Annual Report to the Director

2016

Submitted to:

Director
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Ministry of Environment
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Tire Stewardship BC

Annual Report to the Director

2016

Table of Contents

Tire Stewardship BC
2016 Report to Director, Waste Prevention

1. Executive Summary

Products within plan	Tires
Program website	www.tsbc.ca

Recycling Regulation Reference	Topic	TSBC – 2016 Summary Report

Part 2, section 8(2)(a)	Public Education Materials and Strategies	• TSBC continued and enhanced its educational campaign through sponsorships, social media and directly to the public at Tire Round-Up events held across the province. Key achievements included:
		  • Partnering with other BC stewards in the province-wide BC Recycles Ambassador Tour that included retailer site visits and attending community events;
		  • A stronger presence via social media – Facebook & Twitter; and
		  • Continuing the Community Grant Program to incent the use of BC rubber in qualified projects across the province (21 in 2016).

Part 2, section 8(2)(b)	Collection System and Facilities	• As in previous years, TSBC offered options to the public beyond the acceptance of their replaced tires through BC retailers when they purchase new ones. Tires not left with the retailer, known as "orphan" tires, were also captured through:
		  • Return to Retailer (R2R) program, through which 839 retailers currently accept up to 4 tires from each member of the public; and
		  • Tire Round-Up events held around the province (15 in 2016).
		• Scrap tires from other registered sites such as auto wreckers, small auto body shops and garages were also collected by haulers for the program.

Part 2, section 8(2)(c)	Product Environmental Impact Reduction, Reusability and Recyclability	• ***Reduction*** initiatives focused on educating the public on extending the life of tires to keep them out of the waste stream as long as possible. • ***Reusability*** of tires continued to be realized through retreading and "culling" of good used tires for re-use. • ***Recyclability*** enhancements remain challenging, given the durable structure of a tire, designed to ensure safety and a long road life.
Part 2, section 8(2)(d)	Pollution Prevention Hierarchy and Product / Component Management	• TSBC has always incented the 3R (recycling) options over 4R (energy recovery) options through the financial incentive rates offered for each. • In 2016, 3R uses represented 70% of the total tonnes processed.

Recycling Regulation Reference	Topic	TSBC – 2016 Summary Report
Part 2, section 8(2)(e) ——— Part 2, section 8(2)(e.1)	Product Sold and Collected and Recovery Rate	• The 2016 "Recovery Rate," applying the calculation recommended by the BC Recycling Regulation, was 76% across all regulated tire types. See Appendix B for a copy of the Audit Report. • The "Collection Rate," however, continues to be 100% and is more indicative of TSBC's true performance based on the tires actually available for collection, as explained in Section 7. ——— • See Appendix C for breakdown of collection by Regional District.
Part 2, section 8(2)(f)	Summary of Deposits, Refunds, Revenues and Expenses	• See Section 8 for the reference to TSBC's independently audited financial statements, which are included as Appendix A to this report. • Note that the Advance Disposal Fee rates have not increased since 2008.

Plan Performance – 2016

Performance Targets (as agreed with Ministry)	Performance	Remediation Strategies (if requirement or target not met)
1. Report total tonnes collected broken down by Regional District	Please see Appendix C for a breakdown of scrap tire collection volumes by tonne in each Regional District	N/A
2. a) 84% Recovery Rate (Total # Units Collected / Total # units sold)	76% Recovery Rate	a) Please see Section 7 for an explanation of the variance and Appendix B for a copy of the Audit Report.
b) Approximately 100% Collection Rate (Total # Units Collected / Total # Units Available for Collection)	Approximately 100% Collection Rate	b) N/A – no unmet demand for scrap tire collection.

Performance Targets (as agreed with Ministry)	Performance	Remediation Strategies (if requirement or target not met)
3. Breakdown of total processed (43,668 tonnes in 2016) a) 3R – 83%	a) 69.5% – 3R (rubber, steel and fibre recycled into products)	3R: TSBC continues to pursue 3R (TDP) options for the fibre extracted during the recycling process, the component of the tire causing the performance % to be below target. This is discussed more in Section 6
b) 4R – 13%	b) 29.0% – 4R (rubber, steel and fibre plus residual fibre from 3R process for energy recovery) Broken down as follows: • 16% fibre • 13% whole tires or shred	4R: It is important to note that 55% of the volume directed to TDF is fibre, a residual from the tire recycling process.
c) 5R (Residual) – 3.5%	c) 0.6% – 5R (landfill of residuals, such as fibre and waste from 3R process)	5R: This low percentage is due to a concerted effort by the processor to minimize waste and find 3R and 4R uses for the material.
d) 5R (Off Spec) – 0.5%	d) 0.9% – 5R (landfill of off spec regulated tires that cannot currently be processed into 3R or 4R)	5R: In 2016, only a very small portion of the program tires were still unable to be processed (376 tonnes). Processing has begun in 2017.
4. 1,700 collection sites – Collection site is defined as a retailer that in normal course of business will take back one scrap tire for every new tire sold	1,922 collection sites	Please see Section 4 for a detailed explanation and Appendix B for a copy of the Audit Report.
5. a) 500 Return to Retailer (R2R) locations b) 2 Return to Retailer (R2R) locations per Regional District	839 R2R locations All Regional Districts have at least 2 R2R locations	N/A

Performance Targets (as agreed with Ministry)	Performance	Remediation Strategies (if requirement or target not met)
6. 15 collection events	15 collection events – please see Table 1 for details	
7. Report on measures taken to reduce abandoned waste	Submitted - please see Appendix E	N/A
8. Less than 24 legitimate collection complaints from retailers and generators	No legitimate collection complaints received from the 3,742 registered retailer and scrap tire generator sites, substantiating the Collection Rate result of ~100% (please see Section 7)	N/A
9. Less than 12 consumer complaints	No complaints recorded	N/A
10. Under $5 / PTE* program cost *Passenger Tire Equivalent	$4.58 / PTE	N/A
11. To ensure program stability, no less than 6 months of operational cost in reserve	As of December 31, 2016, TSBC had approximately 8 months of current operational cost in reserve	N/A
12. At least one update to the GHG inventory report between 2013 and 2017	No report planned or conducted in 2016. Scheduled for completion in 2017.	N/A
13. Delivery of OTR Processing Options Report to Ministry by July 1, 2016	Submitted - please see Appendix D	N/A

2. Program Outline

TIRE STEWARDSHIP BC ASSOCIATION (TSBC) is a not-for-profit society responsible for operating BC's scrap tire recycling program in accordance with its Ministry of Environment approved Tire Stewardship Plan and the BC Recycling Regulation.

The society is governed by a Board comprised of seven directors representing the following member organizations:

- Retail Council of Canada;
- Western Canada Tire Dealers Association;
- Tire and Rubber Association of Canada; and
- New Car Dealers Association of BC.

TSBC is accountable to its stakeholders and the public for the collection, processing and environmentally sound disposal of all scrap tires designated under the BC Recycling Regulation.

TSBC collects an eco fee on the sale of every new tire from TSBC registered retailers in addition to tires on vehicles imported from the United States. The eco fee rates are set by TSBC and vary based on tire size and category. 100% of the fees collected are applied to the operation of the program, including transportation and processing of the tires, program administration, communication and education, community grants, as well as a reserve fund. In 2016, of the $21.7M collected in eco fees, $18.8M was paid out in Transportation, Processing and Manufacturing Incentives and over $400,000 awarded in grants for 21 projects in communities throughout BC.

TSBC operates a retail based collection system. Most consumers leave their scrap tires at the retailer location when purchasing new tires. These tires are collected on a regular basis by haulers that transport the tires to three processing sites in BC, two in Delta and one on Vancouver Island. Some motorists choose to take their scrap tires home for disposal at a later date. TSBC refers to these tires as "orphan" tires and offers the consumer two free disposal options: drop off at up to 15 collection events throughout the year and/or at 839 Return to Retailer (R2R) locations throughout BC that accept up to 4 car tires, clean and off-rim, from the public. TSBC publishes the collection events and R2R locations on its website. The R2R location information is also available through the Recycling Council of BC's Recyclepedia app and the BCRecycles online tool.

