge condition. This condition permitted the wheel to drop between the rails and the train to derail. Examination of wheel-contact markings placed the Original Point of Derailment (OPOD) near the insulated joints at Signal 662. The displaced wheelset then continued through the track layout until reaching the 664 double slip switch, where the wheel followed a diverging route and the derailment progressed.

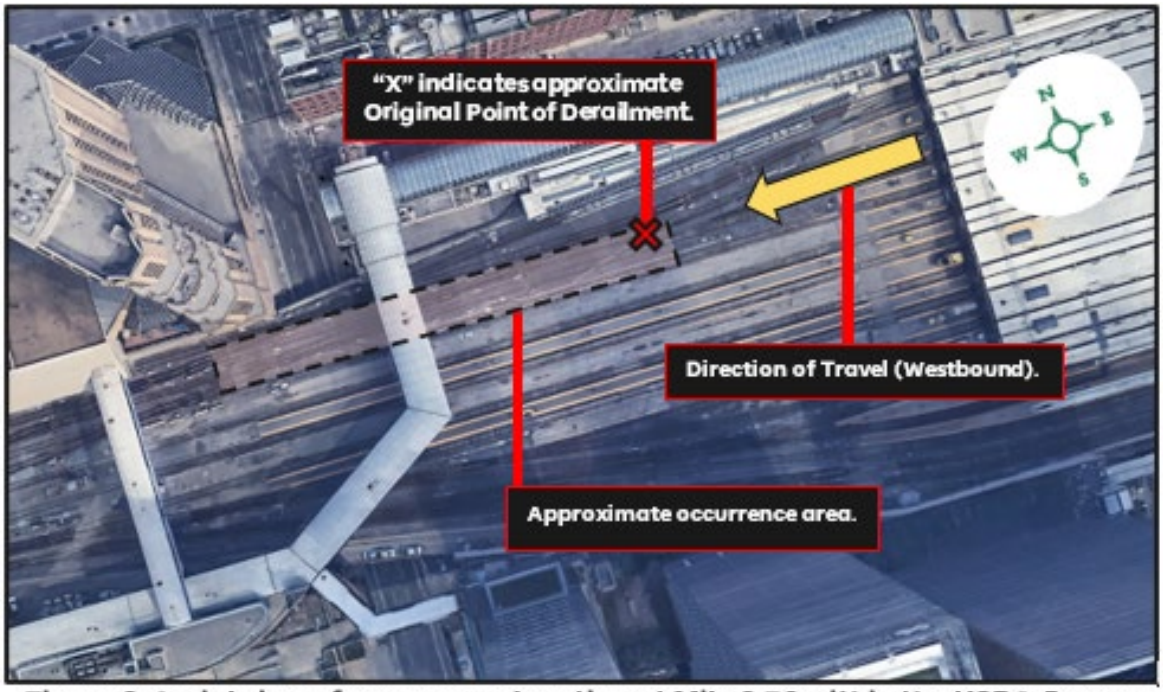

Figure 2: Aerial view of occurrence location at Mile 0.30 within the USRC. Image retrieved from Google Maps.

Post-occurrence technical assessments identified no mechanical deficiencies with the train and no wheel-profile or thin-flange conditions that would have contributed to the derailment. The information reviewed did not identify any non-compliant actions by the train crew. The cause was therefore an infrastructure condition that developed progressively over time through a combination of legacy fastening configuration, fastener degradation, and repeated operational loading.

What the Investigation Uncovered

While the physical failure occurred at the track level, the condition developed within a broader system. The investigation examined how the condition was able to develop and remain undetected (preventative controls), and how the organization responded post derailment.

Preventative Controls

- **Standards and Legacy Infrastructure:** The fastening arrangement at the location pre-dated the Metrolinx Track Standards requirements. Standards evolved over time, from the CN Engineering Track Standards (2004), through the GO Transit Track Standards (2016-2023), to the Metrolinx Track Standards – Heavy Rail (April 2025), which introduced clearer and more specific fastening requirements. There is no formalized process to verify or retrofit existing (legacy) infrastructure against updated requirements, no defined transition, exemptions, or applicability guidance.
- **Detection Limitations:** Routine inspections relied primarily on visual checks, limiting reliability of detecting reduced clamping force or internal fastener degradation – specifically lag screws which remained physically present. Inspection forms use open comment fields without standardized prompts linked to specific MTS requirements. Electronic geometry testing was performed annually, and Manual Gauge Pressure Testing (MGPT) was discretionary – resulting in a limited ability to detect progressive degradation developing between testing cycles.
- **Recurring Condition:** A wide gauge condition was identified and repaired in the area in 2024. The location passed geometry testing in 2025, however, the condition redeveloped prior to the next scheduled inspection. Corrective maintenance restored geometry temporarily without fully eliminating the underlying fastening degradation. Toronto Terminal Railways (TTR) records for

2025 also showed recurring fastening and infrastructure deficiencies near the occurrence location.

