

The Canadian Battery Association Manitoba Stewardship Plan for Lead-Acid Batteries

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Executive Summary

The Canadian Battery Association (CBA) estimates that there are approximately 4,800,000 kg of lead-acid batteries (LABs) sold in Manitoba in an average calendar year. Approximately 85% of the LABs are sold to consumers for used in vehicles including commercial trucks. The remaining 15% are motive systems such as forklifts and golf carts and stationary systems for power storage and backup. The motive and stationary systems are not typically sold to consumers and are business-to-business transactions.

The CBA's stewardship program provides for a point-of-sale recovery program for consumer products and a business-to-business recovery program for commercial products.

The current recovery rate for consumer products in Manitoba is difficult to determine because of the complex national and international transportation network to smelters in Canada and the US. A preliminary estimate of LAB recovery rates in Manitoba is 116% for the first 6 months of 2010. The recovery rate when adjusted for new vehicle sales is 97%. The recovery rate by CBA members is similar the recovery rate published by Battery Council International (BCI). The CBA is compiling the data from the North American smelters to confirm the actual recovery rates from Manitoba and with the recovery rates published by BCI.

The CBA has formalized a comprehensive and convenient network of 100 retail return collection facilities that cover the urban and rural parts of Manitoba. In addition, there are the wholesale facilities of CBA members and an independent recycling infrastructure (e.g., automotive and steel recyclers) that will also collect LABs in Manitoba.

The CBA's Stewardship Program has the endorsement of top 6 manufacturers of LABs that account for more than 90% of the LABs sold in Manitoba. The remaining 10% of LABs are sold in Manitoba by new car dealers as a component within a new vehicle.

1 Introduction

The Canadian Battery Association (CBA) is developing a National Stewardship Program for LABs and Manitoba will be the first jurisdiction that the CBA's National Program will be implemented. The CBA respectfully submits its stewardship plan to the Ministry of Environment for review and approval.

1.1 Regulatory Requirements

The *Waste Reduction and Prevention Act* and the *Household Hazardous Material and Prescribed Materials Stewardship Regulation* is the regulatory framework in Manitoba that requires the stewardship of lead-acid batteries.

In addition, there are a variety of Acts and Regulations that will have an influence on the development and implementation of the Stewardship Plan. Those Acts and Regulations are:

- The Canadian Environmental Protection Act
- The Manitoba Environment Act;
- The Manitoba Dangerous Goods Handling and Transportation Act
 - Dangerous Goods Handling and Transportation Regulation;
 - Generator Registration and Carrier Licensing Regulation; and the,
 - Manifest Regulation.

1.2 About Lead-Acid Battery Use in Manitoba

Lead acid batteries (LABs) are important in the daily lives of every person in Manitoba. LABs are used to:

- Start our vehicles, boats and recreational vehicles;
- Power our electronics, telecommunication systems and safety systems (e.g., emergency lighting, fire alarms) during power outages;
- Start commercial trucks and public transport such as buses, trains and planes; power forklifts;
- Provide back power for data centres for bank networks, computer systems,
- Store power for alternative energy applications

LABs range in size from 2 kg in a small emergency lighting system to 20 kg in an average passenger battery to thousands of kilograms in a commercial application.

Because of the wide range of LABs, the stewardship plan groups the LABS into the following 5 categories:

| Category | Size (kg) | Typical Application |
|-----------------------------------|-----------|--|
| Sealed Lead Acid | 2 ó 10 | emergency lighting, fire sensors |
| Vehicle ó Passenger & Light Truck | 10 ó 20 | start vehicles |
| Vehicle - Commercial Truck | 30 -50 | start transport trucks |
| Motive | 30 ó 300 | electric forklifts, golf carts |
| Stationary | >300 | large power supply and emergency back-up |

The average life span of a LAB varies depending on their design and application. SLA, vehicle and commercial truck batteries are designed to last approximately 60 months. Motive batteries (e.g., used in forklifts) last 10 years while Stationary batteries that typically serve as emergency or reserve power are much larger and can last for more than 20 years.

The market for LABs in Canada is estimated to be \$500 million^[CM1] in sales annually. Approximately, 85% of those sales are to the vehicle and commercial truck applications. The remaining 15% are for motive and stationary applications.

