# BRITISH COLUMBIA
## LAMPS AND LIGHTING EQUIPMENT STEWARDSHIP PROGRAM (LIGHTRECYCLE) 2016 ANNUAL REPORT

For submission to:
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# Contents

# 1   Executive Summary

This annual report has been prepared by Product Care Association of Canada ("PCA") based on the requirements set in the BC Lamps and Lighting Equipment Stewardship Plan dated March 9, 2012 and approved by the BC Ministry of Environment on April 23, 2012 ("Program Plan"), and pursuant to the requirements of the Recycling Regulation B.C. Reg. 449/2004 ("Regulation").

From July 1, 2010 to July 1, 2012, PCA's British Columbia Lamps and Lighting Equipment Stewardship Program ("Program" or "LightRecycle") included residential-use fluorescent lamps only. On July 1, 2012, the Program expanded to include "all electronic or electrical lighting equipment, parts and bulbs" used in residential and non-residential applications, pursuant to the requirements of the Regulation. [1] This report covers the period of January 1 to December 31, 2016.

Lamps, lighting fixtures and ballasts used in residential and non-residential applications are covered under PCA's Program Plan. These products are broken down into thirteen Product Categories as listed in Table 1 below.

Table 1: Program Product Categories and Website

| Product Categories | 1. Fluorescent Tubes measuring ≤ 2 feet<br>2. Fluorescent Tubes measuring > 2 feet and ≤ 4 feet<br>3. Fluorescent Tubes measuring > 4 feet<br>4. Compact Fluorescent Lights (CFL)/ Screw-In Induction Lamps<br>5. Light Emitting Diodes (LED)<br>6. High Intensity Discharge (HID) and Other<br>7. Incandescent / Halogen<br>8. Miniature Bulb Package<br>9. Designated Small Fixtures / Decorative Light Strings<br>10. Fixture Category A<br>11. Fixture Category B<br>12. Large Outdoor Fixtures<br>13. Ballasts/Transformers (not integrated into lamps or fixtures) |
|---|---|
| Program Website | The BC LightRecycle website is www.lightrecycle.ca.<br>The Product Care Association's website is productcare.org. |

A complete list of products accepted and not accepted by the Program is available in the Program's Product Guide on the LightRecycle website: http://www.lightrecycle.ca/member-and-seller-support-centre/member-resources/.

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[1] Recycling Regulation B.C. Reg. 449/2004 Part 4, Schedule 3, Section 2 (1) (e).

The Program's regulatory reporting requirements and key performance targets for 2016 are summarized in Table 2 and Table 3 below.

## Table 2: Regulatory Reporting Requirements

| Regulation Provision | Topic | Summary |
|---|---|---|
| Part 2, section 8(2)(a) | Public Education Materials and Strategies | <ul><li>Paid advertising, media & partnerships</li><li>Community events & collateral</li><li>Point of sale and point of return materials</li><li>PCA and Program website</li><li>PCA toll-free number and RCBC Hotline & Recyclepedia</li></ul> |
| Part 2, section 8(2)(b) | Collection System and Facilities | The Program's collection system had 442 collection sites.<br>Additional collection services included:<ul><li>Direct pickup service for PCB containing ballasts</li><li>Direct pickup service from Large Volume Generators of lamps and pre-crushed lamps</li><li>16 collection events</li></ul> |
| Part 2, section 8(2)(c) | Product Environmental Impact Reduction, Reusability and Recyclability | Producers are working to reduce the environmental impact of lighting products through innovative product design and technology. Life-cycle management is also playing an important role in reducing the environmental impact of lighting products. The proliferation of LEDs (which do not contain mercury) has resulted in fewer mercury-containing products entering the market. |
| Part 2, section 8(2)(d) | Pollution Prevention Hierarchy and Product / Component Management | <ul><li>Lamps were broken down into component parts (glass, metal, mercury, phosphor powder) and recovered/recycled/safely landfilled when necessary:<br>  - Glass was used in manufacturing processes and/or used as cullet<br>  - Metal was recycled and used in manufacturing processes<br>  - Phosphor powder was stabilized then securely landfilled.<br>  - Mercury was stabilized then securely landfilled.</li><li>Residential-use fixtures were broken down into component parts for recovery / recycling.</li><li>Commercial fixtures and non-PCB ballasts were collected and managed through the existing market driven scrap metal recycling system.</li><li>PCB ballasts were collected and managed as hazardous waste and sent for incineration at licensed/permitted facilities.</li></ul> |

| Regulation Provision | Topic | Summary |
|---|---|---|
| Part 2, section 8(2)(e) | Product Sold and Collected and Recovery Rate | • Program members reported selling 34,930,035 units of program product.<br>• In 2016, the Program collected an estimated:<br> - 6,260,826 units of lamps<br> - 550 tonnes of fixtures from residential collection sites<br> - 36,014 kilograms of PCB ballasts<br> - 12,678 kilograms of crushed lamps |
| Part 2, section 8(2)(e.1) | | See Table 10 for estimated collection volumes by regional district. |
| Part 2, section 8(2)(f) | Summary of Revenues and Expenses | • The Program is funded by fees remitted by members on the sale of new program products sold in or into British Columbia.<br>• An independent financial audit for the reporting period is appended to the report (see Appendix C). |

Table 3: 2016 Key Performance Targets

| 2016 Key Performance Targets | | |
|---|---|---|
| Regulation, Part 2 section 8(2)(g) | | |
| 2016 Priority Stewardship Plan Targets | 2016 Performance | Strategies for Improvement |
| Capture Rate: Fluorescent Tubes | Target: 34-62% | 42% | N/A |
| Capture Rate: CFLs | Target: 36-62% | 51% | N/A |
| HID, UV, Neon lamps (Units) | 132,862 | 220,655 | N/A |
| Residential Fixtures (tonnes)[2] | 188 – 210 | 550 tonnes | N/A |
| Consumer Awareness | 55% (by end of 2017) | 49% (as of 2015) | The program is identifying key markets and developing strategies to target improvement for each market respectively. |
| 2016 Accessibility Targets: The program conducted an accessibility study in 2016 describing accessibility levels as of December 31, 2016. The study determined the program was accessible to 99.29% of the population for | | |

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[2] The residential fixtures target was converted and rounded from kgs to tonnes to match the data available from Program processors

| | | | |
|---|---|---|---|
| commercial lamps, 99.65% for residential lamps, 98.07% of the population for residential fixtures, and 95.89% of the population for commercial fixture and non PCB ballasts depots. | | | |
| Commercial Lamps | 95% | Target Exceeded | Yes |
| Residential Fixtures | 95% | Target Exceeded | Yes |
| Commercial Fixtures and Non- PCB Ballasts | 95% | Target Exceeded | Yes |

## 2   Program Outline

PCA is a federally incorporated, not-for-profit product stewardship association formed in response to stewardship regulations and is governed by a multi-sector industry board of directors.

In 2016, the Program operated in accordance with PCA's Program Plan pursuant to the requirements of the Regulation.

Between January 1, 2016, and Dec 31, 2016, the Program captured end-of-life lamps and lighting equipment products from all sectors (residential, institutional, commercial and industrial) and diverted them from the landfill.

## 3   Public Education Materials and Strategies

In 2016, PCA engaged in extensive communication efforts to inform British Columbians about the Program. The following list outlines the Program's public education materials and strategies for 2016:

- Paid advertising, media & partnerships
- Community events & collateral
- Point of sale and point of return materials
- Company and program website
- PCA toll-free number and RCBC hotline & recyclepedia

Details of the initiatives undertaken by the LightRecycle Program in 2016 are provided below.  See Appendix A for select examples of Program materials and advertising.

**Paid Advertising, Media & Partnerships**

- LightRecycle ran two province-wide campaigns in British Columbia with top network Global TV. One campaign ran for 26 consecutive weeks from November 2015 through May 2016 airing 30 second spots that featured local talent voicing community "infomercial" PSAs aimed at educating viewers about special waste recycling. The second campaign ran for 12 consecutive weeks from September 2016 through December 2016 airing 15 second spots. In the second

campaign, special focus was placed on airing ads in Vancouver, Kelowna, the areas in and surrounding Prince George and Kamloops, as well as the areas in and surrounding Terrace and Kitimat. This campaign featured traditional commercial advertising that drove consumers to the Program website. In total, over 2,500 spots of 15 and 30 second duration aired in 2016.

- LightRecycle pursued a significant, full-year radio advertising campaign on Newcap Radio station Z95.3 FM. The campaign included brand sells (driving listeners to the website and delivering key messages about the Program), event promotion (supporting LightRecycle community event activities), contesting (digital and on-air contests with grand prizes available to those who engaged with LightRecycle key messaging) and digital take-overs (LightRecycle took over the radio station's homepage).

- LightRecycle advertised with industry trade publication Electrical Line Magazine via 6 X ½ page full-colour advertisements running every 2 months throughout 2016 (January, March, May, July, September and November). Electrical Line Magazine is a bi-monthly electrical trade publication with a qualified national circulation in excess of 19,000 that reaches industries (sawmills, pulp mills, mining, petroleum), building trades (industrial, commercial, and residential electrical contractors), consulting engineers, architects, and government bodies.

- LightRecycle ran full page print ads through Business in Vancouver, an industry-specific publisher. One series ran in the May edition of *Office Space*, a BOMA BC publication with a 42,000-strong readership. The second series ran in an issue of the sustainability business magazine *Green Space*, which has a targeted distribution of 12,500.

- Multi-lingual advertising: ReGeneration, with inclusion of LightRecycle program info, advertised on Fairchild Radio (Cantonese and Mandarin) in the spring and fall, and Spice Radio (Hindi, Punjabi and English), all year long, targeting BC's largest ESL populations and regions.

- Digital advertising took place with B2B marketing specialist Multiview, via a targeted campaign that used extensive SEM advertising with specific focus on lighting industry professionals, contractors, relampers, and building managers. Both static banners and animated images were displayed on relevant websites.

- LightRecycle was a corporate sponsor of national electrical trade organization, ElectroFed. In addition to branding on ElectroFed collateral materials and at ElectroFed events and conferences, LightRecycle also received full page advertisements in ElectroFed's national magazine, *InfoElectro*. Collectively, this had a 30,000+ marketing reach.

- The Program pursued a Western Canadian targeted digital campaign via YP Group. The campaign syndicated Facebook posts, targeted digital display ads, and smart digital display ads (re-serving impressions to pre-qualified audiences).

- LightRecycle ran 12 week long spring and fall campaigns with LAMAR Transit. These advertisements were multi-panel (see Appendix A) covering 16 stations along the Expo, Millenium, and Canada Skytrain lines in the GVRD. Together, they generated 92 million gross impressions.

- In July and September of 2016, the Program pursued elevator TV screen advertising in Vancouver, Burnaby, Richmond, and the Tri-cities through IHN Media. 15 second long advertisements played across 167 screens in 16 buildings, generating 1,346,688 impressions.

- Through Del Communications, the Program advertised through a web banner ad and a full page print ad that ran in the 2016 British Columbia Electrical Association (BCEA) membership directory. This targeted electrical industry professionals who may be Large Volume Generators.
- In December 2016, LightRecycle advertised in various transit shelters in Burnaby, New Westminster, and Langley through Pattison Outdoor Advertising. Five 48" x 68" ads ran over a period of 4 weeks, with each individual ad promoting its closest LightRecycle drop-off location.

**Community Events & Collateral**

- LightRecycle exhibited at BUILDEX Vancouver in February 2016.This two day-long trade show and conference attracted over 40,000 industry professionals who work in the construction, property management, interior design, renovation, and architecture industries.
- The Program also exhibited at BUILDEX Express in November 2016; a specialized one day trade show and conference also targeted towards industry professionals.
- LightRecycle also collected lighting products at Party for the Planet in April 2016. The Program contributed to a $15,000 sponsorship for this event that included brand visibility within the following platforms: related newspaper ads, 40 radio spots, event flyers, programs, on-site signage, and the event's Light Recycling Zone, which was hosted by the Program.
- Event collateral, such as a branded tent, tablecloth, pop-up banners and other materials, were utilized to ensure the Program had a strong visual presence at the events listed above as well as 77 other Regeneration events promoting all PCA programs including LightRecycle. Additionally, branded prizing and participatory, trivia-based games were employed at all events to ensure audience engagement and program information retention.

