



June 8, 2023

Memorandum

Re: Consultant's Report on Enhancing Consumer Access to Recycling Services Under EPR

In October 2022, the Ministry of Environment and Climate Change Strategy (ministry) contracted Eunomia Research and Consulting, Inc. (consultant) through a competitive bid process. The contract was intended to examine consumer access to collection services in B.C.'s extended producer responsibility (EPR) system and subsequently propose a framework. The proposed framework seeks to address limitations, such as lack of consistency and granularity, in how reasonable access to collection services is established by EPR agencies under B.C.'s Recycling Regulation.

The consultant initiated the project by reviewing factors of accessibility associated with the variety of regulated products, communities, and collection services in British Columbia. This included interviews with external parties, secondary research, and jurisdictional scans. Shortlisted factors informed the groupings of similar product and community types. Based on these groupings, the consultant then determined accessibility standards by collection service types to develop a proposed consumer access framework.

The ministry received the final report and Excel-based tool in spring 2023. The report outlined the consultant's process and rationale used in developing the proposed consumer access framework. The tool adapted the framework into guidance for ease of use. The consultant presented their findings to the project interviewees in May 2023.

This report and the associated tool are not a mandate or final ministry policy. Rather, the results of the study outlined in the report and tool will be used to inform the ministry's policy approach on consumer access to recycling services.

Enhancing Consumer Access to Recycling Services Under EPR

March 2023



Report For

British Columbia Ministry of Environment and Climate
Change Strategy

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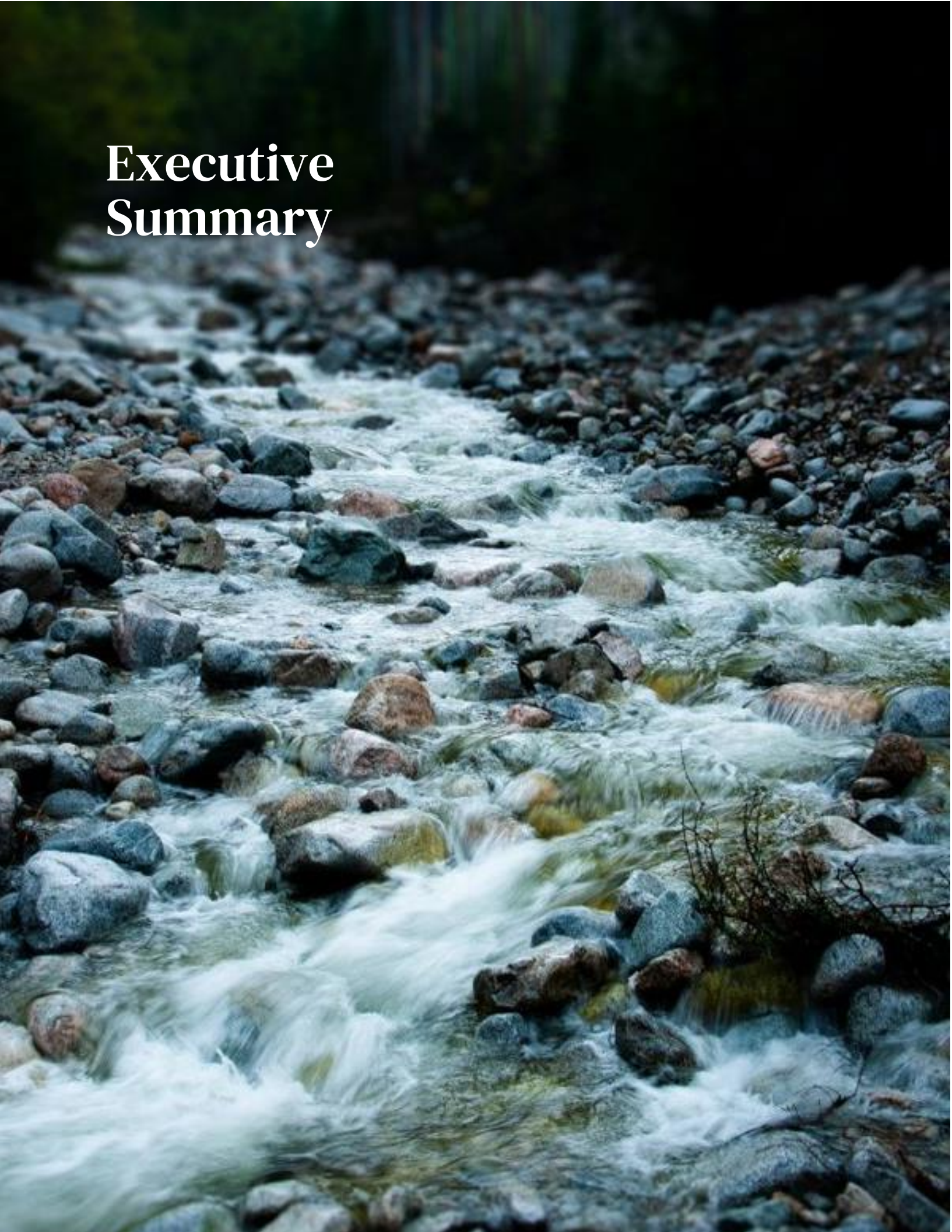
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Executive Summary



Overview

British Columbia (B.C.) has extended producer responsibility programs (EPR) for a variety of products. Under the authority of the Environmental Management Act, the Recycling Regulation requires producers, or an agency acting on their behalf, to “provide for reasonable and free consumer access to collection facilities or collection services” throughout B.C. Agencies must submit an EPR plan for approval, and review the plan every five years, which sets out how they will meet this obligation.

Currently, there is no overarching standard or guideline in B.C. that defines what constitutes 'reasonable access.' As a result, EPR agencies have established their own accessibility criteria. These criteria are then assessed by the ministry on a case-by-case basis. The absence of a standard or guideline leads to varying criteria across programs, which can create confusion among consumers and potentially limit equity.

The Ministry of Environment and Climate Change Strategy has commissioned Eunomia Research and Consulting Inc to develop an accessibility framework to specify what constitutes reasonable access, aid EPR agencies in developing plan commitments, and assist the province in evaluating the adequacy of those commitments in meeting regulatory requirements.

Status and Limitations of Current Access Standards

Currently, EPR agencies establish their commitments for meeting reasonable access independently. Although there is some coordination between agencies through the Stewardship Agencies of British Columbia (SABC), the association representing the collective of Producer Responsibility Organizations in B.C., the lack of alignment between agencies creates limitations in the broader system. Limitations of the current status of access standards include:

- **Inconsistent community group categories and definitions:** Different EPR agencies use various terms to determine community groupings, while others use the same terms with different definitions. This leads to inconsistent standards, as a community may be categorized differently by different EPR agencies.
- **Lack of granularity in community groups:** Most EPR agencies define communities as either urban or rural, resulting in only two categories for community groups. The fact that there are only two categories for community groups and that there is typically a single province-wide target for access means that EPR agencies can meet their targets without providing service to the most rural and remote communities.
- **Inconsistent standards for reasonable access:** EPR agencies use various factors for determining reasonable access, such as drive time to the return location, total number of return locations, or distance to return locations. This lack of consistency makes it difficult to evaluate and compare reasonable access across programs.
- **Standards may not result in reasonable access for all communities:** Most EPR agencies evaluate reasonable access using only one factor, such as drive time or number of return locations. This limited evaluation scope does not consider other factors that may impact an individual consumer's ability or likelihood to return a product. Additionally, the standards set are modest, which may result in some communities still lacking reasonable access.

In developing the accessibility framework, the project team aimed to address the limitations that currently exist in the standards set for reasonable access.

Framework and Methodology

To develop an accessibility framework that establishes clear parameters for what constitutes reasonable access to services under the recycling regulation, the project team evaluated factors within the recycling system for three different categories as follows:

- **Product Factors:** In B.C., there are more than a dozen EPR programs, and more products are expected to be regulated in the coming years. Regulated products have different characteristics that could impact a consumer's desire or ability to return them, as well as an EPR program's ability to collect them. The project team reviewed these product characteristics and grouped products into categories reflecting the relative similarities between products. The framework standards are set per category, so that similar products have the same requirements, and products with different characteristics have different requirements. For example, light bulbs and smoke alarms have similar characteristics therefore they are grouped together, but tires and beverage containers are much less similar and are in different groups. This approach found a balance between having a one size fit all approach for products and having more than a dozen different requirements for every type of product. Since many agencies will have the same standard; it makes collaboration easier within groups.
- **Community Factors:** B.C. is a diverse province with highly dense urban centres and remote rural areas. These communities have different characteristics that may influence a program's approach to collect products and may justify different collection standards (e.g., for instance, a community's size, whether there is reliable infrastructure [i.e., roads]). The project team reviewed these community factors to identify which ones would necessitate different collection service standards. By doing so, the project team was able set standards based on community types. These groupings establish clear delineation for agencies to understand what service standards they need to meet in specific areas.
- **Collection Service Factors:** There are several ways to return and collect products, which can be grouped into four main approaches: single family curbside / multi-family collection / direct pick-up, permanent collection facilities, temporary collection facilities and events, and mail-back returns. Each of these approaches have different features that can influence reasonable access, such as the frequency of collection or distance to a return location. Therefore, the project team reviewed the most relevant characteristics for each collection service option. The framework also considers how the same level of access could be met through different collection methods.

The project team conducted primary interviews with interested parties, secondary research, and jurisdictional scans to develop a comprehensive list of factors that may influence a consumer's access to recycling services or would be relevant in understanding potential differences in collection service standards. The long list was then further refined based on relevance and applicability, resulting in a set of factors used to develop the accessibility framework.

Factor Selection and Framework Development

In order to develop an accessibility framework, establish product and community groups, and create service level requirements for each group, the project team selected several factors from a previously determined long list of factors.

To create product groupings, the following factors were selected as they were determined to be the most relevant for determining reasonable access:

- **Frequency of purchase:** How often a product is purchased is closely associated with how often it is disposed. Therefore, purchase frequency is a relevant factor in determining the accessibility of return

infrastructure. Products that are purchased frequently require different collection service to ensure reasonable access. For instance, a product that is frequently purchased will be disposed of more frequently, and thus, requires a more easily accessible return option than a product that is purchased only once a year. To categorize products based on their purchase frequency, the project team grouped them into three categories: daily, weekly, or yearly/less than yearly.

- **Product size and weight:** These factors are relevant to accessibility as they physically affect a consumer's ability to carry and return a product. For instance, smaller products (e.g., smart phones, beverage containers) can easily be carried by an average individual, while larger products (e.g., televisions, refrigerators) may require a vehicle for transportation. Products can be categorized into small (less than 1 kg), medium (1 kg - 10 kg), and large (greater than 10 kg) based on their weight.
- **Product hazard level:** The hazards associated with collecting, storing, transporting, and disposing of each product vary depending on the hazardous nature of each product. B.C.'s Hazardous Waste Regulation specifies unique collection requirements for hazardous materials that must be considered when establishing a framework for EPR accessibility. Therefore, the products included in the accessibility framework are classified as either hazardous or non-hazardous based on this regulation.

In order to tailor the accessibility framework to various community types, the project team selected the following factor to create community groups:

- **Index of Remoteness:** This index, developed by Statistics Canada, takes into account the distance of a community from different population centres as well as the population size of those centres. This allows communities to be categorized into five distinct groups based on their level of accessibility: *easily accessible*, *accessible*, *less accessible*, *remote*, and *very remote* community types. The selected factor recognizes that the accessibility of recycling services can vary greatly depending on a community's remoteness and population size.

The project team reviewed different collection service options and categorized them into four different types: single family curbside / multi-family collection / direct pick-up, permanent collection facilities, temporary collection facilities or events, and mail-back returns. From these options, the team selected factors that may impact a consumer's access to recycling services.

Then, based on the different factors used to group products into categories (i.e., size/weight, frequency of purchase, and hazard level) and communities into groups (based on the Index of Remoteness), a set of standards for reasonable access was developed. For each group, a population target was established, indicating the percentage of the population that should have reasonable access under the accessibility framework.

The framework allows EPR agencies to have flexibility in determining the most suitable collection service for different communities while meeting the standard for reasonable access. For example, agencies may choose which of the four collection service options they will provide, as long as the standard for reasonable access is met. However, some exceptions exist where only a limited number of collection service options are considered reasonable access (e.g., mail-back services are not an option for hazardous products).

The standards for reasonable access were determined by considering multiple types of collection service and the factors which are relevant to reasonable access. Depending on the product group, there are up to four options for collection service. For each type of collection service, there are both primary and secondary factors. Primary factors, such as the frequency of service and/or the drive time between the consumer and the service, were deemed the most critical for the particular collection service, and the standard for these

factors must be met. On the other hand, agencies are given leeway in meeting the standards for secondary factors, and they only need to satisfy one of the additional factors.

The primary and secondary factors for the different collection service options are outlined below, with specific standards detailed in the tables that follow. As previously mentioned, EPR agencies are required to provide only one of the collection service options listed below, and for the chosen option, the primary factor must be met, and in some cases, one of the secondary factors must also be met to be considered reasonable access.

For single family curbside / multi-family collection / direct pick-up:

- Primary factor
 - **Frequency of collection:** This is the most widely used standard for measuring access to single family curbside / multi-family collection / direct pick-up services. Residential collection services are mandated for packaging and paper products under the recycling regulation, and thus the primary distinction between service levels across different communities is frequency of collection. Frequency of collection is also the distinguishing feature for direct pick-up services for non-residential locations

For permanent collection facilities:

- Primary factor
 - **Drive time to collection facilities:** Drive time to a collection facility is used by SABC and other EPR agencies to evaluate accessibility, and is therefore already a widely-accepted factor for measuring consumer access to recycling services. In addition to being an established factor for measuring access, drive time is also correlated with recycling rates. The time it takes consumers to drive to recycling collection sites is directly linked to accessibility, as longer drive times can be perceived as a challenge to recycling. Several studies have shown that proximity to a recycling drop-off location increases the likelihood of people recycling their materials.
- Secondary factors (one of three required)
 - **Collection facility operating hours:** The hours during which a facility is open directly affect a consumer's ability to use the service and return products to the facility. To return a product, the consumer needs to be available when the collection facility is open and accepting returns.
 - **Ability to return other regulated products:** With a variety of regulated products in B.C., it may be more accessible for consumers to be able to return more than one product at the same location, rather than having to travel to different locations for different products. Additionally, with the increasing number of EPR programs, it is important to ensure not only that individual programs have reasonable access, but that the system as a whole provides reasonable access.
 - **Consumer satisfaction:** While there are other factors to consider when evaluating reasonable access, not all consumers may find them equally important. Even when a facility may meet the primary factor (drive time) the conditions of the facility may limit a consumers accessibility and willingness to use the location. Measuring overall satisfaction with the accessibility of the return network and individual locations can provide insight into the quality of the service and areas for improvement.

For temporary collection facilities and events:

- Primary factors

- **Frequency of operation:** Temporary collection facilities, including events, are only open for certain periods of time. Therefore, the frequency of their occurrence can determine their accessibility and whether they provide equivalent access to other service options.
- **Drive time to collection facilities/events:** As with permanent collection facilities, the time it takes for consumers to drive their recyclables to temporary collection site or event is directly linked to accessibility.
- Secondary factors (one of two required)
 - **Collection facility hours:** Similar to permanent collection facilities, the hours during which a temporary collection facility (including collection events) is open directly affects a consumer's ability to use the service and return products.
 - **Ability to return other regulated products:** Similar to permanent collection facilities, consumers may find it more accessible if they can return multiple regulated products at the same location.

For mail-back returns:

- **Primary factor**
 - **Drive time to return location:** Although EPR agencies do not have authority to influence the location of postal services, like other collections service options, the time it takes consumers to drive their recyclables to postal locations is directly related to accessibility. As such is must be demonstrated that these services meet access standards.

To provide EPR agencies with additional flexibility, as there may be barriers that limit an agency's ability to provide service, population targets have been set for each program and community type. If a community has reasonable access to a collection service, then the population of that community would count towards the population target. All community types as defined by the index of remoteness have population targets under 100%.

The complete framework can be found on the following pages. In addition to the framework, a tool has been developed to help navigate the different requirements more easily. EPR agencies can use this tool to determine written accessibility statements for inclusion in their EPR plans. Government employees can also use this tool to review those plans.

Table 1: Accessibility Framework for Single Family Curbside / Multi-family Collection / Direct Pick-Up

				Primary Factor
Product Group	Product Examples	Community Type	Population Target	Reasonable Access for Frequency of Collection
Daily, Small, Non-Hazardous	Packaging and Paper Products	Easily Accessible Area	95%	Weekly/Biweekly
		Accessible Area	90%	Weekly/Biweekly
		Less Accessible Area	85%	Biweekly
		Remote Area	50%	Monthly
		Very Remote Area	25%	Monthly
	Packaging and Paper Products(Flexibles and Glass)	Easily Accessible Area	95%	Weekly/Biweekly
		Accessible Area	90%	Weekly/Biweekly
		Less Accessible Area	85%	Biweekly
		Remote Area	50%	Monthly
		Very Remote Area	25%	Monthly
Weekly, Small, Non-Hazardous	Beverage Containers including Milk, Beer Containers	Easily Accessible Area	95%	Not Accessible*
		Accessible Area	90%	Not Accessible
		Less Accessible Area	85%	Not Accessible
		Remote Area	50%	Not Accessible
		Very Remote Area	25%	Not Accessible
Yearly/Less than yearly, Small/Medium, Hazardous	Paint, Pesticides, and Flammable Liquids, Used Motor Oil, Filters, Containers and Antifreeze, Medications	Easily Accessible Area	95%	6 times per year
		Accessible Area	90%	4 times per year
		Less Accessible Area	85%	2 times per year
		Remote Area	50%	Once per year
		Very Remote Area	25%	Once per year
Yearly/Less than yearly, Large, Hazardous	Auto Batteries/Lead Acid Batteries	Easily Accessible Area	95%	6 times per year
		Accessible Area	90%	4 times per year
		Less Accessible Area	85%	2 times per year
		Remote Area	50%	Once per year
		Very Remote Area	25%	Once per year
Yearly/Less than yearly, Small/Medium, Non-Hazardous	Electronics, Light Bulbs and Light Fixtures, Small Appliances, Alkaline and Rechargeable Batteries, Smoke Alarms, Carbon Monoxide Detectors, Telecommunication Equipment, Thermostats, Cell Phones	Easily Accessible Area	95%	6 times per year
		Accessible Area	90%	4 times per year
		Less Accessible Area	85%	2 times per year
		Remote Area	50%	Once per year
		Very Remote Area	25%	Once per year
Yearly/Less than yearly, Large, Non-Hazardous	Outdoor Power Equipment, Tires, Large Appliances	Easily Accessible Area	95%	6 times per year
		Accessible Area	90%	4 times per year
		Less Accessible Area	85%	2 times per year
		Remote Area	50%	Once per year
		Very Remote Area	25%	Once per year

*Not Accessible due to feasibility of returning consumer deposits through curbside system

Table 2: Accessibility Framework for Permanent Collection Facilities

				Primary Factor	Secondary Factors				
Product Group	Product Examples	Community Type	Population Target	Reasonable Access for Drive Time to Permanent Collection Facility	% of Facilities Meeting Minimum Hours	Minimum Weekday Hours Open	Minimum Weekend Hours Open	% of Census Subdivisions (CSD) With At Least One Universal Return Location	% of Consumers Satisfied With Permanent Collection Facility Network
Daily, Small, Non-Hazardous	Packaging and Paper Products	Easily Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Accessible Area	90%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Less Accessible Area	85%	15 minutes	80%	20	5	80%	80%
		Remote Area	50%	20 minutes	80%	20	5	80%	80%
		Very Remote Area	25%	30 minutes	80%	20	5	80%	80%
	Packaging and Paper Products (Flexibles and Glass)	Easily Accessible Area	95%	10 minutes	80%	45	16	80%	80%
		Accessible Area	90%	10 minutes	80%	32	8	80%	80%
		Less Accessible Area	85%	15 minutes	80%	20	5	80%	80%
		Remote Area	50%	20 minutes	80%	20	5	80%	80%
		Very Remote Area	25%	30 minutes	80%	20	5	80%	80%
Weekly, Small, Non-Hazardous	Beverage Containers including Milk, Beer Containers	Easily Accessible Area	95%	10 minutes	80%	45	16	80%	80%
		Accessible Area	90%	10 minutes	80%	32	8	80%	80%
		Less Accessible Area	85%	15 minutes	80%	20	5	80%	80%
		Remote Area	50%	20 minutes	80%	20	5	80%	80%
		Very Remote Area	25%	30 minutes	80%	15	4	80%	80%
Yearly/Less than yearly, Small/Medium, Hazardous	Paint, Pesticides, and Flammable Liquids, Used Motor Oil, Filters, Containers and Antifreeze, Medications	Easily Accessible Area	95%	15 minutes	80%	40	12	80%	80%
		Accessible Area	90%	20 minutes	80%	32	6	80%	80%
		Less Accessible Area	85%	30 minutes	80%	20	5	80%	80%
		Remote Area	50%	40 minutes	80%	15	4	80%	80%
		Very Remote Area	25%	45 minutes	80%	10	2	80%	80%
Yearly/Less than yearly, Large, Hazardous	Auto Batteries/Lead Acid Batteries	Easily Accessible Area	95%	15 minutes	80%	40	12	80%	80%
		Accessible Area	90%	20 minutes	80%	32	6	80%	80%
		Less Accessible Area	85%	30 minutes	80%	20	5	80%	80%
		Remote Area	50%	40 minutes	80%	15	4	80%	80%
		Very Remote Area	25%	45 minutes	80%	10	2	80%	80%
Yearly/Less than yearly, Small/Medium, Non-Hazardous	Electronics, Light Bulbs and Light Fixtures, Small Appliances, Alkaline and Rechargeable Batteries, Smoke Alarms, Carbon Monoxide Detectors, Telecommunication Equipment, Thermostats, Cell Phones	Easily Accessible Area	95%	15 minutes	80%	40	12	80%	80%
		Accessible Area	90%	20 minutes	80%	32	6	80%	80%
		Less Accessible Area	85%	30 minutes	80%	20	5	80%	80%
		Remote Area	50%	40 minutes	80%	15	4	80%	80%
		Very Remote Area	25%	45 minutes	80%	10	2	80%	80%
Yearly/Less than yearly, Large, Non-Hazardous	Outdoor Power Equipment, Tires, Large Appliances	Easily Accessible Area	95%	15 minutes	80%	32	8	80%	80%
		Accessible Area	90%	20 minutes	80%	20	5	80%	80%
		Less Accessible Area	85%	30 minutes	80%	20	5	80%	80%
		Remote Area	50%	40 minutes	80%	12	4	80%	80%
		Very Remote Area	25%	45 minutes	80%	8	2	80%	80%

Table 3: Accessibility Framework for Temporary Collection Facilities and Events

Product Group	Product Examples	Community Type	Population Target	Primary Factors		Secondary Factors		
				Reasonable Access Frequency for Temporary Collection Facility and Event	Reasonable Access Drive Time for Temporary Collection Facility and Event	% of Facilities and Events Meeting Minimum Hours	Minimum Hours Open	% of Temporary Collection Facilities and Events Where At Least Two Other EPR Programs Are Collaborating
Daily, Small, Non-Hazardous	Packaging and Paper Products	Easily Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Accessible Area	90%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Less Accessible Area	85%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Remote Area	50%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Very Remote Area	25%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
	Packaging and Paper Products (Flexibles and Glass)	Easily Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Accessible Area	90%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Less Accessible Area	85%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Remote Area	50%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Very Remote Area	25%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
Weekly, Small, Non-Hazardous	Beverage Containers including Milk, Beer Containers	Easily Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Accessible Area	90%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Less Accessible Area	85%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Remote Area	50%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Very Remote Area	25%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
Yearly/Less than yearly, Small/Medium, Hazardous	Paint, Pesticides, and Flammable Liquids, Used Motor Oil, Filters, Containers and Antifreeze, Medications	Easily Accessible Area	95%	6 times per year	15 minutes	80%	16	50%
		Accessible Area	90%	4 times per year	20 minutes	80%	10	50%
		Less Accessible Area	85%	2 times per year	30 minutes	80%	8	50%
		Remote Area	50%	Once per year	40 minutes	80%	8	50%
		Very Remote Area	25%	Once per year	45 minutes	80%	8	50%
Yearly/Less than yearly, Large, Hazardous	Auto Batteries/Lead Acid Batteries	Easily Accessible Area	95%	6 times per year	15 minutes	80%	16	50%
		Accessible Area	90%	4 times per year	20 minutes	80%	10	50%
		Less Accessible Area	85%	2 times per year	30 minutes	80%	8	50%
		Remote Area	50%	Once per year	40 minutes	80%	8	50%
		Very Remote Area	25%	Once per year	45 minutes	80%	8	50%
Yearly/Less than yearly, Small/Medium, Non-Hazardous	Electronics, Light Bulbs and Light Fixtures, Small Appliances, Alkaline and Rechargeable Batteries, Smoke Alarms, Carbon Monoxide Detectors, Telecommunication Equipment, Thermostats, Cell Phones	Easily Accessible Area	95%	6 times per year	15 minutes	80%	16	50%
		Accessible Area	90%	4 times per year	20 minutes	80%	10	50%
		Less Accessible Area	85%	2 times per year	30 minutes	80%	8	50%
		Remote Area	50%	Once per year	40 minutes	80%	8	50%
		Very Remote Area	25%	Once per year	45 minutes	80%	8	50%
Yearly/Less than yearly, Large, Non-Hazardous	Outdoor Power Equipment, Tires, Large Appliances	Easily Accessible Area	95%	6 times per year	15 minutes	80%	16	50%
		Accessible Area	90%	4 times per year	20 minutes	80%	10	50%
		Less Accessible Area	85%	2 times per year	30 minutes	80%	8	50%
		Remote Area	50%	Once per year	40 minutes	80%	8	50%
		Very Remote Area	25%	Once per year	45 minutes	80%	8	50%

Table 4: Accessibility Framework for Mail-back Returns

				Primary Factor
Product Group	Product Examples	Community Type	Population Target	Reasonable Access for Drive Time to Mail-back Collection Facility
Daily, Small, Non-Hazardous	Packaging and Paper Products	Easily Accessible Area	95%	Not Accessible
		Accessible Area	90%	Not Accessible
		Less Accessible Area	85%	Not Accessible
		Remote Area	50%	Not Accessible
	Packaging and Paper Products (Flexibles and Glass)	Very Remote Area	25%	Not Accessible
		Easily Accessible Area	95%	Not Accessible
		Accessible Area	90%	Not Accessible
		Less Accessible Area	85%	Not Accessible
Weekly, Small, Non-Hazardous	Beverage Containers including Milk, Beer Containers	Remote Area	50%	Not Accessible
		Very Remote Area	25%	Not Accessible
		Easily Accessible Area	95%	Not Accessible
		Accessible Area	90%	Not Accessible
		Less Accessible Area	85%	Not Accessible
		Remote Area	50%	Not Accessible
	Paint, Pesticides, and Flammable Liquids, Used Motor Oil, Filters, Containers and Antifreeze, Medications	Very Remote Area	25%	Not Accessible
		Easily Accessible Area	95%	Not Accessible
Yearly/Less than yearly, Small/Medium, Hazardous	Auto Batteries/Lead Acid Batteries	Accessible Area	90%	Not Accessible
		Less Accessible Area	85%	Not Accessible
		Remote Area	50%	Not Accessible
		Very Remote Area	25%	Not Accessible
	Electronics, Light Bulbs and Light Fixtures, Small Appliances, Alkaline and Rechargeable Batteries, Smoke Alarms, Carbon Monoxide Detectors, Telecommunication Equipment, Thermostats, Cell Phones	Easily Accessible Area	95%	15 minutes
		Accessible Area	90%	20 minutes
		Less Accessible Area	85%	30 minutes
		Remote Area	50%	40 minutes
Yearly/Less than yearly, Large, Non-Hazardous	Outdoor Power Equipment, Tires, Large Appliances	Very Remote Area	25%	45 minutes
		Easily Accessible Area	95%	Not Accessible
		Accessible Area	90%	Not Accessible
		Less Accessible Area	85%	Not Accessible
		Remote Area	50%	Not Accessible
		Very Remote Area	25%	Not Accessible
		Easily Accessible Area	95%	Not Accessible
		Accessible Area	90%	Not Accessible

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Terms & Definitions

The following are key terms used throughout the report. The corresponding definitions explain how these terms are used and intended to be understood in the context of this report.