Statistics Canada reports the following vehicle registration for Canada and Manitoba.

| Registration Category | Canada | Manitoba | % of Canada |
|---------------------------------------|------------|----------|-------------|
| Vehicles <4,500 kg | 19,876,990 | 670,511 | 3.37% |
| Vehicles 4,500 - 15,000kg | 503,505 | 12,209 | 2.42% |
| Vehicles >15,000kg | 326,190 | 17,328 | 5.31% |
| Buses | 85,579 | 3,939 | 4.60% |
| Motorcycles & Mopeds | 594,866 | 12,974 | 2.18% |
| Trailers | 5,747,291 | 140,312 | 2.44% |
| Off-Road, construction, farm vehicles | 1,920,880 | 121,895 | 6.35% |
| Totals | 29,055,301 | 979,168 | 3.37% |

Source: Statistics Canada ó Last Updated: 2010-02-22

Assuming that the average life span of the vehicle battery is 5 years, the number of vehicle batteries sold in Manitoba is just under 200,000 units. If the average unit weighs just 20kg, then the total weight of vehicle LABs sold in Manitoba is approximately 4,000,000 kg.

Given that the vehicle LABs account for 85% of the market share based on sales information, the total weight of LABs sold in Manitoba is estimated to be in the order of 4,800,000 kg.

While these figures represent a very rough estimate, they serve as a starting point for the development of the stewardship plan in Manitoba and the estimation of current recovery rates.

1.3 Population Distribution in Manitoba

One of the key challenges of a Stewardship Plan is to provide accessibility to the consumer in urban and rural areas. Manitoba is a unique province in that its population is centred in one large city. Over 55% of the province's total population live in Winnipeg. The next largest city is Brandon with 3.6% of the province's population.

The population breakdown of Manitoba for the top 37 cities with a population over 1,000 is summarized below. Churchill was included in the list as it has a population near 1,000 and poses unique transportation challenges for a stewardship plan.

| | | | |
|----|--------------------|---------|--------|
| 1 | Winnipeg | 641,483 | 55.86% |
| 2 | Brandon | 41,511 | 3.61% |
| 3 | Thompson | 13,446 | 1.17% |
| 4 | Portage la Prairie | 12,773 | 1.11% |
| 5 | Steinbach | 11,066 | 0.96% |
| 6 | Selkirk | 9,553 | 0.83% |
| 7 | Winkler | 9,106 | 0.79% |
| 8 | Dauphin | 7,906 | 0.69% |
| 9 | Morden | 6,571 | 0.57% |
| 10 | Flin Flon | 5,836 | 0.51% |
| 11 | The Pas | 5,765 | 0.50% |
| 12 | Stonewall | 4,376 | 0.38% |
| 13 | Swan River | 3,859 | 0.34% |
| 14 | Altona | 3,746 | 0.33% |
| 15 | Virten | 3,010 | 0.26% |
| 16 | Neepawa | 2,980 | 0.26% |
| 17 | Carman | 2,880 | 0.25% |
| 18 | Beausejour | 2,823 | 0.25% |
| 19 | Minnedosa | 2,474 | 0.22% |
| 20 | Niverville | 2,464 | 0.21% |
| 21 | Killarney | 2,273 | 0.20% |

| | | | |
|----|----------------|-------|-------|
| 22 | Oakbank | 2,075 | 0.18% |
| 23 | Gimli | 1,891 | 0.16% |
| 24 | Souris | 1,772 | 0.15% |
| 25 | Stony Mountain | 1,757 | 0.15% |
| 26 | Roblin | 1,672 | 0.15% |
| 27 | Morris | 1,643 | 0.14% |
| 28 | Ste. Anne | 1,534 | 0.13% |
| 29 | Carberry | 1,502 | 0.13% |
| 30 | Boissevain | 1,497 | 0.13% |
| 31 | Lorette | 1,447 | 0.13% |
| 32 | Pinawa | 1,430 | 0.12% |
| 33 | Russell | 1,428 | 0.12% |
| 34 | Rivers | 1,193 | 0.10% |
| 35 | Melita | 1,051 | 0.09% |
| 36 | St. Adolphe | 1,048 | 0.09% |
| 37 | Lac du Bonnet | 1,009 | 0.09% |
| 38 | Churchill | 923 | 0.08% |

Source: Statistics Canada, 2006 Census Data

Based on the population analysis, one of the challenges of a Manitoba product stewardship program will be providing recovery services to the smaller rural communities.

