Annual Report

Chief Safety and Risk Officer

Technical Standards and Safety Authority
Ministry of Government and Consumer Services

Province of Ontario

September 2016

Daniel Hoornweg, PhD, PEng

Querencia Partners Canada Ltd.
# Table of Contents

- **Executive Summary** 3
- **1. Data Management** 5
- **2. Top Safety Priorities** 8
- **3. Benchmarking** 10
- **4. The Greater Toronto Area and Northern Ontario** 11
- **5. Public Safety: A Shared Mandate** 14
- **6. Productivity and Public Safety** 15
- **7. Emerging Issues – Updates** 19
  - 7.1 Integrated Service Delivery 19
  - 7.2 Home *Inspections* to Home *Servicing* 19
  - 7.3 Safety and Seniors 21
  - 7.4 Special Buildings 22
  - 7.5 Public Education (Behavioral Economics) 22
  - 7.6 Training Programs – Overlapping Accreditation 23
  - 7.7 Ontario Risks Outlook, 2015 25

- **References** 28

- **Annex 1: Annual Work Plans – Chief Safety and Risk Officer** 30
- **Annex 2: Chief Safety and Risk Officer Mission** 32
- **Annex 3: Potential Improvements in Various Service Sectors** 36
- **Annex 4: Summary of Ontario Open Data** 37
- **Annex 5: Excerpt from Speech by Hon Yasir Naqvi, Minister of Community Safety and Correctional Services.** 39
- **Annex 6: Safe Communities** 40
- **Annex 7: Regulatory Update** 42
- **Annex 8: Country Benchmark of Burden of Disease** 44
Executive Summary

This 2016 Annual Report covers the period May 1, 2015 to April 30, 2016. Separate related documents will be prepared in 2016. These include Review of the Annual State of Public Safety Report (ASPR); Benchmarking Ontario’s Elevating Devices, and; Ontario Risk Assessment 2016. Several of the following recommendations were included in the FY2015 ASPR review and discussed with Ministry of Government and Consumer Services (MGCS) staff.

*****

Summary of Recommendations

i. As part of TSSA 20/20 a time-bound data management plan should be provided by TSSA. The plan should include key steps to make data sets available to the public along with facilitation of online activities. Progress on the targets should be a part of the annual corporate scorecard (Annual Report).

ii. Public safety is a shared mandate. TSSA’s key objectives, such as minimizing carbon monoxide poisoning, require broad partnerships with common, yet differentiated objectives. Several areas exist where TSSA could help facilitate a shared approach to top safety priorities, including:

- Establish a joint home inspection and servicing program (with MGCS – initiate a multi-stakeholder workshop in 2016);
- Review practicalities of a new multi-stakeholder approach for institutions housing vulnerable populations;
- With key partners, such as Parachute Canada, develop a long-term awareness campaign on public safety (and injury prevention; ensure that the links to a dynamic business climate are highlighted).

iii. In the ASPR each program-specific discussion overseen by a Statutory Director should provide the status of regulatory underpinnings, e.g. when was the legislation last updated, and is there a review process underway (if so, expected schedule).
iv. TSSA’s inclusion of baseline comparisons (ASPRs and Annual Reports) provide important information for TSSA’s work program, and more broadly for other provincial agencies. These comparisons should continue (especially with jurisdictions outside Canada); and ideally be standardized, with risk levels linked to DALY – Disability Adjusted Life Years - equivalents per one million Ontarians, or facility users, e.g. per ski lift usages.

v. The Northern Ontario Compliance Strategy – Gas stations and Marinas is a pragmatic approach to the region’s unique circumstances. The strategy might be broadened to include other TSSA sectors, e.g. special buildings, and linked to the region’s broad uptake of ‘safe communities’.

vi. Safe communities, as championed by WHO and Parachute Canada might provide a valuable tool for TSSA’s safety initiatives. Two unique programs could be supported by TSSA: in Northern Ontario and the Greater Toronto Area (Greater Golden Horseshoe). These could both be supported by multi-sector, multi-stakeholder community advisory councils (similar to TSSA’s community advisory councils but perhaps with broader agency support) and could be designed to mesh with the locally-specific growth strategies.

vii. In key TSSA documents, e.g. the ASPR, for elevating devices (and possibly escalators) a short discussion on the risk of inoperability should be added (recognizing this is beyond TSSA’s regulatory mandate).

viii. TSSA, with partners such as Parachute Canada, MCSCS, MGCS, and ESA should consider combining public awareness raising efforts for safe communities. A compelling case can be made that as much charitable giving should be directed to injury prevention as to, for example, cancer research and support (economic returns and improved well-being is more than ten-times greater for injury prevention than support for diseases such as cancer and diabetes).
1. Data Management

Following the 2011 recommendation of Norm Inkster, CSRO, to establish a Chief Information Officer (CIO) position in TSSA a new CIO began June, 2012 (and resigned October, 2015). Since June 2012, with the emphasis on the 20/20 project the CEO has assumed the CIO responsibilities.

Shortcomings with TSSA’s existing data structure and supporting processes were identified several years ago and steps to remedy and develop a more robust system are proceeding (Current State Analysis Report). Shortcomings in data integrity are often nascent until an emergency event occurs, e.g. ‘Location of major propane sites still unclear’ (Globe and Mail, Aug 15, 2008).^1

A major data management campaign is underway through TSSA 20/20, a key enabler to the – ‘Fix the Foundation’ strategy. This multi-year undertaking intends to: enhance trustworthiness of information; provide effective business intelligence, seamless customer interactions, and organizational modernization.

Data management is an ongoing and critical role of TSSA. While TSSA 20/20 is underway complementary and timely data management improvements are being sought where practical.

Previous CSRO Reports suggested:

(i) Make elevator inspection schedules public;
(ii) Review and report on the merits of opening TSSA data on other inspected operators and customers, e.g. boilers and pressure vessels;
(iii) Prepare a plan for TSSA database(s) to be placed on ‘Ontario Open Data’;
(iv) Develop and share analytic tools on risk events and maintenance priorities, particularly with local governments and operators of ‘special buildings’.

As proposed the last two years, while recognizing the critical nature of data reliability, management processes, and timeliness, and after discussions with ED Directors, an aspirational target specific to elevating device data management was recommended:

(i) No later than May 1, 2016 TSSA should have at least its Elevating Devices data publicly available on its website (or alternate location). As much as possible, access and usability of the data should be consistent with other ‘Open Ontario’ data sets.

Due to the risk inherent in publishing real time data in a static manner and limitations of the current system this target was not achieved.

Previous CSRO reports discussed data management, namely:

1. Data management aspects such as: management systems and platforms, ‘big data’, smart (and safe) cities, the role of social media, and application of real-time sensors on critical equipment, are evolving quickly. Management systems and platforms in particular represent significant budget requirements, e.g. TSSA’s IT costs exceed 10 percent of the overall operating budget.

2. Next-step data management efforts, e.g. ‘app development’, may require broader agency participation, and possibly integration of private sector partners, such as manufacturers, building owners and management companies. TSSA’s credibility is largely contingent on its ability to collect, validate, and interpret relevant data.

3. TSSA’s data management system evolved along five, largely distinct, business processes: ED/AD/Ski; BPV; Fuels; USA; OE. Enhanced and harmonized approaches are now being developed. These business areas will benefit from common attributes such as customer billing, online services and data submission (and definition). Data management is a process where perfection can be the enemy of better. Sustained improvements of data quality and timeliness should be envisaged.

In addition: Responding to a Freedom of Information request the complete list of elevators in New York City was released November, 2015. There are more than 76,000 elevating devices in New York City2. Safety agencies such as the

---

Washington State Department of Labor and Industries provide comprehensive elevating device inspection information on their website.\(^3\) Data such as timing of inspections at a specific building, payment of fees, contact names, licensing and regulatory requirements, are readily available online.

Staff of MGCS presented to the Elevating Devices Advisory Council, 22 October 2015 the Province’s plans to encourage open data (Annex 4). More open data across the province is envisaged to enhance data integrity and foster economic development through new uses of the data.

TSSA’s operational vision includes the requirement to fully implement a “risk-informed” approach to regulating public safety. This is commendable. RIDM however needs to be underpinned by good quality and publicly vetted data.

Many professional and trades associations provide an online data set of licensed members. A recommendation was made to TSSA that a list of licenced Operating Engineers be readily available (ideally online). These activities may be part of TSSA 20/20 however there may be opportunity to move undertakings forward, not needing to wait for full completion of TSSA 20/20. The lists could be published with the proviso that the list is specific to a time-bound date (prior to real time data publication as envisaged under TSSA 20/20).

