Annual Report

Chief Safety and Risk Officer

Technical Standards and Safety Authority
Ministry of Government and Consumer Services
Province of Ontario

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Executive Summary


1. Summary of Recommendations

(i) Consistent with last year’s recommendation and current progress, no later than May 1, 2016 TSSA should, at a minimum, have elevating devices data publicly available on its website (or alternate location). As much as possible, access and usability of data should be consistent with other ‘Open Ontario’ data sets.

(ii) TSSA’s inclusion of baseline comparisons provided in previous ASPRs 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.

(iii) Public safety is a shared mandate. TSSA’s key objectives, such as minimizing carbon monoxide poisoning, require broad partnerships with common, yet differentiated objectives.

(iv) The ‘special buildings’ pilot now underway with TSSA’s Fuels Sector should be closely monitored (of the initial 100 buildings reviewed, all were non-compliant, not all non-compliant were high-risk), and possibly expanded (e.g. add elevating devices reviews) and fast-tracked (interim modifications to current methodologies may be warranted, and site selection process clearly defined – the pilot is envisaged as at least a three-year undertaking).

(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’, in concert with other similar rural areas in Ontario.

(vi) Safe communities, as championed by WHO and Parachute Canada (see Sec 4.1) 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 other community advisory councils but perhaps with broader agency support) and could be designed to mesh with the locally-specific growth strategies.
2. 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. A major data management campaign is underway (TSSA 20/20 – ‘Fix the Foundation’). Shortcomings with the existing system have been identified and steps to remedy and develop a more robust system are proceeding.

Previous CSRO Annual 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’.

TSSA reports include the target: ‘Data cleansing for critical elements in the Elevating Devices Safety Program area complete; accuracy levels determined and targets set; and a roadmap developed for Enterprise Risk Management.’

This target is integrated within the larger initiative of enterprise information architecture. As proposed last year, and recognizing the critical nature of data reliability, management processes, and timeliness, an aspirational target specific to elevating device data management should be maintained. The following was suggested:

(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.

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. Value for money considerations suggest that clear metrics and schedules are needed on progress and public safety enhancements. This is fully consistent with the Strategic Plan – Strategy Four (Organizational Effectiveness) and the objectives of (i) Build a strong foundation to succeed, and (ii) Fully use TSSA resources to optimize performance.

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. A ‘hierarchy of data management’
would, in addition to ‘fixing the foundation’, likely first focus on effective data collection by
inspectors and locational information for facilities such as elevating devices EDs and
boilers and pressure vessels BPVs. Enterprise architecture, e.g. billing and client
monitoring systems would rest on this platform. So too applications, e.g. software, and
technology, e.g. remote support and data centers.

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.

3. Baseline Comparisons and Benchmarking

An initial study completed by the CSRO last year 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.¹

Annex 6 provides preliminary findings for ED oversight requirements in New York, Illinois,
France and New Zealand. 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.

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.²,³

¹ 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.
² The term DALY was originally developed by Harvard University for the World Bank in 1990. The term is now widely
used in public health and broad health reporting, e.g. the 2012 Global Health Burden Report by the World Health
Organization. RIDM is a general risk industry standard metric that originated in systems engineering.
³ DALY as used here only pertains to immediate injury of the activity in question, e.g. physical injury using an elevator or
amusement device. The possible impact of say, communicable diseases or long-term health impacts that might be
associated with the activity, such as long-term exposure to hydrocarbons or cumulative back strains from amusement
rides are not captured here: This is standard industry practice. The metric combines morbidity and mortality thereby
providing a more holistic account of safety impact.
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.

Ontario, especially Northern Ontario, has many communities seeking Parachute Canada and World Health Organization (WHO) International ‘Safe Community’ designation (see Sec. 4.1). 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 urban resilience.

3.1 Benchmarking TSSA

A scoping exercise for benchmarking TSSA was completed April, 2014 by Risk Sciences International (RSI), Ottawa. Proposed candidate jurisdictions for inclusion in an ongoing review include: New York City; Illinois (with emphasis on Chicago); Paris, France; London, England; Hong Kong; Singapore; New Zealand or Australia, and; Finland. 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 long-term value of benchmarking is derived through baseline and trend observation over time.

As discussed in Section 4.1 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 (see Annex 4); (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 is not readily benchmarked per se as the Authority is unique in mandate and structure. However the individual sectors are readily comparable across jurisdictions, e.g. ED, BPV, OE and USA. These activities are common in most jurisdictions and usually share standard regulations, manufacturers, and approaches.
The pace and scope of global trends in public safety provision are likely to increase as potential risks intensify and more people and property are put in harm's way (e.g. population of the world’s cities and the global economy will both likely double in the next 35 years). Population of the Greater Toronto Area alone is on pace to increase by more than 40 percent, with a doubling of economy, by 2050. Aging population also further taxes provision of public safety.

A concern raised when TSSA was established as a Delegated Administrative Authority was technical staffing complements to ensure government’s sustained ability to “steer” policy direction while assigning “rowing” requirements to the DAA (Winfield et al 2002). The Ministry partially addresses this through public consultations and consultant service contracts when revising regulations, and establishment of the CSRO position. Benchmarking and monitoring policy changes with a cadre of public safety agencies provides an additional level of comparative evaluation and assurance (see Annex 6).

In addition to benchmarking TSSA in specific sectors, a broader benchmark on timeliness and process mechanics for updating related regulations may be useful. A separate report on benchmarking elevating devices accompanies this report (summary in Annex 6).

