
 <p>THE CITY OF <b>CALGARY</b> ENVIRONMENTAL &amp; SAFETY MANAGEMENT</p>	<b>2014 Q1 and Q2 CORPORATE ENVIRONMENT, HEALTH &amp; SAFETY MANAGEMENT SYSTEMS AND COMPLIANCE REPORT</b>
	<b>Reporting period: 2014 January 01 to 2014 June 30</b>

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## Significant Incidents

A significant incident is defined as:


- A hazardous or dangerous materials spill/release;
  - An incident or worker injury that is reportable to Alberta Occupational Health and Safety (OHS) as per the Occupational Health and Safety Act;
  - An event with the potential to compromise the integrity of environmental assets, and/or that may represent potential liability concerns or reputation risks to The City;
  - Collapse or upset of heavy equipment or building component, or regulatory infractions or incidents with likelihood of significant regulatory interaction.
- 
- January
    - None reported
  - February
    - None reported
  - March – Roads
    - Sarcee Yard, located at 5851 Richmond Road SW, has been used to store snow removed from residential streets throughout the winter season. The volume of snow stored at this location is approximately equal to 75 M litres of meltwater. This snow storage location was established as a temporary site to accommodate the large volume of snow removed from residential streets this winter. Due to the time constraints and public safety concerns this site did not go through the same regulatory approval process with Alberta Environment and Sustainable Resource Development (AESRD) as the other three snow storage sites that are in use by The City. On 2014 March 13, an off-site release of meltwater from the southwest corner of the site was observed by a Roads employee and was reported immediately to (AESRD).
    - Laboratory analyses of meltwater samples from the site have been completed by a consultant. The results indicate the presence of some contaminants in concentrations exceeding specified limits set for groundwater and surface water by AESRD. The contaminants exceeding the specified limits include some total and dissolved metals as well as some inorganic and organic parameters. The specified limits for these parameters are included in the AESRD publications Alberta Tier 1 Soil and Groundwater Remediation Guidelines December 2010 for Commercial Sites with Fine and Coarse Grained Soils and Surface Water Guidelines for Use in Alberta, November 1999.
    - A berm has been built to contain the meltwater. Most of the contamination fraction is typically in fine particulate form or bound to suspended solids in the meltwater. A remediation system is being implemented to ensure a high removal rate for suspended solids, treatment of the meltwater through flocculent tubes

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and a settling tank to manage the anticipated volume of meltwater. The system was operational by early April, and is anticipated to be in place through late June, depending on the results of an assessment and water quality testing at that time.

Once the snow pile has been removed from its current location, soil samples of the ground beneath the pile will be collected and tested for the contaminants present in the snow.

- **March – Waste & Recycling**
  - The City received notification that compliance was achieved for an Alberta Occupational Health and Safety (OHS) Demand for an investigation related to an incident that occurred on 2014 February 28. A worker was injured when his hand was caught between the extended fork of the rear tipper and the controls on the side of a residential garbage truck.
  - The investigation identified that the design of the equipment in use at the time of the incident caused a pinch point hazard that was not recognized in a hazard assessment. Corrective and preventative actions undertaken and planned include:
    - re-aligning the tipper control levers to eliminate the pinch-point hazard;
    - ensuring the injured worker is formally trained on the use of all equipment he is required to use; and
    - updating the procedure for placing the tipper in the travel position and reviewing this with all affected workers.
- **April – City Clerks**
  - A Census Taker fell while walking in a residential area and sustained injuries requiring surgery and a hospital stay in excess of two days. Alberta OHS was notified and issued a Demand for an investigation and recommendations for corrective actions to prevent a recurrence of similar incidents
  - The investigation identified a number of preventive actions, primarily related to updating the orientation material for the Census Takers. The updated material will further emphasize wearing appropriate footwear for weather conditions, reminders to avoid walking with hands in pockets, inputting information into electronic tablets or using mobile phones while walking, and to maintain an awareness of the terrain when walking. The investigation and corrective and preventive actions were forwarded to Alberta OHS and the Demand was subsequently closed on 2014 April 30.
  - A self-service online Census application is being considered. Should the project go ahead, it would decrease the number of Census Takers going door-to-door and would allow the work to occur later in the spring when walking hazards are typically lower.

