



Carleton
UNIVERSITY

Environmental Health and Safety
Annual Report
of the Vice-President (Finance and Administration)
2016

To the Building Program Committee
of the Board of Governors

May 16th 2017

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1. EXECUTIVE SUMMARY

The Annual Report on Environmental Health and Safety (EHS) profiles the effectiveness of Carleton's efforts in addressing our responsibilities in managing the operational risks of a research and educational intensive university.

The Environmental Health and Safety Office is a critical partner in support of Carleton's mission through developing, promoting and implementing best practices in prevention strategies while balancing these with responsible risk taking:

- By establishing structures, policies, standards and programs
- By managing Carleton's response to regulatory issues related to health and safety
- By identifying opportunities to influence change in safety awareness
- By fostering and strengthening a culture of collaborative prevention and resolution of health and safety concerns
- By embedding sustainability principles in all our operational, research and academic endeavours

Carleton is subject to increasing numbers and complexity in health and safety legislation, all of which require differing intensity of activities, program development, training and documentation for compliance. As such, these require a strong internal responsibility system to ensure we support Carleton's core pillar of innovation in research and education, while ensuring that Carleton is managing risks responsibly.

Carleton's KPIs

Table 1 KPI Changes Between 2015 and 2016

	2015	2016	Change
# of Critical Injuries	2	3	
Days Lost to Injury Claims	102	48	
# of Lost Time Injuries	9	7	
Average # of Lost Days/Injury Claim	11.3	6.9	
# of Good Catches Reported	37	89	
# Responses to Fire Alarms	71	108	
H&S Awareness Training (%completion)	66	70	

1.1 2016 ACHIEVEMENTS AND SUCCESSES

- Approval obtained for investment into an integrated EHS data management system in February 2016 from ISSC. Significant collaboration with multiple stakeholders (HR, ITS, Faculties, JHSC) ensures a “Made for Carleton” solution. Launch of Phase 1 expected Spring 2017
- Successful inaugural audit of Carleton’s Controlled Goods Program
- Increased requests for ergonomic office assessments (over 20% increase). Not a single lost time day (LTD), and no WSIB claims
- Good Catch (near miss) reports more than doubled from previous year, including several received from students completing health and safety awareness training
- Enhanced fume hood safety for staff and students through investment in the acquisition and implementation of audible alarms to advise of suboptimal operation as well as through consolidated fume hood and Biological Safety Cabinet inspection. Identified key limitation to exhaust ventilation in Steacie and associated impact on undergrad teaching. Assisted with engineered solution to improve safety.
- Stairwell railing replacement in Steacie and Southam Halls as risk mitigation factor to address legal non conforming issues. Additional investment planned for additional buildings as part of \$14M annual renewal.
- Successful response to Bill 132 through development and implementation of University policy on Sexual Violence and refreshing of Workplace Violence and Harassment Prevention policies.
- EHS professional staff recognized by their peers: Director elected Vice Chair (and incoming Chair) to CEHSO (Council of Environmental Health and Safety Officers) and requested to teach Occ Health and Safety course for Sprott; Manager, Laboratory and Academic Safety elected to the Executive of OUBSO (Ontario University Biosafety Officers); Manager, University Operations Safety elected to the Ergonomics and Publications Committee of AIHA (American Industrial Hygienists Association) and presented novel research at the AIHce 2016 conference.

1.2 LOOKING FORWARD TO 2017 AND BEYOND

- Roll out Phase 1 of the Medgate Environmental Health & Safety (EHS) Software system, Accident, Incident and Good Catch reporting.
- Develop Campus wide risk based H&S training strategy as a recommendation from the EHS Internal Audit to strengthen EHS culture and reduce risk across the organization through alignment with ISO 18001 standards. Collaborative approach with HR, OQI, EDC and faculty and departmental stakeholders
- Develop a framework to enhance health and safety in the “Shared Spaces” model of teaching and research laboratory spaces in the new Health Sciences building prior to fall 2017 occupancy.

- In collaboration with Human Resources and Health Services, a pilot project will focus on enhanced return to work and accommodation programs as well as support for experiential learning under the guidance of an Occupational Health nurse
- Develop, in collaboration with Risk Management, faculties, and Student Services, a framework to reduce institutional risk related to research field work and unpaid placements, given the dual drivers of increased internationalization and provincial emphasis on experiential learning opportunities.

2. 2016 STRATEGIC PRIORITIES

2.1 ASSESSING NEEDS: INTERNAL FORCES

2016 continued implementation of activities and programs aimed at further strengthening Carleton's environmental health and safety performance and positioning Carleton as a responsive organization, capable of readily adapting to changes in both the regulatory environment and with the ability to reduce risk while supporting our teaching and research activities.

With the strategic investment of \$14M annually into renewal of university facilities, there are inevitably construction type activities within staff and student occupied spaces. At various times during 2016, there were in excess of 100 active projects underway. With increased regulatory oversight being evidenced across the construction industry, increased attention to ensuring staff and student satisfaction, a Contractor Safety Management framework was identified and developed as a priority during 2016. Refinements will continue in 2017.

Carleton's Lockout Tagout (LOTO) program was fully implemented across the organization with investment into purchase of consistent equipment and training of all staff, and development of specific operational procedures. These were consulted upon and then shared with our contracted service provider C&W Services, a key Partner and Supplier for third party custodial and maintenance services.

A significant investment into improved effectiveness into health and safety decision making through metrics was achieved with the approval in February 2016 for the purchase of a third party data management software system. This integrated EHS data management system reduces manual data entry and will ensure health and safety efforts across campus are more readily tracked. This software captures information on injuries, accidents and good catches (Phase 1); inspections, equipment inventory and overall risk analysis (Phase 2).

The EHS team is currently fully resourced with the spring 2016 hiring of a new Fire Prevention, Health and Safety Officer. This allowed an intense refocus on fire prevention activities. These activities included consolidated evacuation signage across campus with 2 phases completed in 2016, and a third planned for first quarter 2017; updated fire safety plans for all buildings; training for residence fellows, exam proctors, virtual venture leadership team, as well as enhanced engagement with campus fire safety wardens campus wide. A collaboration with Fire Engineering undergraduate students have permitted fire drills with timed egress studies that serve to enhance campus safety, engage with research activities at Carleton and to create experiential learning opportunities for the students.