2 Program Administration

2.1 The Canadian Battery Association

The Canadian Battery Association (CBA) is a Federally-registered Not-for-Profit Association[CM2]. The CBA has six national members that account for more than 90% of the LAB sales in Canada and Manitoba.

The CBA has three objectives:

- provide members with an efficient and effective stewardship program;
- Provide the statistical detail required by the stewardship program in a format that is common to all participants.
- ensure the service is cost-efficient, comprehensive (multi-material) consumer-focused, that includes point-of-sale return collection system.

The national members of the CBA_[CM3], in alphabetical order, of the CBA are:

- C&D Technologies Inc
7430 Pacific Circle
Mississauga, Ontario
L5T 2A3
Primary Contact: Mike Graper
- Crown Battery of Canada Ltd
7430 Pacific Circle
Mississauga, Ontario
L5T 2A3
Primary Contact: Darcy O'Neill
- EnerSys Canada Ltd
61 Parr Boulevard
Bolton, Ontario
L7E 4E3
Primary Contact: Bob Bryan
- Exide Technologies
6950 Creditview Road
Mississauga, Ontario
L5N 0A6
Primary Contact: Nelson Romberio
- Johnston Controls
5757 North Green Bay Avenue
Milwaukee, Wisconsin
53209
Primary Contact: Gary Santori
- Power Battery Sales Ltd dba East Penn Canada
165 Harwood Ave. N.
Ajax, Ontario
L1Z 1L9
Primary Contact: Luc Theriault

The CBA has expanded its membership to include companies that sell LABs in Manitoba. The following businesses in Manitoba are Associate Members of the CBA:

- Battery Direct Winnipeg
#3, 2073 Logan Avenue
Winnipeg, Manitoba
R2R 0J1
(204) 489-6666

- GNB Industrial Power (A Division of Exide Technologies)
Hutchings Street
Winnipeg, Manitoba
R2X 2X1
(204) 783-5486
- Energy Systems Services
96 Debaets Street
Winnipeg, Manitoba
R2J 3S9
(204) 663-2115
- Interstate Battery Systems
216-79 Eagle Drive
Winnipeg, Manitoba
R2R 1V4
(204) 694-2999
- Power Battery Sales Ltd dba East Penn Canada
111 Inksbrook Drive, Unit 1
Winnipeg, Manitoba
R2R 2V7
(204) 586-2171
- Prairie Battery
1280 Border Street
Winnipeg, Manitoba
R3H 0M6
(204) 633-3500

The Manitoba CBA members provide the majority of the wholesale distribution for consumer and commercial batteries in the Province. Retail outlets such as NAPA, Canadian Tire etc., are not members of the CBA as the manufacturer within the CBA provides the stewardship obligations on behalf of the retail outlets. Other than some of the new car dealers that sell imported vehicles, the CBA is not aware of any retail outlets in Manitoba that sell LABs outside the CBA's stewardship plan.

2.2 Program Recovery Target(s)

The CBA's Stewardship Plan is unique in that the industry has already achieved a very high recovery rate of lead-acid batteries (LABs) in North America. Battery Council International (BCI) estimates more than 96% of all battery lead

is recovered and recycled. BCI has been very active in the development of an effective recovery and recycling program throughout North America.

Within Canada, the six National Members within the CBA account for the majority of sales of LABs in Manitoba. The preliminary estimate of the weight of LABs sold in Manitoba is 4,800,000 kg (see Section 1.2).

The majority of LABs sold and recovered by CBA members in the first 6 months of 2010 were LABs from vehicles. Based on data from CBA members, the Manitoba recovery rate for LABs in 2010 is approximately 116%.

The LABs associated with new vehicle sales are not included in this recovery rate because the vehicles are manufactured outside of Manitoba. Hence the sales data for LABs in new vehicles are not included in the data supplied by CBA members. Information from Statistics Canada indicates that approximately 27,000 new vehicles will be sold in Manitoba in 2010. The majority of new cars sold in Manitoba are manufactured in North America and will have LABs manufactured by CBA members and hence the LABs of most new vehicles are covered by the CBA's stewardship plan. Vehicles imported from outside North America do not contain LABs that are included in this stewardship plan. Import car sales in Manitoba are estimated to be less than 25% of the overall sales of new vehicles in Manitoba. For example, the LABs sold by Hyundai are not (at this time) included in the CBA's stewardship plan.

