

Annual Report to the Director 2021



Submitted to:

Director
Extended Producer Responsibility
Environmental Protection Division
Ministry of Environment & Climate Change Strategy
PO Box 9341, STN PROV GOVT
Victoria, BC V8W 9M1

Submitted by:

Rosemary Sutton
Executive Director
Tire Stewardship BC
300 – 536 Broughton Street
Victoria, BC V8W 1C6
1.866.759.0488

June 29, 2022



Tire Stewardship BC

Annual Report to the Director

2021

Table of Contents

1. Executive Summary	1
2. Program Outline	4
3. Public Education Materials and Strategies	5
4. Collection System and Facilities	8
5. Product Environmental Impact Reduction, Reusability and Recyclability	10
6. Pollution Prevention Hierarchy and Product / Component Management	11
7. Recovery Rate and Product Sold and Collected	13
8. Summary of Deposits, Refunds, Revenues and Expenditures	14
9. Plan Performance	15

Appendices

- A [2021 Independently Audited Financial Statements](#)
- B [2021 Non-Financial Information Audit Report](#)
- C [Collection Volumes by Tire Type by Regional District](#)
- D [Collection Facility Locations](#)

1. Executive Summary

Products within plan	Tires
Program website	www.tsbc.ca

Recycling Regulation Reference	Topic	TSBC – 2021 Summary Report
Part 2, section 8(2)(a)	Public Education Materials and Strategies	<ul style="list-style-type: none"> • TSBC continued its educational campaign in 2021 despite the impacts of COVID-19 on the proposed plan, which resulted in the cancellation of all face-to-face interactions including community events and collection events. With the creativity of TSBC’s team, the awareness campaign pivoted to messaging through channels such as: <ul style="list-style-type: none"> • Radio and bus ads in key markets identified by either population or need; • Advertorials in key markets; • A stronger online presence that included social and digital media; and • The annual Community Grant Program to incent the use of BC rubber in qualified projects across the province (10 in 2021).
Part 2, section 8(2)(b)	Collection System and Facilities	<ul style="list-style-type: none"> • As in previous years, TSBC offered options to the public beyond acceptance of their replaced tires through BC retailers when they purchased new ones. Tires not left with the retailer at that time, known as “orphan” tires, were also captured through: <ul style="list-style-type: none"> • The Return to Retailer (R2R) Program, whereby retailers currently accept up to 4 tires from each member of the public. Tire Round-Ups, additional options used in the past, remained on hold through 2021 due to COVID-19. • Scrap tires were also collected by haulers for the program from other registered sites that either generate or have tires available for collection, such as landfills, auto wreckers, small auto body shops and garages.
Part 2, section 8(2)(c)	Product Environmental Impact Reduction, Reusability and Recyclability	<ul style="list-style-type: none"> • 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 remained challenging given the durable structure of a tire, designed to ensure safety and a long road life.

Recycling Regulation Reference	Topic	TSBC – 2021 Summary Report
Part 2, section 8(2)(d)	Pollution Prevention Hierarchy and Product / Component Management	<ul style="list-style-type: none"> • TSBC has always incented the 3R (recycling) options over 4R (energy recovery) options through the financial incentive rates offered for each. • In 2021, 88% of the total tonnes of rubber processed were recycled.
Part 2, section 8(2)(e)	Recovery Rate and Product Sold and Collected	<ul style="list-style-type: none"> • The 2021 “Recovery Rate” was 95% across all regulated tire types. See the Non-Financial Information Audit Report in Appendix B.
Part 2, section 8(2)(e.1)		<ul style="list-style-type: none"> • See the breakdown of Collection Volumes by Tire Type by Regional District in Appendix C.
Part 2, section 8(2)(f)	Summary of Deposits, Refunds, Revenues and Expenses	<ul style="list-style-type: none"> • TSBC’s Independently Audited Financial Statements are referenced in Section 8 and included as Appendix A to this report. • Note that the Advance Disposal Fee rates have <u>not increased</u> since 2008.