After tires are collected, the majority are recycled into products with the remainder used as a fuel supplement. The products created are coloured landscaping mulch and crumb rubber. The crumb rubber is processed into new products such as playground surfaces, tiles, arena flooring and agricultural mats. With the Manufacturing Incentive Program and landscaping mulch product, TSBC is pleased to report that the volume of finished products made from BC rubber ***in BC*** since 2010 has more than ***tripled***.

3. Public Education Materials and Strategies

TSBC focuses its stakeholder outreach on a broad education and communication campaign, raising consumer awareness on "where the money goes" and "where the tires go." In 2016, communication methods included the initiatives below.

Tire collection events

TSBC participated in and provided funding for 15 collection events in 2016. To reduce the significant costs associated with these events, TSBC once again partnered with the Artist Response Team (ART) to hold Round-Ups in conjunction with concerts held at the schools through the ART education program. In 2016, TSBC partnered with ART for 7 Round-Ups, with the schools responsible for all the event promotion through social media, school newsletters and posters, and TSBC providing the collection and a donation to the schools to fund environmental related initiatives. In total, over 6,600 tires were collected at the 15 Round-Ups held around the province.

TSBC uses Round-Ups as an opportunity to hand out tire gauges to promote proper tire maintenance which extends the life of a tire and saves fuel which reduces GHG. The public are also offered fridge magnets which promote the Return to Retailer program and let people know they can dispose of their orphan tires at an R2R location in their area rather than abandoning them in the urban or rural landscape or taking them to landfill, possibly for an additional charge.

Community Grant Program

The Community Grant Program provides matching funds up to a maximum of $30,000 per project to not-for-profit organizations, schools, municipalities, etc., that use BC recycled rubber. This program not only benefits the communities but is an excellent way to get the word out on "what happens to the tires" and "what happens to the money." The ability to showcase how British Columbians benefit when scrap tires are diverted from landfill and recycled into marketable products is invaluable. As one recipient noted *"Thank you very much for the funding provided to complete our playground with a fantastic poured-in-place rubber surface. We have received numerous kudos for not resorting to engineered wood fibre as would have been our only choice without your financial assistance".*

In 2016, grants were awarded to 21 applicants from communities throughout BC, which used 373,000 lbs of BC rubber, the equivalent of approximately 24,000 car tires, for playground and spray park surfaces, recreational flooring, pathways and outdoor fitness area projects. The Community Grant Program was featured in community papers and on social media. Applicants are required to have onsite signage to officially recognize TSBC as a contributor to these important projects and to advise the local MLA of the project and the grant.

In 2016, TSBC was pleased to have partnered with the Pacific Autism Family Network (PAFN) to help fund two playgrounds at the new state of the art facility in Richmond. PAFN is a centre of excellence and network of supports for individuals with Autism Spectrum Disorder and their families across the province. The opening of the centre was held on November 9, 2016 by Premier Christy Clark with

Minister Polak in attendance. The reaction of the children, parents and staff to the new playground confirmed this project was a win for everyone involved.

Ambassador Tour

In 2016, TSBC was pleased to once again be the primary partner with the BC Used Oil Program in the newly branded BC Recycles annual Ambassador Tour. A total of 10 stewards participated in 2016 making this the largest tour to date. BC Recycles is the one-stop-shop for consumers to locate where to take back their recycling and was created in response to a request from the Ministry to make it easy for BC consumers to recycle. From May to August, four communications students from SFU tour the province in branded vehicles visiting 130 BC communities. The tour has two focus areas: B2C and B2B.

B2C is the consumer facing component of the tour with the students hosting a booth at community events throughout the province. The primary goals are to create responsible recycling awareness; promote BC Recycles and the Recyclepedia app; engage consumers in social media; and to promote each steward and their respective mandates. In 2016, 23 events were attended with a reach to over 800,000 consumers.

The B2B component is the visits to program participants; in TSBC's case, these are the tire retailers. The goals are to build valuable relationships; collect data by way of a survey; and to create awareness of the tour and BC Recycles. In 2016, the students visited 950 TSBC retailers.

These initiatives saw an increase in visits to the BC Recycles website, with 80% being new visitors, and a spike in the BC Recycles app downloads during the period of the tour. In addition, there was a significant uptake in social media through Twitter, Facebook and Instagram with a 5-minute segment on Global News.

The program is an excellent way for TSBC to connect with retailers face to face and gives retailers the opportunity to provide feedback first hand, specifically on their level of satisfaction with scrap tire collection services. TSBC is pleased to report that the average satisfaction score was once again 8/10, a significant achievement given the high number of collection points across the province. A focus of the survey in 2016 was to gather information on non-program off the road tires, and specifically, if the retailers that sold these tire types would support adding these tires to the BC Regulation. Details on the results of this survey can be found in Appendix D.

Partnerships

With two other BC stewardship agencies, TSBC co-sponsored the production and delivery of the Voices of Nature & Rock the Salish Sea Tour concerts in 2016. This is an innovative program that combines music and ecological education and is designed to reach children in elementary school, their teachers and their families. The program focuses on environmental stewardship, sending a strong message that the key to protecting nature in our daily lives is by reducing and managing waste. As one school principal commented, *"Our community brought in more than 1,800 tires! The students were so proud of their efforts and that of the town, both in their stewardship success as well as to contribute to the fundraising of the school".* The program is developed and delivered by the Artist Response Team from Vancouver. Seven concerts in total were held in 2016, all of which had an associated TSBC Round-Up.

Website

The website is designed to provide information to two main stakeholder groups: registered participants and the public. For the public, the website includes information on:

- Drop off locations (R2R locations and tire collection events);
- Community Grant Program;
- TSBC videos;
- Tire recycled products; and
- Annual reports.

RCBC Hotline and Recyclepedia & BC Recycles

As in prior years, TSBC contributed funding to the Recycling Council of BC to operate the Recycling Hotline and its Recyclepedia Smart Phone App. TSBC also contributes to and supports the BC Recycles website, a Stewardship Agencies of BC initiative. These tools are excellent resources for the consumer, particularly for information on tire drop off locations, and align with the Ministry's desire to have a one-stop-shop for citizens of BC looking for information on where to recycle their waste.

4. Collection System and Facilities

As the tire program is a retailer based collection system, TSBC defines a collection facility as *"a TSBC registered retailer that, in the normal course of business, will accept one scrap tire for every new tire sold."* This definition reflects that not all tire retailers are in a position to take back a scrap tire for every new tire sold. An example is Home Depot, which may sell a trailer with new tires even though their primary business is not selling tires or equipment with new tires.

In 2016, there were 1,922 collection facilities compared to 1,886 in 2015. The change relates to a combination of various events, such as new retailer locations, closed locations, and changes in retailer businesses that resulted in the retailers no longer meeting the definition of a collection facility.

Unlike other product stewardship programs where consumers must choose between putting their end-of-life product into the waste stream or taking it to a collection depot for recycling, most motorists exchange their old tires for new ones at the time of purchase. These tires are collected from the retailers by haulers, some of which sort and cull the good used tires for reuse, with the remainder transported to TSBC registered processors. The majority of scrap tires generated annually are picked up at tire retailer locations.

TSBC also collects scrap tires from other registered sites that generate scrap tires as part of their normal business operations, such as auto wreckers and small auto body shops and garages.

An estimated 3% of the total annual generation collected results from motorists who choose to take their old tires home rather than leave them with the retailer for disposal. Ultimately, most of these orphan tires end up at a landfill where they are held for collection by haulers. Recognizing this as a cost and logistical problem for some landfills, TSBC continues to work on providing alternative disposal options such as the Return to Retailer (R2R) program and tire Round-Up events. The decrease in volume of tires going to landfill (6% in 2012) indicates that the measures TSBC has put in place as alternate disposal methods are working. As a result of a recruitment drive for R2Rs during the Ambassador Tours and during TSBC's Compliance Review visits, TSBC has seen an increase of the number of R2R locations from 449 in 2012 to 839 R2R locations at the end of 2016. R2Rs are registered retailers that have voluntarily agreed to accept up to 4 clean and off-rim car tires from the public. In addition to the TSBC website, the list of R2R locations is available on the BC Recycles website and the Recyclepedia app.