**Point of Sale and Point of Return Materials**

- Program posters, rack cards, and signage for both retailer and collection site audiences were replenished upon request, free of charge. A dedicated online re-order form for these materials is hosted on the program website, LightRecycle.ca.

**Dedicated Program Website**

- The Program's official website, www.lightrecycle.ca, remained a popular resource for all individuals and groups interacting with the Program. The site continues to provide:
  - A geography-based collection site finder
  - Collection site hours of operations
  - Program accepted product lists, fully revamped to be visually-oriented and easier to navigate
  - Dedicated website sections for consumers, program members and service partners
  - Information for the industrial, commercial and institutional market segment, including large volume generator product management options
  - Contact information for key Program staff
  - Program FAQs and annual reports

In 2016, there were 46,990 unique visitors to the Program website-an increase of 5.05% from 2015.

**PCA Toll-free Number and RCBC Resources**

- PCA operated a toll-free number (1-888-772-9772) to respond to consumer inquiries.

- The Program continued to participate in the Recycling Council of British Columbia (RCBC) recycling hotline service (1 800 667 4321 or 604 RECYCLE). Consumers were able contact RCBC operators during business hours and obtain information about return options for Program Products.

Information about LightRecycle was also provided on the RCBC website, in the RCBC Recyclepedia, and on the RCBC App, which received a combined total of 8,229 inquiries.

# 4   Collection System

The BC LightRecycle Program provides a free and convenient collection system for all consumers of Program Products. PCA does not directly own or manage collection sites, but has contracts with them based on the services they provide (see Section 4.1 for descriptions of collection sites services). These sites include retailers, recycling organizations (both non-profit and for profit), local government recycling centers or transfer stations and other associations or businesses interested in participating in the Program.

The collection system accepts lamps, ballasts and fixtures from residential, institutional, commercial and industrial sectors. Products accepted in the LightRecycle program, or "Program Products," will be collected by contracted sites and are outlined in Table 4 below. A complete list of products accepted and not accepted by the Program is available in the Program's Product Guide on the LightRecycle website: http://www.lightrecycle.ca/member-and-seller-support-centre/member-resources/.

Table 4: Summary of Program Products

| Summary of Program Products |
| --- |
| **Whole Lamps:** <br> • Fluorescent, induction and UV tubes of all lengths and shapes <br> • Compact fluorescent lights (CFL) and screw-in induction lamps <br> • Light emitting diodes (LED) <br> • High intensity discharge lamps (HID) of all types <br> • Special purpose lamps <br> • Incandescent lamps <br> • Halogen lamps <br> • Miniature lamps <br> **Pre-Crushed Lamps** |

| Fixtures: |
| --- |
| • Small light fixtures and light strings<br>• Residential light fixtures<br>• Commercial light fixtures<br>• Industrial light fixtures<br>• Large outdoor fixtures |
| **Ballasts and Transformers:**<br>• PCB Containing<br>• Non-PCB Containing |

## 4.1       Collection Sites

A collection site is a physical location where consumers can drop off Program Products. Collection sites can offer one or more collection services based on various factors. Services offered by collection sites are generally advertised to the public. In some cases, collection sites are not advertised where the location does not collect from the general public. LightRecycle enters into separate contracts with collection sites for each collection service offered and as a result, there is no one-to-one relationship between the number of sites and the number of services offered. The seven different collection services offered through the Program are listed in Table 5.

Table 5: LightRecycle Collection Service Types

| Type of Service | Description |
| --- | --- |
| Advertised Residential Lamps | Collection sites accepting residential volumes of lamps (up to 16 units) |
| Advertised Residential Fixtures | Collection sites accepting residential volumes of fixtures |
| Advertised All Sectors Lamps (Commercial and Residential) | Collection sites accepting commercial volumes of lamps (more than 16 units) |
| Advertised Commercial Fixtures and Non-PCB Ballasts | Collection sites accepting commercial volumes of fixtures & Non-PCB Ballasts |
| Unadvertised Residential Fixtures | Collection sites accepting residential volumes of fixtures from specific sources only |
| Unadvertised Commercial Lamps | Collection sites accepting commercial volumes of lamps from specific sources only |
| Unadvertised Consolidators | Collection sites consolidating volumes of Program Products into larger quantities from specific sources only |

The Program's system included 442 contracted collection sites, with 6 sites added in 2016 and 3 sites removed, representing a net increase of 3 sites from 2015. See Appendix B for a full list of collection sites by location and

Table 6 for a list with sites that were added and removed in 2016.

Table 6: Collections Sites Added/Removed in 2016

| Depot Name | Depot Location | Change from 2015 |
|---|---|---|
| East Hastings Bottle Depot | Vancouver | Opened in 2016 |
| Unadvertised | Vancouver | Opened in 2016 |
| White Rock Return It Depot | White Rock | Opened in 2016 |
| Davie Village Home Hardware | Vancouver | Opened in 2016 |
| Unadvertised | Richmond | Opened in 2016[3] |
| Cook St. Castle | Victoria | Opened in 2016 |
| Gescan Trail | Trail | Closed in 2016 |
| Norbert Salvage | Bridal Falls | Closed in 2016[4] |
| Rona 61280 (Vancouver) | Vancouver | Closed in 2016 |

Table 7 provides a list of contracted collection sites by Regional District.

Table 7: Contracted Collection Sites by Regional District[5]

| Regional District | # of Collection Sites |
|---|---|
| Alberni-Clayquot | 5 |
| Bulkley-Nechako | 10 |
| Capital Regional District | 44 |
| Cariboo | 10 |
| Central Coast | 3 |
| Central Kootenay | 11 |
| Central Okanagan | 16 |
| Columbia Shushwap | 6 |
| Comox Valley | 7 |
| Cowichan Valley | 13 |
| East Kootenay | 8 |
| Fraser Valley | 24 |
| Fraser-Fort George | 6 |
| Kitimat Stikine | 6 |
| Kootenay Boundary | 2 |
| Metro Vancouver | 151 |
| Mt Waddington | 9 |
| Nanaimo Regional District | 17 |
| North Okanagan | 12 |
| Northern Rockies | 1 |
| Okanagan Similkameen | 16 |

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[3] This location actually opened in 2012, but was not listed until 2016.
[4] Technically closed in 2015, but site only reported in 2016.
[5] Allocation of some collection sites to regional districts was adjusted in 2016 to better reflect their geographic location.

| Regional District | # of Collection Sites |
|---|---|
| Peace River | 9 |
| Powell River | 4 |
| Skeena-Queen Charlotte | 3 |
| Sointula | 0 |
| Squamish Lillooet | 11 |
| Strathcona | 9 |
| Sunshine Coast | 8 |
| Thompson Nicola | 21 |
| **Total** | **442** |

## 4.2 Large Volume Collections

In addition to collection sites, the Program provided direct pick-up services for large volume generators (LVGs). LVGs are organizations/companies that generate large enough quantities of Program Products at their own site or at offsite locations that would over burden any one collection site. The Program provided this service free of charge for specified minimum quantities.

The following Program Products are covered under this service:
- Whole lamps
- Drums of pre-crushed lamps
- PCB containing ballasts

## 4.3 Collection Events

The Program also partners with local governments and not-for-profit organizations in holding collection events to provide temporary collection services for Program Products. Table 8 lists the dates and locations of the 16 collection events in 2016 that the Program participated in.

Table 8: 2016 Collection Events

| Date | Location |
|---|---|
| 23-Apr-16 | Cache Creek |
| 14-May-16 | Revelstoke |
| 14-May-16 | District of Mission |
| 15-May-16 | Golden |
| 28-May-16 | Sparwood |
| 28-May-16 | Radium |
| 29-May-16 | Kimberley |
| 11-Jun-16 | Kamloops |
| 10-Sep-16 | Sicamous |
| 17-Sep-16 | Creston |

| Date | Location |
|------|----------|
| 18-Sep-16 | Castlegar |
| 24-Sep-16 | Golden |
| 24-Sep-16 | Salmon |
| 1-Oct-16 | Nakusp |
| 1-Oct-16 | Chilliwack |
| 15,16-Oct-16 | Township of Langley |

# 5    Product Environmental Impact Reduction, Reusability and Recyclability

Lighting product producers continue working to reduce the environmental impact of lighting products through innovative product design and technology. For example, new design has resulted in the development of smaller diameter fluorescent tubes now readily available in the marketplace and prevalent in new construction and renovations. These products can provide the same or more light with fewer material resources. The amount of mercury contained within fluorescent lights has also been decreasing. Through innovative technology, manufacturers have decreased the amount of mercury in fluorescent lamps by over 80% since 1990.

Life cycle management is also playing an important role in reducing the environmental impact of lighting products. For example, producers are focusing their attention on increasing product energy efficiency. This has resulted in a substantial increase in the lifespan of fluorescent lights in the last decade, reducing the cumulative environmental impact associated with these products.

The advancement of LED lighting technology is also having a significant impact on the lighting market as a whole.  Manufacturers are focusing most of their efforts in this area and no longer spending research energy on expanding the CFL product line. Acceptance of LED technologies is increasing as prices decrease.  In fact, the acceptance and adaptation to LED technology has been much more rapid and widespread than most industry experts would have forecasted three years ago. Due to the significantly longer lifespan of LED lights, there is a decrease in sales expected for other traditional lighting technologies, such as halogen, incandescent and fluorescent lights. The shift to more energy efficient and longer lasting lighting technology is clear.  This change will result in a positive environmental impact as fewer lights, including those that contain mercury, will require disposal.  These trends will only become visible to the Program as the market transitions to the new technology and these new technologies start reaching end-of-life.

## 5.1 GHG Emissions

The estimated greenhouse gas (GHG) impact of the recycling of lighting products was calculated using a GHG emission inventory tool developed specifically for LightRecycle by a third party based on nationally and internationally-recognized reference protocols and standards. Furthermore, due to limited available information from downstream processors and the numerous assumptions that had to be made to determine the GHG impact, the final GHG emission numbers are accurate to only one significant digit. The GHG emissions for 2016 were estimated based on these calculations, to be 5000 tonnes of equivalent carbon dioxide ($CO_2e$). This value is based on 4 tonnes of $CO_2e$ generated per tonne of material managed.

# 6 Pollution Prevention Hierarchy and Product / Component Management

The objective of the Program is to minimize the improper disposal of Program Product by providing an effective collection program and ensuring that the collected materials are either recycled or disposed of in an environmentally responsible manner. The Program strives to manage collected materials as high on the pollution prevention hierarchy[6] as possible, where economically feasible and viable. The application of the pollution prevention hierarchy and the management of each product varies by Program Product depending on options available and economic feasibility.

The Program maintains an established system for managing Program Products. After collection, Program Products are transported to the Program's primary processors. These processors include three for processing whole lamps, two for fixtures, one for crushed lamps and one for PCB containing ballasts. At the processors, Program Products are broken down into their respective component materials and either processed on site or sent to a downstream processor for further processing. Information about how material was managed by the Program's primary processors was based on information provided to PCA by the Program's primary processors.

Lamp processors are required to conform to the BC LightRecycle Lamp Processor Standard, which defines the minimum requirements to become an approved processor. The Standard sets out environmental, occupational health and safety, and material handling rules to ensure materials are handled appropriately.

**Lamps**
Whole lamps were processed and broken down into various components under a controlled environment. As reported by the Program's processors, the component parts were recycled or disposed of as follows:
- Metal was sent to various downstream metal sites for recovery and recycling.
- Glass was sent to various concrete manufacturing companies for use in concrete manufacturing or as an aggregate, and to a glass recycling company to become cullet.
- Phosphor powder and mercury were stabilized, then securely landfilled.

**Crushed Lamps**
Crushed lamps were sent to a smelter that operates a thermal treatment process for recycling. During the smelting process:
- Metal was converted into ferrous granules and glass was crushed, then used as a commodity in cement manufacturing.
- Phosphor powder and mercury were stabilized, then securely landfilled.

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[6] The pollution prevention hierarchy is explained on pages 12 and 13 of the BC Recycling Regulation Guide available here: http://www2.gov.bc.ca/assets/gov/environment/waste-management/recycling/recycle/recycle_reg_guide2012.pdf

**Residential Fixtures**

Residential fixtures contain materials similar to small appliances (e.g., metal, glass, plastics, etc.). As a result, the Program partnered with the Canadian Electrical Stewardship Association (CESA) stewardship program to collect residential fixtures along with small appliances and power tools at contracted collection sites that also serve as CESA depots. They were shipped to two independent processors where they were comingled with other electronics and broken down into their respective components.