Plan Performance – 2021

Performance Measures (as agreed with the Ministry)		Annual Targets			Performance																														
1.	Recovery Rate (Total # Units Collected in reporting year / Total # Units Sold 5 years prior to reporting year)	90%			95%																														
2.	The percentage allocation of total tonnes of scrap tires (i.e. all rubber, steel and fibre) <u>processed and shipped</u> Note: on average, rubber accounts for 70% of the total tire weight, with 15% steel and 15% fibre	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="background-color: #1a3d4d; color: white;">Recycling</th> <th style="background-color: #1a3d4d; color: white;">Energy Recovery</th> <th style="background-color: #1a3d4d; color: white;">Landfill</th> </tr> </thead> <tbody> <tr> <td>Rubber</td> <td style="text-align: center;">86%</td> <td style="text-align: center;">13%</td> <td style="text-align: center;">1%</td> </tr> <tr> <td>Steel</td> <td style="text-align: center;">100%</td> <td></td> <td></td> </tr> <tr> <td>Fibre</td> <td></td> <td style="text-align: center;">98%</td> <td style="text-align: center;">2%</td> </tr> </tbody> </table>		Recycling	Energy Recovery	Landfill	Rubber	86%	13%	1%	Steel	100%			Fibre		98%	2%	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="background-color: #1a3d4d; color: white;">Recycling</th> <th style="background-color: #1a3d4d; color: white;">Energy Recovery</th> <th style="background-color: #1a3d4d; color: white;">Landfill</th> </tr> </thead> <tbody> <tr> <td>Rubber</td> <td style="text-align: center;">88%</td> <td style="text-align: center;">11%</td> <td style="text-align: center;">1%</td> </tr> <tr> <td>Steel</td> <td style="text-align: center;">100%</td> <td></td> <td></td> </tr> <tr> <td>Fibre</td> <td></td> <td style="text-align: center;">99%</td> <td style="text-align: center;">1%</td> </tr> </tbody> </table>		Recycling	Energy Recovery	Landfill	Rubber	88%	11%	1%	Steel	100%			Fibre		99%	1%
	Recycling	Energy Recovery	Landfill																																
Rubber	86%	13%	1%																																
Steel	100%																																		
Fibre		98%	2%																																
	Recycling	Energy Recovery	Landfill																																
Rubber	88%	11%	1%																																
Steel	100%																																		
Fibre		99%	1%																																

Performance Measures (as agreed with the Ministry)		Annual Targets	Performance
3.	Number of collection sites (i.e. registered retailers that will take back a scrap tire from the consumer at the time a new tire is sold)	1,850	1,981
4.	a) Total number of retailers and generators in BC that take back orphan tires (R2R) b) Number of R2Rs in each Regional District	a) 800 province-wide b) At least 25% of registered retailers in each Regional District are R2R locations	a) 777* b) Achieved
5.	Education and Awareness a) Awareness of where to take scrap tires for safe disposal b) Awareness of where to go to find information on safe disposal locations	a) 59% b) 75%	a) 56%** b) 68%**

* See [Section 4 / Collection System and Facilities](#) (para. 5) for further discussion on these results.

** See [Section 3 / Consumer Education and Awareness](#) for further discussion on these results.

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 & Climate Change Strategy approved [Extended Producer Responsibility Plan](#) and the [BC Recycling Regulation](#).

The society is governed by a Board 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 (producers) including online sales as well as 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, and a reserve fund. In 2021, of the \$24M collected in eco-fees, \$23M was paid out in Transportation, Processing and Manufacturing Incentives, representing 92% of all expenses, and \$240,000 was awarded in grants for 10 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 collection events throughout the year and/or at 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 by Western Rubber Products located in Delta with the remainder used for energy recovery. 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 continues to grow, expanding six-fold since 2009 with further growth anticipated in 2022.

