Solid Waste Association of North America

2016 Excellence Award Entry
Special Waste Management Category

Entrant Organization: City of Edmonton, Eco Station Program.

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Title of Entry: Eco Station Hazardous Waste Collection Program
Jurisdiction: Edmonton, Alberta, Canada

Cost per household:
Annual operating cost for the Eco Station program in 2015 was CND$12/household/year

Approximate budget:
CND$16.5 million for development of most recent Eco Station (opened March 31, 2015)
Executive Summary

The City of Edmonton's Eco Station program provides the residents in the Edmonton region four convenient, environmentally sound, cost effective and safe facilities to drop off household hazardous waste (HHW), universal waste, recyclables, and general waste. The program has operated for 21 years, served over 2.7 million customers, and diverted over 4 million gallons HHW, almost half of the total HHW volume in the Province while representing only 21% of the population. Approximately 40% of total waste received at Eco Stations is diverted from landfill, positively contributing to the City of Edmonton's diversion goal of 90% for residential waste. The program is highly supportive by the residents and is one of the top rated services provided by the City of Edmonton.

1. Design and Planning

This section will discuss the planning process and the layout of the Eco Stations. The impacts that the design and management of the Eco Stations have had will be mentioned along with the specific details of the programming.

1.1 Planning Process and Most Important Factors

Eco Stations were initially designed to serve the public as a designated space to drop off their Household Hazardous Waste (HHW). As this design developed, other services were added to serve the residents as best as possible, as the City of Edmonton believes the convenience is the key to encourage the participation in voluntary programs. Nowadays, four Eco Stations are strategically located within the city to receive HHW, electronic waste, recyclables and general waste from residents in the Edmonton Region. Table 1 below lists the most important factors in program planning and how these requirements are achieved.

<table>
<thead>
<tr>
<th>Approach</th>
<th>Participation</th>
<th>Service Equity and Convenience</th>
<th>Environmental Benefits</th>
<th>Cost Effectiveness</th>
<th>Safety</th>
<th>Customer Satisfaction</th>
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<tr>
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<td>Service Hours</td>
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<td>Customer Service</td>
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</tbody>
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1.2 Program Design

1.2.1 Strategic facility locations and planning

The Eco Station program was part of the integrated waste system with the goal of diverting 90% of household waste from the landfill. Prior to the Eco Stations the City held an annual three day Toxic Round Up event (Figure 1). The decision to provide these services all evolved from the need to divert waste from the landfill and to provide the residents an easy way to dispose of any unwanted items.
The City’s first Eco Station, Strathcona Eco Station, opened the door to public in 1995. This facility was a transfer grinder station built in the 1970s and retired in early 1990s. It was retrofitted into the first permanent facility to receive HHW and other wastes from residents. Since then, three other Eco Stations were strategically planned and built in 2000, 2009, and 2015. The four Eco Stations spread around the city and provide easy access to residents from all developed neighborhoods. The next Eco Station is under planning and will be built by 2025. Figure 2 is a map showing the 5 km radius around each existing Eco Station.

1.2.2 One stop shop to accept a variety of materials

Eco Stations are convenient one-stop-shops for disposal of all household waste. The program accepts approximately 30 categories of hazardous and other wastes. The convenience of the program and the enhanced public education promote the participation, therefore increasing the diversion of HHW from the curbside waste collection stream and sewage system. When the first Eco Station opened in 1995, no one seemed to need to drop off any HHW. Staff had to drive their personal vehicles through the site to demonstrate how to use the new facility on the grand opening day. By end of 2015, The Eco Stations have served over 2.7 million people and removed over 4 million gallons of HHW from the waste stream. Figure 3 shows the current City Mayor presenting a gift to the two millionth customer at the Eco Station.
### 1.2.3 Site and facility design

