

Shaw Communications Inc.

BC Electronic Equipment – Stewardship Plan

April 2012



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Executive Summary

Shaw Communications Inc. (Shaw) has developed our BC Electronic Equipment Stewardship Plan in accordance with the requirements set out in the BC Recycling Regulation – Electronic and Electrical Product Category. Under the Regulations, Shaw, as a producer, must submit a stewardship plan that is approved by the BC Ministry of the Environment.

This stewardship plan outlines Shaw's designed program elements to plan for the collection, recycling, refurbishing or re-use of our products. Shaw has procedures in place to assist our customers in helping us adhere to these regulations. This plan will allow us to track our electronic waste management progress and report our results to the ministry. Consistent with industry guiding principles, at Shaw we are committed to increasing the life-cycle of our equipment or ensuring a thorough recovery process from both rental and retail customers and proper disposal.



Stakeholder Consultation

Shaw consulted internally with various senior staff responsible for various aspects of equipment management, sales and distribution. To obtain external feedback, public consultation was carried out in the following ways:

- The Stewardship Plan was reviewed by staff both within British Columbia and with staff from our National Distribution Centre in Calgary;
- Ongoing consultation with Ministry of Environment staff was implemented to ensure both the spirit and letter of the new regulations was fully reflected in this plan;
- A copy of this plan in draft form was posted on Shaw's external website in August 2011 to meet the 45 day public posting requirement;
- A publically advertised conference call with invitations to various interested stakeholders was held on September 22, 2011 to receive feedback.

Collection System

Shaw Communications Inc. (Shaw) includes Shaw Cable products, (cable/digital TV, internet, phone) Shaw Direct products, (Direct-to-Home Satellite TV) and Shaw for Business products, (internet and telephone). Shaw's Stewardship Plan includes the following program elements:

For British Columbia Shaw distributes consumer products from our National Distribution Centre (NDC) in Calgary, Alberta. The products are sent to our various regional operations in BC, and from there are either installed into a home or business by our staff or are taken home from one of our 19 retail locations.

Note: Shaw also distributes to third party retailers, who in turn sell direct to consumers. This Plan does not cover those activities.

Shaw customers generally either rent equipment from Shaw, or purchase outright. This Plan covers both situations.

The following comprises a list of product types in reference to the requirements provided for in the BC Recycling Regulation – Electronic and Electrical Product Category.

- Modems
- Routers
- Set-top boxes
- Personal Video Recorders (PVRs)

- Remotes
- Satellite Receivers
- Batteries used in these devices

The following represent Shaw's internal equipment that will be included in our recycling program:

- Modems
- Routers
- Set-top boxes
- Personal Video Recorders (PVRs)
- Batteries used in these devices
- Phones

Equipment no longer needed is returned to Shaw by several different methods:

- In most cases, customers call Shaw for a free service pick up for old equipment;
- Customers may drop equipment off at one of our 19 retail locations;
- Customers may call Shaw and receive a box with a pre-paid way bill to ship their old equipment directly to our NDC.

For Shaw Direct:

- When upgrading equipment, Shaw Direct mails the new equipment to the consumer, which includes a pre-paid way bill, and the customer may mail the old equipment directly to our NDC;
- Customers may exchange old equipment with new equipment during a service call;
- Customers who no longer require service may call Shaw Direct to receive an empty box with a pre-paid way bill and return old equipment directly to our NDC.

Shaw is able to track all equipment that leaves the NDC for BC and then is returned. Currently, for consumer leased equipment, company-led upgrades of equipment and customer initiated upgrades, over 75% of this equipment is received at the NDC or regional warehouses.

Shaw will further refine our tracking system to capture products that were sold to customers outright from Shaw. This will be in place for April 2012 and will allow Shaw to establish accurate baseline recovery rates for the first operational year of this plan.



Disposition of Returned Equipment

Equipment that can be refurbished within BC is done so and returned back into the distribution stream for customer installations. Equipment that is not locally reused is returned to the NDC in Calgary. There it is tested and if it can be repaired and reused it is then redeployed.

Equipment that is no longer adequate for Shaw customers but is still useable may be sold to other companies for further use. Equipment that cannot be sold is evaluated for components that can be reused.

Any remaining equipment is sent from the NDC to Westcan Recycling Ltd. for recycling. Westcan is a member in good standing of both the Canadian Association of Recycling Industries and the Institute of Scrap Recycling Industries.

Batteries

Shaw uses several types of batteries in consumer products. For batteries in our set-top boxes we have an arrangement with *Call2recycle* through the NDC. *Call2recycle* is a member of CHWMEG for independent third-party auditing of facilities. *Call2recycle* is also recognized by the Ontario Ministry of Environment to operate their collection program for collecting and recycling spent rechargeable batteries.