TSBC also hosts province-wide tire collection events where the public can drop off any tire size, on or off rim, at no charge. No tire is turned away at the event, including non-program, to eliminate the risk of the tire being abandoned or dumped near the event location. The 2016 events are shown in Table 1 below. While these types of events are successful in terms of diverting tires that might otherwise be abandoned in the rural or urban environments, they remain costly to host. In 2016, through its partnership with ART engaged schools, TSBC worked with ART to initiate local collection events as part of its fundraising activities, with TSBC providing a financial contribution linked directly to the success of their Round-Ups. In 2016, 7 of the 15 Round-Ups were ART related events and one event was specific to working with the Okanagan Regional District's annual West Nile Virus round up program. In total, over 6,600 tires were collected thanks to the efforts of all involved, which included the retailers willing to host these events and Western Rubber for providing the trailers and manpower to accept and load the tires.

Table 1 Collection Events – 2016

Date	Facility	City
April 16	London Drugs	Prince George
April 16	Canadian Tire	Nanaimo
April 23	Canadian Tire	Duncan
April 30	Canadian Tire	Powell River

Date	Facility	City
April 30	Regional District	Elkford
May 7	Kal Tire	Vancouver
May 21	Northshore Tire	North Vancouver
June 4	Esso Car Clinic	Victoria
June 11	Canadian Tire	Campbell River
June 18	Bella Tire	Trail
July 23	Kal Tire	Mackenzie
August 20	Kal Tire	Kamloops
August 27	Kal Tire	Cranbrook
September 17	Big O	Richmond
October 1	Regional District	Kelowna

5. Product Environmental Impact Reduction, Reusability and Recyclability

TSBC and producers continue to seek opportunities to reduce the environmental impacts associated with the life cycle of a tire, and to increase its reusability at the end of that cycle.

Reduction

Recycling tires at their end-of-life is important, but lengthening their life so that fewer are used is essential – this is an area where both the motorist and industry can play a part. The life of a tire is significantly increased with proper tire maintenance, i.e., keeping tire pressure at the correct level. Tire manufacturers are making progress with the introduction of innovative tire lines specifically designed and constructed for low rolling resistance. Motorists can also play their part by ensuring tires are properly inflated and maintained. TSBC continues to work in partnership with The Tire and Rubber Association of Canada in their annual Be Tire Smart campaign which focuses on educating the motoring public on the benefits of proper tire inflation and maintenance.

Reusability

Retreading of medium truck tires and Off-the-Road (OTR) tires is an ongoing commercially viable activity, and accounts for significant volumes of tires diverted from end-of-life management. TSBC's program incents this activity by **not** assessing an eco fee on retreaded tires (equivalent to $9 per medium truck tire). As retreaded tires are not program tires, their sales are not included in the diversion statistics. However, both medium truck and OTR tire retreading will continue to increase under the program as a result of the commercial strength of the market for this product.

The retreading of passenger and light truck tires is not currently recommended as these types of tires are not designed by the manufacturer to be retreaded. In addition, the culling by scrap tire haulers of worn tires not yet at their end-of-life has occurred since the program's inception in 1991. Most culled tires are exported and as such, never enter the recycling system in BC.

Recyclability

TSBC's ability to influence product design to increase recyclability is extremely limited. While an accepted and theoretically possible outcome in some industries, automotive tires are not simple consumer commodities. Instead, they are a critical element in the safe operation of motor vehicles. For this reason, the design and operating parameters of tires are mandated by federal regulation and international agreement.

The things that make a tire "safe" also tend to be those that make it difficult to recycle. That said, the international tire manufacturers are responding to the environmental challenges of tire manufacturing by doing such things as replacing high aromatic petroleum based oils with bio-based oils from corn, canola, oranges, etc. In addition, manufacturers are beginning to incorporate recycled rubber into selected tire types and are actively investing in new sources of natural rubber supply such as guayule and Russian Dandelion, which can be produced in North America.

6. Pollution Prevention Hierarchy and Product / Component Management

TSBC manages collected products in accordance with the "pollution prevention hierarchy", i.e., recycle (3R) before energy recovery (4R) before residual disposal (5R). TSBC incents the processing of scrap tires into higher value-added products by providing higher financial incentives to recycle a tire than to use a tire for energy recovery. Beyond primary processing, TSBC promotes the use of BC's recycled rubber in products manufactured in BC through a Manufacturing Incentive.

Table 2, which follows these descriptions, provides the 2016 results based on the various categories.

3R Tire Derived Product (TDP)

This category includes the rubber component that has been recycled and sold to market; it does not include rubber that is in inventory at the processor's site as a product for sale at a later date. The reporting category also includes steel and fibre, extracted in the recycling process, sold as a product to an end use market.

4R Tire Derived Fuel (TDF)

This category comprises not only the rubber but also the steel and fibre components of whole tires or shred, used for energy recovery. Volumes reported also include any fibre extracted in the recycling process that is sold to a kiln, which typically represents over 50% of the total volume of material diverted to TDF. As iron is required in the kiln feed and the ash produced contains elements required in the chemistry of clinker, the tires are not only a fuel source but a beneficial raw material for the production of clinker at the cement plant. In Europe, statistics for end of life tire disposal take into account the incorporation of the inorganic content of tires in cement manufacturing by reporting 25% of the weight of tires sent to cement kilns as TDP and not TDF.

5R Residuals

Residuals include waste material from the recycling process (sweepings) and any fibre or steel that cannot be sold to a market and is ultimately disposed of at landfill.

5R Off Spec

This category includes regulated tires that cannot be processed, currently Logger / Skidder Tires. These tires will become part of the recycling process in 2017 due to significant upgrades at the recycling plant, creating a recycling solution for these larger and more difficult to handle off-the-road tires.

Table 2 Product Hierarchy Results – 2016

Category	% by weight	Description
3R (Tire Derived Product)	69.5%	**Rubber:** recycled into crumb rubber and subsequently used to create a variety of products including: athletic tracks; synthetic turf fields; playgrounds; colourful, resilient flooring in recreational facilities; and flooring and mats for agricultural and industrial use. The tires were also recycled into coloured landscaping mulch, a replacement for bark mulch. **Steel:** sold to a steel recycler.
4R (Tire Derived Fuel)	29%	**Rubber, steel, fibre:** primarily used for energy recovery in a BC cement kiln with the steel replacing the iron required to make the cement and the ash contributing to the chemistry to of the clinker. Of the 29%, 55% is the fibre, a residual from the recycling process.
5R Residuals	0.6%	**Material landfilled:** waste component of the recycling process and fibre that could not be sold into market.
5R Off Spec	0.9%	**Material landfilled:** all Logger / Skidder Tires and any other program tires / material that could not be processed.

TSBC supports a mix of TDP and TDF end-use to ensure there is a market for all BC scrap tires and recycled tire products. This policy of allowing some tires to be used as a fuel supplement, in place since 1991, is economically and environmentally sound. It is a lower cost alternative, which helps TSBC contain eco fee levels, and all TDF usage has appropriate environmental permits.

TDF usage is market driven and varies from year to year. For example, TDF usage was at an all-time low in 2012 due to economic conditions in the cement industry combined with a record high demand for TDP. However, increased use of tires for energy recovery can occur when TDP markets decline, such as the economic downturn in 2008 to 2010. In recent years the volumes of tires directed to Lehigh and Catalyst has been consistent. The fluctuation in total volumes is related to the volume of fibre extracted from the recycling process directed to TDF, which varies based on the total volumes recycled and the product produced. Crumb will extract considerably more fibre than mulch. The only exception to note, as referenced in TSBC's 2015 Annual Report, was increased volumes to TDF as a result of tires being diverted to this end use during a 4-week shutdown at Western Rubber because of a significant plant upgrade. The diversion allowed tires to continue to flow during the shutdown, critical to the continuity of the program and its stakeholders.

With 55% of the TDF volume being fibre, a residual from the recycling process, the volume of whole tires and shred directed to TDF remains low within TSBC's target of 13%. TSBC continues to work with industry through its Research and Development program and current participants to find TDP solutions for the fibre. Research to date includes the use of recycled tire fibre in concrete applications with a pilot project scheduled for 2017 at The University of British Columbia. If successful, this application would consume, at minimum, all of BC's tire fibre creating a value-added product that in most provinces is considered waste and landfilled.

7. Product Sold and Collected and Recovery Rate

The measure of effectiveness of stewardship programs recommended by the BC Recycling Regulation is the "Recovery Rate", the actual number of scrap tires collected divided by the actual number of new tires sold. TSBC's results for 2016 are summarized in Table 3 below.

