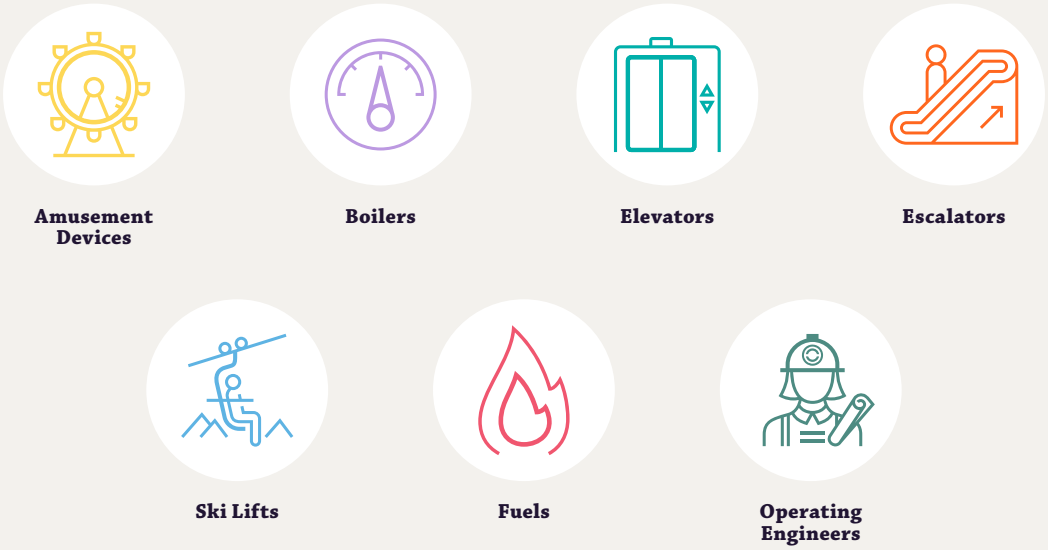


TSSA Public Safety Report 2026

PARTNERING FOR A SAFE ONTARIO

About Us

The Technical Standards and Safety Authority (TSSA) is Ontario's public safety regulator, mandated by the Government of Ontario to enforce technical safety regulations and enhance public safety in the following key sectors:



TSSA's range of safety services includes engineering design reviews, authorization of regulated entities and professionals, inspections, data collection and risk analysis, compliance support, enforcement, prosecution activities, and public education. TSSA also provides limited non-regulatory services through contracts to organizations in Ontario, mainly in the nuclear industry.

Acknowledgements

TSSA is proud to present this year's edition of the Public Safety Report for the fiscal year 2026 (May 1, 2025 - April 30, 2026); hereinafter referred to as FY26. TSSA would like to express gratitude to its inspectors and engineers for collecting and documenting valuable pieces of information and data - through their inspections, investigations, and engineering services - that have been instrumental in developing this report, as well as the Communications and Stakeholder Relations teams for reviewing and supporting the drafting of the report. TSSA would like to especially acknowledge the Strategic Analytics Team for developing this report.

TSSA would also like to acknowledge Safety and Risk Officer Deepak Jaswal, LLB, CTPRP, for his advice and independent review of the report.

Finally, TSSA would like to thank its partners in industry, government, advisory councils, and the public, who help keep Ontarians safe.

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Message from TSSA Directors

We are pleased to present the 2026 edition of the Technical Standards and Safety Authority's (TSSA's) Public Safety Report, offering an integrated view of safety performance and regulatory effectiveness in our regulated sectors in Ontario.

This report reflects our continued commitment to protecting the public through evidence-based oversight, sound engineering practices, and responsive policy frameworks. TSSA has continued to strengthen the safety system through improvements in compliance, deeper engagement with regulated parties, and increased use of advanced data and analytics. Together, these efforts contribute to a stable safety ecosystem, where risk is actively managed.

Overall safety performance remains strong, with data continuing to show sustained progress in the reduction of severity of incidents across the province. While there were 6,579 reported incidents in FY2026, this incident volume has not translated into more severe outcomes. In fact, the observed injury burden declined to a 10-year low pointing to a reduction in the severity of incidents, potentially driven by factors such as improved risk management practices within regulated industries.

Compliance is a key means of fostering a safer Ontario, supported by stronger ongoing collaboration between TSSA and industry stakeholders. Through targeted interventions and proactive compliance support, we continue to enable regulated parties to meet their obligations while improving public safety in Ontario. In parallel, TSSA has maintained a strong focus on education, outreach, and partnership. Through direct engagement with owners, operators, and certificate holders, we are helping build the knowledge and capability required to manage safety risks effectively.

The Risk of Injury and Fatality (RIF) and the Overall Injury Burden (OIB) have consistently maintained a downward trend. Taken together, these indicators demonstrate that controls, mitigation strategies, and system safeguards are increasingly effective at preventing the more serious outcomes.

A key enabler of these outcomes is the organization's growing maturity in data and analytics. TSSA continues to expand its use of data-driven insights to better understand risk, prioritize activities, and inform decision-making. Advanced analytics, including predictive models for inspection prioritization and risk scoring, allow us to allocate resources more effectively and focus attention where it is needed most. These capabilities not only enhance operational efficiency but also play an instrumental role in reducing risk and potential harm.

As we look ahead, TSSA will continue to advance its integrated approach to safety, bringing together engineering excellence, evidence-based policy, and advanced analytics. We remain focused on enhancing how safety is measured, strengthening risk-informed oversight, and supporting regulated parties in achieving better outcomes.

This report provides a snapshot of the state of safety in Ontario. We encourage all stakeholders to continue working collaboratively to maintain and improve public safety across the province.



Anand Rangarajan
Director, Business Intelligence



AJ Kadirgamar
Director, Elevating and Amusement Devices and Ski Lifts Safety Program



Owen Kennedy
Director, Fuels Safety Program



Kim Semper
Director, Boilers and Pressure Vessels and Operating Engineers Safety Program



Phil Simeon
Director, Regulatory Policy



State of Safety in Ontario – All Programs Combined

At a Glance

Total Number of Incidents

6,579

Total Number of Non-Permanent Injuries

2,070

Total Number of Permanent Injuries

25

Total Number of Fatalities

1



Incidents

There has been a reduction in counts of incidents, permanent injuries and fatalities in FY26 compared to last year. Considering the reporting enhancements and the 17% population growth of Ontario from FY17 to FY26,[1] the rate of incidents per million people has shown a positive improvement, decreasing from 437 incidents per million people in FY25 to 406 incidents per million people in FY26. Permanent injuries, as a measure of the severity of an incident, continue to trend downward at 25 in FY26, well below the 10-year average of 43. One fatality was recorded in FY26, within the Fuels Safety program.

Incidents*

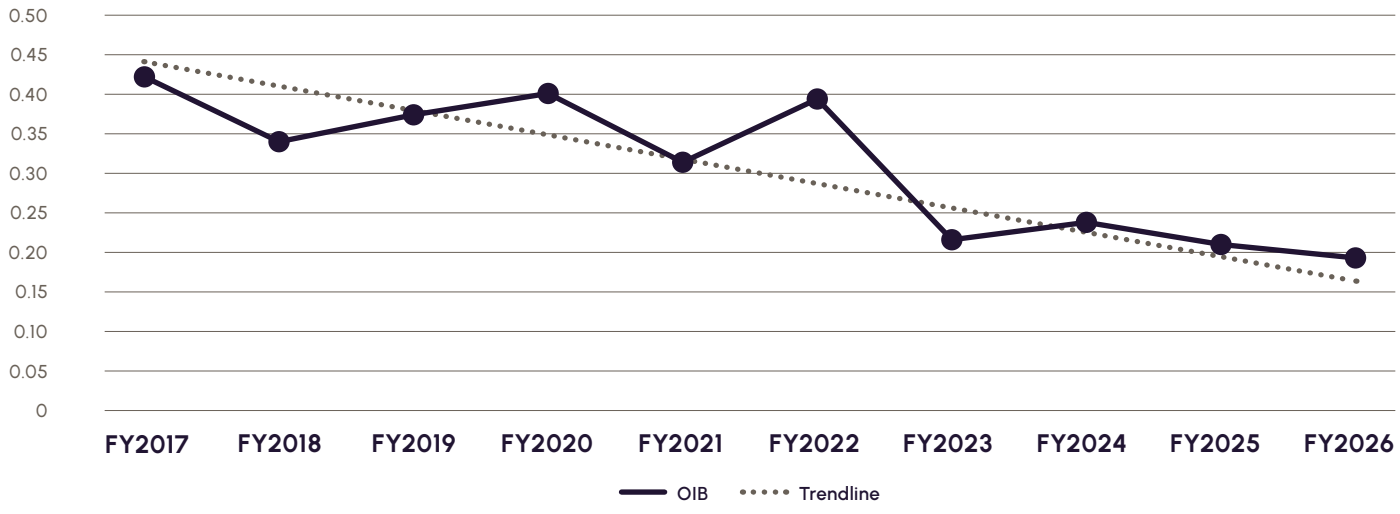
FY26 vs 10-year average

*As of 2026-04-30

Incidents	Non-Permanent Injuries	Permanent Injuries	Fatalities[2]
6,579	**2,070**	**25**	**1**
avg 5,801 ↑	avg 1,454 ↑	avg 43 ↓	avg 3 ↓

Figure A1: 10-Year Observed Injury Burden Trend for All Programs

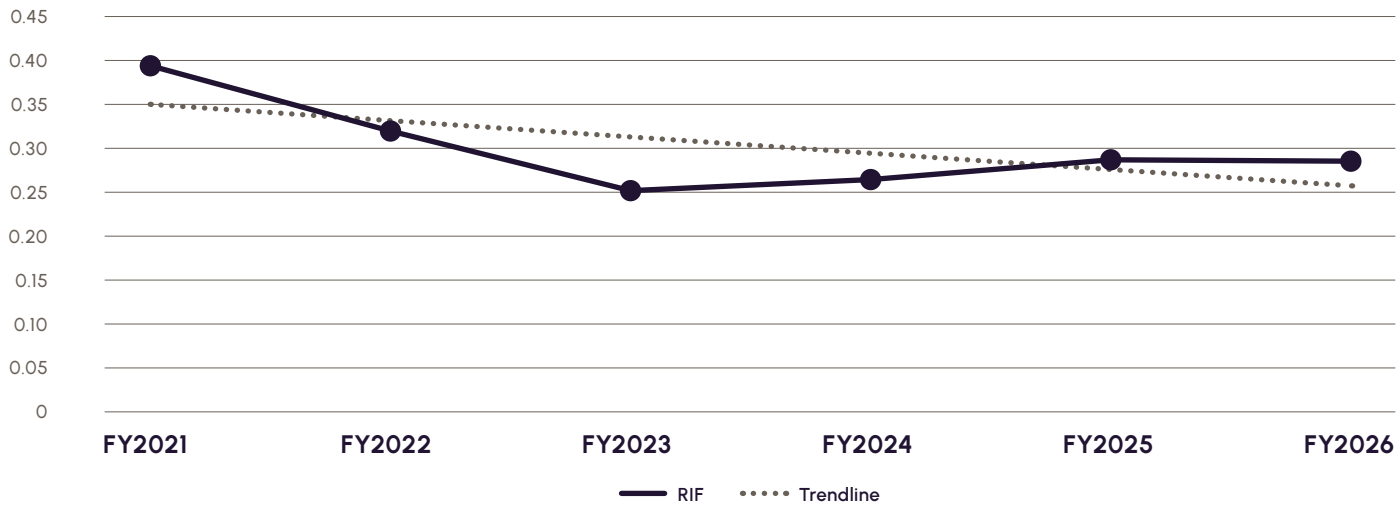
The Observed Injury Burden (OIB) is reported based on fatalities and the severity of injuries experienced during incidents in that year. It is the measure in fatality equivalent per million people (FE/mp) observed each year and normalized by the population of Ontario. Over the 10-year period from FY17 to FY26, the OIB in Ontario demonstrates a clear overall downward trend, as confirmed by the linear trendline. The OIB which began at 0.42 FE/mp in FY17, declined to 0.19 in FY26 – a reduction of approximately 54% over the period. While the general trajectory is downward, the data shows some year-over-year volatility. Notable fluctuations include a rebound to 0.40 in FY20 and a spike to 0.39 in FY22, before a more sustained and sharper decline through FY23 (0.22), FY24 (0.24), FY25 (0.21), and finally FY26 (0.19). The post-FY22 period reflects the most consistent period of improvement across the entire decade.



1 Population estimates, by age and gender (statcan.gc.ca) accessed on 2026-05-01
2 The incident involving the fatality was closed on June 25 2026

Figure A2: Risk of Injury or Fatality for All Programs (2021-2026)

TSSA's Risk of Injury or Fatality (RIF) estimates the potential for injury or fatality by performing a Monte Carlo[3] simulation on incident data, and RIF is measured in FE/mpy (fatality equivalent per million people per year) The RIF remained relatively stable between FY22 and FY26, ranging narrowly between 0.2537 FE/mpy and 0.3225. After an initial decline from 0.3225 in FY22 to a low of 0.2537 in FY23, the RIF gradually increased to 0.2893 in FY25 before marginally easing to 0.2877 in FY26. The linear trendline reflects a modest downward trend over the five-year period, suggesting a slight overall reduction in predicted injury or fatality risk.



3 J.E Gentle. "Computational Statistics." In International Encyclopedia of education, third edition (2010): 93-97. A Monte Carlo simulation is used to model the probability of different outcomes in a process that cannot easily be predicted due to the intervention of random variables. It is a technique used to understand the impact of risk and uncertainty.

Inspection Results

Inspections are a critical component of TSSA's safety value chain, encompassing both periodic and non-periodic inspection types conducted at intervals determined by TSSA's risk model as applicable. By assessing regulated devices and facilities against applicable requirements, inspections generate valuable data that informs TSSA's analysis, reporting, and regulatory decision-making – including the identification of areas with elevated probabilities of harm.

In FY26, a total of 20,385 periodic inspections were completed.[4] Of these, 14,483 were compliant, 5,622 failed, and 280 fell into the "other" category. "Other" category means the inspection could not be categorized into either compliant or fail.

Across all programs, 71% of all periodic inspections conducted by TSSA inspectors resulted in a compliant inspection, which is a slight improvement from last year at 69%. A compliant inspection means the inspector did not find any high-risk issues. Only 28% of inspections resulted in a failed inspection. A failed inspection means the inspector found a high-risk issue that needs urgent attention. When periodic inspections fail, the owner/operator is given 14 days to comply before a TSSA inspector follows-up with another inspection to ensure compliance. TSSA monitors patterns of high-risk non-compliances to identify opportunities to leverage education, compliance support and partnership to improve compliance.

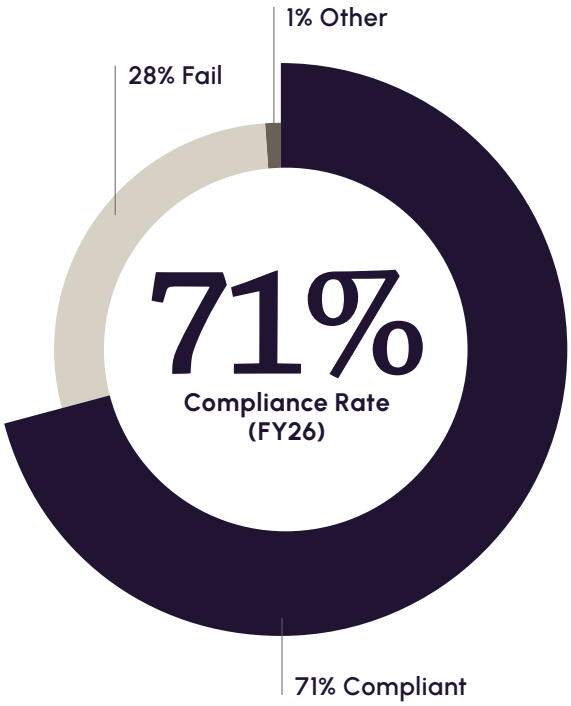
TSSA uses data and evidence to risk assess code and regulatory requirements and identify priorities for compliance during inspections. These are distributed to regulated parties in the form of Compliance Standards to ensure they are informed about the critical requirements for compliance during a periodic inspection.

Compliance Support

The Compliance Support Program is a no-cost, professional service delivered by TSSA and is designed to assist regulated entities to comply with codes, regulations and standards. The program is geared towards entities where data from past periodic inspections demonstrates a need for compliance assistance. Independent of and separate from TSSA's inspection activity, this compliance support service, through a compliance support advisor, gives entities the opportunity to engage directly with TSSA to address specific non-compliance issues. Through one-on-one guidance, a compliance support advisor provides tailored advice, education, and support in parallel to TSSA's periodic inspection process.

In FY26, TSSA provided compliance support to **over 190** regulated parties. Additionally, TSSA delivered **28** presentations on compliance standards and TSSA's data-driven approach to enhancing public safety in Ontario to **1,500** audience members from all sectors across Ontario.