When the new vehicle sales data for the first 6 months of 2010 are combined with the Manitoba data from CBA members, the adjusted recovery rate is 97%.

The CBA members report modest sales of motive and stationary sales of LABs in Manitoba; however, no recovery of these types of batteries was recorded. The sales and recovery information from motive and stationary batteries were not included in the overall sales and recovery figures for the following reasons:

- Stationary battery sales are based on a project by project basis;
- Stationary and motive batteries are large and very long lived;
- The commercial operators of the motive and stationary batteries will ensure their recovery and recycling of these batteries when they require replacement.

To confirm the reported recovery rates in Manitoba, the CBA is in the process of contacting the North American smelters to determine the volumes of recovered lead from Manitoba. For example, Gopher Resource in Eagan Minnesota has reported that it has processed just under 800,000 kg of LABs from Manitoba in the first 6 months of 2010. The recycling of Manitoba LABs at Gopher Resources in 2010 is projected to be 1,600,000kg of LABs or 33% of the LABs sold Manitoba (1,600,000 kg processed at Gopher / 4,800,000 kg sold in Manitoba).

The CBA is in the process of contacting the following smelters to obtain the data from the different smelters to corroborate the recovery rates of the CBA members. The smelters that process LABs from Manitoba are:

- Exide's 6 smelters in the US;
- Tonolli in Mississauga, Ontario;
- Xstrata in Sudbury, Ontario
- Newalta in Ste Catherine, Quebec;
- Teck in Trail, British Columbia;

The CBA believes that because the interprovincial and international movement of LABs requires Federal permits and manifests under the Canadian Environmental Protection Act (CEPA), the delivery rates from Manitoba can be verified by the data provided by the above smelters.

Based on the preliminary information collected to date, the CBA Stewardship Plan will set an initial recovery target for all battery types after the first full year of data that can be verified by manifests by the smelters. The CBA feels that one full year of data is needed from Manitoba to set an accurate recovery target for the different battery types.

2.2 Program Goals, Objectives and Principles

The goals of the Canadian Battery Association's Stewardship Program are:

- Provide a program that is convenient to consumers and retailers of lead-acid batteries;
- Provide a National comprehensive stewardship program that meets the needs of each province;
- Promote the safe recovery, storage and transportation of lead-acid batteries.

The principles of the CBA Stewardship Program are:

- Integrate into member's Zero Waste Initiatives where possible;
- Develop solutions that can be implemented across Canada;
- Increase recycling and beneficial reuse options as dictated in the Pollution Prevention Hierarchy;
- Use Reverse Logistics to minimize transportation costs and ecological footprints;
- Develop solutions that meet corporate, social, environmental and economic goals of its members and regulatory agencies;

2.3 Organization Structure and Management in Manitoba

The CBA is managed across Canada by its Executive Director. The CBA is responsible for the overall administration of the program and the preparation of the stewardship plan.

The administrative functions of the CBA include:

- development and updating of the CBA's Stewardship Plan;
- preparing reports for regulatory agencies, Board of Directors and stakeholders;
- preparing the communication materials for the media releases;
- overseeing the budgets and contingency plans;
- undertaking stakeholder consultation and organization of Advisory Committees;
- resolving disputes and investigating complaints;
- developing annual business plans including annual strategies and actions designed to meet Performance Measures (see Section 6).

The CBA has a simple governance model. The Executive Director provides all the basic support to the Board of Directors. The CBA's Board of Directors are comprised of the six national representatives and form the voting members of the CBA. The Board of Directors are responsible for the overall development and implementation of a national recycling program for LABs.

The businesses that sell LABs in Manitoba are Associate Members of the CBA and form a Steering Committee. The Steering Committee ensures that Province-specific issues are reflected in the Manitoba Stewardship Program. The CBA members doing wholesale and retail business in Manitoba and signatories to this stewardship plan will form a CBA Manitoba Steering Committee.

The purpose of the Manitoba Steering Committee is to:

- Identify local and provincial issues that will need to be addressed in the stewardship plan;
- Provide sales and recovery data as outlined in by CBA policy;
- Participate in events to recover lead-acid batteries in remote and rural locations;

2.4 Accountability and Transparency

Representatives from the Manitoba Steering Committee of the CBA will become an active member of Resource Conservation Manitoba.