#### 1.2.3.1 Site layout

The Eco Stations are designed for customers to travel in a one way direction through the site for convenient and optimal traffic flow of large number of vehicles. Vehicles entering the site are first met by an attendant at the kiosk to declare the type and amount of waste they have and pay any necessary fees. The customers then proceed to the yard area of the Eco Stations, where side load bins and roll off bins are each allocated for a specific type of waste. At this stage, residents who need to dispose of items such as large furniture, appliances, tires, yard waste, cardboard, paper, glass, metal, construction debris…etc. can proceed to the well labeled bins and drop off their waste. The residents then drive inside the building if they have HHW, electronics, paint, florescent tubes and light bulbs, batteries, car oil, propane tanks and fire extinguishers. Each Eco Station building has two drive-through drop-off lanes that allow for the flow of traffic. Once inside, customers dispose of their items in well labeled carts and leave the building. They can stop by at the Reuse building (Ambleside and Kennedale) before leaving the Eco Station. Attendants in both the yard and drive-through lanes guide and help the residents for offloading. Figure 4 shows the flow of residents through the Ambleside Eco Station as an example. Long lanes before the kiosks have been incorporated in the design of newer Eco Stations to avoid the lineup on the public street. Figure 5 is a picture of the drive through lane inside the building, and figure 6 shows one of the attendants at the kiosk.

For safety reasons, the public is not allowed outside of the designated areas for residential vehicles. Once the material has been accepted at the Eco Station, the staff is responsible for sorting the items in the designated areas for future processing. Staff also implements screening procedures for waste not allowed to be accepted by the Approval. These customers are given the information on where they can drop off such waste.
1.2.3.2 Architectural design and public art
The architectural design, as well as building materials, for the three Eco Stations that were built was influenced by the industrial aesthetic of the surrounding area. The exterior building walls of two of the Eco Stations feature public art pieces. Each piece is an image of a gigantic sculpture made by the artist with recycled materials or refuse collected from streets, against a digital Canadian landscape background (Figures 7 and 8).

1.2.3.3 Safety features
Safety features that were considered during the design phase were:

- Reducing cross traffic to a minimum.
- Having separate entrances for the public and contractors.
- Adequate signage and labels.
- The entire yard and entrances to the Eco Station building and Reuse building are clearly visible from the supervisor’s office and the kiosk.

1.2.3.4 Waste Processing
This section will summarize the processing of the different types of waste collected. Refer to the following link on YouTube for a video: https://www.youtube.com/watch?v=KuMr6x04X4E.

Household Hazardous Waste:
Eco Stations are not designed to process the dropped off materials. Eco Station attendants sort and package the HHW material into drums according to their chemical classification. The steel drums have a capacity of 54 gallon and are placed into chemical storage lockers as secondary containment. The drums are then collected by a contracted hazardous waste broker and shipped under manifest to an approved hazardous waste processing and storage facility. Most collected HHW is either reused or recycled. The remaining material is sent to Swan Hills Waste Treatment Centre for safe disposal. Figure 9 shows the HHW sorting station.
Fluorescent tubes:
Fluorescent tubes are crushed at Ambleside and Kennedale Eco Stations using special equipment to separate the mercury content and is then stored in drums to be sold and recycled. Figure 10 on previous page shows tubes being packed for shipping to the bulb crusher at Kennedale or Ambleside Eco Stations.

Paint:
Paint is tested in house to determine its condition. Any paint that can be reused is made available to customers. Each resident can select up to four cans of paint per visit for free. Paint that is not in good condition is packaged into 264 gallon totes (Figure 11) while in their original container. These totes are regularly picked up by a contractor and go through further processing under the Alberta Recycling Management Authority (ARMA)’s Paint Recycling Program.

Oil:
Used oil is emptied from its original container and is pumped into an aboveground tank located outside the building. The double walled tank has its own integral secondary containment and is also surrounded by a concrete curb for tertiary containment. The tank is emptied when needed by an approved Alberta Used Oil Management Association recycler. Figure 12 shows an employee working at the used oil area.

Other waste (paper, metals, appliances, yard waste…etc.):
Items such as cardboard, paper, glass and other recyclables are sold directly to commodities markets and are shipping via City of Edmonton vehicles. Electronic waste, construction waste, yard waste, appliances and scrap metals are delivered to the Edmonton Waste Management Centre (EWMC) for processing and recycling or resale. Compostable material is processed in the City’s municipal composter which produces horticultural and municipal grade compost for sale, and non-compostable residuals are sent to the landfill.