**Commercial Fixtures and Non-PCB Ballasts**

Commercial fixtures and non-PCB ballasts were collected and managed outside the Program through the existing market-driven scrap metal recycling system. Given the value of the metal commodity, the Program assumes that the material is recycled, but some non-metal material would need to be disposed of. Since it is a market-driven system, the Program has no ability to verify or report on the volume and portion of the material recycled and or disposed of through this system.

**PCB Ballasts**

PCB ballasts were collected and managed as hazardous waste and incinerated at high temperature in a PCB licensed incinerator. PCBs are regulated from transportation to disposal by the BC Ministry of the Environment and equivalent agencies.

Table 9 provides a consolidated overview of the processing pathways and final disposition of materials derived from Program Products.

Table 9: Material Processing Pathways

| Material | Sub-Component | Processing Pathway | Final Disposition |
|---|---|---|---|
| Lamps (all technologies) | Phosphor Powder | Primary processor Sends phosphor powder containing mercury through transfer for stabilization and final disposition. | Phosphor powder was landfilled. |
| | Mercury | See discussion under Phosphor Powder above. | Mercury was landfilled. |
| | Metal | Primary processors sent all metals to various downstream metal recyclers. | Metals were sold as a commodity into the scrap metal market. |
| | Glass | Primary processors sent to various concrete manufacturers or glass recyclers. | Used as an aggregate in concrete or as cullet. |
| Crushed Lamps | Metal, and Glass | Primary processors managed all materials to final disposition. | Used as a commodity in the manufacturing of cement. |
| | Mercury and Phosphor Powder | Primary processor managed all materials to final disposition. | Phosphor powder and mercury were landfilled. |

| Material | Sub-Component | Processing Pathway | Final Disposition |
|---|---|---|---|
| Residential Fixtures | Ferrous Steel | Managed through the (CESA) collection and recycling system. | Consolidate/Shred/Sort/Process |
| | Plastics | | Sort/Separate/Grind/Shred/Extrude/Pelletize/Granulate |
| | Aluminum | | Consolidate/Shred |
| | Wire and Cables and String lights | | Sort/Smelt |
| | Copper | | Consolidate/Shred/Smelt |
| | Glass | | Wash and grind/Crush |
| | Circuit Boards | | Smelt |
| | Refuse | | Landfill |
| | Rechargeable and Non Rechargeable Batteries | | Consolidate |
| | Paper Based Materials | | Recycle |
| Commercial Fixtures and Non-PCB Ballasts | NA | Managed through the existing market driven scrap metal recycling system. | |
| PCB Ballasts | NA | Hazardous Waste Management Company sent to PCB licensed incinerator. | Incineration. |

# 7    Product Sold, Product Collected and Recovery Rate

## 7.1        Products Sold

In 2016, members of the BC LightRecycle Program reported 34,930,035 units sold of LightRecycle Program Products in BC. Table 10 shows the number of units reported sold by Product Category in 2016 Units Reported Sold by Product Category in 2016

Table 10: Units Reported Sold by Product Category in 2016

| Product Category | Units Reported Sold |
|---|---|
| 1. Fluorescent Tubes measuring ≤ 2 feet | 84,729 |
| 2. Fluorescent Tubes measuring > 2 feet and ≤ 4 feet | 2,953,077 |
| 3. Fluorescent Tubes measuring > 4 feet | 258,908 |
| 4. Compact Fluorescent Lights (CFL)/ Screw-In Induction Lamps | 3,214,489 |
| 5. Light Emitting Diodes (LED) | 7,226,167 |
| 6. High Intensity Discharge (HID) and Other | 504,588 |
| 7. Incandescent / Halogen | 10,430,236 |
| 8. Miniature Bulb Package | 525,094 |
| 9. Designated Small Fixtures/Decorative Light Strings | 4,790,326 |
| 10. Fixture Category A | 4,237,352 |
| 11. Fixture Category B | 115,135 |
| 12. Large Outdoor Fixtures | 33,396 |
| 13. Ballasts/Transformers (not integrated into lamps or fixtures) | 375,001 |
| **Total** | 34,859,868.00 |

## 7.2        Products Collected

In 2016, the BC LightRecycle Program collected approximately 6,412,871 units of lamps, 550 tonnes[7] of fixtures through residential collections, 37,223 kg[8] of PCB ballasts and 12,678 kg of crushed lamps.  Table 11 provides a summary of the collection data. Collection quantities for the different Program Products are based on annual reports and/or estimated based on quantities processed by the Program's

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[7] Due to the comingling of collections and processing and the complexity of the recycling system, it is not possible for the Program to be able to specifically identify the proportion of materials attributed to LightRecycle and the Program has limited ability to verify accuracy of the reported information to a precise degree of certainty.

[8] This weight includes the weight of the drum.

processors between January 1 and December 31, 2016, as reported by the Program's processors. The reported quantities may include Program Products received in the 2015 fiscal year but processed in the 2016 fiscal year and may exclude units collected in the 2016 fiscal year that were not processed as of December 31, 2016.

Table 11: Estimated Quantity of Products Collected in 2016

| Program Product | Estimated Quantity Collected |
|---|---|
| Whole Lamps | 6,260,826 units |
| Residential Fixtures | 550 tonnes |
| PCB Containing Ballasts | 36,014  kg |
| Crushed Lamps | 12,678 kg |

Table 12 presents a breakdown of the estimated number of units of each lamp Product Category collected by the Program in 2016. Targets for HID and other and residential fixtures in 2016 (132,862 units and 188-210 tonnes respectively) were exceeded.

Table 12: Whole Lamp Units Collected by Product Category

| Lamp Product Category | Units Collected |
|---|---|
| 1. Fluorescent Tubes (All sizes and shapes) [9] | 2,468,080 |
| 2. Compact Fluorescent Lights (CFL)/ Screw-In Induction Lamps | 1,127,552 |
| 3. Light Emitting Diodes (LED) | 43,020 |
| 4. High Intensity Discharge (HID) and Other [10] | 220,655 |
| 5. Incandescent / Halogen[11] | 2,401,519 |
| **Total Units Collected** | **6,260,826** |

Table 13 sets out the estimated number of lamp Program Product units collected by individual regional districts. The estimated quantities were calculated by multiplying an average of units per box type (see Table 14) by total boxes received by type based on the total boxes and lamps received and reported by the lamp Program processors.

Table 13: Estimated Units of Lamps Collected by Regional District in 2016

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[9] This number includes: 0-2', 2-4', 4-8', and U and O shaped tubes.

[10] This number includes: Sodium lamps, HPS lamps (High Pressure Sodium), Metal Halide lamps, Mercury Vapour lamps, Induction tubes, UVC lamps and tubes, and Neon and Poly-coated tubes. Neon and poly-coated tubes are reported from the processor in length of feet. The length is then divided by 4 and rounded to nearest whole number to obtain reported units.

[11] This number includes projector bulbs and miniature bulbs.

| Regional District | Estimate of Lamp Units |
|---|---|
| Alberni Clayoquot | 11,919 |
| Bulkley Nechako | 6,040 |
| Capital Regional District | 234,942 |
| Cariboo | 32,571 |
| Central Coast | - |
| Central Kootenay | 17,572 |
| Central Okanagan | 187,318 |
| Columbia Shuswap | 36,070 |
| Comox Valley | 30,192 |
| Cowichan Valley | 71,604 |
| East Kootenay | 23,899 |
| Fraser Fort George | 29,028 |
| Fraser Valley | 259,592 |
| Kitimat Stikine | 14,432 |
| Kootenay Boundary | 9,492 |
| Metro Vancouver | 2,603,009 |
| Mt. Waddington | 8,512 |
| Nanaimo Regional District | 139,620 |
| North Okanagan | 68,986 |
| Northern Rockies | 887 |
| Okanagan Similkameen | 30,881 |
| Peace River | 11,976 |
| Powell River Regional District | 15,876 |
| Skeena-Queen Charlotte | 3,094 |
| Squamish Lillooet | 42,990 |
| Strathcona | 10,562 |
| Sunshine Coast | 27,126 |
| Thompson Nicola | 89,875 |
| **Total** | **4,018,065** |

Table 14: Average Units per Box Type 2016

| Box Type | Average Units per box |
|---|---|
| Residential CFL and mixed bulbs | 168 |
| Residential four foot tubes | 26 |
| Residential eight foot tubes | 14 |
| Commercial CFL and mixed bulbs | 550 |

| | |
|---|---|
| Commercial four foot tubes-gaylord | 750 |
| Commercial four foot tubes-plywood | 300 |
| Commercial eight foot tubes | 35 |

Due to the variability in the number of Program units actually collected within a box, the total number of units by regional district only represents an estimate of collected volumes and does not necessarily reflect the actual number of units collected by regional district.

Commercial fixtures and non-PCB ballasts were collected and managed outside the program through the existing market driven scrap metal recycling system.

Table 15 provides a summary of the targets and the Program's performance. All 2016 collection targets were exceeded by the Program.

Table 15: Collection Rate Targets and Performance

| Collection Rate Targets | 2016 Target | 2016 Collections | Program's Performance |
|---|---|---|---|
| HID, UV, Neon lamps (Units) | 132,862 | 220,655 | N/A |
| Residential Fixtures (tonnes)[12] | 188 – 210 | 550 tonnes | N/A |

## 7.3 Capture Rates

The Program Plan sets capture rate targets for fluorescent tubes and CFLs rather than recovery rates. The capture rate compares the quantity of products collected in a year to the quantity of products estimated to be "available for collection" in that year.

The methodology used to determine the units "available for collection" for fluorescent tubes and CFLs (as provided in Table 16) applied the best available data as of 2012 when the Program Plan was developed and is subject to change.

Table 16: Capture Rates – Fluorescent Tubes and CFLs

| Product | Units Available to Collect | Units Collected | Capture Rate Target | Actual Capture Rate |
|---|---|---|---|---|
| Fluorescent Tubes | 5,850,715 | 2,468,080 | 34-62% | 42% |
| CFLs | 2,231,365 | 1,127,552 | 36-62% | 51% |

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[12] The residential fixtures target was converted and rounded from kgs to tonnes to match the data available from Program processors

# 8   Summary of Revenues and Expenditures

The Program is funded by members based on environmental handling fees (EHFs) applied to the sale of new program products in or into British Columbia. The fee may be passed on by the member to their customers, either as a visible fee or by incorporating the cost directly into the price of the product.

In 2016, all fees were used for Program purposes; directly funding the promotion, collection, transportation and recycling of collected products.  Table 17 provides a list of the EHF rates charged per unit for Program product categories in 2016.