Table 3 Product Sold and Recovery Rates – 2016

Tire category	Units Sold	Units collected and delivered to a processor	Recovery Rate
Passenger & Light Truck	3,691,151	2,774,255	75%
Medium Truck	304,042	268,764	88%
Large Agricultural	15,106	10,444	69%
Logger / Skidder	3,466	1,794	52%
Total	**4,013,765**	**3,055,257**	**76%**

Annual Recovery Rates vary according to the number of new tires sold or scrapped in any year, both of which are sensitive to changes in BC's economy, weather and population, all of which are outside of TSBC's control. In addition, the timing of a sale of a new tire does not correspond directly with either the generation or the collection of a scrap tire. For example, the sale of a new car does not typically result in the generation of a scrap tire, and with new car sales being more than one third of annual tire sales, this can have a significant impact when comparing sales to collections. As in 2015, there was a concerted effort by new car dealers to offer for sale and include in the payments, 4 new winter tires with every purchase or lease. In addition, PLT tire sales (car tires) rose 9% from 2015, with sales at an all-time high since 2007 when the sales data was first captured.

Additional factors outside of TSBC's influence must be taken into account to explain why the Recovery Rate may never approach 100% in a growing economy. One factor is the export of partially worn tires not yet at their end-of-life to markets outside BC for reuse, never to return as scrap tires in BC. The more tires exported for reuse, the better the result, according to the Pollution Prevention Hierarchy (reduce, reuse, recycle, recover) – but the lower the Recovery Rate. Further, as the total number of vehicle registrations continue to increase with BC's population (up 1.25% from 2015) and with the greater use of winter tires (and enforcement by police agencies on certain highways), there is an ever-increasing number of tires "in use" or "in storage and ready for use" further reducing the number of scrap tires in BC. Vehicle registrations for BC are not yet available for 2016 but 2015 numbers show an increase of 3% over the prior year.

TSBC believes the Recovery Rate is only one of two measures available to assess the program's effectiveness. As such, TSBC also reports the annual "Collection Rate", the actual number of scrap tires collected / estimated number of scrap tires available for collection. The number of tires available for collection is explained below. TSBC believes both rates are required to properly describe its performance in this area.

The collection and transportation of scrap tires from source locations throughout BC to processors is well established, efficient and effective. Over TSBC's nine years of operation starting January 2007, the estimated Collection Rate has been 100%. This means that virtually 100% of the scrap tires available for collection at retailers or scrap tire generators (e.g., landfills and auto wreckers) were collected for recycling, energy recovery or reuse. There are no known stockpiles, and collection complaints by retailers, generators and consumers are extremely rare. This demonstrates the effectiveness of the collection system and TSBC's confidence in the estimated number of scrap tires available for collection.

8. Summary of Deposits, Refunds, Revenues and Expenditures

The TSBC program is funded by an Advance Disposal Fee (ADF), commonly referred to as an eco fee. It is a condition of registration with TSBC that retailers remit ADFs monthly for every new tire sold to cover the costs of the program, which are primarily the collection and processing of the scrap tires. Retailers may choose to pass the ADF on to the consumer.

The ADFs are set by TSBC and vary by tire type to adequately compensate for the higher costs of collecting and disposing of larger tires. The fees in 2016 for the different tire types, shown in Table 4 below, have not increased since 2008.

Table 4 Advance Disposal Fees – 2016

Tire category	ADF per tire
Passenger & Light Truck (PLT)	$5
Medium Truck (MT)	$9
Agricultural Drive	$15
Logger / Skidder	$35

Other OTR tires are excluded from the Recycling Regulation because until recently there were very limited recycling solutions for these larger tires. In 2016, TSBC conducted some preliminary analysis to better understand the volumes and recycling costs of the non-program OTRs with the intent to seek regulation with the support of the affected stakeholders. Further information can be found in Appendix D.

100% of fees collected are used for the operation of the scrap tire recycling program.

Program revenues and expenses are provided in TSBC's 2016 independently audited financial statements, included as Appendix A and posted with this Annual Report on TSBC's website.

9. Plan Performance

TSBC is currently operating under its 2013-2018 Stewardship Plan, approved by the Ministry on June 28, 2013. In this plan, TSBC set several new performance measures and targets, as reported in Table 5 below.

Table 5 Plan Performance – 2016

Performance Targets (as agreed with Ministry)	Performance	Remediation Strategies (if requirement or target not met)
1. Report total tonnes collected broken down by Regional District	Please see Appendix C for a breakdown of scrap tire collection volumes by tonne in each Regional District	N/A
2. a) 84% Recovery Rate (Total # Units Collected / Total # units sold) b) Approximately 100% Collection Rate (Total # Units Collected / Total # Units Available for Collection)	76% Recovery Rate Approximately 100% Collection Rate	c) Please see Section 7 for an explanation of the variance and Appendix B for a copy of the Audit Report. d) N/A – no unmet demand for scrap tire collection.
3. Breakdown of total processed (43,668 tonnes in 2016) e) 3R – 83% f) 4R – 13%	e) 69.5% – 3R (rubber, steel and fibre recycled into products) f) 29.0% – 4R (rubber, steel and fibre plus residual fibre from 3R process for energy recovery) Broken down as follows: • 16% fibre • 13% whole tires or shred	3R: TSBC continues to pursue 3R (TDP) options for the fibre extracted during the recycling process, the component of the tire causing the performance % to be below target. This is discussed more in Section 6 4R: It is important to note that 55% of the volume directed to TDF is fibre, a residual from the tire recycling process.

Performance Targets (as agreed with Ministry)	Performance	Remediation Strategies (if requirement or target not met)
g) 5R (Residual) – 3.5%	g) 0.6% – 5R (landfill of residuals, such as fibre and waste from 3R process)	5R: This low percentage is due to a concerted effort by the processor to minimize waste and find 3R and 4R uses for the material.
h) 5R (Off Spec) – 0.5%	h) 0.9% – 5R (landfill of off spec regulated tires that cannot currently be processed into 3R or 4R)	5R: In 2016, only a very small portion of the program tires were still unable to be processed (376 tonnes). Processing has begun in 2017.
4. 1,700 collection sites – Collection site is defined as a retailer that in normal course of business will take back one scrap tire for every new tire sold	1,922 collection sites	Please see Section 4 for a detailed explanation and Appendix B for a copy of the Audit Report.
5. a) 500 Return to Retailer (R2R) locations	839 R2R locations	N/A
b) 2 Return to Retailer (R2R) locations per Regional District	All Regional Districts have at least 2 R2R locations	
6. 15 collection events	15 collection events – please see Table 1 for details	
7. Report on measures taken to reduce abandoned waste	Submitted - please see Appendix E	N/A
8. Less than 24 legitimate collection complaints from retailers and generators	No legitimate collection complaints received from the 3,742 registered retailer and scrap tire generator sites, substantiating the Collection Rate result of ~100% (please see Section 7)	N/A

Performance Targets (as agreed with Ministry)	Performance	Remediation Strategies (if requirement or target not met)
9. Less than 12 consumer complaints	No complaints recorded	N/A
10. Under $5 / PTE* program cost *Passenger Tire Equivalent	$4.58 / PTE	N/A
11. To ensure program stability, no less than 6 months of operational cost in reserve	As of December 31, 2016, TSBC had approximately 8 months of current operational cost in reserve	N/A
12. At least one update to the GHG inventory report between 2013 and 2017	No report planned or conducted in 2016. Scheduled for completion in 2017.	N/A
13. Delivery of OTR Processing Options Report to Ministry by July 1, 2016	Submitted - please see Appendix D	N/A

Appendix A: 2016 Audited Financial Statements

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INDEPENDENT AUDITORS' REPORT

To the Members of
Tire Stewardship B.C. Association

Report on the Financial Statements

We have audited the accompanying financial statements of Tire Stewardship B.C. Association, which comprise the statement of financial position as at December 31, 2016 and the statements of operations, changes in net assets, and cash flows for the year then ended, and notes, comprising a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements 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 financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements 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 financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements 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 financial statements.

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

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of Tire Stewardship B.C. Association as at December 31, 2016 and its results of operations and its cash flows for the year then ended in accordance with Canadian accounting standards for not-for-profit organizations.

Report on Other Legal and Regulatory Requirements

As required by the British Columbia Society Act, we report that, in our opinion, these principles have been applied on a basis consistent with that of the preceding year.

Collins Barrow Victoria Ltd.