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- April – Waste & Recycling Services
  - A worker sustained back injuries while operating a commercial garbage disposal truck, requiring a hospital stay greater than 2 days. The employee was driving a front end loader truck at the East Calgary Landfill to unload refuse material. The employee drove through uneven, rutted ground at the landfill which caused the truck's driver seat to bottom out. Alberta Occupational Health and Safety (OHS) was notified of the incident, and issued a Demand for The City to complete an incident investigation and recommendations for corrective actions to prevent a recurrence of similar incidents.
  - The front end loader truck seats are operated on an air ride system. The process for setting up the driver's seat was reviewed and a variety of improvements recommended. These include reviewing the effectiveness of the current air ride system versus the feasibility and effectiveness of a hydraulic system. A full inspection of all driver and passenger seats for the entire fleet of front end loaders is also underway. As part of North American Occupational Safety and Health week, W&RS presented safe driving information to all commercial employees which included defensive driving information, and ergonomics, as well as seat set up and stretching exercises specific to drivers. The investigation and corrective and preventive actions were forwarded to Alberta OHS and the Demand was subsequently closed on 2014 May1.
- May – Water Resources & Water Services
  - A roofing contractor was working on behalf of Water Resources at a construction site, when a fire occurred. A torch being used to heat up a sub-membrane ignited a bucket of adhesive. There were no injuries. Alberta Occupational Health and Safety (OHS) was notified and issued a Demand to complete an investigation. The investigation was completed and corrective and preventive actions implemented. The file was subsequently closed by OHS 16 May 2014.
- June
  - None reported

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## Legislation Update

- Fisheries Act

Amendments to the Fisheries Act, first introduced in 2012, came into force and became effective 2013 November 25. The most significant aspect of the Amendments is the refocusing and narrowing of the regulatory protection from habitat protection to fisheries protection and the prevention of serious harm to fish that are part of a commercial, recreational or aboriginal fishery.

The City will be required to meet all of the regulatory requirements in the amended Act for projects undertaken on or adjacent to water ways. The majority of this type of work occurs on or near the Bow and Elbow Rivers, both of which support significant recreational fisheries. The City had been required to meet stringent control and mitigation measures for projects undertaken in and near the rivers for fishery habitat protection and will continue to do so under the amended Act requirements. Although the amendments arguably weaken habitat protection, the amendments have significantly increased penalties by increasing maximum fines to \$1.0 million for individuals and \$6.0 million for corporations.

## Regulatory Infractions

- None to report.


## Audit Activity

### Environment

The City's environmental management system is based on the ISO 14001 international standard for environmental management. The City holds 11 business unit level ISO 14001 registrations. A requirement of registration is that there is both an internal and external audit program. Internal audits assess conformance to the elements of the ISO 14001 standard as well as compliance to regulatory or legal requirements. External audits assess conformance to the ISO standard including the effectiveness of the internal audit program and the process for evaluation of regulatory compliance.

Eight audits were completed during the reporting period of 2014 January 01 to 2014 June 30:

- 3 internal combined ISO 14001 audits/compliance audits were completed by City staff:
  - Parks, Recreation and Transportation Infrastructure
- 2 external surveillance audits were conducted by The City's external Registrar PricewaterhouseCoopers (PwC):
  - Water Resources & Water Services and Corporate Properties & Buildings
- 3 external re-registration audits were conducted by The City's external Registrar PricewaterhouseCoopers (PwC):

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- Calgary Transit, Fleet Services and Supply Management

No areas of potential concern related to regulatory compliance were identified during the audits and all audited business units maintained their respective ISO 14001 registrations.

There were five minor nonconformities to the ISO 14001 and/or OHSAS 18001 standards identified in the external audit of Fleet Services.

- Nonconformity, corrective and preventative action – one incident investigation was not entered into the tracking system and another was signed off prior to the actions being completed
- Operational control – One employee interviewed during the audit was not able to readily access specific safe work practice documents.
- Operational control – Some nonconformities in implementation of procedures were noted, such as not consistently requiring visitors or customers to wear personal protective equipment when required, and the storage of a flammable substance near an ignition source (electrical outlet).
- Monitoring and measurement – Two of six monthly inspection sheets reviewed were not signed off by management.
- Communication – Minutes from recent Joint Worksite Health, Safety and Environment Committee meetings were not generated or circulated.
- Emergency response and planning – Fleet Services has a mature Emergency Response Plan (ERP) in place, and has developed a drill schedule with a high level testing plan. However, it was noted that the drill plan focuses mainly on testing evacuation plans for fires and does not indicate how other identified potential emergency response situations (e.g. chemical spill, major medical, bomb threats, etc.) will be tested.


There were two minor nonconformities to the ISO 14001 standard identified in the external audit of Calgary Transit.

- Competence, training and awareness – Based on the training matrix, not all employees requiring environmental training had received it.
- Operational control – One requirement of the ECO Plan for the Anderson Station Extension was for a Tree Protection Plan but there was no evidence that one was created for this project.

There were five minor nonconformities to the ISO 14001 standard identified in the external audit of Water Resources & Water Services.