Table 17: EHF Rate Schedule

| Product Category | Fee Category | EHF in 2016 |
|---|---|---|
| **Lamps** | 1. Fluorescent/Induction/UV Tubes measuring ≤ 2 feet | $0.20 |
| | 2. Fluorescent/Induction/UV Tubes measuring > 2 feet and ≤ 4 feet | $0.40 |
| | 3. Fluorescent/Induction/UV Tubes measuring > 4 feet | $0.80 |
| | 4. Compact Fluorescent Lights (CFL)/ Screw-In Induction Lamps | $0.15 |
| | 5. Light Emitting Diodes (LED) | $0.15 |
| | 6. High Intensity Discharge (HID) and Other | $1.10 |
| | 7. Incandescent / Halogen | $0.05 |
| | 8. Miniature Bulb Package | $0.10 |
| **Fixtures** | 9. Designated Small Fixtures / Decorative Light Strings | $0.15 |
| | 10. Fixture Category A | $0.15 |
| | 11. Fixture Category B | $0.15 |
| | 12. Large Outdoor Fixtures | $0.15 |
| **Ballasts** | 13. Ballasts/Transformers (not integrated into lamps or fixtures) | $0.15 |

# 9   Plan Performance

| 2016 Key Performance Targets | | | |
|---|---|---|---|
| Regulation, Part 2 section 8(2)(g) | | | |
| **2016 Priority Stewardship Plan Targets** | | **2016 Performance** | **Strategies for Improvement** |
| Capture Rate: Fluorescent Tubes | Target:  34-62% | 42% | N/A |
| Capture Rate: CFLs | Target:  36-62% | 51% | N/A |
| HID, UV, Neon lamps (Units) | 132,862 | 220,655 | N/A |
| Residential Fixtures (tonnes)[13] | 188 – 210 | 550 tonnes | N/A |
| Consumer Awareness | 55% (by end of 2017) | 49% (as of 2015) | The program is identifying key markets and developing strategies to target improvement for each market respectively. |
| 2016 Accessibility Targets: The program conducted an accessibility study in 2016 describing accessibility levels as of December 31, 2016. The study determined the program was accessible to 99.29% of the population for commercial lamps, 99.65% for residential lamps, 98.07% of the population for residential fixtures, and 95.89% of the population for commercial fixture and non PCB ballasts depots. | | | |
| Commercial Lamps | 95% | Target Exceeded | Yes |
| Residential Fixtures | 95% | Target Exceeded | Yes |
| Commercial Fixtures and Non- PCB Ballasts | 95% | Target Exceeded | Yes |

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[13] The residential fixtures target was converted and rounded from kgs to tonnes to match the data available from Program processors

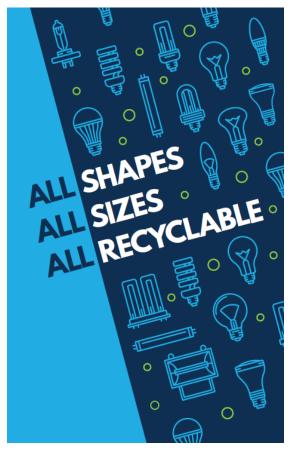# Appendix A - Advertising and Communication Materials

**Del Communications, Print Ad**



**Multiview Advertisement, Web Ad**

**LAMAR Transit Ad, Double Panel, Fall Campaign**

## BUILDEX Vancouver – Event set-up

# Appendix B - List of Contracted Collection Sites

| # | Depot Name | City | Regional District |
|---|---|---|---|
| 1. | 7 Mile Landfill and Recycling Center | Port McNeil | Mt. Waddington |
| 2. | Abbotsford Bottle Depot | Abbotsford | Fraser Valley |
| 3. | Abbotsford Community Services Recycling | Abbotsford | Fraser Valley |
| 4. | Abbotsford Transfer Station | Abbotsford | Fraser Valley |
| 5. | ABC Recycling - Burnaby | Burnaby | Metro Vancouver |
| 6. | ABC Recycling - Campbell River | Campbell River | Strathcona |
| 7. | ABC Recycling - Fort St. John | Fort St. John | Peace River |
| 8. | ABC Recycling - Kelowna | Kelowna | Central Okanagan |
| 9. | ABC Recycling - Prince George | Prince George | Fraser Fort George |
| 10. | ABC Recycling - Surrey | Surrey | Metro Vancouver |
| 11. | ABC Recycling - Terrace | Terrace | Kitimat Stikine |
| 12. | Action Steel Sales | Penticton | Okanagan Similkameen |
| 13. | Agassiz Bottle Depot | Agassiz | Fraser Valley |
| 14. | Aim Lighting & Electric | Delta | Metro Vancouver |
| 15. | Albertson's Home Center | Parksville | Nanaimo Regional District |
| 16. | Aldergrove Bottle Depot | Aldergrove | Metro Vancouver |
| 17. | Allied Salvage & Metals | Richmond | Metro Vancouver |
| 18. | Allied Scrap Metal Squamish | Squamish | Squamish Lillooet |
| 19. | Alpine Disposal & Recycling | Victoria | Capital Regional District |
| 20. | Applecross Home Hardware | Nanaimo | Nanaimo Regional District |
| 21. | Armstrong Bottle Depot | Armstrong | North Okanagan |
| 22. | Asset Investment Recovery | Victoria | Capital Regional District |
| 23. | Augusta Recyclers | Powell River | Powell River Regional District |
| 24. | Bay Street Castle | Victoria | Capital Regional District |
| 25. | Bella Bella Eco-Depot | Bella Bella | Central Coast |
| 26. | Bella Coola Recycling Depot | Hagensborg | Central Coast |
| 27. | Bill's Bottle Depot | Salmon Arm | Columbia Shuswap |
| 28. | Bings Creek Solid Waste | Duncan | Cowichan Valley |
| 29. | Blight's Home Hardware | Vancouver | Metro Vancouver |
| 30. | Border Town Recycling Group | Stewart | Kitimat Stikine |
| 31. | Bottle Depot - Glanford | Saanich | Capital Regional District |
| 32. | Bottle Depot - Queens | Victoria | Capital Regional District |
| 33. | Boucherie Bottle Depot & Self Storage | West Kelowna | Central Okanagan |
| 34. | Brentwood Auto & Metal Retailers | Saanichton | Capital Regional District |
| 35. | Bridgeview Return-It Bottle Depot | Surrey | Metro Vancouver |
| 36. | Bulkley Valley Bottle Depot | Smithers | Bulkley Nechako |
| 37. | Burgess Plumbing Heating & Electrical | Williams Lake | Cariboo |
| 38. | Burns Lake Home Hardware | Burns Lake | Bulkley Nechako |

| | | | |
|---|---|---|---|
| 39. | Burns Lake Recycling Return-it Depot | Burns Lake | Bulkley Nechako |
| 40. | Burnside Home Hardware | Victoria | Capital Regional District |
| 41. | Campbell Mountain Sanitary Landfill | Penticton | Okanagan Similkameen |
| 42. | Campbell River Waste Management Centre | Campbell River | Strathcona |
| 43. | Canadian Tire #351 Penticton | Penticton | Okanagan Similkameen |
| 44. | Canadian Tire #355 Kamloops | Kamloops | Thompson Nicola |
| 45. | Canadian Tire #362 Nanaimo | Nanaimo | Nanaimo Regional District |
| 46. | Canadian Tire #368 Victoria | Victoria | Capital Regional District |
| 47. | Canadian Tire #389 Vancouver Cambie | Vancouver | Metro Vancouver |
| 48. | Canadian Tire #433 Chilliwack | Chilliwack | Fraser Valley |
| 49. | Canadian Tire #434 Abbotsford | Abbotsford | Fraser Valley |
| 50. | Canadian Tire #437 Campbell River | Campbell River | Strathcona |
| 51. | Canadian Tire #438 Williams Lake | Williams Lake | Cariboo |
| 52. | Canadian Tire #443 Surrey | Surrey | Metro Vancouver |
| 53. | Canadian Tire #480 Powell River | Powell River | Powell River Regional District |
| 54. | Canadian Tire #487 Quesnel | Quesnel | Cariboo |
| 55. | Canadian Tire #488 Port Alberni | Port Alberni | Alberni Clayoquot |
| 56. | Canadian Tire #489 Surrey | Surrey | Metro Vancouver |
| 57. | Canadian Tire #601 North Vancouver | North Vancouver | Metro Vancouver |
| 58. | Canadian Tire #603 Burnaby | Burnaby | Metro Vancouver |
| 59. | Canadian Tire #604 Vancouver | Vancouver | Metro Vancouver |
| 60. | Canadian Tire #608 Coquitlam | Coquitlam | Metro Vancouver |
| 61. | Canadian Tire #609 Port Coquitlam | Port Coquitlam | Metro Vancouver |
| 62. | Canadian Tire #610 Richmond | Richmond | Metro Vancouver |
| 63. | Canadian Tire #636 Sechelt | Sechelt | Sunshine Coast |
| 64. | Canadian Tire #678 Surrey | Surrey | Metro Vancouver |
| 65. | Capital Salvage | Vancouver | Metro Vancouver |
| 66. | Carney's Waste Systems | Squamish | Squamish Lillooet |
| 67. | Ccon Steel | Abbotsford | Fraser Valley |
| 68. | Central Builders' Supply Prince George | Prince George | Fraser Fort George |
| 69. | Central Hardware | Enderby | North Okanagan |
| 70. | Central Saanich Home Hardware | Saanichton | Capital Regional District |
| 71. | Century Home Hardware | 100 Mile House | Cariboo |
| 72. | Chase Home Hardware Building Centre | Chase | Thompson Nicola |
| 73. | Chasers Bottle Depot | Vernon | North Okanagan |
| 74. | Chetwynd Home Hardware | Chetwynd | Peace River |
| 75. | Chetwynd Recycling & Bottle Depot | Chetwynd | Peace River |
| 76. | Chilliwack Bottle Depot | Chilliwack | Fraser Valley |
| 77. | Clearwater Eco Depot | Clearwater | Thompson Nicola |
| 78. | CM Recycling | Quesnel | Cariboo |
| 79. | Collingwood Bottle Exchange | Burnaby | Metro Vancouver |
| 80. | Columbia Bottle Depot - Dease | Kelowna | Central Okanagan |

| 81. | Columbia Bottle Depot - Kirschner | Kelowna | Central Okanagan |
|---|---|---|---|
| 82. | Columbia Bottle Depot - St. Paul | Kelowna | Central Okanagan |
| 83. | Columbia Recycle | Kimberly | East Kootenay |
| 84. | Comox Valley Auto + Metal Recyclers | Courtenay | Comox Valley |
| 85. | Comox Valley Waste Management Centre | Cumberland | Comox Valley |
| 86. | Cook St. Castle Building Centre | Coquitlam | Metro Vancouver |
| 87. | Coquitlam Return-It Depot | Coquitlam | Metro Vancouver |
| 88. | Cormorant Island recycling Facility | Alert Bay | Mt. Waddington |
| 89. | Cortes Island Waste Management Centre | Cortes Island | Strathcona |
| 90. | Courtenay Return-It Depot | Courtenay | Comox Valley |
| 91. | Cranbrook Bottle Depot | Cranbrook | East Kootenay |
| 92. | D.C. Campbell Recycling Dawson Creek | Dawson Creek | Peace River |
| 93. | Davis Trading & Supply | Vancouver | Metro Vancouver |
| 94. | Davie Village Home Hardware | Vancouver | Metro Vancouver |
| 95. | District of Oak Bay | Oak Bay | Capital Regional District |
| 96. | District of Tumbler Ridge | Tumbler Ridge | Peace River |
| 97. | DL's Recycling Centre | Saanichton | Capital Regional District |
| 98. | Do Your Part Recycling | Terrace | Kitimat Stikine |
| 99. | Dolly's Home Hardware | Qualicum Beach | Nanaimo Regional District |
| 100. | Duncan Home Hardware Building Centre | Duncan | Cowichan Valley |
| 101. | Dunlop's Home Hardware Building Centre | Port Hardy | Mt. Waddington |
| 102. | East Hastings Bottle Depot | Vancouver | Metro Vancouver |
| 103. | Eco-Depot Recycling Centre | Fort St. John | Peace River |
| 104. | Edmonds Recycling | Langley | Metro Vancouver |
| 105. | Edmonds Return-It Depot | Burnaby | Metro Vancouver |
| 106. | Enderby Return-it Recycling Depot | Enderby | North Okanagan |
| 107. | Ernie's Used Auto Parts | Castlegar | Central Kootenay |
| 108. | Fernie Bottle Depot | Fernie | East Kootenay |
| 109. | Fernie Home Building Center | Fernie | East Kootenay |
| 110. | Fisher Road Recycling | Cobble Hill | Cowichan Valley |
| 111. | Fleetwood Bottle Return Depot | Surrey | Metro Vancouver |
| 112. | Fraser Lake Bottle Depot | Fraser Lake | Bulkley Nechako |
| 113. | Fraser Valley Metal Exchange | Maple Ridge | Metro Vancouver |
| 114. | Fraser Valley Return-It | Langley | Metro Vancouver |
| 115. | Gabriola Island Recycling | Gabriola Island | Nanaimo Regional District |
| 116. | Galiano Island Recycling Resources | Galiano Island | Capital Regional District |
| 117. | Galiano Trading | Galiano Island | Capital Regional District |
| 118. | Gandy's Home Hardware | Vancouver | Metro Vancouver |
| 119. | General Grant's North Shore Bottle Depot | Kamloops | Thompson Nicola |
| 120. | General Grant's Sahali | Kamloops | Thompson Nicola |
| 121. | Gibsons Building Supplies | Gibsons | Sunshine Coast |
| 122. | Gibsons Recycling Depot | Gibsons | Sunshine Coast |
| 123. | Go Green Bottle Depot | Vancouver | Metro Vancouver |