CHARTERED PROFESSIONAL ACCOUNTANTS

April 19, 2017
Victoria, B.C.

Tire Stewardship B.C. Association
Statement of Financial Position

As at December 31	2016 $	2015 $
ASSETS		
Current Assets		
Cash	**1,142,973**	1,653,261
Accounts receivable	**2,703,485**	2,035,408
	3,846,458	3,688,669
Investments (note 2)	**11,195,310**	10,641,495
Intangible Asset (note 3)	**122,283**	188,983
	15,164,051	14,519,147
LIABILITIES		
Current Liabilities		
Accounts payable and accrued liabilities (note 4)	**1,856,676**	2,602,767
NET ASSETS (NOTE 5)		
Unrestricted	-	-
Restricted		
Program Reserve	**13,307,375**	11,916,380
	15,164,051	14,519,147

COMMITMENTS (NOTE 6)

Signed by Directors on behalf of the Board:

Director

Director

Tire Stewardship B.C. Association
Statement of Operations

For the Year Ended December 31	2016 $	2015 $
REVENUE		
Advance Disposal Fees	**21,775,714**	20,184,134
Investment Income (note 2) -		
From Cash and Cash Equivalents	**4,617**	6,758
From Fixed Income Securities and Equities	**613,238**	161,407
Less Investment Management Fees	**(56,424)**	(60,254)
Total Revenue	**22,337,145**	20,292,045
EXPENSES		
Program Incentives	**18,801,969**	18,471,378
Administration		
Program Management	**1,276,232**	1,223,464
Communications and Education	**178,738**	281,674
Community Grant Program	**320,987**	386,206
Professional Fees	**207,563**	85,106
Board Expenses and Travel	**160,661**	170,169
Total Expenses	**20,946,150**	20,617,997
EXCESS (DEFICIENCY) OF REVENUE OVER EXPENSES	**1,390,995**	(325,952)

Tire Stewardship B.C. Association
Statement of Changes in Net Assets

For the Year Ended December 31

	Unrestricted	**Restricted**	**2016**	2015
		Program Reserve	**Total**	Total
	$	$	**$**	$
Net Assets - Beginning of year	-	11,916,380	**11,916,380**	12,242,332
Excess (Deficiency) of Revenue over Expenses	1,390,995	-	**1,390,995**	(325,952)
Transfers (note 5)	(1,390,995)	1,390,995	**-**	-
NET ASSETS - END OF YEAR (NOTE 5)	-	13,307,375	**13,307,375**	11,916,380

Tire Stewardship B.C. Association
Statement of Cash Flows

For the Year Ended December 31	**2016**	2015
	$	$
CASH PROVIDED FROM (USED FOR):		
OPERATING ACTIVITIES		
Excess (deficiency) of revenue over expenses	**1,390,995**	(325,952)
Items not affecting cash -		
Amortization of intangible asset	**66,700**	11,117
Realized loss (gain) on sale of investments	**(137,696)**	20,688
Unrealized loss (gain) on investments	**(160,441)**	240,128
Changes in non-cash working capital balances related to operations -		
Accounts receivable	**(668,077)**	(311,326)
Accounts payable and accrued liabilities	**(746,091)**	(350,614)
	(254,610)	(715,959)
INVESTING ACTIVITY		
Proceeds from sale of investments	**1,267,814**	4,507,028
Purchase of investments	**(1,523,492)**	(3,665,702)
Purchase of intangible asset	**-**	(200,100)
	(255,678)	641,226
DECREASE IN NET CASH	**(510,288)**	(74,733)
Net Cash - Beginning of year	**1,653,261**	1,727,994
NET CASH - END OF YEAR (NOTE 1)	**1,142,973**	1,653,261

Tire Stewardship B.C. Association

NOTES TO FINANCIAL STATEMENTS

For the Year Ended December 31, 2016

Tire Stewardship B.C. Association ("TSBC") is a Stewardship Agency registered in British Columbia and incorporated under the British Columbia Society Act as a not-for-profit organization on August 25, 2003. TSBC is exempt from income taxes pursuant to Section 149(1)(l) of the Income Tax Act, Canada. On January 1, 2007, TSBC assumed responsibility for the Ministry of Environment ("Ministry") FIRST Program and entered into an agreement to manage the industry stewardship program for scrap tires in British Columbia in accordance with a Ministry-approved Stewardship Plan. The 2013-2017 Stewardship Plan was approved by the Ministry on June 28, 2013.

The B.C. Recycling Regulation (449/2004) includes the requirement that all producers, as defined in the regulation and referred to in these notes as "tire retailers", prepare or be part of an approved stewardship plan. Presently, TSBC has the only approved tire stewardship program in the province and accordingly all tire retailers in B.C. must be registered.

1. SIGNIFICANT ACCOUNTING POLICIES

The financial statements have been prepared in accordance with Canadian accounting standards for not-for-profit organizations, applied within the framework of the significant accounting policies summarized below:

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 assets and liabilities and the disclosure of contingencies at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. As discussed in note 5, the incentive payments to the processors are payable only after the processing is complete and the product is sold. An inventory of processed materials not yet sold, and unprocessed scrap tires exists at the processors' plants. This inventory is estimated based on reports from the processors and actual inventories may vary significantly from this estimate. These estimates are reviewed periodically by management.

Revenue Recognition

TSBC follows the deferral method of accounting. Under this method, restricted revenue is recognized in the year in which the related expenses are incurred. Unrestricted revenue is recognized when received or receivable if the amount received can be reasonably estimated and collection is reasonably assured. Investment income is recognized when earned.

TSBC charges an advance disposal fee to tire retailers on the sale of new tires. This fee is variable based on the type of tires sold. Advance disposal fee revenues are collected by the tire retailers at the point of sale and reported to TSBC in the following month. TSBC accrues the advance disposal fee revenues and recognizes them as unrestricted revenues in the month in which they were generated as reported by the tire retailers.

Cash and Cash Equivalents

The cash presented on the statement of financial position consists of cash on hand and cash on deposit. The cash and cash equivalents component of investments consists of cash on deposit and investments in money market instruments.

1. SIGNIFICANT ACCOUNTING POLICIES (continued)

Intangible Asset

Intangible asset consists of software and is accounted for at cost. Amortization is based on its useful life using the straight-line method. The amortization method and the estimate of the useful life of the intangibles are reviewed annually. Intangibles are tested for impairment when events or changes in circumstances indicate that the carrying value may not be recoverable. Impairment of an intangible asset is recognized in an amount equal to the difference between the carrying value and the fair value of the related intangible asset. TSBC utilizes a direct valuation approach in determining the fair value of intangible assets.

Research and development

Research costs are expensed in the period incurred. Development costs are expensed in the period incurred unless, in the opinion of management, the deferral criteria set forth by the CPA Canada Handbook – Accounting are satisfied in all material respects, in which case development expenditures are capitalized and amortized over the estimated life of the related products.

Intangible Asset impairment

The carrying value of the intangible asset may be written down to recognize a reduction in its recoverable amount to its fair value. The impairment is measured by comparing the carrying value of the intangible asset to the fair value, based on the present value of undiscounted future cash flows expected to be generated from the intangible asset. An impairment charge is recorded in net income. Impairment charges are not reversed if there is a subsequent increase in its fair value.

Incentives Payable

Incentives payable to processors are due only after the processing is complete and the product is sold for an eligible end use (or in the case of tire-derived fuel uses, delivered to the facility consuming the fuel). Incentives payable to manufacturers are due on receipt of crumb rubber from the processor or on sale of the final manufactured product depending on the manufacturers' processes. Incentives payable as of the end of the fiscal year are included in accounts payable and accrued liabilities.

Financial Instruments

Measurement of financial instruments

TSBC initially measures its financial assets and financial liabilities at fair value, except for certain related party transactions that are measured at the carrying amount or exchange amount, as appropriate.

TSBC subsequently measures all its financial assets and financial liabilities at cost or amortized cost, except for investments that are quoted in an active market, which are measured at fair value. Changes in fair value of these financial instruments are recognized in excess (deficiency) of revenue over expenses.

Financial assets measured at amortized cost on a straight-line basis include cash and cash equivalents and accounts receivable.

Financial liabilities measured at amortized cost on a straight-line basis include accounts payable and accrued liabilities.

Financial assets measured at fair value include quoted fixed income securities and equities.