- Environmental Aspects – Not all environmental aspects associated with the Calgary operations appear to have been documented.
- Training, awareness and competence - Significant gaps in completion of certain training requirements were found. Specific examples of training modules where



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less than optimal completion rates were documented included Transportation of Dangerous Goods and Environmental Awareness.


- Control of documents - An emergency map did not have a date or revision control number on the document. Environmental aspects for one division had not been reviewed within the timeline stated in the EnviroSystem manual.
- Nonconformity, corrective and preventive action - Water Resources & Water Services' EnviroSystem manual requires the review of the effectiveness of corrective action and preventive actions. It was noted that the review of the effectiveness of corrective actions and preventive actions is not currently being carried out.
- Management review - Some action items from Management Review meetings were not reviewed and the process does not align fully with the EnviroSystem manual.

There were three minor nonconformities to the ISO 14001 standard identified in the external audit of Corporate Properties & Buildings.

- Emergency preparedness and response - Corporate Properties & Buildings (CP&B) has developed a new building emergency response manual that is in draft format and soon to be implemented. The previous CP&B emergency response manual (ERP) was adopted as part of the draft manual. It was noted that the adopted ERP was last updated in 2009 and there were responsibilities assigned to a position that no longer exists with the business unit (CB&P ERP Coordinator).
- Internal audit and evaluation of compliance - The Corporate Properties & Buildings EnviroSystem core manual requires an internal audit of all divisions on an annual basis and CP&B to coordinate annual compliance audits. In a review of past internal and compliance audits, it was found that neither had been conducted since 2012.
- Nonconformity, corrective and preventive action - Corporate Properties & Buildings uses the EnviroTracker application to record and track findings. It was noted that root cause analysis has not been recorded for a number of findings. The CP&B core manual requires the EnviroSystem Management Representative to assign a responsible person to investigate the non-conformity, identify root causes and take corrective or preventive actions to avoid their recurrence.

There were four minor nonconformities to the ISO 14001 standard identified in the external audit of Supply Management.

- Monitoring and measurement - A City Operations Inspection form is in use for monitoring environmental, health and safety characteristics of various operations. It is not consistently used in all areas and did not appear to be signed off by management. Some agenda items from previous inspections were not closed out in subsequent inspections.
- Control of documents - The Supply Management EnviroSystem core manual requires that documents of external origin that are deemed necessary for the planning and operation of the EnviroSystem are identified and their distribution

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- controlled, and obsolete documents will be removed from all points of issue and use. There does not appear to be a clearly defined and implemented process for identifying documents of external origin. Some hard copy documents in circulation are obsolete. Two Emergency Response Manuals, for the Logistics Centre and Manchester, are past due their three year review/revision cycle and include information known to be out of date, such as the new 311 reporting process for spills and the updated Emergency Operations Centre procedures for crisis response.
- Operational control - At the Carpentry Shop one product was found without a Material Safety Data Sheet (MSDS) database entry for paint thinner. At least three hard copy MSDS 's were on the shelves that were expired.
  - Emergency preparedness and response - The City of Calgary Supply Management's EnviroSystem core manual, emergency preparedness and response (EPR) section requires emergency preparedness and response procedures to be developed and tested for sites where Supply Management is the significant tenant. Supply Management uses X-527 forms to document emergency response preparedness drills. It was noted that not all drills are being documented on the X-527 forms. For example, no EPR drill documentation was located for the Logistic Center from recent drills.

There one minor nonconformity to the ISO 14001 standard identified in the internal audit of Recreation.

- A bulletin was circulated and posted at all Recreation facilities in January 2014, communicating the change in procedure for substance release reporting, primarily the change from reporting to regulators through Calgary Fire Department (HazMat) to reporting through 311. However, an outdated version of the documented procedure for reporting substance releases (including a reference to reporting through HazMat) was observed at some locations on wall placards (e.g. Killarney Aquatic & Recreation Centre , pool basement storage area) and within the Recreation Health, Safety and Environment Manual ( e.g. Rose Kohn Arena).


There were no nonconformities to the ISO 14001 standard identified in the internal audit of Parks.

There were no nonconformities to the ISO 14001 standard identified in the internal audit of Transportation Infrastructure.


Specific corrective and preventive action plans have been developed for each nonconformity identified by the audit findings. The action plans will be reviewed and assessed for effectiveness and implementation during the next scheduled audit for the affected business units.