Collection service – A product collection mechanism, including single family curbside / multi-family collection / direct pick-up, permanent collection facility, temporary collection facility or event, and mail-back returns. This report focuses on these four types of collection services as part of the accessibility framework but does not claim that this list is exhaustive.

Permanent collection facility – A type of collection service that is a permanent place (e.g., a depot or retail location) where consumers can return regulated products for proper end-of-life management. This type of collection facility is established by the producer or identified in an approved plan.¹

Temporary collection facility – A type of collection service that is a temporary location (e.g., a collection event) where consumers can return regulated products for proper end-of-life management. This type of collection facility is operated and/or funded by the producer.

Single family curbside / multi-family collection / direct pick-up – A type of collection service provided to single-family and multi-family buildings. For single-family households, this includes materials set out at the curb for pickup. For multi-family households, there is typically collection from a central location in buildings with five or more residential units. Direct pick-up is often used to refer to on-demand collection from industrial and commercial waste generators and is included in this phrase as it is tangential to single family curbside and multi-family collection. In this report, “single family curbside / multi-family collection / direct pick-up” refers to a service that is provided by the producer to residents at various frequencies specified in the framework.

Mail-back return – A type of collection service that allows consumers to return their products through regular mail service.

Retailer – A person who sells or offers for sale a product to a consumer.² In this report, retailer is also used to refer to the retail store as a whole, not just a person.

Duty of producer – A producer must either have an approved EPR plan under Part 2 of B.C.’s Recycling Regulation and comply with the plan or comply with Part 3, to use in a commercial enterprise, sell, offer for sale or distribute a regulated product in B.C.³

Indigenous governments, organizations, or communities – Governments and organizations representing Indigenous Peoples or communities of Indigenous Peoples. In Canada, Indigenous Peoples includes First Nations, Inuit, and Métis people.⁴

Hazardous waste – Products that are defined as hazardous in Section 1 of B.C.’s Hazardous Waste Regulation.⁵

Census Subdivision (CSD) – A municipality or an area that is deemed to be equivalent to a municipality for statistical reporting purposes.⁶

Census Agglomeration (CA) – A large, densely populated centre that comprises economically and socially integrated neighbouring municipalities. A CA must have a core population of at least 10,000 based on data from the previous Census of Population Program.⁷

Census Metropolitan Area (CMA) – A large, densely populated centre that comprises economically and socially integrated neighbouring municipalities. A CMA must have a population of at least 100,000, of which 50,000 or more must live in the core based on adjusted data from the previous Census of Population Program.⁸

Index of Remoteness – A tool that can be used to measure the relative remoteness of Canadian communities. Developed by Statistics Canada, this index considers the distance a community is from all the population centres in a given travel radius, as well as the population size of those centres. Based on the index scores, communities can be grouped into one of five categories: *easily accessible*, *accessible*, *less accessible*, *remote*, and *very remote*.⁹

Recovery rate – The amount of product collected divided by the amount of product produced, expressed as a percentage.¹⁰

Disposal – Refers to the discarding of unwanted or waste material,¹¹ unless specified as ‘disposal for recycling’ or ‘disposal to landfill’.

Universal return location – A permanent collection facility that accepts all the products (of the same hazard level) that can be returned within that census subdivision.

Acronyms

The following are key acronyms used throughout the report, provided here for reference.

B.C.	British Columbia
CSD	Census Subdivision
CA	Census Agglomeration
CMA	Census Metropolitan Area
EPR	Extended Producer Responsibility
PRO	Producer Responsibility Organization
PPP	Packaging and Paper Products
RI	Remoteness Index
SABC	Stewardship Agencies of British Columbia



1.0

Introduction

1.1 Project Background

The Province of British Columbia (B.C.) has extended producer responsibility (EPR) programs in place for a variety of products including beverage containers, paint, tires, packaging and paper products (PPP), and lubricating oil, among others. EPR is a policy tool that shifts both the financial and physical end-of-life management of products from local and Indigenous governments and taxpayers to the producers and consumers of those products. In B.C., and most jurisdictions with EPR frameworks, producers delegate their responsibility to an EPR agency (also referred to as a Producer Responsibility Organization (PRO), stewardship agency, or stewardship organization) who then provides the operational support to meet producer requirements under the relevant legislation.

Under the authority of the Environmental Management Act, the Recycling Regulation requires producers, or the designated agency acting on their behalf, to submit an EPR plan for approval and must review the plan every five years.¹² Within this plan, the agency must “provide for reasonable and free consumer access to collection facilities or collection services” throughout B.C.¹³

Currently, there is no overarching standard or guideline in B.C. that defines what constitutes 'reasonable access.' As a result, EPR agencies have established their own accessibility criteria. These criteria are then assessed by the ministry on a case-by-case basis. The absence of a standard or guideline leads to varying criteria across programs, which can create confusion among consumers and potentially limit equity.

To support EPR agencies in the development of plan commitments and to assist the province in evaluating these commitments for adequacy, the Ministry of Environment and Climate Change Strategy has commissioned Eunomia Research and Consulting Inc. to develop an accessibility framework that identifies what constitutes reasonable access to a collection service.

1.2 Project Objectives

The overall objectives of this assignment are to:

- Establish a hierarchy of service level requirements to optimize consumer access to collection services for regulated products, with consideration for different community types and the products being collected;
- Develop a framework to direct EPR agencies in developing required consumer accessibility commitments in EPR plans; and
- Develop objective criteria for ministry staff to evaluate accessibility commitments in EPR plans.

In order to meet these objectives, the assignment was developed in two phases. The outcomes of the first phase include the following and were summarized in a previous report¹⁴ :

- Definitions for terms and concepts;
- A list of factors that may influence the required level of access to collection services, with an explanation for each factor;

- Characteristics of collection facilities that impact consumer access and/or willingness to use the recycling service, with a brief explanation; and
- A summary of key takeaways from engagement with various parties.

The objectives of the second phase, results of which are provided in this report, are to:

- Establish a hierarchy of service level requirements to optimize consumer access to recycling services for regulated products, commensurate with the product and community characteristics identified in Phase 1;
- Develop written accessibility commitments for the aforementioned service level requirements that could be integrated into EPR plans; and
- Develop a tool to guide EPR agencies in determining their service level requirements based on the hierarchy developed. This tool is provided separately but described within this report.

1.3 Methodology

Phase 1

The first phase of this project involved a mixed methods approach which included both a secondary research review and primary interviews. The project team reviewed relevant B.C. legislation, EPR plans submitted by EPR agencies, academic and grey literature, feedback on EPR plans and the current Stewardship Agencies of British Columbia (SABC) accessibility standard from various parties, and related information from similar jurisdictions.

This secondary research phase was supplemented with information gathered through interviews with interested parties. In total, eleven interviews were conducted with representatives from five different organizations. These interviews included members from Indigenous organizations, non-profits, regional districts, and EPR agencies. A full list of the interviews conducted during this project is provided in Appendix 1.0.

Phase 2

The second phase of the project included additional analysis to understand which of the factors identified in Phase 1 were most relevant for establishing levels of reasonable access for EPR programs. The long list of factors was then shortlisted, and each shortlisted factor was reviewed in more detail with ministry staff. To establish access levels, the project team reviewed current performance, access levels in other jurisdictions, access standards for similar tasks or needs, and other relevant literature. Based on the access levels determined, a tool was developed which will allow both the ministry and EPR agencies to easily understand the required access levels for a program and written accessibility commitments that could be integrated into EPR plans to demonstrate adoption of the access levels.

1.4 Project Framework

In order to develop a hierarchy of service level requirements, the project team, together with ministry staff, categorized different sections of a recycling system to identify where different service level requirements may be appropriate. As B.C. is a diverse province with various EPR programs, the aim of these categories is to provide “reasonable and free consumer access to collection facilities or collection services”, as set out in the B.C. Recycling Regulation, to all communities in the province.¹⁵ The specific categories reviewed to understand the factors that could impact accessibility are as follows:

- **Product Factors:** There are more than a dozen EPR programs in B.C., with additional products expected to be regulated in the coming years. Different products have different characteristics (e.g., size/weight, hazard level) that may impact a consumer’s desire or ability to return the product. Additionally, there are characteristics that influence an EPR program’s ability to collect the product. Therefore, the project team reviewed these product characteristics and grouped products into categories. The framework standards are set per category, so that similar products have the same requirements, and products with different characteristics have different requirements. This approach allowed the project team to group products so products which are different could have different requirements under this framework. These groups allow for a more streamlined accessibility framework, and since many agencies will have the same standard, collaboration is easier within groups.
- **Community Factors:** B.C. is a diverse province with highly dense urban centres and remote rural areas. Because urban and rural communities have different characteristics that may influence an EPR program’s ability to collect products, different collection standards are justified for each grouping. Community factors were reviewed to identify characteristics that could allow for different collection service standards. This review of community characteristics allowed the project team to set standards based on community types. These groups will establish clear delineation for agencies to understand what service standards they need to meet in what areas.
- **Collection Service Factors:** Products regulated under EPR programs can be returned in a number of ways, which can be grouped into four main approaches: single family curbside / multi-family collection / direct pick-up, permanent collection facilities, temporary collection facilities and events, and mail-back returns. Each of these approaches may have different characteristics that influence reasonable access such as collection frequency or driving distance. Therefore, the project team reviewed the most relevant characteristics for each collection service approach. The framework also considers how the same level of access could be met through the different collection methods.

These three sets of factors are combined to create a hierarchy of service level requirements broken down by product and community type.

This report follows the same structure as the project framework. First, the current status is provided detailing how EPR programs utilize product, community, and collection service factors to determine reasonable access and limitations with this approach (Section 2.0). Then a section is provided for each product, community, and collection service factors outlining the justification for how the project team selected factors to be included in an accessibility framework (Sections 3.0, 4.0, 5.0). Finally, Section 6.0 details the accessibility framework for evaluating reasonable access and provides an explanation for how this framework can be used for drafting written accessibility commitments that can be integrated into EPR plans.



2.0

Current Status

As discussed in Section 1.1, EPR agencies must adequately provide for “reasonable and free consumer access to collection facilities or collection services” within their EPR plans. This section presents an overview of how B.C.’s EPR agencies currently establish their commitments for reasonable access and any limitations with how these commitments are currently structured.

SABC, the association representing the collective of Producer Responsibility Organizations in B.C., collaborate on providing access to these services; while this group consists of most EPR agencies in the province, membership is voluntary and not all agencies are members. In 2021, SABC released Guidance on Accessibility of Stewardship Programs (Accessibility Framework) that provides principles of accessibility, an accessibility framework, and considerations for remote communities.¹⁶ The SABC framework is as follows:

Depending on the nature of the product and the circumstances required for collection, each Stewardship Program should provide collection service to a specified percentage* of the British Columbia population using the criteria below:

- *For Non-Urban communities, collection service within 60 kilometers*
- *For Urban communities, collection service within 15 kilometers*
- *For Remote communities, collections service where practical*

*This will vary by program

2.1 General Limitations

Definition of Reasonable

In the current regulation, the term “reasonable” is not defined, leaving room for interpretation of what constitutes reasonable accessible to EPR services. While EPR is intended to “shift the responsibility *from* local and Indigenous governments and taxpayers to the producers and consumers”,¹⁷ the lack of definition of reasonable access has resulted in services being determined on a case-by-case basis. As was shared in interviews, this process oftentimes puts the responsibility on local, Indigenous, and Provincial governments to push for what they deem reasonable access in their communities from each EPR agency. The accessibility framework aims to address this issue by more clearly defining what is reasonable access for different product groups in different types of communities.

2.2 Product Groupings

B.C. has a long-standing EPR framework that has grown over the last 20 years to cover a diverse range of products such as paint, used oil, and beverage containers, with more products scheduled to be added in the next few years.¹⁸ At present, the regulation includes the following obligated product categorizes, organized into five schedules:

- Schedule 1: Beverage Container Product Category

- Schedule 2: Residual Product Categories (solvent and flammable liquids, pesticides, gasoline, pharmaceuticals, lubricating oil, oil filters, paint, lead-acid batteries, antifreeze)
- Schedule 3: Electronic and Electric Product Category
- Schedule 4: Tire Product Category
- Schedule 5: Packaging and Paper Product Category

It's worth noting that while these schedules recognize the inherent differences in product types, the requirement for 'reasonable access' is applied at large and is not differentiated based on the schedules. Therefore, establishing a standard for accessibility based on these groupings may not be the correct approach.

Products due to be added to the regulation include hybrid and electric vehicle batteries and other battery types; mattresses and foundations; compressed canisters, such as single-use camping fuel and fire extinguishers; medical sharps used by people at home; emerging electronics and more moderately hazardous products. The ministry's EPR Five-Year Action Plan 2021-2026 sets the goal of clarifying product categories/groupings with the addition of these materials.¹⁹

2.2.1 Limitations

Universal Requirement

Under B.C.'s current Recycling Regulation, it is a universal requirement to provide for "reasonable and free consumer access" for all regulated products.²⁰ While this allows flexibility for EPR agencies to choose the collection service(s) that best suit their needs, it has resulted in many different methods of collection and ways of measuring the level of services provided for each product type, making it difficult for the ministry to understand how programs are performing in comparison to one another. This framework intends to acknowledge the differences in product types by creating product groups; this clarifies what is reasonable access for different types of products, resulting in a more equitable standard.

Collaboration Amongst EPR Agencies

Collaboration is one of SABC's principles of product stewardship.²¹ Although some degree of collaboration amongst EPR agencies already exists, further collaboration would help ease the financial burden faced by each agency as well as improve the consumer return experience. This framework provides groupings of products, which could be used to inform future collaboration opportunities for EPR agencies. As EPR in B.C. is expanded to cover more and more products, improved collaboration and the need for organized product groupings will only become more important. Not only does it provide better consumer services by improving collection, it also allows for cost-sharing between agencies.

2.3 Community Groupings

B.C. is a diverse province with highly dense urban centers and remote rural areas. Most EPR agencies use this urban and rural split to create separate standards for different community types. For example, in its 2013 Action Plan, SABC included different standards for community groups as follows:

- Rural communities with a population of 4,000 or more
- Urban communities with a population of 4,000 or more

The definition for urban and rural used is:

“For purposes of the depot service standard, rural communities are defined as cities, towns, resort municipalities and district municipalities with a population of between 4,000 and 29,999 outside the Metro Vancouver and Capital Regional Districts. Urban communities are defined as cities, district municipalities and towns within the Metro Vancouver and Capital Regional Districts with a population of 4,000 or more and cities and district municipalities with a population of 30,000 or more in the remainder of the province.”²²

The current breakdown does not provide a definition for communities with populations under 4,000, but the updated Guidance on Accessibility of Stewardship Programs²³ does mention remote communities.

When it comes to categorizing communities, many programs use the SABC standard, but others use urban and rural with slightly different definitions. For instance, the Electronic Products Recycling Association (EPRA) defines urban areas as any Census Metropolitan Area (CMA) defined by Statistics Canada, with rural areas being communities which fall outside CMAs. Other agencies, like the Brewers’ Recycled Container Collection Council (BRCCC), have one access standard for the entire population and do not differentiate between urban and rural areas.

2.3.1 Limitations

Varied Categories and Definitions

Although SABC provides a suggested standard, EPR agencies are not required to use it. This has led to various organizations presenting accessibility standards with different categorizations of communities and different definitions for the same term. This can create confusion for ministry staff tasked with reviewing accessibility standards or verifying whether the standard was met. Additionally, it can cause confusion for residents and regional districts trying to understand what level of service they should expect if they are considered ‘rural’ under one definition but not under another.

It's also worth noting that Statistics Canada is moving away from the terms ‘rural’ and ‘urban’ in the regular census, which may make it even more challenging to agree on a definition. For example, the terms ‘population centre,’ ‘core,’ ‘fringe’ and ‘rural area’ have replaced the terms ‘urban area,’ ‘urban core,’ ‘urban fringe’ and ‘rural fringe’ since the 2011 Census.²⁴

Lack of Granularity

When EPR agencies report on the accessibility of their programs, most report a single percentage for the entire population, rather than disaggregated data for different community groups. For example, an EPR agency may have different accessibility standards for urban and rural areas, but rather than report accessibility levels for each of these community types, it will report one number for the entire B.C. population. This lack of

granularity presents challenges to the ministry or interested parties in understanding how access in certain community types could be improved and ensuring that the requirements of the Recycling Regulation are being met across different community types. Additionally, the lack of granularity enables EPR agencies to meet accessibility targets even if there is limited to no access in certain community types (i.e., more remote areas). In general, it makes more sense—both logistically and financially—to provide collection services in urban areas as more material can be collected in a smaller radius. This can lead to agencies prioritizing the establishment of collection services in urban areas to support meeting their overall accessibility target. The existence of a single target for the entire population makes it difficult to evaluate levels of service in different community types.

For example, if 80% of B.C.'s population is living in urban areas and 20% in rural areas, and an EPR agency has set an overall population target of 90%, it could technically meet that target by providing access to collection services to 100% of those living in urban communities and to only 50% of those living in rural communities. Without providing specific targets for each community type, it is difficult to know which communities make up the 10% of the population that does not have access. This could lead to lower accessibility levels in more rural and remote areas where it can be considered more difficult to provide service.

Additionally, the diversity within rural areas is also significant so even if a separate rural target was set, this could similarly exclude service in the most remote areas. Without establishing specific targets for unique community types, it is difficult to ensure that the requirements of the regulation are met across different community types.

2.4 Collection Service Standards

As previously stated, B.C.'s EPR agencies are required to establish their own accessibility targets. They are required to provide "reasonable access," but there is no overarching standard or guidance defining what exactly is meant by 'reasonable.' As a result of this lack of guidance, the standards set by the different EPR agencies are varied and the factors established for determining reasonable access are limited.

In its 2013 Action Plan, SABC recommended the following access standards:

- For rural communities with a population of 4,000 or more, a 45 minute drive to a collection facility.
- For urban communities with a population of 4,000 or more, a 30 minute drive to a collection facility.

Similarly to SABC, BRCCC utilizes a drive time metric for measuring access. This standard determines access based on the driving distance from a community to a return location.

Other programs use different standards for determining access levels. Some examples include:

- **Number of Locations:** Tire Stewardship BC (TSBC) requires that at least 25% of registered retailers in each regional district take back end-of-life tires (i.e., return to retail locations).²⁵
- **Distance to Location:** Call2Recycle's goal is to ensure that at least 95% of British Columbians reside within 15 kilometers of an active collection facility.²⁶
- **Mail-Back Returns:** TELUS allows their customers to return their devices via regular mail; in their reporting, they indicate that 100% of the population has reasonable access.²⁷

2.4.1 Limitations

Inconsistent Use of Standards

Currently, different EPR agencies evaluate consumer access to collection services based on a different set of factors. These include drive time to return location, distance to return location, total number of return locations, and the ability to return materials via mail. The fact that different programs interpret reasonable access differently makes it challenging to compare accessibility levels across programs and to ensure that similar programs provide similar levels of service.

Limited Factors Used to Establish Access Standards

While there is no universally accepted definition of “accessible,” it is important to identify potential ways to define accessibility in numerous sectors, including recycling. In recent years, published papers have sought to establish frameworks for measuring accessibility by using multiple factors to provide a comprehensive evaluation of access, which may look different for different consumers.

For example, the healthcare sector has established a framework called the Five A’s of access,²⁸ which includes affordability, availability, accessibility, accommodation and acceptability. These factors are further elaborated in Table 5.²⁹ While this framework was developed for healthcare services, the Five A’s were included in Recycling Council of British Columbia’s review of accessibility standards and can provide relevant context when considering reasonable access for recycling services.³⁰

Table 5: Five A’s of Accessibility

Accessibility Category	Detailed Explanation
Affordability	The ability and willingness to pay the fees associated with the services
Availability	Having enough personnel to keep appointments and the personnel having the capacity to do their jobs properly. Staff have enough resources.
Accessibility	How close are the services to the people who use the service and how easy is it to find the location.
Accommodation	Is it easy to get an appointment. The hours at times which most people can use the service, how can people get information about the service.
Acceptability	Service provider accepts all clients.

More recently, scholars have identified factors of convenience that are specifically related to recycling and EPR programs.³¹ These factors are further detailed in Table 6. Within this framework, 30 different factors are identified for evaluating access or convenience to recycling services for EPR programs. These include the days and hours when a consumer can return their product, the distance or travel time to the return location, the fees involved in the recycling process, the draw of the collection point, and the physical effort needed, among other factors.

Table 6: Major Categories and Factors of Convenience for EPR

Summary of major categories and factors of convenience.

Convenience categories				
Knowledge requirements	Proximity to collection point	Opportunity to drop-off materials	Draw of the collection point	Ease of process
<i>Convenience factors</i>				
• Accessibility of information • What and how to sort/segregate • Where to bring materials • How to get to drop-off site • When (days and hours) to go • Acceptance requirements (e.g., residency status) • Drop-off procedures • Drop-off fees	• Distance: walking • Distance: vehicular • Degree of traffic congestion/control • Access to public transportation • Timing of public transportation	• Days open • Hours open • Authorization to drop-off	• Retail centers • Non-retail services • EOL fees • Cleanliness, security	• Sorting/segregation requirements • Storage requirements • Processing/cleaning • Storage needs • Collection container type • Physical effort • Physical access • Staff interactions and assistance • Access to vehicle • Drop-off procedure

The differences between the published frameworks for determining access and how EPR agencies have interpreted access, whether individually or as a collective through SABC, are significant. In most cases, the interpretation of reasonable access only includes one factor, whether it is drive time, distance, or the total number of locations. By only using one factor, they fail to provide a holistic framework for evaluating reasonable access. Evidence suggests that multiple factors should be considered when evaluating reasonable access. Therefore, the current approach of evaluating reasonable access based on only one factor suggests that existing access not be reasonable.