Figure A3: Periodic Inspection Results



4 A completed periodic inspection refers to a periodic inspection or work order that has been carried out and formally outcomed by the inspector in Customer Relationship Management (CRM), with the status updated to completed or posted. This excludes any inspections that remain scheduled, unscheduled, or in progress

Resolved Lapsed Authorization

As part of TSSA's mandate to enhance public safety, TSSA has an ongoing process to address expired authorizations and ensure authorization holders who have not renewed or reinstated their authorizations, do not continue to operate. The process involves follow-up communication with owners and authorization holders and, if required, inspections to terminate the operations or request the renewal of the authorization. Expired authorizations are considered "resolved" if they are either successfully renewed or the operations are confirmed halted. The following summarizes the outcomes across various program areas:

Boilers and Pressure Vessels with a Record of Inspection: 98% resolution rate, with a total of 10,375 resolved authorizations.
Elevators, Escalators, Amusement Devices, and Ski Lifts: 99% resolution rate, with a total of 43,416 resolved authorizations.
Fuels Program: 99% resolution rate, with a total of 11,965 resolved authorizations.

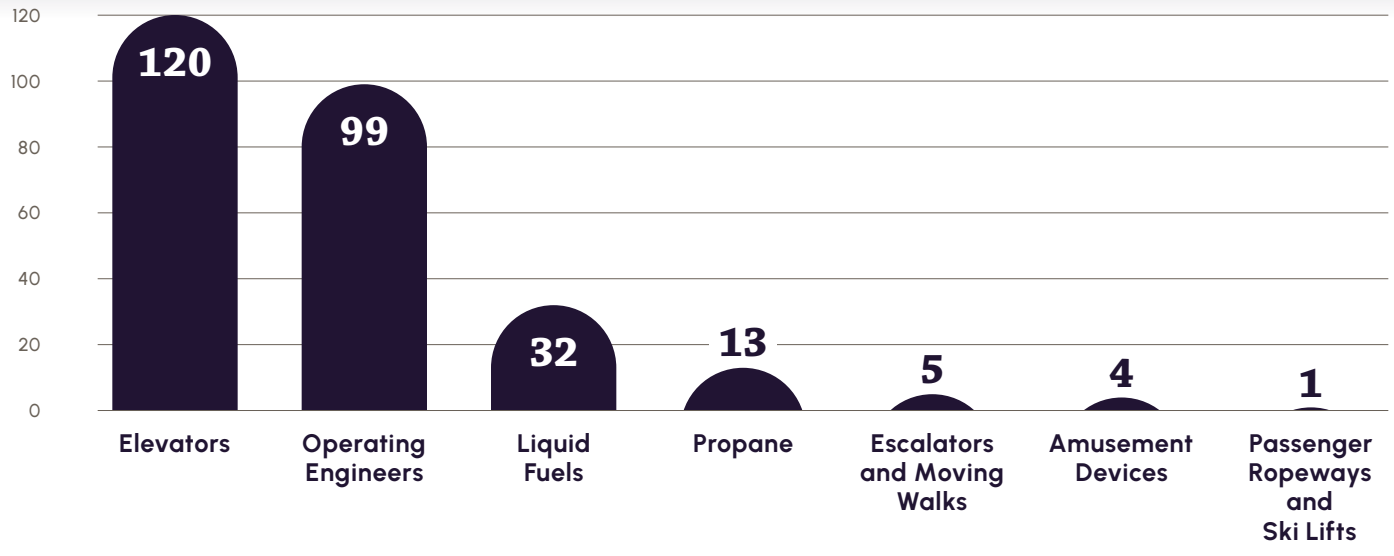
High-risk devices and sites for elevators, escalators, amusement devices, ski lifts, liquid fuels, propane, and OE plants in FY26

Based on a methodology developed in 2017, TSSA analyzes data from inspection activities and reported incidents to assess the relative risk of authorized inventory across the above TSSA-regulated industries. The risk score for each device, equipment or facility is then compared against a risk threshold set by the program statutory director. In FY26, less than 1.7% of inventory had a risk level above TSSA tolerability level. In FY26, the high-risk inventory percentage is lower than that of last year (1.90%). This decrease is primarily due to a decrease in the percentage of high-risk OE plants and elevators.

Figure A4: High-risk devices and sites (FY26)

Number of High-risk devices and sites
274
Reduction of 43 devices and sites from last year (FY25)

Percentage of High-risk Inventory
1.61%





Amusement Devices Safety Program

TSSA's Amusement Devices (AD) Safety Program regulates the devices designed to entertain thrill seekers, including roller coasters, Ferris wheels, merry-go-rounds, water slides, go karts, bumper cars, inflatables, bungee devices and Zip Lines.

Before a new amusement device is registered, TSSA reviews engineering designs to ensure compliance with Ontario's safety requirements. TSSA licenses amusement rides and operators and issues certificates to qualified mechanics.

TSSA also issues permits for rides each year the rides are in operation. TSSA inspects new devices prior to their start up and again at the start of every new season. When necessary, TSSA also conducts investigations.

At a Glance

Compliance Rate FY26

80%

Number of Permitted Amusement Devices

917

Approved Engineering Designs

136

Operators

258

Certified Mechanics

382



Incidents

In FY26, there was an increase in both total incidents and non-permanent injuries compared to the 10-year average. Reported incidents rose to 1,609, marking a 72% increase, while non-permanent injuries rose to 1,550, marking a 77% increase. The reported data reflect enhanced reporting practices and more complete data collection.

Despite the recent uptick, long-term trends show improvement. Permanent injuries have declined from 33 in FY17 to 14 in FY26, representing a 58% reduction over the past decade. Additionally, there were zero fatalities recorded in FY26. This suggests that, although the short-term incident figures appear elevated, overall safety performance has improved over time.

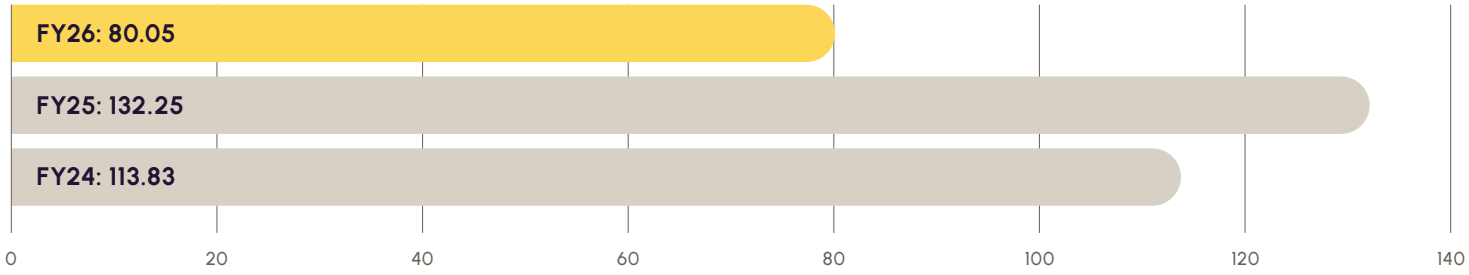
Incidents*

FY26 vs 10-year average

*As of 2026-04-30

Incidents	Non-Permanent Injuries	Permanent Injuries	Fatalities
1,609 ↑	**1,550** ↑	**14** ↓	**0** ↓
avg 935	avg 874	avg 20	avg 0.2

Incidents per 100 Permitted Amusement Devices*



*Metric is based on 917 active amusement devices (excluding inflatables) as at the end of FY26 (May 1, 2025, to April 30, 2026).

Distribution of Top Incidents by Amusement Device Types (2017-2026)

Over the 2017–2026 period, amusement rides alone accounted for 55% of incidents – more than the remaining categories combined – and water slides followed at 29%. This suggests that high-volume, high-interaction devices drive the majority of incidents in the program.

*Other amusement devices and rides (go-karts, inflatables, etc.)

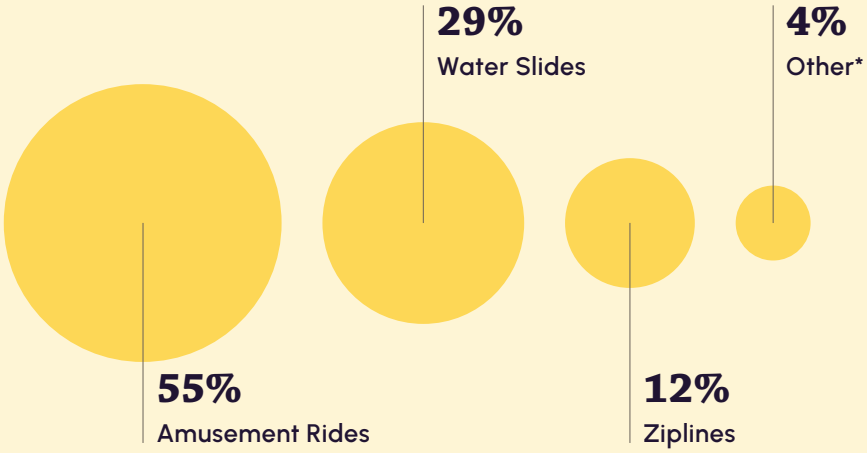


Figure B1: 10-Year Observed Injury Burden Trend for Amusement Devices

The long-term trendline for the Amusement Devices program points clearly downward, demonstrating meaningful reduction in the severity of injuries over the past decade. While the OIB has moved up and down year to year, the overall direction is encouraging – the FY26 value of 0.0843 FE/mp is notably lower than the 0.1596 FE/mp peak recorded in FY19, and the downward trendline confirms that these short-term fluctuations do not detract from the broader improvement in safety outcomes.

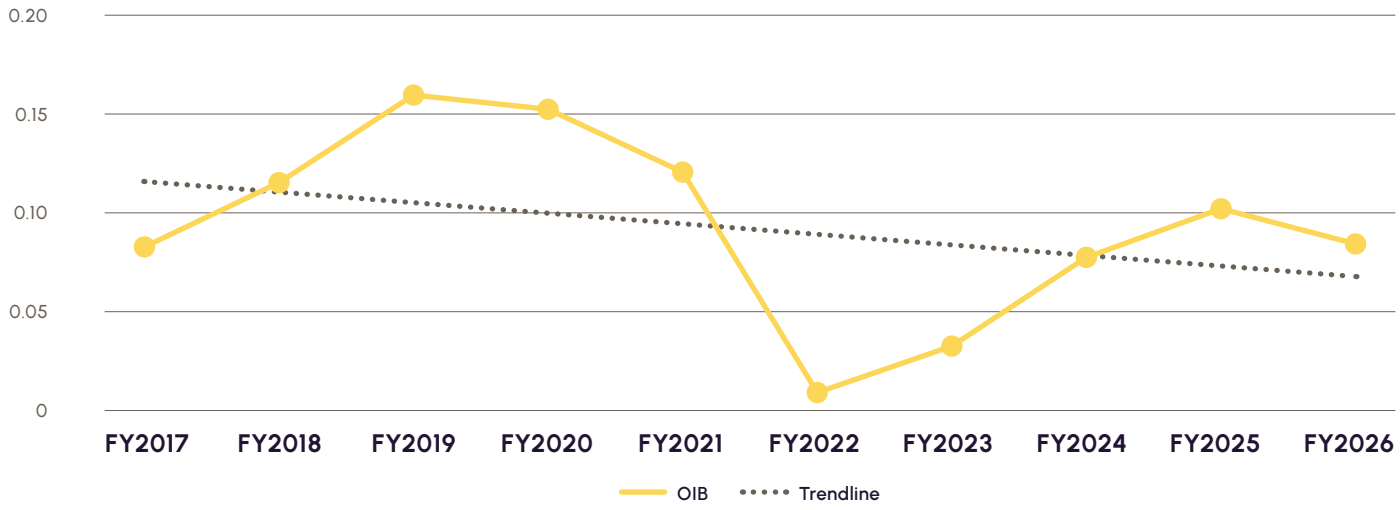
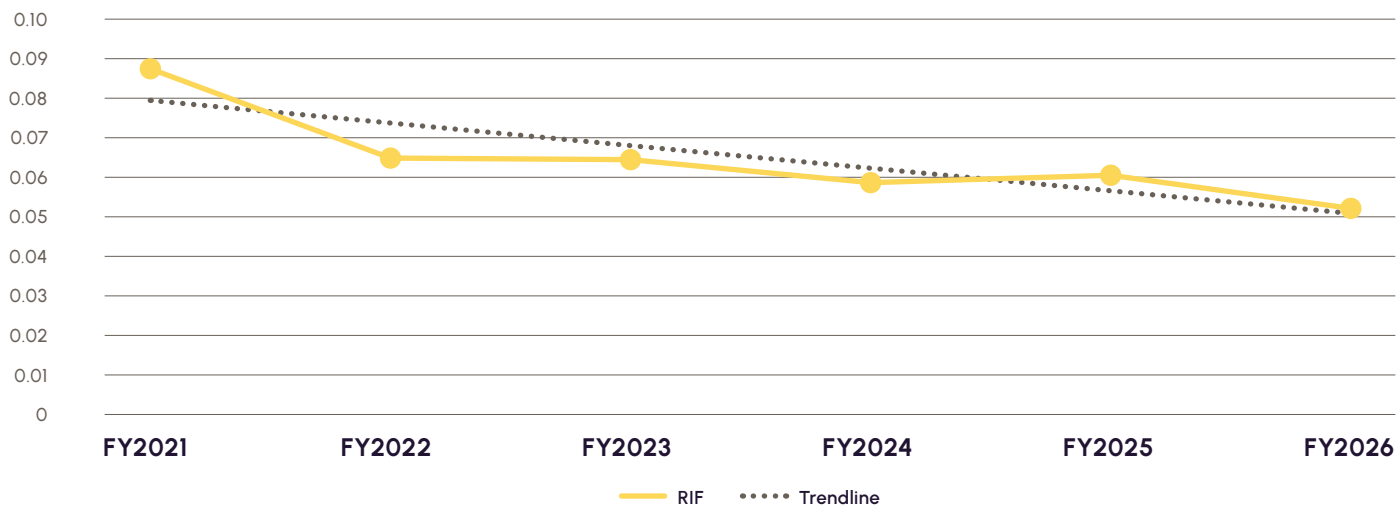


Figure B2: Risk of Injury or Fatality for Amusement Devices (2021-2026)

TSSA's Risk of Injury or Fatality (RIF) estimates the potential for injury or fatality by performing a Monte Carlo simulation on 10-year historical data. The RIF for the Amusement Devices program has trended downward over the past five years, reaching its lowest point of 0.0525 FE/mpy in FY26. While a minor uptick occurred in FY25, the overall trajectory is positive – FY26's result brings the RIF to a new five-year low, reinforcing that the long-term trendline for safety outcomes in the amusement devices program is firmly in the right direction.



Inspection Results

TSSA conducts a variety of inspection types, including periodic and non-periodic inspections every year. Figure B3 highlights the compliance outcomes from periodic inspections carried out in FY26. In FY26, the Amusement Devices program completed a total of 1,790 periodic inspections, of which 1,428 were compliant, 350 failed and 12 fell under 'Other'. This results in a compliance rate of approximately 80%, indicating that a significant majority of devices met TSSA safety requirements and did not have any observed high-risk non-compliances.

Figure B3: Periodic Inspection Results

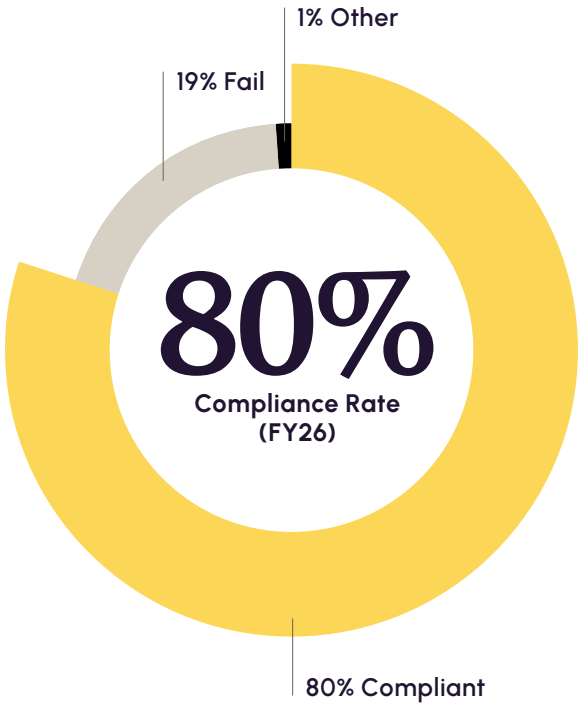


Figure B4: High-risk Amusement Devices (FY26)

Number of High-risk Amusement Devices

4

High-risk inventory for amusement devices has gone up from 1 amusement device in FY25 to the current 4 amusement devices.

Percentage of High-risk Inventory

0.12%

Top High-risk Issues from Periodic Inspections (FY26)

Compliance Issue	Total Number of Orders Issued
Ensure all fasteners are properly secured.	**75**
Ensure all electrical cords, cables, conduits, and equipment are free from physical damage.	**51**
Ensure the passenger unit surfaces are smooth and free of sharp edges to prevent injury.	**39**

Spotlight

Engineering Review and Inspection: The Safeguards Behind Ontario's Amusement Devices



Stock photo: Yulia Raneva / iStock

When families visit an amusement facility, they expect rides, devices, and attractions to be safe. That confidence is supported by a system of regulatory oversight designed to identify risks before the public uses a device.

In March 2026, TSSA laid charges against the operator of Aerosports Trampoline Park in Scarborough following an incident in which a child was injured after falling from a zipline. During its investigation, TSSA determined that the zipline had not been authorized for public use and ordered it shut down.