3. REGULATORY REQUIREMENTS

Seemingly, for the first time in recent history, there were few unexpected regulatory changes. Most regulatory changes listed below had been introduced or at least seen preliminary discussions in 2015, with 2016 as the “in effect” date. Still other announced regulatory changes will be implemented in 2017 and 2018, such that response and compliance can be achieved through consolidated planning.

3.1 REFORM OF OHSA: COMMITTEE CERTIFICATION TRAINING

In this next phase of the implementation of the recommendations of the Expert Advisory Panel on Occupational Health and Safety (The Tory Dean Report, 2010), the government of Ontario introduced legislation that would standardize training provided to members of the Joint Health and Safety Committees.

Pro-active initiatives ensured that all committee members requiring this training received it prior to deadlines, resulting in a more effective committee structure, as well as decreased overall training costs. Savings were applied to supply additional training to enhance learning opportunities for all Carleton safety committees.

3.2 REFORM OF OHSA: WORKING AT HEIGHTS

Another of the strategic priorities identified by the Chief Prevention Officer for provincial regulatory oversight has been high hazard activities. Specifically, rigorous training requirements setting a minimum standard for high risk activities such as working at height with tougher penalties where standards for training, supervision and the provision and use of safety equipment are not followed. All workers who work at heights are to complete new MOL approved training prior to April 2017.

While Carleton employees do not engage in construction activities per se, they do perform activities that pose higher risk, including work being performed at heights. A review of activities carried out across the campus identified a number of areas where these new regulations apply. These include core services such as FMP and the Science Technology Centre as well as several faculty research projects such as those carried out in Engineering and Design (Civil and Environmental, Mechanical and Aerospace, Architecture) and the Faculty of Arts and Social Sciences (Theater).

Training meeting the new standards was provided in late 2016, and will be repeated in early 2017 to ensure all applicable Carleton staff and students are compliant. In addition to training our staff and students.

3.3 REFORM OF OHSA: INTRODUCTION OF SEXUAL VIOLENCE AND HARASSMENT PLAN ACT

With the passing of Bill 132, the Sexual Violence and Harassment Plan Act, in March of 2016, the Occupational Health and Safety Act was amended with respect to information and instruction concerning domestic and sexual violence.

Carleton was impacted in two areas, namely, significant modifications to the existing policies and programs to prevent workplace violence and harassment were required, as well as the requirement to introduce a new university policy on Sexual Violence, under the Ministry of Colleges and Universities Act. As a result, there is a significant requirement for updates to the existing programs, including alignment with a new policy on Sexual Violence. The Workplace Harassment Program was reviewed by stakeholders, including the Joint Health and Safety Committee (JHSC). Once finalized, the campus wide online training will be adjusted to reflect the changes, and transferred to the CuLearn platform for consistency.

4. MANAGING RISK @ CU

To assist in managing risks that affect the university, an evolving risk review process is completed annually which includes regulatory compliance elements as well as program identification and gap analysis, particularly with regard to the infrastructure elements. Injury/incident data such as severity and frequency dimensions are also incorporated when establishing the risk ranking. This risk exercise will continue into 2017 with expansion of operational program elements.

4.1 2016 RISK MITIGATION ACTIVITIES AT A GLANCE

4.1.1 Asbestos Management @ CU

In 2012, an updated campus asbestos containing materials (ACM) survey was completed which highlighted areas for improvement. This facilitated a systematic approach to abating and/or repairing damaged ACM. By 2016 ***all damaged asbestos containing materials identified in the 2012 campus survey have been abated or repaired.*** An RFP was issued in early 2017 to refresh the campus ACM survey through third party audit to ensure ongoing review of ACM condition on campus.

During 2016, there was one incident of significance when contractor error resulted in an asbestos breach during a renewal project in Robertson Hall. There were no occupational exposures as a result, and effective communications occurred immediately with building occupants, union leadership and the JHSC. All indicated their satisfaction with the proactive approach taken.

In 2016, Asbestos Awareness training was developed and transferred to the CuLearn online platform, replacing the previous in class delivery model. Offered as an optional training course available to all Carleton faculty and staff, the Asbestos Awareness training has provided an opportunity to increase awareness of this particular hazard in their workspaces. Since its online conversion, over 6000 members of the Carleton community have completed the Asbestos Awareness training.

4.1.2 Performance Verification of Engineering Controls

The use of fume hoods and biological safety cabinets (BSC) are the primary engineering controls in place to mitigate the risk of biological and chemical exposures for our workers and students. Currently, there are 175 fume hoods and 17 BSCs used on campus to control exposure. There are also a handful of other types of local exhaust ventilation systems (LEVs) across various departments, such as snorkels and slot hoods, which serve a similar purpose.

In 2016, the annual fume hood management process was enhanced to include not only fume hood certification according to ANSI standards, but to include the consolidation of biological safety cabinet certifications across all departments. Investment was made to install over 65 fumehood monitors to effectively reflect operational parameters as an enhanced safety measure for users.

4.1.3 Chemical Management @CU

A consolidated Chemical Inventory was completed in 2014, confirming the presence and use of over 30,000 separate containers of chemicals across campus. These included chemical use in research, teaching and operational activities. This consolidated inventory provided data to permit the implementation of consistent, campus wide hazard signage for all such locations (implemented 2015).

Reconciliation of the chemical inventory began in the summer of 2016 and will conclude in the summer of 2017. To date, 68% of the records for chemicals were found as expected. Of those missing, the majority were disposed without being removed from the inventory. Further training has since been provided to users on the removal of chemicals from the inventory. Having an accurate inventory has facilitated production of emergency response and business continuity plans for these higher risk areas.

Engagement with end-users over the course of the past year allowed EHS members to increase awareness of the chemical inventory and understanding of the associated procedures. In future years, we expect greater chemical inventory accuracy leading to a more versatile and powerful tool for compliance with chemical weapon and controlled goods regulatory requirements, as well as targeted academic and occupational safety initiatives to address risk.