3.2 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 economy overall). Much of Canada’s, and Ontario’s, future wealth will be determined by the GTA.

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 February 2014 Grosvenor, a UK-based real estate firm, published its Resilient Cities report. Toronto was touted as the world’s ‘most resilient’ city. Reports ranking cities are common; some more definitive than others. Urban resilience (metropolitan areas and discreet cities) is emerging as a key economic differentiator and public safety imperative. All large urban areas are actively engaged in identifying their (changing) risk profile and attempting to enhance adaptation capacities.

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

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4 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.

5 The City of Toronto was rated 2nd Least Vulnerable (climate, environment, resources, infrastructure, community) and 2nd Most Adaptive (governance, institutions, technical and learning, planning systems, funding structures) for a combined ‘world’s most resilient’ of the 50 of the world’s ‘most important’ cities.
in policy development. Two agenda items 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, and (ii) promoting the GTA and Ontario's a unique position as one the world’s most resilient jurisdictions (i.e. safe 'global city').

The GTA is unique in Ontario, hence the Places to Grow Act and a unique set of policy tools for the region, e.g. Metrolinx, Condominium Act. The application and development of public safety policies may also be modified for the unique attributes of the region. For example in New York and Chicago, the size and capacity of New York City and Chicago led to their (municipal) oversight of elevating devices.

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. TSSA also enacted unique policy implementation approaches in launching the Northern Ontario Compliance Strategy – Gas stations and Marinas in 2014 (see Annex 5).

Consistent with the two Growth Plans, TSSA, along with other agencies, should, where warranted, and without diminishing province-wide initiatives, continue to enact unique and customized approaches to public safety in the GTA 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.

4. Public Safety, a Shared Mandate

Preventable injuries impose a major burden on Ontario and Canada’s economies. Costs of injuries are in excess of $20 billion per year, and are the leading cause of death for Canadians below age 45. Canada ranks a worrisome 24th out of 34 OECD6 member countries for injury related mortality rates (WHO, 2008).

As highlighted in Fig. 4.1, 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 charities7 into a single, national organization to better coordinate and drive injury prevention. Parachute’s 10-year goal is for Canada to move from 24th to 1st in WHO ranking in terms of injury mortality (with a 25% reduction as a 3-year milestone). Parachute’s values are: evidence-based; policy driven; nationally led, community driven; implementation focused;

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7 Parachute was created through the merger of Safe Communities Canada, Safe Kids Canada, SMARTRISK, ThinkFirst Canada.
collaborative and complementary; and innovation (see Fig. 4.2).

Parachute, with its origins linked to 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.

This evidence-based, and measured, approach for health care and public safety is increasingly common. For example Australia used its own DALY calculations to direct $900 million in public health and safety program spending since 2009 (New York Times April 2, 2015).8

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 ministries assigned public safety mandates include, among others, Transportation, Community Safety and Correctional Services, Health and Long Term Care, and TSSA’s oversight ministry – Ministry of Government and Consumer Services (MGCS).

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.

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. Company Profile: Putting Public Safety First. 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.

4.1 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 66 ‘safe communities’ in Canada, 26 in Ontario including Canada’s first safe community, Brockville (1996) and the most recent, Northumberland (April, 2015).

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).

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
- Designation ceremony

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 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

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9 [http://www.ki.se/csp/](http://www.ki.se/csp/)
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 reinforce common 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.
**Figure 1: The High Costs of Injury (Canada 2008)**

![Economic Burden and Societal Contribution](image)

From: Parachute Strategic Plan, November 2013

**Figure 2: Parachute Canada’s Strategic Framework**

![Strategic Framework](image)

From: Parachute Strategic Plan, November 2013
5. Emerging Issues – Watching Brief (Updates)

Several issues are emerging and may warrant a more comprehensive review (issues raised in previous Annual Reports):

5.1 Integrated Service Delivery

A success story in the Ontario public safety sector is the Ontario Regional Common Ground Alliance (ORCGA). Digsafe and ON1CALL combine several utilities and agencies wanting the public to “Call Before You Dig”. Making it 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.

5.2 Home Inspections to Home Servicing

Home inspections are typically carried out at time of sale; often by an accredited member of the Ontario Association of Home Inspectors. Other 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). Servicing often connotes less risk to the practitioner than inspection. However to overcome potentially high-costs (e.g. from the 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, home servicing could emerge as a habit similar to automobile servicing. This should also increase homeowner convenience and safety and, as a secondary benefit, would enhance economic development. This change in mindset will take time to implement, as current regulations, individuals and existing businesses, oversight agencies, homeowner habits, and costs will all be impacted. However, 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 this specific

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10 Discussions at Liquid Fuels Community Advisory Council
risk. 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 (and possibly replace) the somewhat *ad hoc* and growing regime of home inspections and compliance. This will take time to emerge as even in the automobile servicing area the public is not readily convinced by the ‘value proposition’ of preventive maintenance. The program could be similar to an ‘Eco-Audit’. Other partners could include the Electrical Safety Authority (ESA), insurance industry, Fire Marshal’s Office and local utilities. This initiative might first be launched in 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, see Sec 4). Another possible example is the current incentives for use of winter tires (reduced auto insurance rates) – a similar approach might be taken with furnace servicing and reduced home insurance rates.

5.3 Safety and Seniors

Ontario is undergoing 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 mandate as seniors tend to experience risks more acutely in some areas such as EDs (tripping and falling), ‘special buildings’, and staffing might be impacted.