For batteries used in our phone modems, we recycle through the distribution company, Arris. For regular alkaline batteries for our remotes we use various recycle methods within BC, including collection from C Con Batteries. In the first year of this plan Shaw will develop a province-wide protocol for all batteries not returned to the NDC.

Internal Equipment

Shaw is committed to managing 100% of our internal equipment use according to the regulations. Once replaced, the old equipment is then refurbished by ERA and donated and distributed to local community organizations and charities. On Vancouver Island, old internal equipment is sent to Encorp.

Consumer Access

Consumers may access information about how to return their equipment by calling our call centres, our staff will provide the information needed. Consumers may also access our website at Shaw.ca to learn more about our green



initiatives. Consumers can speak with service/installation staff at a consumer's locality or at one of our 19 retail centres:

- North Vancouver
- Surrey
- Shaw Tower - Vancouver
- Whistler
- Victoria
- Nanaimo
- Kelowna
- Chilliwack
- Castlegar
- Grand Forks
- Prince George
- Cranbrook
- Saltspring Island
- Duncan
- Port Alberni
- Courtenay
- Campbell River
- Richmond Center
- Metrotown (Burnaby)

These 19 centres are collection sites and ensure over 80% of our customers are within one hour of a Shaw collection point. In addition, Shaw service technicians will also come to a customer's home for free equipment pick up, or customers may call Shaw toll-free to receive a pre-paid package to return their equipment.

Recovery Rate:

Shaw leases and sells equipment to our customers. Approximately two thirds of consumer equipment is leased. We currently recover 75% of our leased equipment. In the first year of this plan, Shaw will develop a tracking system to ensure that we can set a firm baseline for recovery rates for all equipment regardless of whether it is leased or sold to consumers. At the end of the first year we will consult on our newly identified targets, and then submit the targets and consultation results to the Ministry at the end of the first quarter of Year Two, October 1, 2013.

For proprietary reasons, Shaw will use aggregate weight of items as the means of measuring recovery rates. We are able to track each piece of equipment sent to BC from the NDC. We can identify each piece of equipment that is in use by a customer, each piece or equipment no longer in use and track each piece that is returned to the NDC.

Therefore we will define equipment available for recovery as that equipment no longer in use by the consumer but not returned to the NDC. Our recovery rate will be measured as the percentage of this out-of-service equipment recovered by Shaw.

Much of the equipment that falls under the regulations is often used for many years at a time. Routers, modems and digital set-top boxes can be in use for well over a decade. Therefore, the percentage of equipment that is deployed but no longer in use by a customer will be small relative to the amount of equipment in the distribution chain.

Shaw's goal will be an absolute minimum recovery rate of 75% by 2017, (this will be equipment no longer in use by a customer, and will not include the ongoing redeployment of refurbished equipment).

Consumer Awareness:

Shaw will use several methods for ensuring our customers are aware of the options available to them for returning equipment. These will include:

- Information on Shaw's external website;
- Call Centre staff will be able to advise customers calling in asking how they can return old equipment;
- Shaw will partner with the Recycling Council of BC's – Recycling Hotline which will give consumers who call information about to dispose of old Shaw equipment;
- Shaw technicians and installers will be aware of what information to provide customers on the disposal of old equipment, and will at all times accept old equipment from customers;
- Stickers on Shaw equipment will have information to assist the customer in ensuring equipment is returned to Shaw.

The majority of equipment is returned to Shaw in the normal course of customer interaction. Shaw has four regional call centres in BC, and most customers engage with Shaw through this medium. Shaw will explore additional means to increase customer awareness of the program options, including enhanced web site information, e-mails and inserts to customer's bills. Unlike many consumer products or services, when a customer no longer requires service, they generally must contact Shaw; this is the most consistent opportunity to advise each specific customer as to the best options for them to ensure their old equipment is properly returned.

In the first year of the plan, Shaw will conduct a consumer awareness study to determine how familiar our customers are with the opportunities available to recycle their old equipment with Shaw.

Based on these results we will amend our strategies as needed for continuous improvement in customer awareness. Our objectives beyond this will be:

2013	24%
2014	28%
2015	30%
2016	35%
2017	40%

Shaw will conduct annual assessments to measure the progress of our consumer awareness programs.

Management of Program Costs

As Shaw will collect all our equipment directly from customers, Shaw will not be adding any fees onto equipment sold or leased to customers. All costs for collections, refurbishment, reselling or recycling will be borne by Shaw.

