2016 SWANA Safety Award Submission

Category: Biggest Safety Improvement

City Of Toronto Solid Waste Management Services

“Moving Towards Excellence in Workplace Health, Safety, and Wellbeing”

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SWANA Member #: 999466
Toronto, Ontario, Canada
Population – 2.6 Million
1. EXECUTIVE SUMMARY

Toronto Solid Waste Management Service (SWMS) formulated and began adopting an operationally focused “SWMS H&S Strategic Framework” to better enable and coordinate improvements in divisional safety programs and safety culture. Founded on a platform of total-workforce engagement and responsibility, extensive collective effort in 2014 and 2015 have produced incremental improvement year-over-year resulting in great overall impact in both leading and lagging indicators. Sample improvements include the completion of close to 100 small and large scale safety focused tactical actions, 43% decrease in OSHA-Recordable-Equivalent incidents, 23% decrease in Lost Time Frequency rates, 39% decrease in At-Fault Collisions, 29% decrease in total annual worker’s Compensation costs, 49% reduction in new claims costs, and a 87% reduction in Ministry Of Labour identified regulatory contraventions. We are particularly thankful for the efforts of our frontline workforce who have genuinely increased their focus on personal safety matters and the safety of the public whom we all serve.

2. Operational and Environmental Background

Toronto’s SWMS is responsible for collecting, processing, hauling, composting and disposing of municipal and private sector solid waste, recyclable, and household-hazardous-waste for 2.6-million residents. The public service division contains some 900 employees, 550 of which are directly responsible to deliver the core services that our residents rely on including operational support staff such as facility maintenance and closed-landfill monitoring personnel. Curbside collection services are completed by City and contracted workforce split evenly to serve approximately 625-thousand curbside residents. All Litter collection, Transfer Station and Haulage activities are completed by City personnel. Weekly services include manual, semi-automated, and fully automated pickup of various waste streams including organics, yard waste, and oversized material. Operational activities are regulated by various governmental regulation including mandatory and free no-fault worker’s compensation coverage for workers. City frontline personnel are further represented by CUPE Local 416 and their Joint Health Safety Committee members where workplace incidents are obligatory to be reported to them. Critical injuries are further reported to CUPE and Ministry of Labour further for investigation purposes.

Some operational statistics includes:

- Approximately 2.1 million person-hours worked per year
- A Fleet of 325 collection, haulage, and front-end-loader and other heavy equipment
- Approximately 2.2-million KMs of inner-city collection driving, and 2.2-million KMs of City/Highway driving
- Annual average of 1-million tons of waste collected and processed.
3. SWMS H&S Strategic Framework

Despite the presence of meaningful commitment to workplace health and safety, a need for change was identified as a result of a mismatch between effort and outcome, stagnant performance metrics, and an overwhelming sense of pressure to implement an ever increasing set of regulatory and stakeholder expectations. The SWMS Strategic Framework was developed through extensive consultation and interaction with frontline workers, JHSCs, supervisors, and senior-management personnel to gain commitment and buy-in to adopt risk and regulatory based management systems and safety programs. The framework provided coordinated attention on short, mid, and long-term safety performance and culture improvement needs bounded together by a divisional H&S Vision statement, five strategic pillars, a 3-5 year SWOT exercise, and annual objective-setting exercises to set accomplishments goals for each strategic pillar.

To be the City of Toronto's "divisional" leader in protecting the health and safety of our employees and the stakeholders that we interact with.
4. Summary of H&S Program Components

In 2014 and 2015 over 100 small and larger scale tactics were completed including development and implementation of detailed jobs-specific and annual refresher training programs, ergonomic assessments of work process and equipment, industrial hygiene assessments and related facility upgrades, development and implementation of supervisory and worker capabilities, improved access to PPE, increased field level coaching and observation of staff, improved monthly tailgates and overall tracking and measurement of incident reporting and investigation quality. We further improved operational commitment to return-to-work practices, improved worker involvements in equipment purchasing and green-bin design input, and most importantly greatly focused on including frontline workers and Joint Health and Safety Committee members in the development and implementation of the various initiatives. Current elements of the SWMS Safety programs include:

- Implementation and compliance monitoring of 50 overarching corporate policies and programs to meet regulatory requirements
- Updated Safe Working Procedures manual with key instruction for over 100 tasks
- Detailed Ergonomic and Physical Demands Analysis for 72 core and modified duty related frontline tasks and subtasks
- Detailed Industrial Hygiene monitoring including noise, Indoor Air Quality, and Diesel Particulate Matter exposure assessments for Transfer Stations, and Collection personal
- Site and on-the-road emergency and environmental response plans
- Incident reporting and Incident Investigation completion, training and quality monitoring
- Site program audits and gap assessments against regulatory and policy expectations
- Documented Field Level Safety observations by management staff
- Detailed workplace violence and harassment assessment including provisions for Customer Service and interaction with the public
- Comprehensive frontline and supervisor job-specific training program
- 9 Annual In-Service training programs customized for each divisional sub-unit.
- First Aid program involving building internal instructor capability to train over 300 frontline collection’s and Transfer Station staff in Emergency First Aid
- Comprehensive 5-day certification training for management and worker safety committee members
- Detailed Transfer Station plant inspection program and training
- Detailed and comprehensive worker-hazard reporting and follow up program
- Pedestrian and School Zone safety initiatives
5. Monitored H&S Performance Indicators

As part of ensuring appropriate follow up and effectiveness of programs and initiatives, a comprehensive and business unit specific dashboard was developed in 2014 to track various performance indicators and completion rates of annual objectives. While we aim to add additional leading-indicator metrics, currently some regularly monitored indicators include:

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<td>Objective Action Tracker</td>
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<td>Contractor Incidents and Collisions</td>
<td>Return To Work effectiveness</td>
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6. Visualization of Some Performance Indicators

43% reduction in OSHA-Recordable-Equivalent incidents since 2013.

Steady Year-Over-Year reductions in Recordable incidents in 2014 and 2015.

23% reduction in Lost Time-Frequency Rates since 2013. Rate = #LTx200,000/Hours Worked

39% decrease in At-Fault vehicular incidents and collision.
29% decrease in total annual worker’s Compensation costs, 49% reduction in new claims costs. In 2014 $300,000 of costs related to one historical open lost-time case involving an unfortunate medical complication. This reminded the team on the importance of safety prevention as injuries can produce lasting health impacts and costs.

Costs include open cases from previous calendar years.

Supervisor incident/illness report quality improved from 80% of the reports lacking proper information in early 2014 to 37%. More work remains to reach our target of 20%.

7. Key Implemented Initiatives in 2014 and 2015 leading to improvements

Systematic improvements in safety performance and culture are always hard to be attributed to any one particular “silver bullet”. In particular as part of the discussions to build commitment to the SWMS H&S Strategic Framework, consensus was built on the importance of doing the “right things” as opposed to initially seeking immediate improvements in downstream outcome measures. We believe this steady focus has helped instill a greatly improved culture of safety throughout the division over the past two years in addition to our efforts to reduce risk exposures where possible. In particular we focused on three sets of challenges in parallel – 1) An intensive focus to close glaring safety program quality gaps related to frontline operations, overt regulatory exposures, and reoccurring safety issues prioritized by the frontline workforce – 2) Improving the capabilities of the frontline and management personnel - 3) building management system type frameworks for future growth. The following sections highlight some of the key developed/implemented programs and initiatives in 2014 and 2015.

i. Training and Development

**First Aid Instructor and Emergency First Aid Training:**

- SWMS completed First Aid Instruct training to develop divisional resources to complete the regulated Emergency and Standard First Aid training. First Aid instructors include worker and management staff. Given the risks associated with workers being on the road with delayed access to help, the decision was made to complete emergency first aid training for all collection personnel utilizing internally trained First Aid instructors.
Annual In-Service Training Program:

- In-service is an annual operating-unit specific training program that is co-developed by a joint team of H&S professionals, management, workers and Safety Committee members. More importantly the training program is further delivered by a mix of workers, supervisors, and H&S professionals to install a cooperative culture of engagement between workers and management. In-Service is reviewed annually to ensure the material is updated and addresses yearly “Hot-Topics” on safety matters as well as customer service priorities. This includes addressing H&S matters brought up by staff, updates on regulatory requirements, review of Safe-Work-Procedures and job-specific hazard. Training programs also included video messages from senior management and custom made safe-work-practice videos made in-house. All driving functions also include a driver safety refresher training as part of In-Service training.