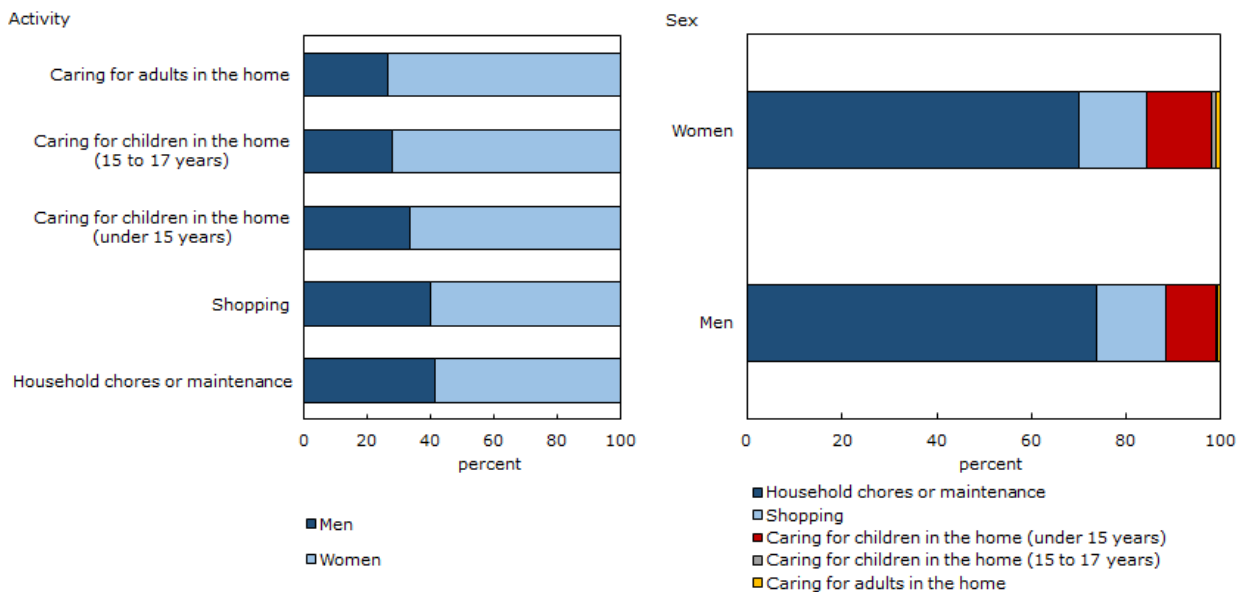
Standards Set May Not Result in Reasonable Access

The current standards established by EPR agencies, whether it is drive time to a return facility or others, can be considered modest. Many programs publish high rates of access based on their interpretation of reasonable access. At first glance, this could be viewed as positive, as the goal should be high rates of access. However, if the agencies' interpretation of reasonable access leads to a modest standard, many people may not have reasonable access to recycling services. Furthermore, a modest standard with high rates of access creates very little incentive to improve accessibility moving forward, as there is close to universal access according to the standard. These standards are also subjective, and during interviews with EPR agencies, no program was able to identify a clear, objective definition of reasonable or how it was used to establish the current drive time metrics.

For those who still return their products even when they live beyond where the EPR program is providing access or when standards are modest, significant time is spent on the product returns. This unpaid activity contributes to the unpaid economy of work, and those with less access are required to do more unpaid labor compared to those with more access. In Canada, the value of unpaid labor on a per capita basis per year is \$30,160.³² If a program is more accessible, consumers can spend more time on leisure activities or on paid work.

It is also important to consider who is responsible for the management of products within B.C. households. According to Statistics Canada, a majority of both shopping and household chores are completed by women. Therefore, programs with modest standards likely require additional unpaid work from women compared to men.

Figure 1: Share of Total Unpaid Household Work Hours by Activity and Sex (2015)



Source: Statistics Canada, special tabulation, "Measuring the economic value of unpaid household work in Canada, 2015 to 2019," *Latest Developments in the Canadian Economic Accounts* (13-605-X), 2022.

Based on this evaluation of the current service standards (Section 2.0), the following sections provide an explanation of the chosen accessibility factors for product types (Section 3.0), community types (Section 4.0), and collection service types (Section 5.0).



3.0

Product Factors

Current EPR programs in B.C. span a wide variety of product types. To better understand how accessibility commitments from EPR agencies may vary based on product types, the project team reviewed factors which may influence the level of service required. This section includes the factors which are included in the accessibility framework and how they can be used to create product groupings.

3.1 Factor Review Overview

The project team developed a long list of product factors to understand the variety in the nature of products regulated under EPR and what differences in product types may need to be considered for different collection methods. These included product size; product weight; frequency of purchase; product hazard level; product lifespan; product durability; consumable product; area of use; purchase method; purchase location; secondary return, disposal to landfill, or recycling method; product user; return volume; other regulations. A full list of product factors reviewed and their relevance to accessibility can be found in Appendix 2.0.

There are various factors that could impact a consumer's ability to return a product as well as what level of service is reasonable for an EPR agency to provide. Including every possible product factor would create an overcomplicated framework with redundant factors. The project team, therefore, sought to identify the key product factors that are most relevant to EPR accessibility and necessary for consideration. Informed by interviews with interested parties and collaboration with the ministry, a comprehensive review of the long list of product factors was narrowed down to product size and weight, frequency of purchase, and product hazard level.

3.2 Frequency of Purchase

The frequency at which products are purchased is closely linked to how often they are disposed. Products that are purchased more frequently tend to be disposed of more frequently. Frequency of purchase is relevant to accessibility because products that are purchased often require different return infrastructure for access to be considered reasonable. While disposal frequency is a more direct factor affecting accessibility, it is difficult to measure. Therefore, it was decided that the frequency of purchase would be the best indicator of product usage in relation to disposal needs. When grouping products based on purchase frequency, their intended life span was also considered, but in most cases, purchase and disposal tend to be correlated. For example, a consumer may buy a new lawnmower to replace an old one that is broken and needs to be disposed.

To calculate the frequency of purchase, the unit sales of products in each EPR program were divided by the provincial population to estimate the units purchased per capita per year. For products whose sales are reported on a tonnage basis (as opposed to units), an estimated weight per product was used to determine the number of units sold. Based on these calculations, and with an understanding of intended product use, four purchase frequencies categories were established: daily, weekly, yearly, and less than yearly. However, after considering the size/weight and hazard level of the products along with their purchase frequency, the project team determined that yearly and less than yearly purchase frequencies did not warrant separate product groupings. This was because three purchase frequency groupings, in addition to the other product factors,

were deemed sufficient to account for any necessary differences in the access standards. Consequently, in this framework, products are grouped by daily, weekly, and yearly/less than yearly purchase frequencies. These groupings are common metrics of time and align with the frequency calculations. For example, a product that was estimated to be purchased over 365 times per year was classified as having a “daily” frequency of purchase.

3.3 Product Size and Weight

A product’s size and weight is relevant to accessibility because it influences a consumer’s ability to carry and return a product. Smaller products can easily be carried by the average individual, whereas larger products may require transportation via a vehicle. Additionally, residents may be able to put smaller products in their garbage bin and dispose of them with regular trash collection. EPR access should not only consider accessible recycling is but also how relatively accessible disposal to landfill is. EPR agencies have also informed the project team that the size/weight of the product impacts the collection process.

To categorize products, the project team divided them into small (less than 1 kg), medium (1 kg – 10 kg), and large (greater than 10 kg) based on their weight. The Canada Occupational Health and Safety Regulations (SOR/a86-304) on Manual Handling of Materials 14.36-49 state that an employee must be trained if they are responsible for lifting anything over 10 kg.³³ As it is not feasible for EPR agencies to train residents in the handling of heavy items, this weight limit was used as the quantifier for the large category. Products like tires, auto batteries, and mattresses would fall under the large category. As many currently regulated products are within the less than 10kg range, a 1 kg quantifier was added to distinguish small products from medium products. See Table 7 for more information on the product categories.

3.4 Product Hazard Level

The nature of certain products may require specific storage and disposal methods, especially if they are hazardous. For example, storing hazardous materials in small retail stores for prolonged periods can pose health risks to employees. To address this issue, the Hazardous Waste Regulation specifies unique collection requirements for hazardous materials that must be taken into account when establishing an accessibility framework for EPR programs.

Products in the accessibility framework are considered as hazardous or non-hazardous based on the B.C. Hazardous Waste Regulation definition.

3.5 Product Groupings

The table below summarizes the proposed product groupings, which consist of six categories. These categories were established by considering the three factors described earlier in this section, namely size/weight, frequency of purchase, and hazard level), and how they affect the ease of product return and collection. Therefore, the standard for reasonable access for each product grouping differs based on these

product factors. The standard also accounts for community and collection service factors, which are explained in the following sections.

Table 7 : Product Groupings and Examples

Product Group	Product Examples
Daily, Small, Non-Hazardous	Printed Paper and Packaging Printed Paper and Packaging (Flexibles and Glass) ³⁴
Weekly, Small, Non-Hazardous	Beverage Containers including Milk, Beer Containers
Yearly/Less than yearly, Small/Medium, Hazardous	Paint, Pesticides, and Flammable Liquids, Used Motor Oil, Filters, Containers and Antifreeze, Medications
Yearly/Less than yearly, Large, Hazardous	Auto Batteries/Lead Acid Batteries
Yearly/Less than yearly, Small/Medium, Non-Hazardous	Electronics, Light Bulbs and Light Fixtures, Small Appliances, Alkaline and Rechargeable Batteries, Smoke Alarms, Carbon Monoxide Detectors, Telecommunication Equipment, Thermostats, Cell Phones
Yearly/Less than yearly, Large, Non-Hazardous	Outdoor Power Equipment, Tires, Large Appliances



4.0

Community Factors

B.C.'s population lives in a diverse variety of community types, including densely populated urban areas, remote rural areas, and island communities. To better understand how EPR agencies can tailor their accessibility commitments to each community type, the project team examined various factors that may impact the level of service required. This section outlines the factors that are included in the accessibility framework and how they can be used to create community groupings.

4.1 Factor Review Overview

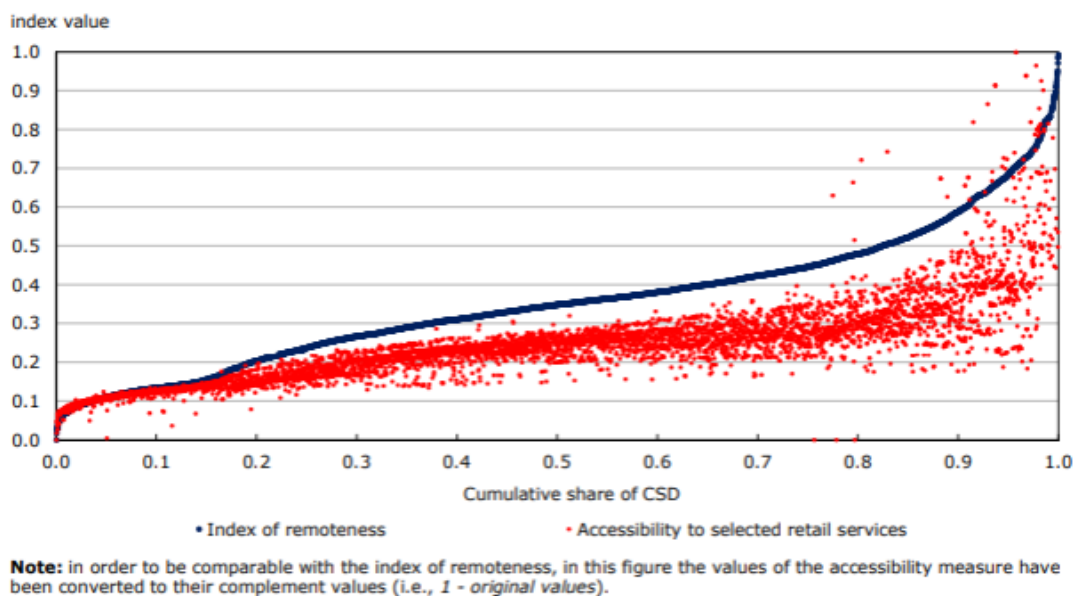
To better understand how and why accessibility standards and targets should be tailored to different communities, the project team compiled a long list of community factors. These included population size, geographic location, level of tourism, current waste management services, among others. A complete list of community factors reviewed and their relevance to accessibility can be found in Appendix 3.0.

Given the numerous factors that could affect a community's ability to return a product, the project team sought to identify a single measure that would capture several factors at once, rather than creating a convoluted framework with dozens of community types. After evaluating all the factors on the long list, the project team decided to use the Index of Remoteness developed by Statistics Canada to create community groupings for the accessibility framework.

4.2 Index of Remoteness

The project team utilized Statistics Canada's Index of Remoteness to categorize communities and determine reasonable access levels for EPR programs. The index takes into account both the distance of a community from various population centres and the size of those centres. For example, if two communities are the same size but one borders a large city while the other is several hundred kilometers away from any city, the former community would have a more accessible index score. This is more accurate than the traditional urban-rural categorization, which typically only considers population size and not distance to other communities.

Distance to other communities is an important factor in determining reasonable access to recycling services as providing services to a community with a small population but that is near a large community may be relatively efficient and cost effective. Furthermore, Statistics Canada has reported that a community's remoteness level is correlated with its access to other services.³⁵ The Index of Remoteness, therefore, provides an efficient way to establish different service levels or even determine if a service can be provided in certain community types. As Figure 2 illustrates, the more remote a community is, the less access to retail services they have. In the Statistics Canada report, retail services were identified through the North American Industry Classification System (NAICS) codes 44 and 45, which pertain to the retail trade sector. If there is greater access to retail services, then products can be more easily sold in the community, while the opposite is true if access is limited.

Figure 2: Distribution of the Accessibility Measure to Selected Retail Services³⁶

Statistics Canada calculates an Index of Remoteness number for each census subdivision (CSD) in Canada, the details of which can be found in published reports.³⁷ Each CSD is assigned a remoteness index (RI) score ranging from 0 to 1, such as 0.23, where lower numbers indicate more accessible areas and higher numbers correspond to more remote areas. Based on their Index of Remoteness, CSDs are then grouped into one of five categories:

- Easily Accessible
- Accessible
- Less Accessible
- Remote
- Very Remote

For example, all CSDs with a RI score lower than 0.15 could be considered easily accessible. To group the different CSDs into categories, Statistics Canada employs five different methodologies, three of which—the manual method, the Jenks natural breaks method, and the K-means clustering method—were recommended in a recent report.³⁸ Each of these methods is explained in detail by Statistics Canada.³⁹

The project team evaluated how the B.C. population would be distributed using the manual method, the Jenks natural breaks method, and the K-means clustering method. The results of these analyses are presented in Figures 3, 4, and 5 and Tables 8, 9, and 10.

Figure 3: Distribution of B.C. Population into Community Groupings Based on Remoteness Index (RI) Score - Manual Method

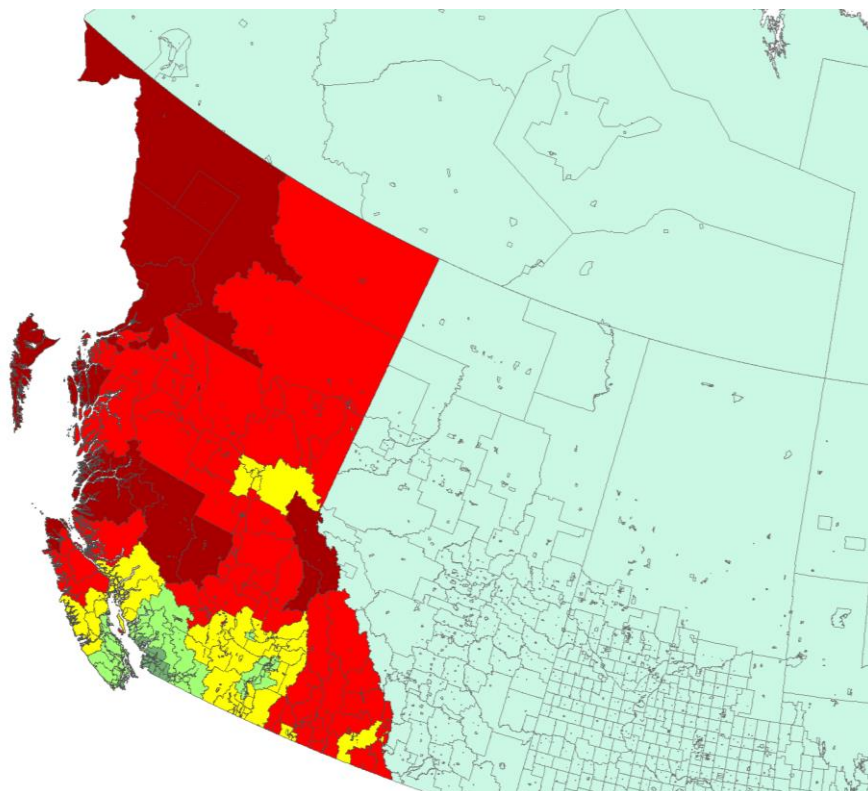


Table 8: Distribution of B.C. Population by Community Grouping Based on Remoteness Index (RI) – Manual Method

	RI Score	# of B.C. CSDs	% of B.C. CSDs	CSD Population Total (2021)	% of B.C. Population
Easily Accessible Area	< 0.1500	67	9%	3,232,416	64.6%
Accessible Area	0.1500 to 0.2888	155	21%	1,029,489	20.6%
Less Accessible Area	0.2889 to 0.3898	152	20%	368,785	7.4%
Remote Area	0.3899 to 0.5532	258	34%	349,847	7.0%
Very Remote Area	> 0.5532	111	15%	20,311	0.4%
Total		743	99%	5,000,879	99.9%

Figure 4: Distribution of B.C. Population into Community Groupings Based on Remoteness Index (RI) Score - Jenks Method

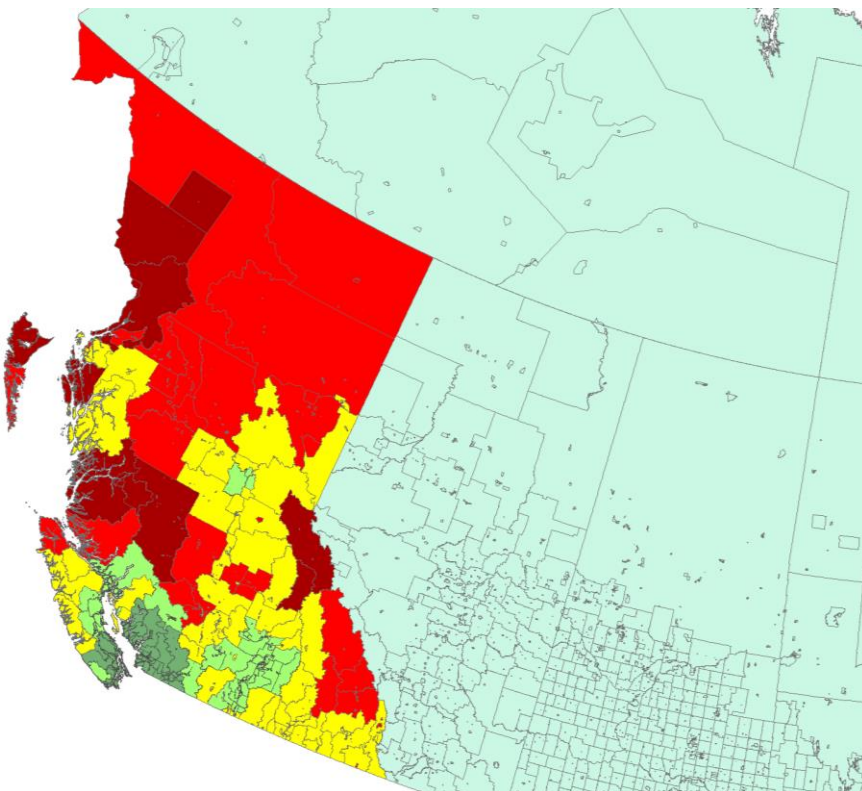


Table 9: Distribution of B.C. Population into Community Groupings Based on Remoteness Index (RI) Score – Jenks Method

	RI Score	# of B.C. CSDs	% of B.C. CSDs	CSD Population Total (2021)	% of BC Population
Easily Accessible Area	< 0.2002	163	22%	3,698,892	74.0%
Accessible Area	0.2002 to 0.3269	115	15%	811,396	16.2%
Less Accessible Area	0.3270 to 0.4546	235	31%	362,118	7.2%
Remote Area	0.4547 to 0.6267	171	23%	114,550	2.3%
Very Remote Area	> 0.6267	59	8%	13,892	0.3%
Total		743	99%	5,000,879	99.9%

Figure 5: Distribution of B.C. Population into Community Groupings Based on Remoteness Index (RI) Score - K-Means Method

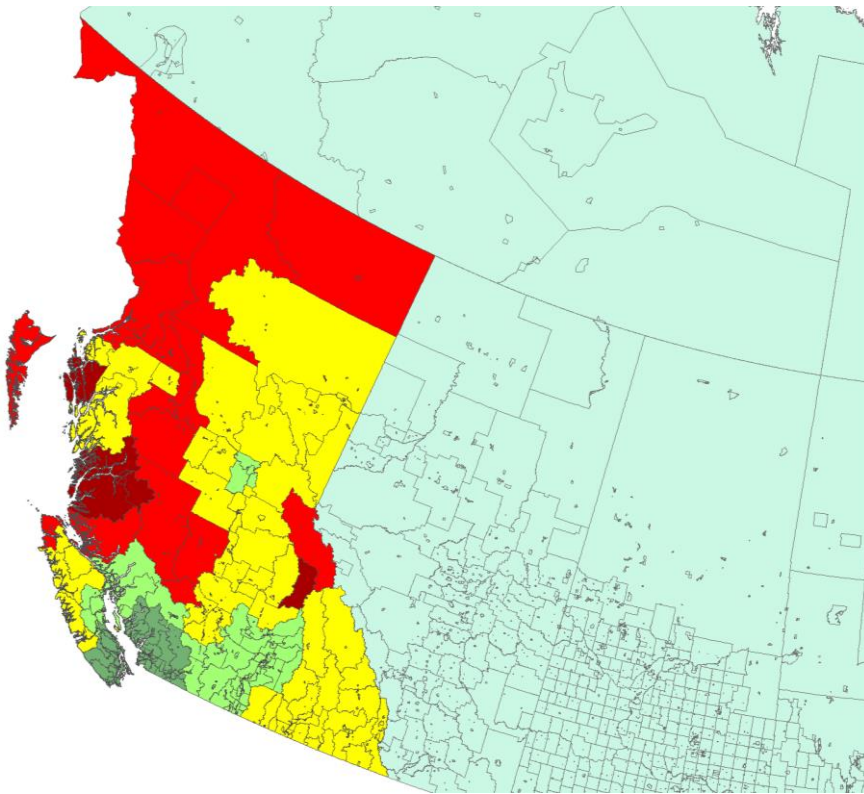


Table 10: Distribution of B.C. Population into Community Groups Based on Remoteness Index (RI) Score – K-Means Method

	RI Score	# of B.C. CSDs	% of B.C. CSDs	CSD Population Total (2021)	% of B.C. Population
Easily Accessible Area	< 0.2130	174	23%	3,711,540	74.2%
Accessible Area	0.2130 to 0.3565	144	19%	833,681	16.7%
Less Accessible Area	0.3566 to 0.5080	268	36%	404,215	8.1%
Remote Area	0.5081 to 0.6877	137	18%	46,372	0.9%
Very Remote Area	> 0.6877	20	3%	5,040	0.1%
Total		743	99%	5,000,879	99.9%

As can be seen in the figures and tables presented, there are varied population splits between the different community categories. After discussions with different parties and evaluating current levels of service across different CSDs, the project team recommends that the ministry utilize the K-Means method for community grouping. Based on this method, 74.2% of the population resides in *easily accessible areas*, 16.7% in *accessible areas*, 8.1% in *less accessible areas*, 0.9% in *remote areas*, and 0.1% in *very remote areas*. This method has the highest proportion of the population living in easily accessible and accessible areas, providing a clear approach

for determining community groups and understanding access requirements in accordance with methods used by Statistics Canada.

The index provides sufficient granularity to enable different access levels for communities based on their remoteness. By using published metrics, each EPR program can clearly understand the required access levels, and all programs can use the same definition for community areas. This will allow for clearer management and more opportunity for collaboration. It will also allow the ministry to evaluate the accessibility of different programs and ensure they align with their commitments.

4.3 Community Groupings

Building on the product groupings outlined in Section 3.5,, the framework establishes access standards and targets for each product grouping within different community types. For example, thermostats fall into the *Yearly/Less than yearly, Small/Medium, Non-Hazardous* category and will have distinct access standards for community types that are *easily accessible, accessible, less accessible, remote, and very remote*. The program can accurately assess the remoteness index of each CSD, as Statistics Canada regularly updates the Index.

Table 11: Community and Product Groupings

Product Group	Product Examples	Community Type
Daily, Small, Non-Hazardous	Packaging and Paper Products	Easily Accessible Area
		Accessible Area
		Less Accessible Area
		Remote Area
		Very Remote Area
	Packaging and Paper Products (Flexibles and Glass)	Easily Accessible Area
		Accessible Area
		Less Accessible Area
		Remote Area
		Very Remote Area
Weekly, Small, Non-Hazardous	Beverage Containers including Milk, Beer Containers	Easily Accessible Area
		Accessible Area
		Less Accessible Area
		Remote Area
		Very Remote Area
Yearly/Less than yearly, Small/Medium, Hazardous	Paint, Pesticides, and Flammable Liquids, Used Motor Oil, Filters, Containers and Antifreeze, Medications	Easily Accessible Area
		Accessible Area
		Less Accessible Area
		Remote Area
		Very Remote Area
Yearly/Less than yearly, Large, Hazardous	Auto Batteries/Lead Acid Batteries	Easily Accessible Area
		Accessible Area
		Less Accessible Area
		Remote Area

		Very Remote Area
Yearly/Less than yearly, Small/Medium, Non-Hazardous	Electronics, Light Bulbs and Light Fixtures, Small Appliances, Alkaline and Rechargeable Batteries, Smoke Alarms, Carbon Monoxide Detectors, Telecommunication Equipment, Thermostats, Cell Phones	Easily Accessible Area
		Accessible Area
		Less Accessible Area
		Remote Area
		Very Remote Area
Yearly/Less than yearly, Large, Non-Hazardous	Outdoor Power Equipment, Tires, Large Appliances	Easily Accessible Area
		Accessible Area
		Less Accessible Area
		Remote Area
		Very Remote Area



5.0

Collection Service Factors

In B.C., there are several collection service options available to consumers. Each of these options has different service levels or service factors that determine reasonable access. This section provides an overview of the collection service factors and standards that are included in the accessibility framework, and how they can aid in understanding reasonable access.