The CBA website will have an entire section on Manitoba (www.canadianbatteryassociation/manitoba.ca) with a section devoted to:

- Overview of program including current recovery rates, health and safety information, location of battery recycling depots;
- Administrative information including financial information, stewardship plan in downloadable format and the current business plan for Manitoba;
- The environmental story for lead acid batteries including the fate of lead-acid batteries, electrolyte and plastic;
- Forms and procedures for CBA members;
- contact information.

In addition, the CBA will publish all the relevant information with respect to the safe collection, transportation and recycling of LABs in Manitoba.

Because there is no eco-fee on LABs sold in Manitoba, the CBA feels that an independent financial audit and a Stakeholder Advisory Committee are not required.

2.5 *Dispute Resolution*

There are three dispute resolution stages utilized by the CBA to resolve differences between two parties.

First Stage:

The first stage is to encourage the two parties to come to a fair resolution of the issue. Should any one of the parties be unsatisfied with the outcome of this stage, they must provide in writing to the CBA that the first stage of the dispute resolution procedure has not been successful.

Second Stage:

The CBA will take an active role in the mediation between the two parties. During this stage, the two parties will have an opportunity to describe the problem to the CBA and the CBA will generate options and a recommendation for consideration by the two parties. Should any one of the parties be unsatisfied with the outcome of this stage, they must provide in writing to the CBA that the second stage of the dispute resolution procedure has not been successful.

Third Stage:

In the event that no resolution has been reached, the CBA will appoint a qualified mediator or an arbitrator under the Arbitration Act. The cost of the mediator and the remaining costs will be borne equally by the two parties.

In the event that the CBA is a party in the dispute, then Stage 2 would be by-passed.

2.6 Reporting and Review

The CBA will review its stewardship programs every five years and submit an updated stewardship plan to the Ministry of Environment for approval.

In addition, the CBA will prepare an annual business plan for its national and provincial programs. These business plans will be available to the regulatory agencies and will be posted on the CBA's website.

The CBA will be responsible for the regulatory reporting, consultation and writing of the stewardship plan for regulatory agencies.

2.7 Financing Mechanism

The development, implementation and general administration of the CBA Stewardship Program for Lead-Acid Batteries (LABs) will be borne by the members of the CBA through its annual membership fee.

The annual membership fee will be set to ensure that the administrative costs of the Stewardship Program for Manitoba are covered. The membership fees will be reviewed each year.

Consumers will not be charged an eco-fee at the retail level. Eco-fees are not required because the value and demand for recycled lead provides sufficient incentive for Stewards in Manitoba to collect, transport and recycle core lead-acid batteries.

The current price of lead is \$1.60 per kg on the London Metal Exchange. An average vehicle battery weighing 20kg has approximately 14 kg of lead valued at over \$20 per battery. In addition, the secondary lead markets from LABs are crucial to the production of new lead acid batteries in North America. There is not enough production of primary lead in the world to produce the estimated 120,000,000 lead acid batteries sold each year in North America.

Because of these market forces, there is an active industry of secondary lead recyclers that pursue the collection and recycling of LABs. To compete with independent lead recyclers, CBA members employ several strategies to ensure the collection of LABs by CBA members. The strategies used include:

- implementing a core charge (deposit) / core credit programs at the wholesale level to encourage the return of core LABs. Typically these core charges / core credits programs are \$10 per automotive battery with greater amounts for larger battery sizes.
- offering to pick up core LABs at no cost from wholesalers and consumers.
- organizing special collection of core LABs through sweeps and events that promote recycling activities of LABs. (e.g., Exide's Annual Earth Day Event)

3 Product Life Cycle Management

3.1 Product Life Cycle Mgt

This section summarizes the fate of the products, residuals and commodities. Lead-acid battery technology has been around for 150 years and its three basic components are all 100% recyclable. The following sections outline the fate of the lead-acid batteries and the numbers are taken from Battery Council International's brochure titled: Sustainability/Recycling.

3.1.1 Lead

Battery Council International estimates that 96% of all battery lead is recovered and recycled. The recycling of lead is essential for the battery industry as there is not sufficient virgin lead product to supply the lead-acid battery market.