| | | | |
|---|---|---|---|
| 124. | Gold Trail Recycling | 100 mile House | Cariboo |
| 125. | Grand Forks Bottle Depot | Grand Forks | Kootenay Boundary |
| 126. | Grand Forks Home Hardware | Grand Forks | Kootenay Boundary |
| 127. | Guildford Bottle Depot | Surrey | Metro Vancouver |
| 128. | Haney Bottle Depot | Maple Ridge | Metro Vancouver |
| 129. | Haney Builders Supplies | Maple Ridge | Metro Vancouver |
| 130. | Happy Stan's Recycling | Port Coquitlam | Metro Vancouver |
| 131. | Hartland Landfill Recycling Depot | Victoria | Capital Regional District |
| 132. | Hazelton Bottle Depot | New Hazelton | Kitimat Stikine |
| 133. | Hewer Home Hardware | Vancouver | Metro Vancouver |
| 134. | High Point Electric | Surrey | Metro Vancouver |
| 135. | Highway 4 Auto Salvage | Coombs | Bulkley Nechako |
| 136. | Hipperson Home Hardware | Nelson | Central Kootenay |
| 137. | Home Building Centre - Salmon Arm | Salmon Arm | Columbia Shuswap |
| 138. | Home Building Centre - Vernon | Vernon | North Okanagan |
| 139. | Home Hardware - Cranbrook | Cranbrook | East Kootenay |
| 140. | Home Hardware - Penticton | Penticton | Okanagan Similkameen |
| 141. | Home Hardware - Princeton | Princeton | Okanagan Similkameen |
| 142. | Home Hardware - Revelstoke | Revelstoke | Columbia Shuswap |
| 143. | Home Hardware - Sidney | Sidney | Capital Regional District |
| 144. | Home Hardware - Williams Lake | Williams Lake | Cariboo |
| 145. | Home Hardware - Courtenay | Courtenay | Comox Valley |
| 146. | Home Hardware Building Centre - Merritt | Merritt | Thompson Nicola |
| 147. | Hope Bottle Depot | Hope | Fraser Valley |
| 148. | Hornby Island Waste Management Centre | Hornby Island | Comox Valley |
| 149. | Houston Bottle Depot | Houston | Bulkley Nechako |
| 150. | Interior Freight and Bottle Depot | Vernon | North Okanagan |
| 151. | Invermere Home Hardware | Invermere | East Kootenay |
| 152. | Ironwood Bottle Depot | Richmond | Metro Vancouver |
| 153. | Island Return It - Campbell River | Campbell River | Strathcona |
| 154. | Island Return It - Duncan | Duncan | Cowichan Valley |
| 155. | Island Return It - Esquimalt | Esquimalt | Capital Regional District |
| 156. | Island Return It - Sidney | Sidney | Capital Regional District |
| 157. | Island Return It - South Cowichan | Cobble Hill | Cowichan Valley |
| 158. | Island Solid Waste Management - Port Clements | Port Clements | Skeena-Queen Charlotte |
| 159. | Island Solid Waste Management - Queen Charlotte | Queen Charlotte | Skeena-Queen Charlotte |
| 160. | J&C Bottle Depot | Penticton | Okanagan Similkameen |
| 161. | Junction Bottle Depot | Ladysmith | Cowichan Valley |
| 162. | Kamloops Home Hardware | Kamloops | Thompson Nicola |
| 163. | Kaslo Building Supplies | Kaslo | Central Kootenay |

| | | | |
|---|---|---|---|
| 164. | Keremeos Sanitary Landfill | Keremeos | Okanagan Similkameen |
| 165. | Kerrisdale Lumber | Vancouver | Metro Vancouver |
| 166. | Kitchener Bottle Depot | Burnaby | Metro Vancouver |
| 167. | Knox Mountain Metals | Kelowna | Central Okanagan |
| 168. | KUTE Kitimat Recycling Depot | Kitimat | Kitimat Stikine |
| 169. | Ladner Bottle Depot | Delta | Metro Vancouver |
| 170. | Ladner Village Hardware | Ladner | Metro Vancouver |
| 171. | Lake Cowichan Home Hardware | Lake Cowichan | Cowichan Valley |
| 172. | Langley Bottle Depot | Langley | Metro Vancouver |
| 173. | Lee's Bottle Depot | Burnaby | Metro Vancouver |
| 174. | Lillooet Landfill | Lillooet | Squamish Lillooet |
| 175. | Logan Lake Bottle Depot | Logan Lake | Thompson Nicola |
| 176. | London Drugs #02 | Vancouver | Metro Vancouver |
| 177. | London Drugs #03 | New Westminster | Metro Vancouver |
| 178. | London Drugs #04 | Vancouver | Metro Vancouver |
| 179. | London Drugs #05 | North Vancouver | Metro Vancouver |
| 180. | London Drugs #06 | Burnaby | Metro Vancouver |
| 181. | London Drugs #07 | Vancouver | Metro Vancouver |
| 182. | London Drugs #08 | Surrey | Metro Vancouver |
| 183. | London Drugs #09 | Surrey | Metro Vancouver |
| 184. | London Drugs #10 | Vancouver | Metro Vancouver |
| 185. | London Drugs #11 | Richmond | Metro Vancouver |
| 186. | London Drugs #12 | Kelowna | Central Okanagan |
| 187. | London Drugs #14 | Victoria | Capital Regional District |
| 188. | London Drugs #15 | Coquitlam | Metro Vancouver |
| 189. | London Drugs #16 | Abbotsford | Fraser Valley |
| 190. | London Drugs #17 | Delta | Metro Vancouver |
| 191. | London Drugs #18 | Langley | Metro Vancouver |
| 192. | London Drugs #19 | Vancouver | Metro Vancouver |
| 193. | London Drugs #25 | Burnaby | Metro Vancouver |
| 194. | London Drugs #28 | Vancouver | Metro Vancouver |
| 195. | London Drugs #29 | Victoria | Capital Regional District |
| 196. | London Drugs #35 | Kamloops | Thompson Nicola |
| 197. | London Drugs #36 | Nanaimo | Nanaimo Regional District |
| 198. | London Drugs #37 | Delta | Metro Vancouver |
| 199. | London Drugs #39 | Vernon | North Okanagan |
| 200. | London Drugs #41 | Chilliwack | Fraser Valley |
| 201. | London Drugs #42 | White Rock | Metro Vancouver |
| 202. | London Drugs #44 | West Vancouver | Metro Vancouver |
| 203. | London Drugs #46 | Victoria | Capital Regional District |
| 204. | London Drugs #47 | Maple Ridge | Metro Vancouver |
| 205. | London Drugs #50 | Vancouver | Metro Vancouver |
| 206. | London Drugs #51 | Prince George | Fraser Fort George |

| 207. | London Drugs #52 | Richmond | Metro Vancouver |
|------|------------------|----------|-----------------|
| 208. | London Drugs #53 | Vancouver | Metro Vancouver |
| 209. | London Drugs #54 | Victoria | Capital Regional District |
| 210. | London Drugs #55 | Mission | Fraser Valley |
| 211. | London Drugs #56 | Burnaby | Metro Vancouver |
| 212. | London Drugs #61 | Gibsons | Sunshine Coast |
| 213. | London Drugs #67 | Courtenay | Comox Valley |
| 214. | London Drugs #70 | Penticton | Okanagan Similkameen |
| 215. | London Drugs #71 | Burnaby | Metro Vancouver |
| 216. | London Drugs #72 | Nanaimo | Nanaimo Regional District |
| 217. | London Drugs #73 | Campbell River | Strathcona |
| 218. | London Drugs #74 | Vancouver | Metro Vancouver |
| 219. | London Drugs #75 | Surrey | Metro Vancouver |
| 220. | London Drugs #76 | Westbank | Central Okanagan |
| 221. | London Drugs #77 | Duncan | Cowichan Valley |
| 222. | London Drugs #78 | Vancouver | Metro Vancouver |
| 223. | London Drugs #80 | Squamish | Squamish Lillooet |
| 224. | London Drugs #81 | Surrey | Metro Vancouver |
| 225. | London Drugs #82 | Vancouver | Metro Vancouver |
| 226. | London Drugs #85 | Abbotsford | Fraser Valley |
| 227. | Lone Butte Supply | 100 Mile House | Cariboo |
| 228. | Lorne Street Bottle Depot | Kamloops | Thompson Nicola |
| 229. | Lougheed Return-It Depot | Coquitlam | Metro Vancouver |
| 230. | Louis Creek Eco-Depot | Louis Creek | Thompson Nicola |
| 231. | Lower Nicola Eco-Depot | Merritt | Thompson Nicola |
| 232. | Macleods True Value Hardware | Fort St. James | Bulkley Nechako |
| 233. | Mac's Traders | Langley | Metro Vancouver |
| 234. | Maple Ridge Bottle Depot | Maple Ridge | Metro Vancouver |
| 235. | Maple Ridge Lighting | Maple Ridge | Metro Vancouver |
| 236. | Mayne Island Building Center | Mayne Island | Capital Regional District |
| 237. | Meade Creek Recycling Drop-off Depot | Lake Cowichan | Cowichan Valley |
| 238. | Merritt Return-It Depot | Merritt | Thompson Nicola |
| 239. | Metrotown Bottle Return It Center | Burnaby | Metro Vancouver |
| 240. | Mission Flats Landfill | Kamloops | Thompson Nicola |
| 241. | Mission Recycling | Mission | Fraser Valley |
| 242. | Mission Recycling Centre & Bottle Depot | Mission | Fraser Valley |
| 243. | Mouatt's Home Hardware | Salt Spring Island | Capital Regional District |
| 244. | MountainHigh Lighting | Castlegar | Central Kootenay |
| 245. | Nak'azdli Recycling Depot | Fort St. James | Bulkley Nechako |
| 246. | Nanaimo Recycling Exchange Society | Nanaimo | Nanaimo Regional District |
| 247. | Nelson Home Hardware Building Centre | Nelson | Central Kootenay |
| 248. | Nelson Leafs Recycling Centre | Nelson | Central Kootenay |
| 249. | New & Nearly New | Kimberly | East Kootenay |

| | | | |
|---|---|---|---|
| 250. | New Life Furniture and Recycling | Creston | Central Kootenay |
| 251. | New Westminster Recycle Depot | New Westminster | Metro Vancouver |
| 252. | Newton Bottle Depot | Surrey | Metro Vancouver |
| 253. | North Shore Bottle Depot | North Vancouver | Metro Vancouver |
| 254. | North Vancouver Bottle & Return-It Depot | North Vancouver | Metro Vancouver |
| 255. | North Vancouver Transfer Station | North Vancouver | Metro Vancouver |
| 256. | Oak Bay Home Hardware | Victoria | Capital Regional District |
| 257. | OK Bottle Depot | Richmond | Metro Vancouver |
| 258. | Okanagan Falls Landfill | Okanagan Falls | Okanagan Similkameen |
| 259. | Oliver Sanitary Landfill | Oliver | Okanagan Similkameen |
| 260. | Osoyoos Bottle Depot | Osoyoos | Okanagan Similkameen |
| 261. | Osoyoos Home Hardware | Osoyoos | Okanagan Similkameen |
| 262. | Panorama Village Return-It Depot | Surrey | Metro Vancouver |
| 263. | Parksville Bottle & Recycling Depot | Parksville | Nanaimo Regional District |
| 264. | Parksville Home Building Centre | Parksville | Nanaimo Regional District |
| 265. | Parksville Home Hardware | Parksville | Nanaimo Regional District |
| 266. | Parsons Scrap Metals | Surrey | Metro Vancouver |
| 267. | Pearson's Home Hardware | North Vancouver | Metro Vancouver |
| 268. | Peerless Road Recycling | Ladysmith | Cowichan Valley |
| 269. | Pemberton Recycling Centre | Pemberton | Squamish Lillooet |
| 270. | Pender Island Home Building Centre | Pender Island | Capital Regional District |
| 271. | Pender Island Recycling Society | Pender Island | Capital Regional District |
| 272. | PG Recycling | Prince George | Fraser Fort George |
| 273. | Pitt Meadows Bottle & Return-It Depot | Pitt Meadows | Metro Vancouver |
| 274. | Planet Earth Recycling | Westbank | Central Okanagan |
| 275. | Port McNeil Recycling Depot | Port McNeil | Mt. Waddington |
| 276. | Port Moody One-Stop Market & Bottle Depot | Port Moody | Metro Vancouver |
| 277. | Powell Street Return-it Bottle Depot | Vancouver | Metro Vancouver |
| 278. | Powerhouse Recycled Auto & Truck Parts | Cumberland | Comox Valley |
| 279. | Puds Auto Wrecking & Towing | Osoyoos | Okanagan Similkameen |
| 280. | Quality Glass | Ashcroft | Thompson Nicola |
| 281. | Queensborough Landing Return-It | New Westminster | Metro Vancouver |
| 282. | R Home Supply Centre | Dawson Creek | Peace River |
| 283. | R&T Bottle Depot | Abbotsford | Fraser Valley |
| 284. | Refuse Resource Recovery | Victoria | Capital Regional District |
| 285. | Regional Recycling - Abbotsford | Abbotsford | Fraser Valley |
| 286. | Regional Recycling - Burnaby | Burnaby | Metro Vancouver |
| 287. | Regional Recycling - Cloverdale | Surrey | Metro Vancouver |
| 288. | Regional Recycling - Hayes | Nanaimo | Nanaimo Regional District |
| 289. | Regional Recycling – Old Victoria | Nanaimo | Nanaimo Regional District |
| 290. | Regional Recycling - Prince Rupert | Prince Rupert | Skeena-Queen Charlotte |