Between 2014 and 2015 custom made In-Service training programs were made and delivered to all operating units across SWMS covering nearly 600 employees. This includes programs for Curbside and Parks Collection, Litter, Maintenance, Office Staff, Closed-Landfill, Hazardous Waste Depot personnel, Transfer Stations, Haulage Operations, and Environment Days staff.

2-Day H&S Competency For Management and Monthly Coaching Sessions:

- The City of Toronto requires all personnel who have supervisory duties to complete a 2-Day supervisor course on H&S responsibilities and accountabilities under the law and City policy expectations. In addition SWMS engaged in a grass-roots Talent Management program where frontline personnel interested in becoming supervisors were also provided the training. SWMS maintained a 100% training compliance over 2014 and 2015 in addition to training close to 40 additional staff for developmental purposes.
New Employee Onboarding:

• In 2014 a revamped New Employee Onboarding was developed in the Collection unit and then in 2015 carried through within the Transfer Station unit. It included a full account of all training needs for new employees within the first 30 days of employment, documentation, and follow up by supervisors. Within the Haulage division, internal resources and expertise were developed to deliver all regulatory driver training needs for personnel looking to gain more advanced licenses.

Heavy Equipment Operator Refresher Program:

• As a result of incident investigations on two incidents in 2014, a comprehensive Heavy Equipment Operation refresher training program was completed and implemented for Haulage and Transfer Station staff. Incident Investigation revealed that while staff had training in the past no refresher training program existed for them since their original hire date. Nearly 75 staff member have been trained involving a 1-day in-class course and a subsequent field-level practical observation/coaching session.

Safety Committee Function and 5-Day Safety Committee Certification

• Ontario Ministry of Labor mandates the presence of safety committees and requires at least one worker and one management member to be certified in their training program involving a 4-day theoretical and 1-day SWMS specific job-hazard training. The City of Toronto is an authorized provider of this training. In 2014 and 2015 SWMS committed to going well above and beyond regulatory requirements by certifying 68 of the 84 SWMS Safety Committee members. Safety Committers have identified and resolved close to 140 documented safety concerns in 2014 and 2015.

ii. Hazard and Risk Assessment, Reduction and Control

Division Wide Systematic Risk Assessment and Operating Procedure Development

• In 2014 an inventory of all key business processes and activities was made with a subsequent risk assessment based ISO 27001 practices. H&S, Environmental, and Business Continuity risks were identified and assessed at the macro level. The initiative then subsequently led to a project throughout 2015 to create associated Integrated Management based Operating Procedures with reference to all H&S, Environmental, Quality and Customer Service components of tasks. All core divisional activities were assessed using the ISO based integrative management risk assessment framework and nearly 100 Operating Procedures have been written so far.
Industrial Hygiene and Lighting Assessments with Follow Up

- Systematic Indoor Air Quality, Diesel Exposure assessments, Mold, and Lighting assessments were done over 2014 and 2015 to update historical assessments. IH surveys for all Transfer Stations and Collection working environments further included noise monitoring and personal dosimetry.

Follow Up:

- Major capital investment and maintenance resources were allocated to upgrade tipping floor HVAC systems in Transfer Stations with air quality issues.
- Offices around Tipping floors where refurbished to eliminate Tipping Floor air intrusion. Transfer Station Operator booths where all relocated to the outside or near Tipping Floor entrances to reduce worker exposure levels to risk.
- Aggressive maintenance and administrative controls were put in place to minimize and eliminate diesel exhaust exposure in relation to problematic collection vehicles.
- New HEPA Filters were installed in Front-End-Loaders to ensure cab IAQ levels of heavy equipment in Transfer Stations did not hit actionable exposure levels.
- Significant capital expenditure was allocated to upgrade and improve Transfer Station lighting across the City.

New Anti-Fatigue Mats in Stand-up Trucks

- Worker report of foot, knee and hip pain led to workplace assessments identifying a need to replace aging mats in Stand-up trucks. Various Anti-fatigue mats were trialed and based on worker feedback work mats were replaced in all semi and automated stand-up trucks.