Each cell of a lead-acid battery contains electrodes of elemental lead (Pb) and (PbO₂). Small amounts of antimony, tin, calcium or selenium are usually alloyed in the electrode to add strength and simplify manufacture. The lead electrodes, battery posts and lead oxide are used to manufacture lead for new grids, parts and lead oxide.

The recovered lead is separated and put through a Reverb Furnace. The furnace recovers a high percentage of the lead and the slag is considered hazardous waste because of the high residual lead

content. The slag from the Reverb Furnace is sent to a blast furnace and the lead is extracted. Once the lead has been recovered by the blast furnace, the remaining slag is non-hazardous waste and can be safely disposed of in landfills.

3.1.2 Electrolyte

Sulphuric acid is the primary components of the electrolyte within the battery. The dilute sulphuric acid be reused and recycled in a variety of processes:

1. Filtered and used on site: Acid is drained from the used batteries and filtered to remove any particles. This filtered acid is then used in the Waste Water Treatment Facility at the smelter.
2. Crystallized: Acid is put through a Crystallizer and in the process turned into Sodium Sulphate. The Sodium Sulphate is sold to manufacturers of glass, detergents etc.
3. Sold to Third Parties: The drained Acid is sold without any recycling or refining, to third parties. For example to Tanneries.
4. Neutralized: The Acid is neutralized using Caustic Soda into a Non-hazardous waste that can be disposed off safely.
5. New Filter Process (Experimental): The drained Acid can be filtered using a new process whereby the Acid can be re-used in the manufacture of new batteries.

3.1.3 Casing

The smaller SLA and transport batteries have a plastic casing while the larger industrial and commercial batteries have steel casings.

Both the plastic and steel casings are recovered and recycled into new cases for lead-acid batteries.

4 Stakeholder Consultation

The consultation plan will focus on three stakeholder groups: *Decision Makers*; *Affected Parties*; and, *Interested Parties*. The CBA will vary the style of consultation depending on the nature of the stakeholder groups,

The consultation plan for Lead-Acid Batteries is very simple because there are no consumer eco-fees levied at the point of sale.

4.1 *Decision Makers*

The decision makers are defined as the stakeholders that will approve the Stewardship Plan in Manitoba. The decision makers include the Manitoba Conservation and the Board of Directors of the Canadian Battery Association.

The CBA Board of Directors has been fully engaged in the development and approval of the Stewardship Plan for Manitoba and their consultation is ongoing.

Meetings with Manitoba Conservation were set for May 2010 and additional meetings will be planned in the fall of 2010 after Manitoba Conservation has had an opportunity to review the full submission.

4.2 *Affected Parties*

The affected parties defined as the stakeholders that will be positively or negatively affected by the Stewardship Plan. Because there are no consumer eco-fees at the point of sale, the public are not considered as Affected Parties.

National brandowners are actively involved with their retail partners in the recovery of LABs from the consumer and because of the net value of LABs, the Stewardship Program will have a positive affect on these sectors.

Manitoba CBA members will also be positively impacted by the stewardship program. Education materials, training and resource materials from the CBA will improve recovery rates, reduce health and safety concerns with the collection, storage and transportation of LABs.

Finally, the transporters that serve the north and remote communities will also be positively impacted as they will be contracted to transport the LABs from remote communities.

Green Manitoba will benefit from the Stewardship program as the CBA will provide up-to-date information on the location of return depots.

Finally, the small remote First Nations Communities will also be positively affected by the Stewardship Program. The CBA will meet with First National leaders to identify issues related to the collection, storage and transportation of LABs from First Nations Communities.

Meetings with these affected parties will be completed by December 31, 2010 so that the CBA stewardship program in Manitoba can start on January 1, 2011.

4.3 *Interested Parties*

There are a variety of interested parties including the public, consumers, media, academics and environmental groups. After the start of the Stewardship Program for LABs, the CBA will participate in news releases, conferences and meetings as an avenue to provide ongoing consultation from these groups.

5 Collection System

The Manitoba collection system for Lead-Acid Batteries (LABs) will be based on a reverse distribution program where by retailers and distributors will recover the end-of-life or core LABs.

The high recovery rate of core LABs in Manitoba is the result of the high value and demand for recycled lead in North America. To ensure the core LABs are returned to the distributor, the majority of manufacturers have implemented a core charge at the wholesale level. The core charge ensures that the retailers collect and return core LABs to the manufacturer.