In Ontario, each amusement device must hold a TSSA permit before it can operate for the season. TSSA reviews engineering designs for new rides, issues operating permits, conducts periodic inspections of approved devices, and certifies the mechanics responsible for installation, maintenance, and daily safety checks.

No Amusement Ride is Allowed to Operate without TSSA's Approval

"Most people only see the attraction once it's operating, but they trust there is significant safety work behind the scenes to help ensure amusement devices can be used safely," said Sonny Silva, Regional Supervisor of Elevating Devices and Amusement Devices at TSSA. "Permits, inspections, and technical reviews are important safeguards that help identify potential risks before the public is exposed to them."

TSSA's authorization helps ensure devices meet applicable safety standards before the public uses them. When a device operates without a necessary authorization, it means there has been no formal safety review prior to public use.

In this case, TSSA's records showed no zipline had been approved for operation at the facility. Following the investigation, charges were laid for operating an amusement device without authorization, operating it in an unsafe manner, and providing false information to TSSA.

While the matter is before the courts, the case highlights the importance of compliance and safety oversight. Through a comprehensive range of safety activities, including engineering reviews, inspections, incident investigations, enforcement actions, and public education, TSSA supports the safe and responsible operation of amusement devices across Ontario.



Boilers and Pressure Vessels Safety Program

TSSA's Boilers and Pressure Vessels (BPV) Safety Program regulates the design, construction, maintenance, use, operation, repair and service of pressure retaining components manufactured or used in Ontario. This includes equipment that produces and distributes hot water, steam, compressed air, and other compressed liquids and gases used in commerce and industry.

TSSA is involved in all aspects of the lifecycle of pressure vessels: from design, manufacture and installation to operation, maintenance and decommissioning.

TSSA conducts engineering reviews, examines pressurized equipment and facilities prior to start-up, conducts periodic inspections on uninsured boilers and pressure vessels, surveys quality programs for equipment manufacturers, and certifies inspectors employed by insurers licensed to conduct periodic inspections of insured equipment.

At a Glance

Certificate of Competency Holders

204

Certificate of Authorization Holders

3,265

Certificates of Inspection Issued

20,522



Incidents

With zero injuries and fatalities recorded in FY26 – consistent with the 10-year average – injuries in this program area remains low. However, the value of this data is contingent upon on the completeness of reporting.

TSSA continues to work with boilers and pressure vessels owners and operators to improve incident and near-miss reporting, as greater participation will help build a more complete picture of safety across the program.

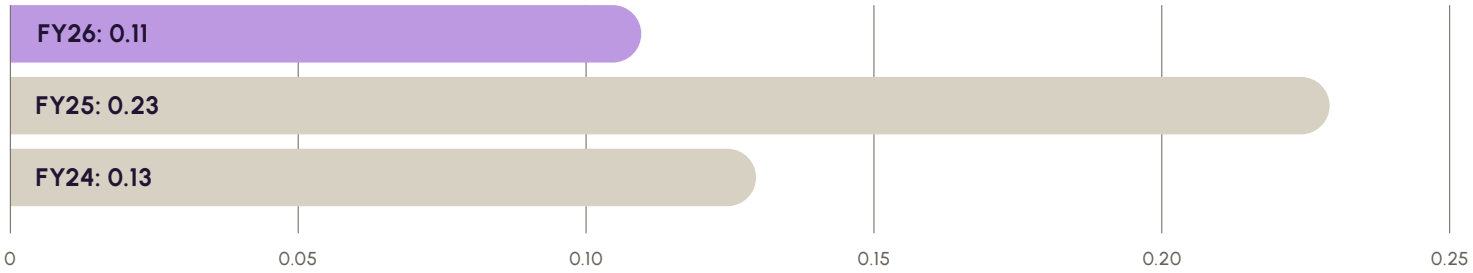
Incidents*

FY26 vs 10-year average

*As of 2026-04-30

Incidents	Non-Permanent Injuries	Permanent Injuries	Fatalities
78	**0**	**0**	**0**
avg 100	avg 0.3	avg 0.3	avg 0

Incidents per 100 authorized Boilers and Pressure Vessels



TSSA's Risk of Injury or Fatality (RIF) estimates the potential for injury or fatality by performing a Monte Carlo simulation on 10-year historical data. In FY26, the RIF for Boilers and Pressure Vessels was calculated at 0.0008 FE/mpy – remaining consistently low alongside the Observed Injury Burden.

While these figures are encouraging, their significance grows with the quality and volume of data behind them. TSSA continues to work with owners, operators, and third-party insurance inspectors to strengthen incident and near-miss reporting across the program, so that these metrics increasingly reflect a full and accurate picture of safety in Ontario.

The majority of licensed boiler and pressure vessels (BPVs) in the province are subject to periodic inspections conducted by third-party insurance inspectors, who are required to submit an official record of each inspection to the TSSA. In FY26, TSSA inspectors conducted 2,537 periodic inspections on uninsured boiler and pressure vessels.

BPV Data Collection Project

In June 2025, TSSA launched the BPV Certificate of Inspection (COI) Portal, a significant step forward in how compliance data is collected across the program. For the first time, third-party insurance inspectors are now required to report 20 specific violations identified during inspections directly through portal; 11 of which are classified as high-risk requiring immediate compliance before a COI can be issued.

This initiative marks a meaningful shift toward consistent, complete, and analyzable safety data – information that was not systematically tracked prior to this change. The data collected will strengthen TSSA's ability to monitor compliance, identify emerging risk trends, and drive better safety outcomes across the province.

All licensed insurers and third-party inspection agencies are required to report violations through the BPV COI Portal as they are identified. Timely and complete reporting is essential to building the evidence base needed to protect public safety in Ontario.

As third-party inspection data collection was phased in through FY26, the following table only includes the results from inspections performed by TSSA.

Top High-risk Issues from TSSA Inspections (FY26)

Compliance Issue	Total Number of Orders Issued
Dismantle, clean, and inspect the low water cutoff for wear, and demonstrate that it works properly to the TSSA Inspector.	**52**
Equipment not serviced in accordance with maintenance lists and manufacturer's recommendations.	**41**
Repair or replace the temperature controls and confirm they work properly with the TSSA Inspector.	**25**

Spotlight

Supporting Ontario's Agricultural Sector Through Education and Outreach



Stock photo: Martin Barraud / iStock

Boilers and pressure vessels (BPVs) are widely used across Ontario's agricultural sector, supporting activities such as greenhouse production, dairy processing, and grain drying. Because these systems operate under pressure, their safe installation, maintenance, inspection, and operation are crucial to protecting workers, property, and the public.

In 2021, the provincial government removed the exemption for agricultural BPVs to strengthen safety on farms and in surrounding communities. As a result, agricultural BPV equipment became subject to Ontario Regulation 220/01 under the Technical Standards and Safety Act, 2000, and the CSA B51 Code.

To support the sector's transition to these requirements, TSSA has worked closely with industry associations and stakeholders to help farmers understand and meet their safety obligations.

"The safety requirement for agricultural BPV helps align Ontario farms with safety standards used across Canada," said Tony Gabriele, Regional Supervisor, Boilers and Pressure Vessels, TSSA, and Project Lead for the Agricultural BPV Initiative. "We recognize these requirements are new for many farmers. Through education and engagement, we're working with industry partners to help operators understand what's required and stay compliant."

Helping Farmers Navigate Compliance Requirements

Through its "Stay Safe. Stay Compliant." campaign, TSSA delivered practical education and outreach to support farmers. The campaign included participation at major industry events such as the Dairy Farmers of Ontario Annual Meeting, the Ontario Greenhouse Vegetable Growers presentation, the Beef Farmers of Ontario Annual General Meeting, and the Grain Farmers of Ontario conference. At these events, farmers, operators and industry members had opportunities to speak directly with TSSA inspectors, ask questions, and receive guidance on compliance obligations.

TSSA's campaign also delivered a range of supporting engagements and materials, including webinars, newsletters, trade publication content, inspection checklists, FAQs, and informational brochures, to help improve awareness and clarify regulatory requirements.

One simple step in compliance is reporting all agricultural BPVs through TSSA's online form. Once submitted, TSSA schedules a site assessment where an inspector reviews equipment for compliance and provides guidance on any corrective actions. To help prepare for inspections and comply with regulations, TSSA encourages farmers to visit TSSA's website: tssa.org and access the latest updates and practical tools to support them through the compliance process.



Elevating Devices Safety Program

Elevators

TSSA's Elevating Devices (ED) Safety Program regulates elevators in Ontario to ensure all devices conform to the Act and applicable regulations, codes and standards.

This includes: passenger, freight, hand-powered, observation, sidewalk, temporary, limited use/application elevators, dumbwaiters, material and freight platform lifts, lifts for persons with physical disabilities, man-lifts, construction hoists, incline lifts, stage lifts, and parking garage lifts.

TSSA reviews and registers elevators, issues licences, conducts inspections, performs incident investigations, provides engineering services, registers contractors and certifies mechanics.

TSSA works closely with industry, through advisory councils and consultations, to propose improvements and implement effective safety strategies and solutions. Collectively, TSSA strives to ensure a safe environment for the riding public.

At a Glance

Compliance Rate FY26

73%

Number of Elevators

67,191

Number of Passenger Elevators
50,151

Other Elevating Devices
17,040



Elevators
Approved Engineering Designs

1,938

ED Program
Registered Contractors

180

Elevators
Owners

23,241

ED Program
Certified Mechanics

4,853

Incidents

In FY26, incidents totalled 958 – significantly above the 10-year average of 776. However, a clear reduction in injury severity was observed. Non-permanent injuries fell to 54, compared with the 10-year average of 100. There were no permanent injuries or fatalities, compared with decade averages of 6 permanent injuries and 0.4 fatalities. This decoupling of incident frequency from injury severity suggests that while more incidents are being logged – possibly due to better reporting - actual harm is decreasing.

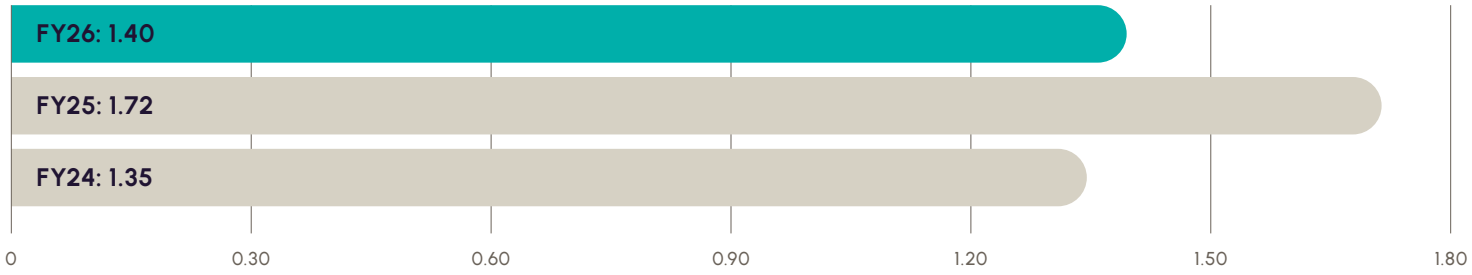
Incidents*

FY26 vs 10-year average

*As of 2026-04-30

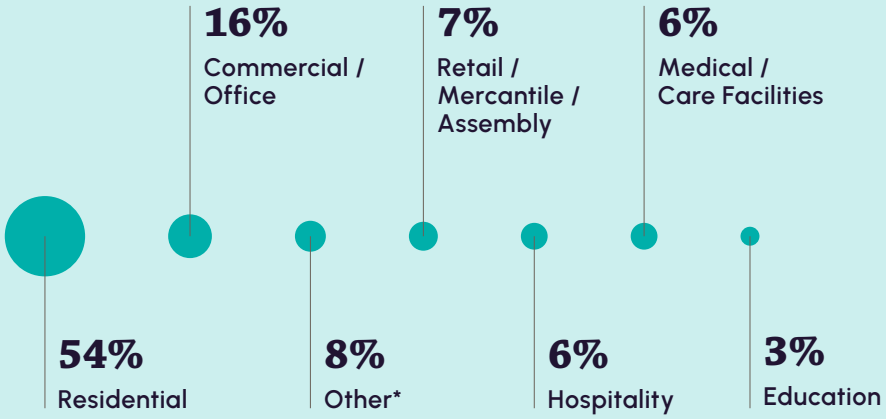
Incidents	Non-Permanent Injuries	Permanent Injuries	Fatalities
958 ↑	**54** ↓	**0** ↓	**0** ↓
avg 776	avg 100	avg 6	avg 0.4

Incidents per 100 Authorized Elevators in Ontario



Distribution of Incidents by Elevator Building Types (2017-2026)

Elevator incident patterns demonstrate a strong correlation between building type and usage intensity, with residential settings exhibiting higher frequencies (54%) due to occupant density and operational demands. This observation highlights the importance of prioritizing risk mitigation and safety strategies within apartment and condominium environments. Non-residential sectors, while representing a smaller share of incidents, warrant targeted interventions based on their unique operational profiles. Overall, the data underscore the necessity of adaptive safety programs that address both high-risk residential contexts and the distinct needs of commercial, public, and institutional sites.



*Other locations include industrial, infrastructure, transportation and unknown

Figure C1: 10-Year Observed Injury Burden Trend for Elevators in Ontario

The Observed Injury Burden (OIB) for elevators in Ontario demonstrates a clear overall downward trend over the 10 years from FY17 to FY26, as confirmed by the linear trendline. The OIB began at 0.195 FE/mp in FY17 and declined to 0.002 in FY26, representing a reduction of approximately 99% over the period.

Despite the overall downward trend, notable spikes were observed in FY20 (0.161) and FY22 (0.025), potentially reflecting isolated injury events given the low baseline. However, from FY21 onward, OIB values have remained consistently low, ranging between 0.001 and 0.025, indicating a sustained improvement in injury outcomes. The FY26 value of 0.002 was among the lowest recorded in the decade, underscoring an ongoing improvement in elevator safety in Ontario.

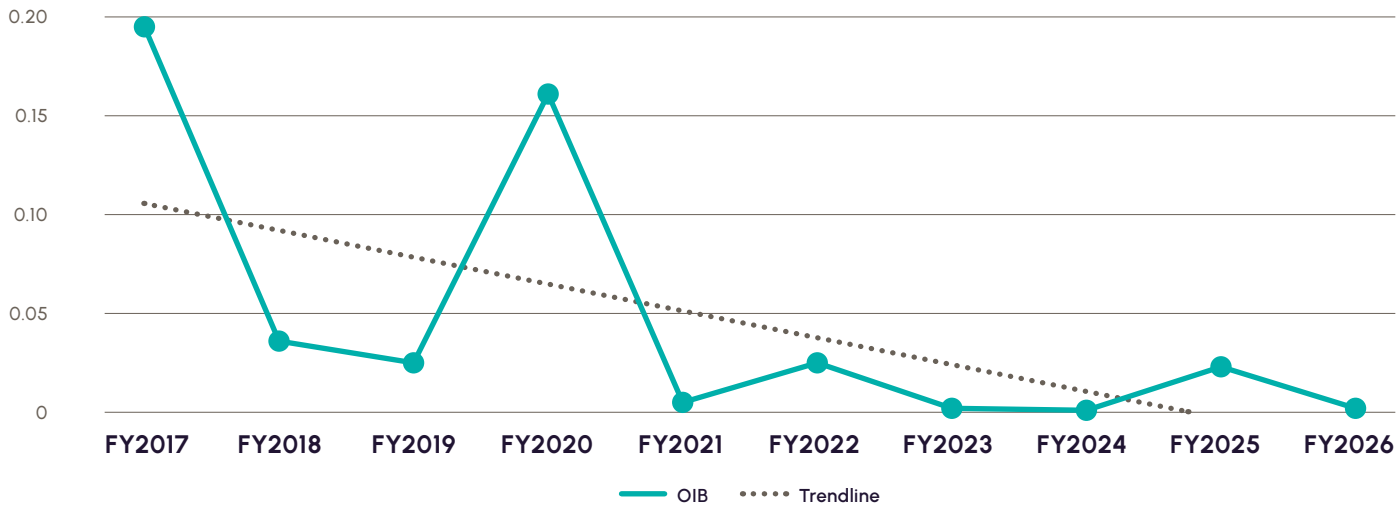
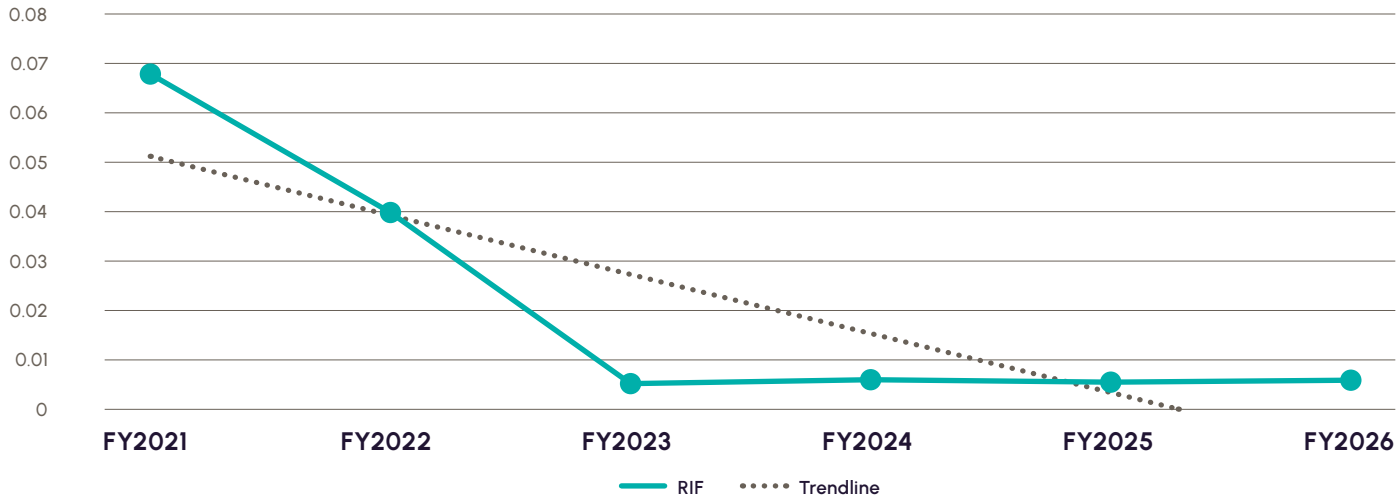


Figure C2: Risk of Injury or Fatality for Elevators (2021-2026)

TSSA's Risk of Injury or Fatality (RIF) for elevators has remained stable since FY23, with values ranging narrowly between 0.0050 FE/mpy and 0.0058 through to FY26. The linear trendline shows the beginning of a decline from 0.0401 in FY22, indicating that the predicted risk of injury or fatality associated with elevators has improved significantly over time and has remained consistent in recent years.