In the fuels sector, TSSA oversees 9,752 licenced facilities, including 3,700 gas stations and 1,132 propane facilities. In 2015, the regulations requiring annual inspections at propane facilities was updated with a risk-informed schedule. As a condition of license the larger of these facilities are required to provide a comprehensive Risk Safety Management Plan (RSMP), while smaller facilities are required to provide key safety data. While taking into account legal and competition considerations, these management plans should be readily available to the public. Consistent with the Northern Ontario special strategy, the Safe Communities Program, and new propane facility regulations, TSSA should publish (and annually update) RSMPs and possibly specific gas stations and marinas in Northern Ontario (as part of a Safe Communities program, see Section 4).

---

\(^3\) [http://www.lni.wa.gov/tradeslicensing/elevators/](http://www.lni.wa.gov/tradeslicensing/elevators/)
As part of TSSA 20/20 a time-bound data management plan should be provided by TSSA. The plan should include key steps to make data sets available to the public along with facilitation of online activities. Progress on the annual targets should be a part of the annual corporate scorecard (Annual Report).

Another important aspect of data management for TSSA is who owns, maintains, and manages the data. For example, Uber, Google smart cars, and many of the cell-phone apps we use, are as much about collecting the data on user behaviour as on providing the primary service.

Online purchases of a mattress, a cell-phone app that lets you scan the elevator license to determine when last it was inspected (and its condition when it was inspected), connecting BPVs to the internet to facilitate continuous real-time monitoring: these, and many similar activities, are merging quickly. Data will grow in value as risk-informed practices become more wide-spread. Possibly with other Delegated Authorities and government agencies, TSSA should develop a data management plan for public comment (and regular updating).

2. Top Safety Priorities

The TSSA FY2015 Annual State of Public Safety Report (ASPR) lists the following top safety priorities:

1. Carbon monoxide in homes
2. User behaviour on elevators
3. Fuels safety at commercial establishments
4. Institutions housing vulnerable populations

The list highlights the challenge facing TSSA. Many of the top priorities need an integrated, multi-sector response. Carbon monoxide in homes, for example, is best approached through an ongoing and broader education and inspection-management regime (not likely led by TSSA – see Section 5). User behaviour, e.g. with elevators, also likely needs to be part of a broader public education campaign. Institutions housing vulnerable populations face a myriad of shifting and urgent priorities. For example integrated responses for risks such as fire
protection, pandemics, and storms would need to be part of any TSSA mandated risk management efforts.

**Figure 2.1: TSSA Risk Assessment**

There are insufficient numbers of occurrences and injuries reported in the Boilers & Pressure Vessels, Operating Engineers and Upholstered and Stuffed Articles sectors to enable a risk assessment. Consult the full Annual State of Public Safety Report for an explanation of TSSA's methodology for calculating and assessing risk.

From FY2015 ASPR

**Figure 2.2: Risk by Location**

1a. Fuel-Related Risks at Private Dwellings
1b. CO Release in Multi-Unit Residences
2. Unsafe User Behaviour on Elevators
3. Fuel-Related Risks at Commercial Locations
4. Fuel-Related Risks at Institutions

Failure of Technologies Periodically Inspected by TSSA

From FY2015 ASPR
3. Benchmarking

An initial study completed by the CSRO in 2014 investigated similar activities (elevating devices, fuels and BPVs) in other jurisdictions (outside Canada). Preliminary findings for New York, Chicago and Australia provided useful baseline comparisons. Discussions are underway to have this information regularly collected by TSSA, and other safety authorities, e.g. Finland.4

Preliminary findings for ED oversight requirements in New York, Illinois, France and New Zealand were provided last year. The template was provided by TSSA staff, and is consistent with work underway between TSSA and Tukes (the Finnish equivalent). Additional information to be collected includes indicative costs and data publication practices. Also an overview of website functionality is underway. Washington State Department of Labor and Industries provides comprehensive services online, and could serve as a practical example for TSSA.

Ontario, especially Northern Ontario, has many communities seeking Parachute Canada and World Health Organization (WHO) International ‘Safe Community’ designation (Windsor recently joined). This is a positive trend and is closely aligned with the mandate of TSSA (and other agencies). Safe Community programs are often closely linked to the health sector, where much of the discourse uses a common lexicon outlined in the Global Burden of Disease Study e.g. DALY, ‘risk of fatality’ and ‘burden of injury’. This also facilitates effective economic analysis of injury and prevention. Benchmarking initiatives at TSSA should encourage use of common metrics and approaches, especially with the health sector and additionally with food security, municipal service provision (e.g. emergency response), and increasingly with urban resilience.5

---

4 Similar to Singapore, a ‘safe cities award’ could be considered (Ontario-wide or possibly with several peer organizations nationally and around the world). This might evolve as part of the newly launched TSSA Safety Awards Program.

5 Application of Risk Informed Decision Making (RIDM) is accepted international standard practice. Use of RIDM for risk analysis provides an important platform for others to follow (and compare) in similar risk analysis, e.g. food safety, road safety, and accidental injury such as water safety. DALY – Disability Adjusted Life Years - is a standard international metric that facilitates credible comparisons and baseline monitoring especially in sectors involving injury and public safety.

TSSA augments DALY with an equivalent “risk of injury or fatality.” The risk of injury or fatality, usually presented in a range of 0.03 for ski lifts to 1.12 for fuels per 1,000,000 Ontarians (with a global target of 1.0) is an acceptable metric but could be enhanced perhaps if presented by user, as ‘per 1 million elevator rides or ski-lift uses’ rather than solely by population.
A scoping exercise for benchmarking TSSA was completed April, 2014 by Risk Services International (RSI), Ottawa. This was updated as part of the FY2015 ASPR. The intent is to develop an ongoing benchmarking and peer review mechanism that facilitates comparisons across relative risk ratings for target activities, e.g. risk of injury per elevator ride, ‘value for money’ of public safety initiatives, and trend analysis, e.g. are there areas where public safety is markedly declining (or improving) relative to a peer group.

The provision of ‘public safety’ services is evolving quickly in many jurisdictions. These changes will be driven by factors such as: (i) new technologies; (ii) data collection and management systems; (iii) desire for efficiencies and cost savings and efforts to engender economic development from public safety provision; (iv) response to events, many of which may be exacerbated by a changing climate, aging demographic, increasingly inter-related and complex systems; (v) social media; (vi) availability of trained personnel, e.g. operating engineers (demographics and willingness/ability to pay); (vii) rapid urbanization globally, and locally increased efforts at urban density, with corresponding greater reliance on elevators; (viii) differentiated service levels and regulations by region, e.g. Northern Ontario and City of Toronto.

TSSA as a combined agency has few peers (e.g. few jurisdictions delegate the same tasks to a single agency), however the individual sectors are readily comparable across jurisdictions, e.g. ED, fuels, BPV, and OE. These activities are common in most jurisdictions and usually share similar standards, manufacturers, and approaches.

4. The Greater Toronto Area and Northern Ontario

The Greater Toronto Area (GTA) will be home to more than half Ontario’s population by 2030, and well over half the Province’s economy (now more than a fifth of Canada’s overall economy; and ratio growing).⁶

---

⁶ Here GTA is considered the same as the Places to Grow Act’s ‘Greater Golden Horseshoe’ and includes: the Counties of Peterborough, Northumberland, Simcoe, Dufferin, Wellington, Brant and Haldimand; Regions of Niagara, Waterloo, Halton, Peel, York and Durham; Cities of Hamilton, Brantford, Guelph, Toronto, Barrie, Peterborough, and Orillia.
Pursuant to the *Places to Grow Act*, 2005, the Growth Plan for the Greater Golden Horseshoe (GGH) took effect on June 16, 2006. The GTA (or GGH), as one of the fastest growing regions in North America, with its unique geographic location, is emerging as a critical global city. In May 2016 the report “Shaping Land Use in the Greater Golden Horseshoe: A Guide to Proposed Changes” (aka ‘The Crombie Report’) provided a coordinated land use planning review. Relevant to TSSA’s mandate was the Review’s call for greater emphasis on sustainable and livable communities, transportation hubs, planning for resilient infrastructure and better preparedness for climate change.

Increasingly, municipalities looking to strengthen their overall resilience will want to work more closely with agencies like TSSA and Ministry of Government and Consumer Services in policy development. Two areas might include: (i) increased due diligence and service provision as governments and government agencies face more legal challenges as risks are manifested, e.g. flooding in Thunder Bay (see Section 7.2), and (ii) promoting the GTA and Ontario’s a unique position as one the world’s most resilient jurisdictions (i.e. safe ‘global city’).