4.1.4 In House Risk Assessment (RA) Services

In 2016, **a total of 18 risk assessments were completed** and included areas such as: 1) concern over electromagnetic field (EMF) exposure, 2) IAQ and mould (7 investigations) concerns, 3) lead paint investigation and abatement 4) decommissioning of chemistry research laboratory 5) ergonomic assessments. These risk assessments were a combination of reactive and proactive in nature. A summary of the key risk assessments performed in 2016 are highlighted in table 2 below.

Table 2: Key Risk Assessments Completed in 2016

RA's Performed	Details
Radio Frequency EMF exposure concern in Engineering	<ul style="list-style-type: none"> - Concern raised over possible exposure to EMF (Doppler Radar) generated by experimental processes in a temporary laboratory setting. - Review of regulatory framework confirmed that all such installations must adhere to Health Canada requirements - Review of experimental equipment confirmed all field strengths were well below Health Canada Safety Code 6 - Confirmed that core issue was communication gap and perception that radar installations cause harm. - Instituted communication process including signage

Decommissioning of Chemistry Laboratory (air reactive chemicals)

- To enable significant renovations to proceed safely and with minimal impact on building operations, a risk assessment of Steacie 426 was completed prior to demolition.
 - Chemical usage, combined with historical records indicated that several air reactive peroxide forming chemicals had been used, and had most likely contaminated fumehood ductwork
 - Third party specialist was retained to survey, sample and monitor fumehood to remove air reactive materials
 - Monitoring and removal of mercury contamination of all drains was completed by EHS staff
 - All surfaces were decontaminated and rendered safe
-

In addition to the 18 risk assessments performed in 2016, 77 office ergonomic assessments were completed. Similar to previous years, over 40 % of staff members were already using paramedical services to help address their symptoms before contacting the EHS Office for assistance. Despite already exhibiting physical symptoms in several cases, the opportunity for intervention to address the root cause remains. Further to the recommendations provided this year, no WSIB claims were filed for workstation concerns, and more importantly, individuals were not required to be away from work with injury.

4.1.5 Hazardous Waste Management

EHS continues to manage disposal of hazardous waste to reduce storage of chemicals and to ensure compliance with MOE regulations.

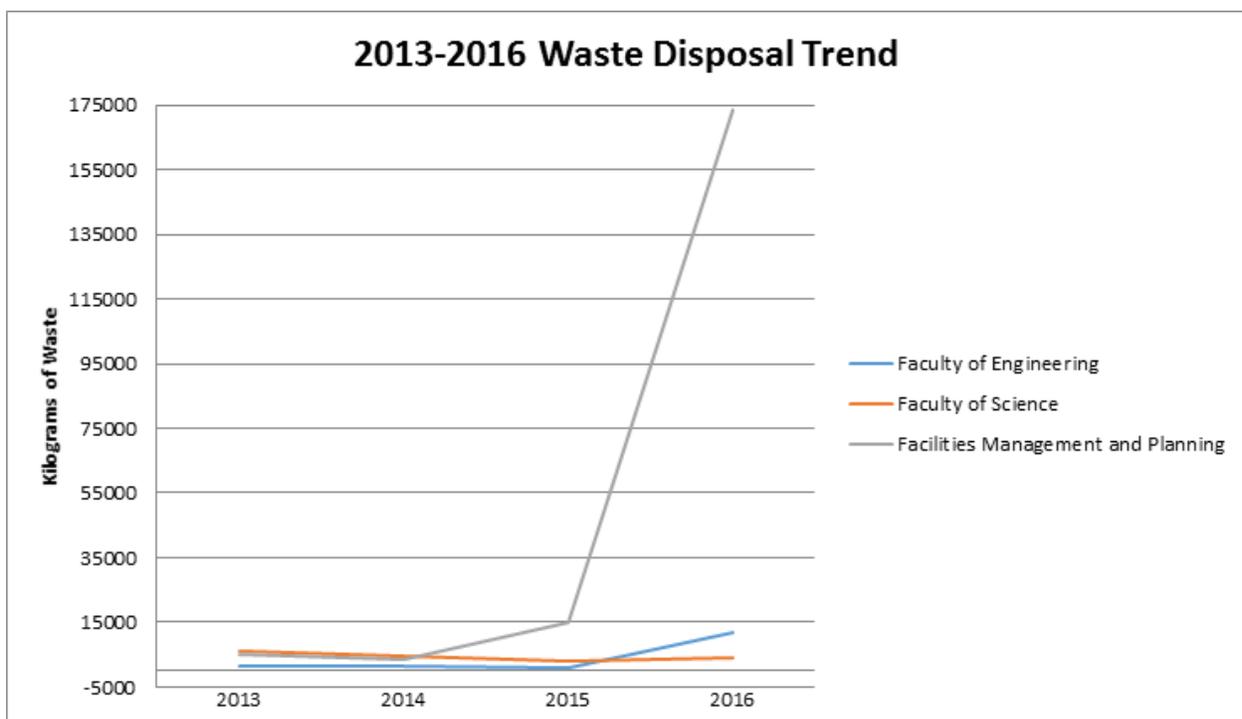


Figure 1: 2013-2016 Waste Disposal Trend

The significant increase in waste disposal in 2016 is in part a result of the implementation of the decommissioning procedures within the faculties. Renovations to 3 chemistry research laboratories in Steacie prompted a cleanout and proper disposal of many expired and unwanted chemicals. In Engineering, mine tailings no longer required for research were disposed of which cleared space for essential materials. In addition, numerous projects managed through FMP required pumping of industrial waste from various tanks and pits across campus, in addition to pumping groundwater further to the removal of obsolete underground storage tanks.