1.2.4 Service Hours
Eco Stations have monitored the hourly traffic distribution and tested different business hours. The current business hours are set up accordingly as follows:

- Winter (Mid-November to Early April): Tuesdays to Saturdays, 9am to 4:30pm
- Summer (Early April to Mid-November): Mondays to Saturdays, 9am to 6:30pm.
This setup allows the Eco Stations to operate at a cost effective and safe manner to serve the customer based on demand.

1.2.5 Promotion of Reduce, Reuse, and Recycle

1.2.5.1 Site selection, facility design and construction
The least impact on natural land has always been a consideration in locating an Eco Station. The first Eco Station was a reuse of a decommissioned waste grinder facility. Two other Eco Stations were built on industrial redeveloped lands.

Some design and construction features that were studied and included in the construction of the Eco Stations are:

- Air curtains at the building customer drive-through lane entrances and exits to prevent heat loss and reduce energy consumption in the cold winter.
- Stormwater retention and detention ponds and bioswales to reduce the industrial runoff (Figure 14).
- Curtain walls and glazed overhead doors to allow for natural light to penetrate the building (Figure 15).
- Low flow faucets in all the building amenities to reuse water consumption.
- Solar panels to supply the hot water tanks with energy to heat water.
- Geothermal technology to provide heating and cooling in the newest Kennedale Eco Station.
- LED lighting to reduce energy usage.

In addition, the newest Kennedale Eco Station was developed on a site previously used for industrial purposes. The following was done during the construction of this Eco Station:

- The reuse of over 16 tons of concrete substructure left by the previous land owner. This substructure was demolished, removed and crushed offsite, then brought back on site to be reused for the site development (Figure 16). Figure 17 shows the site before concrete removal.
- Following the standard of LEED certification. The Kennedale Eco Station is expected to receive its LEED certificate in 2017.
1.2.5.2 Sorting and recycling
The materials accepted at Eco Stations are sorted into approximately 30 categories, and shipped off site for disposal or recycle. The City of Edmonton strives to recycle as many categories as possible. At this time all following categories are recycled: used glycol, fluorescent tubes/bulbs, waste paint, wet cell batteries, refillable propane cylinders, disposal propane cylinders, fire extinguishers, aerosols, used oil, used oil filters, small engines, visual display devices, tires, white goods, scrap metal, aluminum, electronic appliances, and computer components. Yard waste are composted or broken into mulch for reuse. Approximately 40% materials received at Eco Stations are recycled. To encourage the residents to come to the Eco Stations and safely dispose of their HHW and other recyclables, there is no fee for dropping off HHW, electronic waste, and any recyclable material. A small fee is applied for the disposal of larger refuse items such as furniture and yard waste.

1.2.5.3 Reuse
The two newer Eco Stations (Ambleside and Kennedale) each features a Reuse building. Household items that are still in good condition are placed in the Reuse building for the public to take for free. These items could be collected from either an Eco Station or another City waste collection program, and can include books, furniture, appliances, decorative ornaments and many others. Figure 18 is a view of inside the Reuse building.

Reusable paint and used oil containers are also set out in the Eco Station building, where HHW is handled, for public to take to reuse (Figure 19 and 20).

1.2.6 Customer Service
The two main components for the participation of residents in the Eco Station program are the customer satisfaction and the convenience of the system. The Eco Station program is one of the top rated services provided by the City. Please refer to Section 5.3 for further details.

1.2.7 Public Education
Public education increases and enhances the public awareness of the Eco Station program. It is a great approach to increase the public participation. Please refer to Section 6 for details.

1.3 Community Contributions
The Eco Station program was a pioneer in 1995 when there was no regulatory requirement to divert HHW from landfill yet, and the program continues to lead the City, the region, and the province in HHW management. This program changed residents' behaviours and has diverted over 4 million gallons of HHW from the residential waste stream.
• The Eco Stations operate year round collecting nearly 50% of the HHW volume in the Province of Alberta while representing only 21% of the population.

• The program has been a strong pillar in the larger waste diversion plan of the City of Edmonton. Without the Eco Stations, residents would have no convenient place to drop off their HHW and therefore risk joining these items with the regular waste collection stream or in the sewer, which would cause further processing challenges and less diversion.