Communities in the GTA (especially the City of Toronto) will be particularly interested in the role of elevators in enhancing neighbourhood resilience and public health. For example, researchers with St. Michael’s Hospital assessed survival rates for out-of-hospital cardiac arrest in high-rise buildings: delays to patient care and effect on survival. They found that in Toronto chances of survival drop dramatically as people live on higher floors – chance of survival above the 16th floor less than 1%, i.e. futile, and no survivors of cardiac arrest above the 25th floor (Drennan et al, 2016)\(^7\).

The challenge of elevators and their role in delaying first responders is similar when power outages leave elevators inoperable. In the US for example, about 30 people die, and 17,000 are injured in elevators every year. However more than 1900 people die taking the stairs (2007 data – Nagata, 2014 and McCann, 2013). This was borne out during Super Storm Sandi in New York, where the majority of deaths were attributed to people needing to take the stairs for food and water as elevators remained inoperable (especially the elderly and infirm).

---

\(^7\) NB: overall chances of survival marginal in all post-hospital settings.
The fuels sector is also critical in enhanced urban resilience. For example, during power outages carbon monoxide poisoning often increases, and emergency operation of fuel facilities is often an emergency preparedness priority.

Similar to the GTA, Northern Ontario is a unique region within Ontario. Recognizing this, the Growth Plan for Northern Ontario took effect March 4, 2011 (date of next review not known). TSSA enacted unique policy implementation approaches in launching the Northern Ontario Compliance Strategy – Gas stations and Marinas in 2014.

During 2015 (Sudbury) and 2016 (Sault Ste Marie) the CSRO visited northern Ontario. Closures of gas stations remains a concern, as does varying levels of service provision capabilities, e.g. availability of licensed household fuel tank service agents. With the relatively high level of coverage of ‘Safe Communities’ in Northern Ontario these initiatives could be foundational for TSSA-mandated concerns, e.g. safe gas stations, safe fuels handling at home.

One of the longest running pilot programs for community safety (under the Ministry of Community Safety and Correctional Services) is the Community Mobilization and Gateway Hub in North Bay. Northern communities, especially those designated ‘Safe Communities’ (with Parachute Canada) likely have the best chances for broad community-wide success.8

Consistent with the two Growth Plans of the Greater Golden Horseshoe and Northern Ontario, TSSA, along with other agencies, should, without diminishing province-wide initiatives, continue to develop unique and customized approaches to public safety in the GTA (GGH) and Northern Ontario. These two areas – with their corresponding growth plans – can have public safety directly integrated into their growth and development strategies. Public safety can promote more and better growth, and particularly in the GGH, greater productivity (see Section 5).

---

8 The Safe Community program (Parachute Canada) and the Safer Communities (Ministry of Community Safety and Correctional Services – MCSCS) have considerable overlap. The Province of Ontario (MCSCS) is consulting on the ‘Strategy for a Safer Ontario’, again, considerable overlap exists with related agencies such as TSSA, ESA and local governments.
5. Public Safety, a Shared Mandate

One Canadian child dies every 9 hours from preventable injuries (more than all other causes combined); 93% of car accidents involve human error; 85% of hospitalization of Canadian seniors are on account of falls. Preventing injury is the most cost effective public safety investment available to Canadians, and yet relatively low levels of funding are allocated, and government agencies assigned the task of prevention are often driven by short-term ad hoc priorities. Coordination could be enhanced.

Preventable injuries impose a major burden on Ontario and Canada’s economies. Costs of injuries are in excess of $26 billion per year, and are the leading cause of death for Canadians aged 1-44. Canada ranks a worrisome 24th out of 34 OECD member countries for injury related mortality rates (WHO, 2008).

As highlighted in Fig. 5.1, preventable injuries have a disproportionately large economic burden relative to diseases such as heart and cancer. The burden from injury, i.e. 60,000 disabilities per year in Canada, can last for decades. The burden of injury and related mortality and disabilities are particularly borne by vulnerable populations, such as children, the elderly, Aboriginal peoples, and those living in lower socio-economic levels.

In 2012 Parachute was created by combining four not-for profit Canadian charities into a single, national organization to better coordinate and drive injury prevention. Parachute, with its origins in the health care field, relies heavily on evidence-based approaches and shared (global) metrics. Key global targets and comparators are the WHO global burden of disease, and the regularly updated (every 10 years) Global Burden of Disease Study (Lancet, 2015). In comparing injury impacts these studies typically rely on metrics and approaches such as DALY and RIDM. Use of these metrics is growing around the world (including TSSA).

Public safety encompasses many sectors in addition to public health, e.g. security, emergency response, product and food safety. Public safety is a mandated responsibility of several Federal and Provincial Ministries. In Ontario key

---

10 Parachute was created through the merger of Safe Communities Canada, Safe Kids Canada, SMARTRISK, ThinkFirst Canada.
ministries assigned public safety mandates include, among others, Transportation, Community Safety and Correctional Services, Health and Long Term Care, Labour and Public Health Ontario and TSSA’s oversight ministry – Ministry of Government and Consumer Services (MGCS). Better coordination is possible. Ontario’s Ministry of Community Safety and Correctional Services just completed public consultation on “Developing a new Strategy for a Safer Ontario.” This strategy is mostly about the cost of policing, often one of the largest budget items of local government. The question of value for money from this costly policing as it might relate to injury prevention (an enormous potential economic benefit) is rarely raised.\(^{11}\)

There are many ways to educate the public. Social media is just one way of getting out the message; but it is an important indicator, and can be a powerful communication tool. Twitter quantitative measures (number of followers) can provide a useful ‘quick indication’ of impact. Parachute Canada, with a key injury prevention message, has approximately 7000 twitter followers, and issues about 5 tweets per day. Compare this to ESA with 3300 twitter followers, and about 2 tweets per day, and TSSA with about 1250 twitter followers and 1 tweet per day. Granted TSSA and ESA are Ontario only and their mandates and audiences somewhat differ from parachute and TSSA does not rely on Twitter to drive its public safety message (e.g. uses Instagram and geofencing as well). However, a review of the social media strategy may be beneficial. A yearly strategic communications plan that includes social media with objectives and measureable targets would allow best use from this communication tool and would ensure it is fully leveraged with other communication channels. Consideration should be given to partnership / integrated plans with other agencies.

5.1 Public Safety Priorities

It bears repeating: every 9 hours one child dies in Canada from preventable injuries. Figure 5.1 provides a powerful comparison on how Canadian society views injury vis a vis diseases like cancer and diabetes. This is not to make light of the devastating impacts of heart disease, diabetes and cancer, but rather to highlight the enormous potential that can accrue from reduced injury – economic, and well-being. From a selfish senior’s perspective the focus should be on injury as well – the average senior is more than ten-times more likely to be admitted to

\(^{11}\) Comments reviewed 14 May, 2015
hospital from a fall than from cancer.

In May 2016 the Princess Margaret Cancer Foundation 50/50 Lottery was awarded. The $3,321,555 prize was the largest 50/50 prize in the world. The Foundation’s lottery has revenue of some $165 million per year. This one lottery, in one province is more than ten-times as large as all funds allocated across Canada to charities with the mandate of injury prevention.

If Parachute Canada’s 10-year goal of Canada moving from 24th to 1st in WHO ranking in terms of injury mortality were to be realized more than $10 billion would be added to the economy and overall quality of life would be markedly improved, especially for the young. Complementary benefits would also accrue in areas like reduced casualty insurance claims (increased community resilience), and increased real estate values ('safe communities' premium). TSSA would be a direct beneficiary of these societal improvements, as many of the risk-reduction and injury prevention objectives are the same.

Public safety might not be as ‘sexy or scary’ as other risks we face. This cognitive dissonance is costly. TSSA, with partners such as Parachute Canada, other delegated authorities and government agencies, should consider combining public awareness raising efforts for safe communities.12 Parachute Canada already has a successful annual gala, and TSSA recently started an annual Safety Awards program, however by combining efforts and focusing on injury prevention through safe communities better results are likely to accrue. A compelling case could be made that as much charitable giving should be directed to injury prevention as to cancer research and support.