5.1 Factor Review

The project team developed and reviewed a long list of factors to identify which ones should be used to establish reasonably accessible service level requirements. The complete list can be found in Appendix 4.0. As more than a dozen factors were identified, the team needed to shorten the list into a set of factors that could be well understood, evaluated, and that could provide enough flexibility for EPR agencies to efficiently provide service.

The project team divided collection service types into four categories, as different types of collection service may require different accessibility factors. These categories are:

- Single family curbside / multi-family collection / direct pick up;
- Permanent collection facilities;
- Temporary collection facilities including collection events; and
- Mail-back returns.

The four collection service options offer flexibility to nearly all EPR agencies in meeting reasonable access targets, as they can choose from multiple options that meet the requirements. For example, in certain community types, a program may choose to provide either single family curbside / multi-family collection / direct pick-up service or permanent collection facilities, both of which meet all the required factors. The purpose of this study is not to determine the most effective collection service for EPR agencies, but to identify equivalent services in terms of accessibility.

Primary and Secondary Factors

To be considered reasonably accessible, each collection service type must meet a set of standards, which are based on the shortlisted factors derived from the long list. As discussed in Section 2.4.1, multiple factors should be considered when assessing accessibility. Some frameworks identify more than 30 different factors. To operationalize the accessibility framework for this project, the project team split the shortlisted factors into primary and secondary factors. The primary factors are the most critical for the given collection service and EPR agencies must meet the established standard. For secondary factors, agencies have flexibility and need to meet at least one additional factor. This section (5.0) provides the rationale for selecting the different factors and the specific standards for each factor, while Section 6.0 offers more detail on how the primary and secondary factors work in practice. The primary and secondary factors for each collection service option are as follows.

For single family curbside / multi-family collection / direct pick-up:

- Primary factor

- Frequency of collection

For permanent collection facilities:

- Primary factor
 - Drive time to collection facilities
- Secondary factors (one of three required)
 - Collection facility hours
 - Ability to return other regulated products
 - Consumer satisfaction

For temporary collection facilities and events:

- Primary factors
 - Frequency of operation
 - Drive time to collection facilities
- Secondary factors (one of two required)
 - Collection facility hours
 - Ability to return other regulated products

For mail-back returns:

- Primary factor
 - Drive time to return location

5.2 Collection Systems and Accessible Service Levels

5.2.1 Single Family Curbside / Multi-family Collection / Direct Pick-up

Single family curbside / multi-family collection / direct pick-up service includes the pickup of materials from single-family homes that set out materials at the curb, as well as the pickup of materials from multi-family households, which is typically done from a central location in buildings with five or more residential units. Direct pickup services are also considered to be part of this collection service option, as long as it is provided at the frequency indicated in the framework. To provide reasonable levels of access, single family curbside / multi-family collection / direct pick-up services must meet the standards outlined in this section.

Not Applicable Product Groupings

There are some product groups for which single family curbside / multi-family collection / direct pick-up service is not considered accessible. One example is beverage containers. Beverage containers are regulated

under the province's deposit return system and must be returned to a recycling depot or to retail locations in order for the consumer to reclaim the deposit. While consumers can also place these containers in their curbside blue boxes, doing so means that they are forfeiting the deposit. As curbside blue box programs are unable to return the deposit to the consumer, this collection service option would not be considered accessible for such product groups.

5.2.1.1 Primary Factor: Frequency of Collection

Factor Selection

Frequency of collection is the most common criterion for evaluating the level of access to single family curbside / multi-family collection / direct pick-up services. Since these services are already required to be free and are typically conveniently located near residents' homes, the main difference between service levels is the frequency (i.e., how often) and schedule of collections.

Factor Standards

In order to determine a reasonable level of access for single family curbside / multi-family collection / direct pick-up, the project team reviewed current service levels in B.C., as well as those provided in other jurisdictions.

The primary product type collected through curbside service is packaging and paper products (PPP). Based on discussion with interested parties and a review of collection schedules, it was found that single family curbside / multi-family collection / direct pick-up recycling service is available in at least one community of all types, except for *very remote* communities. In many of these communities, collection is provided on a weekly basis, as shown in Figure 6, which displays the collection schedule for Vancouver.

Figure 6: Vancouver Collection Schedule⁴⁰



For other product types single family curbside / multi-family collection / direct pick-up is less common. In annual reports, there is some mention of collection programs but not many details are provided. The B.C. Used Oil Management Association (BCUOMA) mentions a mobile pick up program but information on the frequency of that collection or how to access the mobile pick up program is not readily available in the report. For other EPR programs, like B.C.'s waste electronics and electrical equipment program (operated by EPRA) or the paint recycling program (operated by Product Care Association (PCA)), there are pickup options for large volume generators.

Figure 7: Online Portal for Scheduling Curbside Collection of Textiles and Small Electronics – Chichester, England



The screenshot shows the Chichester District Council website. The header includes the council's logo and name. Below the header is a navigation bar with a 'Services' tab, a search bar, and links for 'Apply · report · pay' and 'My account'. The main content area has a breadcrumb trail: 'Home > Environment and waste > Rubbish and recycling > Book a free textile or small electrical collection'. The title of the page is 'Book a free textile or small electrical collection'. Below the title, a note states 'Fields marked * are required.' The form itself is titled 'Collection details' and contains the following sections:

- What do you want collected?***
 - ☒ Small electricals
 - ☐ Textiles
- The collection day for this address is a **Tuesday**.**
- Please select which date you would like your collection to be made***
 - ☐ 07 March 2023
 - ☐ 21 March 2023
 - ☐ 04 April 2023
 - ☐ 18 April 2023

The project team conducted a jurisdictional scan to identify single family curbside /multi-family collection / direct pick-up programs for similar products and their frequency of service. One example is Chichester, England, which provides free curbside collection for textiles and small electronics.⁴¹ Under this program, residents can schedule a free collection (up to two months in advance) through an online portal, with the service available approximately twice per month. While there are limited spots available for each collection day, experts familiar with the system have indicated that current capacity is sufficient to meet demand on most days. There is also a coalition of companies in the UK, called Podback, which offers curbside collection for difficult-to-recycle coffee pods.⁴² In Exeter, England, this service is provided weekly.⁴³ As coffee pods are frequently used packaging, their collection is provided more often.

Table 12 presents a summary of the single family curbside / multi-family collection / direct pick-up frequency based on the review of current service levels in B.C. as well as those in other jurisdictions. As previously stated, single family curbside / multi-family collection / direct pick-up is not mandatory for all programs. For certain product groups, an EPR agency may choose to provide equivalent access through another collection service (e.g., permanent collection facilities).

The justification for the frequency standards is as follows.

- **Weekly/biweekly:** Many communities are already provided curbside services for commonly disposed materials like PPP on a weekly or biweekly basis. A reduction in service can be perceived as a move from reasonable to unreasonable access. Therefore, a weekly or biweekly collection frequency is suggested for most commonly purchased materials in more accessible communities. The frequency of service should be based on the container size provided to the household. In general, if a smaller container is provided, service should be provided more frequently. The suggested cut-off for weekly/biweekly service is 120 litres. If a single-family home is provided with a container smaller than 120 litres, then weekly service should be provided. If a single-family home is provided with a larger container, then biweekly service can be provided.
- **Biweekly and monthly:** For the most commonly purchased materials, the frequency of collection is scaled from weekly collection based on how remote the community is. For *less accessible areas*, a standard of biweekly collection frequency is suggested, and for *remote* and *very remote areas*, a monthly collection frequency standard is suggested.
- **One to six times per year:** Curbside collection is currently only common for PPP; therefore, there is no existing standard for other product types. However, based on the review of other jurisdictions, single family curbside / multi-family collection / direct pick-up is feasible for many of these products. The project team reviewed standards for other collection service options, such as permanent facilities or mail-back, and based on those standards, an equivalent standard was selected. A collection frequency of six times per year (equivalent to every other month) is suggested for *easily accessible areas*, with the frequency scaled based on how remote the community is. Additionally, as mentioned previously, there are other service options to meet the requirement that do not involve single family curbside / multi-family collection / direct pick-up.

Table 12: Frequency Standard for Reasonable Access to Single Family Curbside / Multi-family Collection / Direct Pick-up

Product Group	Community Type	Frequency Standard for Reasonable Access
Daily, Small, Non-Hazardous (excluding flexibles and glass)	Easily Accessible Area	Weekly/Biweekly
	Accessible Area	Weekly/Biweekly
	Less Accessible Area	Biweekly
	Remote Area	Monthly
	Very Remote Area	Monthly
Daily, Small, Non-Hazardous (including flexibles and glass)	Easily Accessible Area	Weekly/Biweekly
	Accessible Area	Weekly/Biweekly
	Less Accessible Area	Biweekly
	Remote Area	Monthly
	Very Remote Area	Monthly
Weekly, Small, Non-Hazardous (beverage containers)	Easily Accessible Area	Not Accessible
	Accessible Area	Not Accessible
	Less Accessible Area	Not Accessible
	Remote Area	Not Accessible
	Very Remote Area	Not Accessible
Yearly/Less than yearly, Small/Medium, Hazardous	Easily Accessible Area	6 times per year
	Accessible Area	4 times per year
	Less Accessible Area	2 times per year
	Remote Area	Once per year
	Very Remote Area	Once per year
Yearly/Less than yearly, Large, Hazardous	Easily Accessible Area	6 times per year
	Accessible Area	4 times per year
	Less Accessible Area	2 times per year
	Remote Area	Once per year

Yearly/Less than yearly, Small/Medium, Non-Hazardous	Very Remote Area	Once per year
	Easily Accessible Area	6 times per year
	Accessible Area	4 times per year
	Less Accessible Area	2 times per year
	Remote Area	Once per year
Yearly/Less than yearly, Large, Non-Hazardous	Very Remote Area	Once per year
	Easily Accessible Area	6 times per year
	Accessible Area	4 times per year
	Less Accessible Area	2 times per year
	Remote Area	Once per year
	Very Remote Area	Once per year

5.2.2 Permanent Collection Facilities

A permanent collection facility refers to a depot or retail location that is established by the producer or identified in an approved plan, where consumers can return regulated products. To ensure that consumers have reasonable access to this collection service option, such facilities must meet the standards outlined below.

Not Applicable Product Categories

For easily recycled, frequently purchased products, permanent collection facilities that are located in *easily accessible* and *accessible areas* are not considered to provide reasonable access, and hence no standard is set. Frequent trips to drop-off areas in *easily accessible areas* is not considered reasonable because these products are used daily and accumulate in homes. Access must be provided through a different collection service. For example, single family curbside / multi-family collection / direct pick-up can be provided for PPP.

5.2.2.1 Primary Factor: Drive Time to Collection Facility

Factor Selection

Drive time is already a well-accepted factor used by both SABC and a number of EPR agencies to evaluate accessibility. It is also identified in the Five A's of accessibility and other reviews of access standards.

Several studies have shown that the closer a person is to a recycling drop-off location, the more likely they are to recycle. For instance, a study in China found that in a gated community, the distance from a household to the community recycling drop-off was predictive of their recycling behaviour.⁴⁴ Another study in the USA showed that the expected number of visits to the community drop-off location decreases by 1% as the roundtrip distance from home to the site increases by a mile.⁴⁵ A third study found that "greater distances to recycling bins cause the act of recycling to be perceived as more complex, labour intensive, and time-consuming."⁴⁶ Although not explicitly related to accessibility, one of the main goals of any EPR program is to collect materials, which makes distance and drive time important factors to measure.

There are several other factors similar to drive time, such as travel time by walking or public transportation, overall distance, or distance to closest public transportation stop, which were not selected. Although these

factors are important, the project team did not want to overprescribe the number of standards needed. Drive time was selected for several reasons.

Firstly, drive time is considered a better proxy than distance, as the time it takes to travel distances varies in dense urban areas compared to more rural communities. For example, a brief analysis on Google Maps shows that a 15 km drive in Vancouver takes 34 minutes,⁴⁷ while a 15 km drive in Prince George takes only 16 minutes.⁴⁸ Additionally, consumers typically evaluate trips based on the time it takes rather than the distance travelled.

Setting a lower drive time target should also lead to lower walking times and travel by public transportation, and the overall distance to households is expected to reduce. For example, in the aforementioned Vancouver scenario (34 minute drive time to travel 15 km), the expected public transportation time is 42 minutes, and walking time is estimated at 3 hours and 9 minutes. A shorter 15-minute drive in Vancouver would also result in shorter travel times by public transportation (26 minutes) and walking (1 hour and 10 minutes).⁴⁹

Although travel times for public transportation or walking may differ from drive time, the drive time standard will still lead to lower travel times in areas where drive time is lower compared to areas where drive time is higher. Even if a consumer were unable to drive themselves, they may require longer travel times, but these times would be comparatively lower for a lower drive time standard.

Factor Standards

To determine reasonably accessible drive time standards for different EPR programs, the project team conducted a review of current access levels to both regulated products under EPR and other services in B.C.

Several drive time standards are already in use in the province, including:

- Beer and beer packaging: 10 minutes (no distinction between urban and rural areas)⁵⁰
- Electronics: 30 minutes for CMA communities, 45 minutes for non-CMA communities⁵¹
- Beverage containers: 30 minutes for urban areas, 45 minutes for rural areas⁵²
- SABC standard: 30 minutes for urban areas, 45 minutes for rural areas⁵³

In addition to evaluating existing standards, the project team also reviewed the accessibility of other services in B.C. to gain insight into potential new standards for products. Statistics Canada recently conducted a study to assess the proximity of services and amenities to the population.⁵⁴ Among other things, the study evaluated the percentage of the population that can access different services based on a set distance measurement.

Table 13: Access to Different Services in British Columbia

	CMA*	CA**	Rural
Within 1 km of grocery store	63.2%	26.5%	16.1%
Within 1 km of pharmacies	75.9%	38.7%	20.1%
Within 3 km of a health care facility	99.2%	91.6%	62.3%

Within 1.5 km of primary education	85.4%	55.3%	26.9%
Within 1.5 km of secondary education	76.1%	47.1%	26.1%
Within 1.5 km of childcare	91.7%	68.5%	25.5%
Within 1 km of public transit	93.6%	53.5%	20.5%
Within 1.5 km of a library	39.1%	17.0%	20.3%
Within 1 km of a neighborhood park	89.1%	63.1%	35.5%

*Census Metropolitan Area

**Census Agglomeration

The distance measurements used in this study are based on the concept of a 15-minute neighborhood which assumes that individuals should be able to meet most, if not all, of their daily needs within a 15-minute journey, either by walking or using public transportation. Most of these distances are assumed to be a 15-minute walking time.

As shown in Table 13, none of the services have universal access in all community types based on these distances. In general, people living in more dense and larger communities have better access to services compared to those living in rural areas. In their review of different standards, the Recycling Council of British Columbia classified centrality into three levels, stating:

“The services for the accessibility analysis are chosen to represent at least three levels of centrality (lower is more accessible):

- low centrality: pharmacies and primary schools
- medium centrality: railway stations, hospitals and secondary schools
- high centrality: airports, highway entrances and facilities of tertiary education.”

They also indicated that recycling services would fall somewhere between low and medium centrality. Reviewing the low and medium centrality services included in the Statistics Canada study, such as pharmacies, primary education, and secondary education, reveals that 80% of CMAs, 50% of CAs, and 25% of rural areas fall within the 1 km or 1.5 km distance standard. If recycling services are considered to be of similar need to low or medium centrality, then a 1.5 km distance or approximately 5-minute drive time could be considered reasonable if 80% was deemed an appropriate population target for establishing similar access levels. For less urban and rural communities, almost half of the population currently meets the report distance standards, therefore setting a 5-minute drive time would not be considered reasonable. As the Statistics Canada study did not show levels of access for longer distances, it is difficult to estimate the exact distance at which an acceptable portion of the population has access to the service. However, since the study shows that the less the population has access the more rural the community is, it is sensible to scale or increase the drive time for more remote communities based on what is chosen for urban and accessible communities.

Based on the review of current standards and drive time access to other services in B.C., Table 14 outlines the drive time standards for reasonable access to permanent collection facilities for different community types. As

there are 35 different combinations of product groups and community groups, each of which needs a standard defined, and many of these have the same standard, a summary of the main standards is provided.

Collection Service Standards

Overall, the justification for selecting the different standards is as follows:

- **10-minute drive time:** A 10-minute drive time is considered reasonable for two main reasons. First, this standard is already used by one program (BRCCC). Second, according to Statistics Canada, CMAs (which are similar to easily accessible and accessible areas) have access to many services within 1 km, which is much closer than a 10-minute drive time. Therefore, setting a 10-minute drive time for the *weekly, small, non-hazardous* and the *daily, small, non-hazardous (flexibles and glass)* categories for *easily accessible* and *accessible* communities was deemed reasonable. As these are the most commonly purchased items, they were deemed to have the most accessible standard.
- **15-minute drive time:** This drive time was scaled from the 10-minute drive time for less accessible areas and less frequently purchased products. For the *daily, small, non-hazardous* and *weekly, small, non-hazardous* product groups, this standard was chosen for *less accessible areas*. This represents a 50% longer drive time than accessible areas. Then, for products that are purchased either yearly or less than yearly, this drive time was selected for *easily accessible* communities. As these products are used, and therefore recycled by consumers, less often, it was determined that a slightly longer drive time could still be considered as reasonable access.
- **20- to 45-minute drive times:** For the product and community groups that do not meet the justification for a 10- or 15-minute drive time, the reasonable access drive time selected is between 20 and 45 minutes. First, a maximum drive time of 45 minutes was selected as this is currently the longest drive time used by any EPR agency. Therefore, this was the drive time selected for very *remote* communities. Then, the drive time was scaled accordingly for the communities that were less remote.

Table 14: Reasonable Access for Drive Time Standard for Permanent Collection Facilities

Product Group	Community Type	Reasonable Access for Drive Time to Permanent Collection Facility
Daily, Small, Non-Hazardous (excluding flexibles and glass)	Easily Accessible Area	Not Accessible
	Accessible Area	Not Accessible
	Less Accessible Area	15 minutes
	Remote Area	20 minutes
	Very Remote Area	30 minutes
Daily, Small, Non-Hazardous (including flexibles and glass)	Easily Accessible Area	10 minutes
	Accessible Area	10 minutes
	Less Accessible Area	15 minutes
	Remote Area	20 minutes
	Very Remote Area	30 minutes
Weekly, Small, Non-Hazardous	Easily Accessible Area	10 minutes
	Accessible Area	10 minutes
	Less Accessible Area	15 minutes
	Remote Area	20 minutes
	Very Remote Area	30 minutes
Yearly/Less than yearly, Small/Medium, Hazardous	Easily Accessible Area	15 minutes
	Accessible Area	20 minutes
	Less Accessible Area	30 minutes
	Remote Area	40 minutes

Yearly/Less than yearly, Large, Hazardous	Very Remote Area	45 minutes
	Easily Accessible Area	15 minutes
	Accessible Area	20 minutes
	Less Accessible Area	30 minutes
	Remote Area	40 minutes
Yearly/Less than yearly, Small/Medium, Non-Hazardous	Very Remote Area	45 minutes
	Easily Accessible Area	15 minutes
	Accessible Area	20 minutes
	Less Accessible Area	30 minutes
	Remote Area	40 minutes
Yearly/Less than yearly, Large, Non-hazardous	Very Remote Area	45 minutes
	Easily Accessible Area	15 minutes
	Accessible Area	20 minutes
	Less Accessible Area	30 minutes
	Remote Area	40 minutes
	Very Remote Area	45 minutes

Ultimately, it will be up to the different agencies to determine the best methodology for calculating drive time from different collection service options. It is suggested that the drive time analysis utilize census dissemination blocks to determine the population covered, as this is the smallest geographic area for which population is disseminated.⁵⁵ Additionally, the analysis should take into account average traffic levels to obtain an accurate drive time.

5.2.2.2 Secondary Factor: Collection Facility Hours

Factor Selection

The hours during which a facility is open directly correspond to a consumer's ability to use the service and return products at the facility. While most EPR agencies currently report only on drive time, a facility's hours of operation are important for understanding the accessibility of a facility.

Factor Standards

Determining the number of hours that a permanent facility should be open in order to be considered accessible is not a straightforward task. There are many different types of permanent collection facilities, including depots and retail stores. For the most part, the operating hours of these location are outside the control of EPR agencies, which is why only 80% of facilities must meet the minimum hour requirements. To ensure accessibility for all consumers, including those who may be busy and unable to return products during traditional weekday hours (i.e., 9:00am to 5:00pm), the hours a facility is open were divided into weekday and weekend hours.

To establish reasonable operating hour requirements for permanent facilities, the project team evaluated the current hours of existing facilities for all products currently regulated by EPR programs in B.C. The review showed that permanent facilities in more remote areas are typically open two to three days a week, including weekends, while those in the most accessible areas are open seven days a week. However, not all remote communities have access to a permanent facility. This review, in conjunction with an evaluation of reasonableness, determined the range of minimum hours for different product and community groups. Weekday minimum hours range from 8 to 45 hours, and weekend minimum hours range from 2 to 16.

Weekday Hours: In *easily accessible areas*, the weekday hours open range from 32 to 45 hours. Given that these are the most accessible areas, it was deemed reasonable that permanent facilities should be open for at least one hour (on average) outside the 9:00am to 5:00pm range during the week (i.e., 45 hours) for the most frequently purchased products. This requirement was scaled down to approximately four days a week in the most accessible areas for products purchased less frequently. In *very remote areas*, the weekday hours open range from 8 to 15 hours. Since many of these communities currently lack permanent facilities, the standard of existing facilities open about two to three days in remote areas was extrapolated and scaled down to *very remote* communities. Additionally, this framework recognizes some of the cost challenges with opening facilities in *very remote areas* and adjusts the hourly requirement accordingly. The same methodology was used to establish the hours for the other three communities in between (*accessible, less accessible, and remote*). See Table 15 for further details.

Weekend Hours: In *easily accessible areas*, the weekend hours open range from 8 to 16 hours. Given that these are the most accessible areas, it was deemed reasonable that permanent facilities should be open for the equivalent of two full weekend days for the most frequently purchased products. This requirement was scaled down to one full weekend day for products purchased less frequently. Currently, many facilities are outperforming this standard. In *very remote areas*, the weekend hours open range from 2 to 4 hours. As with weekday hours, the standard is scaled from existing facilities in remote areas and is intended to be an attainable standard to encourage EPR agencies to provide increased service in these underserved communities. The same methodology was used to establish the hours for the other three communities in between (*accessible, less accessible, and remote*). See Table 15 for further details.

It should be noted that in *easily accessible* and *accessible areas*, a permanent facility is not deemed accessible for *daily, small, non-hazardous* products (excluding flexible and glass). This does not mean that these products cannot have permanent collection facilities; however, it does mean that populations receiving service through these facilities cannot be included to meet accessibility standards. For these products to contribute towards meeting the standard, these communities must receive single family curbside / multi-family collection / direct pick-up.

Table 15: Reasonable Access Operating Hours for Permanent Collection Facilities

Product Group	Community Type	% of Facilities Meeting Minimum Hours	Minimum Weekday Hours Open	Minimum Weekend Hours Open
Daily, Small, Non-Hazardous (excluding flexibles and glass)	Easily Accessible Area	Not Accessible	Not Accessible	Not Accessible
	Accessible Area	Not Accessible	Not Accessible	Not Accessible
	Less Accessible Area	80%	20	5
	Remote Area	80%	20	5
	Very Remote Area	80%	20	5
Daily, Small, Non-Hazardous (including flexibles and glass)	Easily Accessible Area	80%	45	16
	Accessible Area	80%	32	8
	Less Accessible Area	80%	20	5
	Remote Area	80%	20	5
	Very Remote Area	80%	20	5

Weekly, Small, Non- Hazardous	Easily Accessible Area	80%	45	16
	Accessible Area	80%	32	8
	Less Accessible Area	80%	20	5
	Remote Area	80%	20	5
	Very Remote Area	80%	15	4
Yearly/Less than yearly, Small/Medium, Hazardous	Easily Accessible Area	80%	40	12
	Accessible Area	80%	32	6
	Less Accessible Area	80%	30	5
	Remote Area	80%	15	4
	Very Remote Area	80%	10	2
Yearly/Less than yearly, Large, Hazardous	Easily Accessible Area	80%	40	12
	Accessible Area	80%	32	6
	Less Accessible Area	80%	20	5
	Remote Area	80%	15	4
	Very Remote Area	80%	10	2
Yearly/Less than yearly, Small/Medium, Non- Hazardous	Easily Accessible Area	80%	40	12
	Accessible Area	80%	32	6
	Less Accessible Area	80%	20	5
	Remote Area	80%	15	4
	Very Remote Area	80%	10	2
Yearly/Less than yearly, Large, Non- Hazardous	Easily Accessible Area	80%	32	8
	Accessible Area	80%	20	5
	Less Accessible Area	80%	20	5
	Remote Area	80%	12	4
	Very Remote Area	80%	8	2

5.2.2.3 Secondary Factor: Ability to Return Other Regulated Products

Factor Selection

There are currently more than a dozen EPR programs operating in B.C., some of which cover a wide variety of products. For example, the Major Appliance Recycling Roundtable (MARR) manages dishwashers, built-in microwaves, and freezers, among other products. In addition to the programs currently in operation, B.C.'s Recycling Regulation is set to expand to a number of new products in the coming years, including electric vehicle batteries and mattresses. With the increasing number of EPR programs, it is important to ensure not only that individual programs have reasonable access, but that the system as a whole provides reasonable access.