1. SIGNIFICANT ACCOUNTING POLICIES (continued)

Impairment
Financial assets measured at cost are tested for impairment when there are indicators of impairment. The amount of the write-down is recognized in excess (deficiency) of revenues over expenses. The previously recognized impairment loss may be reversed to the extent of the improvement, directly or by adjusting the allowance account, provided it is no greater than the amount that would have been reported at the date of the reversal had the impairment not been recognized previously. The amount of the reversal is recognized in excess (deficiency) of revenues over expenses.

Transaction costs
TSBC's transaction costs related to financial instruments that will be subsequently measured at fair value are recognized in excess (deficiency) of revenues over expenses in the period incurred. The carrying amount of the financial instruments that will not be subsequently measured at fair value is adjusted for transaction costs directly attributable to the origination, issuance or assumption of these instruments.

2. INVESTMENTS

	2016	2015
	$	$
Cash and cash equivalents, at amortized cost	442,657	397,776
Fixed income securities, measured at fair value	7,868,296	7,522,544
Equities, measured at fair value	2,884,357	2,721,175
Investments	**11,195,310**	10,641,495

Investment income is comprised of interest income of $291,027 (2015 – $399,852), dividends of $28,691 (2015 – $29,129), realized gain/ loss of $137,696 (2015 – loss of $20,688), unrealized gain of $160,441 (2015 – loss of $240,128), less investment management fees of $56,424 (2015 – $60,254).

3. INTANGIBLE ASSET

	2016	2015
	$	$
Software (net of amortization)	122,283	188,983

The software is being amortized on a straight-line basis over three years. The amount of amortization included in the statement of operations for this intangible asset was $66,700 (2015 – $11,117).

4. GOVERNMENT REMITTANCES
Accounts payable and accrued liabilities include Goods and Services Tax payable of $108,608 (2015 – $121,430).

5. NET ASSETS
TSBC's board of directors approved a transfer from the Unrestricted Reserve to the Program Reserve in the amount of $1,390,995.

5. NET ASSETS (continued)

Unrestricted Net Assets:

- Funds the operational expenses of TSBC, are not externally restricted and are available for general use.

Program Reserve:

- Ensures that funds are available to meet the potential incentives owing to processors for the whole tires and unsold product from previously delivered tires. TSBC has entered into agreements with processors to provide incentives to process and sell their products. The incentive is paid when the product is sold.
- Assists, in the event of a cessation of the Tire Stewardship Program, or the wind up of the Society, or other contingencies with the potential financial consequences that may arise if such events were to occur.
- Ensures funds are available to fund research and development activities and other initiatives needed to sustain a tire-recycling program in the province of British Columbia.

6. COMMITMENTS

As at December 31, 2016, whole tires and unsold product at registered processor facilities were estimated at 929,466 (2015 – 778,408) passenger tire equivalents ("PTE"). The incentive payments to processors could amount to a future liability of up to $2,785,606 (2015 – $2,342,438). TSBC has entered into an agreement for the provision of management and administrative services to June 28, 2018.

7. FINANCIAL INSTRUMENTS

TSBC's financial instruments consist of cash and cash equivalents, accounts receivable, investments (note 2), and accounts payable and accrued liabilities.

Risks and Concentrations

TSBC is exposed to various risks through its financial instruments, without being exposed to concentrations of risk. The following analysis provides a measure of the TSBC's risk exposure as at December 31, 2016.

Credit risk

Credit risk is the risk that one party to a financial instrument will cause a financial loss for the other party by failing to discharge an obligation. Credit risk arises from the potential that registered tire retailers who are required to remit advance disposal fees on their tire sales will fail to perform their respective obligation to remit these funds to TSBC. TSBC is exposed to credit risk from these registrants. However, TSBC has a large number of registered tire retailers, which minimizes the concentration of credit risk.

Liquidity risk

Liquidity risk is the risk that an entity will encounter difficulty in meeting obligations associated with financial liabilities. Unless otherwise noted, it is management's opinion that, under normal circumstances, TSBC is not exposed to significant liquidity risk arising from these financial instruments.

Market risk

Market risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risk comprises three types of risk: currency risk, interest rate risk and other price risk.

Currency risk

Currency risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates. Unless otherwise noted it is management's opinion that, under normal circumstances, TSBC is not exposed to significant currency risk arising from these financial instruments.

7. FINANCIAL INSTRUMENTS (continued)

Interest rate risk

Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates. TSBC is exposed to interest rate risk on its fixed and floating interest rate financial instruments. Fixed-interest instruments subject TSBC to a fair value risk, since fair value fluctuates inversely to changes in market interest rates. Floating rate instruments subject TSBC to related cash flow risk. Unless otherwise noted it is management's opinion that, under normal circumstances, TSBC is not exposed to significant interest rate risk arising from these financial instruments.

Other price risk

Other price risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices (other than those arising from interest rate risk or currency risk), whether those changes are caused by factors specific to the individual financial instrument or its issuer, or factors affecting all similar financial instruments traded in the market. TSBC is exposed to other price risk through its investments in fixed income securities and equities for which the values fluctuate with the quoted market price and interest rates.

Appendix B: 2016 Non-Financial Information Audit Report

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INDEPENDENT REASONABLE ASSURANCE REPORT

To the Members of Tire Stewardship B.C. Association

We have been engaged by the management of Tire Stewardship B.C. Association (the "Stewardship Agency") to perform a reasonable assurance engagement in respect of the following information, detailed within the Stewardship Agency's Annual Report to the Ministry of Environment and in Attachment 1, for the year ended December 31, 2016 (together the "Subject Matter"):

- 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 B.C. Regulation 449/2004 (the "Recycling Regulation");
- The description of how the recovered product was managed in accordance with the pollution prevention hierarchy in accordance with Section 8(2)(d) of the Recycling Regulation;
- The total amount of the producer's product sold and collected and the producer's recovery rate in accordance with Section 8(2)(e) of the Recycling Regulation; and,
- Performance for the year in relation to approved targets under Section 8(2)(b), (d) and (e) in accordance with Section 8(2)(g) of the Recycling Regulation.

The objective of this Report is to disclose how the Stewardship Agency's management has discharged its responsibility to report on the Subject Matter in accordance with Sections 8(2)(b), (d), (e) and (g) of the Recycling Regulation.

RESPONSIBILITIES

Management is responsible for the preparation and fair presentation of the Subject Matter in accordance with the evaluation criteria as listed in Attachment 1 and for such internal control as management determines is necessary to enable the preparation of the Subject Matter such that it is free from material misstatement, whether due to fraud or error.

Our responsibility in relation to the Subject Matter is to perform a reasonable assurance engagement and to express an opinion based on the work performed and evidence obtained. Our opinion does not constitute a legal determination on the Stewardship Agency's compliance with the Recycling Regulation.

EVALUATION CRITERIA

Management is responsible for the preparation of suitable evaluation criteria in accordance with the *Guide to Third Party Assurance 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. The evaluation criteria presented in Attachment 1 are an integral part of the Subject Matter and address the relevance, completeness, reliability, neutrality and understandability of the Subject Matter.

SCOPE OF THE ASSURANCE ENGAGEMENT

We carried out our reasonable assurance engagement in accordance with the International Standard on Assurance Engagements 3000 ("ISAE 3000"), Assurance Engagements other than Audits or Reviews of Historical Financial Information, published by the International Federation of Accountants.

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INDEPENDENT REASONABLE ASSURANCE REPORT (continued)

This standard requires that we comply with the independence and other ethical requirements of the International Ethics Standards Board for Accountants Code and that we apply International Standard on Quality Control 1. ISAE 3000 also requires that we plan and perform the engagement to obtain reasonable assurance about whether the Subject Matter is free from material misstatement. A reasonable assurance engagement includes examining, on a test basis, evidence supporting the amounts and disclosures within the Subject Matter. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement in the Subject Matter, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the entity's preparation and fair presentation of the Subject Matter in order to design assurance procedures that are appropriate in the circumstances, but not for purpose of expressing a conclusion on the effectiveness of the entity's internal control.