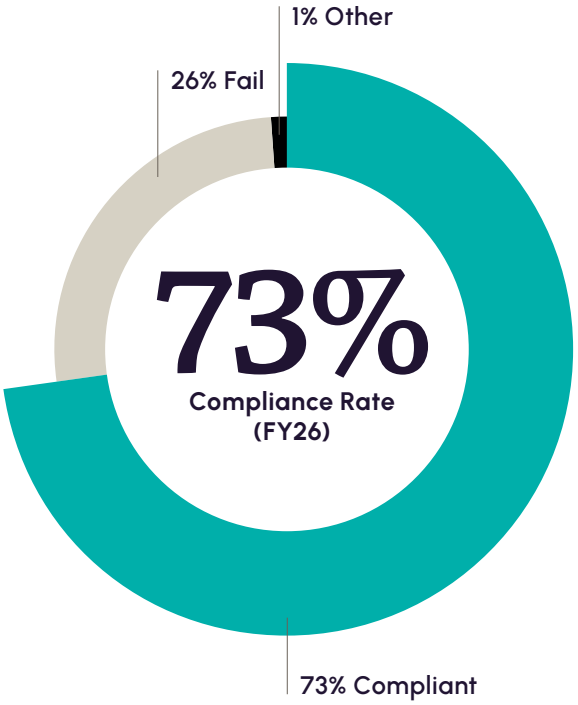


Inspection Results

TSSA conducts a variety of inspection types, including periodic and non-periodic inspections every year. Figure C3 highlights the compliance outcomes from periodic inspections carried out in FY26.

In FY26, TSSA completed 12,318 periodic elevator inspections, of which 8,991 were compliant, 3,185 failed, and 142 were categorized as 'Other'. This results in a compliance rate of 73%, a modest improvement from 71% in FY25. The year-over-year improvement is likely a part of TSSA's continued efforts to support industry compliance through education and enforcement activities. Notably, the total number of inspections in FY26 (12,318) increased by 22.76% (or 2,264) from FY25 (10,034), demonstrating expanded inspection coverage across the province.

Figure C3: Periodic Inspection Results



Top High-risk Issues from Periodic Inspections (FY26)

Compliance Issue	Total Number of Orders Issued
Restrict the hoist-way or car door opening, annual periodic task not complete and records not maintained.	**793**
Car emergency system maintenance not completed, and logbook not updated.	**779**
Scheduled maintenance task not complete and logbook not signed to confirm compliance.	**436**

Figure C4: High-risk Elevators in FY26

Number of High-risk Elevators

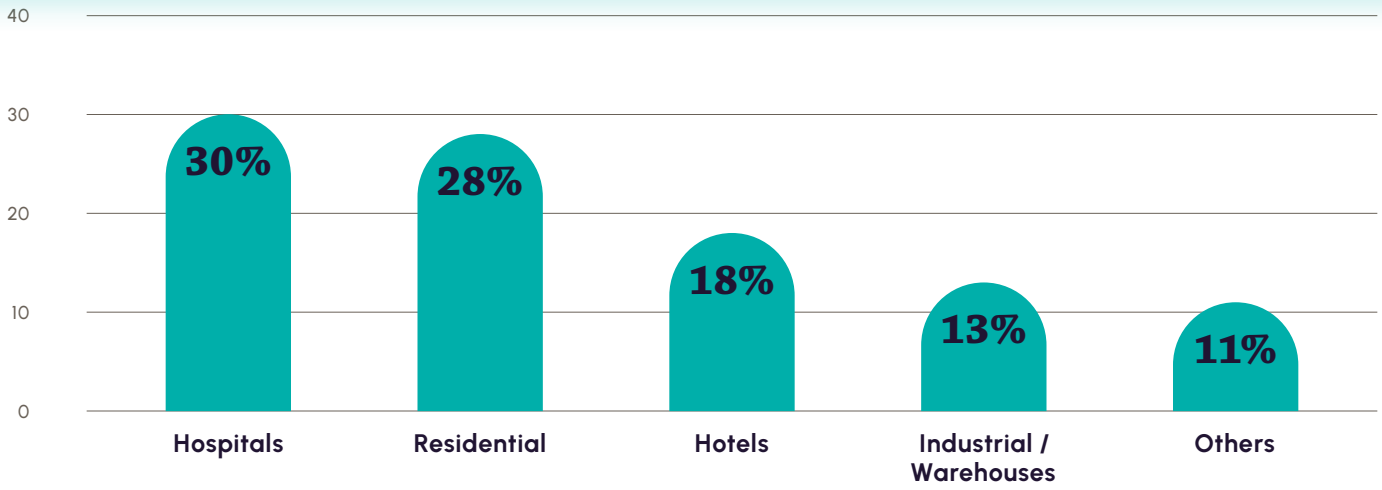
120

The number of high-risk elevators in Ontario declined from 134 in FY25 to 120 in FY26, representing a reduction of 14 devices.

Percentage of High-risk Inventory

0.24%

These high-risk devices accounted for 0.24% of the total authorized elevator inventory in the reporting period. This continued decrease is likely in part of the progress in addressing high-risk non-compliances across the province.



Spotlight

Administrative Penalties: A New Tool to Strengthen Elevator Safety Compliance


Stock photo: Kadmy / iStock

Administrative penalties for elevating devices came into effect in June 2025 as part of the TSSA's efforts to protect the public, reinforce safety requirements, and modernize its enforcement framework.

In FY2026, the regulator issued its first administrative penalties in the elevating devices program, totaling $18,000 for six counts of non-compliance involving elevator alteration work performed by an unregistered contractor.

The penalties were issued to a condo corporation, the licence holder of six elevators in a residential building in Mississauga, Ontario. The corporation was found to have engaged a contractor that did not hold a TSSA registration to carry out elevator alteration work. The penalties have been paid in full.

Enhancing Compliance Through Modern Enforcement Tools

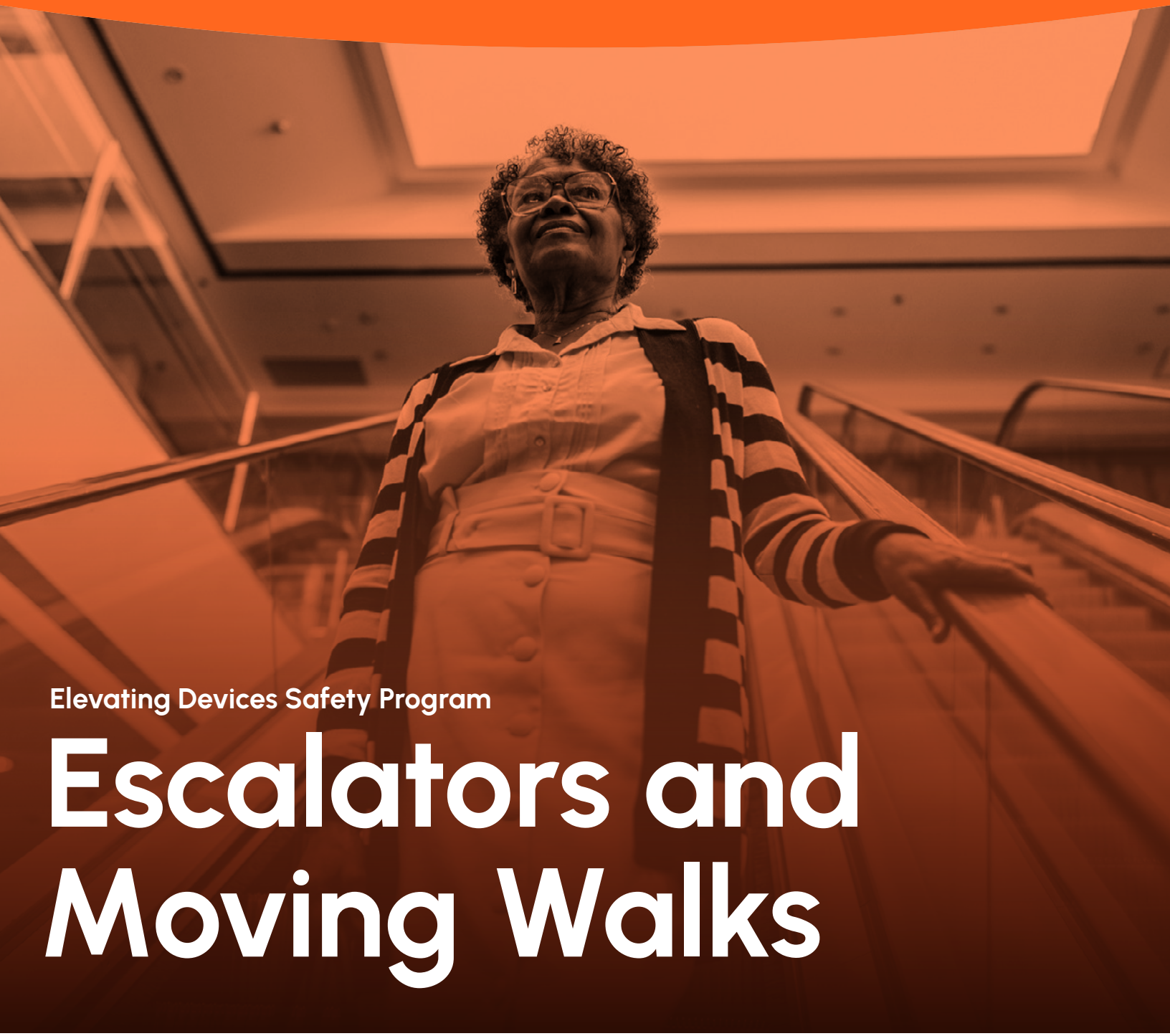
"In Ontario, only contractors registered with TSSA and certified mechanics are permitted to perform or supervise work on elevating devices, and in this case there is a clear violation that falls under TSSA's administrative penalty framework," said AJ Kadirgamar, Director of TSSA's Elevating Devices Safety Program. "Administrative penalties are designed to strengthen compliance and accountability by providing an effective and efficient mechanism to deter violations in the elevating devices sector."

Currently, the administrative penalties apply to specific violations under Ontario Regulation 209/01 related to passenger elevators in residential settings, including condominiums, rental buildings, long-term care homes, and student residences.

The enforcement tool may apply when:

- **A residential building owner** does not engage a TSSA-registered contractor for the installation and alteration of elevating devices
- **A person works on an elevating device** who is not employed by a registered contractor or does not hold the required elevator mechanic certificate for the type of work being performed
- **A contractor** fails to submit an elevator incident report involving death or serious injury

Administrative penalties are intended to reinforce compliance with the requirement to keep elevators safe to use for Ontarians. The penalties are avoidable when the safety work on elevators are operated and maintained in accordance with regulatory rules and standards.



Elevating Devices Safety Program

Escalators and Moving Walks

TSSA's Elevating Devices Safety Program regulates escalators and moving walks in Ontario to ensure all devices conform to the Act and applicable regulations, codes and standards.

TSSA reviews and registers escalators and moving walks, issues licences, conducts inspections, performs incident investigations, provides engineering services, registers contractors and certifies mechanics.

TSSA works closely with industry, through advisory councils and consultations, to propose improvements and implement effective safety strategies and solutions. Collectively, TSSA strives to ensure a safe environment for the riding public.

At a Glance

Compliance Rate FY26

50%

Number of Authorized Devices

2,329

Owners

358

Approved Engineering Designs

16



Incidents

In FY26, escalator and moving-walks-related incidents rose to 865, above the 10-year average of 718. This could be related to a number of factors including enhanced reporting, increased usage and population growth. Notably, however, the severity of outcomes has improved. Non-permanent injuries were slightly down from the 10-year average (392 compared to 401), permanent injuries dropped to 1 compared to an average of 3, and there were zero fatalities recorded this year. This could potentially be attributed to a combination of factors including safety measures in place, safer user behaviour, and the ongoing collaboration between industry and other stakeholders.

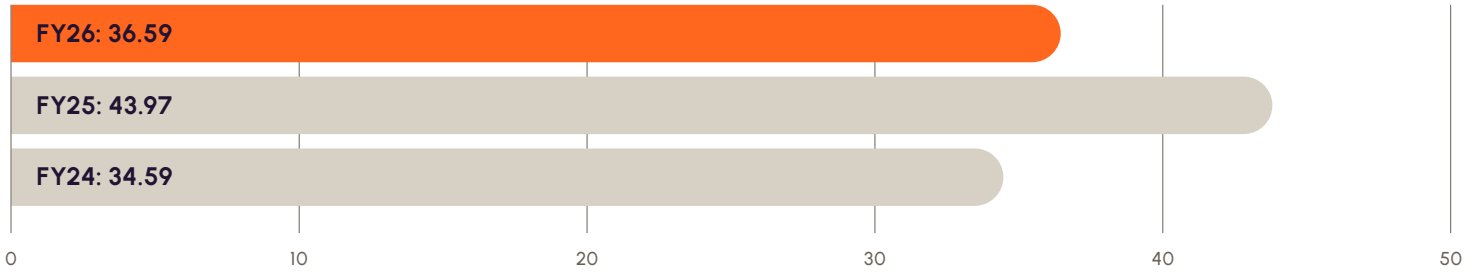
Incidents*

FY26 vs 10-year average

*As of 2026-04-30

Incidents	Non-Permanent Injuries	Permanent Injuries	Fatalities
865 ↑	**392** ↓	**1** ↓	**0** ↓
avg 718	avg 401	avg 3	avg 0.4

Incidents per 100 authorized Escalators and Moving Walks in Ontario



Distribution of Escalators and Moving Walks Incidents by Building Types (2017-2026)

Mass Transportation and Retail/Mercantile settings account for 92% of all escalator and moving walk incidents over the past decade – a concentration that reflects usage volume rather than safety deficiencies. Escalators and moving walks in these environments serve significantly higher foot traffic than those in offices, entertainment venues, or other building types, making the elevated incident share an expected outcome of scale. The remaining 8% spread across commercial, assembly, and other building types reinforces that where people ride most, incidents naturally follow.

*Other Building Types (such as hotels, medical, etc.)

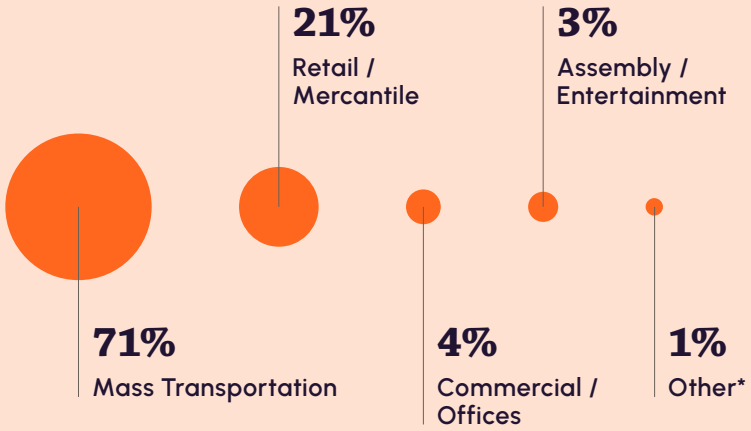


Figure D1: 10-Year Observed Injury Burden Trend for Escalators and Moving Walks in Ontario

The most striking observation of FY26 is the sharp drop in the OIB to 0.0025 FE/mp – the lowest value recorded in the entire 10-year period - a significant improvement from 0.0262 in FY25. This decline reflects the zero fatalities and reduced injury severity observed this year. This stands in notable contrast to the consistently elevated readings recorded between FY21 and FY25, a period during which the OIB remained persistently high. While the long-term trendline indicates a gradual upward drift over the decade, the FY26 result represents a meaningful and welcome reversal, signalling significant reduction in the burden of harm across the Escalators and Moving Walks program.