As discussed in Section 5.2.2.1, the time consumers spend travelling to a return location is an important factor to consider when evaluating reasonable access. As more products become covered under the EPR system, consumers will be required to return more products, which could lead to more frequent returns. Therefore, it is reasonable to assume that a consumer may want to return several products during a single trip. If each of the covered products has a different return location, returning three products may take over two hours of driving, even if the drive time standard is 30 minutes, if the return locations are not optimally placed for this example consumer return.

To promote reasonable access returns, it is recommended that a standard be established for the number of other covered products that must be accepted at return locations. Collaboration is one of SABC's principles of product stewardship,⁵⁶ and increased collaboration could help identify cost-sharing opportunities while also

improving collection. This provides a benefit to both EPR agencies in cost savings, and consumers in improved service.

Factor Standard

Establishing a standard on the number of different covered products that can be returned at a given collection facility is not a straightforward task. A fixed number of products may restrict growth in areas that currently lack reasonable access to return locations. For instance, setting a standard that mandates “at least three covered products must be able to be returned at permanent return locations” could deter EPR agencies from providing service in a new area where other agencies are not operating, as it would not be possible to have more than one product returned at a location.

To address the challenge of setting a standard on the number of covered products that can be returned, the project team developed the concept of a “universal return location.” This term refers to any permanent collection facility that accepts all the products that can be returned within a specific census subdivision through permanent return facilities, provided that the products are of the same hazard level.

For instance, suppose that there are three different covered products that can be returned within a census subdivision, and there are permanent collection facilities that accept each of these products. In that case, a universal return location would be a permanent return facility where all three products could be returned. This would ensure that EPR programs will not be discouraged from providing collection services in new communities. Even if they are the only program accepting returns in that community, the facility would be considered a universal return location.

In order to provide flexibility to programs, it is not necessary for every single facility to become a universal return location. Instead, it is recommended that at least one universal return location be established in each census subdivision where the agency has permanent collection facilities. This will also offer convenience to consumers who may prefer to travel to one location to return all of their products. It may be difficult for all CSDs to have a universal return location; therefore, under this framework, 80% of CSDs with permanent collection facilities operated by the same agency must have a universal return location to meet this standard. This standard is measured based on the number of CSDs, not the number of locations. For instance, a CSD may have 12 locations where products can be returned, but at least one of these locations must be a universal return location for the entire CSD to count towards meeting the standard. Hence, if an agency had 300 permanent collection facilities in 100 different CSDs, it would need to establish 80 universal return locations, in 80 different CSDs, to meet this standard.

Table 16: Reasonable Access for the Ability to Return Other Covered Products at Permanent Collection Facilities

Product Group	Community Type	% of CSDs With At Least One Universal Return Location
Daily, Small, Non-Hazardous (excluding flexibles and glass)	Easily Accessible Area	Not Accessible
	Accessible Area	Not Accessible
	Less Accessible Area	80%
	Remote Area	80%
	Very Remote Area	80%

Daily, Small, Non-Hazardous (including flexibles and glass)	Easily Accessible Area	80%
	Accessible Area	80%
	Less Accessible Area	80%
	Remote Area	80%
	Very Remote Area	80%
Weekly, Small, Non-Hazardous	Easily Accessible Area	80%
	Accessible Area	80%
	Less Accessible Area	80%
	Remote Area	80%
	Very Remote Area	80%
Yearly/Less than yearly, Small/Medium, Hazardous	Easily Accessible Area	80%
	Accessible Area	80%
	Less Accessible Area	80%
	Remote Area	80%
	Very Remote Area	80%
Yearly/Less than yearly, Large, Hazardous	Easily Accessible Area	80%
	Accessible Area	80%
	Less Accessible Area	80%
	Remote Area	80%
	Very Remote Area	80%
Yearly/Less than yearly, Small/Medium, Non-Hazardous	Easily Accessible Area	80%
	Accessible Area	80%
	Less Accessible Area	80%
	Remote Area	80%
	Very Remote Area	80%
Yearly/Less than yearly, Large, Non-Hazardous	Easily Accessible Area	80%
	Accessible Area	80%
	Less Accessible Area	80%
	Remote Area	80%
	Very Remote Area	80%

5.2.2.4 Secondary Factor: Consumer Satisfaction

Factor Selection

In total, close to 20 different collection service factors were identified through interviews and secondary research to better understand reasonable consumer access. In addition to the factors mentioned above, these included factors such as location cleanliness, the time required at the facility, any physical requirements at the location, accessibility of the built environment, staffing levels, clear signage, and parking availability, among others. Many of these factors are important to consider for improving service and access for consumers. However, including all of these factors would likely create an overly complicated and difficult framework to manage. Having too many requirements can limit flexibility for service providers to meet the needs of the consumers in their communities.

Rather than requiring many different factors, an overall consumer satisfaction factor is recommended. Consumers may prioritize different aspects of a collection facility that will impact their satisfaction. For example, some consumers may require parking close to the facility and assistance carrying their products, while others may prioritize a quick process where they spend minimal time at the facility. For other factors,

such as the cleanliness of the facility, it is difficult to come up with objective metrics. Under this factor, it will be up to the EPR agency to create a network of returns that meet the needs of consumers.

Factor Standards

The consumer satisfaction factor is unique in that it combines several factors into one measure. Under this factor, EPR agencies will be required to survey consumers who use their network of return locations to ensure that they are satisfied with the collection network. However, determining satisfaction can be subjective, so additional guidance on measuring satisfaction is provided. If satisfaction is evaluated on a Likert scale, the following levels can be used:

- Very satisfied
- Satisfied
- Neutral
- Dissatisfied
- Very dissatisfied

Under a five-point Likert scale, “satisfied” would be the second highest option.

The surveys conducted by EPR agencies to assess consumer satisfaction should also include specific questions related to the collection network. These surveys should cover at least six different aspects of consumer accessibility and satisfactions, such as:

- Time spent at the facility
- Parking availability
- Distance to the nearest public transportation stop
- Staffing at the return location (this can range from overall satisfaction of the staff, their customer service, or efficiency)
- Physical requirements at the location
- Clear signage and ease of finding the location
- Accessibility of the built environment
- Cleanliness of the return location

Based on the different questions asked, the survey can provide a total satisfaction level by averaging the satisfaction of the different questions asked. For example, if 10 questions are asked on a five-point Likert scale, the average of all 10 questions should be at least 4.0, assuming 4.0 is satisfied and 5.0 is very satisfied. Surveys should be conducted at least every two years to ensure satisfaction levels are met.

Under this standard, it is recommended that at least 80% of consumers are satisfied (using the Likert scale described above) with their permanent return facilities for each product and community group.

Table 17: Reasonable Access for Consumer Satisfaction with Permanent Collection Facilities

Product Group	Community Type	% of Consumers Satisfied With Permanent Collection Facility Network
Daily, Small, Non-Hazardous (not including flexibles and glass)	Easily Accessible Area	Not Accessible
	Accessible Area	Not Accessible
	Less Accessible Area	80%
	Remote Area	80%
	Very Remote Area	80%
Daily, Small, Non-Hazardous (including flexibles and glass)	Easily Accessible Area	80%
	Accessible Area	80%
	Less Accessible Area	80%
	Remote Area	80%
	Very Remote Area	80%
Weekly, Small, Non-Hazardous	Easily Accessible Area	80%
	Accessible Area	80%
	Less Accessible Area	80%
	Remote Area	80%
	Very Remote Area	80%
Yearly/Less than yearly, Small/Medium, Hazardous	Easily Accessible Area	80%
	Accessible Area	80%
	Less Accessible Area	80%
	Remote Area	80%
	Very Remote Area	80%
Yearly/Less than yearly, Large, Hazardous	Easily Accessible Area	80%
	Accessible Area	80%
	Less Accessible Area	80%
	Remote Area	80%
	Very Remote Area	80%
Yearly/Less than yearly, Small/Medium, Non-Hazardous	Easily Accessible Area	80%
	Accessible Area	80%
	Less Accessible Area	80%
	Remote Area	80%
	Very Remote Area	80%
Yearly/Less than yearly, Large, Non-Hazardous	Easily Accessible Area	80%
	Accessible Area	80%
	Less Accessible Area	80%
	Remote Area	80%
	Very Remote Area	80%

5.2.3 Temporary Collection Facilities and Events

Temporary collection facilities are non-permanent locations where consumers can return covered products. This includes collection events. When curbside or permanent facilities are not feasible in certain areas due to various barriers, EPR agencies have in the past provided different temporary collection facilities to ensure reasonable access for consumers. Since programs have indicated that they meet their access targets through

either curbside or permanent collection facilities, there have been no specific standards to be met for these temporary facilities to be considered as providing reasonable access. Generally, temporary collection facilities are used as a secondary collection service when the primary method is not possible. Therefore, when reviewing what standards are needed to establish reasonable access, the project team compared these standards against what is typically the primary service to determine what equivalent service may be. In order for consumers to have reasonable access to a temporary collection facility (including collection events), the facility needs to meet the following standards.

Not Applicable Product Categories

For the most frequently purchased products (i.e., those categorized as *daily, small, non-hazardous* and *weekly, small, non-hazardous*), temporary collection facilities, including collection events, are considered inaccessible. The services offered by these facilities cannot be provided at a frequency that would be considered equivalent to single family curbside / multi-family collection / direct pick-up or permanent collection facilities. Since these products are purchased frequently, waste is generated consistently, and many consumers lack the space to store them for extended periods. Moreover, these products can be disposed of in general waste collection. Long intervals between collections could discourage recycling and lower collection rates.

5.2.3.1 Primary Factor: Frequency of Temporary Collection Facility or Event

Factor Selection

Since these collection facilities are temporary, one of the main factors to consider in establishing reasonable access is the frequency at which they occur. Consumers in some communities may not have the ability to store their products for long periods of time, and if the temporary collection facility is not available frequently, they may be more likely to dispose of their products in the garbage.

Factor Standards

The project team reviewed EPR agencies' annual reports to determine the frequency of collection events in previous years. According to annual reports from 2020 and 2021, EPR agencies held between 0-50 events per year across the entire province. This is a positive step towards providing service in areas where other collection services are not available.

The project team reviewed single family curbside / multi-family collection / direct pick-up and permanent facility standards to work towards developing equivalent service levels for temporary collection facilities and events. The main standard reviewed was the reasonable access frequency for single family curbside / multi-family collection/ direct pick-up, as it is the only other collection service option that has a frequency standard.

The recommended reasonable access standards are outlined in Table 18, and the rationale for their selection is as follows:

- **One to six times per year:** For less frequently purchased products, the frequency of temporary collection facilities or events was aligned with the frequency for single family curbside / multi-family collection/ direct pick-up. Therefore, for certain product groups, single family curbside / multi-family collection / direct pick-up or collection events are considered equally accessible as long as they are provided at the same frequency and meet other standards. In communities where more than one

collection event per year is required, there must be a sufficient gap of at least one month between events for them to be regarded as separate.

Table 18: Reasonable Access Frequency for Temporary Collection Facilities and Events

Product Group	Community Type	Reasonable Access Frequency for Temporary Collection Facilities and Events
Daily, Small, Non-Hazardous (excluding flexibles and glass)	Easily Accessible Area	Not Accessible
	Accessible Area	Not Accessible
	Less Accessible Area	Not Accessible
	Remote Area	Not Accessible
	Very Remote Area	Not Accessible
Daily, Small, Non-Hazardous (including flexibles and glass)	Easily Accessible Area	Not Accessible
	Accessible Area	Not Accessible
	Less Accessible Area	Not Accessible
	Remote Area	Not Accessible
	Very Remote Area	Not Accessible
Weekly, Small, Non-Hazardous	Easily Accessible Area	Not Accessible
	Accessible Area	Not Accessible
	Less Accessible Area	Not Accessible
	Remote Area	Not Accessible
	Very Remote Area	Not Accessible
Yearly/Less than yearly, Small/Medium, Hazardous	Easily Accessible Area	6 times per year
	Accessible Area	4 times per year
	Less Accessible Area	2 times per year
	Remote Area	Once per year
	Very Remote Area	Once per year
Yearly/Less than yearly, Large, Hazardous	Easily Accessible Area	6 times per year
	Accessible Area	4 times per year
	Less Accessible Area	2 times per year
	Remote Area	Once per year
	Very Remote Area	Once per year
Yearly/Less than yearly, Small/Medium, Non-Hazardous	Easily Accessible Area	6 times per year
	Accessible Area	4 times per year
	Less Accessible Area	2 times per year
	Remote Area	Once per year
	Very Remote Area	Once per year
Yearly/Less than yearly, Large, Non-Hazardous	Easily Accessible Area	6 times per year
	Accessible Area	4 times per year
	Less Accessible Area	2 times per year
	Remote Area	Once per year
	Very Remote Area	Once per year

5.2.3.2 Primary Factor: Drive Time to Collection Facility

Factor Selection

Section 5.2.2.1 provides a thorough explanation of why drive time was selected as a factor. Similar to permanent facilities, it is important to consumers that facilities are in close proximity to ensure that returning

products is accessible. While there are no drive time standards for any collection events at present, it is reasonable to assume that only people within a certain travel time would be willing to attend such events. Therefore, just as for permanent facilities, temporary facilities should confirm that consumers are within a specific travel time to be considered having reasonable access.

Factor Standards

The factor standards are outlined in Table 19. These factors are classified as not accessible for products where temporary facilities cannot provide accessible service (see Section 5.2.3.1) or when their drive time is comparable to that of permanent collection facilities (see Section 5.2.2.1). The drive time must be the same for the collection service to be considered an equivalent access option as a consumer's ability to reach the facility needs to be consistent. When a collection event is held in a community, only the population residing within the recommended drive time would be considered to have reasonable access to the event, while the rest of the population would not be considered.

Table 19: Reasonable Access Drive Time Standard for Temporary Collection Facilities and Events

Product Group	Community Type	Reasonable Access Drive Time for Temporary Collection Facilities and Events
Daily, Small, Non-Hazardous (excluding flexibles and glass)	Easily Accessible Area	Not Accessible
	Accessible Area	Not Accessible
	Less Accessible Area	Not Accessible
	Remote Area	Not Accessible
	Very Remote Area	Not Accessible
Daily, Small, Non-Hazardous (including flexibles and glass)	Easily Accessible Area	Not Accessible
	Accessible Area	Not Accessible
	Less Accessible Area	Not Accessible
	Remote Area	Not Accessible
	Very Remote Area	Not Accessible
Weekly, Small, Non-Hazardous	Easily Accessible Area	Not Accessible
	Accessible Area	Not Accessible
	Less Accessible Area	Not Accessible
	Remote Area	Not Accessible
	Very Remote Area	Not Accessible
Yearly/Less than yearly, Small/Medium, Hazardous	Easily Accessible Area	15 minutes
	Accessible Area	20 minutes
	Less Accessible Area	30 minutes
	Remote Area	40 minutes
	Very Remote Area	45 minutes
Yearly/Less than yearly, Large, Hazardous	Easily Accessible Area	15 minutes
	Accessible Area	20 minutes
	Less Accessible Area	30 minutes
	Remote Area	40 minutes
	Very Remote Area	45 minutes
Yearly/Less than yearly, Small/Medium, Non-Hazardous	Easily Accessible Area	15 minutes
	Accessible Area	20 minutes
	Less Accessible Area	30 minutes
	Remote Area	40 minutes

Yearly/Less than yearly, Large, Non-Hazardous	Very Remote Area	45 minutes
	Easily Accessible Area	15 minutes
	Accessible Area	20 minutes
	Less Accessible Area	30 minutes
	Remote Area	40 minutes
	Very Remote Area	45 minutes

5.2.3.3 Secondary Factor: Hours Open

Factor Selection

The hours during which a temporary facility is open directly affect a consumer's ability to use the service and return products. While most EPR agencies report only the annual frequency of temporary facilities, the operating hours are crucial in determining the accessibility of a facility.

Factor Standards

Determining the appropriate number of hours for temporary facilities to be open in order to be considered accessible is not a straightforward task. Currently, most temporary facilities take the form of collection events, and it is difficult to evaluate the current performance of the duration of EPR agencies' collection events.

To establish reasonable operating hour requirements for temporary facilities, the project team evaluated the reasonableness of the duration of a collection event based on the annual frequency standard. It was deemed reasonable for a collection event to span 16 hours (an average of two days) in *easily accessible areas*, 10 hours (an average of one long day extending beyond 9:00am-5:00pm) in *accessible areas*, and 8 hours (one full day) in *less accessible, remote, and very remote areas*. These hours should be held within a three-day period. For example, a 16-hour event could take place over two days (8 hours each day) or over three days (5 1/3 hours each day). These hours are the same for all product types because the level of service is scaled by the frequency of temporary facilities being open on an annual basis, as described in Section 5.2.3.1.

5.2.3.4 Secondary Factor: Ability to Return Other Regulated Products

Factor Selection

The importance of being able to return other covered products is discussed in Section 5.2.2.3. Similar to permanent collection facilities, temporary collection facilities (including events) can improve accessibility if multiple products can be returned at the same time. This can reduce the number of events held, making it easier for consumers to track events and return products. If agencies choose to meet reasonable access through temporary collection facilities, particularly events, there may be significantly more events held in various communities than is currently the case. It may become confusing and difficult to track if a different agency hosts a collection event each week. Therefore, if there is more collaboration between agencies, then many products can be returned at these events.

Factor Standard

Unlike permanent collection facilities, it is not feasible to implement universal temporary collection locations.

Although EPR agencies should consider hosting events where a large number of products can be returned, the level of coordination required among different programs for a temporary event can be challenging. Therefore, it is recommended that at least half of the temporary collection facilities or events are coordinated with at least two other programs so that other covered products can also be returned. If this standard is met, then at 50% of events, at least three different products can be returned.

Product Group	Community Type	% of Temporary Collection Facilities and Events Where At Least Two Other EPR Programs Are Collaborating
Daily, Small, Non-Hazardous (excluding flexibles and glass)	Easily Accessible Area	Not Accessible
	Accessible Area	Not Accessible
	Less Accessible Area	Not Accessible
	Remote Area	Not Accessible
	Very Remote Area	Not Accessible
Daily, Small, Non-Hazardous (including flexibles and glass)	Easily Accessible Area	Not Accessible
	Accessible Area	Not Accessible
	Less Accessible Area	Not Accessible
	Remote Area	Not Accessible
	Very Remote Area	Not Accessible
Weekly, Small, Non-Hazardous	Easily Accessible Area	Not Accessible
	Accessible Area	Not Accessible
	Less Accessible Area	Not Accessible
	Remote Area	Not Accessible
	Very Remote Area	Not Accessible
Yearly/Less than yearly, Small/Medium, Hazardous	Easily Accessible Area	50%
	Accessible Area	50%
	Less Accessible Area	50%
	Remote Area	50%
	Very Remote Area	50%
Yearly/Less than yearly, Large, Hazardous	Easily Accessible Area	50%
	Accessible Area	50%
	Less Accessible Area	50%
	Remote Area	50%
	Very Remote Area	50%
Yearly/Less than yearly, Small/Medium, Non-Hazardous	Easily Accessible Area	50%
	Accessible Area	50%
	Less Accessible Area	50%
	Remote Area	50%
	Very Remote Area	50%
Yearly/Less than yearly, Large, Non-Hazardous	Easily Accessible Area	50%
	Accessible Area	50%
	Less Accessible Area	50%
	Remote Area	50%
	Very Remote Area	50%

5.2.4 Mail-back

Some EPR agencies offer consumers the option to return their products through regular mail service. The agencies that offer this service claim that it provides full access to the entire population. However, for mail-back return to be considered reasonably accessible, it must meet certain standards to ensure equivalent service. Since EPR agencies will have very limited control over how mail-back returns are operated, the number of factors to consider is lower compared to other collection service measures.

5.2.4.1 Primary Factor: Drive Time to a Return Location

Factor Selection

A detailed justification for why drive time was selected as a factor is provided in Section 4.3.2.1. As is the case with permanent collection facilities, it is important for consumers to have mail-back facilities located close by to ensure that product returns are accessible. Currently, EPR agencies indicate that there is universal reasonable access when mail-back is provided, but there is no evidence to support how accessible postal returns are. It is the responsibility of the EPR agency to provide evidence that mail returns for their products have equivalent access as other collection service options in the same product grouping.

Not Applicable Product Categories

Mail-back return is not a reasonable option for all product groupings. For products that are purchased very frequently, constantly mailing back the packaging would be onerous for both the mail system and the consumer. Hazardous products have specific transportation and disposal requirements that cannot be met through mail. Finally, returning large products through mail would be too challenging and potentially too expensive.

Factor Standard

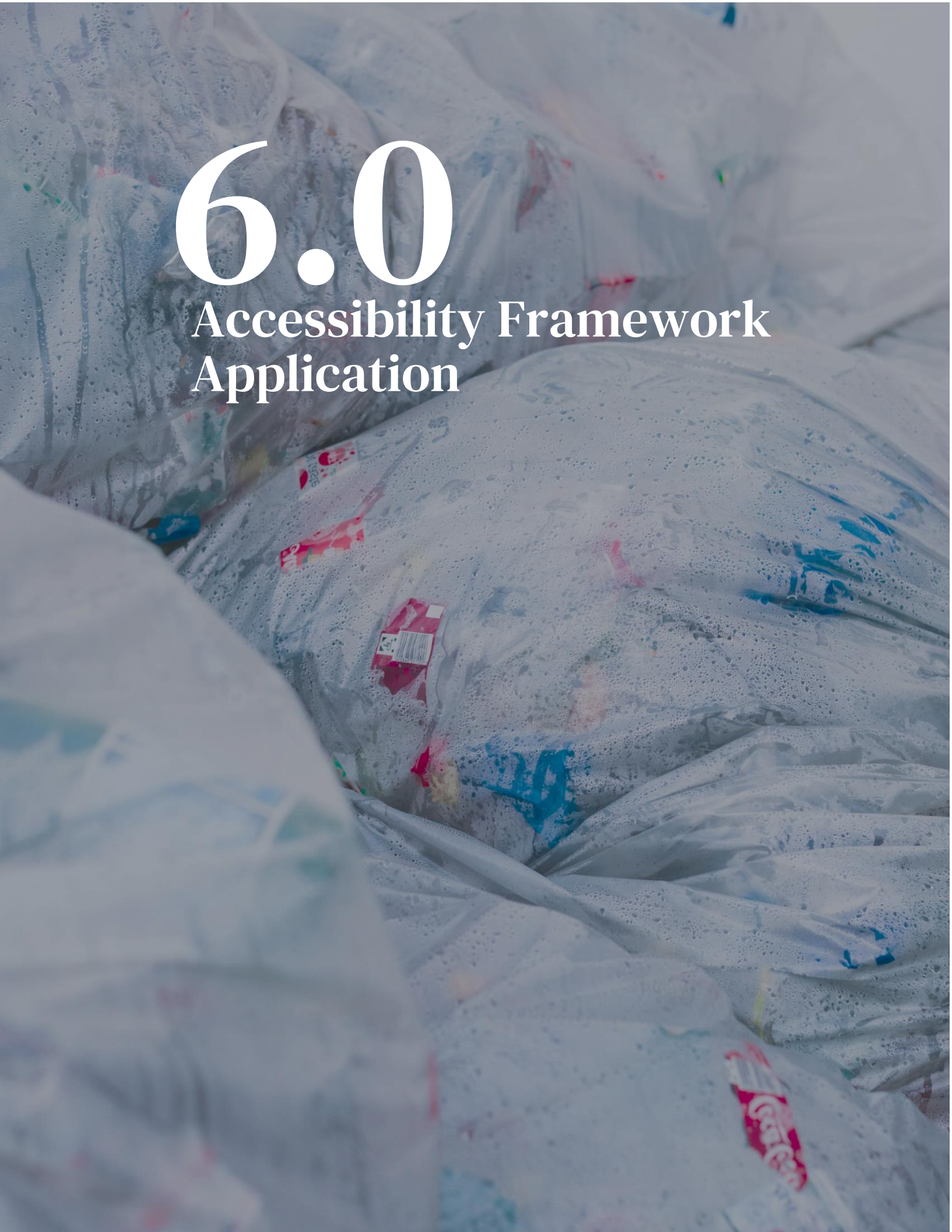
The standard for reasonable drive time for mail-back returns includes one category.

- **15-45 minutes:** The drive times are set to be equivalent to the drive time standard for permanent collection facilities (see Section 5.2.2.1). This is to ensure that the flexibility within this framework provides equivalent access levels for all collection types.

Table 20: Reasonable Access Drive Time Standard for Mail-Back Returns

Product Group	Community Type	Reasonable Access Drive Time for Mail-back Returns
Daily, Small, Non-Hazardous (excluding flexibles and glass)	Easily Accessible Area	Not Accessible
	Accessible Area	Not Accessible
	Less Accessible Area	Not Accessible
	Remote Area	Not Accessible
	Very Remote Area	Not Accessible
Daily, Small, Non-Hazardous (including flexibles and glass)	Easily Accessible Area	Not Accessible
	Accessible Area	Not Accessible
	Less Accessible Area	Not Accessible
	Remote Area	Not Accessible
	Very Remote Area	Not Accessible
Weekly, Small, Non-Hazardous	Easily Accessible Area	Not Accessible

	Accessible Area	Not Accessible
	Less Accessible Area	Not Accessible
	Remote Area	Not Accessible
	Very Remote Area	Not Accessible
Yearly/Less than yearly, Small/Medium, Hazardous	Easily Accessible Area	Not Accessible
	Accessible Area	Not Accessible
	Less Accessible Area	Not Accessible
	Remote Area	Not Accessible
	Very Remote Area	Not Accessible
Yearly/Less than yearly, Large, Hazardous	Easily Accessible Area	Not Accessible
	Accessible Area	Not Accessible
	Less Accessible Area	Not Accessible
	Remote Area	Not Accessible
	Very Remote Area	Not Accessible
Yearly/Less than yearly, Small/Medium, Non- Hazardous	Easily Accessible Area	15 minutes
	Accessible Area	20 minutes
	Less Accessible Area	30 minutes
	Remote Area	40 minutes
	Very Remote Area	45 minutes
Yearly/Less than yearly, Large, Non-Hazardous	Easily Accessible Area	Not Accessible
	Accessible Area	Not Accessible
	Less Accessible Area	Not Accessible
	Remote Area	Not Accessible
	Very Remote Area	Not Accessible



6.0

Accessibility Framework Application

6.1 Framework in Operation

Section 3.0 explained how products are categorized in the framework, Section 4.0 explained how communities are categorized in the framework, and Section 5.0 reviewed the collection service standards necessary for providing reasonable access.