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. Keller (2015) provides an important lesson from the 2003 Paris heat wave, where most of the 5000+ victims were elderly, and most lived on higher floors of multi-residences buildings.

5.4 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 current ‘Special Buildings’ pilot where every one of the 100 inspected special buildings was found to be non-compliant (in the fuels sector). Annex 4 highlights the likely impending pressures as efforts are launched to reduce costs in health care (retirement homes) and government safety provision, while demographic trends add to the challenge as populations age quickly.

5.5 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.

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.

As highlighted through groups such as the Behaviour Insights Team relatively simple initiatives such as a common business number (identifier) across various government agencies can provide better tracking and communication, e.g. Ministry of Finance working with TSSA on fuels non-compliances as well as tax avoidance? Can communications help as a compliance tool? TSSA is launching several public education efforts. For example the four element ‘CO community blitz campaign’ now underway relies on a ‘nudge’ across all stages of behaviors change; increased awareness; enhanced knowledge of individual role; and awareness of actions to take for risk mitigation. Similarly the Province of Ontario is reviewing 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. For example, the Ministry of Government and Community Services’ advertising campaign for consumer tips (‘don’t be a dummy’).

5.6 Training Programs – Overlapping Accreditation

An area that warrants more in-depth analysis is the purported 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, although based on lessons from other sectors such as health care providers, higher salaries alone do not grow the complement in underserviced areas. Only cursory discussions on this topic were held by the CSRO; a more thorough review is

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11 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?
proposed. How this is linked with the Ontario College of Trades may also be further reviewed.

There now exists overlapping accreditation requirements between the Ontario College of Trades and TSSA with regard to elevating devices and gas technicians. This is confusing and cumbersome to prospective workers; a resolution should be forthcoming.

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; a summary report is expected in late 2015.

5.7 Safety and Trade Issues (especially in Upholstered and Stuffed Articles)

In reviewing upholstered and stuffed article activities the inter-related issue of safety (from fill material and possible contamination, e.g. rodents and bed-bugs) and trade protection emerges. How does e-commerce affect this issue; what are other jurisdictions doing; what are major trends? Mattresses can now be purchased online (delivered direct to homes). How does this affect regulation?

After reviewing TSSA’s sixteen delegated regulations, and recognizing the need for regulatory renewal, the MGCS identified a review of USA regulation as a priority (along with OE and a new regulation for liquid natural gas). The report is now complete and undergoing review.
Figure 3: Brockville, Canada’s First ‘Safe Community’ (1996)

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


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

Fiscal Year 2015/2016

2. **Benchmarking.** Continue with review on global comparators of TSSA’s delegated tasks and assess global practices in some 3 to 5 jurisdictions on EDs, and monitor assessment of OE reviews (OE review overseen by MCGS, ED benchmarking complete 2015/16 FY).
3. **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 2015/16).
4. **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, annual report).
5. **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).
6. **Attend representative Advisory Council meetings, review minutes (ongoing).**
7. **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).
8. **Respond to possible requests from the TSSA Board and/or Minster of Consumer and Government Services (as requested).**

Estimated Input: 35 days and $10,000 expenditures – travel and servicers.
1. **Review Key Reports.** Review and provide comments on the 2013-2014 Annual Public Safety Performance Report (ASPR) and TSSA Annual Report.

2. **Benchmarking.** Conduct primary research and assist TSSA in contracted services to assess global practices in some five to seven jurisdictions on BPV, AD, ED, and Fuels. Include ‘watching briefs’ on (i) operating engineers, (ii) ‘special’ buildings and populations, e.g. seniors’ residents and schools, (iii) USA, especially e-commerce aspects, and (iv) risk informed regulatory development (ongoing review of the role of RIDM).

3. **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.

4. **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.

5. Monitor and where requested comment on safety policy proposals.

6. 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.

7. Respond to possible requests from the TSSA Board and/or Minster of Government and Consumer Services.

Estimated Input: 33 days and $12,500 expenditures – travel and 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.
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.
Northern Ontario Compliance Strategy – Gas Stations and Marinas

January 14, 2015  By tssablog  With 4 comments  Tagged with: compliance, environment, gas stations, Liquid Fuels Handling Code, marinas

Recent consultations with northern Ontario stakeholders have identified significant challenges for some gas station and marina owner/operators in complying with regulatory requirements outlined in the Liquid Fuels Handling Code (LFHC).

The limited availability of certified fuels contractors, short construction season to upgrade or repair equipment and seasonal operations of many fuel facilities in northern Ontario have been identified as major barriers to complying with code requirements.

In order to assist operators facing compliance challenges with orders related to underground piping and sumps, TSSA has developed a revised compliance strategy for northern Ontario to provide additional flexibility for owner/operators. TSSA fuels inspectors have been directed to work with owner/operators who require additional consideration to develop flexible compliance plans to effectively manage safety and environmental risks.

This revised approach to enforcement deals primarily with requirements related to single-walled underground piping and sumps, and is available only to those owners and operators of facilities in northern Ontario, as defined by the Northern Ontario Heritage Fund.
Annex 5: Special Buildings Targeted Inspection Program

TSSA Launches Special Buildings Targeted Inspection Program

November 3, 2014, By tissalg, 0 With no comments yet, Tagged with: Long-term Care Facilities, Nursing homes, Retirement Homes

This summer, TSSA launched a three-year pilot inspection program for retirement homes, long-term care facilities, schools, hospitals and other high occupancy buildings to address potential public safety risks associated with fuel-burning equipment such as furnaces and kitchen appliances. Retirement homes and long-term care facilities are the focus for year one.