---

12 ‘Safe’ in this context would likely include resilient, ‘smart’ and sustainable, e.g. low carbon.
**Figure 5.1: The High Costs of Injury**

![Economic Burden and Societal Contribution for Select Disease Categories]

*From: Parachute Strategic Plan, November 2013*

### 6. Productivity and Public Safety

*Productivity isn’t everything, but in the long run it is almost everything.*


The September 25, 2014 mandate letter from Premier Kathleen Wynne to the Honourable David Orazietti, Minister of Government and Consumer Services provides a summary of MGCS priorities, i.e. (i) Supporting Ministries and Government Services; (ii) Improving ServiceOntario’s Delivery and Partnerships; (iii) Strengthening Consumer Services; (iv) Building a Dynamic Business Climate. Public safety is assumed to be a MGCS mandate, and an integral component of Delegated Authorities within the Ministry, e.g. Electrical Safety Authority and TSSA. Public safety is an integral component of a dynamic business climate.

TSSA advocates for public safety. The Authority states – **Our Purpose: To promote**
and enforce public safety. Our Vision: To be a valued advocate and recognized authority in public safety.

TSSA administers seven regulatory statutes as well as takes an active role in areas such as user behavior, e.g. waterslides, and safety issues that involve many agencies and homeowners, e.g. carbon monoxide poisoning. For sustained improvement in public safety, broader, and longer term partnerships are likely needed. ‘Safe communities’ offer an attractive model and potential partner to develop these partnerships. Public safety should also be seen as a key driver of increased productivity.

For the last 14 years the Ontario Institute of Competitiveness and Prosperity has produced an annual report, usually lamenting Ontario’s ongoing and seemingly inexorable decline in productivity (Figure 6.1). Ontario’s pathway to productivity may lie in safer, smarter, sustainable communities. Canadians by-in-large are injured more than our OECD compatriots. Reducing these injuries could be a large driver of increased productivity.

The Ministry of Government and Consumer Services should consider requesting the Institute of Competitiveness and Prosperity to review how safe and resilient communities can support increased productivity in Ontario.

6.1 Ontario’s ‘Red Tape Challenge’

“Ontario has 380,000 regulatory requirements for business, almost double the number in some provinces,” (Ed Clark - November, 2015).

The Red Tape Challenge is an online consultation tool designed to identify and eliminate duplication, shorten response times and make it easier for business to interact with government. Ideas for improvement can be submitted anonymously online to the Ministry of Economic Development, Employment and Infrastructure. The most-raised issues in the first two months pertain to trades, licensing requirements and the newly launched College of Trades (including power engineers).

Consultations began with regulations for automotive parts manufacturing (March 29 – May 31, 2016). This will be followed by industry sectors: food processing;
The auto parts sector illustrates the scope of regulations under review. The provincial categories are: health and safety (38 regulations); employment and labour (13); corporate and commercial law (10); environmental (26); land use and planning (4); taxation and financial planning (5). Of the 38 regulations in the health and safety category 17 are under the remit of TSSA.

TSSA should anticipate robust scrutiny of its service provision, timeliness, and perceived value for money as part of the Red tape Challenge. With partners, such as MTO and ESA, TSSA may want to highlight how public safety supports a dynamic business community. Value also accrues to public safety agencies if they can show how ‘safe at work’ readily transfers to safe at home and safe at play.

Although much is written about Ontario’s ‘onerous regulatory requirements’ the data may need to be better parsed. The World Bank’s ‘Ease of Doing Business’ review places Canada as a top performer (14th out of 189 countries; Figure 6.2) although this is behind New Zealand (2nd), Korea (4th), UK (6th), US (7th), Sweden (8th), Norway (9th), Finland (10th), and Australia (13th).

Ontario representing about half of Canada’s economy would have a large impact of the Canada ease of Doing Business score, however it is not clear if it is easier to conduct business in Ontario relative to other Canadian provinces, or specific US states. Ontario’s Ministry of Economic Development, Employment and Infrastructure should be asked to downscale the World Bank’s Ease of Doing Business analysis to Ontario vis a vis other Canadian provinces and US states, and possibly Toronto (GGH) vis a vis key US and global cities.

By further analyzing Ontario’s business environment lessons will emerge on where greater safety can be obtained in conjunction with easing business processes and enhancing community well-being. ‘Safe and green’ are usually compelling attractants for better businesses. With the World Bank-initiated Global City Indicators Facility and World Council on City Data located in Toronto, a credible analysis could be undertaken that measures the links between safe communities and ease of doing business, along with competiveness and productivity.
Figure 6.1: Ontario’s prosperity continues to lag most peer jurisdictions

![Graph showing GDP per capita comparison between Ontario and North American peers, 2014.](image)


Figure 6.2: Ease of Doing Business in Canada – 14 out of 189.

<table>
<thead>
<tr>
<th>Canada</th>
<th>OECD High Income</th>
<th>GNI per capita (US$)</th>
<th>$1,690</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting electricity (rank)</td>
<td>105</td>
<td>63.76</td>
<td>31.5</td>
</tr>
<tr>
<td>Time (days)</td>
<td>137</td>
<td>63.76</td>
<td>31.5</td>
</tr>
<tr>
<td>Cost (% of income per capita)</td>
<td>12.61</td>
<td>63.76</td>
<td>31.5</td>
</tr>
<tr>
<td>Reliability of supply and transparency of tariffs index (0-4)</td>
<td>6</td>
<td>63.76</td>
<td>31.5</td>
</tr>
<tr>
<td>Registering property (rank)</td>
<td>42</td>
<td>75.09</td>
<td>31.5</td>
</tr>
<tr>
<td>DIT score for registering property (0–100)</td>
<td>75.09</td>
<td>75.09</td>
<td>31.5</td>
</tr>
<tr>
<td>Procedures (number)</td>
<td>5</td>
<td>75.09</td>
<td>31.5</td>
</tr>
<tr>
<td>Time (days)</td>
<td>16.5</td>
<td>75.09</td>
<td>31.5</td>
</tr>
<tr>
<td>Cost (% of property value)</td>
<td>3.3</td>
<td>75.09</td>
<td>31.5</td>
</tr>
<tr>
<td>Quality of land administration index (0–30)</td>
<td>21.5</td>
<td>75.09</td>
<td>31.5</td>
</tr>
<tr>
<td>Protecting minority investors (rank)</td>
<td>6</td>
<td>76.67</td>
<td>31.5</td>
</tr>
<tr>
<td>DIT score for protecting minority investors (0–100)</td>
<td>76.67</td>
<td>76.67</td>
<td>31.5</td>
</tr>
<tr>
<td>Strength of minority investor protection index (0–10)</td>
<td>7.7</td>
<td>76.67</td>
<td>31.5</td>
</tr>
<tr>
<td>Extent of shareholder governance index (0–10)</td>
<td>6.7</td>
<td>76.67</td>
<td>31.5</td>
</tr>
<tr>
<td>Extent of conflict of interest regulation index (0–10)</td>
<td>8.7</td>
<td>76.67</td>
<td>31.5</td>
</tr>
<tr>
<td>Paying taxes (rank)</td>
<td>9</td>
<td>93.00</td>
<td>31.5</td>
</tr>
<tr>
<td>DIT score for paying taxes (0–100)</td>
<td>93.00</td>
<td>93.00</td>
<td>31.5</td>
</tr>
<tr>
<td>Total tax rate (% of profit)</td>
<td>21.1</td>
<td>93.00</td>
<td>31.5</td>
</tr>
<tr>
<td>Time (hours per year)</td>
<td>191</td>
<td>93.00</td>
<td>31.5</td>
</tr>
<tr>
<td>Cost (number per year)</td>
<td>8</td>
<td>93.00</td>
<td>31.5</td>
</tr>
<tr>
<td>Enforcing contracts (rank)</td>
<td>40</td>
<td>65.49</td>
<td>31.5</td>
</tr>
<tr>
<td>DIT score for enforcing contracts (0–100)</td>
<td>65.49</td>
<td>65.49</td>
<td>31.5</td>
</tr>
<tr>
<td>Time (days)</td>
<td>570</td>
<td>65.49</td>
<td>31.5</td>
</tr>
<tr>
<td>Cost (% of claim)</td>
<td>22.3</td>
<td>65.49</td>
<td>31.5</td>
</tr>
<tr>
<td>Quality of judicial processes index (0–14)</td>
<td>10.5</td>
<td>65.49</td>
<td>31.5</td>
</tr>
<tr>
<td>Resolving insolvency (rank)</td>
<td>16</td>
<td>81.36</td>
<td>31.5</td>
</tr>
<tr>
<td>DIT score for resolving insolvency (0–100)</td>
<td>81.36</td>
<td>81.36</td>
<td>31.5</td>
</tr>
<tr>
<td>Time (years)</td>
<td>0.8</td>
<td>81.36</td>
<td>31.5</td>
</tr>
<tr>
<td>Cost (% of estate)</td>
<td>7</td>
<td>81.36</td>
<td>31.5</td>
</tr>
<tr>
<td>Recovery rate (cents on the dollar)</td>
<td>87.3</td>
<td>81.36</td>
<td>31.5</td>
</tr>
<tr>
<td>Strength of insolvency framework index (0–16)</td>
<td>11</td>
<td>81.36</td>
<td>31.5</td>
</tr>
</tbody>
</table>