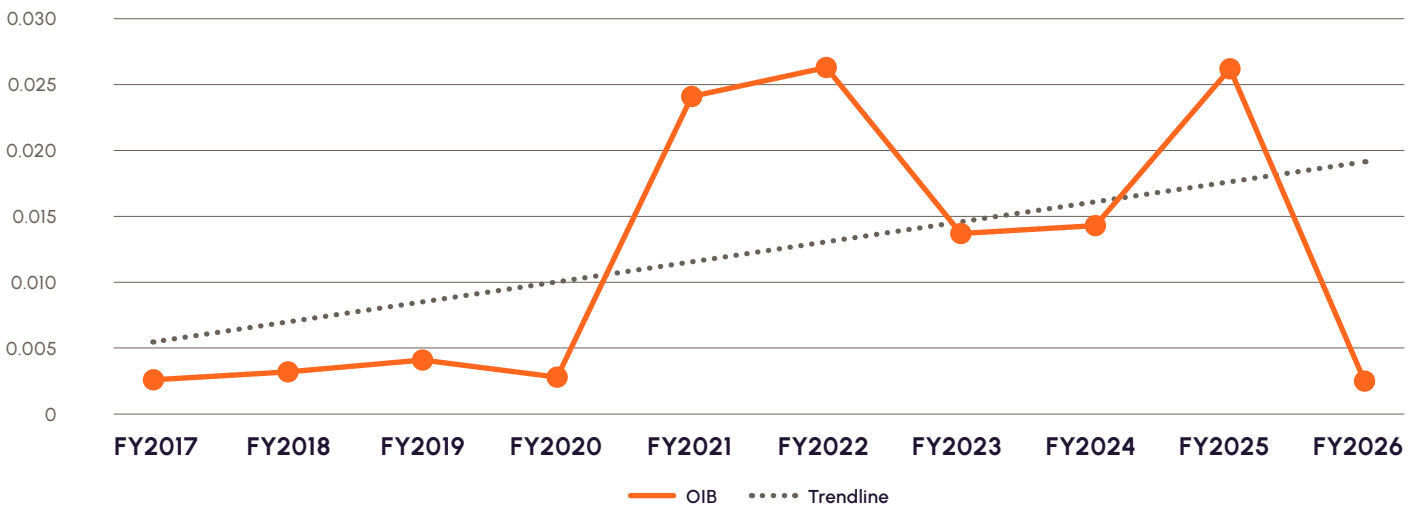
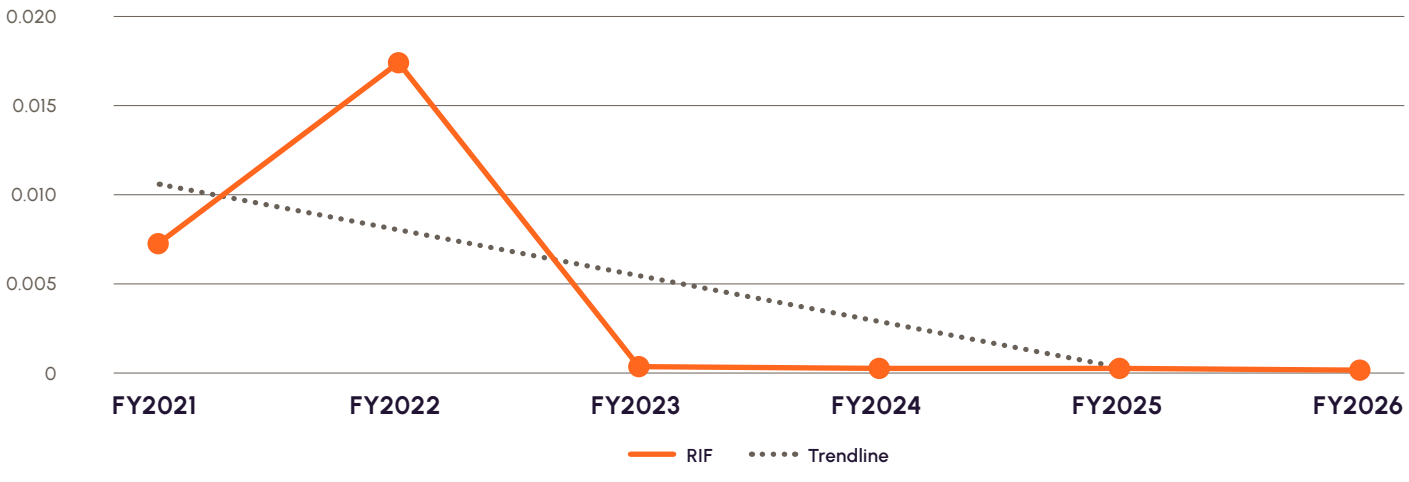


Figure D2: Risk of Injury or Fatality for Escalators and Moving Walks (2021-2026)

TSSA's Risk of Injury or Fatality (RIF) estimates the potential for injury or fatality by performing a Monte Carlo simulation on 10-year historical data. The RIF for Escalators and Moving Walks has declined dramatically from 0.0175 FE/mpy in FY22 to effectively zero by FY26 – the lowest point in the five-year window. This sustained, and near-complete reduction in potential risk is a strong indicator that safety conditions in the escalator and moving walks program have improved substantially over this period.



Inspection Results

TSSA conducts a variety of inspection types, including periodic and non-periodic inspections every year. Figure D3 highlights the compliance outcomes from periodic inspections carried out in FY26. In FY26, TSSA conducted 491 periodic inspections of escalators and moving walks, of which 245 were compliant, 233 failed, and 13 were categorized as 'Other'. The 50% compliance rate underscores that there remains significant room for improvement across the sector. TSSA will continue to work closely with owners and operators to address outstanding deficiencies and drive stronger maintenance and compliance practices across the province.

Figure D3: Periodic Inspection Results

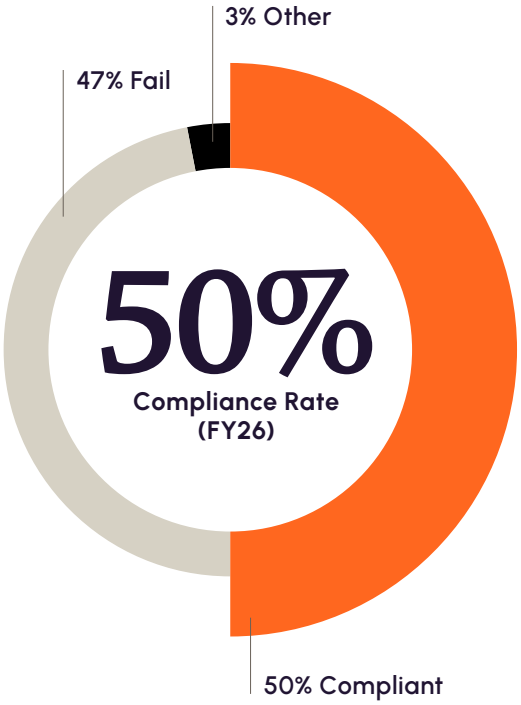


Figure D4: High-Risk Escalator and Moving Walks (FY26)

Number of High-Risk Escalator and Moving Walks

5

High-risk inventory for escalators and moving walks has increased from 4 devices in FY25 to 5 devices currently.

Percentage of High-risk Inventory

0.29%

Number of Mass Transportation High-Risk Escalators

1

Number of Mercantile High-Risk Escalators

4

Top High-risk Issues from Periodic Inspections (FY26)

Compliance Issue	Total Number of Orders Issued
Repair/replace the steps with broken tread.	**70**
The step demarcation lights are inoperative.	**53**
The comb with any broken teeth shall be repaired/replaced.	**41**

Spotlight

Navigate Safely with the Right Choice


Stock photo: Torjrtrx / iStock

Every day, escalators and moving walks help Ontarians travel through transit stations, shopping centres, office buildings, and other public spaces. While these devices provide a convenient and efficient way to move between floors, safe travel depends on both proper equipment operation, and the choices riders make.

Over the past decade, approximately 92% of reported escalator and moving walk incidents occurred in mass transportation and retail settings, where higher pedestrian volumes mean more frequent use. Some serious incidents have involved rider behaviour, particularly when people carry bulky items such as luggage, shopping bags, and parcels. Incidents have also happened to people using walkers, canes, and other mobility aids on escalators. Injuries can be serious, in previous years, even fatal injuries have occurred in these circumstances.

Choose the Elevator When Carrying Bulky Items or Using Mobility Aids

Escalators and moving walks are a safe and reliable way to travel when used properly. However, items such as luggage, shopping carts, strollers, walkers, and other mobility devices can affect balance or become caught between moving parts of an escalator, increasing the risk of falls and serious injuries.

Preventing injuries requires riders to make safe choices. When carrying large packages, pushing a stroller, using a walker, cane, or other mobility aid, or if you have concerns about your balance or mobility, choosing an elevator, when available, is often the safer option.

"Safe mobility is a shared responsibility. When elevators are available, they provide an important alternative for people who may not be able to safely use escalators, including those carrying bulky items or using mobility aids. We also encourage facilities with escalators to consider accessibility and provide safe navigation options that support riders to move through their spaces safely," said AJ Kadirgamar, Director of TSSA's Elevating Devices Safety Program.

TSSA offers consumer safety resources with tips and reminders to help riders use escalators and moving walks safely. Visit the TSSA's dedicated consumer safety website, safetyinfo.ca, to explore more about safe riding practices.



Elevating Devices Safety Program

Passenger Ropeways and Ski Lifts

TSSA's Ski Lifts Safety Program regulates the safety of passenger ropeways and ski lifts in Ontario, including chair lifts, bar lifts, passenger conveyors, gondola lifts, reversible ropeways, passenger ropeways, rope tows, tube tows and aerial tramways.

TSSA reviews and registers lift designs, licenses lift devices, conducts inspections, performs incident investigations and promotes public awareness of safe ski-lift behaviour throughout Ontario. In addition, TSSA certifies ski lift mechanics and registers contractors. Passenger Ropeways and Ski Lifts, are hereinafter referred to as Ski Lifts.

At a Glance

Compliance Rate FY26
84%

Certified Mechanics
315

Number of Devices
220

Owners
62

Registered Contractors
46

Approved Engineering Designs
7



Incidents

In FY26, incidents in the Ski Lifts program rose to 86, above the 10-year average of 70, alongside a corresponding increase in non-permanent injuries to 64 from 52. This uptick can be attributed to a strong snow season and a return to full resort attendance across Ontario. The increase in reported numbers is also attributable, in part, to a growing awareness of reporting obligations – a direct outcome of TSSA's ongoing work with owners and operators. While this progress is encouraging, TSSA continues to call on ski resort owners and operators to report all incidents and near-misses as they occur. Complete and timely reporting is essential to understanding risk, identifying trends, and making Ontario's slopes safer for everyone.

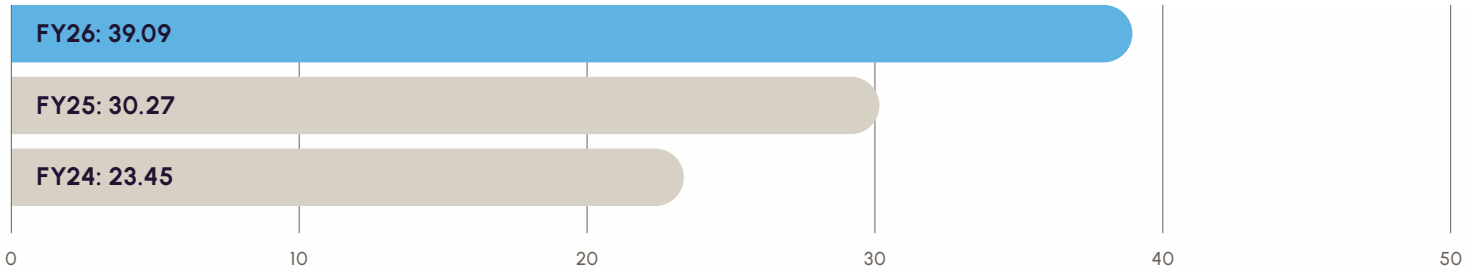
Incidents*

FY26 vs 10-year average

*As of 2026-04-30

Incidents	Non-Permanent Injuries	Permanent Injuries	Fatalities
86 ↑	**64** ↑	**4** ↑	**0**
avg 70	avg 52	avg 3	avg 0

Incidents per 100 authorized Ski Lifts in Ontario



Distribution of Incidents by Top Ski Lift Types (2017-2026)

Chair lifts account for 87% of all ski lift incidents over the past decade – a concentration that reflects their dominance in the inventory and their role as the primary mode of transporting skiers and snowboarders up the hill. Ski passenger conveyors follow at 9%, while ski bar lifts and rope tows each account for 2%. The large majority attributable to chair lifts reinforces where targeted safety education and operational oversight can have the greatest impact, particularly around loading and unloading – the most common points of risk for riders.

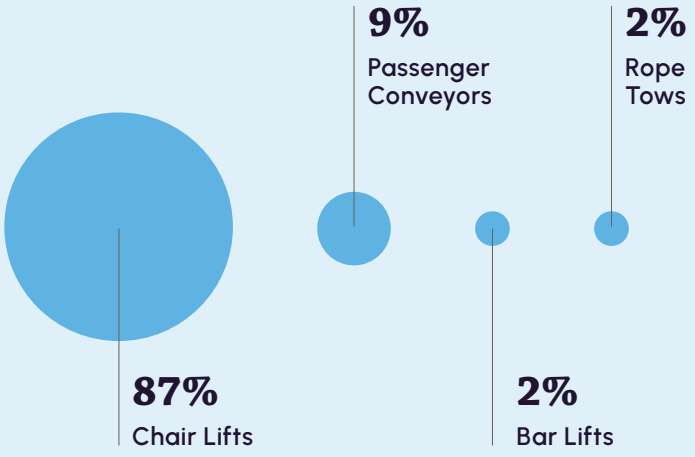


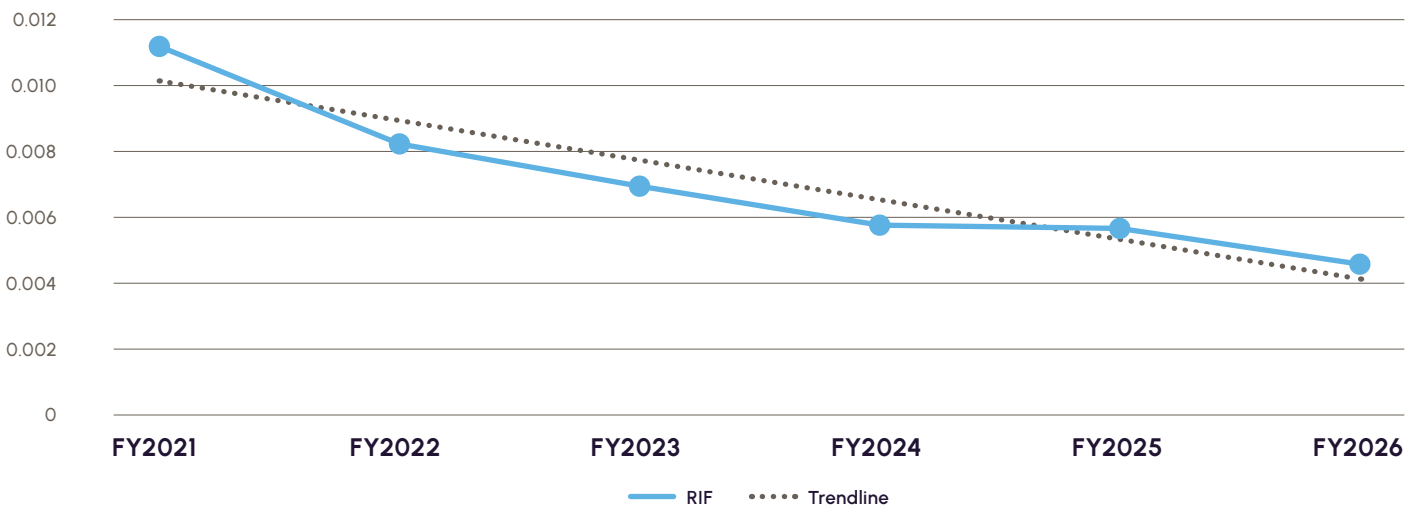
Figure E1: 10-Year Observed Injury Burden Trend for Ski Lifts in Ontario

The most notable observation of FY26 is the sharp decline in OIB to 0.0010 FE/mp – the lowest value recorded in the entire 10-year period, and a dramatic improvement from 0.0150 in FY25. Despite year-to-year fluctuations between FY21 and FY25, the long-term trendline has remained relatively flat. The FY26 outcome is well below that baseline; with zero fatalities and reduced injury severity the primary drivers of this outcome, representing the strongest safety result the ski lifts program has seen in a decade.



Figure E2: Risk of Injury or Fatality for Ski Lifts (2021-2026)

TSSA's Risk of Injury or Fatality (RIF) estimates the potential for injury or fatality by performing a Monte Carlo simulation on 10-year historical data. The RIF for Ski Lifts has declined consistently every year since FY22, falling from 0.0083 FE/mpy to 0.0046 in FY26 – a 45% reduction over five years. With both the data points and the trendline trending consistently downward, the Ski Lifts program has achieved its lowest potential risk reading on record, serving as a meaningful indicator of sustained safety improvement across the sector.



Inspection Results

TSSA conducts a variety of inspection types, including periodic and non-periodic inspections every year. Figure E3 highlights the compliance outcomes from periodic inspections carried out in FY26. In FY26, the Ski Lifts program completed a total of 114 periodic inspections, with 96 compliant and 18 failed, resulting in a Compliance rate of 84%.