| | | | |
|---|---|---|---|
| 291. | Regional Recycling - Richmond | Richmond | Metro Vancouver |
| 292. | Regional Recycling - Vancouver | Vancouver | Metro Vancouver |
| 293. | Regional Recycling - Whistler | Whistler | Squamish Lillooet |
| 294. | Revelstoke Bottle Depot | Revelstoke | Columbia Shuswap |
| 295. | Richmond Recycling Depot | Richmond | Metro Vancouver |
| 296. | Ridge Meadows Recycling Society | Maple Ridge | Metro Vancouver |
| 297. | Rona Abbotsford #61220 | Abbotsford | Fraser Valley |
| 298. | Rona Alert Bay #1215 | Alert Bay | Mt. Waddington |
| 299. | Rona Burnaby #61270 | Burnaby | Metro Vancouver |
| 300. | Rona Chilliwack #61390 | Chilliwack | Fraser Valley |
| 301. | Rona Clearwater #06410 | Clearwater | Thompson Nicola |
| 302. | Rona Cobble Hill #61040 | Cobble Hill | Cowichan Valley |
| 303. | Rona Coquitlam #61260 | Coquitlam | Metro Vancouver |
| 304. | Rona Coquitlam #61290 | Coquitlam | Metro Vancouver |
| 305. | Rona Delta #12422 | Delta | Metro Vancouver |
| 306. | Rona Hope #61350 | Hope | Fraser Valley |
| 307. | Rona Kamloops #61310 | Kamloops | Thompson Nicola |
| 308. | Rona Kelowna #61700 | Kelowna | Central Okanagan |
| 309. | Rona Langley #61810 | Langley | Metro Vancouver |
| 310. | Rona Madeira Park #9551 & #61420 | Madeira Park | Sunshine Coast |
| 311. | Rona Maple Ridge #61190 | Maple Ridge | Metro Vancouver |
| 312. | Rona Nanaimo #61030 | Nanaimo | Nanaimo Regional District |
| 313. | Rona New Westminster #6158 | New Westminster | Metro Vancouver |
| 314. | Rona North Vancouver #61740 | North Vancouver | Metro Vancouver |
| 315. | Rona North Vancouver #8140 | North Vancouver | Metro Vancouver |
| 316. | Rona Pemberton Valley Hardware #08522 | Pemberton | Squamish Lillooet |
| 317. | Rona Penticton #61480 | Penticton | Okanagan Similkameen |
| 318. | Rona Port McNeil  #1195 | Port McNeil | Mt. Waddington |
| 319. | Rona Powell River #2791 | Powell River | Powell River Regional District |
| 320. | Rona Quesnel #61320 | Quesnel | Cariboo |
| 321. | Rona Richmond #8040 | Richmond | Metro Vancouver |
| 322. | Rona Squamish #61450 | Squamish | Squamish Lillooet |
| 323. | Rona Surrey #61240 | Surrey | Metro Vancouver |
| 324. | Rona Surrey #61720 | Surrey | Metro Vancouver |
| 325. | Rona Surrey-Newton #61250 | Surrey | Metro Vancouver |
| 326. | Rona Vancouver #61760 | Vancouver | Metro Vancouver |
| 327. | Rona Vanderhoof #11690 | Vanderhoof | Bulkley Nechako |
| 328. | Rona Vernon #61300 | Vernon | North Okanagan |
| 329. | Rona Victoria #61710 | Victoria | Capital Regional District |
| 330. | Rona Whistler #61460 | Whistler | Squamish Lillooet |
| 331. | Rona Williams Lake #61340 | Williams Lake | Cariboo |
| 332. | Ross Bay Home Hardware | Victoria | Capital Regional District |

| 333. | Rypac Metal Recycling | Surrey | Metro Vancouver |
|---|---|---|---|
| 334. | Salish Soils | Sechelt | Sunshine Coast |
| 335. | Salt Spring Island Recycling Depot | Salt Spring Island | Capital Regional District |
| 336. | Salvation Army - Brentwood Thrift Store | Brentwood | Capital Regional District |
| 337. | Salvation Army - E 12th Ave Thrift Store | Vancouver | Metro Vancouver |
| 338. | Salvation Army - Hillside Thrift Store | Victoria | Capital Regional District |
| 339. | Salvation Army - Langley Thrift Store | Langley | Metro Vancouver |
| 340. | Salvation Army - Mill Bay Thrift Store | Mill Bay | Cowichan Valley |
| 341. | Salvation Army - North Vancouver Thrift Store | North Vancouver | Metro Vancouver |
| 342. | Salvation Army - Port Coquitlam Thrift Store | Port Coquitlam | Metro Vancouver |
| 343. | Salvation Army - Prince George | Prince George | Fraser Fort George |
| 344. | Salvation Army - Sooke Thrift Store | Sooke | Capital Regional District |
| 345. | Salvation Army - View Royal Thrift Store | View Royal | Capital Regional District |
| 346. | Sandy's Auto Parts | Langford | Capital Regional District |
| 347. | Sapperton Return-It Depot | New Westminster | Metro Vancouver |
| 348. | Sardis Bottle Depot | Chilliwack | Fraser Valley |
| 349. | Schnitzer Steel Pacific - Campbell River | Duncan | Strathcona |
| 350. | Schnitzer Steel Pacific - Cassidy | Cassidy | Nanaimo Regional District |
| 351. | Schnitzer Steel Pacific - Duncan | Duncan | Cowichan Valley |
| 352. | Schnitzer Steel Pacific - Victoria | Victoria | Capital Regional District |
| 353. | Scotch Creek Bottle Depot | Scotch Creek | Columbia Shuswap |
| 354. | Scotch Creek Home Building Center | Scotch Creek | Columbia Shuswap |
| 355. | Scott Road Bottle Depot | Surrey | Metro Vancouver |
| 356. | Scrap King Autowrecking & Towing | Salmo | Central Kootenay |
| 357. | Sechelt P/U Recyclers | Sechelt | Sunshine Coast |
| 358. | Semiahmoo Bottle Depot | Surrey | Metro Vancouver |
| 359. | Shepherds Home Hardware | Armstrong | North Okanagan |
| 360. | Simpson Home Hardware | West Vancouver | Metro Vancouver |
| 361. | Skyway Distributors | Cranbrook | East Kootenay |
| 362. | Smithers Home Hardware | Smithers | Bulkley Nechako |
| 363. | Smithers Lumber Yard | Smithers | Bulkley Nechako |
| 364. | Smokey Creek Salvage | South Slocan | Central Kootenay |
| 365. | Sointula Recycling Depot | Sointula | Mt. Waddington |
| 366. | Sooke Home Hardware | Sooke | Capital Regional District |
| 367. | South Thompson Recycling | Pritchard | Thompson Nicola |
| 368. | South Vancouver Bottle Depot | Vancouver | Metro Vancouver |
| 369. | Southridge Building Supplies | Surrey | Metro Vancouver |
| 370. | Steveston Return-It Depot | Richmond | Metro Vancouver |
| 371. | Summerland Landfill | Summerland | Central Okanagan |
| 372. | Sun Coast Waste Eco Depot | Port Alberni | Alberni Clayoquot |
| 373. | Sun Dial Lighting Vernon | Vernon | North Okanagan |

| 374. | Sunset Coast Bottle Depot | Powell River | Powell River Regional District |
|---|---|---|---|
| 375. | Surrey Central Return-It | Surrey | Metro Vancouver |
| 376. | Surrey Transfer Station | Surrey | Metro Vancouver |
| 377. | T-2 Market Oliver | Oliver | Okanagan Similkameen |
| 378. | Terrace Bottle Depot | Terrace | Kitimat Stikine |
| 379. | The Battery Doctors | Kelowna | Central Okanagan |
| 380. | The Hut Bottle Depot | Princeton | Okanagan Similkameen |
| 381. | The Lampost | Kamloops | Thompson Nicola |
| 382. | The Re-Use-It Centre Whistler | Whistler | Squamish Lillooet |
| 383. | Thorsen Creek Recycling Depot | Bella Coola | Central Coast |
| 384. | Tofino Co-op Hardware | Tofino | Alberni Clayoquot |
| 385. | Trail Bay Hardware #51784 | Sechelt | Sunshine Coast |
| 386. | Trail Bottle Depot | Trail | Kootenay Boundary |
| 387. | Tri Port Recycling | Port Hardy | Mt. Waddington |
| 388. | Tsawwassen Home Building Centre | Delta | Metro Vancouver |
| 389. | Tsawwassen Return it Center - D&G | Delta | Metro Vancouver |
| 390. | Ucluelet Bottle Depot | Ucluelet | Alberni Clayoquot |
| 391. | Unadvertised | Chilliwack | Fraser Valley |
| 392. | Unadvertised | Kelowna | Central Okanagan |
| 393. | Unadvertised | Langford | Capital Regional District |
| 394. | Unadvertised | Maple Ridge | Metro Vancouver |
| 395. | Unadvertised | Nanaimo | Nanaimo Regional District |
| 396. | Unadvertised | Saanich | Capital Regional District |
| 397. | Unadvertised | Surrey | Metro Vancouver |
| 398. | Unadvertised | Vancouver | Metro Vancouver |
| 399. | Unadvertised | Victoria | Capital Regional District |
| 400. | Unadvertised | Delta | Metro Vancouver |
| 401. | Unadvertised | Victoria | Capital Regional District |
| 402. | Unadvertised | North Vancouver | Metro Vancouver |
| 403. | Unadvertised | Abbotsford | Fraser Valley |
| 404. | Unadvertised | Kelowna | Central Okanagan |
| 405. | Unadvertised | Burnaby | Metro Vancouver |
| 406. | Unadvertised | Delta | Metro Vancouver |
| 407. | Unadvertised | New Westminster | Metro Vancouver |
| 408. | Unadvertised | Burnaby | Metro Vancouver |
| 409. | Unadvertised | Coquitlam | Metro Vancouver |
| 410. | Unadvertised | Surrey | Metro Vancouver |
| 411. | Unadvertised | Victoria | Capital Regional District |
| 412. | Unadvertised | Langley | Metro Vancouver |
| 413. | Unadvertised | Coquitlam | Metro Vancouver |
| 414. | Unadvertised | Winlaw | Central Kootenay |
| 415. | Unadvertised | Burnaby | Metro Vancouver |
| 416. | Unadvertised | Burnaby | Metro Vancouver |

| 417. | Unadvertised | Dawson Creek | Peace River |
|------|--------------|--------------|-------------|
| 418. | Unadvertised | Fort St. John | Peace River |
| 419. | Unadvertised | Vancouver | Metro Vancouver |
| 420. | Unadvertised | Richmond | Metro Vancouver |
| 421. | Urban Impact Recycling | Richmond | Metro Vancouver |
| 422. | Valemount Recycling Center | Valemount | Fraser Fort George |
| 423. | Vancouver Central Return-It Depot | Vancouver | Metro Vancouver |
| 424. | Vancouver West Bottle Depot | Vancouver | Metro Vancouver |
| 425. | Venture Bottle Depot - Lumby | Lumby | North Okanagan |
| 426. | Venture Training  Vernon | Vernon | North Okanagan |
| 427. | Village of Gold River | Gold River | Strathcona |
| 428. | Village of New Denver | New Denver | Central Kootenay |
| 429. | Walnut Grove Bottle Depot | Langley | Metro Vancouver |
| 430. | Wastech Services | Coquitlam | Metro Vancouver |
| 431. | Wells Gray Home Hardware | Clearwater | Thompson Nicola |
| 432. | West Coast Metal Recycling | Langley | Metro Vancouver |
| 433. | Westbank Home Hardware | Westbank | Central Okanagan |
| 434. | Westcoast Hardware | Port Alberni | Alberni Clayoquot |
| 435. | Whistler Home Hardware | Whistler | Squamish Lillooet |
| 436. | White Rock Return It Depot | White Rock | Metro Vancouver |
| 437. | Wide Sky Disposal | Fort Nelson | Northern Rockies |
| 438. | Willow Point Bottle Depot | Campbell River | Strathcona |
| 439. | Willowbrook Recycling Depot | Langley | Metro Vancouver |
| 440. | Wilway Lumber | Abbotsford | Fraser Valley |
| 441. | Winfield Return It Centre | Lake Country | Central Okanagan |
| 442. | Woss Recycling Depot | Woss | Mt. Waddington |