The main elements of our work were:

- Inquiring and discussing with the Stewardship Agency's management to obtain an understanding of the management and information systems, processes and relevant controls used to generate, aggregate and report the data in the Annual Report;
- Testing relevant controls, transactions and source records on a sample basis;
- Agreeing the number and changes in the number of collection facilities to supporting documentation;
- Inspecting source documentation for proper classification of collection facilities and other registered retailers on a test basis;
- Confirming the existence and location of collection facilities and other registered retailers on a test basis;
- Confirming the total amount of producer's product sold and collected during the year on a test basis;
- Agreeing the total amounts of the producer's product sold and collected and processor's product end-fate during the year to source records on a test basis;
- Confirming the total weight of each category of product end-fate during the year with processors on a test basis;
- Agreeing data used in calculations to source records on a test basis;
- Re-performing calculations on a test basis including the recovery rate and product end-fate percentage calculations;
- Inspecting a sample of the Stewardship Agency's compliance and education program review results to obtain assurance over self-reported data;
- Agreeing the applicable Annual Report target data to the approved stewardship plan to ensure completeness and consistency; and
- Reviewing the consistency of the Subject Matter with the related disclosures in the Annual Report.

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

INHERENT LIMITATIONS

Non-financial performance information is subject to more inherent limitations than financial information, given the characteristics of the Subject Matter 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 judgements. Furthermore, the nature and methods used to determine such information, as well as the evaluation criteria and the precision thereof, may change over time. Accordingly, it is important to read our report in the context of the evaluation criteria.

an independent member of BAKER TILLY INTERNATIONAL

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INDEPENDENT REASONABLE ASSURANCE REPORT (continued)

OPINION

In our opinion, the Subject Matter within the Stewardship Agency's Annual Report for the year ended December 31, 2016 presents fairly in accordance with the evaluation criteria, in all material respects:

- 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 total amounts of the producer's product sold and collected and the producer's recovery rate in accordance with Section 8(2)(e); and
- The performance for the year in relation to approved targets under Sections 8(2)(b), (d) and (e) in accordance with Section 8(2)(g) of the Recycling Regulation.

OTHER MATTERS

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 Stewardship Agency, and accordingly, we do not accept any responsibility for loss occasioned to any other party acting or refraining from acting based on this report.

Collins Barrow Victoria
CHARTERED PROFESSIONAL ACCOUNTANTS

Victoria, BC Canada
June 28, 2017

an independent member of BAKER TILLY INTERNATIONAL

Attachment 1
Tire Stewardship B.C. Association ("TSBC") Assurance / Evaluation Criteria
For Data From Reporting Year Ended December 31, 2016

Collection Facilities

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

Specific Disclosures in the annual stewardship report for which evaluation criteria were developed	
Disclosure per annual report	**Reference (Page # / Table #)**
Number and Location of Collection Facilities	Page 8, Section 4 and Page 17, Table 5
Change in Number and Location of Collection Facilities	Page 8, Section 4

Evaluation Criteria

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.

1. The number of collection facilities is measured by the number of registered retailers, as at year end, that will take back a scrap tire from the consumer at the time a new tire is sold (TSBC's fiscal year ends December 31st).
2. The location of collection facilities is included in the list of registered retailers that is provided on the TSBC website as at December 31, 2016**.**
3. The change in the number and location of collection facilities is based on direct comparison of the number of collection facilities on a provincial and regional district basis compared to the equivalent data for the preceding year.

Product Management (End of Fate)

Assessment of 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

Specific Disclosures in the annual stewardship report for which evaluation criteria were developed	
Disclosure per annual report	**Reference (Page # / Table #)**
3R Tire Derived Product	Page 12, Table 2 and Page 16, Table 5
4R Tire Derived Fuel	Page 12, Table 2 and Page 16, Table 5
5R Residuals	Page 12, Table 2 and Page 17, Table 5
5R Off Spec	Page 12, Table 2 and Page 17, Table 5

Evaluation Criteria

The following evaluation criteria were applied to the assessment of 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.

Attachment 1 (continued)
Tire Stewardship B.C. Association ("TSBC") Assurance / Evaluation Criteria
For Data From Reporting Year Ended December 31, 2016

TSBC manages products in accordance with the "Pollution Prevention Hierarchy", i.e., recycle ("3R"), before energy recovery ("4R"), before residual disposal ("5R"), and reports on volumes in each of the 3R, 4R and 5R categories.

1. **3R Tire Derived Product ("TDP")**
   This category includes the rubber, steel and fibre components that have been recycled and sold to market. It does not include rubber, steel or fibre that is in inventory at the processor's site for sale or disposal at a later date.

   The number of tonnes is recorded on Processing Incentive claims substantiated by Processor's sales invoices to customers.

2. **4R Tire Derived Fuel ("TDF")**
   This category comprises the rubber, steel and fibre components of whole tires and shred used for energy recovery, in addition to fibre extracted in the recycling process.

   Shred & Fibre: The number of tonnes is recorded on Processing Incentive claims substantiated by Processor's sales invoices to customers.

   Whole Tire: The number of tonnes is recorded on Processing Incentive claims substantiated by the user's Tire Burn Report adjusted for volumes of import tires received during the same period.

3. **5R Residuals**
   This category include waste material from the recycling process (sweepings) and any fibre or steel that cannot be sold to a market and is ultimately disposed of at a landfill.

   The number of tonnes is recorded on Processing Incentive claims substantiated by shipping documents to the landfill and copies of weigh scale tickets.

4. **5R Off Spec**
   This category includes regulated tires that cannot be diverted to a 3R or 4R use and is ultimately disposed of at landfill, such as Logger / Skidder tires and cut tires.

   The number of tonnes is recorded on Processing Incentive claims substantiated by shipping documents to the landfill and copies of weigh scale tickets.

Recovery Rate

Assessment of the description of total amounts of the producer's product sold and collected and the producer's recovery rate in accordance with Section 8(2)(e) of the Recycling Regulation

Specific Disclosures in the annual stewardship report for which evaluation criteria were developed	
Disclosure per annual report	**Reference (Page # / Table #)**
Units Sold = 4,013,765 units	Page 13, Table 3
Units Collected = 3,055,257 units	Page 13, Table 3
Recovery Rate (Units Collected / Units Sold) = 76%	Page 13, Table 3 and Page 16, Table 5

Attachment 1 (continued)
Tire Stewardship B.C. Association ("TSBC") Assurance / Evaluation Criteria
For Data From Reporting Year Ended December 31, 2016

Evaluation Criteria

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

1. The recovery rate is expressed as a percentage of the number of units (units are defined as whole tires) collected divided by the number of units sold.
   a. The number of units collected is recorded at the time of pick up on a TSBC waste manifest form and delivered to a TSBC registered processor.
   b. The number of units sold is recorded at the time the Advance Disposal Fee (ADF) is reported by the retailer on TSBC's ADF Return form.
   c. The number of units collected and sold are self-reported data that are subject to reviews of their completeness and accuracy on a sample basis under TSBC's Compliance and Education program. In 2016, 144 (2015-179) retailers were subjected to such reviews.

Performance for the Year

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

Specific Disclosures in the annual stewardship report for which evaluation criteria were developed		
Disclosure per annual report	**Targets in approved stewardship plan**	**Reference (Page # / Table #)**
Collection Facilities: 8(2)(b)		
Number and Location of Collection Facilities	1,700	Page 8, Section 4 and Page 17, Table 5
Change in Number and Location of Collection Facilities	No Target	Page 8, Section 4
End of Fate: 8(2)(d)		
3R Tire Derived Product	69.5%	Page 12, Table 2 and Page 16, Table 5
4R Tire Derived Fuel	29.0%	Page 12, Table 2 and Page 16, Table 5
5R Residuals	0.6%	Page 12, Table 2 and Page 17, Table 5
5R Off Spec	0.9%	Page 12, Table 2 and Page 17, Table 5
Recovery Rate: 8(2)(e)		
Units Sold	No Target	Page 13, Table 3
Units Collected	No Target	Page 13, Table 3
Recovery Rate (Units Collected / Units Sold)	76%	Page 13, Table 3 and Page 16, Table 5

Attachment 1 (continued)
Tire Stewardship B.C. Association ("TSBC") Assurance / Evaluation Criteria
For Data From Reporting Year Ended December 31, 2016

Evaluation Criteria

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 disclosed in the annual report;
- The expected outcomes and target dates as included in the annual report are consistent with the targets in the approved stewardship plan; and
- The facts disclosed in the annual update on progress are supportable by evidence, neutral and understandable.