Figure E3: Periodic Inspection Results

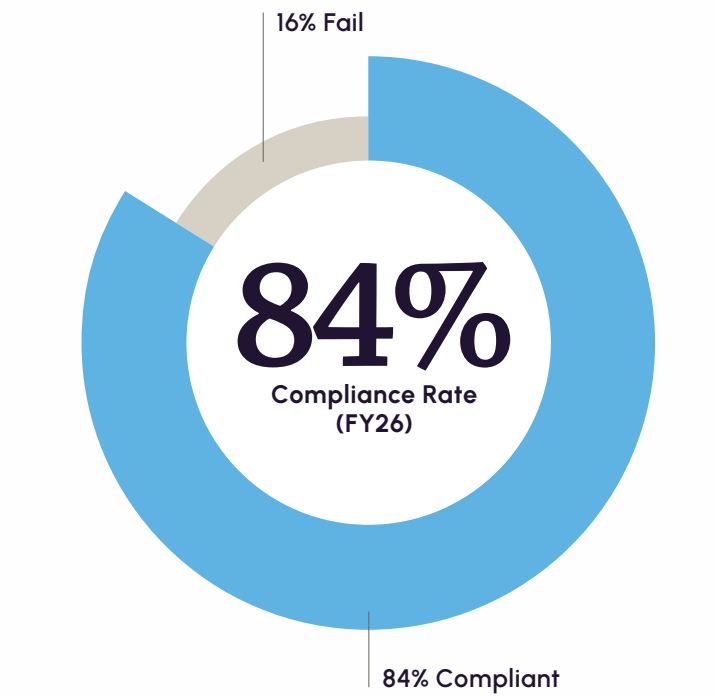


Figure E4: High-risk Ski Lifts in FY26

Number of High-Risk Ski Lifts

1

No change since FY25.

Percentage of High-risk Inventory

0.42%

Top High-risk Issues from Periodic Inspections (FY26)

Compliance Issue	Total Number of Orders Issued
Ski lift operators are required to complete evacuation training before the start of each season and keep a record of that training in their logbook.	3
All operators and attendants must be trained and documented before taking on their duties.	3
Service brakes are not adjusted to provide the correct braking force.	3

Spotlight

A Serious Near Miss: The Importance of Qualified Supervision During Maintenance



Stock photo: Cynthia Lee / Alamy

A chairlift at an Ontario ski resort was undergoing off-season maintenance when a serious failure of the rigging equipment occurred during repair work. The incident put workers in harm's way, caused excessive damage to the device, and highlighted the risks of performing maintenance without proper supervision and safe work procedures.

During the spring shutdown, the chairlift carriers were removed from the line and the lift's cylinder for the tension system was taken out for rebuilding. Several months later, while the tension cylinder was being reinstalled, part of the rigging system required for the installation of the cylinder failed. The sudden release of tension on the haul rope caused the carriage to move forward uncontrollably, striking terminal retention blocks and damaging the bottom terminal station.

Work was immediately stopped and the equipment was secured. Due to the severity of the damage and the condition of the equipment, the lift was ultimately deemed unsuitable for continued operation and was dismantled. No injuries were reported but the operator failed to notify TSSA about the incident.

Investigation Revealed Multiple Safety Violations

TSSA's investigation identified several elements of non-compliance and issued orders, including:

- **Unsafe work practices:** The work involved critical components of the lift's tensioning system, and inappropriate rigging was used during the maintenance activity.
- **Lack of qualified supervision:** Repair work involving the hydraulic tension cylinder was performed without the supervision of a qualified ski lift mechanic.
- **Failure to report the incident:** Despite the equipment failure and the safety risks involved, the incident was not reported to TSSA as required.

"Chairlift maintenance must be conducted according to safety laws," said Cy Gray, Manager of Investigations at TSSA. "This was a near miss that could have resulted in serious injury to the workers doing this maintenance. Having qualified mechanics oversee critical safety work is an essential safeguard that ensures technical expertise and experience are applied to identify hazards, prevent equipment failures, and, most importantly, protect workers and the public."

For ski lifts, all repair and maintenance activities must be supervised by certified mechanics. Reporting incidents is also a mandatory part of the safety process; it allows TSSA to assess failures and safety risks in a timely manner and ensure appropriate corrective actions are implemented.



Fuels Safety Program

TSSA's Fuels Safety (FS) Program regulates the transportation, storage, handling and use of fuels in Ontario including natural gas, propane, fuel oil, gasoline, diesel, butane, hydrogen, digester gas, and landfill gas. TSSA carries out inspections and licenses pipelines, gas stations, propane filling stations, marinas and tanker trucks.

TSSA issues licences to operate fuel facilities and pipelines, registers contractors and certifies tradespersons who install and service fuel-burning equipment. TSSA reviews and approves facility plans for TSSA-licensed sites and performs custom equipment approvals and inspections to ensure fuel is handled and used safely.

TSSA investigates incidents and reports of non-compliance and provides technical expertise to industry stakeholders, safety partners and consumers.

At a Glance

Compliance Rate
Liquid Fuels Program
44%

Compliance Rate
Propane Program
74%

Compliance Rate
Heating Contractors Program
80%

FS Program
Accredited Training Providers
131

FS Program
Heating and Petroleum Contractor Audits
2,692

FS Program
Registered Contractors
9,211

FS Program
Certificate Holders
63,341



Incidents

In FY26, fuels-related incidents declined to 2,936 – below the 10-year average of 3,182 – and the severity of outcomes improved significantly across every measure. Non-permanent injuries fell to 10, permanent injuries to 6, and one fatality was recorded this year, all notably below their respective 10-year averages of 28, 11, and 2.

This across-the-board reduction in both incident volume and injury severity, achieved in a year of continued population growth, represents the strongest safety result the fuels program has seen in the past decade.

Incidents*

FY26 vs 10-year average

*As of 2026-04-30

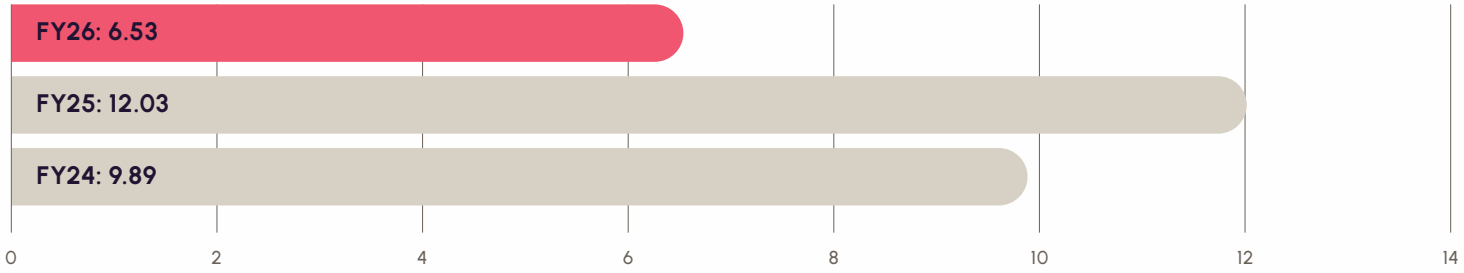
Incidents	Non-Permanent Injuries	Permanent Injuries	Fatalities*
2,936	**10**	**6**	**1**
avg 3,182 ↓	avg 28 ↓	avg 11 ↓	avg 2 ↓

Breakdown of Fuels Incident Types

FY26

Pipeline Strikes Incidents	Pipeline Strikes Non-Permanent Injuries	Pipeline Strikes Permanent Injuries	Pipeline Strikes Fatalities
1,882	**0**	**0**	**0**
Non-Pipeline Strikes Incidents	Non-Pipeline Strikes Non-Permanent Injuries	Non-Pipeline Strikes Permanent Injuries	Non-Pipeline Strikes Fatalities
1,054	**10**	**6**	**1**

Non-Pipeline Strikes Incidents per 100 authorized Fuel facilities and sites in Ontario*



*The incident involving the fatality was closed on June 25 2026

Figure F1: 10-Year Observed Injury Burden Trend for Fuels in Ontario

The downward trajectory of the Fuels OIB over the past four years tells a compelling story. After peaking at 0.318 FE/mp in FY22, the OIB has fallen sharply and consistently, reaching 0.103 in FY26. The long-term trendline reinforces this improvement, pointing clearly downward across the decade, but the FY26 result is a sobering reminder that fuels-related risks remain capable of the most severe outcomes.

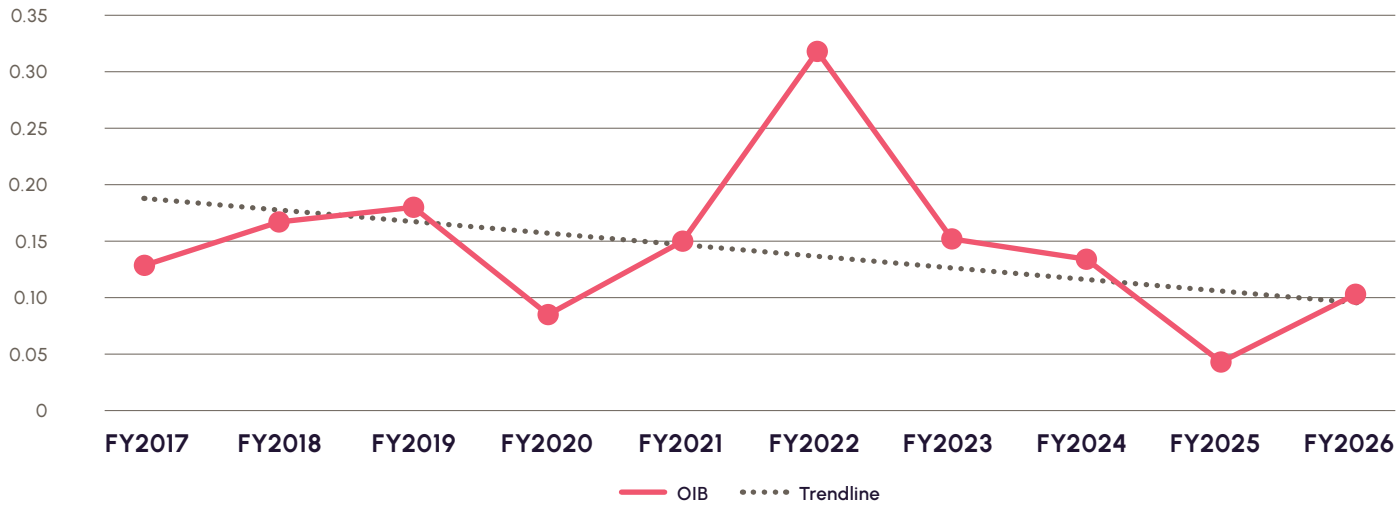
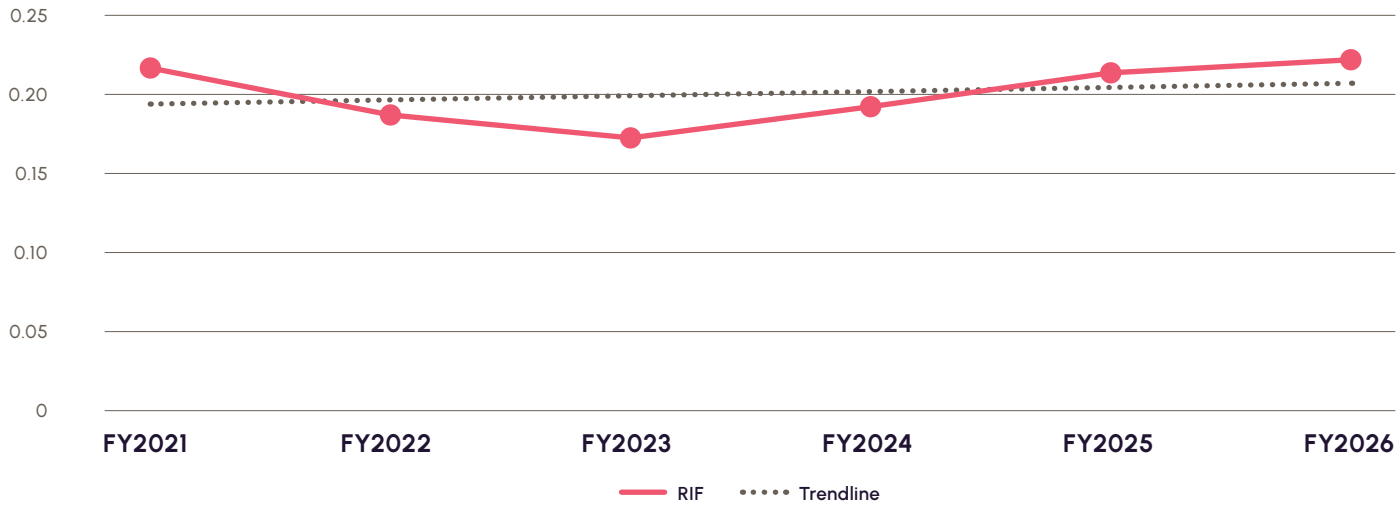


Figure F2: Risk of Injury or Fatality for Fuels (2021-2026)

TSSA's Risk of Injury or Fatality (RIF) estimates the potential for injury or fatality by performing a Monte Carlo simulation on 10-year historical data. In FY26, the RIF for Fuels stands at 0.2241 FE/mpy – which is a small uptick but remains generally stable compared to 0.2157 in FY25 and is broadly consistent across the five-year window.



Inspection Results

Liquid Fuels

TSSA conducts periodic inspections of liquid fuel storage and dispensing facilities once every three years. During these inspections, the facility will be evaluated against the adopted liquid fuels code, and any non-conformances will be cited as orders. In FY26, 947 periodic inspections were performed, with 412 compliant, 507 failed, and 28 classified as 'Other'. This results in a compliance rate of 44%, indicating more than half the facilities have had recorded high-risk observations during their periodic inspection.

Figure F3: Periodic Inspection Results

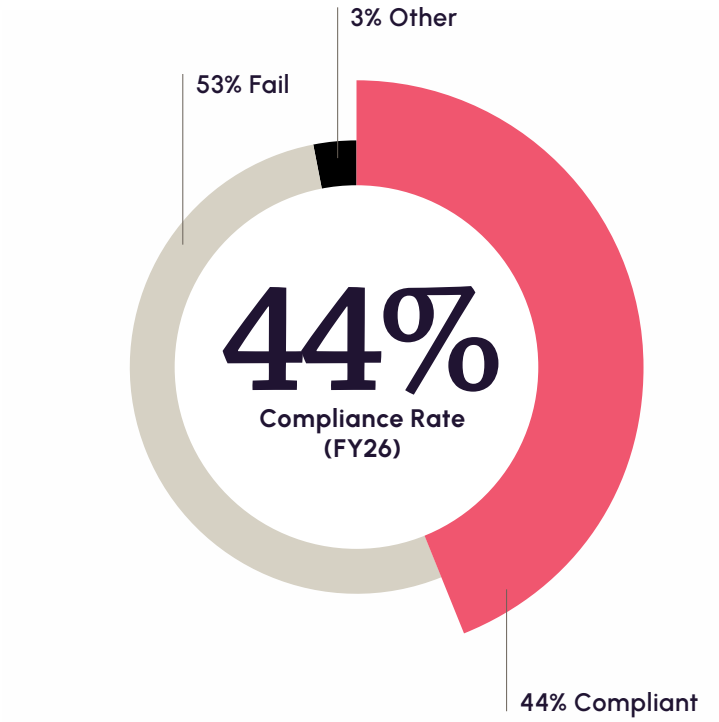


Figure F4: High-risk Liquid Fuel Sites in FY26

Number of High-Risk Liquid Fuel Sites
32
In FY25 there were 48 High-Risk Liquid Fuel Sites.

Percentage of High-risk Inventory
0.89%

Number of Gas Stations
27

Number of Marinas
5

Top High-risk Issues from Periodic Inspections (FY26)

Compliance Issue	Total Number of Orders Issued
Facility to provide confirmation of the maintenance and annual testing of the shear valves and leak detection system.	**258**
Ensure the employees are trained in equipment use, spill response and emergency response and make records available.	**109**
Ensure Stage I vapour recovery equipment is properly installed, operated, and maintained as required.	**71**

Propane

TSSA conducts a variety of inspection types, including periodic and non-periodic inspections every year. Figure F5 highlights the compliance outcomes from periodic inspections carried out in FY26. In FY26 a total of 465 periodic inspections were completed, with 346 compliant, 115 failed, and 4 categorized as 'Other'. The resulting Compliance rate is 74%.