**Appendix C - Audited Financial Statement**

PRODUCT CARE ASSOCIATION
BC LIGHTRECYCLE PROGRAM

STATEMENT OF REVENUES AND EXPENSES

31 DECEMBER 2016

# PRODUCT CARE ASSOCIATION
# BC LIGHTRECYCLE PROGRAM
**Statement of Revenues and Expenses**
For the year ended 31 December 2016

## Contents

**ROLFE, BENSON LLP**
CHARTERED PROFESSIONAL ACCOUNTANTS

# INDEPENDENT AUDITORS' REPORT

To:  BC Ministry of Environment,

As required the British Columbia Environmental Management Act, Recycling Regulation 8(2)(f)(ii), we have audited the Statement of Revenues and Expenses of the BC LightRecycle Program (the "Statement") as reported by Product Care Association for the year ended 31 December 2016 and a summary of significant accounting policies and other explanatory information.

## Management's Responsibility for the Statement

Management is responsible for the preparation of the Statement in accordance with Canadian accounting standards for not-for-profit organizations, and for such internal control as management determines is necessary to enable the preparation of the Statement that is free from material misstatement, whether due to fraud or error.

## Auditors' Responsibility

Our responsibility is to express an opinion on the Statement based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the Statement is free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the Statement. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the Statement, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation of the Statement in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the Statement.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

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## INDEPENDENT AUDITORS' REPORT - continued

### Opinion

In our opinion, the Statement presents fairly, in all material respects, the revenues and expenses of the BC LightRecycle Program as reported by Product Care Association for the year ended 31 December 2016 in accordance with Canadian accounting standards for not-for-profit organizations.

### Restriction on Distribution

This report is prepared on the direction of Product Care Association's management and the BC Ministry of Environment. As a result, the report may not be suitable for another purpose. Our report is intended solely for Product Care Association's management and the BC Ministry of Environment and should not be distributed to other parties.

*Rolfe, Benson LLP*

CHARTERED PROFESSIONAL ACCOUNTANTS

Vancouver, Canada
10 April 2017

**agn** INTERNATIONAL

## Statement of Revenues and Expenses
### For the year ended 31 December 2016

|                                                  |    | 2016      |
| ------------------------------------------------ | -- | --------- |
| **Revenues**                                     | $  | 5,667,698 |
|                                                  |    |           |
| **Program expenses**                             |    |           |
| Processing                                       |    | 2,836,014 |
| Collection                                       |    | 639,658   |
| Administration (Note 2(c))                       |    | 524,280   |
| Communications                                   |    | 360,999   |
| Transportation                                   |    | 312,431   |
|                                                  |    | 4,673,382 |
|                                                  |    |           |
| **Excess of revenues over expenses for the year**| $  | 994,316   |

The accompanying notes are an integral part of this statement of revenues and expenses.

**ROLFE, BENSON LLP**
CHARTERED PROFESSIONAL ACCOUNTANTS

PRODUCT CARE ASSOCIATION
BC LIGHTRECYCLE PROGRAM
Notes to the Statement of Revenues and Expenses
For the year ended 31 December 2016

1. **Basis of Presentation**

The Statement of Revenues and Expenses (the "Statement") only includes the revenues and expenses of the BC LightRecycle Program (the "Program"), a segment of the operations of Product Care Association (the "Association").

2. **Summary of Significant Accounting Policies**

The Statement is prepared in accordance with Canadian accounting standards for not-for-profit organizations. The significant policies are detailed as follows:

(a) Revenue Recognition

Environmental handling fees ("EHF") are received from members of the BC LightRecycle Program. The Association recognizes these fees as revenue when received or receivable if the amount to be received can be reasonably estimated and collection is reasonably assured. EHF revenues are recognized as individual members report and remit them as required by applicable provincial environmental legislation.

(b) Use of Estimates

The preparation of financial statements in accordance with Canadian accounting standards for not-for-profit organizations requires management to make estimates and assumptions that affect the reported amounts of revenues and expenses and disclosure of contingencies included in the statement. Accounts subject to significant estimates include revenue accruals, expense accruals and overhead allocation. Actual results could differ from those estimates.

(c) General and Administrative Expenses - Overhead Allocation

A portion of the total general and administrative expenses of the Association, net of expense recoveries, has been allocated to this Program. The allocation of general and administrative expenses to this Program is determined using the percentage of program specific operating expenses as compared to total operating expenses for all the Association's programs. Included in administration expense is $295,549 of overhead expense which has been allocated to the Program.

**ROLFE, BENSON LLP**
CHARTERED PROFESSIONAL ACCOUNTANTS

# Appendix D - 2016 Third Party Assurance Statement for Non-Financial Information

PRODUCT CARE ASSOCIATION OF CANADA
BC LAMPS AND LIGHTING
EQUIPMENT STEWARDSHIP PROGRAM

INDEPENDENT REASONABLE
ASSURANCE REPORT

31 DECEMBER 2016

**ROLFE, BENSON LLP** | CHARTERED PROFESSIONAL ACCOUNTANTS

1500 – 1090 West Georgia Street
Vancouver, B.C. V6E 3V7
Tel: 604-684-1101   Fax: 604-684-7937
E-mail: admin@rolfebenson.com

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# INDEPENDENT REASONABLE ASSURANCE REPORT

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To Directors of
Product Care Association of Canada,

We have been engaged by Product Care Association of Canada (the "Association") to perform a reasonable assurance engagement in respect of the following information (the "Selected Information"), detailed in Appendix 1, and also included within the Association's Annual Report for the BC Lamps and Lighting Equipment Stewardship ("LightRecycle") Program to the Ministry of Environment for the year ended 31 December 2016:

- Section 4.1 Collection Sites and Appendix B - the location of collection facilities, and any changes in the number and location of collection facilities from the previous report in accordance with Section 8(2)(b) of BC Regulation 449/2004 (the "Recycling Regulation");
- Section 6 Pollution Prevention Hierarchy and Product/Component Management - the description of how the recovered product was managed in accordance with the pollution prevention hierarchy under Section 8(2)(d) of the Recycling Regulation;
- Section 7.2 Products Collected - the description of how total amounts of the producer's product collected has been calculated in accordance with Section 8(2)(e) of the Recycling Regulation; and
- Section 9 Plan Performance – the description of performance for the year in relation to targets in the approved stewardship plan under Section 8(2)(b), (d) and (e) of the Recycling Regulation.

Our reasonable assurance engagement does not constitute a legal determination on the Association's compliance with Sections 8(2)(b), (d) and (e) of the Recycling Regulation.

**Responsibilities**

Preparation and fair presentation of the Selected Information in accordance with the evaluation criteria as listed in Appendix 1 is the responsibility of the Association's management. Management is also responsible for such internal control as management determines is necessary to enable the preparation of the Selected Information such that it is free from material misstatement. Furthermore management is responsible for preparation of suitable evaluation criteria in accordance with the Guide to Third Party Assurance Requirements for Non-Financial Information in Annual Reports – 2016 Reporting Year dated March 2017 as specified by the Director under section 8(2)(h) of the Recycling Regulation of the Province of British Columbia. The Ministry of Environment has granted the Association certain exemptions from these guidelines.

Our responsibility is to express an opinion on the Selected Information based on the procedures we have performed and the evidence we have obtained.

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## Evaluation Criteria

The evaluation criteria presented in Appendix 1 are an integral part of the Selected Information and address the relevance, completeness, reliability, neutrality and understandability of the Selected Information.

## Scope of the Assurance Procedures

We carried out our reasonable assurance engagement in accordance with the International Standard on Assurance Engagements 3000 (ISAE 3000) published by the International Federation of Accountants. This Standard requires that we comply with independence requirements and plan and perform the engagement to obtain reasonable assurance about whether the Selected Information is free of material misstatement.

A reasonable assurance engagement includes examining, on a test basis, evidence supporting the amounts and disclosures within the Selected Information. The procedures selected depend on our judgement, including the assessment of the risks of material misstatement in the Selected Information due to omissions, misrepresentations and errors. In making those risk assessments, we consider internal control relevant to the entity's preparation and fair presentation of the Selected Information in order to design assurance procedures that are appropriate in the circumstances, but not for the purpose of expressing a conclusion on the effectiveness of the entity's internal control. A reasonable assurance engagement also includes assessing the evaluation criteria used and significant estimates made by management, as well as evaluating the overall presentation of the Selected Information. The main elements of our work were:

- Gain an understanding of the data collection, monitoring and reporting processes through inquiries of management;
- Testing the processes, documents and records on a sample basis;
- Re-calculating quantitative data on a sample basis as it pertains to the Selected Information;
- Ensuring the Selected Information is presented consistently in the Annual Report.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.

## Inherent Limitations

Non-financial performance information is subject to more inherent limitations than financial information, given the characteristics of the Selected Information and the methods used for determining and calculating such information. Qualitative interpretations of relevance, materiality and the accuracy of data are subject to individual assumptions and judgments. Furthermore, the nature and methods used to determine such information, as well the evaluation criteria and the precision thereof, may change over time. It is important to read our report in the context of evaluation criteria.

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## Conclusion

In our opinion, the Selected Information within Product Care Association of Canada's Annual Report for the BC Lamps and Lighting Equipment Stewardship Program for the year ended 31 December 2016 presents fairly, in all material respects, in accordance with the evaluation criteria listed in Appendix 1:

- the location of collection facilities, and any changes in the number and location of collection facilities from the previous report in accordance with Section 8(2)(b) of the Recycling Regulation;
- the description of how the recovered product was managed in accordance with the pollution prevention hierarchy under Section 8(2)(d) of the Recycling Regulation;
- the description of how total amounts of the producer's product collected has been calculated in accordance with Section 8(2)(e) of the Recycling Regulation; and
- the description of performance for the year in relation to targets in the approved stewardship plan under Section 8(2)(b), (d) and (e) of the Recycling Regulation.

## Emphasis of Matter

Without qualifying our opinion, the following should be noted regarding the information in the Annual Report:

1. The Association does not present a recovery rate in the Annual Report. As such, the total amount of producer's products sold as presented on Table 10 - Units Reported Sold by Product Category in 2016 on page 17 of the Annual Report has not been included in the Selected Information in accordance with the Guide to Third Party Assurance Requirements for Non-Financial Information in Annual Reports - 2016 Reporting Year dated March 2017 as issued by the British Columbia Ministry of Environment.

2. As noted in the Responsibilities section of the audit report, the Association is required to prepare suitable evaluation criteria in accordance with the Guide to Third Party Assurance Requirements for Non-Financial Information in Annual Reports – 2016 Reporting Year dated March 2017. For the 2016 reporting year, the Ministry of Environment has granted the Association an exemption from adopting the definition of reuse, recycling, material and energy recovery, landfill, final disposition and primary service provider as defined in SPE-890-15 - A Guideline for Accountable Management of End-of-life Materials.

3. Section 9 Plan Performance of the Annual Report contains performance targets for capture rates which is not included in the scope of our reasonable assurance engagement for Section 8(2)(e) of the Recycling Regulation, and as such, this is not included in the Selected Information.