The initiative follows an analysis of fuels-related incident occurrences at special buildings (often institutions with vulnerable populations) that identified a higher than acceptable level of risk owing to non-compliant installation and maintenance practices.

While the key objective of this pilot program is to enhance public safety by reducing the risk of carbon monoxide (CO) exposure to building residents, this initiative will also enable TSSA to:

- Gain a better understanding of the extent and nature of regulatory non-compliances associated with fuel-burning equipment at high-occupancy buildings
- Ensure regulatory compliance
- Evaluate the need for a more comprehensive inspection program

A large sample of retirement homes and long-term care facilities will be selected for inspection on a random basis.
<table>
<thead>
<tr>
<th>Questions</th>
<th>New York City Department of Buildings</th>
<th>Office Of The Illinois State Fire Marshal - Elevator Division</th>
<th>AFNOR - France</th>
<th>WorkSafe New Zealand in partnership with Ministry of Business, Innovation &amp; Employment, and The New Zealand Lift and Elevator Association</th>
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<tr>
<td>a. What is the overarching regulatory framework in the context of the technology life cycle?</td>
<td>Oversees the regulation and enforcement of elevating device activities within the City of New York, including installation, operation and maintenance. This is accomplished through enforcement of the City’s Building Code, in particular, Chapter 30 regarding elevators and conveying systems. Except as otherwise provided for the code, design, construction, installation, alteration, repair and maintenance of elevators and other conveying systems and their components must conform to ASME A17.1 (with modifications provided by Appendix K in the NYC Building Code and ASME A17.2, ASME A18.1, ASME A17.5, ANSI A10.5, ASME QE1-1, ASME A90.1, ASME B20). The main activities of the Dept. of Buildings are plan examination, issuing construction permits, inspection of properties, and licensing of trades. The Buildings department does not engage in repair activities of elevating devices and only performs inspections.</td>
<td>Oversees the regulation and enforcement of elevating device activities within the State of Illinois through the “Elevator Safety and Regulation Act” for elevators, platform lifts and stairway chair lifts, escalators, moving walks, dumbwaiters and material walks, and other elevating devices. Limited to areas outside of municipalities over 500,000 pop. This is accomplished through the following activities within the State of Illinois, but outside the City of Chicago (and other 500,000+ municipalities): Registration, Inspection; Certification of Conveyances; Licensing Contractors, Mechanics, Inspectors, Inspection Companies and Apprentices.</td>
<td>Design, manufacture and install (new lifts): There are common regulations in the European Union member states. In the Lifts Directive 95/16/EC there are presented the essential health and safety requirements that new lift needs to fulfill. Lift that is designed and manufactured according to harmonized European standards, is presumed to be in conformity with the essential health and safety requirements of Lifts Directive. That is so called New Approach harmonization legislation in EU. The Lifts Directive also describes the Conformity Assessment procedures for new lifts. There are alternative ways to place lift on the market; with different kind of inspection procedures or quality systems. The Lifts Directive also sets requirements for economic operators, like installers, manufacturers and inspection bodies. (All EU member states have to implement the directive to their national legislation.) Operate and maintain: National legislation covers the lift's life cycle after it has been taken into use. The national regulations concern mainly operating, maintaining, repairing and inspecting, because the requirements for lift equipment itself are presented in the Lifts Directive. The lift equipment needs to be in conformity with the regulations that were valid when lift was installed. So, the old lifts, taken into use before Lifts Directive became valid, are in conformity with old national regulations. Existing lifts are also subject to performance based standards or risk based assessments for safety conformance. Corrective actions are then applied progressively.</td>
<td>Under the Health and Safety in Employment Act, the Approved Code of Practice for Elevators in New Zealand is the “Voluntary Code of Practice for Health and Safety Issues in the New Zealand Lift Industry” Under the Building Act, only licensed building practitioners may conduct or supervise restricted building work Under the Building Act, major building work such as installation, construction, alteration, demolishing or removal must apply for a consent. Some minor work may not require consent, but must satisfy specific criteria under the Building Code The building consent authority must issue a code compliance certificate for satisfaction of code requirements The Code of Practice provides minimum standards for safe provisioning of companies involved in any stage related to elevators, escalators and associated equipment of: Installation Examination Inspection Testing Manufacturing Service Maintenance Repair Dismantling (including complete demolition)</td>
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<tr>
<td>b. What is the scope and extent of regulation?</td>
<td>Dept. of Buildings regulations cover all lifts, elevators, escalators, amusement rides, and related conveyance devices within New York City regardless of age and installation date through the Building Code Chapter 30 The regulations cover all parts of the life cycle from design and installation to dismantling and removal. Design of elevators must conform to ASME A17.1 and will be enforced.</td>
<td>The regulations cover all parts of the life cycle from Design; Installation; Construction; Operation; Inspection; Testing; Maintenance; Alteration and repair</td>
<td>All. European regulation covers all new lifts until they have been taken into use and national regulations the rest of the life cycle.</td>
<td>Installation is covered mainly by the Building Act to ensure safe compliance of applicable codes following installation and construction by a building consent authority Maintenance and safety beyond installation and regular use is mandated by the Health and Safety in Employment Act which references the Code of Practice on the WorkSafe website and in partnership with The New Zealand Lift and Escalator Association</td>
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### c. Are requirements in the regulation or adopted through codes and standards?