Figure F5: Periodic Inspection Results

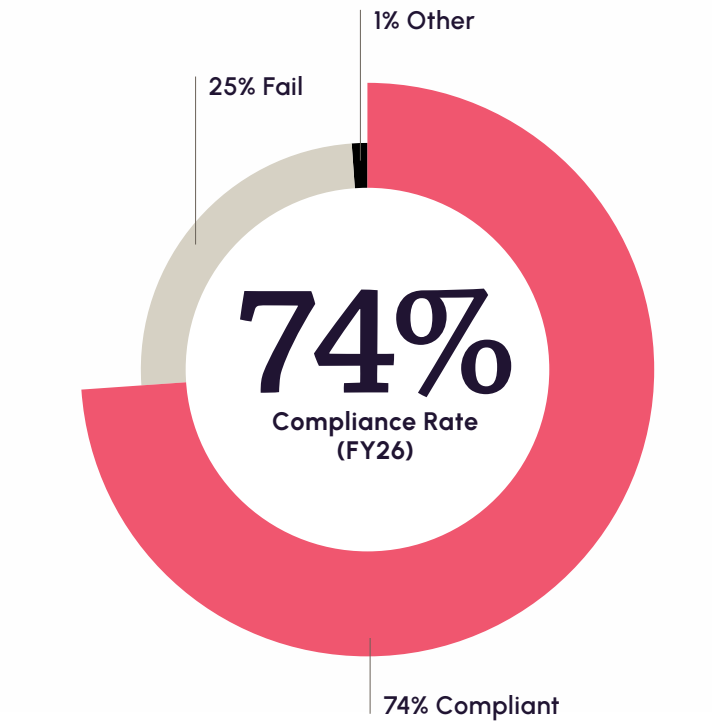


Figure F6: High-risk Licensed Propane Sites in FY26

Number of High-Risk Propane Sites
13
No change since FY25.

Percentage of High-risk Inventory
1.30%

Number of Cylinder Refill Centres
9

Number of Propane Filling Plants
4

Top High-risk Issues from Periodic Inspections (FY26)

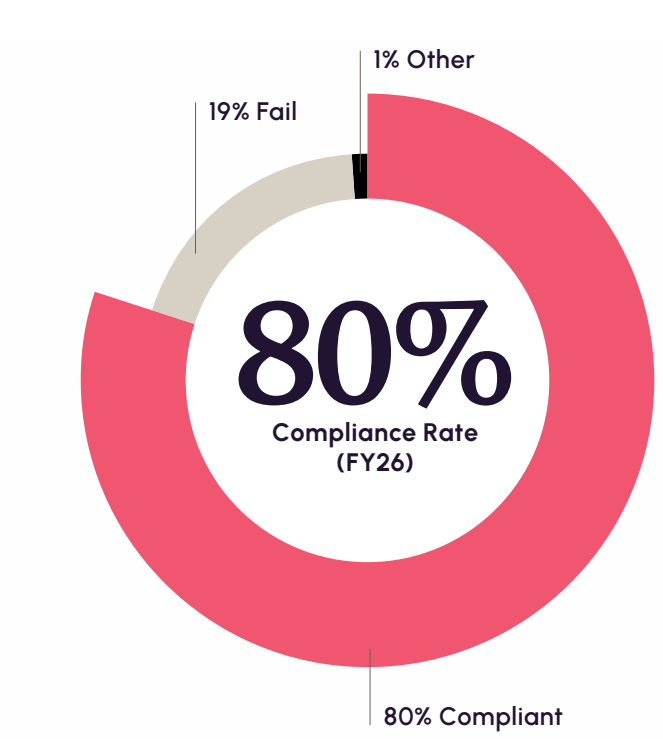
Compliance Issue	Total Number of Orders Issued
Facility to provide confirmation of an inspection report not more than 1 year old detailing that an inspection of the facility has been conducted by an authorized person to ensure that the site is in compliance.	**55**
Have an authorized person inspect the tank pressure relief valve every 5 years and keep the inspection record.	**50**
Ensure the facility is operated in accordance with its Risk and Safety Management Plan.	**27**

TSSA conducts periodic audits on heating and petroleum contractors to monitor their safety and risk management practices.

Heating Contractors

A total of 2,608 periodic audits were completed in FY26. Of these, 2,084 were compliant, 490 failed, and 34 fell into the 'Other' category. The resulting compliance rate is 80%.

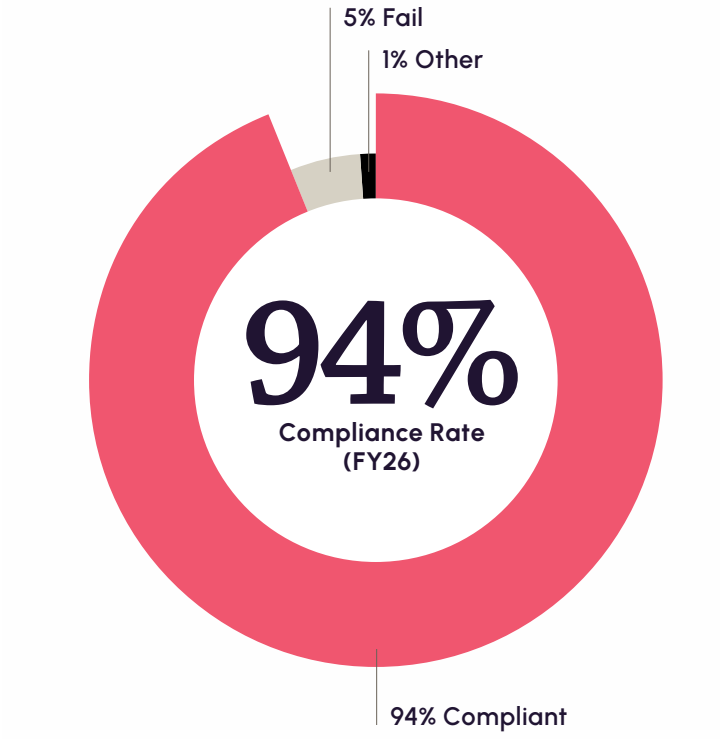
Figure F7: Periodic Inspection Results



Petroleum Contractors

A total of 83 periodic audits were completed in FY26. Out of these, 78 were compliant, 4 failed, and 1 was marked as 'Other'. This results in a compliance rate of 94%.

Figure F8: Periodic Inspection Results



Spotlight

Improper Home Assessment Turns Water Heater into a Safety Risk



Stock photo: Holden Henry / iStock

A newly installed natural gas water heater at a single-family home in Southern Ontario created a carbon monoxide hazard that sent the homeowner to hospital.

Following the installation, someone visiting the home noticed the smell of natural gas and called for help. The homeowner felt unwell and was taken to hospital. The local fire department and gas supplier responded to the incident and TSSA conducted an inspection.

Although CO readings did not reach alarming levels, TSSA's inspection identified problematic installation issues. The contractor had not fully assessed the home's structure and ventilation requirements before installation. As a result, a single-pipe vent system was used instead of the required dual-pipe direct-vent system. The incorrect venting meant the water heater couldn't receive enough combustion air. That was allowing carbon monoxide to build up inside the home.

Be Sure to Conduct a Thorough Assessment Before Installation

The appliance was immediately isolated and tagged out of service. TSSA issued an order requiring the installation to be corrected before the water heater could be returned to service. The contractor subsequently replaced the incorrect venting system with the proper configuration.

This incident highlights the importance of conducting a thorough assessment before installing fuel-burning appliances to ensure they operate safely. While no serious injuries occurred, this case demonstrates how an improper assessment, and then installation, creates serious safety risks for homeowners and occupants.

"Installing and servicing gas appliances requires more than a good understanding of the equipment itself. It also requires a thorough assessment of the customer's home and the conditions needed for the appliance to operate safely. Missing any critical part of that assessment can create serious safety risks, as this case demonstrates. Fuels contractors have a responsibility to ensure the work they perform is safe for their customers," said Owen Kennedy, Director of Fuel Safety at TSSA.

As the regulator, TSSA operates a Heating Contractor Audit Program that regularly assesses contractors' business operations and compliance with regulatory requirements. The findings from these audits help inform TSSA's outcome-based regulatory approach, enabling regulatory actions to be prioritized based on risk. The program continues to evolve, with enhanced processes that guide contractors' compliant operations.



Operating Engineers

TSSA's Operating Engineers (OE) Safety Program registers, inspects and regulates plants that power Ontario with electricity, refrigeration, heating and cooling. TSSA is also responsible for the examination and certification of the professionals who manage power plant operations.

TSSA's comprehensive registration, inspection and certification activities ensure that operating engineers and operators have the skills and knowledge to safely manage, operate and maintain boilers, steam turbines and engines, gas compression plants, refrigeration plants, and associated mechanical and electrical systems in power generation, industrial processes and environmental plants.

At a Glance

Compliance Rate
51%

Operating Engineers / Certificate Holders
10,688

Registered Plants
2,930



Incidents

In FY26, the number of reported incidents in the Operating Engineers program rose to 47 – more than double the 10-year average of 19. With zero injuries and zero fatalities recorded, incidents increase is best understood as a positive signal: more incidents are being captured and reported than ever before, rather than an indication of deteriorating safety conditions. The historical data shows incident counts have been climbing steadily since FY24, suggesting that TSSA's ongoing efforts to strengthen reporting practices in this program are gaining traction.

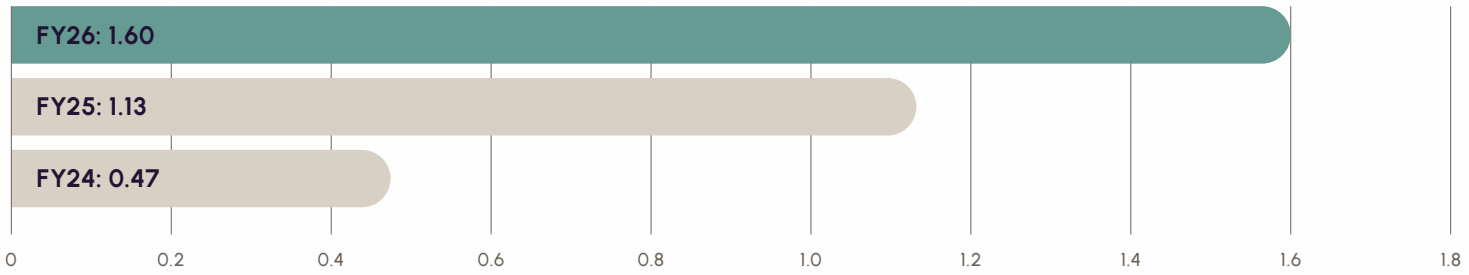
Incidents*

FY2026 vs 10-year average

*As of 2026-04-30

Incidents	Non-Permanent Injuries	Permanent Injuries	Fatalities
47 ↑	**0**	**0**	**0**
avg 19	avg 0	avg 0	avg 0

Incidents per 100 authorized Operating Plants in Ontario in FY26



The Observed Injury Burden (OIB) values for the OE program have remained consistently negligible, reflecting the continued absence of injuries. Since there are no recorded injuries in the last 10 years, the RIF is zero.

Inspection Results

TSSA conducts a variety of inspection types, including periodic and non-periodic inspections every year. Figure G1 highlights the compliance outcomes from periodic inspections carried out in FY26. In FY26, a total of 1,568 periodic inspections were completed. Of these, 803 were compliant, 719 failed, and 46 were categorized as 'Other.' This results in a compliance rate of 51%.

Figure G1: Periodic Inspection Results

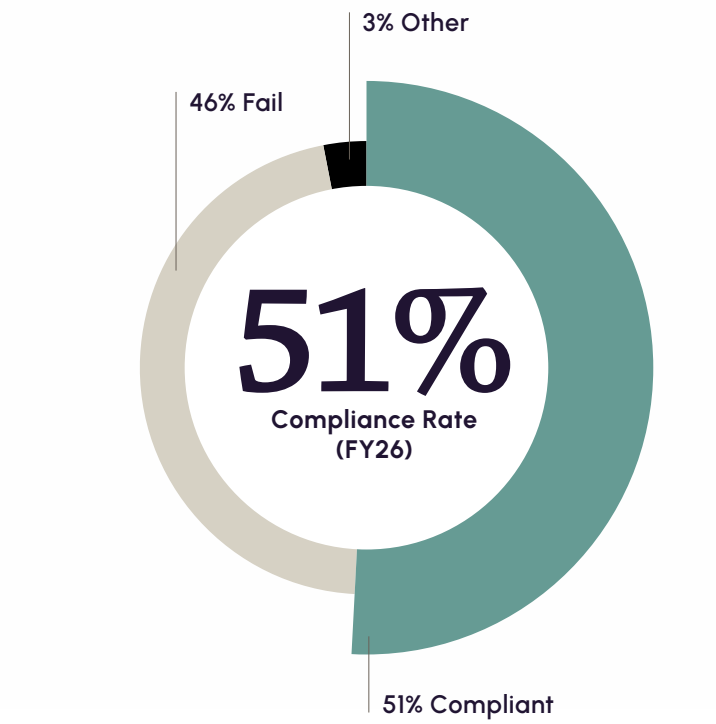


Figure G2: High-risk Operating Plants in FY26

Number of High-Risk Operating Plants

99

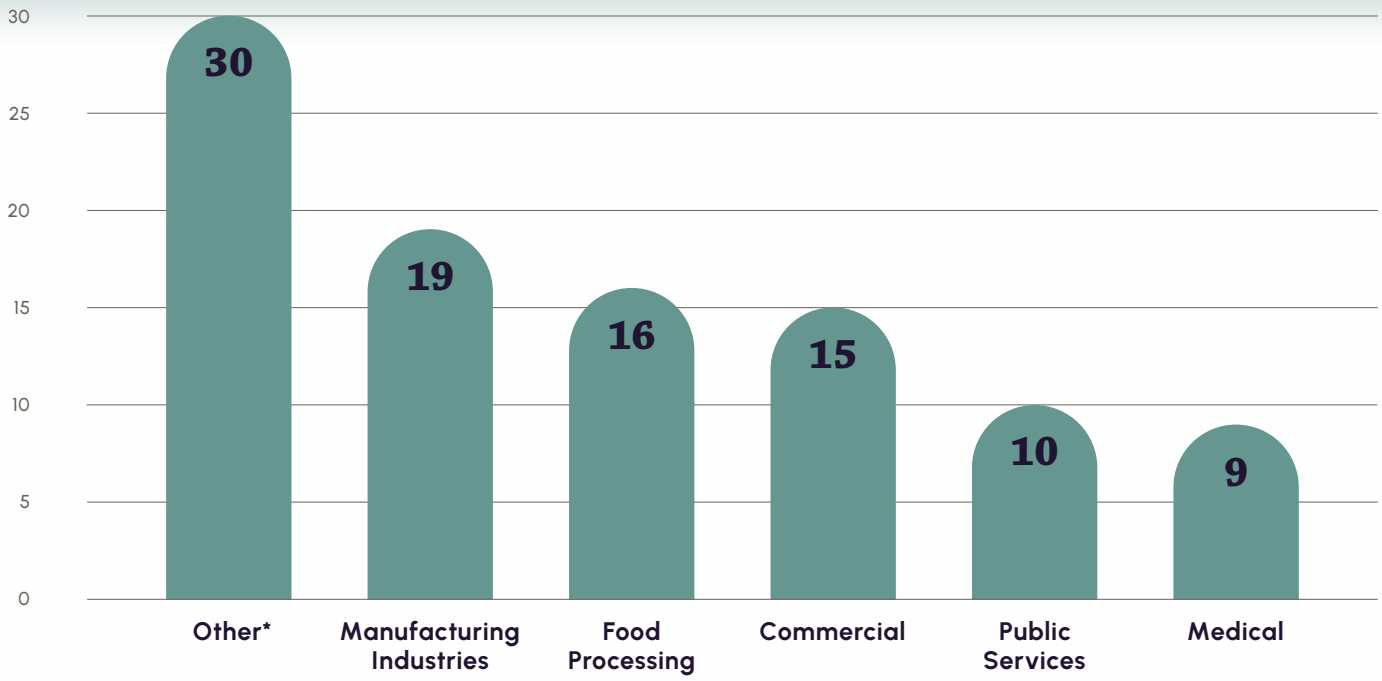
vs 116 in FY25.

Percentage of High-risk Inventory

3.63%

Figure G3: Top 3 High Risk Plant Types and functions (FY26)

High-Pressure Plant	Low-Pressure Plant	Refrigeration Plant
52	**36**	**11**



*Other includes sites such as academic, production, agricultural and residential

Top High-risk Issues from Periodic Inspections (FY26)

Compliance Issue	Total Number of Orders Issued
Test, log and tag all refrigeration safety limiting devices at least once per year.	**145**
Test refrigerant gas detectors, ventilation systems and alarms at least once annually. Tag devices as such and log this information.	**128**
Refrigeration plant safety valves over 5 years old must be serviced or replaced.	**126**

Spotlight

Leak in Grocery Store Underscores Risks of Inadequate Maintenance


Stock photo: VLG / iStock

In June 2025, a refrigerant leak involving approximately 160 kg of R404A was reported at a grocery store in Southern Ontario. The initial notification from property management indicated a suspected crack in the defrost header.

R404A is commonly used in commercial refrigeration systems in large grocery operations. While non-flammable under normal conditions, it can become combustible under elevated temperatures in the presence of oxygen. As a result, systems using this refrigerant require ongoing maintenance and inspection to support safe operation and early detection of defects.

A TSSA inspector attended the site and confirmed that repairs had already been completed through brazing of the evaporator coil, followed by a successful leak test. The contractor responsible for the repair clarified that the issue was a pinhole leak in the evaporator coil, not the defrost header. The repair was verified, and a refrigerant leak detector reading of 0 ppm confirmed the system was no longer leaking. No injuries or significant property damage were reported.

Maintenance: The Key to Contain Escalation of Risks

This incident reinforces the importance of routine inspection and preventive maintenance in refrigeration systems. Key focus areas should include frost build-up monitoring, corrosion or contamination that may affect system integrity, and identifying unusual vibration, overheating, or abnormal operating cycles.