Management of Environmental Impacts

Shaw's Stewardship Plan is guided by the following principles:

- Consistent with the Canadian Council of Ministers of the Environment Canada-Wide Principles for Electronics Product Stewardship (CCME Principles) including harmonization with other Canadian provinces (www.ccme.ca/assets/pdf/eps_principles_e.pdf);
- Consistent with British Columbia stewardship principles as defined in the Ministry of Environment Business Plan, the Recycling Regulation and the Recycling Regulation Guide;
- Recycle, refurbish and sell equipment to our customers in a responsible fashion to respect health and environmental concerns;
- All customers can access our program;
- Consumer information on recycling options will be made available to our customers;
- We will accept Shaw equipment that may have been sold to customers from third-party retailers at no cost to our customers;
- Shaw will liaise with the Electronic Stewardship Agency of BC (ESABC) to ensure they are aware of our program; also we will work to ensure our products are not double counted between Shaw retail and third party retailers.

In the first year of the Plan we will explore with Encorp options for



Shaw to pull our equipment from the recycle stream and repair and redeploy back into the Shaw system. We will accept all Shaw equipment regardless of whether it was sold by Shaw or a third party retailer.

- Shaw will engage with other electronics producers, primarily Telus and Bell, to monitor in the first year the volume of equipment returned to the wrong producer. We anticipate the volume to be very minimal, and will develop protocols for managing this equipment.

Pollution Prevention Hierarchy

Shaw works with our manufacturers and suppliers to ensure there are no toxic or hazardous materials in either the electronic equipment or the packaging. The majority of our suppliers are RoHS compliant.

Shaw has worked with our manufacturers and suppliers to reduce the amount of packaging used to ship the equipment to our NDC. We have also reduced the amount of packaging for each device that gets shipped to the consumer. In addition, we use recyclable packaging products wherever possible.

Shaw's triage of recovered equipment includes a multiple stage assessment of the reparability and reusability of both whole products and components. In BC, when a product is recovered it is assessed to determine reparability or reusability. If it is useable again, it is placed back within the local area's distribution stream. If it is not deemed locally repairable or reusable it is returned to the NDC in Calgary.

In Calgary, if the unit can be repaired it is done and then returned back in to the distribution stream. If it can be repaired, but is not deemed useable in Canada, we look to other opportunities to have the product reused in other jurisdictions. We use only Canadian resellers of our equipment, with their markets generally being in the US.

If a product cannot be repaired it is either harvested for any reusable components or returned to the manufacturer under warranty. The last stage is for any unusable portions to be recycled by Westcan in Alberta. Westcan manages the recycling of this equipment as follows:

- Modems: units removed from boxes, baled and shipped to shredder for downstream metal recovery;
- DCT: units removed from boxes, baled and shipped to shredder for downstream metal recovery;
- Cardboard; baled and shipped to end user;
- ACB – Aluminum Cable boxes: disassemble, segregate and repackage, Aluminum Cast shipped to Secondary Aluminum Smelter;

- USB cables: units removed from boxes, baled, sheared and granulated for copper recovery:
- Equipment racks (Steel): sheared and shipped to steel mills.

Westcan Recyclers has done a considerable amount of research into the consumers that receive the products for re-melt purposes once it has been processed at their facility in Calgary. They advise us they have complete comfort in their environmental and safety standards whether for domestic or export markets.

Westcan is a member of two recycling associations:

CARI – Canadian Association of Recycling Industries www.cari.ca
ISRI – Institute of Scrap Recycling Industries www.isri.org

Shaw will establish a system of measuring the fate of equipment post recovery at the NDC. We will establish measurements to report out on the percentage of equipment refurbished and redeployed, resold to a third party, broken down for components and percentage recycled. At present, Shaw does not send any Phase 4 products to a landfill from the NDC.

Product Life Cycle Management

Shaw does not manufacture the products we lease or sell to consumers. However we work with our suppliers and have significantly reduced the amount of packaging our products are shipped in. We have eliminated any toxins used in packaging ink.

In recent years Shaw's NDC has taken a number of steps to reduce the impact of its operations on the environment. These initiatives have targeted the minimizing and responsible management of waste as well as the use of a renewable power.

Key achievements to date:

Diverting Material from the Landfill

1,830,000lbs of material were diverted from the landfill between June '10 and May '11 including:

- 850,000lbs of paper, plastic and cardboard – a combination of office paper, warehouse packaging;
- 379,000lbs of wood from old or broken pallets which is ground down into mulch by a local company and reused as ground cover in local parks and gardens;
- 21,000lbs of steel and aluminum (including old/damaged connectors, amplifiers & tap housings, equipment racks/chassis, metal cabinets);

- 219,000lbs of electronic equipment including components from line equipment, modulators, settops and other network electronics;
- 36,000lbs of modem and equipment batteries;
- 59,000lbs of scrap coaxial cables;
- 266,000lbs of obsolete decommissioned equipment was resold to third parties.

Being Bullfrog Powered

NDC sources 100% green electrical power. Every month the NDC alone purchases 110 Megawatt hours of electricity which Bullfrog Power generates through low impact wind and hydro facilities and feeds back into the grid to offset the NDC's demand for conventionally generated electricity. This 1,320 Megawatt hours annual reduction in the NDC's net consumption of conventional electricity translates to a yearly decrease in CO2 emissions of 913 tonnes or just over 2,000,000lbs.