Trading across borders (rank) 44
DIT score for trading across borders (0–100) 88.36
Time to export
Documentary compliance (hours) 1
Border compliance (hours) 2
Domestic transport (hours) 2
Cost to export
Documentary compliance (US$) 156
Border compliance (US$) 167
Domestic transport (US$) 324
Time to import
Documentary compliance (hours) 1
Border compliance (hours) 2
Domestic transport (hours) 2
Cost to import
Documentary compliance (US$) 163
Border compliance (US$) 172
Domestic transport (US$) 268
7. Emerging Issues – Updates

Issues raised previously, that warrant continued monitoring, include:

7.1 Integrated Service Delivery

A success story in the Ontario public safety sector is the Ontario Regional Common Ground Alliance (ORCGA – Recipient of a 2015 TSSA Safety Award). Digsafe and ON1CALL combine several utilities and agencies wanting the public to “Call Before You Dig”. Making things easier is an important way to increase public compliance.

In Ontario a relatively small-scale company can have more than 30 government inspections per year. These are costly to the company: Coordination and synergies may be possible. Also significant risk reduction is possible through use of consolidated (and coordinated) data collection. A ‘311 one-call’ type-service is now common in many larger cities. Similar coordination and synergies might be gained by combining provincial mandates, e.g. Labour and Environment, as well as by combining the objectives of various levels of government.

TSSA might be a key member (and perhaps program instigator) in the areas of home safety (e.g. carbon monoxide), the role and use of elevators, institutions housing vulnerable populations.

7.2 Home Inspections to Home Servicing

Bill 165, the Licensed Home Inspectors Act has passed third reading and Ontario will begin regulating home inspectors in 2017 (under MGCS). British Colombia and Alberta, along with 39 US states already regulate home inspectors. Much of the protocol for a ‘comprehensive inspection’ is outlined in CSA home inspection standard A770 (2015).

There are about 1500 home inspectors in Ontario (65% full-time); 80% board certified; 75% college or university educated. The home inspector associations were extensively involved in developing the program for home inspector regulation (report received by Minister Tracy MacCharles, MGCS, 2013). The
(industry) report suggests costs for home inspections will rise 1% - 5% under the new regulations.

Home inspections are typically carried out at time of sale. Other ancillary home inspections include fireplaces and woods stoves (WETT), home heating, energy audits, insurance agents, etc. The scope and frequency of home inspection is particularly relevant to TSSA as this may be the most practical way to address CO poisoning, which is TSSA’s largest public safety risk.

Home inspections might also be a way to increase compliance of home heating systems which in Northern Ontario is a particular challenge as many heating systems are oil-fired and the region suffers from a shortage of independent Oil Burner Technicians (OBT). In some regions availability of OBTs is limited by concerns of the potential insurance risks associated with inspections (especially mandatory ten-year oil burner inspections)\(^\text{13}\).

Servicing often connotes less risk to the practitioner than inspection. However to overcome potentially high-costs (e.g. from the low-density of homes in Northern Ontario) home inspections may need to be multi-sector and actively supported by local municipalities and insurance companies.

To better address CO and other TSSA-regulated aspects such as home fuel-oil tanks and private dwelling elevators, home servicing should emerge as a habit in Ontario similar to automobile servicing. This should also increase homeowner convenience and safety and, as a secondary benefit, would enhance economic development.

From a public safety perspective (e.g. CO poisoning), this appears to be the most likely way to achieve significant and cost effective reductions in managing these risks. The potential ancillary benefits from the approach are large. Therefore there may be significant value for TSSA to review ways to encourage the emergence of an Ontario-wide culture of routine home servicing to augment home inspections at time of sale. These home servicing agents would not be TSSA inspectors, but rather undergo sufficient CO prevention training.

\(^{13}\) Discussions at Liquid Fuels Community Advisory Council
This initiative might first be supported through a receptive ‘Safe Community’ and integrated within existing growth strategies of Northern Ontario and Greater Golden Horseshoe (public safety being an important driver of economic development).

As home inspectors are licensed, a ‘home servicing’ designation should be developed. Home servicing should be promoted as a voluntary approach to maximize safety, convenience and home equity. Key aspects of a typical home service would include: (i) potential CO sources and fire safety (TSSA, with Fire Marshall’s Office); home elevators (non-regulated); an assessment for falls and other hazards for seniors and/or children (Parachute Canada); energy audit (MOECC); home adaptation assessment (HAAP)\(^\text{14}\); security (MCSCS); and depending on community locally specific issues such as raccoons, oil tanks, snow loads, overland flooding.

Annually (or every two-years) homeowners should be encouraged (by a variety of agencies) to have their homes serviced by a licensed home inspector (with adequate training). The program may need to be phased in as inspectors are trained. Costs of the service would mostly be borne by the home owner (similar to servicing of automobiles) however broad incentives should be available, e.g. reduced home insurance premiums, greater re-sale value.

TSSA and other partners such as Intact Centre and Parachute Canada should convene a workshop in 2016, under the leadership of MGCS staff, to develop the approach to a home servicing practice in Ontario (similar to home inspection).

7.3 Safety and Seniors

Ontario continues to undergo a large demographic shift with the median age rising quickly. Ontario’s population over 65 is expected to more than double between 2012 and 2036 (14.6% of the population in 2012 or 2 million seniors, increasing to 24% of population or 4.2 million seniors in 2036: Ontario Ministry of Finance, 2013). This has profound effects on much of TSSA’s public safety

\(^{14}\) HAAP, the Home Adaptation Assessment Program is an on-site home assessment developed by Intact Centre on Climate Adaptation. The assessment is a standardized 50-point review of homes intended to enhance household resilience and climate change adaptation capacity. Meetings held by CSRO and Cheryl Evans, Director, HAAP and Blair Feltmate, Head, ICCA
mandate as seniors tend to experience risks more acutely in some areas such as EDs (tripping and falling) and ‘special buildings’.

Ontario is not unique in this large demographic shift, however as Canada’s largest economic driver, and rapid increase in the relative make-up of the service sector in Ontario’s economy, as well as the growing emphasis on urban resilience, Ontario will be acutely challenged with seniors and safety.

Within institutions housing vulnerable populations and home servicing (CO, falls, in-home EDs), for example, TSSA will need to place greater emphasis on the needs of seniors. A first priority would likely be expanding the special buildings pilot.

7.4 Special Buildings

Related to the above, past ASPRs highlight the trend of non-compliance in special buildings such as senior’s homes, hospitals and schools. The 28 deaths associated with a fire in a Quebec senior’s home February 2014 reinforce the vulnerabilities and special needs of this population. This is further corroborated through TSSA’s recently expanded ‘Special Buildings’ pilot where every one of the 100 inspected special buildings was found to be non-compliant (in the fuels sector).

A key partner in the special buildings program is the Ontario Retirement Homes Regulatory Authority. Discussions have been held by TSSA staff and the CSRO on possible ways to strengthen the partnership\(^{15}\). These should be continued and advanced.

7.5 Public Education (Behavioral Economics)

Much of TSSA’s mandated risk can be attributed to human behavior, especially in the case of elevating devices, escalators, amusement devices and carbon monoxide. Public education, including the application of behavioral economics – also colloquially referred to as the ‘Nudge Factor’ – is a powerful tool to encourage behavioral changes to reduce risk. TSSA is developing effective experience in the area of behavioral economics.

\(^{15}\) CSRO personal discussions with Deanna Williams, Risk Officer
Distracted operators at Amusement Devices (i.e. on their smart phones) are a commonly identified risk factor (personal communication). Distraction (e.g. by phone) is also a key risk factor in automobile accidents, pedestrian fatalities, elevating devices and ski lifts. Bringing about a concerted and sustained campaign to reduce distracted behavior is likely best pursued in a comprehensive manner, rather than sector-by-sector.

Can better communications help as a compliance tool?\textsuperscript{16} TSSA has several public education efforts underway. Parachute Canada is also developing expertise in this area. Coordination, and mutual support, might be possible. Similarly the Province of Ontario reviews behavioral economic techniques in the Economic Regulatory Deputy Ministers’ Committee. Public Education and the considered use of behavioral economics are likely to grow in importance. TSSA may want to develop this expertise within a provincial (and possibly Canadian) partnership.