• The Eco Station program is well used by residents in surrounding municipalities.

• The City of Edmonton is an active partner with Alberta Environment and Alberta Recycling Management Authority on HHW management new initiatives.

• The Eco Station program has provided annual HHW training sessions for remote municipalities in the Nunavut Territory of Canada since 2011. The training include 1 week in class training in Nunavut and 1 week onsite training in Edmonton at an Eco Station.

2. Use of Equipment and Technologies

This section will discuss the different equipment and technologies used and how they impact the day to day operations and increase the efficiency of the operation.

2.1 Equipment

2.1.1 Household Hazardous Waste Storage Lockers
Each facility has two HHW storage lockers and each locker has four isolated compartments (Figure 21). The compartments have the capacity to hold seven to ten 54 gallon drums. The compartments have a steel grating floor with a containment spill tray underneath each compartment as the secondary containment. HHW drums are stored in different compartments by category.

These storage lockers are a safe way to protect the staff, public, and the environment from the HHW, keeping them out of direct sunlight and over secondary containment trays. The lockers are usually near the contractor access roads and allow for easy loading of the drums without interfering with the clients at the Eco Station.

2.1.2 CFC Recovery Unit
The LiteEvac unit is used for recovering CFC from refrigerators, water coolers, ice machines, dehumidifiers, air conditioners and any other appliances that use CFC’s. The unit is capable of recovering CFC from several units at a time and allows for easy, safe, and efficient recovery. CFC’s are then sent to an approved contractor for recovery or disposal, while the appliances recycled as white goods. Figure 22 shows an attendant completing CFC removal.

2.1.3 Skidsteer, Telehandler, Forklift and Telescopic Wheel Loader

Figure 21: HHW storage lockers

Figure 22: An Eco Station attendant attaching a sticker on a fridge after CFC removal
All Eco Stations have the necessary equipment used for loading, lifting and dumping. Pallets of drums or electronics, heavy appliances, tires and debris are only a few examples of what these equipment are used for moving or loading. See Figure 23 for a forklift with drum carrier attachment as an example.

2.1.4 Additional Ventilation for HHW Sorting Area
Each Eco Station building has its own HHW sorting station only accessible by trained staff. These stations have a localized air exchange unit above them (Figure 24). These unites are always on and work to remove any odors or fumes from the HHW products that the residents drop off. The filters for these units are changed on a regular basis.

2.1.5 Oil Pumps and Storage Tank
Eco Stations are equipped with oil pumps that pump the oil from trays inside the building to the aboveground double-walled storage tank outside. The tanks are equipped with high-level sensors and alarms to prevent the overflow into the concrete tertiary containment.

2.1.6 Fluorescent Tube Crusher (Bulb Eater)
The “Bulb Eater” is a device that mounts on any 54 gallon drum. It has a nozzle that allows fluorescent tubes and blubs to be safely pushed in and then crushed automatically. The glass, steel and mercury are all separated and each is sold separately for recycling. The mercury is captured in five internal filters which can be easily replaced when needed. Figure 25 shows an attendant using the Bulb Eater.

2.1.7 HHW Carts
Well labelled carts are placed in between the two drive-through drop-off lanes at Eco Stations (Figure 5). Customers drop off HHW in appropriate carts. Employees take the full cart to the designated area for further handling of HHW, while placing a replacement beside the drop-off lanes.

2.1.8 64 gallon drums
64 gallon drums are used for the storage of HHW at Eco Stations.

2.2 Technologies

2.2.1 GIS Technology for Strategic Locations
GIS technology has been used during the strategic site selection of Eco Stations. Figure 2 is an example of house count within 2.5 and 5 km of each Eco Station. GIS is also used to analyze the driving distance to each existing and potential Eco Station and the nearby neighbourhood information, such as the number of locations of concerned industries or shortest distance to a water course.
2.2.2 Energy Conservation Technologies
As mentioned previously, energy conservation technologies have been built in newer Eco Stations and added in older Eco Stations, including:

- Solar panels to supply the hot water tanks with energy to heat water.
- Geothermal technology to provide heating and cooling in the newest Kennedale Eco Station.
- Air curtains at the building customer drive-through lane entrances and exits to reduce energy consumption (Figure 26).
- Curtain walls and glazed overhead doors to allow for natural light to penetrate the building (Figure 5, 7, and 15).
- Stormwater retention and detention ponds and bioswales to reduce the industrial runoff (Figure 16).
- Low flow faucets in all the building amenities to reuse water consumption.
- LED lighting to reduce energy usage.