All scrap tires collected are recycled right here in BC due in part to the success and growth of the Delta recycler, Western Rubber Products, and the manufacturer North West Rubber located in Abbotsford. Both companies have made significant investments in recent years to grow their capability, capacity and product lines and they continue to do so, strengthening their position in a competitive marketplace.

3. Public Education Materials and Strategies

TSBC continues to focus its stakeholder outreach on a broad education and communication campaign, raising consumer awareness on “where the money goes” and “where the tires go.”

The TSBC website is the main hub for information shared with both the general public and tire retailers. Recognizing the need for an update, TSBC completed a full redesign of the website in 2021 and celebrated a May 2021 launch. The new site successfully acts as a landing point for comprehensive information and materials on tire recycling in BC.

To continue educating and raising consumer awareness, TSBC built on its 2020 program approach. The objective of the program was to increase awareness of tire recycling across BC residents, especially vehicle owners, and to improve their understanding of the connection between scrap tires and their second life. The call to action was to highlight the consumers’ ability to find a recycling location through the Recycling Council of BC’s Recyclepedia App and/or the TSBC website. The messaging was delivered through bus ads, radio ads and digital media, supported by social media posts, community engagement and media outreach.

The bus and radio ads were delivered in markets determined by either population (Vancouver and Victoria) or feedback from local governments that specifically asked TSBC to conduct more education in their regions (Fraser Fort George and East Kootenay).

In 2021, TSBC had planned to build on and increase its consumer awareness program through live events. However, as this program involves direct engagement with the public at community festivals, general recycling events and specific tire collection events, TSBC was again unable to proceed due to COVID-19.

Supplementing these efforts, TSBC also engages with the public in the ways detailed below.

Community Grant Program

The [Community Grant Program](#) is now in its 13th year and has provided over \$5.6M in grants to over 315 projects in 96+ communities throughout BC. The 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.

In 2021, grants totalling \$240,000 were awarded to 10 applicants from communities throughout BC, noting there were some withdrawals due to fundraising challenges related to COVID-19. The grants awarded resulted in the use of approximately 210,000 lbs of BC rubber (the equivalent of approximately 14,000 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. Grant awardees are required to have onsite signage to officially recognize TSBC as a contributor to these important projects and to advise the local MLA and Mayor and Council of the project and the grant.

Partnerships – [Artist Response Team \(ART\)](#)

In 2021, TSBC sponsored the Artist Response Team (ART) and their launch of the first-ever Sing Out For The Earth virtual concert series. The 20-minute concerts featured K-5 students from two remote communities, singing out for watersheds and nature. The program involved A.J. Elliott Elementary (40 students) located in the fishing village of Sointula on Malcolm Island off the northeast coast of Vancouver Island, and Haisla Community School (75 students) in the First Nations village of Kitimat. Due to restrictions on live events, teachers filmed their students singing and sent the footage to ART for editing into a professional, fun virtual concert which was shared with parents, teachers and students. TSBC was recognized in all online event materials and in the live concert videos.

Partnerships – [First Nations Recycling Initiative](#)

Led by Recycle BC and in conjunction with 8 other stewards, TSBC funds this very important initiative that supports First Nations interested in starting recycling programs in their communities. The program is administered by a dedicated First Nations field service specialist who meets with communities around BC and guides and supports their recycling needs, providing tools and resources. Despite challenges due to COVID-19 and weather, the field service specialist was able to visit with 13 communities. While no collection events could be held, they are expected to resume in 2022. TSBC remains a member of the [Indigenous Zero Waste Technical Advisory Group](#) and looks forward to working further with and supporting this group in its efforts.