- **Operational Loading:** The USRC is one of the busiest operating environments on the network. As fastening effectiveness decreased, the remaining fasteners were exposed to increased loading, accelerating deterioration over time.

Incident Response and Recovery

- **Command and Coordination:** A formal Incident Command Structure was not established until after the derailment had produced significant operational and customer impacts. The Incident Commander and reporting pathways were not effectively understood on site. An Emergency Operations Centre was not activated early in the response, limiting the ability to coordinate multiple incident sites simultaneously.
- **Communication:** Proactive updates were not consistently distributed in a timely manner, with multiple informal communication channels and chat threads utilized. Frontline teams and customers did not consistently receive timely information. Customer-facing systems such as departure boards and trip-planning tools struggled to keep pace.
- **Customer Impact and Recovery:** Union Station became a secondary incident site due to crowding, delayed platform assignment, customer movement challenges, and capacity trains during peak periods. Recovery required specialized rerailing equipment and heavy-equipment operations, and limited access to the corridor extended the recovery period before service could be fully restored.
- **Evidence Retention and Documentation:** At the time of the occurrence, there was no enterprise-level requirement governing evidence retention, tagging, chain-of-custody, or secure storage of physical evidence following a derailment incident. Failed components (such as the lag screws) were not preserved for independent engineering examination, and a consolidated multi-disciplinary technical report integrating track, mechanical, and operational perspectives was not initially produced.

Network-Wide Inspection Blitz

To determine if similar conditions existed elsewhere, a joint inspection blitz was completed across all 169 curves within the USRC. The inspections identified 40 non-compliant locations where rail fastenings did not meet required standards, including missing or insufficient fasteners, rolled plates, and mixed fastening configurations. Inspectors also identified ice jacking, packed snow and ice around frogs, ice accumulation within the track structure, and a further wide gauge condition. Corrective actions were taken to address the conditions identified from the blitz.

Summary of Findings

Causes

- The fastening configuration at the occurrence location did not meet the lag screw occupancy required by the Metrolinx Track Standards (MTS), as two (2) lag screws per plate were installed in contrast to the four (4) required.
- The lag screws present across nine (9) consecutive timber ties were in a degraded condition (broken, loose, or missing), further reducing the effectiveness of the fastening system to maintain gauge and resist lateral rail movement under repeated train loading.
- The resulting loss of effective lateral rail fastening caused lateral rail displacement and an approximate 1⅛-inch wide gauge condition under load, leading to the derailment of GO 3009.

Contributing Factors

- Portions of the track structure were maintained with a two (2) lag-screw configuration instead of the four (4) required by the updated MTS.
- Visual inspections may not effectively, consistently or reliably identify reduced clamping force, internal fastener degradation, or reduced fastening effectiveness where lag screws remain physically present.
- Inspection forms did not consistently include structured prompts tied to MTS requirements and fastening conditions, increasing reliance on individual observation and judgment.
- A wide gauge condition repaired in 2024 passed the 2025 geometry test but redeveloped before the next annual inspection, indicating the underlying degradation was not fully resolved.
- Annual geometry testing intervals limited the ability to detect progressive fastening degradation developing between testing cycles.
- Corrective maintenance that restores geometry temporarily, without addressing underlying fastening degradation, allows wide gauge conditions to redevelop under repeated loading.
- Continuous, high-traffic operation exposed the degraded fastening system to repeated operational stress.
- Updated track standards were implemented without a formalized verification process, leaving inconsistencies between updated requirements and existing infrastructure inspection and maintenance practices.

Other Findings

- The track infrastructure in the occurrence area was installed prior to the 2025 Metrolinx Standards. Historic standards required tie plates holes to be occupied to maintain effective fastening.
- Geometry testing and MGPT provide stronger indication of rail movement and gauge instability under load than visual inspections alone. The derailment occurred prior to the next scheduled geometry inspection.
- Post-occurrence blitz inspections identified locations requiring corrective action for winter-related deterioration and ice jacking across the network, and 40 of the 169 USRC curves required fastening corrective action or further evaluation.
- An Operational Response and Recovery Review identified challenges related to command structure, communication flow, and recovery coordination, including the emergence of unsanctioned communication channels and inconsistent customer information.
- Recorded data identified a short delay between initial derailment and the incident train coming to a complete stop.
- Limited corridor access delayed deployment of recovery equipment, extending the recovery period before service could be restored.
- A formal consolidated technical report and formal evidence retention were not in place. Without preserved physical evidence, opportunities for independent technical examination and long-term organizational learning are reduced.