4.1.6 Promoting Safety Culture @ CU

The safety culture of an organization represents the shared beliefs, attitudes and work practices of employees and management. An organization that successfully develops a strong and vibrant safety culture can expect to realize tangible results in reducing workplace accidents and their associated costs. In 2016, EHS once again organized and successfully ran the second weeklong series of activities to promote North American Occupational Safety and Health, Mental Health Awareness and Emergency Preparedness week in May 2016. Presented in collaboration with Healthy Workplace and the Department of University Safety, this annual event provides an excellent opportunity to focus, reinforce and strengthen the Carleton community's commitment to these important initiatives in accordance with a key SIP initiative, namely, to further develop a healthy workplace and supportive environment.

In September 2016, EHS launched a new online presence under the Twitter handle [@CU_HealthSafety](#). This social media environment has enabled EHS to introduce a new communication channel to enhance promotion of positive safety culture at Carleton University, expanding reach to more members of the Carleton community than ever before. The @CU_HealthSafety audience has seen steady growth, gaining an average of 54 followers/month, and reaching 215 followers by end of year. By tweeting valuable and engaging content, we achieved a notable 12, 851 impressions in November and December.

We hope to build off our momentum into 2017, gaining followers and maintaining a high engagement rate. Utilizing social media, we plan to further increase awareness of health and safety programs and policies, particularly among the student population. We anticipate increased attendance to training sessions, and thus higher rates of compliance, as well as increased participation in safety culture initiatives throughout 2017.

4.1.7 Audit of EHS Office

Price Waterhouse Cooper performed an internal audit of EHS to assess the adequacy and effectiveness of policies, procedures and practices of the EHS Office as compared to generally accepted international standards. The scope of the audit focused on the EHS Office and its related policies, procedures and programs, including implementation across the University. The April 2016 Report provided positive comments:

“there is a strong culture and commitment to EHS across the University – from the direction, services and support provided by the EHS Office and senior executives/Board of Governors commitment to oversight relative to EHS to the individuals working across the University who demonstrate their commitment to a safe and healthy working environment on a daily basis”.

Notwithstanding, the audit identified opportunities to further strengthen the overall Environment Health and Safety program to reduce the potential to expose the University to a moderate level of risk. One

recommendation was the strengthening of the Environmental Health and Safety Policy. In response, the EHS Policy was renewed in January 2017, adding a foundational element and integrating the health and safety management system as core elements, as recommended by the Audit report and the ISO and CSA Standards on Environmental Health and Safety Management Systems.

“the University will integrate environmental, health, and safety considerations into all decisions and approvals relating to growth, planning, infrastructure, and development”.

A second recommendation, to develop a university wide health and safety training framework was initiated in 2016 in collaboration with Human Resources and Faculty Leaders, and will continue through mid 2017. The centralized learning management system (CuLearn) will continue to be leveraged to enhance delivery of core health and safety training to staff and students across campus.

Furthermore, the implementation of an enterprise EHS software tool for EHS data management will allow for improved information for trending and decision-making as confirmed through the audit.

4.2 ENFORCEMENT BY LEGISLATIVE AUTHORITIES

4.2.1 Ministry of Labour: Inspections and enforcement

There were no inspection or enforcement visits from the MOL in 2016

4.2.2 Ministry of Labour: Notifications

The following were reported in 2016:

- February 23, 2016: a male visitor sustained a fracture to his leg resulting from a slip and fall outside the Solar House caused by an icy section of the pathway. Freezing rain had occurred during the day. The gravel pathway was subsequently paved to prevent recurrences.
- February 24, 2016: a male student sustained a fracture to his leg from a slip and fall on the steps of Minto Case. He had been running to catch a bus when he slipped from ice resulting from ongoing freezing rain. De-icing had been actively ongoing at the time.
- August 22, 2016: a male visitor lost control of his bicycle when riding over an electrical cord cover on a pathway next to Athletics. After losing control, he struck a food delivery truck and sustained a fracture to his forearm.

No orders were received for the above, and the MOL did not attend.

4.2.3 Ministry of the Environment and Climate Change: Inspections and enforcement

There were no inspection or enforcement visits from the Ministry of the Environment and Climate Change (MOECC) in 2016.

- In August 2015, the MOECC visited to assess campus air emission compliance and to review Environmental Compliance Approvals documentation given new regulatory framework. Non-compliance issues resulting from the regulatory changes were identified and a plan to address was proposed and accepted. Corrective actions were implemented throughout 2016, and will conclude in 2017.

- In October 2015, the MOECC visited to assess compliance with hazardous waste regulations. All documentation related to waste management was found to be in full compliance. During the visit, it was identified that an Environmental Compliance Approval had not been completed. Required documentation was completed and the ECA was granted in December 2016.

4.2.4 Canadian Nuclear Safety Commission (CNSC): Inspections

The CNSC performed an official inspection in October 2016. There were no deficiencies or non compliance items identified. All prescribed records were well documented and available for review by the CNSC inspector. Our annual application for a licence to import nuclear materials was granted under the Nuclear Safety and Control Act.

4.2.5 Canadian Food Inspection Agency (CFIA): Inspections

Plant Pest Containment Level 1 compliance letters were issued for 5 locations within the department of Biology upon a successful inspection by the CFIA. These letters allowed for the subsequent issuance of import permits to the faculty members for the collection of their research specimens.

4.2.6 Public Works and Government Services Canada (PWGSC) - Controlled Goods

In February 2016, PWGSC performed the first audit of Carleton's Controlled Goods Program to ensure we remain compliant with the Controlled Goods Regulations. While a few minor documentation gaps were identified, these were easily addressed, and Carleton received confirmation in May 2016 that we were fully compliant, and that our research activities with controlled goods could continue.

4.3 SAFETY AND COMPLIANCE COMMITTEES

4.3.1 Joint Health and Safety Committee (JHSC)

The primary objective of the JHSC is to oversee the internal responsibility system and is comprised of worker and management representatives working together to promote a co-operative, positive and progressive approach to dealing with health and safety issues. The committee met five times in 2016 (January, March, June, September and November).

A change in a number of long serving committee members introduced opportunities to refresh the membership with fresh insight, and revived engagement among the members.

Local Safety committees in Science and Engineering continue to examine and develop mitigation strategies to address hazards and risks specific to their work environments.