The following sections outline the existing reverse distribution network operated by the industry in Manitoba.

SLAs: This category of battery are sold and recovered by the Property Management Companies that maintain emergency lighting systems. SLAs are also used in recreational vehicles. Typically these batteries are sold by the recreational vehicle retailers. The CBA contacted the larger recreational vehicle retailers and they actively collect, store and transport core SLAs from their customers will be encouraged to return the core SSLA to be returned to the point of sale.

Vehicle Batteries: This is the largest category of LABs are there is currently an extensive network of 100 retail locations that provide a

comprehensive network across Manitoba. The retail locations provide an extensive network of retail locations that collect, store and transport LABs for recycling. Because of propriety sensitivities between manufacturers, the individual programs and retail locations will not be included in the stewardship program but those details will be provided to the regulators once a non-disclosure agreement has been signed.

Commercial Truck Batteries: Commercial truck maintenance facilities are the primary location where core LABs are collected, stored and recycled. These sites are serviced by the CBA members and the truck batteries are collected when new LABs are dropped off.

Motive and Stationary: The businesses that have purchase the motive LABs (e.g., forklift battery) and Stationary battery systems have taken responsibility for the safe disposition of LABs even in remote locations on a business-to-business relationship. The cost of the collection, storage and transportation of motive and stationary batteries is assumed by the business and the CBA members provide a recycling service to the businesses.

5.1 Consumer Convenience

Providing consumer convenience is a key element to the high national recovery rates of core LABs. The collection depots will be a mix of Retailers and wholesale locations in more urban areas and events in the rural and remote locations across Manitoba.

5.1.1 Return Collection Facilities – Urban Areas

The CBA projects that there will be over 100 retail facilities located across Manitoba for the public to drop off LABs at no charge (Appendix 1). The CBA's return collection facilities include:

- automotive recyclers and dismantlers that recover core LABs from end-of-life vehicles;
- retail stores that includes the Canadian Tire, Kal Tire, Piston Ring and Federated Coop stores that are located in small communities across Manitoba;
- new and used vehicle dealer locations, auto repair facilities and sports vehicle stores.

The CBA will prepare a list of the retail locations for the public to return core LABs.

In addition, the following CBA have warehouse operations in Winnipeg and these locations can be contacted for the drop off of industrial and commercial batteries at no charge.

East Penn Canada
111 Inksbrook Drive, Unit 1
Winnipeg, Manitoba
R2R 2V7
204-586-2171, wi@eastpenncanada.com

EnerSys Canada Ltd
96 Debaets Street
Winnipeg, Manitoba, R2J 3S9
204-663-2115 enersys@mts.net

Exide Canada Inc
Stevenson Road,
Winnipeg, MB R3H 0H8
(204) 697-3335

Interstate Battery Systems
216-79 Eagle Drive
Winnipeg, Manitoba
R2R 1V4
(204) 694-2999

5.1.2 Return Collection Facilities – Rural Areas

One of the key challenges of any stewardship program is the delivery of recycling facilities in rural areas. Fortunately, Federated Coop has agreed to allow LABs to be dropped at their corporate and associate stores across Manitoba that will provide the backbone for the collection of core LABs in rural Manitoba locations.

See Appendix 1 for list of rural communities that will have a return collection facility through this network.

5.1.3 Remote Locations

In addition, the CBA will undertake partnerships with the First Nations, Inuit and Metis Organizations and set up events designed to collect core LABs from these remote locations.

5.2 Public Education and Awareness

5.2.1 Website

The website is a powerful communication tool for the collection of core LABs in urban and rural locations. The CBA website will be established to include a method of locating the closest return collection facility based on postal code.

The CBA will investigate using the website www.recyclemybattery.ca as the central website for consumers and industry to obtain information about the location of return collection facilities.

5.2.2 Communication Materials

The CBA will prepare a variety of communication materials that will be made available to the stewards, wholesalers and retailers of LABs. The goal is to provide standardized information that the manufacturer and retailer can attach their logo and brand.

The objective will be for a pamphlet to be given to every consumer that purchases a LAB. The pamphlet will include key information on the importance of recycling LABs and information on where to return the core LAB at no cost.

5.2.3 Retailers and Partners

The Stewards will make available to the retailers of LABs the communication materials given to consumers. These retailers are typically national brandowners that will be encouraged to put their logo and brands on the communication materials as well as promote the recycling of LABs in their flyers and commercials.