2.3 Waste Screening Procedure
All Eco Stations are operated with an approval under the Alberta Environmental Protection and Enhancement Act. The approval allows Eco Stations to receive hazardous waste generated by residents and educational institutions, as well as non-hazardous waste. The Eco Stations are not allowed to receive explosive waste, radio-active waste, biological waste, or commercially generated hazardous waste.

The screening of waste is performed by all Eco Station attendants encountering customers: kiosks, outdoor general waste drop-off yard, and the Eco Station building drive-through lanes. As residents arrive at the Eco Station, the attendants that greet them at the kiosk clarify the type and quantity of the waste they have. If commercial hazardous waste, explosive waste, radioactive waste, or biological waste is detected, the vehicles are not admitted. The attendants in the drop-off yard and drive-through lanes will also double check the waste brought in while guiding or assisting customers. Employees conduct screening by not only asking the question, but also observing the quantity of waste brought on site and the vehicle used. Customers bringing in wastes that are not acceptable at Eco Stations are given information on where they can drop off such waste.

2.4 Source Reduction, Reuse, and Recycle
Eco Stations do not process waste on site. Reusable items are placed in Reuse building or reuse area for public to take for free. All other materials are sorted and packed by category and shipped off site for recycling or disposal. Approximately 40% materials received at Eco Stations are reused or recycled, averaging 10,315 tons in the last 4 years. Please refer to Sections 1.2.5.2 and 1.2.5.3 for more details.

3. Environmental Benefits and Regulatory Compliance
Edmonton’s Utility Services department has a goal to divert 90% of household waste from landfill. Waste management has a direct link to Greenhouse Gas (GHG) emissions and climate change. For instance, landfill gas contributes 38% of Canada’s manmade methane, a potent contributor to GHG. The Eco Station program has continually had a positive role in diversion rates and is consistently working towards the long term strategic plan of diversion, and reducing GHG emissions as a result of increased diversion. An average of 10,315 tons of material have been recycled or reused through the Eco Station program annually from 2013 to 2015, counting towards reaching the City’s goal of 90% residential waste diversion from landfill.
The primary environmental and safety benefits of Eco Stations are the diversion of hazardous waste from the sewage system, the landfill and the environment, as well as the reduction of illegal dumping. Since Eco Stations began collecting HHW in 1995, 2.7 million residents have visited Eco Stations, and 4.2 million gallons HHW have been processed.

### 3.1 Compliance with Environmental Laws and Regulations

Each Eco Station has an approval issued by Alberta Environment and Parks under the Province of Alberta's Environmental Protection and Enhancement Act. Eco Station operations are also compliant to other applicable federal and provincial regulations. The City of Edmonton has hired a consulting firm to review and update the legal requirements applicable to all City operations on a quarterly basis. As an assurance, an external Compliance Audit is also conducted every three years on the City’s waste management services including the Eco Station program. All Eco Stations are ISO 14001 certified. The program is audited twice a year on ISO14001 compliant.

### 3.2 Recognitions and Achievements

The Ambleside Eco Station program was announced as the Alberta Recycling Management Authority’s collection site of the year in 2011. The Eco Station Hazardous Waste Collection Program won the SWANA Northern Lights Chapter Excellence Award for Waste Management and Diversion in the category of Collections and Transfer in 2015. Eco Stations are also used for piloting new pioneer programs initiated by the Province of Alberta. Eco stations have always received a great attention from local media and great recognition from the Public.

### 4. Worker Health and Safety

All City of Edmonton employees and facilities adhere to the comprehensive city-wide Occupational Health and Safety (OH&S) program.