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<th>Requirement</th>
<th>Description</th>
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<td>As of April 2015, the State Fire Marshal has adopted nationally recognized standards and safety codes surrounding elevators and elevating devices. This includes all ASME codes for mechanics, inspectors, and contractors. The following are applicable standards: Safety Code for Elevators and Escalators (ASME A17.1-2007/CSA B44-07) and ASME A17.7 2007/CSA B44.707; Guide for Inspection of Elevators, Escalators, and Moving Walks (ASME A17.2-2004); Safety Code for Existing Elevators and Escalators (ASME A17.3-2005); Safety Standard for Platform Lifts and Stairway Chairlifts (ASME A18.1-2005); Standard for the Qualification of Elevator Inspectors (ASME QEII-1-2007); American Society of Civil Engineers (ASCE), 1801 Alexander Bell Drive, Reston VA 20191-4400; Automated People Mover Standards (ASCE 21-05), Part 1, 2006; Automated People Mover Standards (ANSI/ASCE/T&amp;DI 21.2-08), Parts 2, 3 and 4, 2008.</td>
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<td>In European level the essential health and safety requirements are presented in Lifts Directive and detailed technical requirements in harmonized standards. The national requirements are in regulations. Also some guidelines exist.</td>
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<td>Under the Health and Safety in Employment Act, the Approved Code of Practice for Elevators in New Zealand is the “Voluntary Code of Practice for Health and Safety Issues in the New Zealand Lift Industry” The code represents the best practices for the lift industry and the minimum standards of performance and safety. Although not specifically referenced, the harmonized standards for lifts and elevators of Australia and New Zealand would provide guidance and code specifics; Australian Standard/New Zealand Standard Series AS/NZS 1735 Lifts, Escalators and Moving Walks.</td>
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### d. Are requirements performance-based or prescriptive?

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<th>Requirement</th>
<th>Description</th>
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<td>Prescriptive, must conform to ASME A17.1</td>
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<td>There are no references to the performance based code of ASME A17.7 or Authorities Having Jurisdiction.</td>
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<td>Prescriptive, must conform to ASME A17.1 and other applicable codes mentioned above, but; There is reference to ASME A17.7 for the purposes of new technology but refers to the performance based code of ASME A17.7 and; Variances are permitted in which case; submit an Application for Conveyance Variance form to the Elevator Safety Review Board.</td>
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<td>Exceptions and variances granted from the literal requirements of applicable State codes, standards, and regulations in cases where such variances would not jeopardize the public safety and welfare. The Administrator has the right to review and object to any exceptions or variances granted by a Local Administrator. The Elevator Safety Review Board shall have the authority to hear appeals, for any denial by the Local Administrator or for any denial or objection by the Administrator. The Board shall hold hearings, and decide upon such within 30 days of the appeal.</td>
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<td>The European part is performance-based. Standards set the minimum requirements and it is possible to achieve them also in other way than described in standard. If solution differs from standard, it has to be proved that the minimum level set in standards is reached, e.g. by means of risk assessment. National part is prescriptive, and that is understandable because it deals with activities (maintaining, repairing, inspecting).</td>
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<td>The Building Act is prescriptive in that it states minimum requirements for safety and code compliance through consent authorities. Maintenance and safe use following installation according to WorkSafe Codes of Practice allow for use of risk based assessments.</td>
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| e. How is the burden of responsibility distributed in the regulation?  
  i. e.g., owner responsibility vs. regulators obligations, etc. | Owners are responsible for safe operation and maintenance of elevators and conveyances. The Dept. of Buildings oversees the regulation and enforcement of elevating device activities. Design, construction, installation, alteration, repair, and maintenance must conform to ASME A17.1. | Owners are responsible for safe operation and maintenance of elevators and conveyances: “The conveyance owner is responsible for hiring a third party inspector to perform annual conveyance inspections unless the conveyance is located in a municipality that has an agreement with the State. In this case the municipality hires the inspector/inspection company to perform conveyance inspections.” The Office of IL SFM regulates the installation, construction, operation, inspection, testing, maintenance, alteration, and repair through licensing of personnel and businesses that work on these conveyances. | Lifs Directive: Lift installer takes responsibility for the design, manufacture, and installation and placing on the market of the lift. Installer gives the declaration of conformity and also affixes the CE marking to lift. National legislation: Lift owner is responsible for lifts safety after it has been taken into use. Owner is responsible for operating, maintaining and inspecting. The economic operators are responsible that the safety of the individuals working with lift (maintaining, repairing, inspecting) is satisfied and they are also responsible that the lift equipment is safe after work is done. | Employers are required to take all practicable steps to ensure that the safety of employees at work is not compromised, they are required to take all practicable steps to:  
  Provide and maintain a safe work environment;  
  Provide and maintain facilities for the health and safety of employees at work;  
  Ensure that machinery and equipment is safe for all employees;  
  Ensure that working arrangements are not hazardous to employees; and  
  Provide procedures to deal with emergencies that may arise while employees are at work.  
 Taking “all practicable steps” means doing what is reasonable and able to be done in the circumstances, taking into account:  
  The severity of any injury or harm to health that may occur;  
  The degree of risk or probability of that injury or harm occurring;  
  How much is known about the hazard and ways of eliminating, reducing or controlling it; and  
  The availability, effectiveness and cost of possible safeguards. |
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<th>Question</th>
<th>Answer</th>
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<tr>
<td>f. What is the periodicity and methodology for regulatory review and</td>
<td>To be determined</td>
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<td>improvement?</td>
<td>Elevator Safety Review Board performs amendments to the Elevator Safety</td>
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<td>and Regulation Act through consultation with engineers and accredited</td>
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<td>organizations.</td>
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<td>Not determined to have regular periodicity</td>
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<td>g. Is the process for developing regulation a consultative one?</td>
<td>To be determined</td>
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<td>i. Are there procedures for community/stakeholder participation?</td>
<td>New York City Department of Buildings adopts all ASME A17.1 codes and</td>
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<td>makes modifications as necessary without impairing the safety of the</td>
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<td>public or to improve safety.</td>
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<td>It is expected, but not certain, that changes within the national codes</td>
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<td>will be reflected</td>
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<td>Yes, with engineering professionals, or professionals accredited for</td>
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<td>the purposes of changing and modifying the act.</td>
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<td>Must be conducted through official review with the Elevator Review</td>
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<td>Board</td>
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<td>h. What is the role of risk identification and monitoring in possible</td>
<td>There is no mention of risk assessments/identification or</td>
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<td>regulatory development and changes?</td>
<td>performance-based code references (ie no mention of ASME A17.7)</td>
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<td>There are provisions for changes based on new technology as outlined</td>
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<td>by ASME A17.7 and;</td>
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<td>Any new technology that is issued a Certificate of Conformance under</td>
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<td>the Performance-Based Safety Code for Elevators and Escalators (ASME</td>
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<td>A17.7-2007/CSA (Canadian Standards Association) B44.7-07) must be</td>
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<td>presented to the Board.</td>
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<td>Standards are greatly based on risk assessment. Where installation's</td>
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<td>solution differs from standard, it must be justified by risk assessment.</td>
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<td>In national legislation, where technical details are not that much</td>
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<td>handled, the risk assessment has not that big role. Amount of accidents</td>
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<td>are taken into account.</td>
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<td>i. Are ‘Special Buildings’ such as seniors home, hospitals and schools</td>
<td>No identified “Special Buildings”</td>
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<td>differentially addressed in requirements or reporting?</td>
<td>All lifts have same requirements concerning conformity of lifts,</td>
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<td>maintenance, use and inspection.</td>
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<td>Exception is wheelchair lifts in residential properties</td>
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<td>Wheelchair Lifts in residential properties are not required to submit</td>
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<td>to the Elevator Division the inspection/test results on the Elevator</td>
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<td>Inspection/Test Report (ELV3)</td>
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<td>However, building owners must keep and be able to produce upon request</td>
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<td>device maintenance log.</td>
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<td>Upon request, inspections and tests can be expedited for high-rise</td>
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<td>buildings, schools, buildings involving the disabled and the elderly,</td>
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<td>single elevator buildings or elevators serving one section of the</td>
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<td></td>
<td>building</td>
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<td>No identified “Special Buildings”</td>
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<td>All lifts have same requirements concerning conformity of lifts,</td>
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<td>maintenance, use and inspection.</td>
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<td>Only cases when outside of oversight of IL SFM, i.e. outside</td>
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<td>jurisdiction, municipalities &gt;500,000</td>
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*To be determined*
## 2. Inspections – Elevating Devices