Partnerships – Clean Ups

TSBC will continue to work with any organizations or individuals requiring assistance with tire removal, supporting projects ranging from landowner property clean ups to beach clean ups. In 2021, TSBC was involved in the following tire removal projects which included collection and/or funding:

- Beach clean ups: Quadra Island and Campbell River
- Site clean up: Cariboo RD, Quesnel landfill
- Remote First Nation sites: Talka and Kwadacha

Educational Tools – [TSBC website](#)

As highlighted earlier in the section, the website was completely redesigned and launched in May 2021. The design focuses on providing information to two main stakeholder groups: registered participants and the public. For the public, the website informs visitors on:

- [Recycling drop off locations \(R2R location finder\);](#)
- [Community Events and Programs;](#)
- [Community Grant Program;](#)
- [News and Updates;](#)
- [Tire Recycling in BC;](#) and
- [Extended Producer Responsibility \(stewardship\) Plans and Annual Reports.](#)

Educational Tools – Social Media & Digital Media

TSBC continues to grow its online presence with increased activity on Facebook, Twitter and Instagram. While they are good forums to promote Tire Round-Ups and TSBC’s attendance at community events, the highest engagement continued to occur on posts about unique tire recycling ideas from around the globe and general recycling stories. Celebration of collecting the 100 Millionth tire was a key story published across TSBC’s social media and website platforms, leading to increased traffic, increased followers and subsequently increased engagement and awareness by the public about recycled products and drop off locations for orphan tires. In 2021, TSBC once again engaged in ads for digital media and brand campaign videos to supplement its communications campaign related to the bus and radio ads.

Educational Tools – 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 (SABC) 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.

Table 1 Consumer Education and Awareness – 2021

Performance Measure	2021 Target	2021 Performance	2020	2019
Awareness of where to take scrap tires for safe disposal	59%	56%	48% (SABC survey 63%)	47%
Awareness of where to go to find information on safe disposal locations	75%	68%	62% (SABC survey 77%)	59%

Prior to 2019, TSBC's consumer awareness surveys were completed through the multi-steward SABC survey conducted every two years. TSBC used the results of the 2016 SABC survey as the baseline to set the targets in its current Extended Producer Responsibility Plan, achieving them in 2018 (TSBC's first year of reporting on consumer education and awareness targets) and again in 2020. The next survey will be held in 2022.

In 2019, 2020 and 2021, TSBC conducted its own survey in partnership with the BC Used Oil Management Association and this reduced-scope/higher customized survey yielded very different performance results from the SABC survey. Other BC stewardship programs that participate in the multi-steward SABC survey also run their own surveys and have confirmed to TSBC that their individual survey results are also lower than in the SABC survey.

TSBC understands the most notable reason for the discrepancy in the SABC versus individual survey results is survey fatigue. This is because responses in the SABC survey are required for multiple stewardship programs combined with the fact that Return-it is the first program listed, and the nature of its product attracts high consumer recognition due to its strong marketing and brand awareness program. Going forward, TSBC will continue to participate in the SABC survey.

While some momentum was lost in 2020 due to COVID-19, TSBC is very pleased with the 2021 climb in awareness percentages which supports its ongoing investment in this area of the business. Although not an identified target, TSBC is also pleased to report that the 2021 survey showed "awareness that the product can be recycled" had reached 75%, up from 57% in 2020. TSBC had hoped to incorporate the community event approach back into the program in 2022 but this will likely be delayed until 2023. The focus areas will continue to be guided by local government feedback and population considerations.

In addition to the disposal messaging, TSBC's communications program will focus on educating the consumer on "Reduce" and "Reuse", two key Rs in the hierarchy that are often overlooked but critical to the environment now and in the future. TSBC's 2022 communication efforts will also focus on the retailers (producers) with the objective of helping them understand their role and responsibilities in the program, and developing relationships to allow for partnerships when it comes to collection event hosting, additional R2R participants, and potential grant program partners.

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 (producer) 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. Examples include Home Depot, which may sell a trailer with new tires even though

Tire Stewardship BC 2021 Report to Director, Extended Producer Responsibility

their primary business is not selling tires or equipment with new tires; an online retailer; or a business located out of province.

In 2021 there were 1,981 collection facilities compared to 2,016 in 2020. Although the change is not significant and simply reflects the retailers in business, events throughout the year that affect this number include new retailer locations, closed locations, and changes in retailer businesses that result in the retailers no longer meeting the definition of a collection facility. In 2021, COVID-19 did have an impact with several retailers unable to stay in business.