Under this framework, products are grouped based on their characteristics, and for each community type, EPR agencies need to meet specific standards. The product and community groups are summarized in Table 22. As an example, smoke alarms are purchased infrequently, are small, and non-hazardous. Therefore, they fall under the *yearly/less than yearly, small/medium, non-hazardous* product grouping. The EPR agency responsible for smoke alarms and other products in that group must meet accessibility standards according to community groups.

6.1.1 Population Targets

In order to provide more flexibility to EPR agencies and to acknowledge that certain areas may face barriers that limit their capacity to provide services, the framework includes population targets for each community group.

Table 21: Population Targets for Different Community Groups

Community Group	Population Target
Easily Accessible Area	95%
Accessible Area	90%
Less Accessible Area	85%
Remote Area	50%
Very Remote Area	25%

This means that a certain percentage of the population in each community group will need to have reasonable access to a collection service based on the identified factors. The K-Means method recommended for community categorization under the Index of Remoteness suggests that meeting all population targets will result in approximately 93% of the total population having reasonable access to a collection service.

The population targets were selected based on the accessibility of other services in the respective areas. It is understood that providing service in *remote* and *very remote areas* can be challenging. As discussed in section 4.2, the more remote a community is on the Index of Remoteness scale, the less access they have to a variety of other services. According to SABC's Guidance on Accessibility of Stewardship Programs, service can be provided to remote communities "where practical."⁵⁷ To promote service in *remote* and *very remote areas*, there needs to be a standard, even if modest, to ensure steps are taken to provide service in these areas. Moreover, as discussed in Section 2.3.1, the current lack of granularity in how targets are established limits the incentive to provide service in remote areas. Combining *less accessible*, *remote*, and *very remote areas* into a single community group labeled "rural areas" can achieve 90% access in this group, with almost 0% access in

remote and *very remote areas*. A summary of how the population targets are incorporated into the framework is presented in Table 22.

Table 22: Product and Community Groups with Population Target

Product Group	Product Examples	Community Group	Population Target
Daily, Small, Non-Hazardous	Packaging and Paper Products	Easily Accessible Area	95%
		Accessible Area	90%
		Less Accessible Area	85%
		Remote Area	50%
		Very Remote Area	25%
	Packaging and Paper Products (Flexibles and Glass)	Easily Accessible Area	95%
		Accessible Area	90%
		Less Accessible Area	85%
		Remote Area	50%
		Very Remote Area	25%
Weekly, Small, Non-Hazardous	Beverage Containers including Milk, Beer Containers	Easily Accessible Area	95%
		Accessible Area	90%
		Less Accessible Area	85%
		Remote Area	50%
		Very Remote Area	25%
Yearly/Less than yearly, Small/Medium, Hazardous	Paint, Pesticides, and Flammable Liquids, Used Motor Oil, Filters, Containers and Antifreeze, Medications	Easily Accessible Area	95%
		Accessible Area	90%
		Less Accessible Area	85%
		Remote Area	50%
		Very Remote Area	25%
Yearly/Less than yearly, Large, Hazardous	Auto Batteries/Lead Acid Batteries	Easily Accessible Area	95%
		Accessible Area	90%
		Less Accessible Area	85%
		Remote Area	50%
		Very Remote Area	25%
Yearly/Less than yearly, Small/Medium, Non-Hazardous	Electronics, Light Bulbs and Light Fixtures, Small Appliances, Alkaline and Rechargeable Batteries, Smoke Alarms, Carbon Monoxide Detectors, Telecommunication Equipment, Thermostats, Cell Phones	Easily Accessible Area	95%
		Accessible Area	90%
		Less Accessible Area	85%
		Remote Area	50%
		Very Remote Area	25%
Yearly/Less than yearly, Large, Non-Hazardous	Outdoor Power Equipment, Tires, Large Appliances	Easily Accessible Area	95%
		Accessible Area	90%
		Less Accessible Area	85%
		Remote Area	50%
		Very Remote Area	25%

The framework provides flexibility to EPR agencies in selecting the most appropriate collection service for each community. The framework includes four collection service types: single family curbside / multi-family collection / direct pick-up, permanent collection facilities, temporary collection facilities and events, or mail-

back returns. To meet the population target, EPR agencies can provide reasonably accessible service through one or a combination of these collection service types. For example, in *easily accessible areas*, 70% of the population may have reasonable access through permanent collection facilities. However, in some areas, it may be difficult to site new permanent locations. In such cases, 25% of the population may have reasonable access through single family curbside / multi-family collection / direct pick-up service. Combining these two options will provide reasonable access to a total of 95% of the population, which achieves the target. To be considered reasonable access, each of these collection service types needs to meet a set of standards that were discussed in detail in Section 5.0.

It should be noted that not all of the factors contribute equally to meeting the population target. Therefore, more clarity is provided here on how the population targets can be met for different collections service options.

Meeting Population Target for Single Family Curbside / Multi-family Collection / Direct Pick-up

If a household has access to single family curbside / multi-family collection / direct pick-up service which meets the frequency standard, then that population would count towards the population target. For example, if a community had a population of 1,000 people and 900 had single family curbside / multi-family collection / direct pick-up service at the standard set in the framework, then those 900 people would count towards the population target.

Meeting Population Target for Permanent Collection Facilities

The factors for permanent collection facilities are separated into two categories. They are primary factors and secondary factors. The primary factors are those which are needed to meet the population targets.

Primary Factor

The primary factor for permanent collection facilities is the drive time it takes consumers to travel to the return facility. Therefore, a consumer (which could be measured by dissemination blocks¹ provided by the census) needs to live within the standard drive time to count towards the population target. For example, if a dissemination block in a *less accessible area* is located within a 15-minute drivetime of a beverage container return location, then that location would be considered to have reasonable access and the population within that dissemination block would count towards the population target.

Secondary Factors

There are three secondary factors. These include the hours the location is open, the other covered products which are accepted at the location, and consumer satisfaction of the return collection network. These factors are not counted towards the population target. Additionally, and to provide greater flexibility, only one of the three targets need to be met. For example, an EPR program may have a network of permanent collection facilities where 80% are open 40 hours during the week and 12 hours on weekends. If they already meet this standard, then they do not need to provide evidence on universal return locations or consumer satisfaction.

¹ A dissemination block (DB) is an area bounded on all sides by roads and/or boundaries of standard geographic areas. The dissemination block is the smallest geographic area for which population and dwelling counts are disseminated.

Meeting Population Target for Temporary Collection Facilities and Events

The temporary collection facilities factors are separated into two categories. They are primary factors and secondary factors. The primary requirements are those which are needed to meet the population targets.

Primary Factors

There are two primary factors for temporary collection facilities and events. These include the frequency for which they are held and the drive time consumers must travel to get to the facility. Both of these factors need to be met for the population to count towards the population target. In *less accessible areas*, temporary collection facilities and events, need to be held two times per year and the drive time to the event needs to be 30 minutes or less for to be considerable providing reasonable access. This means a household, or a dissemination block, need to be within a 30-minute drive of two different temporary facilities within a year for this population to count towards the target.

Secondary Factors

There are two secondary factors. These include the hours that the temporary collection facilities or event are open and the number of other covered products which can be return at the facilities. Similar to permanent collection facilities, to provide more flexibility only one of the two standards need to be met.

Meeting Population Target for Mail-back Returns

If a household is within the standard drive time of a location where a consumer can return the product via mail, then that population would count towards the target. This could be through a post office or another location as long as they only have to drive the standard amount of time to reach the location.

The framework in total for the four different collection service methods is summarized in Table 23 through Table 26.

Determining Service Levels

This framework provides a new method for determining reasonable access for EPR programs in B.C. As the methodology is different from how EPR agencies currently decide service levels, there may be areas which currently have service above the standard outline in the framework. This hierarchy establishes what reasonable access is and is not a standard for best-in-class collection service. Therefore, it is vital that this framework is not used as justification for any reduction in service. Service should not be decreased in any community without detailed justification. A few examples are provided here for clarity.

- The *remote* community single family curbside / multi-family collection / direct pick-up frequency standard is monthly for packaging and paper products. If a *remote* community currently has weekly single family curbside / multi-family collection / direct pick-up, the frequency should not decrease to monthly as is the minimum standard in the framework as this would constitute a reduction in service. Instead, the service level should remain the same.
- The drive time standard for electronics in *easily accessible areas* is 15 minutes. If a community lives within 5 minutes of Depot A and 14 minutes of Depot B, Depot A should not be closed even though the community would have reasonable access through Depot B. This would still be a reduction in service.

Table 23: Accessibility Framework for Single Family Curbside / Multi-family Collection / Direct Pick-up

				Primary Factor
Product Group	Product Examples	Community Type	Population Target	Reasonable Access Frequency of Collection
Daily, Small, Non-hazardous	Packaging and Paper Products	Easily Accessible Area	95%	Weekly/Biweekly
		Accessible Area	90%	Weekly/Biweekly
		Less Accessible Area	85%	Biweekly
		Remote Area	50%	Monthly
		Very Remote Area	25%	Monthly
	Packaging and Paper Products (Flexibles and Glass)	Easily Accessible Area	95%	Weekly/Biweekly
		Accessible Area	90%	Weekly/Biweekly
		Less Accessible Area	85%	Biweekly
		Remote Area	50%	Monthly
		Very Remote Area	25%	Monthly
Weekly, Small, Non-hazardous	Beverage Containers including Milk, Beer Containers	Easily Accessible Area	95%	Not Accessible
		Accessible Area	90%	Not Accessible
		Less Accessible Area	85%	Not Accessible
		Remote Area	50%	Not Accessible
		Very Remote Area	25%	Not Accessible
Yearly/Less than yearly, Small/Medium, Hazardous	Paint, Pesticides, and Flammable Liquids, Used Motor Oil, Filters, Containers and Antifreeze, Medications	Easily Accessible Area	95%	6 times per year
		Accessible Area	90%	4 times per year
		Less Accessible Area	85%	2 times per year
		Remote Area	50%	Once per year
		Very Remote Area	25%	Once per year
Yearly/Less than yearly, Large, Hazardous	Auto Batteries/Lead Acid Batteries	Easily Accessible Area	95%	6 times per year
		Accessible Area	90%	4 times per year
		Less Accessible Area	85%	2 times per year
		Remote Area	50%	Once per year
		Very Remote Area	25%	Once per year
Yearly/Less than yearly, Small/Medium, Non-hazardous	Electronics, Light Bulbs and Light Fixtures, Small Appliances, Alkaline and Rechargeable Batteries, Smoke Alarms, Carbon Monoxide Detectors, Telecommunication Equipment, Thermostats, Cell Phones	Easily Accessible Area	95%	6 times per year
		Accessible Area	90%	4 times per year
		Less Accessible Area	85%	2 times per year
		Remote Area	50%	Once per year
		Very Remote Area	25%	Once per year
Yearly/Less than yearly, Large, Non-hazardous	Outdoor Power Equipment, Tires, Large Appliances	Easily Accessible Area	95%	6 times per year
		Accessible Area	90%	4 times per year
		Less Accessible Area	85%	2 times per year
		Remote Area	50%	Once per year
		Very Remote Area	25%	Once per year

Table 24: Accessibility Framework for Permanent Collection Facilities

				Primary Factor	Secondary Factors				
Product Group	Product Examples	Community Type	Population Target	Reasonable Access Drive Time to Permanent Collection Facility	% of Facilities Meeting Minimum Hours	Minimum Weekday Hours Open	Minimum Weekend Hours Open	% of CSDs With At Least One Universal Return Location	% of Consumers Satisfied With Permanent Collection Facility Network
Daily, Small, Non-hazardous	Packaging and Paper Products	Easily Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Accessible Area	90%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Less Accessible Area	85%	15 minutes	80%	20	5	80%	80%
		Remote Area	50%	20 minutes	80%	20	5	80%	80%
		Very Remote Area	25%	30 minutes	80%	20	5	80%	80%
	Packaging and Paper Products (Flexibles and Glass)	Easily Accessible Area	95%	10 minutes	80%	45	16	80%	80%
		Accessible Area	90%	10 minutes	80%	32	8	80%	80%
		Less Accessible Area	85%	15 minutes	80%	20	5	80%	80%
		Remote Area	50%	20 minutes	80%	20	5	80%	80%
		Very Remote Area	25%	30 minutes	80%	20	5	80%	80%
Weekly, Small, Non-hazardous	Beverage Containers including Milk, Beer Containers	Easily Accessible Area	95%	10 minutes	80%	45	16	80%	80%
		Accessible Area	90%	10 minutes	80%	32	8	80%	80%
		Less Accessible Area	85%	15 minutes	80%	20	5	80%	80%
		Remote Area	50%	20 minutes	80%	20	5	80%	80%
		Very Remote Area	25%	30 minutes	80%	15	4	80%	80%
Yearly/Less than yearly, Small/Medium, Hazardous	Paint, Pesticides, and Flammable Liquids, Used Motor Oil, Filters, Containers and Antifreeze, Medications	Easily Accessible Area	95%	15 minutes	80%	40	12	80%	80%
		Accessible Area	90%	20 minutes	80%	32	6	80%	80%
		Less Accessible Area	85%	30 minutes	80%	20	5	80%	80%
		Remote Area	50%	40 minutes	80%	15	4	80%	80%
		Very Remote Area	25%	45 minutes	80%	10	2	80%	80%
Yearly/Less than yearly, Large, Hazardous	Auto Batteries/Lead Acid Batteries	Easily Accessible Area	95%	15 minutes	80%	40	12	80%	80%
		Accessible Area	90%	20 minutes	80%	32	6	80%	80%
		Less Accessible Area	85%	30 minutes	80%	20	5	80%	80%
		Remote Area	50%	40 minutes	80%	15	4	80%	80%
		Very Remote Area	25%	45 minutes	80%	10	2	80%	80%
Yearly/Less than yearly, Small/Medium, Non-hazardous	Electronics, Light Bulbs and Light Fixtures, Small Appliances, Alkaline and Rechargeable Batteries, Smoke Alarms, Carbon Monoxide Detectors, Telecommunication Equipment, Thermostats, Cell Phones	Easily Accessible Area	95%	15 minutes	80%	40	12	80%	80%
		Accessible Area	90%	20 minutes	80%	32	6	80%	80%
		Less Accessible Area	85%	30 minutes	80%	20	5	80%	80%
		Remote Area	50%	40 minutes	80%	15	4	80%	80%
		Very Remote Area	25%	45 minutes	80%	10	2	80%	80%
Yearly/Less than yearly, Large, Non-hazardous	Outdoor Power Equipment, Tires, Large Appliances	Easily Accessible Area	95%	15 minutes	80%	32	8	80%	80%
		Accessible Area	90%	20 minutes	80%	20	5	80%	80%
		Less Accessible Area	85%	30 minutes	80%	20	5	80%	80%
		Remote Area	50%	40 minutes	80%	12	4	80%	80%
		Very Remote Area	25%	45 minutes	80%	8	2	80%	80%

Table 25: Accessibility Framework for Temporary Collection Facilities and Events

Product Group	Product Examples	Community Type	Population Target	Primary Factors		Secondary Factors		
				Reasonable Access Frequency for Temporary Collection Facility	Reasonable Access Drive Time for Temporary Collection Facility	% of Facilities Meeting Minimum Hours	Minimum Hours Open	% of Temporary Collection Facilities Where At Least Two Other EPR Programs Are Collaborating
Daily, Small, Non-hazardous	Packaging and Paper Products	Easily Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Accessible Area	90%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Less Accessible Area	85%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Remote Area	50%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Very Remote Area	25%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
	Packaging and Paper Products (Flexibles and Glass)	Easily Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Accessible Area	90%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Less Accessible Area	85%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Remote Area	50%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Very Remote Area	25%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
Weekly, Small, Non-hazardous	Beverage Containers including Milk, Beer Containers	Easily Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Accessible Area	90%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Less Accessible Area	85%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Remote Area	50%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Very Remote Area	25%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
Yearly/Less than yearly, Small/Medium, Hazardous	Paint, Pesticides, and Flammable Liquids, Used Motor Oil, Filters, Containers and Antifreeze, Medications	Easily Accessible Area	95%	6 times per year	15 minutes	80%	16	50%
		Accessible Area	90%	4 times per year	20 minutes	80%	10	50%
		Less Accessible Area	85%	2 times per year	30 minutes	80%	8	50%
		Remote Area	50%	Once per year	40 minutes	80%	8	50%
		Very Remote Area	25%	Once per year	45 minutes	80%	8	50%
Yearly/Less than yearly, Large, Hazardous	Auto Batteries/Lead Acid Batteries	Easily Accessible Area	95%	6 times per year	15 minutes	80%	16	50%
		Accessible Area	90%	4 times per year	20 minutes	80%	10	50%
		Less Accessible Area	85%	2 times per year	30 minutes	80%	8	50%
		Remote Area	50%	Once per year	40 minutes	80%	8	50%
		Very Remote Area	25%	Once per year	45 minutes	80%	8	50%
Yearly/Less than yearly, Small/Medium, Non-hazardous	Electronics, Light Bulbs and Light Fixtures, Small Appliances, Alkaline and Rechargeable Batteries, Smoke Alarms, Carbon Monoxide Detectors, Telecommunication Equipment, Thermostats, Cell Phones	Easily Accessible Area	95%	6 times per year	15 minutes	80%	16	50%
		Accessible Area	90%	4 times per year	20 minutes	80%	10	50%
		Less Accessible Area	85%	2 times per year	30 minutes	80%	8	50%
		Remote Area	50%	Once per year	40 minutes	80%	8	50%
		Very Remote Area	25%	Once per year	45 minutes	80%	8	50%
Yearly/Less than yearly, Large, Non-hazardous	Outdoor Power Equipment, Tires, Large Appliances	Easily Accessible Area	95%	6 times per year	15 minutes	80%	16	50%
		Accessible Area	90%	4 times per year	20 minutes	80%	10	50%
		Less Accessible Area	85%	2 times per year	30 minutes	80%	8	50%
		Remote Area	50%	Once per year	40 minutes	80%	8	50%
		Very Remote Area	25%	Once per year	45 minutes	80%	8	50%

Table 26: Accessibility Framework for Mail-back Collection

				Primary Factor
Product Group	Product Examples	Community Type	Population Target	Reasonable Access Drive Time for Mail-back Collection Facility
Daily, Small, Non-hazardous	Packaging and Paper Products	Easily Accessible Area	95%	Not Accessible
		Accessible Area	90%	Not Accessible
		Less Accessible Area	85%	Not Accessible
		Remote Area	50%	Not Accessible
		Very Remote Area	25%	Not Accessible
	Packaging and Paper Products (Flexibles and Glass)	Easily Accessible Area	95%	Not Accessible
		Accessible Area	90%	Not Accessible
		Less Accessible Area	85%	Not Accessible
		Remote Area	50%	Not Accessible
		Very Remote Area	25%	Not Accessible
Weekly, Small, Non-hazardous	Beverage Containers including Milk, Beer Containers	Easily Accessible Area	95%	Not Accessible
		Accessible Area	90%	Not Accessible
		Less Accessible Area	85%	Not Accessible
		Remote Area	50%	Not Accessible
		Very Remote Area	25%	Not Accessible
Yearly/Less than yearly, Small/Medium, Hazardous	Paint, Pesticides, and Flammable Liquids, Used Motor Oil, Filters, Containers and Antifreeze, Medications	Easily Accessible Area	95%	Not Accessible
		Accessible Area	90%	Not Accessible
		Less Accessible Area	85%	Not Accessible
		Remote Area	50%	Not Accessible
		Very Remote Area	25%	Not Accessible
Yearly/Less than yearly, Large, Hazardous	Auto Batteries/Lead Acid Batteries	Easily Accessible Area	95%	Not Accessible
		Accessible Area	90%	Not Accessible
		Less Accessible Area	85%	Not Accessible
		Remote Area	50%	Not Accessible
		Very Remote Area	25%	Not Accessible
Yearly/Less than yearly, Small/Medium, Non-hazardous	Electronics, Light Bulbs and Light Fixtures, Small Appliances, Alkaline and Rechargeable Batteries, Smoke Alarms, Carbon Monoxide Detectors, Telecommunication Equipment, Thermostats, Cell Phones	Easily Accessible Area	95%	15 minutes
		Accessible Area	90%	20 minutes
		Less Accessible Area	85%	30 minutes
		Remote Area	50%	40 minutes
		Very Remote Area	25%	45 minutes
Yearly/Less than yearly, Large, Non-hazardous	Outdoor Power Equipment, Tires, Large Appliances	Easily Accessible Area	95%	Not Accessible
		Accessible Area	90%	Not Accessible
		Less Accessible Area	85%	Not Accessible
		Remote Area	50%	Not Accessible
		Very Remote Area	25%	Not Accessible

6.2 Barriers and Backstop Service

Barriers to Providing Collection

The accessibility framework provides service level standards for EPR agencies specific to product and community types. To provide flexibility for EPR agencies, there are four different collection service options which can be used to provide reasonably accessible service to consumers. Additionally, population targets are adjusted depending on the community type and all targets are below 100% as there may realistically be barriers to providing service in some areas. These barriers may include zoning requirements which limit the siting of new permanent return locations, difficulty accessing some communities, or limited time where weather is acceptable for a temporary return location or event. Although these barriers are valid, as there are multiple collections service options, EPR agencies can provide service through a different collection method which does not have these barriers. For example, if new permanent return locations are hard to site in a community, then single family curbside / multi-family collection / direct pick-up can be provided.

All programs have at least two collection service options except for the *daily, small, non-hazardous* product group in *easily accessible* and *accessible* communities and the *weekly, small, non-hazardous* product group in all community types. Although there is less flexibility for these product groupings to provide collection, they still do not need to meet 100% access in any community type. Therefore, there may be some barriers to meeting the access standard, but it is the responsibility of the EPR agency to demonstrate that these barriers limit their ability to provide service up to the standard. Only after this point, should the ministry evaluate whether to potentially lower the population target or adjust one of the accessibility standards in the framework for that program.

Backstop Service Level Requirements

There may be circumstances where service is interrupted due to external forces, such as a natural disaster or a third party operated collection facility shutting down. In these circumstances it is important that service is not only provided to a reasonable level, but to the level of service which was provided before. This framework provides up to four options for collection services, providing ample flexibility for programs to operate within the standard for what is reasonable in the event of drastic, unexpected circumstances. Therefore, the backstop service level that EPR agencies must provide is equivalent to what they were providing, but through a different service method. For example, if a community in a *remote area* is receiving service for electronics through a permanent collection facility that is closed due to a natural disaster, the agency could then choose to either provide single family curbside / multi-family collection / direct pick-up once per year, or a temporary return service such as a collection event once per year within 40 minutes drive time, or mail-back services within 40 minutes drive time. Since these backstop service options are alternative solutions for meeting the same level of access, the adjusted service option could become the new norm for that community if that is preferable over returning to the service provision that previously existed. Alternatively, the backstop service could be provided only in the interim while the previous service is being re-instated (e.g., the depot is reconstructed). Although it may take some time to provide an alternative collection service, the alternative should meet its accessibility criteria. For example, if the reasonable access frequency for collection events is six times per year, then a collection event should be held within two months of the original service ending.

Additionally, if an EPR agency managing *yearly/less than yearly, small/medium, non-hazardous* products provided service to a community through a permanent collection facility that was forced to close, they could provide service to the community through several options. If they wanted to open a new collection facility, but finding a new location would take six months, then an alternative service option needs to be offered in the interim. This could be a collection event or a single family curbside / multi-family collection / direct pick-up open to the community. This alternative collection service should be provided at a reasonable access level prorated for the amount of time it is in place. For example, if it will take six months for a new permanent collection facility to open and the reasonable access standard for frequency of events is four times per year, then two events need to be held in that six-month period.

There are two product groups that do not have multiple collection service options: *daily, small, non-hazardous*; and *weekly, small, non-hazardous*. The current standard defines only one or two service types as accessible for these product groups; therefore, an additional backstop service level option for temporary return facilities is provided in Table 27 below. This level of backstop service is not equivalent to the standard for single family curbside / multi-family collection / direct pick-up and permanent facility services for these product groupings and is only intended to be used in intermediary periods while previous services are being re-established. This standard uses the same factors as temporary service for other product groups; however, since it is intended for interim use only during challenging times, the secondary factor requiring collaboration among EPR agencies is not used, although it is still encouraged that EPR agencies collaborate in these instances. For example, if an EPR agency collects *weekly, small, non-hazardous* products in a *less accessible area* through a permanent collection facility and that facility was forced to close, they would need to provide bimonthly collection events which are open 8 hours for each event until an alternative permanent collection facility was opened. There may be challenges to resuming the previous service levels in the community, but in the interim period they should produce a plan which sets out the timescales and actions in order to resume service.