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<thead>
<tr>
<th>Questions</th>
<th>New York City Department of Buildings</th>
<th>Office Of The Illinois State Fire Marshal - Elevator Division</th>
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<th>WorkSafe New Zealand in partnership with Ministry of Business, Innovation &amp; Employment, and The New Zealand Lift and Elevator Association</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Do they conduct regulatory inspections?</td>
<td>As stated in Appendix K modification reference Annual inspections Three types of maintenance inspections depending on device: Category 1 – Annual Category 3 – Three Year Test (Water Hydraulic Elevators only) Category 5 – Five Year Test Sign off inspections required on the following: New Installations or Major Upgrades Alterations, Modernization, Repair, or Replacement Building owners are required to have a contract with an approved agency to perform repair and maintenance work of passenger elevators. Maintenance work does not require a permit from the Department.</td>
<td>Building owners are required to have an approved individual conduct annual inspections.</td>
<td>New lifts are placed on market according to Lifts Directive and it gives alternative ways to do it. Periodic inspections are made to lifts that are in use.</td>
<td>Building owners are responsible for the safety of occupants whether employees or otherwise. The code of practice outlines that minimum requirements for design, inspection, maintenance and use of company owned vehicles must be established to ensure safe vehicle operation. The Building Act outlines that all buildings must conduct a “Warrant of Fitness” inspection and review annually.</td>
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<tr>
<td>b. Do they have third parties conducting inspections?</td>
<td>Inspections are conducted by Approved Elevator Inspection Agency to conduct the test and one other Approved Elevator Inspection Agency to witness which is not affiliated with that which is conducting the test. Each of the inspections requires the related forms to be filed with the Department of Buildings</td>
<td>Inspections are conducted by Approved Elevator Inspectors</td>
<td>Yes, only third parties make inspections. <strong>New lifts:</strong> Notified bodies. There are more than 200 notified bodies in EU and they are allowed to do inspections in all EU member states. France has 19 bodies currently posted on the list of notified bodies. <strong>Lifts in use:</strong> National inspection companies. AFNOR authorizes the inspection companies. At the moment there are three inspection companies in Finland. They are same that act also as notified bodies.</td>
<td>The Building Act states inspections Warrant of Fitness inspections and annual reviews must be conducted by independent qualified individuals.</td>
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</tbody>
</table>
c. Are there training/credentials for inspectors?