In addition to this use of a green power source, low voltage high efficiency lighting has been installed throughout the NDC warehouse and all indoor forklifts on site are electric as opposed to propane powered (they are therefore green powered).

Looking forward:

Localizing Equipment Quality Assurance

It is an objective of the Shaw Supply Chain to hand over to local teams in the Shaw network more of the equipment quality assurance activities that are a key part of delivering an exceptional customer experience. The aim of this ongoing decentralization is to eliminate any unnecessary transportation of equipment back and forth from a central quality assurance facility. It is also hoped that the increased localizing of such activities results in a reduced level of overall equipment inventory and associated wastes.

Dispute Resolution

For any complaints or disputes between consumers and Shaw that occur, disputes will be individually dealt with in a timely and respectful manner. Customers may call our call centres or send us an e-mail. If issues are not immediately resolved to the satisfaction of the consumer, they will be immediately elevated to management personnel for resolution.

Annual Reporting

Shaw will manage our program, and thus will provide annual reports that profile our performance. In a competitive sector such as ours, Shaw will report aggregate information to illustrate performance.

In our first year report we will confirm the methodology of how we established our baseline recovery rates. In subsequent years we will report on our year over year results to ensure we are meeting or exceeding our targets set out in the Stewardship Plan. In addition, we will report on the following:

- A description of educational materials and educational strategies used to inform our customers and the public;
- An updated list of our retail locations for customers to personally return equipment to Shaw, and any changes in this information from the previous report;
- Our efforts to reduce environmental impacts throughout the product life cycle and to increase reusability or recyclability at the end of the life cycle;
- A description of how the recovered products were managed in accordance with the pollution prevention hierarchy;
- Additional information as to our overall environmental stewardship efforts.



Appendix A: Performance Measurement Summary

Performance Measures	Targets 2013	Targets 2014	Targets 2015	Targets 2016	Targets 2017
Collection Rate	Gather baseline collection data Targets to be consulted on and submitted to MoE by October 1, 2013	X Kg collected	X Kg collected	X Kg collected	X Kg collected (representing minimum rate 75%)
			Conduct an unaccounted study to see what happens to unreturned products at end of life		
Consumer Awareness	24% of consumers aware of return channels and using them	28% of consumers aware of return channels and using them	30% aware of return channels and using them	35% aware of return channels and using them	40% aware of return channels and using them
Collection System and Accessibility					
Number of retail outlets for product return	19	Minimum 19	Minimum 19	Minimum 19	Minimum 19
Mail in Option	Entire province	Entire province	Entire province	Entire province	Entire province
Pollution Prevention Hierarchy					
Equipment Re-deployed from NDC	Establish complete baseline for all equipment				
Equipment Resold via Third Party	Establish complete baseline for all equipment				
Equipment Broken Down and/or Recycled	Establish complete baseline for all equipment				

Appendix B: Public Consultation Summary

Shaw conducted a province-wide teleconference with industry stakeholders, other stewardship entities, regional districts and other telecommunications companies. The following is a summary of the issues raised and Shaw's response.

Recovery rate:

Discussion arose to clarify what our recovery rates were actually measuring, was it end of life equipment or also equipment being returned that was able to be refurbished and redeployed.

It is in fact going to measure true end of life equipment that consumers can no longer use, or where consumers no longer require services from Shaw but had previously bought their equipment. We will develop other metrics to measure the percentage of equipment being refurbished and redeployed or resold.

Other Electronic Stewardship Programs:

As Shaw will manage the recovery of our products, we will work with ESABC and other recyclers to ensure that, collectively, we are accurately counting electronic equipment that is returned for recycling. We will take Shaw equipment back even it had been sold by a third party retailer. We will also work closely with municipal depots and Encorp should any significant volume of our equipment start ending up at their collection stations.

Third Party Audits:

Discussion regarding third party audits for non-financial information testing also occurred during consultations. It is an area that Shaw has committed to work with the Ministry of Environment to better understand its intent and to ensure we comply with the Regulations.

Appendix C: Shaw Stakeholders List

UBCM
Regional Districts in BC
Electronic Stewardship Association of BC
BC Ministry of Environment
Metro Vancouver
City of Vancouver
Recycling Council of BC
City of Kamloops
Encorp
Genesis Recycling Ltd.
Telus
Westcan
Call2Recycle
City of Kamloops
City of Richmond
Coast Waste Management Association
Genesis Recycling Ltd.
Ridge meadows Recycling Society
London Drugs – Retail Operations
Happy Stan's Recycling Services Ltd.
VisionQuest Environmental Strategies Corp.

Appendix D: Website Education

Webpage is under development pending completion of Stewardship Plan. It will be inserted here when on the SHAW.CA website.