Table 27: Additional Backstop Service Options, Frequency for Temporary Collection Facilities and Events

Product Group	Community Type	Reasonable Access Frequency for Temporary Collection Facility	Drive Time to Collection Site	Minimum Hours Open
Daily, Small, Non-hazardous and Weekly, Small, Non-hazardous	Easily Accessible Area	Biweekly/Monthly	15 minutes	16 hours
	Accessible Area	Biweekly/Monthly	20 minutes	10 hours
	Less Accessible Area	Bimonthly	30 minutes	8 hours
	Remote Area	Bimonthly	40 minutes	8 hours
	Very Remote Area	Bimonthly	45 minutes	8 hours

6.3 Accessibility Framework Tool

To provide additional support to EPR agencies, the ministry, and interested parties, a tool was developed which provides a more approachable version of the accessibility framework. This tool is built with Excel and does not require Macros, therefore should be usable on most computers.

For EPR agencies, this tool is intended to be used in conjunction with an agency's spatial analysis of their current service (see Section 6.3.1).

Within the tool, the user will be able to select any covered product within B.C. In the example in Figure 8, electronics is selected.

Figure 8: Tool User Input

User Input: Choose Product select from drop down menu in cell D3	Electronics
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Then the tool shows the primary factors which are counted towards the population target and the different options for meeting the target. For example, for electronics there is flexibility that for a community to be considered to have reasonable access, collection service can be provided through single family curbside / multi-family collection / direct pick-up, or permanent collection facilities, or temporary collection facilities and events, or mail-back returns as long as they meet the standards outlined in the framework. An EPR agency providing service for electronics could choose to provide service only through single family curbside / multi-family collection / direct pick-up and not provide permanent or temporary collection facilities and events or mail-back options; this would require 95% of *easily accessible areas* have single family curbside / multi-family collection / direct pick-up 6 times per year, 90% of *accessible areas* 4 times per year, 85% of *less accessible areas* 2 times per year, 50% of *remote areas* once per year, and 25% of *very remote areas* once per year. Alternatively, the same agency could provide 50% of *easily accessible areas* with single family curbside / multi-family collection / direct pick-up 6 times per year, and the other 45% of *easily accessible areas* with a permanent facility within a 15-minute drive, etc.

Figure 9: Example Primary Factor Requirements

		Choose at least 1 and up to 4 service types						
		Single Family Curbside / Multi-family Collection / Direct Pick-up	or	Permanent Facilities	or	Temporary Collection Facilities and Events	or	Mail-back
Community Type	%	Frequency		Drive Time		Frequency	Drive Time	Drive Time
Easily Accessible Area	95%	6 times per year		15 minutes		6 times per	15 minutes	15 minutes
Accessible Area	90%	4 times per year		20 minutes		4 times per	20 minutes	20 minutes
Less Accessible Area	85%	2 times per year		30 minutes		2 times per	30 minutes	30 minutes
Remote Area	50%	1 time per year		40 minutes		Once per year	40 minutes	40 minutes
Very Remote Area	25%	1 time per year		45 minutes		Once per year	45 minutes	45 minutes

Then for each of the collection service options, the relevant secondary factors are shown. The example in Figure 10, shows the secondary requirements for permanent collection facilities. In this example, if an EPR agency is choosing to meet a portion of the population target through permanent collection facilities, they must choose to meet 1 of the 3 secondary requirements. For example, 80% of facilities must be open at the minimum hours requirements in each community type or 80% of users must indicate that they are satisfied with their experience at the facility or 80% of CSDs where they have permanent return locations have at least one universal return location.

Figure 10: Example Secondary Factor Requirements

Community Type	Choose 1 of 3						
	Minimum Hours Open			or	Minimum Universal Return Locations		User Experience Satisfaction
	% of Facilities	Weekdays	Weekends		% of CSDs	# of Universal Facilities in the Community	
Easily Accessible Area	80%	40 hours	12 hours		80%	1	80% Satisfied
Accessible Area	80%	32 hours	6 hours		80%	1	80% Satisfied
Less Accessible Area	80%	20 hours	5 hours		80%	1	80% Satisfied
Remote Area	80%	15 hours	4 hours		80%	1	80% Satisfied
Very Remote Area	80%	10 hours	2 hours		80%	1	80% Satisfied

6.3.1 Decision Making for EPR Agencies and Written Plan Commitments

The tool will help EPR agencies make decisions on the service level which they need to provide in different communities. Agencies will be able to easily see which collection service options they can use to provide service to different community types and the reasonable access standard for each collection service option. Most likely, EPR agencies will have a preferred option for how they provide service and agencies will already have a collection system in place. EPR agencies will then need to conduct a baseline assessment to understand if their current collection service meets the standards required within the framework. If the current collection network does not meet reasonable access for enough of the population, the tool will show what they need to do in which areas.

Additionally, based on the accessibility framework and the determined service level requirements, EPR agencies will need to provide written accessibility commitments within their EPR plans so that the director can be satisfied that reasonable access is provided for. These written plan commitments will vary by agency and since there are multiple collection service options for each program there is flexibility for how the statements are drafted. The statements should include the primary method for how the agency expects to provide service and then for areas where that collection service may not be feasible what service they will provide the remaining communities. For any collection service option with secondary factor requirements, the EPR agency should indicate which of the factors they will meet. An example for the *yearly/less than yearly, small/medium, non-hazardous* groups is as follows.

(Insert EPR Agency Name)'s main collection service method is through permanent collection facilities. (Insert EPR Agency Name) commits to provide permanent collection facilities for 95% of the population in easily accessible areas within a 15-minute drive time, 90% of the population in accessible areas within a 20minute drive time, 85% of the population in less accessible areas within a 30-minute drive time, 50% of the population in remote areas within a 40-minute drive time, and 25% of the population in remote areas within a 45minute drive time. These permanent collection facilities will meet the requirements of at least one secondary factor in the ministry's accessibility framework. In any areas that do not have permanent collection facilities within the accessible standard drive time, single family curbside / multi-family collection / direct pick-up collection will be offered 6 times a year in easily accessible areas, 4 times per year in accessible areas, 2

times per year in less accessible areas, and once per year in remote and very remote areas.

These statements provide clear commitments from EPR agencies on how they expect plan to provide service in communities across B.C.

6.3.2 Evaluation Tool For Government

This framework and tool can also be used by the ministry to evaluate written accessibility commitments provided by EPR agencies in their EPR plans. For example, when an EPR plan is reviewed, ministry staff can select in the tool which product the plan is relevant to. The tool will then show what the minimum level of commitment is by the agency to meet reasonable access. Ministry staff will be required to cross-reference the commitments in the plan with the standard to confirm that the required level is being met. If the tool indicates that a 15-minute drive time for permanent collection facilities is required for *easily accessible* communities, then the ministry staff will check if the plan commits to providing permanent collection facilities within a 15-minute drive for 95% of the population in that community group.

6.4 Greater than Reasonable Access

The accessibility framework provided in this report sets out what reasonable access to recycling services is for different products and community types. EPR agencies may wish to provide greater than reasonable access to continue to provide better service. Additionally, for programs with recovery targets, if the target is not met while providing reasonable access, then greater than reasonable access may be required. The following section provides suggestions for how programs can provide greater than reasonable access for communities across B.C.

Increase Population Target

For all community types the population target is set at less than 100% to provide flexibility to EPR agencies with the understanding that there may be barriers to providing service in some areas. One of the clearest ways to improve access across the province on average is to provide reasonable access to communities which currently do not have reasonable access. *Remote* and *very remote* communities currently have the lowest population targets out of any community the first steps towards increasing population targets should be in these communities.

Set More Ambitious Travel Time Requirements

The proposed accessibility framework sets the reasonable access travel time equivalent to the amount of time it takes to drive to that location. This was done to provide a relatively easy to understand standard without requiring too many standards for different populations. In practice, not everyone has access to a car or prefers to use a car when travelling.

A more accessible standard would identify what modes of transportation the population of different communities take or would prefer to take and establish standards based on this. For example, a walking time

standard or public transportation transit time may be more appropriate for those who live in downtown areas while a drive time standard would still be relevant in remote areas where driving is necessary or more common. The more detailed any analysis is the greater ability programs, and the ministry, has in understanding accessibility.

The concept of a 15-minute or 20-minute neighborhood has recently gained popularity and interest in urban planning discourse. This concept helps create healthy cities, support equity, and drive thriving local economies. Under this concept, individuals should be able to meet most, if not all, of their daily needs within a 20-minute journey. Some literature specifies walking as the main mode of transportation within 15/20 minutes while other literature allows for cycling or public transit. Some of this research has also taken place in Vancouver stating that 79 per cent of residents in the City of Vancouver have access to a grocery store within a 15-minute walk and 99 per cent had at least one grocery store within a 15-minute cycle. More literature on this subject can be found through C40 Cities⁵⁸, The City of Melbourne Strategic Plan⁵⁹, and the City of Boston⁶⁰.

Figure 11: 20-Minute Neighborhood Graphic



To be in line with the 15- or 20-minute neighborhood concept, a greater than reasonable access framework, the travel time for someone's primary travel method should be no longer than 20 minutes. Therefore, in dense urban areas a 20-minute walk time or public transportation time should be set while in more remote areas a 20-minute drive time should be set.

Develop More Universal Return Locations

Each EPR program should evaluate their access, but it is also important to understand the accessibility of the system as a whole. To improve overall access, this framework set out the concept of a universal return location. In a greater than reasonable access system, more locations would accept a wider set of materials so consumers would only be required to go to one location to return all (or most) of their materials.

Evaluate What Waste Services Are Currently Provided

The community groups were established using Statistics Canada's Index of Remoteness. This allowed for clear community types based on a government published index that will be regularly updated. In addition to this index, agencies can evaluate what waste management services are currently provided in the community to evaluate the standard for providing recycling services. For example, if a community has access to curbside collection for garbage, they could potentially be a better candidate for having greater access to recycling services. One reason for evaluating waste services, is that many covered products in B.C. could be disposed of through regular garbage collection. If garbage collection has a greater than reasonable access, then to work towards ensuring products are disposed of properly the recycling collection of these products should be greater than reasonable as well. Although littering may always be an option there are penalties outlined in legislation⁶¹ and it is generally frowned upon by society which makes it less likely that someone would choose to litter compared to disposal in landfill bound garbage.

Evaluate Additional Standards for Access

The current accessibility framework has a consumer satisfaction standard as there are many aspects of collection service which may increase or decrease a consumer's satisfaction. Some of these may be hard to find objective measurements for such as cleanliness of facilities, therefore a general satisfaction standard is proposed. To establish greater than reasonable access EPR agencies may want to establish standards for additional factors which influence consumer satisfaction. A full list of factors that agencies can consider is located in Appendix 4.0. A few examples include:

- **Time spent at collection facilities.** If returning a product at a collection site takes a significant amount of time, consumers may be less willing to use the location. Lines, automated vs manual processes, or limited staff may impact time spent. Average time spent at a location should be less than 10 minutes. The Beverage Container Management Board of Alberta, who is responsible for regulating Alberta's beverage container recycling system, surveys consumers annually and found in their most annual report that "if the customer spends less than 10 minutes at a depot, the perception of that experience is better than if they spend more than 10 minutes at a depot."⁶²
- **Primary service of collection facility.** Similar to providing universal return locations, having locations which are used as part of consumers' everyday life help provide accessible collection. If they plan to visit the location anyway, returning a product is more convenient.
- **Physical requirements at collection facility.** A collection facility may require certain actions which some consumers may be unable to perform, limiting the accessibility of the site especially if there are no alternatives. This may include lifting the product to put in a receptacle or walking up a flight of stairs. If programs want to have greater than reasonable access, they should consider limiting the need for physical requirements or have staff which can assist anyone.
- **Sorting requirements.** Difficult sorting requirements at facilities may reduce access of recycling programs. Providing automated sorting or having staff support the sorting process can increase convenience.
- **Parking availability:** Consumers who return a product using their vehicle may find a collection site with parking directly at the site more accessible as this would limit their need to search for parking or walk.

Overall, the accessibility framework outlined in this report will provide reasonable access to communities across B.C., but if EPR agencies want to provide greater than reasonable access, there are additional standards they can consider.

Using the principles for greater than reasonable access outlined above an additional framework is provided which builds upon the accessibility standard by improving the percentage of communities that have access, raising the bar for primary and secondary factors, and incorporating additional secondary factors. The same collection service options are included (single family curbside / multi-family collection / direct pick-up, permanent facility, temporary facility, mail-back).

Based on an interview with Indigenous Zero Waste Technical Advisory Group (IZWTAG) and previous written feedback from Zero Waste British Columbia (ZWBC) on the SABC Accessibility Standard, to determine greater than reasonable access the project team sought to reduce variance between different community groups and recognize that agencies should endeavor to provide equal access to all community groups irrespective of where they may live in the province. Similarly, and based on this principle, population targets are aligned for all community groups to provide an overall population target of 95%.

Table 28: Population Targets for Different Community Groups (Greater than Reasonable)

Community Type	Population Target
Easily Accessible Area	95%
Accessible Area	95%
Less Accessible Area	95%
Remote Area	95%
Very Remote Area	95%

A summary of the how the standards for greater than reasonable access are different to the reasonable access framework is summarized below and more details on the factors and standards can be found in Table 29 to Table 34.

Primary and secondary factors: In a greater than reasonable access framework, the primary factors remain the same as these are the most relevant for measuring consumer access to recycling service. The population targets are met through measuring the primary factors. All additional factors provided are secondary factors. In a greater than reasonable access scenario, agencies should strive to meet as many secondary factors as possible, therefore specific requirements for the number of secondary factors is not included.

Greater than reasonable access for single family curbside / multi-family collection / direct pick-up: No additional factors are provided for this collection service method. The main difference is the frequency for which the service is provided for each community type.

Greater than reasonable access for permanent collection facilities: For factors which were included in the reasonable access framework, the standards for meeting greater than reasonable access are increased. This includes setting the shortest drive time at 7 minutes and longest drive time at 25 minutes, increasing the number of hours facilities should be open, increasing the number of CSDs which have universal return locations, and increasing the percent of the population satisfied with the collection service. Additional factors are also provided. This includes an 80% target for the population meeting walking and public transit travel times to collection facilities, a 10 minute average time spent at collection facilities, and an 80% target for the number of facilities which meet parking and building accessibility requirements.

Greater than reasonable access for temporary collection facilities and events: Similar to permanent collection facilities, for factors which were included in the reasonable access framework, the standards for meeting

greater than reasonable access are increased. The frequency for which the events need to be held to meet the target is increased, as is the drive time to the facility, the hours that they are open, and the number of events which involve collaboration with other EPR agencies. Additional factors include an 80% target for the population meeting walking and public transit travel times to collection facilities and a 15 minute average time spent at collection facilities.

Greater than reasonable access for mail-back returns: For mail-back returns an increased drive time standard is included for greater than reasonable access in addition to an 80% target for the population meeting walking and public transit travel times to locations where they can mail-back their product.

Table 29: Greater Than Reasonable Access Standard for Single Family Curbside / Multi-family Collection / Direct Pick-up

				Primary Factor
Product Group	Product Examples	Community Type	Population Target	Reasonable Access Frequency of Collection
Daily, Small, Non-hazardous	Packaging and Paper Products	Easily Accessible Area	95%	Weekly
		Accessible Area	95%	Weekly
		Less Accessible Area	95%	Biweekly
		Remote Area	95%	Biweekly
		Very Remote Area	95%	Biweekly
	Packaging and Paper Products (Flexibles and Glass)	Easily Accessible Area	95%	Weekly
		Accessible Area	95%	Weekly
		Less Accessible Area	95%	Biweekly
		Remote Area	95%	Biweekly
		Very Remote Area	95%	Biweekly
Weekly, Small, Non-hazardous	Beverage Containers including Milk, Beer Containers	Easily Accessible Area	95%	Not Accessible
		Accessible Area	95%	Not Accessible
		Less Accessible Area	95%	Not Accessible
		Remote Area	95%	Not Accessible
		Very Remote Area	95%	Not Accessible
Yearly/Less than yearly, Small/Medium, Hazardous	Paint, Pesticides, and Flammable Liquids, Used Motor Oil, Filters, Containers and Antifreeze, Medications	Easily Accessible Area	95%	12 times per year
		Accessible Area	95%	12 times per year
		Less Accessible Area	95%	12 times per year
		Remote Area	95%	6 times per year
		Very Remote Area	95%	6 times per year
Yearly/Less than yearly, Large, Hazardous	Auto Batteries/Lead Acid Batteries	Easily Accessible Area	95%	12 times per year
		Accessible Area	95%	12 times per year
		Less Accessible Area	95%	12 times per year
		Remote Area	95%	6 times per year
		Very Remote Area	95%	6 times per year
Yearly/Less than yearly, Small/Medium, Non-hazardous	Electronics, Light Bulbs and Light Fixtures, Small Appliances, Alkaline and Rechargeable Batteries, Smoke Alarms, Carbon Monoxide Detectors, Telecommunication Equipment, Thermostats, Cell Phones	Easily Accessible Area	95%	12 times per year
		Accessible Area	95%	12 times per year
		Less Accessible Area	95%	12 times per year
		Remote Area	95%	6 times per year
		Very Remote Area	95%	6 times per year
Yearly/Less than yearly, Large, Non-hazardous	Outdoor Power Equipment, Tires, Large Appliances	Easily Accessible Area	95%	12 times per year
		Accessible Area	95%	12 times per year
		Less Accessible Area	95%	12 times per year
		Remote Area	95%	6 times per year
		Very Remote Area	95%	6 times per year

Table 30: Greater Than Reasonable Access Standard for Permanent Collection Facilities (1 of 2)

				Primary Factor	Secondary Factors				
Product Group	Product Examples	Community Type	Population Target	Reasonable Access Drive Time to Permanent Collection Facility	% of Facilities Meeting Minimum Hours	Minimum Weekday Hours Open	Minimum Weekend Hours Open	% of CSDs With At Least One Universal Return Location	% of Consumers Satisfied With Permanent Collection Facility Network
Daily, Small, Non-hazardous	Packaging and Paper Products	Easily Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Less Accessible Area	95%	10 minutes	90%	32	12	90%	90%
		Remote Area	95%	15 minutes	90%	24	8	90%	90%
		Very Remote Area	95%	15 minutes	90%	24	8	90%	90%
	Packaging and Paper Products (Flexibles and Glass)	Easily Accessible Area	95%	7 minutes	90%	50	20	90%	90%
		Accessible Area	95%	7 minutes	90%	50	20	90%	90%
		Less Accessible Area	95%	10 minutes	90%	32	12	90%	90%
		Remote Area	95%	15 minutes	90%	24	8	90%	90%
		Very Remote Area	95%	15 minutes	90%	24	8	90%	90%
Weekly, Small, Non-hazardous	Beverage Containers including Milk, Beer Containers	Easily Accessible Area	95%	7 minutes	90%	50	20	90%	90%
		Accessible Area	95%	7 minutes	90%	50	20	90%	90%
		Less Accessible Area	95%	10 minutes	90%	32	12	90%	90%
		Remote Area	95%	15 minutes	90%	24	8	90%	90%
		Very Remote Area	95%	15 minutes	90%	24	8	90%	90%
Yearly/Less than yearly, Small/Medium, Hazardous	Paint, Pesticides, and Flammable Liquids, Used Motor Oil, Filters, Containers and Antifreeze, Medications	Easily Accessible Area	95%	10 minutes	90%	50	20	90%	90%
		Accessible Area	95%	10 minutes	90%	50	20	90%	90%
		Less Accessible Area	95%	15 minutes	90%	32	12	90%	90%
		Remote Area	95%	25 minutes	90%	24	8	90%	90%
		Very Remote Area	95%	25 minutes	90%	24	8	90%	90%
Yearly/Less than yearly, Large, Hazardous	Auto Batteries/Lead Acid Batteries	Easily Accessible Area	95%	10 minutes	90%	50	20	90%	90%
		Accessible Area	95%	10 minutes	90%	50	20	90%	90%
		Less Accessible Area	95%	15 minutes	90%	32	12	90%	90%
		Remote Area	95%	25 minutes	90%	24	8	90%	90%
		Very Remote Area	95%	25 minutes	90%	24	8	90%	90%
Yearly/Less than yearly, Small/Medium, Non-hazardous	Electronics, Light Bulbs and Light Fixtures, Small Appliances, Alkaline and Rechargeable Batteries, Smoke Alarms, Carbon Monoxide Detectors, Telecommunication Equipment, Thermostats, Cell Phones	Easily Accessible Area	95%	10 minutes	90%	50	20	90%	90%
		Accessible Area	95%	10 minutes	90%	50	20	90%	90%
		Less Accessible Area	95%	15 minutes	90%	32	12	90%	90%
		Remote Area	95%	25 minutes	90%	24	8	90%	90%
		Very Remote Area	95%	25 minutes	90%	24	8	90%	90%
Yearly/Less than yearly, Large, Non-hazardous	Outdoor Power Equipment, Tires, Large Appliances	Easily Accessible Area	95%	10 minutes	90%	50	20	90%	90%
		Accessible Area	95%	10 minutes	90%	50	20	90%	90%
		Less Accessible Area	95%	15 minutes	90%	32	12	90%	90%
		Remote Area	95%	25 minutes	90%	24	8	90%	90%
		Very Remote Area	95%	25 minutes	90%	24	8	90%	90%

Table 31: Greater Than Reasonable Access Standard for Permanent Collection Facilities (2 of 2)

			Secondary Factors (cont.)						
Product Group	Product Examples	Community Type	% Population Within Walk and Public Transit Times	Walk Time to Permanent Collection Facility	Public Transit Travel Time to Permanent Collection Facility	Average Time at Collection Facilities	% of Facilities That Meet Parking and Built Environment Standard	Parking Availability	Accessibility of Built Environment
Daily, Small, Non-hazardous	Packaging and Paper Products	Easily Accessible Area	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Accessible Area	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Less Accessible Area	80%	10 minutes	10 minutes	10 minutes	80%	1 space per 50m ² floor area	Meets building code ⁶³
		Remote Area	80%	15 minutes	15 minutes	10 minutes	80%	1 space per 50m ² floor area	Meets building code
		Very Remote Area	80%	15 minutes	15 minutes	10 minutes	80%	1 space per 50m ² floor area	Meets building code
	Packaging and Paper Products (Flexibles and Glass)	Easily Accessible Area	80%	7 minutes	7 minutes	10 minutes	80%	1 space per 70m ² floor area	Meets building code
		Accessible Area	80%	7 minutes	7 minutes	10 minutes	80%	1 space per 70m ² floor area	Meets building code
		Less Accessible Area	80%	10 minutes	10 minutes	10 minutes	80%	1 space per 50m ² floor area	Meets building code
		Remote Area	80%	15 minutes	15 minutes	10 minutes	80%	1 space per 50m ² floor area	Meets building code
		Very Remote Area	80%	15 minutes	15 minutes	10 minutes	80%	1 space per 50m ² floor area	Meets building code
Weekly, Small, Non-hazardous	Beverage Containers including Milk, Beer Containers	Easily Accessible Area	80%	7 minutes	7 minutes	10 minutes	80%	1 space per 70m ² floor area	Meets building code
		Accessible Area	80%	7 minutes	7 minutes	10 minutes	80%	1 space per 70m ² floor area	Meets building code
		Less Accessible Area	80%	10 minutes	10 minutes	10 minutes	80%	1 space per 50m ² floor area	Meets building code
		Remote Area	80%	15 minutes	15 minutes	10 minutes	80%	1 space per 50m ² floor area	Meets building code
		Very Remote Area	80%	15 minutes	15 minutes	10 minutes	80%	1 space per 50m ² floor area	Meets building code
Yearly/Less than yearly, Small/Medium, Hazardous	Paint, Pesticides, and Flammable Liquids, Used Motor Oil, Filters, Containers and Antifreeze, Medications	Easily Accessible Area	80%	10 minutes	10 minutes	10 minutes	80%	1 space per 70m ² floor area	Meets building code
		Accessible Area	80%	10 minutes	10 minutes	10 minutes	80%	1 space per 70m ² floor area	Meets building code
		Less Accessible Area	80%	15 minutes	15 minutes	10 minutes	80%	1 space per 50m ² floor area	Meets building code
		Remote Area	80%	25 minutes	25 minutes	10 minutes	80%	1 space per 50m ² floor area	Meets building code
		Very Remote Area	80%	25 minutes	25 minutes	10 minutes	80%	1 space per 50m ² floor area	Meets building code
Yearly/Less than yearly, Large, Hazardous	Auto Batteries/Lead Acid Batteries	Easily Accessible Area	80%	10 minutes	10 minutes	10 minutes	80%	1 space per 70m ² floor area	Meets building code
		Accessible Area	80%	10 minutes	10 minutes	10 minutes	80%	1 space per 70m ² floor area	Meets building code
		Less Accessible Area	80%	15 minutes	15 minutes	10 minutes	80%	1 space per 50m ² floor area	Meets building code
		Remote Area	80%	25 minutes	25 minutes	10 minutes	80%	1 space per 50m ² floor area	Meets building code
		Very Remote Area	80%	25 minutes	25 minutes	10 minutes	80%	1 space per 50m ² floor area	Meets building code
Yearly/Less than yearly, Small/Medium, Non-hazardous	Electronics, Light Bulbs and Light Fixtures, Small Appliances, Alkaline and Rechargeable Batteries, Smoke Alarms, Carbon Monoxide Detectors, Telecommunication Equipment, Thermostats, Cell Phones	Easily Accessible Area	80%	10 minutes	10 minutes	10 minutes	80%	1 space per 70m ² floor area	Meets building code
		Accessible Area	80%	10 minutes	10 minutes	10 minutes	80%	1 space per 70m ² floor area	Meets building code
		Less Accessible Area	80%	15 minutes	15 minutes	10 minutes	80%	1 space per 50m ² floor area	Meets building code
		Remote Area	80%	25 minutes	25 minutes	10 minutes	80%	1 space per 50m ² floor area	Meets building code
		Very Remote Area	80%	25 minutes	25 minutes	10 minutes	80%	1 space per 50m ² floor area	Meets building code
Yearly/Less than yearly, Large, Non-hazardous	Outdoor Power Equipment, Tires, Large Appliances	Easily Accessible Area	80%	10 minutes	10 minutes	10 minutes	80%	1 space per 70m ² floor area	Meets building code
		Accessible Area	80%	10 minutes	10 minutes	10 minutes	80%	1 space per 70m ² floor area	Meets building code
		Less Accessible Area	80%	15 minutes	15 minutes	10 minutes	80%	1 space per 50m ² floor area	Meets building code
		Remote Area	80%	25 minutes	25 minutes	10 minutes	80%	1 space per 50m ² floor area	Meets building code
		Very Remote Area	80%	25 minutes	25 minutes	10 minutes	80%	1 space per 50m ² floor area	Meets building code