#### 4.1 Employee Training

All new Eco Station staff receives two day in-class training before they start working on site. The training includes the operation orientation as well as the following safety components: Workplace Hazardous Materials Information System (WHMIS), Transportation of Dangerous Good (TDG), robbery prevention, release control response, and CFC recovery training by The Heating, Refrigeration and Air Conditioning Institute of Canada. New employees will then receive on site job training provided by a peer. The onsite job training is at least one week long and the employee is allowed to work alone after the peer signs off the new employee training checklist. Onsite mentoring will continually be provided by the peer and site supervisors when needed. Tailgate talks and refresher trainings are performed periodically and all supervisors ensure that their staff is up to date with the required training. Mobile equipment training and respirator fitting test are provided before the employee are assigned to perform the relevant tasks.

#### 4.2 Safety Procedures

Staff is trained on all the operational procedures and supervisors mentor their staff to ensure procedures are followed. Safety of the public and the staff is the primary concern at all times. Having secondary storage containers, lockers for chemicals, proper PPE, regular safety inspections and regular safety audits all contribute to a safe workplace.

All staff is required to supply their own CSA approved steel toe boots, the City of Edmonton then provides them with all other necessary PPE such as gloves, safety glasses, Tyvek coveralls for HHW sorting, reflective clothing for yard attendants, and full face respirators for working in HHW area. First Aid stations, emergency shower stations and eye wash stations are present in all facilities. Spill kits and absorbents are kept on site for use as needed.
In addition to PPE, each Eco Station site has monthly emergency drills, safety inspections, and Safety Committee meetings. Drills performed at each site are for fire, chemical spills, severe weather, and medical aid. Hazard Assessment and Controls and Emergency Response Plans are developed for each facility.

All defects identified at the monthly safety inspections and drills are entered into a database. Management and supervisors review the defect list regularly to ensure the actions are taken.

### 4.3 Injury Rates and Reduction of Injuries

On average, each Eco Station has had one lost time or restricted work injury and one medical aid injury each year in the last four years. Engineering and administrative procedures are developed whenever possible to help prevent any injuries. The Branch also provides an Early Intervention program for its staff: staff that experience aches that require physical therapy, caused at work or at home, are sent to registered therapists by their supervisors, assessed and treated accordingly, to prevent them from getting injured at work.

### 5. Performance, Economics, and Cost Effectiveness

The Eco Stations operate year round collecting nearly 50% of the HHW volume in the Province of Alberta while representing only 21% of the population. User fees cover at least 40% of the operating costs. The net operational cost for operating the Eco Stations is estimated to be half of the operational cost to provide a door to door large item collection program for single families.

#### 5.1 Performance Measures

Success is measured by the number of users at the Eco Stations. The goal is to increase the participation each year. Over 2.7 million vehicles have accessed and used the services at the Eco Stations from 1995 to 2015. The table below shows numbers of visitors and waste collected over the past few years. Table 2 shows the numerical analysis from 2012 until 2015.

<table>
<thead>
<tr>
<th>Year</th>
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<th>Waste collected (Ton)</th>
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<tr>
<td>2014</td>
<td>238,208</td>
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<tr>
<td>2015</td>
<td>277,787</td>
<td>29,238</td>
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#### 5.2 Downtime

Eco Stations have not had a single downtime in the 21 years of operation. Facilities are designed to allow convenient waste drop-off for customers and separate entrance for customers and contractors. The contracts are developed to ensure the City’s ability to get alternate resource to complete work and claim the cost from contractors who cannot pick up waste on time.

#### 5.3 Customer Service and Complaint Handling

Customer satisfaction is one of the most important factors considered during Eco Station planning and operation. The Eco Station program is one of the top rated services provided by the City of Edmonton, with a score of 95% satisfaction rate in a 2015 public survey. Such a high satisfaction rate is achieved by:

- Planning and building convenient facilities for the public to use.
• Having attendants at all areas public have access and providing guidance and assistance in offloading and loading. Such areas include kiosk, outdoor waste drop-off yard, Eco Station building drive-through drop-off lanes, and Reuse building.

• Being polite and patient to customers.

• Being proud of the program and therefore doing the best to provide customers an enjoyable experience at each visit.

• Having Eco Station hours, location, and acceptable materials information available on City website and through the City's hotline 311.