4.3.2 Radiation Safety Committee

The Radiation Safety Committee reports to the Vice President Finance and Administration and is chaired by the Dean of Science. The 2016 activity report discussed at the committee meeting included the issuance of a new internal radioisotope permit and the decommissioning of one other. Also, the MOL approved the installation of 2 new X-ray devices (Physics and Mechanical and Aerospace Engineering).

4.3.3 Animal Care Committee

The Animal Care Committee reports to the Office of the Vice-President (Research and International). The EHS representative on the committee actively participates in the assessment of Animal Use protocols in regards to animal welfare and occupational health, performs mandated inspections of animal holding spaces and facilitates the acquisition of controlled substances often associated with animal work. Of particular note, an application to import specialized rodent chow was approved by the Canadian Food Inspection Agency. Also, a detailed assessment was performed to determine the risks associated with in vivo application of a highly toxic chemical.

4.3.4 Biohazards Committee

The Biohazards Committee reports to the Office of the Vice-President (Research and International). An update was provided to the Committee members by the Biosafety Officer regarding the successful application of an institutional licence under the Human Pathogens and Toxins Act. Currently, Carleton holds 31 active Biohazard permits. There was a 45% increase in approved biohazard permit applications in 2016 in comparison to 2015. This is as a result of new CU researcher hires within the departments of Neuroscience and Biology.

4.4 POLICY STRENGTHENING AND RISK REDUCTION STRATEGY

The Alteration, Repair and Maintenance of Campus Buildings and Grounds Policy was renewed, with increased emphasis on risk reduction through clarifying processes to ensure that any alterations to campus infrastructure are carried out by the Facilities, Management and Planning department.

The Environmental Health and Safety Policy was renewed in January 2017, adding a foundational element and integrating the health and safety management system as core elements, as recommended by the April 2016 EHS Audit report and the ISO and CSA Standards on Environmental Health and Safety Management Systems.

5. PERFORMANCE INDICATORS

5.1 INJURY, INCIDENT AND WSIB INDICATORS

In 2016, Environmental Health and Safety received reports of 188 incidents/accidents in the workplace (71 injuries, 28 incidents, and 89 Good Catch reports).

Of these 71 injuries to staff and students, there were 24 WSIB claims submitted, with 7 of the injuries severe enough to result in the employee being unable to work (lost time). There were 48 lost time days (LTDs) attributed to those 7 claims. There were 3 critical injuries reported to the MOL. Table 3 noted below highlights the difference in key injury and incident tracking indicators between 2015 to 2016.

Table 3: Key Injury and Incident Tracking Changes Between 2015 and 2016

	2015	2016	Change
# of Critical Injuries	2	3	↑
Days Lost to Injury Claims	102	48	↓
# of Lost Time Injuries	9	7	↓
Average # of Lost Days/Injury Claim	11.3	6.9	↓
# of Good Catches Reported	37	89	↑

In 2016, slips and fall incidents accounted for the greatest number of incidents (24) while impact injuries accounted for the greatest number of lost time days accumulated in the incident calendar year (22). Refer to *Figure 2* below.

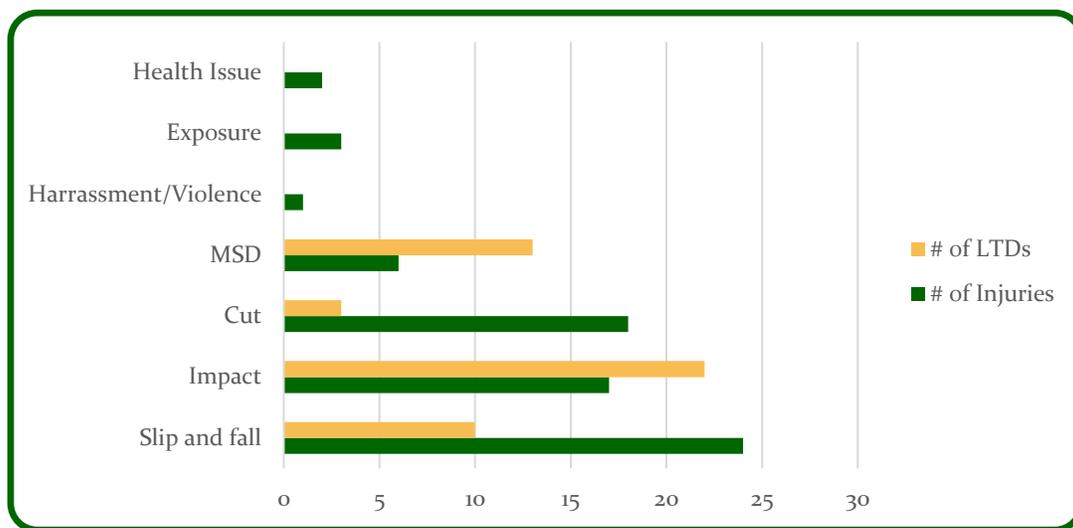


Figure 2: Number of injuries vs. number of LTD's taken within the 2016 calendar year

In addition to the 71 injuries that occurred in 2016, 28 incidents were noted to have occurred while no injuries were documented. Incidents include natural gas leaks, an asbestos breach from abatement work, false activation of life safety alarms, chemical spills, and automotive exhausts re-entraining into buildings.

Similar to previous year's annual report, indicators such as injury frequency, number of incidents requiring medical attention (i.e., health care), and number of lost time days accrued have been aggregated. This grouping of data over the longer term reduces potential for the trend to be skewed by specific cases.

The injuries from 2016 continue to support the long term data suggesting that slips and falls along with MSD's are the primary cause of any lost time days (see figure 3 below).