**Other Matter**

Our report has been prepared solely for the purposes of management's stewardship under the Recycling Regulation and is not intended to be and should not be used for any other purpose. Our duties in relation to this report are owed solely to the Association, and accordingly, we do not accept any responsibility for loss occasioned to any other party acting or refraining from acting based on this report.

*Rolfe, Benson LLP*

CHARTERED PROFESSIONAL ACCOUNTANTS

Vancouver, Canada
28 June 2017

**agn** INTERNATIONAL

Appendix 1

**Evaluation Criteria**

**Collection facilities**

| Specific disclosures in the annual stewardship report for which evaluation criteria were developed | |
| --- | --- |
| **Disclosure per Annual Report** | **Reference** |
| "A collection site is a physical location where consumers can drop off Program Products. Collection sites can offer one or more collection services based on various factors. Services offered by collection sites are generally advertised to the public. In some cases, collection sites are not advertised where the location does not collect from the general public. LightRecycle enters into separate contracts with collection sites for each collection service offered and as a result, there is no one-to-one relationship between the number of sites and the number of services offered." | Section 4.1 Collection Sites - on page 9 |
| "The Program's system included 442 contracted collection sites, with 6 sites added in 2016 and 3 sites removed, representing a net increase of 3 sites from 2015."<br><br>"This location (unadvertised, Richmond) actually opened in 2012, but was not listed until 2016."<br><br>"Technically closed in 2015, but site (Norbert Salvage, Bridal Falls) only reported in 2016." | Section 4.1 Collection Sites - on page 9 and footnotes 3 and 4 on page 10 and Appendix B - List of Contracted Collection Sites on pages 26-36 |

The following evaluation criteria were applied to the assessment of the location of collection facilities, and any changes in the number and location of collection facilities from the previous report in accordance with Section 8(2)(b) of the Recycling Regulation:

- "Collection facilities" are depots that have a signed contract with the Association for the collection of program materials during the reporting period: 1 January – 31 December 2016, a physical location that is available to collect program materials, and the staff of the facility has an adequate understanding of the program.
- The Association maintains a listing of all collection facilities for the program, including the location of the collection facility, the total of which agrees to the number of collection facilities as disclosed in the Annual Report.
- Large volume generators (LVG's) and collection events are excluded from the number of collection facilities.
- The change in number of collection facilities is calculated by comparing the current number of collection facilities, a sum of all the collection facilities that have a signed contract within a given reporting year and those that closed within the same reporting year, to the number of collection facilities reported in the prior reporting year.

**ROLFE, BENSON LLP**
CHARTERED PROFESSIONAL ACCOUNTANTS

**Pollution Prevention Hierarchy**

| Specific disclosures in the annual stewardship report for which evaluation criteria were developed | |
|---|---|
| **Disclosure per Annual Report** | **Reference** |
| "After collection, Program Products are transported to the Program's primary processors. These processors include three for processing whole lamps, two for fixtures, one for crushed lamps and one for PCB containing ballasts. At the processors, Program Products are broken down into their respective component materials and either processed on site or sent to a downstream processor for further processing. Information about how material was managed by the Program's primary processors was based on information provided to PCA by the Program's primary processors." | Section 6 Pollution Prevention Hierarchy and Product/Component Management - on page 14 |
| **Material: Lamps** <br>Sub-Component: Phosphor Powder<br>End fate: Phosphor powder was landfilled.<br><br>Sub-Component: Mercury<br>End fate: Mercury was landfilled.<br><br>Sub-Component: Metal<br>End fate: Metals were sold as a commodity into the scrap metal market.<br><br>Sub-Component: Glass<br>End fate: Used as an aggregate in concrete or as cullet. | Section 6 Pollution Prevention Hierarchy and Product/Component Management - Table 9: Material Processing Pathways on page 15 |
| **Material: Crushed Lamps**<br>Sub-Component: Metal and Glass<br>End fate: Used as a commodity in the manufacturing of cement.<br><br>Sub-Component: Mercury and Phosphor Powder<br>End fate: Landfilled | Section 6 Pollution Prevention Hierarchy and Product/Component Management - Table 9: Material Processing Pathways on page 15 |
| **Material: Residential Fixtures**<br>"Residential fixtures contain materials similar to small appliances (e.g., metal, glass, plastics, etc.). As a result, the Program partnered with the Canadian Electrical Stewardship Association (CESA) stewardship program to collect residential fixtures along with small appliances and power tools at contracted collection sites that also serve as CESA depots. They were shipped to two independent processors where they were comingled with other electronics and broken down into their respective components."<br><br>Sub-Component: Ferrous Steel | Section 6 Pollution Prevention Hierarchy and Product/Component Management on page 15<br><br><br><br><br><br><br><br><br><br><br><br><br><br>Section 6 Pollution Prevention Hierarchy and |

| | |
|---|---|
| End fate: Consolidate/Shred/Sort/Process<br><br>Sub-Component: Plastics<br>End fate:<br>Sort/Separate/Grind/Shred/Extrude/Pelletize/Granulate<br><br>Sub-Component: Aluminum<br>End fate: Consolidate/Shred<br><br>Sub-Component: Wire and Cables and String lights<br>End fate: Sort/Smelt<br><br>Sub-Component: Copper<br>End fate: Consolidate/Shred/Smelt<br><br>Sub-Component: Glass<br>End fate: Wash and grind/Crush<br><br>Sub-Component: Circuit Boards<br>End fate: Smelt<br><br>Sub-Component: Refuse<br>End fate: Landfill<br><br>Sub-Component: Rechargeable and Non Rechargeable Batteries<br>End fate: Consolidate<br><br>Sub-Component: Paper Based Materials<br>End fate: Recycle | Product/Component Management - Table 9: Material Processing Pathways on page 16 |
| **Material: Commercial Fixtures and Non-PCB Ballasts**<br>"Commercial fixtures and non-PCB ballasts were collected and managed outside the Program through the existing market driven scrap metal recycling system. Given the value of the metal commodity, the Program assumes that the material is recycled, but some non-metal material would need to be disposed of. Since it is a market driven system, the Program has no ability to verify or report on the volume and portion of the material recycled and or disposed of through this system." | Section 6 Pollution Prevention Hierarchy and Product/Component Management on page 15 |
| Sub-Component: NA<br>End fate: Managed through the existing scrap metal recycling system | Section 6 Pollution Prevention Hierarchy and Product/Component Management - Table 9: Material Processing Pathways on page 16 |
| **Material: PCB Ballasts**<br>"PCB ballasts were collected and managed as hazardous waste and incinerated at a high temperature in a PCB licensed incinerator. PCBs are regulated | Section 6 Pollution Prevention Hierarchy and Product/Component Management on page 15 |

| from transportation to disposal by the BC Ministry of the Environment and equivalent agencies." | |
|---|---|
| Sub-Component: NA<br>End fate: Incineration | Section 6 Pollution Prevention Hierarchy and Product/Component Management - Table 9: Material Processing Pathways on page 16 |

The following evaluation criteria were applied to the assessment of how the recovered product is managed in accordance with the pollution prevention hierarchy in accordance with Section 8(2)(d) of the Recycling Regulation:

- The Association maintains a listing of all products shipped to the primary processor which is supported by shipping documents or processor invoices.
- The primary processor provides an invoice indicating the amount of product processed and in some cases a certificate of processing/reclamation.
- The primary processor provides information on product management in an annual questionnaire or an annual report to the Association. Questionnaire responses were received from all processors used by the program (excluding the processors of residential fixtures).
- The primary processors for residential fixtures have been approved by the Recycler Qualification Office ("RQO") and the final disposition reported in the Annual Report agrees to the audit report issued by the RQO.
- Shipments of hazardous waste generated from the processing of lamps flow through a multi-step processing environment. Shipments to the primary processor are supported by a bill of lading that does not include information on the expected disposition of these products by the secondary processor. Shipments from the primary processor to the secondary processor are supported by the applicable government manifest which includes co-mingled materials from other sources and information on the expected disposition as completed by the consignee after receiving the shipment.
- Shipments of hazardous waste generated from crushed lamps and PCB ballasts are tracked on a hazardous waste manifest indicating the expected disposition.
- The Association performs periodic site inspections of the processors' facilities (excluding the processors of residential fixtures). Site inspection criteria have been developed to confirm the responses in the questionnaire provided by these primary processors. Site inspections are to be performed on a rotating 3 year schedule. Three of the four processors have been inspected by the Association during 2015 or 2016.


**Product collected**

| Specific disclosures in the annual stewardship report for which evaluation criteria were developed | |
|---|---|
| **Disclosure per Annual Report** | **Reference** |
| "Collection quantities for the different Program Products are based on annual reports and/or estimated based on quantities processed by the Program's processors between January 1 and December 31, 2016, as reported by the Program's processors. The reported quantities may include Program Products received in the 2015 fiscal year but processed in the 2016 fiscal year and may exclude units collected in the 2016 fiscal year that were not processed as of December 31, 2016." | Section 7.2 Products Collected on pages 17 and 18 |

| | |
|---|---|
| **Product collected**<br>Whole Lamps – 6,260,826 units<br><br>Residential Fixtures – 550 tonnes<br><br>PCB Containing Ballasts – 36,014 kg<br><br>Crushed Lamps – 12,678 kg<br><br>"Due to the comingling of collections and processing (residential fixtures) and the complexity of the recycling system, it is not possible for the Program to be able to specifically identify the proportion of materials attributed to LightRecycle and the Program has limited ability to verify accuracy of the reported information to a precise degree of certainty."<br><br>"This weight (PCB ballasts) includes the weight of the drum." | Section 7.2 Products Collected - Table 11: Estimated Quantity of Products Collected in 2016 on page 18 and footnotes 7 and 8 on page 17 |
| **Product Collected – Lamps**<br>Fluorescent Tubes (All sizes and shapes) – 2,468,080 units<br><br>Compact Fluorescent Lights (CFL)/ Screw-In Induction Lamps – 1,127,552 units<br><br>Light Emitting Diodes (LED) – 43,020 units<br><br>High Intensity Discharge (HID) and Other – 220,655 units<br><br>Incandescent / Halogen – 2,401,519 units<br><br>"This number (fluorescent tubes) includes: 0-2', 2-4', 4-8', and U and O shaped tubes."<br><br>"This number (high intensity discharge and other) includes: Sodium lamps, HPS lamps (High Pressure Sodium), Metal Halide lamps, Mercury Vapour lamps, Induction tubes, UVC lamps and tubes, and Neon and Poly-coated tubes. Neon and poly-coated tubes are reported from the processor in length of feet. The length is then divided by 4 and rounded to nearest whole number to obtain reported units."<br><br>"This number (incandescent/halogen) includes projector bulbs and miniature bulbs." | Section 7.2 Products Collected - Table 12: Whole Lamp Units Collected by Product Category on page 18 and footnotes 9, 10 and 11 on page 18 |

The following evaluation criteria were applied to the assessment of the description of how total amounts of the producer's product sold and collected has been calculated in accordance with Section 8(2)(e) of the Recycling Regulation:

**Product Collected**
- The Association maintains a listing of product collected by product category for the fiscal year which agrees to the amounts disclosed in the Annual Report.
- Each shipment of product collected is supported by documentation provided by the processor which indicates the total units collected and the type of program materials collected.
- Residential fixtures are co-mingled with other end of life electronic materials during collection. The processors perform periodic sampling activities to determine the estimated percentage of program materials belonging to the program. The weights of residential fixtures related to the program are calculated by multiplying the total weight of co-mingled materials by the estimated percentage of LightRecycle program materials.

**Performance targets**

| Specific disclosures in the annual stewardship report for which evaluation criteria were developed | |
| --- | --- |
| Disclosure per Annual Report | Reference |
| **Collection Rate Targets** | |
| Target: HID, UV, Neon lamps (units collected) | Section 9 Plan Performance on page 22 |
| 2016 Assertion – Target Exceeded | |
| Target: Residential Fixtures (tonnes collected) | Section 9 Plan Performance on page 22 |
| 2016 Assertion – Target Exceeded | |

The following evaluation criteria were applied to the assessment of the description of performance for the year in relation to targets in the approved stewardship plan under Section 8(2)(b), (d) and (e) of the Recycling Regulation:

- All stewardship plan targets relating to Section 8(2)(b), (d) and (e) of the Recycling Regulation have been identified and reported on by management in the Annual Report.
- The description of progress against targets to date is supported by records of progress maintained by the Association.