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 scrap 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 where they are held for collection at no cost to the program.

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 4.2% of the total annual generation collected results from motorists who choose to take their scrap 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 the volume of tires going to landfill (6% in 2012) shows that TSBC's measures to provide alternate disposal methods are working. 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 RCBC website and the Recyclepedia app. In 2021, the number of R2R locations did decline because the businesses either closed or asked to be removed from the list as they were not comfortable with increased foot traffic during COVID-19. Although the number of R2Rs in any given Regional District is greater than 25% of the total retailers in the region, TSBC will focus its efforts on finding additional R2R locations while supplementing areas in need with collection events.

In 2020, TSBC conducted a survey to understand the challenges for local government and private depots in handling tires. The result was several actions by TSBC, including a commitment to conduct two annual clean outs at local government sites and to work directly with respondents that had more unique challenges. Unfortunately, due to transportation challenges related to COVID-19 and the floods in late 2021, TSBC was unable to service all sites. Although transportation challenges continue in 2022, TSBC remains unwavering in its commitment and will strive to meet it in the coming year, with reporting to the Ministry on progress. For those sites with unique challenges, including unmanned or remote sites, TSBC

provided funding in the form of either an annual stipend or a contribution to help cover the cost of moving the tires to a central location for collection. TSBC will continue to monitor the results of these actions through surveys with affected stakeholders.

The waste audit process conducted annually is important to note in the context of tires disposed of at landfills. In conjunction with all SABC members, TSBC participates in and funds waste audits in a minimum of one Regional District per year. In 2021, SABC participated in two waste audits where tires represented the following percentages:

1. Central Okanagan – Glenmore Landfill, Kelowna: 0.00%
2. Okanagan Similkameen – Campbell Mountain Landfill, Penticton: 0.12%

Despite being non-program materials, bike tires and tubes were included in the count as TSBC offers to collect and recycle them free of charge. This initiative has been in place since 2011 and in 2021, TSBC is pleased to report it has collected and recycled approximately 80,000 tires and tubes.

In prior years, TSBC has hosted province-wide tire collection events where the public can drop off any tire size, on or off rim, at no charge. While COVID-19 continued to hamper the ability to hold these events in 2021, TSBC was pleased to participate in multi-steward events hosted by others such as those in McBride and on Quadra Island. TSBC anticipates its hosted events will re-commence during 2022, with details posted on the website and promoted through social media and local advertising.

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

While managing tires at their end of life is important, lengthening their lives 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, which improves fuel efficiency. 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. Replacing the worn-

out tread allows the reuse of the casing (60-70% of the tire) up to 2 to 4 times, thereby extending the life of the tire. 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.

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 this is 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, advancements in end-of-life tire management are continuing. 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. Manufacturers are also 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.

Note: In late 2020, reports alleged that tire and road wear particles (TRWP) were linked to the death of coho salmon in Washington State. The Tire and Rubber Association of Canada issued a [statement](#) and TSBC will post any updates on this issue to the [News and Updates](#) section of its website. The Tire Industry Project (TIP) under the World Business Council on Sustainable Development continues to support TRWP studies ranging from mitigation to alternative materials analysis for specific areas of concern like 6PPD. For a multimedia introduction to the topic of TRWP and a detailed account of the studies that TIP has sponsored to date, visit www.tireparticles.info.

6. Pollution Prevention Hierarchy and Product / Component Management

TSBC manages the 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 2021 product hierarchy results based on the various categories broken down by component type – rubber, steel and fibre.

3R Recycling

Referred to in the industry as 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. This reporting category also includes steel, extracted in the recycling process, sold as a product to an end use market. Should a recycling market for fibre be found, the fibre directed to this end use would also be reflected in this category.