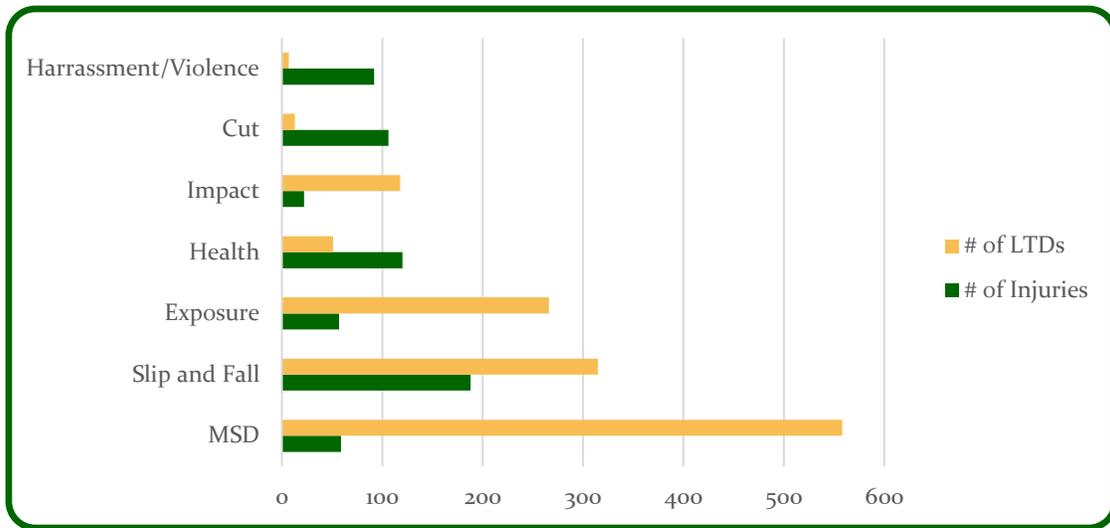


Figure 3: Number of injuries vs. number of LTD's taken within calendar year from 2010 to 2015

5.2 TRAINING PERFORMANCE INDICATORS

5.2.1 Worker and Supervisor Health and Safety Awareness Training

Since its introduction in May 2014, **over 7600 staff and student workers** have completed the Worker Health and Safety Awareness training, Over 1500 of these were in 2016. Even with a constantly varying workforce (TAs, Contract Instructors and Casual staff) this still provides an overall **completion rate of 70%**, an increase of 4% over the previous year, and 8% since introduction in 2014.

Full time permanent staff have an overall completion rate of 88% with faculty members at 79%. Carleton remains the Ontario University with the highest rate of faculty compliance. Significant progress has been made with the TA segment, as their completion rates surpassed 70% in 2016. Challenges remain with completion by casual staff (56%) and Contract Instructors (48%).

The presence of this transient population is reflected when examining completion rates by Faculty or Organizational Unit (Figure 4). It is noted that the FGPA data represents graduate student employees (TAs) that have not been assigned to a specific department or faculty.

Among the various organizational units, the VP Finance and Administration has shown the most significant positive change, achieving 91% compliance, versus 65% the previous year. While the data does represent the shift of Athletics from VP F&A to VP Students & Enrollment, the introduction of monthly training reports to unit heads have resulted in increased management oversight.

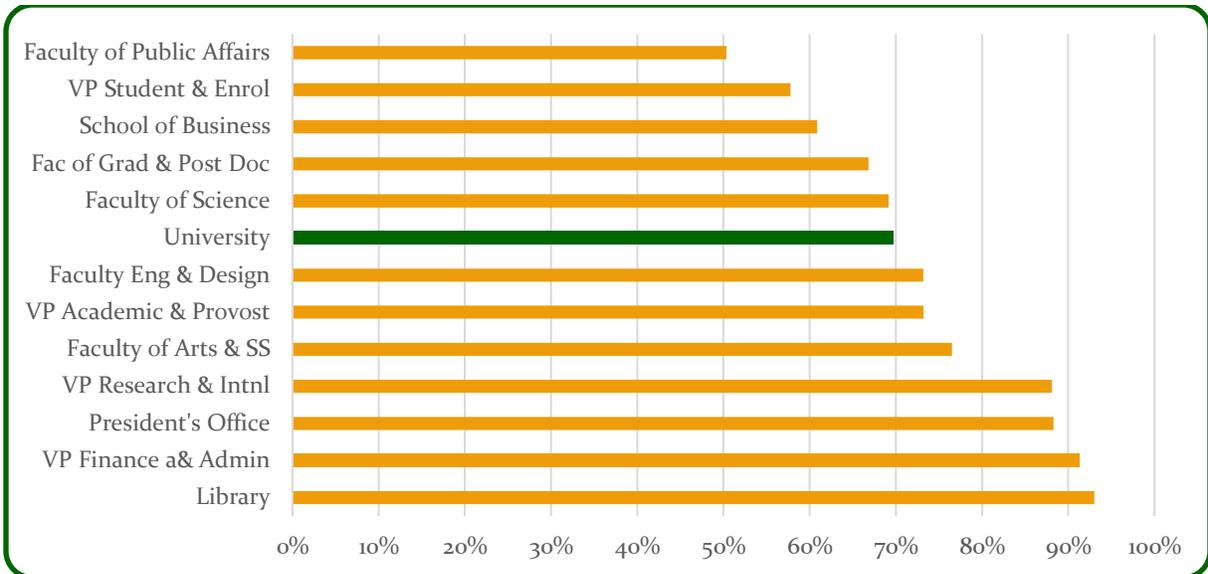


Figure 4: 2016 worker health and safety awareness training completion percentage when separated by faculty or organizational unit

By end of year 2016, over 2500 supervisors had completed the second module, Supervisor Health and Safety Awareness training, with 330 new supervisors completing this year. Metrics such as increased and more timely incident/injury reporting, increased inquiries for risk assessment, more effective close-out of inspection reports, speak to the effectiveness of the training, and overall improvement in safety culture.

5.2.2 Workplace Violence and Harassment Prevention Training

With the introduction of Bill 132, and the Sexual Violence Policy development journey, awareness of Workplace Violence and Harassment Prevention programs and training was more evident than in prior years. Compliance numbers continue to increase with in excess of 9000 Carleton staff and students having completed, with almost 1400 having completed during the year. This represents an overall 75% completion rate for active employees, with core employee employee groups at over 95% compliance. This shows demonstrated commitment to ensuring everyone is familiar with Carleton’s policies and programs to prevent workplace violence and harassment.