7.6 Training Programs – Overlapping Accreditation

An area that warrants continued analysis is the pending shortage of power engineers. This may be partially addressed through amendments to Ontario Regulation 219/01. Also, salaries offered by industry may simply be too low for sustained enticement of potential workers.

There remains overlapping accreditation requirements between the Ontario College of Trades and TSSA with regard to elevating devices and gas technicians.

\textsuperscript{16} For example, up to one-third of all water-slide injuries apparently occur at one location: would a system similar to publicly displayed health ratings of restaurants yield quick improvements?
This is confusing and cumbersome to prospective workers; a resolution should be forthcoming (this is one of the comments already received in Ontario’s Red Tape Challenge.

Recognizing the need for a comprehensive program for accreditation of potential trades on November 19, 2014 then Minister of Training, Colleges and Universities, the Honourable Reza Moridi, appointed Tony Dean as Reviewer to conduct an independent technical review of key areas of Ontario’s skilled trades system and mandate of the College of Trades. TSSA submitted an opinion for Commissioner Dean. The report (aka ‘Dean Review’) was released November, 2015. Key aspects include strengthening and better defining the mandate of the Ontario College of Trades and providing Scopes of Practice (SoP) for all trades. The report recognizes TSSA’s capabilities and professional reliance on risk-informed regulatory oversight. RIDM and risk based regulations are likely to grow in application in Ontario.

Many argue (e.g. Friedman, 1963) that “[t]he overthrow of the medieval guild system was an indispensable early step in the rise of freedom in the Western world.” This ushered in the great-age of wealth generation. Today on a smaller scale, and mainly developing in cities, new initiatives such as Uber taxis and ‘airbnb’ accommodations are challenging current licensing and regulatory practices.

The most contentious aspect of the Dean Review was the sustained or enhanced role of specific trade unions (Mathews-Dinsdale). Better public safety requires better practices, such as regulations and license. These revised regulations may threaten existing stakeholders. The best way to address these concerns is through the use of evidence-based (with open and verifiable data) risk-informed regulation. This was highlighted in the Dean Review – and should remain an area of strength and support from TSSA. For example, the use of a RIDM approach in the Uber debate would be helpful.

7.7 Ontario Risks Outlook 2015

As part of the 2015 Annual Report the CSRO prepared an accompanying report, ‘Ontario Risks Outlook, 2015’. The intent of the document is to support safety regulators in Ontario, such as TSSA, to discuss risk management in context of top risks facing Ontarians. The top risks facing Ontarians were estimated as:

- Failure of critical infrastructure – including cyber attacks
- Failure of climate change adaptation – extreme weather events
- Falls
- Transport Incidents
- Self-harm
- Unintentional poisoning
- Spread of infectious disease
- Water crises
- Conflict – including terrorism, collapse of governance, and weapons of mass destruction
- Violence (personal)

TSSA agreed to review the methodology and facilitate the annual publication of the list (perhaps as part of the ASPR).
Figure 7.1: The Four Pillars of Regulation of Home Inspectors

Figure 7.2: Brockville, Canada’s First ‘Safe Community’ (1996)

http://brockville.safecommunities.parachutecanada.org/
Photo courtesy Parachute Safe Communities, Brockville, Leeds and Grenville
References


McCann, Michael (2013). Center for Construction Research and Training. Deaths and Injuries Involving Elevators and Escalators

Nagata, H. Case Study on Possible Falling Patterns of a Fatal Fall from Stairs. Ind Health, 2014 Sep; 52(5): 432-438


Annex 1: Annual Work Plans – Chief Safety and Risk Officer

Current Work Plan – FY16 [in progress]

- Review Key Reports. Review and provide comments on the 2014-2015 Annual Public Safety Performance Report (ASPR) and TSSA Annual Report (ongoing, ASPR review annual).

- Benchmarking. Continue with review on global comparators of TSSA’s delegated tasks and assess global practices in some 3 to 5 jurisdictions on Elevating Devices (ED), and monitor assessment of Operating Engineers (OE) reviews (OE review overseen by Ministry of Government and Consumer Services (MCGS), ED benchmarking complete FY16).

- Continue to monitor progress on: (i) operating engineers, (ii) ‘special’ buildings and populations, e.g. seniors’ residents and schools, and (iii) risk informed regulatory development (ongoing review of the role of RIDM; special buildings initiative FY16).

- Prepare CSRO’s Annual Report. Consolidate reviews and recommendations and summarize observations for the year. Discuss report with TSSA staff and the Board, as well as MCGS (ongoing, 2015 annual report complete).

- Data Management. Continue to review TSSA’s data management system both in terms of (possible) specific enhancements as well as possible integration and support with other provincial agencies; comment on data robustness. Key contact TSSA’s CIO (target date for published ED data set, May 2016). [revised with departure of CIO – review ongoing].

- Attend representative Advisory Council meetings, review minutes (ongoing).

- Conduct random field visits with TSSA inspectors. Attend TSSA staff meetings and Board meetings as requested. Conduct at least one visit to Northern Ontario (ongoing, visit to Sault St. Marie completed February 2016).

- Respond to possible requests from the TSSA Board and/or Minster of Consumer and Government Services (as requested).
Proposed Work Plan – FY17

• Review Key Reports - Review and provide comments on the 2015-2016 Annual Public Safety Performance Report (ASPR) and TSSA Annual Report.

• Prepare CSRO’s Annual Report - Consolidate reviews and recommendations and summarize observations for the year. Discuss report with TSSA staff and the Board, as well as MGCS. Include a briefing note on ‘public safety, regulations, standards, and the impact of the ‘Uber- economy’ (open data, internet services, and the sharing economy).

• Prepare with TSSA and industry partners a 2016 Risk in Ontario report.

• Data Management - Continue to review TSSA’s data management system both in terms of (possible) specific enhancements as well as possible integration and support with other Provincial agencies; comment on data robustness.

• Monitor and where requested comment on safety policy proposals.

• Attend representative Advisory Council meetings, review minutes, and conduct random field visits with TSSA inspectors. Attend TSSA staff meetings and Board meetings as requested. Conduct at least one visit to Northern Ontario.

• Benchmarking - Continue to monitor ways to benchmark TSSA with global practices on BPV, AD, ED, and Fuels.

• Respond to possible requests from the TSSA Board and/or Minster of Government and Consumer Services.
Annex 2: Chief Safety and Risk Officer Mission

The Chief Safety and Risk Officer’s (CSRO's) mission is to provide the Board of Directors with an independent review of safety activities related to the public safety responsibilities assigned to the Technical Standards and Safety Authority (TSSA) pursuant to the Technical Standards and Safety Act (Act). To this end, the CSRO will furnish analysis, recommendations and information concerning the safety activities reviewed within the scope outlined below. In performing his or her role, the CSRO will strive to be an advocate for public safety and take a forward-looking approach based on current best practices and trends.

Chief Safety and Risk Officer Charter

Role. The CSRO function and primary duties are established under the Act and supplemented by the Memorandum of Understanding (MOU) between TSSA and the Minister of Government and Consumer Services (Minister). This independent function, which is not performed by an employee of TSSA, reports to the Board of Directors with oversight provided by the Governance, Safety and Human Resources Committee (GSHRC).

Authorization and Responsibilities. Authorization is granted for full and complete access to any of the organization's records (either manual or electronic), physical properties and personnel relevant to the CSRO’s engagement. Documents and information given to the CSRO during a periodic review will be handled in the same prudent and confidential manner as by those employees normally accountable for them.

The CSRO has no direct responsibility or any authority over any of the activities or operations that they review. In particular, the CSRO will not:

- **report or comment on any finding of liability or fact or on any investigation, whether initiated by the corporation or another enforcement body, any legal proceeding, or reasonably foreseeable legal proceeding involving the corporation or the Ministry;**
- **report or comment on any action, or decision, by a statutory director under the Act, nor interfere in any duty, or power of a statutory director;**
- **investigate or review specific incidents, or individual complaints; or**
- **accept any statutory, regulatory, administrative or enforcement responsibilities.**
The scope of the CSRO’s engagement encompasses the following activities:

- pursue any safety matters that the Board or the Minister may request or any safety matters as determined by the CSRO to be in the public interest;
- review the adequacy and effectiveness of TSSA’s public safety risk management systems;
- review established public safety risk management systems, policies and procedures to ensure the organization is operating consistent with best practices;
- appraise TSSA’s report on the adequacy and effectiveness of the organization’s safety management framework to ensure compliance with the delegated act and regulations;
- appraise public safety strategies TSSA has established to ensure that the regulatory framework continues to meet the needs of public safety;
- appraise TSSA’s report to the Board of Directors on recent developments involving the regulatory framework under which TSSA operates, including the proposed annual regulatory plan that outlines priorities and supporting rationale;
- review, analyze and report on TSSA’s annual safety performance reports;
- provide draft reports and meet with the GSHRC annually or as required to report on the delivery of responsibilities and maintenance of independence; and
- submit an annual report to the Board of Directors.