Appendix C: Collection Volumes by Tire Type by Regional District

Tire Stewardship BC

Tire Capture by Tire Type by Regional District (tonnes)

Date Range: Jan. 1, 2016 - Dec. 31, 2016

Regional District	PLT	MT	AG	LS	Total
AL-CL Alberni-Clayoquot	256	115	2	1	374
BK-NK Bulkley-Nechako	490	515	17	38	1,060
CAPTL Capital	1,604	210	15	1	1,830
CARBO Cariboo	768	487	21	52	1,328
CENCO Central Coast	0	0	0	0	0
CKOOT Central Kootenay	631	193	5	8	837
CO-SC Comox-Strathcona	854	247	6	10	1,116
COKAN Central Okanagan	1,829	425	17	4	2,274
COLSS Columbia-Shuswap	572	263	21	21	877
COWVY Cowichan Valley	1,274	224	13	2	1,512
EKOOT East Kootenay	728	388	5	18	1,139
FFGEO Fraser-Ft. George	905	1,178	23	28	2,134
FN-LD Fort Nelson-Liard	80	81	1	1	164
FRVLY Fraser Valley	2,457	2,230	88	12	4,787
GRVAN Greater Vancouver	10,791	4,751	152	7	15,701
KIT-S Kitimat-Stikine	413	180	12	0	605
KOOTB Kootenay-Boundary	266	82	3	4	355
MTWAD Mt. Waddington	133	71	2	0	205
NANMO Nanaimo	938	248	9	3	1,199
NOKAN North Okanagan	908	325	13	24	1,271
OK-SM Okanagan-Similkameen	905	251	11	6	1,173
PEACR Peace River	827	644	13	45	1,530
POWLR Powell River	155	56	1	0	212
SK-QC Skeena-Queen Charlotte	126	58	1	0	185
SQ-LI Squamish-Lillooet	468	102	5	1	576
SUNCO Sunshine Coast	227	27	0	0	254
TH-NI Thompson-Nicola	1,508	1,494	33	41	3,076
GRAND TOTALS	**30,113**	**14,844**	**490**	**329**	**45,775**

APPENDIX D: OTR Processing Options – Status Report

Introduction

TSBC has actively researched the recycling of BC's Off-the-Road (OTR) tires since 2010 and reported the status of that research in its Stewardship Plan and Annual Reports.

The research continues to point to two distinct tiers of non-program OTRs:

- Small, medium and large (SML) industrial and earthmover tires up to 39-inch rim diameter; and
- Giant tires with a rim diameter over 39 inches used on haul trucks deployed primarily in open pit mines.

Non-program small, medium and large (SML) OTRs

TSBC continues to receive indications of interest from industry stakeholders in regulating the current non-program SML OTRs to level the playing field for OTR tire consumers and secure the volumes necessary to allow economies of scale for processing. Across Canada, most tire programs already include these tires and have been successful in finding disposal options.

In 2016, work has been undertaken in preparation for a formal request to the Ministry of Environment to remove the current exemption of these tires from Schedule 4 of the Recycling Regulation.

TSBC has conducted research within BC to gain an understanding of the annual volumes, current disposal charges and disposal options, processing capacity and markets. This information will be used to establish the eco fees necessary to directly fund the collection and processing of these tires. This information was gathered from the retailers that supply these tires into the marketplace, Western Rubber and a survey conducted as part of the 2016 Ambassador Tour retailer visits.

The survey indicated that of the 458 retailers that answered the survey, only 80 sold these tires. In most cases, the retailers are already disposing of these tires through their regular hauler for drop off at Western Rubber with a fee charged to the end user at time of purchase. An overwhelming 86% support the regulation of these tires, citing convenience/consistency/ease of explanation to retailers and consumers and creating a level playfield as the primary reasons.

From a processing perspective, Western has completed its plant upgrade with a significant investment in equipment and technology to create cost and processing efficiencies. The new equipment allows Western to process the current volume of non-program SML OTRs.

Non-program giant OTRs

In prior reports, TSBC indicated that two companies were working with industry under a voluntary program to process the giant OTRs generated in BC and Alberta:

1. Kal Tire in partnership with Liberty Tire – to process the tires into various gradations of shred and crumb rubber for the Tire Derived Aggregate (TDA), Tire Derived Product (TDP) and Tire Derived Fuel (TDF) markets.
2. Titan Reclamation Services – to process the tires into steel, oil and gas and carbon black using pyrolysis technology.

Both projects are underway at processing sites located in Alberta and have an initial focus on tires generated in Alberta. TSBC expects both sites will seek additional capacity and start to access volumes from BC by 2018.

TSBC's Next Steps

1. Continue researching current flow, volumes and costs related to the collection and processing of SML OTRs in conjunction with key stakeholders.
2. Continue dialogue with industry on the regulation of SML OTRs.
3. Seek formal support in principle from the key suppliers of SML OTRs into the marketplace to support TSBC's request for regulation.
4. Maintain a watching brief on processing options for BC's giant OTR tires.
5. Continue discussions with Alberta on the nature and extent of harmonizing the OTR tire stewardship programs.

APPENDIX E: Report on Measures to Reduce Abandoned Waste

Introduction

In its current Stewardship Plan, TSBC committed to work with Regional Districts to find ways to reduce the impact of abandoned tires on their waste management operations and to report progress annually. This is TSBC's progress report.

Status of Research

The Working Group, comprised of stewards (including TSBC) and local government (Metro Vancouver and CRD) met once in 2016. Although the meeting did not produce any specific outcomes, both the stewards and local government recognize a collaborative strategy is the most desirable to preventing abandoned waste. However, the party responsible continues to be debated. The next key steps are to examine the root causes of abandoned waste / illegal dumping to guide further actions, such as innovative solutions for by-law enforcement, new educational / marketing campaigns, and alternative collection options such as municipal large item pick-up programs. In addition, the stewards asked that local government direct consumers to the BC Recycles site and / or the Recyclepedia App as a source for finding a collection site to achieve the objective of providing consumers a one-stop-shop for information. These are the only sites constantly updated by the stewards thereby providing the consumers with the most accurate and up to date information.

Ongoing Efforts to Reduce Illegal Dumping

Return to Retailer

TSBC's Return to Retailer (R2R) program continued to grow in 2016, with over 830 retailers across all areas of the province now participating in this voluntary program. The number of R2R locations in urban areas is significant, indicating that if tires are still being dumped in urban environments, it is behavioural change – not the addition of more drop off locations – that needs to occur as part of reducing / eliminating this activity.

Tire collection events

These events are included as a target in TSBC's current stewardship plan. In 2016, they were again held in both urban and rural environments with over 6,600 tires collected. This approach will continue in 2017. These events are intended to collect program tires but all tires are accepted at the event to avoid illegal dumping of the non-program tires at or near the event location.

Education

With two other stewardship agencies, TSBC co-sponsored the production and delivery of the *Voices of Nature* concerts in 2016. *Voices of Nature* is an innovative program that combines music and ecological education and is designed to reach children in elementary school, their teachers and their families. The program focuses on environmental stewardship, sending a strong message that the key to protecting nature in our daily lives is by reducing and managing waste. The program is developed and delivered by the Artist Response Team from Vancouver.

Ambassador Program

In 2016, TSBC partnered with the BC Used Oil Management Association, and 8 other stewards in the annual Ambassador Program. Recently rebranded as the BC Recycles Tour, TSBC engages retailers and the public directly in discussions about the BC tire recycling program's successes, issues, and opportunities for improvement. In 2016, the tour's focus was to promote and educate all stakeholders on BC Recycles, the one-stop-shop for locating drop off locations for stewarded products. With a presence at 23 community events throughout the province, the potential outreach was to over 800,000 consumers. As in prior years, the students visited tire retailer sites and were successful in recruiting more R2R sites for TSBC, bringing the total at the end of 2016 to 839 sites throughout the province.

The success of this program's outreach and the ability to connect one on one with stakeholders has resulted in TSBC participating in the 2017 Ambassador Program.

Next Steps

1. Working Group

TSBC will continue to be part of the Working Group and work towards a collaborative strategy with other stewards and local government to address the challenges associated with illegally dumped tires in both urban and rural environments.

2. R2R recruitment, tire collections events and education

TSBC will continue these activities in 2017 in addition to partnering where possible with other stewards at collection events in some of the more remote areas of the province. However, until there is a baseline available for TSBC to better understand and quantify the problems they are intended to address, the success of these efforts cannot be measured.