Figure 5 2016 workplace violence and harassment prevention training completion percentage when separated by employee group

5.2.3 Additional Health and Safety Training

Training development and delivery continues to be tailored and responsive to the needs of the organization, with the majority of the training being developed and provided directly by EHS staff. The use of some third-party service providers remains the most effective solution for highly specialized areas where the expertise is best acquired externally.

Table 4: Summary of addition training provided by EHS in 2016

Training Course	# of Sessions Delivered	# of Participants Completed	Facilitator
Supervisor Health & Safety Awareness	online	330	EHS
Workplace Violence & Harassment Prevention	online	1,364	EHS
Laboratory Safety	12	118	EHS
Biosafety Awareness	7	34	EHS
Radiation Safety	1	31	EHS
Transportation of Dangerous Goods	2	15	EHS
WHMIS	Online/class	2,844	EHS
Laser Safety	4	11	EHS
Confined Space Awareness	2	16	External
Asbestos Awareness	1	11	EHS
Working at Heights	3	27	External
Lockout/Tagout Awareness	3	28	EHS
Fire Safety Warden	Online/class	119	EHS
Emergency First Aid and CPR	3	43	External

* It is noted that the 2,844 participants who completed the WHMIS training in 2016 also included 1935 first year chemistry students.

5.3 FIRE ALARM STATISTICS

A total of 108 calls for service were made to Ottawa Fire Service (OFS) in 2016. This is above the annual average of 77 fire alarms for the past 5 years. Construction activities and malicious acts contributed to 43% of all calls. Construction related calls occurred primarily during Q3 (See Figure 6). Twenty-five incidents were due to malicious acts involving students/visitors intentionally activating a pull station, smoke/heat detector, or sprinkler head on campus. A single student was identified by DUS as being responsible for the majority of these incidents. 20% of the incidents were related to construction activities involving dust, improper room identification, accidental contact with detectors, or failure to follow required procedures. While the increase in construction related false alarms is of concern, the intensity of construction and renovation on campus is at a pace previously unseen on campus. Nevertheless, efforts continue to strengthen procedures with our construction and renovation partners.

Of the 108 incidents, 26 resulted in a notice of malfunction issued to Carleton University. 4 were directly linked to either fire detection or fire suppression systems, the remaining twenty-two were caused by exterior factors such as water leaks, malicious acts or construction debris/activity.

In addition, DUS responded to a further 25 incidents related to trouble alarms, garbage/cigarette/mulch fires, and stolen fire extinguishers (malicious acts).

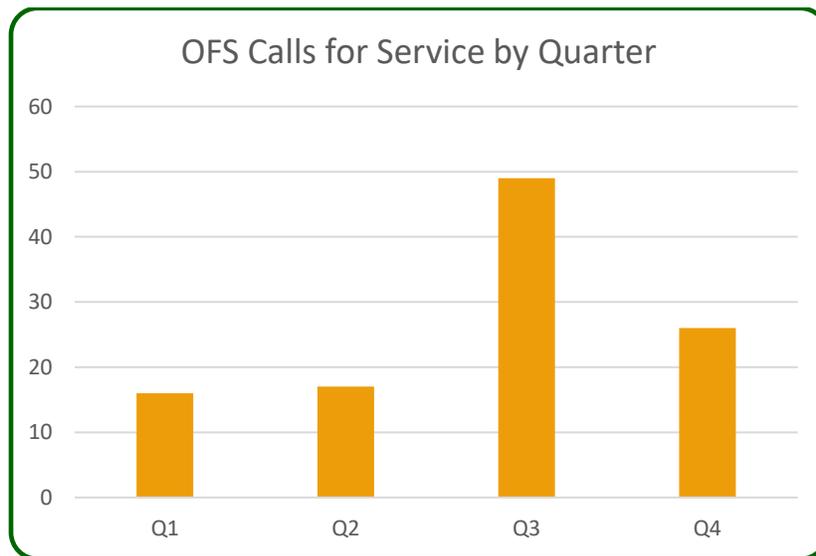


Figure 6: OFS Calls for Service for 2016 – By quarter

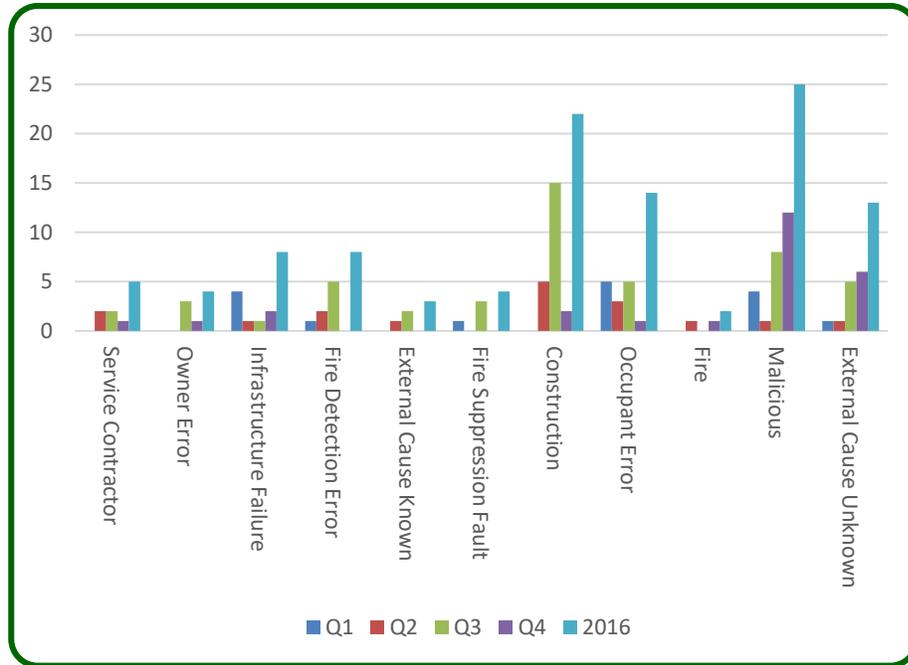


Figure 7: OFS Calls for Service for 2016 – categorized by Type

Emergency Evacuation

Timed egress fire evacuation drills were conducted for all active academic buildings. The target for a successful exercise was to achieve substantial evacuation by the 8-minute mark. **This was achieved** for all academic buildings.