<table>
<thead>
<tr>
<th>Training/Credentials</th>
<th>Requirements</th>
<th>Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>In addition to the license exam, inspectors are required to have:</td>
<td>- Be at least eighteen (18) years old;</td>
<td>No elevator inspector license shall be granted to any person who has not paid the application fee.</td>
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<td>- Be able to read and write the English language;</td>
<td>No inspector's license shall be granted to any person, unless he or she has been certified as meeting the requirements of ASME QEI-1 by a nationally or internationally recognized independent organization concerned with personnel certification. [225 ILCS 312/50]</td>
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<td></td>
<td>- Have good moral character so as not to adversely impact your fitness to perform the duties and responsibilities of a Private Elevator Inspection Agency Inspector;</td>
<td>To be licensed as an elevator inspector, the applicant must have attained QEI certification (see Section 1000.60(a)(1)(D)). An elevator inspector shall notify OSFM within 24 hours after suspension, termination or expiration of his/her QEI certification. No inspector shall perform any inspection covered by the Act without a current QEI certification.</td>
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<td></td>
<td>- Have a minimum of five (5) years of satisfactory experience within the seven (7) years immediately preceding the exam application date in the assembly, installation, repair, design or inspection of elevators or as an elevator mechanic</td>
<td>All elevator inspector license applicants are required to submit proof of insurance as required by Section 100 of the Act and must provide notice at least 10 days in advance to OSFM of any substantial alteration or cancellation of a policy. No work covered by the Act is to be performed without insurance required by Section 100 of the Act.</td>
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</table>

The Lifts Directive (the new one that comes into effect 2016) gives general requirements for knowledge, experience and training of notified body inspectors. Nationally AFNOR requires that the inspection companies take care that their inspectors are sufficiently educated and competent.

Inspection accreditation agencies exist in NZ for inspection bodies including IANZ, and JAS ANZ.

Specifically training in ISO/IEC 17020:2012 inspection bodies, not necessarily in elevating devices but in procedures and technical competence of inspectors.
d. What is the type and extent of inspections?
   i. initial vs. periodic

<table>
<thead>
<tr>
<th>Type of Inspection</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Installation or Major Upgrade</td>
<td>Once an Elevator Application (EA) has been filed and work completed on a new device, or substantial upgrade, alteration, replacement or modernization of a device.</td>
</tr>
<tr>
<td>Alteration, Modernization, Repair or Replacement</td>
<td>Once an Elevator Building Notice (EBN) has been filed and activities completed including removal, dismantling, or minor alteration, repair, or replacement.</td>
</tr>
<tr>
<td>Regular Maintenance Inspection</td>
<td>Category 1 Annual - Building Owners must have a basic test conducted on devices annually. Category 1 tests do not require loading. Category 3 Three Year Test (Water Hydraulic Elevators only) Water Hydraulic elevators must have inspection procedures performed once every three years in addition to the annual Category 1 inspection. Category 5 Five Year Test Building owners must subject devices to a full load inspection once every five years in addition to the annual inspection.</td>
</tr>
</tbody>
</table>

Once work has been completed under either an EA or EBN, the elevator division of the Buildings Department will perform a sign-off inspection and test. Only then can a device be put into use. There is an exception to the sign-off condition which allows contractors to perform the sign-off approval if minor alterations have been performed to an existing elevator under an EBN/PPN application OPPN #26/90.

Two types of inspections, Acceptance Upon installation
Annual It shall be the responsibility of the owner of all new and existing conveyances located in any building or structure to have the conveyance inspected annually. [225 ILCS 312/120(a)]

Initial: Quite profound inspection. If lift is not EU type approved, then even more deep. Periodic: Aim is to make sure that the use of lift is safe. Check at least all safety components, risky parts and functioning of lift. Check that lift has been maintained according to maintenance program (all lifts have to have maintenance program and maintenance log).

e. What is the frequency of inspection?
   i. Prescriptive or non-prescriptive

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual</td>
<td>All prescriptive; follow guidelines of ASME A17.1</td>
</tr>
<tr>
<td>Annual Warrant of Fitness tests, inspections and reviews</td>
<td>All prescriptive; follow guidelines of ASME A17.2</td>
</tr>
<tr>
<td>To be determined</td>
<td></td>
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<tr>
<td>Annual, performed by independent qualified personnel</td>
<td></td>
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</tbody>
</table>
### 3. What is the nature of incident reporting? Elevating Devices

<table>
<thead>
<tr>
<th>Questions</th>
<th>New York City Department of Buildings</th>
<th>Office Of The Illinois State Fire Marshal - Elevator Division</th>
<th>AFNOR - France</th>
<th>WorkSafe New Zealand in partnership with Ministry of Business, Innovation &amp; Employment, and The New Zealand Lift and Elevator Association</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Is it required?</td>
<td>To be determined</td>
<td>To be determined</td>
<td>To be determined</td>
<td>According to the HSE Act of New Zealand: Every employer shall maintain (in the prescribed form) a register of accidents and serious harm; and shall record in the register the prescribed particulars.</td>
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<td></td>
<td>According to the code of practice An accident reporting and investigation system must be developed to identify immediate and basic causes of vehicle accidents/incidents so that corrective measures can be developed and implemented to prevent recurrence.</td>
</tr>
<tr>
<td>b. Does it cover near-misses?</td>
<td>See above</td>
<td>See above</td>
<td>See above</td>
<td>To be determined</td>
</tr>
<tr>
<td>c. Who can report?</td>
<td>See above</td>
<td>See above</td>
<td>See above</td>
<td>To be determined</td>
</tr>
</tbody>
</table>
## 4. What is the nature of Regulatory performance reporting and/or “State of Safety” reporting to the public or oversight bodies? Elevating Devices