Table 32: Greater Than Reasonable Access Standard for Temporary Collection Facilities and Events (1 of 2)

				Primary Factors		Secondary Factors		
Product Group	Product Examples	Community Type	Population Target	Reasonable Access Frequency for Temporary Collection Facilities and Events	Reasonable Access Drive Time for Temporary Collection Facilities and Events	% of Facilities and Events Meeting Minimum Hours	Minimum Hours Open	% of Temporary Collection Facilities and Events Where at Least Four Other EPR Programs Are Collaborating
Daily, Small, Non-hazardous	Packaging and Paper Products	Easily Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Less Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Remote Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Very Remote Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
	Packaging and Paper Products (Flexibles and Glass)	Easily Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Less Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Remote Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Very Remote Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
Weekly, Small, Non-hazardous	Beverage Containers including Milk, Beer Containers	Easily Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Less Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Remote Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Very Remote Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible	Not Accessible
Yearly/Less than yearly, Small/Medium, Hazardous	Paint, Pesticides, and Flammable Liquids, Used Motor Oil, Filters, Containers and Antifreeze, Medications	Easily Accessible Area	95%	12 times per year	10 minutes	90%	24	75%
		Accessible Area	95%	12 times per year	10 minutes	90%	24	75%
		Less Accessible Area	95%	12 times per year	15 minutes	90%	16	75%
		Remote Area	95%	6 times per year	25 minutes	90%	16	75%
		Very Remote Area	95%	6 times per year	25 minutes	90%	16	75%
Yearly/Less than yearly, Large, Hazardous	Auto Batteries/Lead Acid Batteries	Easily Accessible Area	95%	12 times per year	10 minutes	90%	24	75%
		Accessible Area	95%	12 times per year	10 minutes	90%	24	75%
		Less Accessible Area	95%	12 times per year	15 minutes	90%	16	75%
		Remote Area	95%	6 times per year	25 minutes	90%	16	75%
		Very Remote Area	95%	6 times per year	25 minutes	90%	16	75%
Yearly/Less than yearly, Small/Medium, Non-hazardous	Electronics, Light Bulbs and Light Fixtures, Small Appliances, Alkaline and Rechargeable Batteries, Smoke Alarms, Carbon Monoxide Detectors, Telecommunication Equipment, Thermostats, Cell Phones	Easily Accessible Area	95%	12 times per year	10 minutes	90%	24	75%
		Accessible Area	95%	12 times per year	10 minutes	90%	24	75%
		Less Accessible Area	95%	12 times per year	15 minutes	90%	16	75%
		Remote Area	95%	6 times per year	25 minutes	90%	16	75%
		Very Remote Area	95%	6 times per year	25 minutes	90%	16	75%
Yearly/Less than yearly, Large, Non-hazardous	Outdoor Power Equipment, Tires, Large Appliances	Easily Accessible Area	95%	12 times per year	10 minutes	90%	24	75%
		Accessible Area	95%	12 times per year	10 minutes	90%	24	75%
		Less Accessible Area	95%	12 times per year	15 minutes	90%	16	75%
		Remote Area	95%	6 times per year	25 minutes	90%	16	75%
		Very Remote Area	95%	6 times per year	25 minutes	90%	16	75%

Table 33: Greater Than Reasonable Access Standard for Temporary Collection Facilities and Events (2 of 2)

			Secondary Factors (cont.)			
Product Group	Product Examples	Community Type	% Population Within Walk and Public Transit Times	Walk Time to Temporary Collection Facilities and Events	Public Transit Travel Time to Temporary Collection Facilities and Events	Average Time at Collection Facilities and Events
Daily, Small, Non-hazardous	Packaging and Paper Products	Easily Accessible Area	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Accessible Area	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Less Accessible Area	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Remote Area	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Very Remote Area	Not Accessible	Not Accessible	Not Accessible	Not Accessible
	Packaging and Paper Products (Flexibles and Glass)	Easily Accessible Area	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Accessible Area	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Less Accessible Area	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Remote Area	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Very Remote Area	Not Accessible	Not Accessible	Not Accessible	Not Accessible
Weekly, Small, Non-hazardous	Beverage Containers including Milk, Beer Containers	Easily Accessible Area	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Accessible Area	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Less Accessible Area	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Remote Area	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Very Remote Area	Not Accessible	Not Accessible	Not Accessible	Not Accessible
Yearly/Less than yearly, Small/Medium, Hazardous	Paint, Pesticides, and Flammable Liquids, Used Motor Oil, Filters, Containers and Antifreeze, Medications	Easily Accessible Area	80%	10 minutes	10 minutes	15 minutes
		Accessible Area	80%	10 minutes	10 minutes	15 minutes
		Less Accessible Area	80%	15 minutes	15 minutes	15 minutes
		Remote Area	80%	25 minutes	25 minutes	15 minutes
		Very Remote Area	80%	25 minutes	25 minutes	15 minutes
Yearly/Less than yearly, Large, Hazardous	Auto Batteries/Lead Acid Batteries	Easily Accessible Area	80%	10 minutes	10 minutes	15 minutes
		Accessible Area	80%	10 minutes	10 minutes	15 minutes
		Less Accessible Area	80%	15 minutes	15 minutes	15 minutes
		Remote Area	80%	25 minutes	25 minutes	15 minutes
		Very Remote Area	80%	25 minutes	25 minutes	15 minutes
Yearly/Less than yearly, Small/Medium, Non-hazardous	Electronics, Light Bulbs and Light Fixtures, Small Appliances, Alkaline and Rechargeable Batteries, Smoke Alarms, Carbon Monoxide Detectors, Telecommunication Equipment, Thermostats, Cell Phones	Easily Accessible Area	80%	10 minutes	10 minutes	15 minutes
		Accessible Area	80%	10 minutes	10 minutes	15 minutes
		Less Accessible Area	80%	15 minutes	15 minutes	15 minutes
		Remote Area	80%	25 minutes	25 minutes	15 minutes
		Very Remote Area	80%	25 minutes	25 minutes	15 minutes
Yearly/Less than yearly, Large, Non-hazardous	Outdoor Power Equipment, Tires, Large Appliances	Easily Accessible Area	80%	10 minutes	10 minutes	15 minutes
		Accessible Area	80%	10 minutes	10 minutes	15 minutes
		Less Accessible Area	80%	15 minutes	15 minutes	15 minutes
		Remote Area	80%	25 minutes	25 minutes	15 minutes
		Very Remote Area	80%	25 minutes	25 minutes	15 minutes

Table 34: Greater Than Reasonable Access Standard for Mail-back

				Primary Factor	Secondary Factors		
Product Group	Product Examples	Community Type	Population Target	Reasonable Access Drive Time for Mail-back Collection Facility	% Population Within Walk and Public Transit Times	Walk Time to Mail-back Facility	Public Transit Travel Time to Mail-back Facility
Daily, Small, Non-hazardous	Packaging and Paper Products	Easily Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Less Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Remote Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Very Remote Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
	Packaging and Paper Products (Flexibles and Glass)	Easily Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Less Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Remote Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Very Remote Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
Weekly, Small, Non-hazardous	Beverage Containers including Milk, Beer Containers	Easily Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Less Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Remote Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Very Remote Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
Yearly/Less than yearly, Small/Medium, Hazardous	Paint, Pesticides, and Flammable Liquids, Used Motor Oil, Filters, Containers and Antifreeze, Medications	Easily Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Less Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Remote Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Very Remote Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
Yearly/Less than yearly, Large, Hazardous	Auto Batteries/Lead Acid Batteries	Easily Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Less Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Remote Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Very Remote Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
Yearly/Less than yearly, Small/Medium, Non-hazardous	Electronics, Light Bulbs and Light Fixtures, Small Appliances, Alkaline and Rechargeable Batteries, Smoke Alarms, Carbon Monoxide Detectors, Telecommunication Equipment, Thermostats, Cell Phones	Easily Accessible Area	95%	10 minutes	80%	10 minutes	10 minutes
		Accessible Area	95%	10 minutes	80%	10 minutes	10 minutes
		Less Accessible Area	95%	15 minutes	80%	15 minutes	15 minutes
		Remote Area	95%	25 minutes	80%	25 minutes	25 minutes
		Very Remote Area	95%	25 minutes	80%	25 minutes	25 minutes
Yearly/Less than yearly, Large, Non-hazardous	Outdoor Power Equipment, Tires, Large Appliances	Easily Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Less Accessible Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Remote Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible
		Very Remote Area	95%	Not Accessible	Not Accessible	Not Accessible	Not Accessible



7.0

Conclusion

B.C. has extended producer responsibility programs for a variety of products. Under the authority of the Environmental Management Act, the Recycling Regulation requires producers, or their designated agency on their behalf, to submit an EPR plan for approval and review the plan every 5 years. Within this plan the agency must “provide for reasonable and free consumer access to collection facilities or collection services” throughout B.C.

This report, through outreach with various parties, established an accessibility framework to provide guidance to EPR agencies on how they can provide reasonable access and to ministry staff who will evaluate the commitments EPR agencies make in their plans.

Based on the characteristics of products which include their frequency of purchase, size/weight, and if they are hazardous or not, the framework groups products into six different categories:

- Daily, Small, Non-hazardous
- Weekly, Small, Non-hazardous
- Yearly/Less than yearly, Small/Medium, Hazardous
- Yearly/Less than yearly, Large, Hazardous
- Yearly/Less than yearly, Small/Medium, Non-hazardous
- Yearly/Less than yearly, Large, Non-hazardous

Using Statistics Canada Index of Remoteness, communities are grouped into categories and each category is given a population target for the percent of the population which needs to have reasonable access to collections services. These community groups and population targets are as follows:

- Very Accessible – 95%
- Accessible – 90%
- Less Accessible – 85%
- Remote – 50%
- Very Remote – 25%

Finally, the project team developed a long list of factors which may influence a consumer’s access to recycling services or would be relevant to understand potential differences in collections service standards. A short list of factors was selected to create a framework for EPR agencies which show what service levels are needed of a specified standard to be considered as providing reasonable access. The different factors were separated into primary and secondary factors. The primary factors, which include frequency of collection and distance to the return location, are required to be met to achieve reasonable access. These were found to be the most relevant and indicative of measuring reasonable access. There are other factors which are relevant to determining reasonable access, but to provide flexibility to EPR agencies these factors, which include the hours the collection facilities are open, whether other covered products can be returned, and consumer satisfaction, are not mandatory and only one needs to be met to meet reasonable access. The factors to measure reasonable access include:

For single family curbside / multi-family collection / direct pick-up:

- Primary factor

- Frequency of collection

For permanent collection facilities:

- Primary factor
 - Drive time to collection facilities
- Secondary factors (one of three required)
 - Collection facility hours
 - Ability to return other covered products
 - Consumer satisfaction

For temporary collection facilities and events:

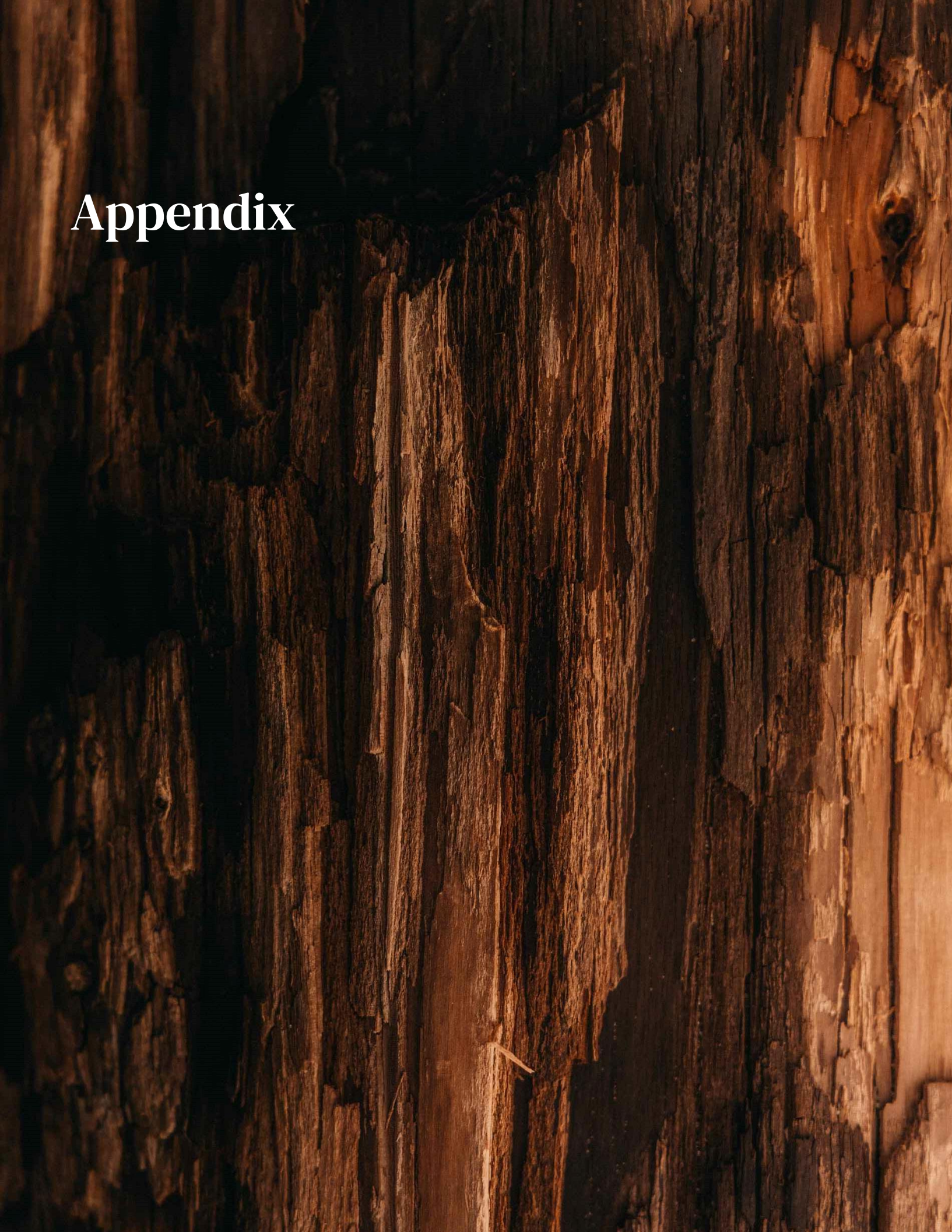
- Primary factors
 - Frequency of operation
 - Drive time to collection facilities
- Secondary factors (one of two required)
 - Collection facility hours
 - Ability to return other covered products

For mail-back returns:

- Primary factor
 - Drive time to return location

A separate Excel based tool was developed to provide EPR agencies and the ministry a clear understanding of what standards EPR agencies need to meet for what communities. Overall, this framework will help establish clear metrics for reasonable access and in turn provide reasonable access to communities around the province.

Appendix



A 1.0 Interviews

The table below shows the organizations interviewed as part of the outreach for this work. In addition to these interviews, the project team had regular meetings with ministry staff who provided consistent oversight and feedback for this project.

The organizations invited to participate in interviews included:

- Stewardship Agencies of British Columbia (SABC)
- B.C. Product Stewardship Council (BCPSC)
- Recycling Council of British Columbia (RCBC)
- Retail Council of Canada (RCC)
- Indigenous Zero Waste Technical Advisory Group (IZWTAG)
- B.C. Bottle and Recycling Depot Association (BCBRDA)

Table A1: Interviews Conducted

Group/Organization	Date/Time
SABC Group 1: Curbside	11/17/22, 11 am PST
SABC Group 2: High Frequency	11/15/22, 10 am PST
SABC Group 3: Medium Frequency	11/16/22, 1 pm PST
SABC Group 4: Medium Use / Hazardous	11/16/22, 10 am PST
SABC Group 5: Low Frequency / Volume	11/17/22, 1 pm PST
B.C. Product Stewardship Council (BCPSC)	11/15/22, 1 pm PST
BCPSC – follow-up, Group 1	1/16/23, 9am PST
BCPSC – follow-up, Group 2	1/17/23, 9am PST
Recycling Council of British Columbia (RCBC)	11/14/22 10 am PST
Retail Council of Canada (RCC)	11/7/22, 10 am PST
Indigenous Zero Waste Technical Advisory Group (IZWTAG)	11/3/22, 11 am PST

A 2.0 Product Factor Long List

Factors	Relevance to Accessibility
Product size	Product size influences a consumer's ability to carry and return a product. For example, smaller products can be carried by the average individual while a larger product may require a vehicle to transport.
Product weight	Product weight influences a consumer's ability to lift the product. This may impact a consumer's ability to carry it to the return location or lift the product into a designated return receptacle.
Frequency of purchase	How often a product is purchased corresponds to its frequency of disposal, and therefore the appropriate access level for recycling. For example, a plastic bottle might be purchased multiple times a day whereas a dishwasher is purchased every few years if that.
Product hazard level	The hazardous nature of products can require certain methods of storage or disposal. For example, storing hazardous materials in small stores for extended periods of time can pose health threats to retail employees. The Hazardous Waste Regulation also does not allow these materials to be dropped off at unstaffed sites.
Product lifespan	The products useful life corresponds to frequency of disposal, and therefore the appropriate access level for recycling.
Product durability	The durability of products influences collection methods and therefore how accessible collection services are provided.
Consumable product	If purchased and used as intended, consumable products would be fully used up and not require recycling services. For example, if properly stored, paint products can be reused until they are entirely consumed.
Area of use	When available, information on areas that use products more or less may inform accessibility standards. For example, pesticides for lawn use may be used in urban areas more frequently.
Purchase method	How a product is purchased can inform return options and how accessible they may be. For example, products purchased in person may have the option for return-to-retail.
Purchase location	The type of location that a product is purchased at can inform return options. For example, purchase locations may also be locations consumers frequently go to and are a return location.
Secondary return, disposal to landfill, or recycling method	Some products have an alternative method to be returned, recycled, or disposed which may be more or less accessible than the EPR program. For example, recyclable paper products can be legally disposed of in the trash and beverage containers can be recycled through the blue box program.
Product user	Products that have certain intended audiences/demographics may indicate different accessibility needs. For example, some products may be more likely to be purchased by youth, families, or elderly populations.
Return volume	Some products may be sold or more likely to be returned in bulk. For example, a case of beverage cans purchased weekly may be more likely to be recycled in bulk compared to appliances which may only be returned as a single unit.
Other regulations	If a product is subject to other regulations these must be taken into consideration for how access to EPR is provided.

A 3.0 Community Factor Long List

Factors	Relevance to Accessibility
Population	Population is one way of characterizing the size of a community, which may dictate reasonable access. Communities with lower population generally have less services compared to communities with large populations.
Population density	Population density when evaluated in addition to total population can indicate how easily products could be collected. E.g., more dense communities could be considered easier to provide curbside collection as the residences are closer to one other compared to communities with low population density.
Urban/Rurality	Urban and rural directly corresponds to population size and density, which informs the level of equitable access. ⁶⁴
Remoteness	More remote communities are more difficult to travel to and therefore could be a measure for the services that could be considered reasonable to provide. Statistics Canada has defined levels of remoteness. ⁶⁵
Proximity to large community	Communities that are close to a large community may have greater access to services.
Proximity to other communities of any size	Communities that are nearby to other communities may be serviced together in a way that is still reasonably accessible.
Influence from large community	Influence from nearby larger communities may indicate the likelihood that consumers travel to said community for services such as recycling. This is qualified based on the Statistics Canada criteria for a Metropolitan Influenced Zone (MIZ). ⁶⁶
Geographic location	Much of B.C.'s population lives within the Lower Mainland ⁶⁷ which also has greater access to recycling markets. The locations of a community could influence how difficult or expensive collections may be.
Community transportation characteristics	These characteristics can indicate how easy it is for EPR agencies to provide service in different areas and/or which types of service are effective. Some communities may be more difficult to access based on their geographic characteristics.
Tourism level	Tourism can increase the amount of disposal occurring in certain communities during peak seasons which could impact appropriate access. For example, some communities with low populations see large influxes of tourists.
Community has essential services	Presence of certain public services can indicate reasonable access levels for EPR. These include public schools, hospitals, grocery stores, libraries, and post offices.
Product can be purchased in the community	One objective of EPR is to move responsibility of the end of management of a product to the producers of that product. A community that sells the product could be an indicator for whether an accessible return location is needed in that community.
Proximity to retailer that sells product	If a community does not sell a covered product, the distance to a community which does sell the product could be a good indication of how accessible a return location should be.
Proximity to retailer >450 sq metres	Communities with access to a large retailer can indicate that they have access to a variety of goods to purchase.
Number of retailers	For communities that have retailers, the number of retailers will inform reasonable levels of access for certain products.
Disposal to landfill services	The types of disposal to landfill services available in the community may inform reasonable levels of access, especially for products that offer curbside services.

A 4.0 Collection Service Factor Long List

Factors	Relevance to Accessibility
Distance to collection facility	Distance to collection facility corresponds to consumer access but does not consider time spent traveling that distance. In general, this is less accurate as different travel methods lead to different travel times.
Drive time to collection facility	How long it takes consumers to drive their recyclables to collection sites directly corresponds to accessibility as the longer it takes to get to a collection site the more challenging it may be to access. Similar to distance but incorporates degree of traffic congestion. Drive time can be used for consumers who have access to a car, and is measured one-way, not round trip.
Public transportation ride time to collection facility	How long it takes consumers to take transit to return their recyclables to collection sites directly corresponds to accessibility as the longer it takes to get to a collection site the more challenging it may be to access. Public transit time can be used for consumers without access to a car and with access to public transportation.
Public transportation schedule to collection facility	Public transportation schedules may impact accessibility of a site regardless of distance of ride time. For example, some transit routes only operate during business hours, which would reduce access for a consumer attempting to dispose of products on the weekend.
Distance to closest public transportation stop	When considering public transportation travel time, it is also important to consider how close the collection site is to the public transit stop as this part of the trip will most likely be walked. A site that is far from a public transit stop could be considered less accessible.
Walking time to collection facility	How long it takes consumers to walk to return their recyclables to collection sites directly corresponds to accessibility as the longer it takes to get to a collection site the more challenging it may be to access. Walking time can be used for consumers without access to cars or public transportation.
Weekday hours open	The more a site is open the more accessible it is to different consumer schedules and lifestyles.
Weekend hours open	The more a site is open the more accessible it is to different consumer schedules and lifestyles.
Number of other covered products which can be returned at same location	As there are many covered products in B.C. a consumer may find it more accessible if they can return more than one product at the same location rather than having to travel to different locations to return different products.
Time required at collection facility/ Time to return a product	If returning a product at a collection site takes a significant amount of time, consumers may be less willing to use the location. Lines, automated vs manual processes, or limited staff may impact time spent.
Primary service of the collection facility	Not all collection facilities are primarily used to collect covered material, for example return to retail options. Understanding the primary purpose and service of the collection facilities may impact a consumer's willingness to use the location.
Physical requirements at collection facility	A collection facility may require certain actions which some consumers may be unable to perform, limiting the accessibility of the site especially if there are no alternatives. This may include lifting the product to put in a receptacle or walking up a flight of stairs.
Sorting requirements	Difficult sorting requirements at facilities may reduce access of recycling programs.

Factors	Relevance to Accessibility
Sorting signage	For facilities that do require sorting, how clear signage is can impact the accessibility of the services.
Staffing	Whether a site is staffed can impact the consumer experience and how easy it is for them to properly dispose of products.
Quality of user experience	Overall, a consumer may be more willing to revisit and therefore return a product if they enjoyed their experience at the collection site and less likely if they had a bad experience. Additionally, consumers may be willing to travel longer to a collection site with a better-quality experience.
Parking availability	Consumers who return a product using their vehicle may find a collection site with parking directly at the site more accessible as this would limit their need to search for parking or walk.
Accessible built environment	Persons with disabilities should be able to enter any buildings where collection sites are located. If they are not able to enter them, then they may not be willing to return the product. Currently there is a technical committee for a model standard for the built environment. ⁶⁸

Endnotes

- ¹ https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/449_2004
- ² https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/449_2004#section1
- ³ https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/449_2004
- ⁴ <https://www2.gov.bc.ca/gov/content/governments/services-for-government/service-experience-digital-delivery/web-content-development-guides/web-style-guide/writing-guide-for-indigenous-content/terminology#aboriginal>
- ⁵ https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/63_88_00
- ⁶ <https://www12.statcan.gc.ca/census-recensement/2011/ref/dict/geo012-eng.cfm>
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