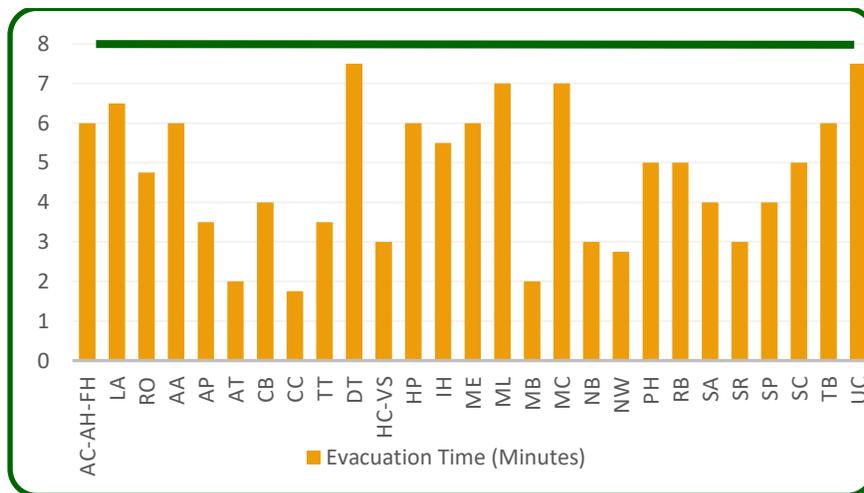


Figure 8: Timed Egress – Academic Buildings

Fire Drills for the residence buildings were conducted in the first week of the fall semester to enhance and supplement student orientation activities. Glengarry and Residence Commons were excluded from the fire drills due to multiple alarms for those two buildings experienced the prior weekend. Reports from the false alarms indicated that occupants exited as required.

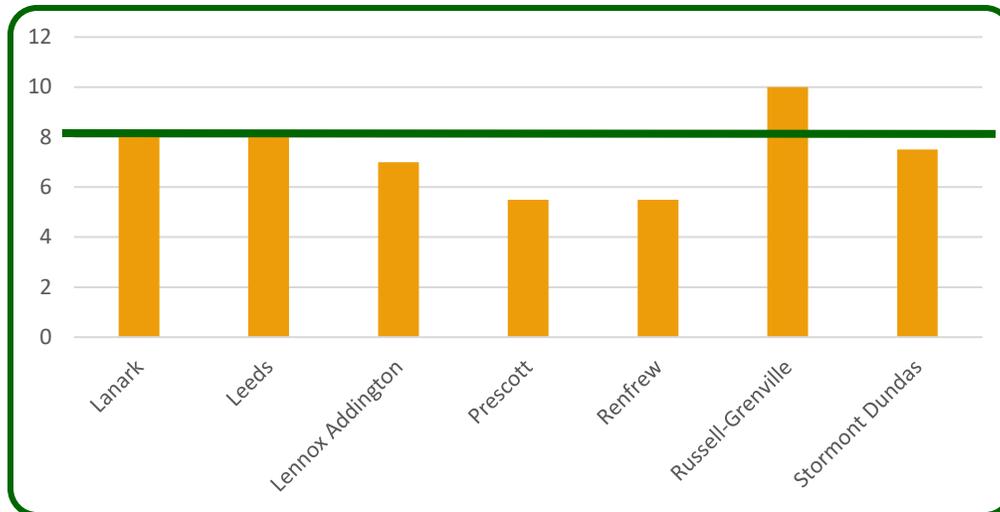


Figure 9: Timed Egress – Residences

All residences except for Russell-Grenville successfully achieved the target of 8 minutes for substantial evacuation. Results were reviewed with the Director of Housing & Residence Life and appropriate retraining was provided to the residents during floor meetings following the drill.

6. LOOKING TO THE FUTURE AND BEYOND

As EHS continues implementation of a number of multi year initiatives, the coming year will solidify the trend for positive change in safety culture across the organization. Effective risk assessment strategies, continuous improvement and employee and student engagement position Carleton firmly at the forefront to meet ongoing legislative oversight and compliance, innovative research activities, student focused educational activities and responsive operational enhancements.

EHS Benchmarking Recommendations – Data Management

The EHS data management system is being implemented in two phases, the first phase (Injury/Incident/Good Catch) is due to roll out in May 2017, and the second phase (Inspections, Equipment and Audits) is scheduled for December 2017. Combined, these complementary processes will provide a solid Internal Responsibility System across the campus, leveraging the injury, inspection and risk assessment information. A comprehensive communication strategy will accompany deployment across campus to supplement early adopter engagement, and ensure a successful tool for capturing and analysing, and ultimately decreasing risk through strategic investment

Internal Audit Recommendations

The 2016 PWC Internal Audit of EHS identified a number of opportunities to strengthen EHS and reduce risk across the organization. These include updating Carleton's Health and Safety Management System, establishing annual targets and objectives, formalizing an operational risk and hazard register aligned with legislative requirements, developing risk assessment tools to assist departments with their specific risk assessment activities, and formalizing a campus wide training matrix that would assist departments and supervisors with identifying required training aligned to hazards.

The latter part of 2017 will see the introduction of a campus wide health and safety training strategy. This strategy will be underpinned by a number of foundational elements, including:

- 1) the "learning" required to address regulatory and risk based processes;
- 2) a learning and teaching methodology consistent with our staff and student's needs;
- 3) phased development and provision of training to meet those needs, at a campus and specific departmental or risk level;
- 4) as well as consolidated management tools to support these.

WSIB Performance Review

The WSIB Integrated Rate Framework will be implemented in 2018. The proposed reform will change the way employers are classified and the way premium rates are set. Given the current financial liabilities faced by the provincial WSIB plan, the reform may add additional costs to current premiums, particularly with the four-year window for claims extended to six years. Such change will disadvantage employers such as Carleton who are in a surcharge position given past performance. A pilot project with Human Resources, Health Services and EHS will focus on enhanced return to work programs under the guidance of an Occupational Health nurse.