4R Energy Recovery

Referred to in the industry as Tire Derived Fuel (TDF), this category comprises not only the rubber but also the fibre extracted in the recycling process that is sold to a kiln. 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 addition, as natural rubber is a renewable resource that comprises 25% of an average of tire, energy recovered from tires can be categorized as a biofuel.

5R Residuals

Residuals include waste material from the recycling process – rubber, steel and fibre – that is ultimately disposed of at landfill. Typically, this would only include the rubber component (sweepings or non-processable material) unless a drop in demand for steel and fibre is triggered by market forces beyond the control of the processor. In late 2020, the primary user of the fibre had a workplace accident that resulted in the plant’s closure for several months. Being a highly flammable material that should never be inventoried on site at the processing facility, TSBC permitted the disposal of fibre at landfill while the processor sought new markets. TSBC is pleased to report that the flow of fibre to energy recovery resumed in early 2021 and back-up markets are now in place should a similar situation arise.

Table 2 Product Hierarchy Results – 2021

Component	Recycling (3R)	Energy Recovery (4R)	Landfill (5R)
Rubber	87.6%	11.1%	1.3%
Steel	100%		
Fibre		99.1%	0.9%

TSBC supports a mix of recycling and energy recovery end uses 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 usage has appropriate environmental permits.

Tires used for energy recovery are market driven and vary from year to year. For example, the usage was at an all-time low in 2012 due to economic conditions in the cement industry combined with a record high demand for recycled products. However, increased use of tires for energy recovery can occur when recycling product markets decline, such as the economic downturn in 2008 to 2010. In recent years, the volume of BC tires consumed by Lehigh in Delta has been consistent.

The volume of whole tires and shred directed to energy recovery remains within TSBC’s target of 13%. TSBC continues to work with industry through its Research and Development Program and current participants to find recycling end uses for the fibre. Research to date includes the use of recycled tire fibre in concrete applications to create a value-added product that in most provinces is considered waste and landfilled.

7. Recovery Rate and Product Sold and Collected

The measure of effectiveness of stewardship programs recommended by the BC Recycling Regulation is the “Recovery Rate”, defined as the actual number of scrap tires collected/divided by the actual number of new tires sold in the reporting year. A report conducted by TSBC’s audit firm concluded the Recovery Rate as currently defined for a product with a life span beyond 1 year is not appropriate in the case of tires; this is because, with the robust tire collection system in place, the factors impacting the difference between sales and collection are the long-term life of a tire, tire sales trends (winter tires, new car sales/vehicle registrations) and to a lesser degree the export of used tires for reuse. In TSBC’s current Extended Producer Responsibility Plan approved by the Ministry on December 7, 2018, the Recovery Rate for tires is defined as the “actual number of scrap tires collected in the reporting year/divided by the actual number of new tires sold 5 years prior” – a more meaningful measure which aligns with an objective of the Ministry for all stewardship programs.

Table 3 Recovery Rate

Units Collected 2021	Units Sold 2016	Recovery Rate
3,796,707	4,013,765	95%

Table 4 Product Sold and Collected in 2021

Tire category	Units Sold	Units collected and delivered to a processor
Passenger & Light Truck	4,026,936	3,462,923
Medium Truck	405,821	326,580

Tire category	Units Sold	Units collected and delivered to a processor
Large Agricultural	17,981	5,703
Logger / Skidder	4,143	1,501
Total	4,454,881	3,796,707

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.

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 2021, shown in Table 5 below, have not increased since 2008, aligning with a goal of the program to “sustain or reduce the average Advance Disposal Fee”.

Table 5 Advance Disposal Fees – 2021

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

Program revenues and expenses are provided in TSBC’s 2021 Independently Audited Financial Statements, included as [Appendix A](#).

9. Plan Performance

TSBC is currently operating under its [2018 Extended Producer Responsibility Plan](#) approved by the Ministry on December 7, 2018. In this plan, TSBC set new performance measures and targets as reported in Table 6 below, and reporting commitments as reported in Table 7 below.