"Refrigerant leaks account for approximately 30 per cent of incidents in the BPV and Operating Engineers program, and many of these cases are linked to gaps in maintenance and operational practices," said Sue Hadley, Chief Officer of Operating Engineers at TSSA. "Regular inspection and preventive maintenance are critical to reducing risk and ensuring safe system performance."

Operators should ensure systems are maintained in line with manufacturer requirements, supported by clear operating procedures, inspected based on risk profile, and repaired by certified contractors. Maintenance activities should also be documented in accordance with CSA B52 Section 8.4.5 to support traceability and safe operations.

Where systems meet regulatory thresholds under Ontario Regulation 219/01, operators should consult a TSSA Operating Engineers Inspector for guidance on registration and compliance requirements.

TSSA is also advancing work to strengthen oversight of refrigeration systems through the development of updated policy and technical frameworks. This initiative aims to address existing safety gaps across a range of environments, including grocery stores, ice rinks, and industrial facilities. A review in fiscal year 2027 will examine current regulations, codes, standards, and tools used to assess refrigeration safety. The findings will inform a risk-based approach to enhance how refrigeration systems are regulated, monitored, and evaluated in Ontario.









Appendix

TSSA Public Safety Report 2026

PARTNERING FOR A SAFE ONTARIO

Appendix I – List of Acronyms

CAD	Code Adoption Document
FE/mpy	Fatality Equivalent(s)/million people/year (with RIF)
FE/mp	Fatality Equivalent(s)/million people (with OIB)
OIB	Observed Injury Burden
RIF	Risk of Injury or Fatality

Appendix II – Glossary of Terms

Closed Incident	A closed incident is one where the investigation has been completed, and all corrective actions and outcomes have been resolved.
Code Adoption Document (CAD)	The default regulatory instrument for mandatory requirements of general application, such as the adoption of codes and standards. This instrument is used to identify and communicate changes to TSSA-specific requirements.
Director's Order	A regulatory decision made by a Statutory Director under the powers given to him/her as per the Act. **Director's Order, Limited Use (s. 27)** Places limits on the operation of a thing that is found to be defective or to not comply with the conditions of its authorization after the thing is fabricated or installed. 27. A director may, a. establish the limits of operation and use of things that are found to be defective or do not conform with its authorization after fabrication or installation. b. permit the operation and use of such thing within such limits as are prescribed, or if there are no such limits, as the director considers safe. **Director's Order, Public Safety (s. 31)** Used only where there is or may be a demonstrable threat to public safety and the subject matter has not otherwise been provided for in the Act or its associated regulations. It can require regulation, use or disuse of specified things. 31. In cases where there is or may be a demonstrable threat to public safety, a director may make an order with respect to the following matters if they have not otherwise been provided for in this Act, the regulations or a Minister's order: 1. Requiring and establishing the form and location of notices, markings or other forms of identification to be used in conjunction with equipment or other things that are prescribed. 2. Regulating, governing and providing for the authorization of the design, fabrication, processing, handling, installation, operation, access, use, repair, maintenance, inspection, location, construction, removing, alteration, service, testing, filling, replacement, blocking, dismantling, destruction, removal from service and transportation of any thing, whether new or used, or a part of a thing and any equipment or attachment used in connection with it.

Fatality-Equivalent (FE)	A unit of measure obtained by integrating quantified health impacts into a single count of equivalent fatalities for benchmarking and decision-making purposes. Injury burden and Risk of Injury or Fatality are expressed in terms of Fatality-Equivalents (FEs). Fatality-equivalent/million people/year (FE/mpy) is a unit of measure obtained by integrating quantified health impacts into a single count of equivalent fatalities for benchmarking and decision-making purposes. Refer to Appendix M for additional details.
Fiscal Year	Represents TSSA's fiscal year (May 1 – April 30), e.g., 2026 represents fiscal year 2026 (May 1, 2025 – April 30, 2026)
Health Impact	Refers qualitatively to injuries or fatalities sustained by the public exposed to TSSA-regulated devices/technologies. A health impact could be one of fatal, permanent or non-permanent injuries. **Permanent Injury** An injury sustained by an individual that partially or totally impairs the normal abilities of that individual for the rest of his/her expected remaining life. **Non-Permanent Injury** The consequence of an incident occurrence wherein there was an observed health impact that was estimated to be non-permanent based on the nature of the injury and its associated severity using a methodology developed by the World Health Organization (WHO). A non-permanent injury has no significant impact on the individual's life expectancy at the time of injury.
Injury Classification	The injury categories used in this report are standardized, program-independent classifications intended to support consistent analysis and reporting across all programs. For the purpose of this report, "injury" includes both non-permanent (temporary) and permanent (long-term or lifelong) health outcomes, consistent with the World Health Organization (WHO) methodology for injury sequelae. The categories represent generalized injury outcomes and do not account for program-specific operating conditions, exposure scenarios, or contextual differences that may influence the nature or severity of an injury. Accordingly, the classifications should be interpreted as broad injury groupings for macro-level analytical purposes only.
Inspection	An official examination of a device, system or procedure conducted by an inspector under the Act in accordance with Section 17 of the Act.

Inspection Order	The authority to issue an order comes from Section 21 of the Act and is served by an inspector to one who contravenes and/or who corrects a contravention to the Act or its associated regulations. Under this section, an inspector may also seal anything with respect to amusement devices, boilers and pressure vessels, elevating devices, fuels, and operating engineers, as referred to in the regulations. Where there is or may be a demonstrable threat to public safety, whether or not the thing is subject to an authorization, an inspection order includes the specific nature of identified contravention, the conditions and actions to be taken to correct the contravention and the allowable time to comply for each identified contravention. Orders can be classified into high-, medium-, and low-risk categories, which statutory directors can define to suit the needs of their program area. With the exception of Operating Engineers, the classifications are defined below. **High-Risk Inspection Order** Issued where non-compliance is identified and warrants an inspection order for immediate action within 0 to 14 days, for time to compliance to regulatory requirements. **Medium- and Low- Risk Issues – Safety Tasks** Issued where noncompliance is identified and warrants an inspection order for action within 90 days, for time to compliance to regulatory requirements.
Occurrence	The realization of a hazard which results in, or has the potential to result in, a consequence to people or property. **Incident** An occurrence involving a system/device/component/tradesperson under TSSA's jurisdiction, whereby a hazard is exposed resulting in a consequence to people or property. **Near-Miss** An occurrence involving a system/device/component/tradesperson under TSSA's jurisdiction, whereby a hazard is exposed demonstrating an instance of elevated exposure to risk, while in this particular instance resulting in no consequence to people or property.
Open Incident	An incident that is not yet resolved and remains under active investigation or work, with corrective actions or outcomes still pending.
Periodic Inspection	An inspection conducted at such intervals as may be determined by the statutory director, risk-based scheduling (where applicable), or required by code or regulation for the purpose of ensuring the safe operation of the device/facility.
Risk	The combination of the probability of occurrence of harm from a thing or a class of things under Section 2 of the Act and the severity of that harm.

Risk of Injury or Fatality (RIF)	The injury burden predicted using a simulation model to combine the probability of occurrence of harm (estimated as occurrence rates) to someone interacting or exposed to TSSA-regulated devices/ technologies and severity of that harm. The Risk of Injury or Fatality (RIF) metric is expressed in fatality-equivalents per exposed population (expressed in millions) per year (FE/mpy). This measure of risk accounts for historical occurrences while taking into consideration the uncertainties and variability inherent in the involved parameters such as the occurrence rate, number of victims, age of each victim and types of injuries sustained. Refer to Appendix M for additional details.
Monte Carlo Simulation	A Monte Carlo simulation is used to model the probability of different outcomes in a process that cannot easily be predicted due to the intervention of random variables. It is a technique used to understand the impact of risk and uncertainty.
Observed Injury Burden (OIB)	The Observed Injury Burden (OIB) is reported based on fatalities and the severity of injuries experienced during incidents in that year. It is the measure in fatality equivalent (FE) observed each year and normalized by the population of Ontario (FE/mp).
Trend	A statistically representative measure for the noticeable tendency or movement toward, or in, a particular direction over a measured period of time (e.g. positive trend, negative trend and no significant quarterly trend). Refer to Appendix M for additional details.

Closed Incidents

A closed incident is one in which the investigation has been completed, and all corrective actions and outcomes have been resolved. The fiscal year runs from May 1 to April 30. Because some incidents reported in a given fiscal year may still be under active investigation at fiscal year-end, the closed incident data in this table is updated annually – incidents that were open at the close of a prior fiscal year and subsequently resolved are reflected in the updated figures for that original reporting period.[5]

All Programs Combined

Description	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Total
Incidents	5,083	5,660	6,358	6,024	4,264	4,888	5,584	6,578	6,991	6,579	58,009
Fatalities	4	2	2	3	5	4	2	4	3	1	30
Permanent Injuries	69	41	59	46	21	30	37	49	56	25	433
Non-Permanent Injuries	1,082	1,356	1,833	1,908	423	1,001	1,521	1,598	1,750	2,070	14,542
Observed Injury Burden	0.422	0.340	0.374	0.401	0.314	0.394	0.216	0.238	0.210	0.193	

Amusement Devices

Description	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Total
Incidents	439	709	1,197	1,384	98	545	1,026	1,071	1,275	1,609	9,353
Fatalities	0	0	1	0	1	0	0	0	0	0	2
Permanent Injuries	33	23	29	26	1	8	10	23	32	14	199
Non-Permanent Injuries	377	661	1,100	1,236	89	529	1,006	992	1,202	1,550	8,742
Observed Injury Burden	0.083	0.115	0.159	0.152	0.121	0.009	0.033	0.078	0.102	0.084	

5 the incident involving the fatality was closed on June 25 2026

Boilers and Pressure Vessels

Description	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Total
Incidents	4	22	117	150	150	126	122	102	132	78	1,003
Fatalities	0	0	0	0	0	0	0	0	0	0	0
Permanent Injuries	2	1	0	0	0	0	0	0	0	0	3
Non-Permanent Injuries	0	0	2	0	0	1	0	0	0	0	3
Observed Injury Burden	0.001	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Elevating Devices: Elevators

Description	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Total
Incidents	543	702	752	699	590	655	746	939	1,174	958	7,758
Fatalities	2	1	0	1	0	0	0	0	0	0	4
Permanent Injuries	11	4	5	8	7	7	6	5	7	0	60
Non-Permanent Injuries	146	132	122	131	88	82	91	90	59	54	995
Observed Injury Burden	0.195	0.036	0.025	0.161	0.005	0.025	0.002	0.001	0.023	0.002	

Elevating Devices: Escalators and Moving Walks

Description	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Total
Incidents	701	726	788	681	389	511	678	881	966	865	7,186
Fatalities	0	0	0	0	1	0	1	1	1	0	4
Permanent Injuries	4	0	4	1	3	1	3	9	6	1	32
Non-Permanent Injuries	441	459	521	459	205	302	376	438	413	392	4,006
Observed Injury Burden	0.003	0.003	0.004	0.003	0.024	0.026	0.014	0.014	0.026	0.003	

Elevating Devices: Passenger Ropeways and Ski Lifts

Description	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Total
Incidents	71	87	87	91	33	74	53	54	64	86	700
Fatalities	0	0	0	0	0	0	0	0	0	0	0
Permanent Injuries	3	2	1	2	2	3	5	5	3	4	30
Non-Permanent Injuries	60	64	66	62	25	59	35	43	43	64	521
Observed Injury Burden	0.012	0.010	0.005	0.001	0.014	0.015	0.015	0.012	0.015	0.001	

Fuels

Description	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Total
Incidents	3,320	3,410	3,395	3,009	3,001	2,961	2,955	3,498	3,339	2,936	31,824
Fatalities	2	1	1	2	3	4	1	3	2	1	20
Permanent Injuries	16	11	20	9	8	11	12	7	8	6	108
Non-Permanent Injuries	58	40	22	20	16	28	13	35	33	10	275
Observed Injury Burden	0.129	0.167	0.180	0.085	0.150	0.318	0.152	0.134	0.043	0.103	

Operating Engineers

Description	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Total
Incidents	5	4	22	10	3	16	4	33	41	47	185
Fatalities	0	0	0	0	0	0	0	0	0	0	0
Permanent Injuries	0	0	0	0	0	0	1	0	0	0	1
Non-Permanent Injuries	0	0	0	0	0	0	0	0	0	0	0
Observed Injury Burden	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Open Incidents

Incidents that are not yet resolved and remain under active investigation or work, with corrective actions or outcomes still pending. The numbers reflected in the tables below are as of April 30, 2026 (end of fiscal year). These figures are dynamic and change on a daily basis as new incidents are opened and pending incidents are closed.

All Programs Combined

Reporting Period	Incidents	Non-Permanent Injuries	Permanent Injuries	Fatalities
FY24	1	0	0	0
FY25	58	0	0	0
FY26	564	92	7	0

Amusement Devices

Reporting Period	Incidents	Non-Permanent Injuries	Permanent Injuries	Fatalities
FY25	1	0	0	0
FY26	35	29	2	0

Boilers and Pressure Vessels

Reporting Period	Incidents	Non-Permanent Injuries	Permanent Injuries	Fatalities
FY25	1	0	0	0
FY26	44	0	1	0

Elevating Devices: Elevators

Reporting Period	Incidents	Non-Permanent Injuries	Permanent Injuries	Fatalities
FY25	5	0	0	0
FY26	176	21	4	0

Elevating Devices: Escalators and Moving Walks

Reporting Period	Incidents	Non-Permanent Injuries	Permanent Injuries	Fatalities
FY25	1	0	0	0
FY26	59	40	0	0

Elevating Devices: Passenger Ropeways and Ski Lifts

Reporting Period	Incidents	Non-Permanent Injuries	Permanent Injuries	Fatalities
FY26	2	2	0	0

Fuels

Reporting Period	Incidents	Non-Permanent Injuries	Permanent Injuries	Fatalities
FY25	50	0	0	0
FY26	232	0	0	0

Operating Engineers

Reporting Period	Incidents	Non-Permanent Injuries	Permanent Injuries	Fatalities
FY24	1	0	0	0
FY26	16	0	0	0

Inspections Conducted

The tables below present the number and types of inspections performed, along with re-inspection results. Inspection outcomes are classified into three categories: **"Full Compliance," "Non-Compliance,"** and **"Other."** The "Other" category captures non-mandated outcomes that fall outside a standard pass or fail designation — including installed base status validations and occurrence inspections — as well as various miscellaneous statuses. "Other" outcomes are not factored into the pass rate.

Note: These figures exclude inspections currently in the pipeline, specifically those with a status of Scheduled, Unscheduled, In Progress, or Cancelled. Only inspections where all related work has been completed are reflected in the counts below.

All Programs Combined

Service Type	Full Compliance	Non-Compliance Found	Other	Grand Total
Alteration Inspection	1,602	1,021	41	2,664
First/Install	5,863	1,670	366	7,899
Initial Inspection	62	118	17	197
Inspection - FA/Var/Info	1,335	106	1,742	3,183
Other Inspections	12,658	3,779	4,522	20,959
Periodic Inspection	15,310	5,236	1,585	22,131

Amusement Devices

Service Type	Full Compliance	Non-Compliance Found	Other	Grand Total
Alteration Inspection	18	6	1	25
First/Install	63	66	2	131
Other Inspection	216	116	16	348
Periodic	1,203	261	19	1,483

Boilers and Pressure Vessels

Service Type	Full Compliance	Non-Compliance Found	Other	Grand Total
Fabrication	7,514	46	728	8,288
First or install	3,669	389	280	4,338
Inspection & Others	629	2	1,540	2,171
Investigation	0	1	13	14
Other Inspections	101	1	110	212
Periodic	2,104	91	342	2,537
QA AUDIT	316	0	1	317

Elevating Devices: Elevators

Service Type	Full Compliance	Non-Compliance Found	Other	Grand Total
Alteration Inspection	1,564	1,000	40	2,604
First/Install	1,429	1,053	40	2,522
Other Inspection	889	666	275	1,830
Periodic	9,768	3,486	999	14,253

Elevating Devices: Escalators and Moving Walks

Service Type	Full Compliance	Non-Compliance Found	Other	Grand Total
Alteration Inspection	10	6	0	16
First/Install	18	16	0	34
Other Inspection	38	28	41	107
Periodic	223	121	53	397

Elevating Devices: Passenger Ropeways and Ski Lifts

Service Type	Full Compliance	Non-Compliance Found	Other	Grand Total
Alteration Inspection	10	9	0	19
First/Install	6	8	0	14
Other Inspection	20	10	1	31
Periodic	118	20	6	144

Fuels

Service Type	Full Compliance	Non-Compliance Found	Other	Grand Total
Audit	1,896	371	45	2,312
First/Install	678	138	44	860
Insp Training Provider	0	0	98	98
Inspection - FA/Var/Info	706	104	104	914
Modification Insp	64	24	11	99
Other Inspection	1,079	2,134	3,175	6,388
Periodic	1,055	662	81	1,798

Operating Engineers

Service Type	Full Compliance	Non-Compliance Found	Other	Grand Total
Follow-Up Inspection	90	115	11	216
Initial Inspection	62	118	17	197
Investigation	0	0	35	35
Other Inspection	20	1	48	69
Periodic Inspection	838	594	85	1,517

Technical Standards & Safety Authority
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Etobicoke, ON M9W 6N9

For more Information
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Consumer safety websites
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