Residents have been very supportive and are actively using the Eco Stations. The complaints are rare, usually not exceeding two per year at all four Eco Stations. Once a complaint is received on site, the attendants and supervisor will do their best to address the customer concern immediately. The issue will also be brought to management. Further actions might be taken. If the compliant is received through 311 or City website, management and supervisor will investigate and address the situation. An update will be provided to the resident who made the compliant.

5.4 Cost Effectiveness

The Eco Station program is a cost effective means for the residents in the Edmonton region to drop off HHW, universal waste, and large items that they cannot set out for collection. The net operational cost is estimated to be half of the operational cost to provide a door to door large item collection program for single families.

The Eco Station program has always been operated within its budget. Operational funding for the facilities is covered through user fee recovery and program payments for specific materials. Alberta Environment and Parks provides funding for the disposal of HHW. Alberta Recycling Management Authority (ARMA) provides collection site incentives on a per-tonne basis for electronic waste and per-container for paint. The Government of Alberta also provided $3.2 million of Municipal Sustainability Initiative funding towards the construction of the Ambleside Eco Station.

6. Public Acceptance, Appearance and Aesthetics

6.1 Building Appearance and Facility Maintenance Program

All City facilities, including Eco Stations, are maintained by the City of Edmonton’s Building Maintenance Branch. Preventive, scheduled maintenance and repairs are done in a timely manner to keep the buildings operating safely and effectively.

The architectural design and the art work installed at Ambleside and Kennedale Eco Stations demonstrate that waste management facilities can be clean, green, and beautiful.

All Eco Stations have a large pole sign that is visible from a far distance. Traffic signs have also been installed on major roads nearby to direct customers how to find the Eco Station.

6.2 Public Relations and Education

Eco Stations develop and maintain good relations with commercial and residential neighbours. As stated previously, Eco Stations are strategically placed to ensure convenient and cost effective service to residents. Public notification and consultation regarding proposed construction of any new facility is initiated years in advance. Public notifications are published on two major local newspapers prior to the construction of a new Eco Station and prior to the issue of a renewable approval (every 10 years for each Eco Station). Residents will have 30 days to submit their
concerns. In addition, all property and business owners within 60 meters of the proposed Eco Station site will receive a letter before the development permit is issued for construction and have 60 days to file their concern. No concern has been brought up by residents during the public consultation in the 21 years of operation.

The City of Edmonton regularly advertises Eco Station program. Regular multimedia advertising campaigns are used to promote residents’ use of existing facilities. The public is informed of their locations, hours of operation and accepted commodities through a variety of venues such as the City’s Urban Recycler newsletter that is delivered annually to every household, YouTube advertisements, Social Media campaigns, public billboards, newspaper advertisements, and through tours of the Edmonton Waste Management Centre, which reach 14,000 students each year. Figure 27 is an example of Social Media campaigns and figure 28 is an example of a brochure published by the City of Edmonton. Below are some examples of the commercial videos of the Eco Station program.

- Battery Newman – Turn Them In: [https://www.youtube.com/watch?v=8cTjPBA3wrA](https://www.youtube.com/watch?v=8cTjPBA3wrA)
- Holiday lights: [https://www.youtube.com/watch?v=jQXyFh14s-g](https://www.youtube.com/watch?v=jQXyFh14s-g)
- Turn Them In Sign for Kennedale Eco Station: [https://www.youtube.com/watch?v=S6wfMs9kQgs](https://www.youtube.com/watch?v=S6wfMs9kQgs)
6.3 Community Concerns

Eco Stations are highly supportive by the communities. The only concerns the City has received were about Eco Stations not being close enough to all City neighborhoods. These concerns were addressed with the addition of the two newer Eco Stations.

6.4 Facility Cleanliness

Littering at Eco Stations is very minimal due to the sites being fenced and manned during the day. All containers and waste collected is contained within the site in a safe and neat manner. Minor litter collection is performed by the staff during the day as necessary in addition to regular sweeping and cleaning.

Items received are typically in their original packaging or containers and are then placed in a drum, a tote, a bin, or pallet. This allows the site to be organized and systematic. No waste ever sits on the pavement or near the appropriate bins. Overflow bins are always available if needed.