Effective Practices (Positive Findings)

- There were no passengers or employees injured among the approximately 108 passengers on board, and customers were safely transferred from the affected train.
- Emergency notifications and operational protection activities were initiated promptly, supporting incident awareness and coordination.
- Post-occurrence inspections, emergency repairs, infrastructure restoration, and testing were completed before the impacted area was returned to service.
- Technical reviews confirmed no train equipment or wheel-profile deficiencies contributed to the derailment.
- The updated MTS (2025) introduced clearer, more specific fastening configuration requirements and guidance than previous standards.
- Responding teams continued to coordinate recovery, customer management and restorations throughout the disruption. The network-wide blitz identified and addressed further infrastructure concerns.

Metrolinx Corrective Actions

Immediate Actions Taken

- The occurrence location was removed form service and damaged track infrastructure was inspected, repaired, and verified before train operations resumed.
- Passengers were safely detrained and transferred, and a post-occurrence examination of the track, rolling stock, and site was completed to document evidence and assess damage.
- A post-occurrence blitz inspection of all 169 curves within the USRC was completed, and the deficiencies identified were corrected through targeted maintenance and repair.
- A subsequent Heavy Geometry Inspection of the USRC was completed, and an Operational Response and Recovery Review was undertaken to evaluate the response and identify improvements.

Actions In Progress and Planned

- Bi-annual geometry inspections within the USRC have been implemented contractually.
- Autonomous track geometry testing technology is planned for implementation in 2027.
- A $15M infrastructure investment program has been initiated within the USRC to address track surface conditions and support localized repairs.
- Additional Metrolinx Track Inspectors have been hired to strengthen oversight and verification of completed maintenance.
- Corrective maintenance has been completed at locations identified through post-occurrence inspections and assessments
- Corrective actions from the Operational Response and Recovery Review (initiated March 2026) are being progressed by the responsible Business units.

Recommended Corrective Actions

The following corrective action recommendations were approved by the IIRRC:

1. Metrolinx to facilitate the development of prioritized actions to address locations requiring intervention and incorporate longer-term remediation requirements into the Strategic Planning Process, verify locations within the USRC where similar fastening conditions exist and conduct a feasibility assessment of remediation requirements, associated risks, and asset lifecycle considerations.
2. Metrolinx to review Section 18.5.4(a) of the Metrolinx Track Standards (MTS) to determine whether Manual Gauge Pressure Testing (MGPT) should be mandated for wide gauge conditions identified during routine, detailed, and mechanized track inspections that meet defined criteria for further investigation, and revise the standard as necessary.
3. Metrolinx to review existing inspection processes to ensure the appropriate checklists are available to assist inspectors.
4. Metrolinx to review the geometry inspection frequencies identified in Table B-8 of the Metrolinx Track Standards (MTS) to determine whether current inspection intervals for track types and operating environments where developing rail restraint and wide gauge conditions may progress between inspection cycles.
5. Metrolinx to review and revise the Standard Implementation Process (SIP) to ensure implementation requirements, applicability to existing infrastructure, transition expectations, and verification activities are clearly defined when introducing or updating infrastructure standards.
6. Metrolinx to conduct a risk assessment to determine 'grandfathering' applicability for non-compliant infrastructure.
7. Metrolinx to ensure all actions identified within the Operational Response and Recovery Review are implemented, tracked to completion, and verified prior to closure.
8. Metrolinx to develop a standardized operating procedure for technical incident investigations including evidence collection and preservation, documentation standards, and role clarity.

Regulatory Position

The Transportation Safety Board of Canada (TSB) were notified of the occurrence on February 2, 2026, and the final occurrence report was submitted on March 19, 2026. Under the Memorandum of Understanding with the Ontario Ministry of Transportation, Metrolinx voluntarily reports all derailments to the TSB. The TSB did not initiate an independent investigation, as the occurrence took place entirely on provincial infrastructure.

Conclusion

GO 3009 derailed at low speed due to a degraded and non-compliant rail fastening system which allowed the track to widen under repeated load. No injuries resulted, and all customers were safely transferred. The investigation has identified causes and contributing factors across infrastructure standards, inspection and detection methods, maintenance practices, and incident response. Remediation is underway and is being tracked through the IIRRC governance process, with corrective actions underway, intended to reduce both the likelihood of recurrence and the impacts of future major disruptions.