**Reporting Accountabilities**

The CSRO shall prepare a report on his or her independent review of TSSA’s safety activities or proposed safety activities related to TSSA’s delegated responsibilities under its Act, including comments on TSSA’s annual safety performance report.

The CSRO shall also prepare a report on an annual basis and this report shall include an overview of the CSRO’s activities and operations highlighting key recommendations arising out of any other report issued by the CSRO in the preceding year, and any other safety matter the CSRO considers relevant consistent with the Act, MOU and this mission and charter.

The CSRO may also be required to prepare other reports as may be requested by the Board or the Minister.
The CSRO may also prepare a report on any matter related to TSSA’s safety activities or proposed safety activities if the CSRO considers it in the public interest to do so.

Where either the Board or the Minister requests a report, the CSRO shall provide the report within the time indicated by the Board or the Minister as the case may be. For all CSRO reports other than reports requested by the Minister, the following process will be followed:

> The CSRO will advise the Chair, GSHRC when a draft report has been prepared and TSSA management will be given an opportunity to correct any factual errors for the CSRO’s consideration. In addition, management may provide comments on the draft report that will be included as an addendum when the report is reviewed by GSHRC.

> Following GSHRC’s review, the finalized report will be provided to the Board of Directors (with a courtesy copy of the report provided to the Deputy Minister) for review, and acceptance. Following Board review, the CSRO will provide the Board accepted report to the Minister for review.

For reports requested by the Minister, the following process will be followed:

> The CSRO will acknowledge the Minister’s request for a report in writing and provide a draft Terms of Reference for review and approval by the Minister. A draft of the report will be provided to the Deputy Minister and TSSA management at the same time for factual review. The final report will be submitted concurrently to the Board and the Minister prior to its public release.

Final reports of the CSRO will include management’s response as an addendum, if any. The CSRO will provide the Minister with thirty days to review all reports prior to public release. All reports will be made available at the corporation’s annual meeting and otherwise made available to the public by such means as determined by the CSRO.

The CSRO will be reviewed and assessed on an annual basis by the Board of Directors.

**Clarification of Organizational Responsibilities**

The Board of Directors is accountable to the Minister for TSSA’s safety
performance, regulatory governance, including the appointment of the CSRO with the consent of the Minister and approval of the CSRO work plan and supporting budget.

The GSHRC assists the Board of Directors in fulfilling its responsibilities related to safety performance, regulatory governance and oversight of the CSRO, including making recommendations to the Board of Directors regarding the CSRO’s appointment, mission and charter, work plans and budget, performance and independence.

The President and CEO is ultimately responsible and assumes ownership for the delivery of effective safety performance, regulatory governance, while acknowledging the independence of the CSRO and statutory directors appointed under the Act.

The Vice President, Operations, has responsibility and accountability for the delivery of the organization’s safety services in all programs, contributes to organizational strategy and direction, and establishes and delivers on organizational goals and objectives.

The Program Directors combine the responsibilities of the statutory director with those of an operational director with the following responsibilities:

- making independent statutory decisions as required by the Act and regulations;
- managing safety risks borne by the public;
- managing the quality of TSSA’s regulatory performance with respect to its contribution to public safety risk management; and
- managing non-safety aspects of financial performance, organizational effectiveness, human resources, customer satisfaction, and other corporate goals.

The Senior Advisor, Public Safety and Risk Management (PSRM) is TSSA’s internal safety accountability advisor. The Senior Advisor, PSRM works with the statutory directors to enhance the quality of public safety decision making by giving strategic advice that promotes objective, quality decision making and providing formal risk management tools and processes.
Work Plans

Annually the CSRO will develop and provide a work plan to GSHRC for review with input from management and approval by the Board of Directors. In addition, to the required annual review of safety performance reporting, the plan will identify the areas or safety activities of the organization selected for review. The areas and safety activities selected will be based on perceived risk to public safety with respect to TSSA’s regulatory responsibilities. Other input for consideration includes:

• prior CSRO report findings; and
• requests by the Board and/or Minister;

The work plan will highlight the scope of the proposed review, estimate associated time to complete and detail applicable costs to the organization.
Annex 3: Potential Improvements in Various Service Sectors

Note: Size of the bubble indicates absolute value of the system in US$ billions
Source: IBM Institute for Business Value analysis based on inefficiency and improvement potential estimates reported during 2009 survey of 318 economists.

From: IBM Global Business Services, 2010 (included in the 2014 CSRO Annual Report)

IBM Global Business Strategies describes a $4 trillion opportunity using a ‘system-of-systems’ approach to build a ‘smarter planet’. The amounts may vary by jurisdiction, and this is a single corporate opinion, however the message is compelling. Worldwide changes should be anticipated in several key systems and sectors – particularly healthcare, education and government and safety.
Annex 4: A Summary of Ontario Open Data

On October 21, 2013, the Ontario government announced its Open Government Initiative.

The purpose of the initiative is to create a transparent, accessible government.

Open Government is comprised of three components:
- Open Dialogue – more opportunities for Ontarians to provide input into government policies and programs
- Open Information – more government information open to public on proactive ongoing basis
- Open Data – making government data available so that citizens and business can develop new ideas, services and applications

Open Data Directive – to make government collected and generated data (e.g., school enrolment, traffic volume on provincial highways) open to the public.

Government data is to be open by default, except in limited and specific circumstances:
- Data that is subject to statutory confidentiality requirements (e.g., Exempt under FIPPA);
- Data that is subject to legal privilege;
- Data that should not be disclosed because of security, confidentiality, or commercial sensitivity reasons.

Data is defined as facts, figures and statistics objectively measured according to a standard or scale such as frequency, volumes or occurrences.

The Open Data Directive applies to all Ontario ministries and provincial agencies. Agencies operate within and are funded by government. TSSA is a not-for-profit self-funded DAA, not an agency.

When government data can be made available to the public, it will be released over the Internet at no cost to the user.

Open data, to the fullest extent possible, is to be available in its original, unmodified form.
The government of Ontario’s Open Data Catalogue is the central platform for all open data published by ministries. All ministry open data must be released through the Open Data Catalogue –www.ontario.ca/open-data.

Provincial agencies must create a new page on their website or, in its absence, on another government website.

Ministries and provincial agencies should prioritize the publication of datasets frequently requested by the public.

Ministries and provincial agencies are working with the public and stakeholders to help identify and prioritize the release of datasets at the community, regional and provincial levels to support social research and planning.

Ministries are working with industry stakeholders to raise awareness of the economic potential of open data, and to prioritize the release of datasets to support economic activities.

From: MGCS presentation to TSSA Elevating Devices Advisory Council, 22 October 2015
Annex 5: Excerpt from Speech by Hon Yasir Naqvi, Minister of Community Safety and Correctional Services.

Public Safety Canada - 2nd Summit on the Economics of Policing & Community Safety - March, 2015 - Ottawa

The [mandate] letter specifically identified the need to:

- Develop a new strategic vision for community safety and policing;
- Accelerate the development of a package of reforms to policing service delivery; and,
- Maintain a strategic focus on community safety through a made-in-Ontario community safety and well-being strategy that builds on past work and complements other key government initiatives.

... towards the value of community safety and well-being at the local level. This is the kind of forward-looking planning that will help communities bend the cost curve for policing and all emergency services ...

... by helping move away from a reactive model of crisis response towards one of pre-emptive intervention and community building. It is one that will be reflected across our government as we expand the existing links with other ministries and public sector organizations to plan for community safety and well-being.

... our government's vision [is] to build safer, stronger communities. Our Strategy for a Safer Ontario is ambitious, it is bold, it will be guided by evidence and will be focused on outcomes.
Annex 6: Safe Communities

Safe Communities Canada was founded in 1996 by Paul Kells who lost his 19-year-old son in a workplace explosion. Safe Communities Canada was dedicated to ‘making Canada the safest country in the world.’ It did this by helping communities across the country build the capacity and resources they need to mount coordinated, collaborative programs designed to reduce the pain and cost of injury and promote a culture of safety.