Positive management practices and initiatives noted during the audits include:




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- **Calgary Transit**
  - Good use of social media (public website and twitter) to engage and communicate with the public regarding environmental initiatives.
  - Recently installed placards at the old material safety data sheets (MSDS) binder locations reminding employees where and how to access the MSDS on line with the new system.
  - Initiation of a new process of regular focused environmental inspections of facilities to add an additional monitoring tool, and has revised their inspection sheets to make them more user-friendly.
  - The use of automated counters on buses that record numbers of riders throughout the day. This allows the planning department to optimize vehicle size for each route at different times of the day in order to maximize efficiency and minimize fuel usage.
- **Corporate Properties & Buildings**
  - Implementation of a new project management framework at Building Infrastructure (BI) includes better tracking of objectives and targets, and the on-going assessment of progress towards completion of goals.
  - Goals and targets are well aligned with The City of Calgary's goals and objectives.
- **Transportation Infrastructure (TI)**
  - A re-evaluation of the environmental aspects resulted in a reduction of significant aspects and better alignment with the business plan.
  - Environmental Construction Operations/Erosion Sediment Control plans are integrated into each project where applicable.
  - TI did an excellent job in reviewing its legal and other requirements. This was evident in the Elbow River Pedestrian Bridge Replacement project where proper permits and approvals were obtained for work along the Elbow River. It was also observed that there is the ongoing review of changes to legal requirements that impact the business unit. For example, the change in the Navigable Water Act that now governs the main water bodies such as the Bow and Elbow River. This has given TI more flexibility when working around small channel of water such as a brook or seasonal pools of water.
  - It was observed that Project Managers (PMs) have established a sound working relationship with contractors. Improvements can be seen in spill reports and communication whether it be in reporting a spill or weekly/monthly site inspections.
  - The City's new spill reporting process was well-communicated to the contractors.
  - TI employees interviewed had a high level of understanding and knowledge regarding TI EnviroSystem and their roles and responsibilities. This ranged from awareness of the green office recycling program to performing bird nesting searches in a forest area.

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- It was noted that the presence and participation of TI's Environmental Specialist whether it be in office staff meetings or site inspections has created high level of awareness for environmental protection.
- TI has a sound records management system providing PMs and all office staff members with an easy to follow project filing classification system.
- TI partnered with Waste and Recycling Services for the Airport Tunnel opening ceremony, to promote proper waste disposal, recycling and composting to citizens. Similar partnership with Waste and Recycling Services will be continued in future opening ceremonies.
  
- **Parks**
  - Well managed response to the June 2013 flood impacts (e.g. fallen trees and washed out pathways), including support for the *Alberta Flood ReLeaf* program sponsored by Tree Canada, in partnership with Alberta Environmental and Sustainable Resource Development and TELUS. This program will provide funding to homeowners, private landowners and municipalities for replacing trees that have been severely damaged and lost by the flood that occurred last summer.
  - Adoption of the 311 mobile application by Urban Forestry will facilitate improved response to tree downfall incidents.
  - Enhanced monitoring and measurement capacity linked to Parks Water Management Strategic Plan will result from further access to water consumption and cost data through the utility vendor.
  - Proactive community engagement and environmental initiatives such as the Residential Streets Policy and "Complete Streets " program which will result in more trees being planted in residential areas as well as the downtown core, using the "Silva cell" system (enhanced soil volume and drainage capacity) to support improved survival rates.
  
- **Recreation**
  - Recreations' Health, Safety and Environment (HSE) system is well integrated into both daily operations and business planning functions of the business unit.
  - There is a high level of communication, awareness and support for environmental controls and programs throughout the business unit and good responsiveness to public demand for environmental initiatives (e.g. water consumption and recycling program support).
  - Good housekeeping practices observed at all facilities visited (e.g. minimal volumes of hazardous substances per operational requirements, properly labeled and with appropriate hazard placards).
  
- **Supply Management**
  - The new Environmental Awareness Orientation online training provides a very thorough review of environmental management and the EnviroSystem, including objectives, risks and controls. The training includes learning checks and a quiz, which requires employees to achieve 80 per cent. This could be a good template for other City Business Units.

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- Good housekeeping was observed at all warehouse/store facilities.
- The new Leadership Activities Log is an effective tool to track initiatives and actions items on a regular basis to drive accountability and ensure actions are completed in a timely manner.
- Supply Management has developed a good description of how the business unit meets legal and other requirements. The business unit has developed a very comprehensive list of other requirements.
- Supply Management has implemented several recycling initiatives, including some new programs for hard hat recycling and installing a baler to reduce recycled material handling.
- Water Resources & Water Services
  - Inclusion of environmental benefits of capital improvement projects including various flood management initiatives.
  - Proactive de-chlorination procedures in place to assure regulatory compliance.
  - Knowledge by field crews of potential environmental impacts involved in their jobs and the appropriate controls to manage these impacts.
  - Soil recycling centre at Spring Garden Operations Centre.