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<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>a. Are there requirements for and means of performance reporting?</td>
<td>Maintenance Log and Control Program Owners are also required to keep a maintenance log, detailing and a Maintenance Control Program, which establishes a program of maintenance and upkeep for the device. Code Data Plate Each device must have a Code Data Plate, which identifies the code and edition in effect at the time of installation and details any installations, repairs or modifications made to the device. Failure to Maintain Owners that repeatedly fail to maintain their elevators can face criminal court action from the Department. Using complaint data, violations, maintenance filings, and field inspection records, the Department of Buildings identifies the ten top offenders who have consistent and chronic elevator problems in their buildings.</td>
<td>To be determined</td>
<td>To be determined</td>
<td>The owner must publicly display a copy of the building warrant of fitness in a place in the building to which users of the building have ready access or, if the compliance schedule relates only to a cable car, publicly display the copy of the building warrant of fitness in or near the cable car.</td>
</tr>
<tr>
<td>b. What sorts of numbers are reported? (e.g. number of incidents, incident trends, compliance information including indicators)</td>
<td>See above</td>
<td>See above</td>
<td>See above</td>
<td>See above</td>
</tr>
<tr>
<td>c. Other types of public information and data management (publication).</td>
<td>See above</td>
<td>See above</td>
<td>See above</td>
<td>See above</td>
</tr>
</tbody>
</table>
## 5. What are the costs associated with inspections and certification? Elevating Devices

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</tr>
</thead>
<tbody>
<tr>
<td>a. What costs are associated with inspection and certification of devices and personnel?</td>
<td><strong>Report Type</strong></td>
<td><strong>Filing Fees</strong></td>
<td><strong>To be determined</strong></td>
<td><strong>To be determined</strong></td>
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<tr>
<td></td>
<td>Category 1 1 Reports $30 per elevator</td>
<td>Elevator Mechanic (Initial and Renewal) - $250.00</td>
<td></td>
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<tr>
<td></td>
<td>Category 3 Reports $40 per elevator</td>
<td>Limited Elevator Mechanic (Initial and Renewal) - $150.00</td>
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<td></td>
<td>Category 5 Reports $40 per elevator</td>
<td>Temporary Elevator Mechanic (Initial and Renewal) - $50.00</td>
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<td></td>
<td>Affirmation of Correction $40 per violating condition</td>
<td>Elevator Apprentice or Helper Registration (One-Time Fee) - $75.00</td>
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<td></td>
<td>Waiver of Penalties $35 per elevator</td>
<td>Elevator Contractor (Initial and Renewal) - $1,000.00</td>
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<td></td>
<td>The following penalties can be issued to owners:</td>
<td>Limited Elevator Contractor (Initial and Renewal) - $500.00</td>
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<td></td>
<td><strong>Buildings with 1-2 Residential Units</strong></td>
<td>Elevator Inspector (Initial and Renewal) - $450.00</td>
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<td></td>
<td>Late Filing (per device); Failure to File* (per device)</td>
<td>Elevator Inspection Company (Initial and Renewal) - $500.00</td>
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<td></td>
<td>Inspection &amp; Test Reports $50 per month; $1,000</td>
<td>License Replacement (Any Type) - $50.00</td>
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<td></td>
<td>Affirmation of Correction $50 per month; $1,000</td>
<td>Licensure Violations (Any Type) Not to Exceed $2,000.00/Occurrence</td>
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<td></td>
<td><strong>All Other Buildings</strong></td>
<td>Registration and I.D. Tags</td>
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<td></td>
<td>Late Filing (per device); Failure to File* (per device)</td>
<td>Conveyance Registration (One-Time Fee) - $30.00</td>
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<td></td>
<td>Inspection &amp; Test Reports</td>
<td>I.D. Tag Replacement (Each)-10.00</td>
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<td>Category 1: $150 per month; Category 1: $3,000</td>
<td>Violation (for Contractors who fail to register a conveyance)</td>
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<td>Category 3 or 5: $250 per month; Category 3 or 5: $5,000</td>
<td>Not to exceed $500.00/Day</td>
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<tr>
<td></td>
<td>Affirmation of Correction</td>
<td>Variance/Exception (Per Conveyance) - $300.00</td>
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<td></td>
<td>Category 1: $150 per month; Category 1: $3,000</td>
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<tr>
<td></td>
<td>Category 3 or 5: $5,000</td>
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<td></td>
<td>The Department of Buildings allows certified agencies to perform inspection activities only. Inspectors representing these agencies are subject to licensing at the following costs at a duration of 3 year terms:</td>
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<td>Elevator Inspector Exam LIC41 Fee: $525</td>
<td>New Installation - $400.00</td>
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<td>License Fee: $50.00</td>
<td>Material Alteration - $200.00</td>
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<td>Renewal Fee: $75.00</td>
<td>Permit Extension - $100.00</td>
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<td>Late Renewal Fee: $50.00</td>
<td>Certification of Operation</td>
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<td>Initial Certificate of Operation - $100.00</td>
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<td>Temporary Certificate of Operation - $0</td>
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<td>Annual Renewal of Certificate of Operation - $75.00</td>
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<td>Renewal of Expired Certificate of Operation - $125.00</td>
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<td>Late Fee - $50.00</td>
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