Table 6 Performance Measures, Targets and Results 2021

Performance Measures (as agreed with the Ministry)		Annual Targets				Performance																																			
1.	Recovery Rate (Total # Units Collected in reporting year / Total # Units Sold 5 years prior to reporting year)	90%				95%																																			
2.	The percentage allocation of total tonnes of scrap tires (i.e. all rubber, steel and fibre) <u>processed and shipped</u> Note: on average, rubber accounts for 70% of the total tire weight, with 15% steel and 15% fibre	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th></th> <th>Recycling</th> <th>Energy Recovery</th> <th>Landfill</th> </tr> </thead> <tbody> <tr> <td>Rubber</td> <td>86%</td> <td>13%</td> <td>1%</td> </tr> <tr> <td>Steel</td> <td>100%</td> <td></td> <td></td> </tr> <tr> <td>Fibre</td> <td></td> <td>98%</td> <td>2%</td> </tr> </tbody> </table>					Recycling	Energy Recovery	Landfill	Rubber	86%	13%	1%	Steel	100%			Fibre		98%	2%	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th></th> <th>Recycling</th> <th>Energy Recovery</th> <th>Landfill</th> </tr> </thead> <tbody> <tr> <td>Rubber</td> <td>88%</td> <td>11%</td> <td>1%</td> </tr> <tr> <td>Steel</td> <td>100%</td> <td></td> <td></td> </tr> <tr> <td>Fibre</td> <td></td> <td>99%</td> <td>1%</td> </tr> </tbody> </table>					Recycling	Energy Recovery	Landfill	Rubber	88%	11%	1%	Steel	100%			Fibre		99%	1%
	Recycling	Energy Recovery	Landfill																																						
Rubber	86%	13%	1%																																						
Steel	100%																																								
Fibre		98%	2%																																						
	Recycling	Energy Recovery	Landfill																																						
Rubber	88%	11%	1%																																						
Steel	100%																																								
Fibre		99%	1%																																						
3.	Number of collection sites (i.e. registered retailers that will take back a scrap tire from the consumer at the time a new tire is sold)	1,850				1,981																																			
4.	a) Total number of retailers and generators in BC that take back orphan tires (R2R) b) Number of R2Rs in each Regional District	a) 800 province-wide b) At least 25% of registered retailers in each Regional District are R2R locations				a) 777* b) Achieved																																			
5.	Education and Awareness a) Awareness of where to take scrap tires for safe disposal	a) 59%				a) 56%**																																			

Performance Measures (as agreed with the Ministry)		Annual Targets	Performance
	b) Awareness of where to go to find information on safe disposal locations	b) 75%	b) 68%**

* See [Section 4 / Collection System and Facilities](#) (para. 5) for further discussion on these results.

** See [Section 3 / Consumer Education and Awareness](#) for further discussion on these results.

Table 7 Reporting Commitments 2021

Reporting Commitments	
1.	Total tonnes collected by Regional District in a calendar year – Appendix C
2.	Dates, locations and results of tire collection events – n/a
3.	Number of legitimate collection complaints received by TSBC – 5
4.	Number of consumer complaints received by TSBC – zero
5.	Results of SABC waste audits and any local government waste audits if data is shared directly with/made available directly to TSBC – Section 4
6.	Comparison of results to targets for all Performance Measures – Table 6
7.	Independently Audited Financial Statements – Appendix A
8.	Non-Financial Information Audit Report – Appendix B
9.	Total product collected and sold in the reporting year – Table 4
10.	Description of how the product was managed in accordance with the pollution prevention hierarchy – Section 6 and Table 2
11.	Collection Facility Locations – Appendix D
12.	Description of educational materials and educational strategies used – Section 3
13.	Efforts taken to reduce environmental impacts, to increase reusability and recyclability – Section 5

Appendix A: [2021 Audited Financial Statements](#)

Appendix B: [2021 Non-Financial Information Audit Report](#)

Appendix C: [Collection Volumes by Tire Type by Regional District](#)

Appendix D: [Collection Facility Locations](#)