Cuts and Laceration Assessment and Cut-resistant Gloves

- As a result of a series of First Aid and Near-Miss reports in relation to the collection material with cut-hazards, i.e. broken toilets, the safety committees began trialling a series of cut-resistant gloves in 2014. A series of gloves were tested and ultimately worker’s top rated pick was made available to employees balancing grip, flexibility, and cut-resistance needs.
Monthly Tailgate Program:

- A new Tailgate program and tracking process was created in 2015 to help improve consistency across the division. Monthly topics were developed based on operation risk, internal resources as well recently references SWANA’s Safety Mondays. **Average compliance to timely tailgate completion increased from 65% in 2014 divisionally to 90% in 2015.**

Psychological Health and Safety Policy

- A City wide initiative began in 2014 to create a Corporate policy to be adopted by divisions in relation to mental health. Through the policy the City committed to promoting psychologically safe and healthy working environments for all employees.

Equipment pre-purchase Ergonomic and Safety Assessments

- Detailed biomechanical and strength testing analysis was done for the City’s new New-Green bins.
- A detailed energy expenditure study was done on the heaviest collection routes to compare workload pressures with ergonomic standard’s recommendations. Assessments provided increased awareness on the importance of route-rotation and route reengineering practices.
- Staff members, including professional ergonomists visited OEM truck manufacturing sites to complete safety and ergonomics assessments of newly ordered Right-hand side trucks. Defined truck specs included addition of DVR cameras on both sides of trucks with split-monitors, increased cabs space, fully adjustable seats on both sides, and extra lights to help with night-time operations.
- **Over 2014 and 2015 Sprain, Strain, and Tear related Lost Time injuries have decreased by 52%.**


- 27 new Safe Work Procedures were created in response to identified gaps and investigation results. Overall 110 procedures were reviewed and updated in response to new work process changes, incident investigation results, and safety committee recommendations.
**Pedestrian and School Zone Safety**

- An extensive inquiry was initiated by SWMS to prevent pedestrian incidents around school zones. SWMS worked to alter collection routes as much as possible to avoid school-zones during busy times, as well as ramped up their in-house training programs. SWMS then partnered with the Toronto School District, Toronto Police and other City divisions on a joint task force to reduce pedestrian incidents in and around school zones. SWMS developed an in-school educational campaign for children. Members of staff visited kindergarten and elementary schools to deliver a combined safety and waste diversion message. As part of the presentations staff also took a garbage truck to schools to discuss the dangers of trucks, safe distances and safe behavior around garbage trucks.

**Transfer Station Workplace Inspection Program**

- A comprehensive site inspection program for Transfer Station facilities was developed including an expectation for safety observations to be prioritized using a risk-matrix. Supplementary documentation and a 1-day training program involving classroom and field activity was also developed and implemented. The program also includes a “Deep-Dive” topic of the month where inspection teams take a closer look at a particular contraventions and hazards each month. By the end of 2015 we were able to achieve a 100% Work-Order completion rate for all High-Risk safety related facility deficiencies.

**Collection’s Field Observation Program**

In 2015 a revamped Field Observation program was created to improve supervisory oversight of on-the-road work practices. Workers are observed through the program three times per year. The observation form was created based on feedback from workers, supervisors and H&S personnel with a focus on at-risk behaviors related to collection practices and driving habits in addition to customer service expectations. Supervisors are expected to use the observations as opportunities for coaching and positive encouragement.

**9. Summary Justification for winning the “Biggest Safety Improvement” Award**

2014 and 2015 were significant transitional years for Toronto’s SWMS safety programs. Many more initiatives are under way such as the implementation of CSA Z462 (NFPA70E), a comprehensive Driver Safety Recognition Program, revamping of SWMS Confined Space and Fall Protection programs, as well a revamping SWMS Contractor Management program. The momentum for these efforts are based on a sincere desire to continuously improve safety culture and programs year over year. Our great reductions in employee injuries, vehicular collisions and worker’s compensation cost reductions have occurred despite an average 2% year-over-year rising trend in total managed tonnage and high customer service expectation pressures. We believe the described initiatives and performance outcomes showcase a comprehensive and productive approach for improving safety programs and safety culture.