Safe Communities Canada was instrumental in bringing about Parachute Canada. Parachute Canada has so far designated 67 ‘safe communities’ in Canada, 27 in Ontario including Canada’s first safe community, Brockville (1996) and the most recent, Windsor (designation ceremony June, 2016).

In Ontario, Safe Communities Canada committees include: Brockville, Leeds and Grenville (1996); Safe Communities on the Grand (1996); Kingston (1997); Sarnia-Lambton (1997); Rainy River Valley (1997); Pickering/Ajax (1998); Hamilton (2000); Sault Ste. Marie (2000); Chatham-Kent (2000); Thunder Bay (2000); Timmins & District (2001); Brampton (2003); Elliot Lake Safe (2003); St. Thomas-Elgin (2003); Ottawa (2003); Dryden Area (2004); Kenora (2004); Welland (2005); Espanola and Area (2005); Bruce (2006); Port Colborne (2009); Kawartha Lakes (2009); Woodstock (2012); Wellington County (2013); Halton Hills (2015); Northumberland (2015); Windsor (2015).

The safe communities concept began at the World Conference on Accident and Injury Prevention, Stockholm, Sweden in 1989. The safe communities designation program follows a ten-step process:

- Create a leadership table
- Create and adopt terms of reference
- Complete a priority setting exercise
- Complete a community scan
- Identify initiatives and evaluation mechanisms
- Identify and fund budget
- Ensure coordination
- Develop a community action plan
- Finalize application
Globally there are more than 350 designated safe international communities; growing by more than 75 new communities per year. The process for certification as a ‘safe community’ internationally\textsuperscript{18} is largely consistent with Safe Communities Canada (now part of Parachute). The approach varies by community however as reflected by local priorities and capacities. Initiatives are underway in at least Australia and New Zealand to quantify and attribute (if warranted) improved safety performance linked to Safe Community designation and activities.

Often a community action plan integrates local conditions, e.g. the Pickering/Ajax Safe Community is linked with Ontario Power Generation and other local employers and safe operation approaches with the neighboring Pickering nuclear plant. In Canada most safe community associations include carbon monoxide as a priority.

Perhaps as an outcome of Paul Kells’ efforts launching Safe Communities Canada (1996) and its early links with the safe communities concept started through WHO at the First World Conference on Accident and Injury Prevention held in Sweden 1989, Canada is well represented in the international safe community program (about one-fifth of all designated communities are Canadian). This preponderance of Canadian involvement is even more pronounced in Northern Ontario where about half of all communities are now designated safe communities (consistent with Canadian and international requirements).

With the majority of Northern Ontario communities designated as Safe Communities there may be merit in working with the committees to harmonize objectives with TSSA. This would be particularly relevant in the fuels sector and with special buildings. Perhaps as a way to support implementation of the Northern Ontario Compliance Strategy (see Annex 5) a new, or re-constituted Community Advisory Committee for Northern Ontario could be established that links the region’s safe communities committees. The Committee could focus on unique aspects of the region, as they relate to TSSA mandated regulations, and do so in an integrated manner, e.g. EDs, OE/BPV and Fuels sectors with community priorities as defined within the Safe Community process.

\textsuperscript{18} \url{http://www.ki.se/csp/}
Annex 7: Regulatory Update – From MGCS, November 2015

This report is intended to provide a bi-annual update to the Technical Standards and Safety Authority (TSSA) industry advisory councils regarding Ministry of Government and Consumer Services (MGCS) initiatives related to TSSA.

1. Regulatory Renewal

MGCS and TSSA continue to work collaboratively to advance the priority regulatory renewal projects underway for Boilers and Pressure Vessels (BPV), Upholstered and Stuffed Articles (USA), and Operating Engineers (OE). Other related projects include Liquefied Natural Gas (LNG), and Code Adoption Documents and Director’s Orders (CAD / DO).

• **BPV**: MGCS and TSSA have developed a draft regulatory proposal to strengthen regulatory compliance and oversight for periodic inspections of boilers and pressure vessels. A targeted stakeholder consultation on the draft regulatory proposal is to be launched with industry in winter 2016 and conclude in the spring. This will be followed by a broader public consultation by the end of 2016.

• **USA**: In November 2015, KPMG’s final report on the USA regulation was circulated to all of the stakeholders who were interviewed as part of the project. MGCS is now considering options for the modernization and streamlining of the USA regulation. MGCS is planning to release a discussion paper for public comment in early 2016.

• **OE**: Work continues on the multi-phase project to comprehensively review the OE regulation. The first phase of work included stakeholder meetings to identify current issues and jurisdictional research to understand how those issues are addressed elsewhere. The second phase will be a targeted stakeholder consultation for OE.

• **LNG**: Lough Barnes Consulting has completed both the stakeholder engagement and jurisdictional research portions of this project. Lough Barnes is to submit its findings paper for MGCS and TSSA review in January 2016. The paper will identify key findings to inform potential approaches to strengthening the LNG regulatory regime in Ontario.
• **CAD / DO**: This is a project being led by TSSA. The purpose of this project is to develop a clearer and more consistent process for the development of TSSA CADs and DOs. Included is the creation of new TSSA standards for the level of analysis employed and evidence presented to support CAD and DO development, the creation of thresholds to determine the level of consultations with TSSA stakeholders, and improvement in communications between MGCS and TSSA throughout the CAD / DO development process. A new standard operating procedure for CAD / DO development is expected to be in place in spring 2016.

**Propane Safety**

On January 1, 2015, amendments took effect to the propane storage and handling regulation that include:

• Moving from annual to risk-based inspections so that higher-risk facilities are inspected more frequently than lower-risk facilities.
• Permitting facilities to select the most appropriate senior management person to complete the mandatory safety training that is required of staff who directly handle propane for transfer.
• Aligning the decision making of Level 1 risk and safety management plan (RSMP) templates – transfer authority for changing the data elements of the templates to the statutory director of fuels safety.
• A new requirement to carry insurance set at minimums of $1 million for small propane transfer facilities and $5 million for medium-to-large propane transfer facilities. This requirement came into force on January 1, 2016.


## Annex 8: Country Benchmarking of Burden of Disease

<table>
<thead>
<tr>
<th>Country</th>
<th>Age-standardized death rate (per 100,000)</th>
<th>Age-standardized YLL rate (per 100,000)</th>
<th>Age-standardized YLD rate (per 100,000)</th>
<th>Life expectancy at birth</th>
<th>Health-adjusted life expectancy at birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kuwait</td>
<td>489</td>
<td>511</td>
<td>1</td>
<td>14</td>
<td>11,796</td>
</tr>
<tr>
<td>United States</td>
<td>639</td>
<td>516</td>
<td>15</td>
<td>17</td>
<td>15,130</td>
</tr>
<tr>
<td>Switzerland</td>
<td>532</td>
<td>567</td>
<td>9</td>
<td>2</td>
<td>11,825</td>
</tr>
<tr>
<td>Netherlands</td>
<td>572</td>
<td>426</td>
<td>7</td>
<td>7</td>
<td>11,847</td>
</tr>
<tr>
<td>Ireland</td>
<td>692</td>
<td>453</td>
<td>10</td>
<td>12</td>
<td>14,298</td>
</tr>
<tr>
<td>Iceland</td>
<td>548</td>
<td>365</td>
<td>1</td>
<td>2</td>
<td>11,310</td>
</tr>
<tr>
<td>Australia</td>
<td>568</td>
<td>389</td>
<td>3</td>
<td>4</td>
<td>12,381</td>
</tr>
<tr>
<td>Canada</td>
<td>558</td>
<td>5</td>
<td>422</td>
<td>6</td>
<td>12,079</td>
</tr>
<tr>
<td>Austria</td>
<td>622</td>
<td>418</td>
<td>5</td>
<td>9</td>
<td>13,732</td>
</tr>
<tr>
<td>Sweden</td>
<td>539</td>
<td>403</td>
<td>4</td>
<td>3</td>
<td>11,196</td>
</tr>
<tr>
<td>Denmark</td>
<td>656</td>
<td>504</td>
<td>13</td>
<td>14</td>
<td>14,383</td>
</tr>
<tr>
<td>Belgium</td>
<td>615</td>
<td>460</td>
<td>12</td>
<td>8</td>
<td>13,458</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>638</td>
<td>455</td>
<td>11</td>
<td>10</td>
<td>13,452</td>
</tr>
<tr>
<td>Germany</td>
<td>644</td>
<td>432</td>
<td>8</td>
<td>12</td>
<td>14,032</td>
</tr>
<tr>
<td>Finland</td>
<td>655</td>
<td>437</td>
<td>9</td>
<td>13</td>
<td>14,467</td>
</tr>
</tbody>
</table>