Further, these national brandowners have national advertising campaigns that can include the communication materials about the recycling of LABs and the subsequent environmental benefits.

Finally, the CBA will work with manufacturers to put standardized recycling labels on every LAB sold in Manitoba. The label will direct the consumers to the www.recyclemybattery.ca website.

The CBA recognizes that there are a variety of French-speaking communities in Manitoba and communication materials will be prepared in both English and French.

5.3 Generation, Storage and Transportation

In Manitoba, spent Lead-Acid Batteries (LABs) are considered a recyclable material and are not subject to all the storage and transportation requirements of hazardous wastes. The following regulatory requirements apply to the collection, storage and transportation of LABs.

5.3.1 Generation, Storage and Transportation

In Manitoba, LABs are considered a recyclable material and a hazardous waste. However, the fact that LABs are classified as a recyclable material means that many of the storage and transportation requirements do not apply to return collection facilities for LABs.

Generation: All generators of recyclable Lead-Acid Batteries (LABs) will need to be registered with the Ministry of Environment by submitting a Generator Registration Report and obtaining a provincial registration number. The registration threshold for LABs in Manitoba is 5kg in an average 30 day period.

Storage: In Manitoba, there are no storage requirements or thresholds for LABs.

Transportation: In Manitoba, the manifesting of shipments of core LABs within the Province is not required. However, trans-boundary shipments of core LABs will be subject to the Federal Canadian Environmental Protection Act (CEPA) and the Export and Import of Hazardous Wastes Regulation under CEPA.

In addition, collectors and transporters of batteries within the CBA program will be required to follow the safe handling and transportation guidelines outlined in Appendix 2.

5.3.2 Training and Education of Recyclers

The recovery, storage and transportation of LABs must be done to CBA standards to ensure environmental and worker safety.

The CBA will initiate a training and education program as part of its Stewardship Program for return-collection facilities and transporters that collect, store and transport LABs in Manitoba.

5.3.3 Inspection of Recycling Infrastructure

The CBA as part of its ongoing commitment to the environment and worker health and safety will ensure the collection depots, storage facilities and transporters are following the CBA guidelines for the safe collection, storage and transportation of LABs.

Businesses that do not conform to the MoE Regulations or the CBA guidelines will be removed from the stewardship program for LABs.

6 Program Performance Measures

There are a variety of program measures that follow the Performance Measure and Reporting Guidelines prepared by Environment Canada. In each performance category there is a summary of the key assumptions made for each performance measure, a description of the performance measure and any associated goals and targets as well as the methodology used by the CBA to track the performance measure.

Performance measures are also expected to evolve overtime as programs mature. Defining new performance measures is a specific target for 2010 and 2011 targeted to identify baseline statistics and adjust targets as required. Please consult the CBA Annual Reports on their website (www.canadianbatteryassociation.ca) for updates to the performance measures and related information available on each measure.

6.1 Awareness

The CBA assumes that key factors to the successful recovery and processing of residuals are awareness of the program and support for the program by consumers and industrial customers. Therefore, it is important to track levels of awareness and adjust advertising, education and outreach strategies.

6.1.1 Awareness of Program

To achieve general awareness of the CBA's stewardship program, the CBA will undertake three communication strategies:

1. Engage Stewards to survey customers to ensure that the recycling options that meet their needs.
2. Update and circulate written communication materials for retail outlets, return-collection facilities, the Resource Conservation Manitoba and local governments that can be distributed to the public.
3. Ensure the CBA's website and Steward's website contains current information and communication materials regarding the stewardship program for LABs in Manitoba.

6.2 Participation and Accessibility

6.2.1 Participation Rate

Because the majority of LABs used in Manitoba are installed by licensed mechanics and technicians, the CBA will measure the participation rate of these parties within the stewardship program.

The CBA will obtain lists of wholesalers and retailers selling LABs in Manitoba and will survey them to ensure they are participating in the Stewardship Program.

The Participation Rate will be measured as the % of wholesalers and retailers actively participating in the CBA's Stewardship Program.

6.2.2 Population within Return Collection Facility

There are an estimated 100 retail collection facilities available to consumers in Manitoba in addition to automotive and metal recyclers as well as CBA wholesale operations. The CBA will review the locations of the return collection facilities in within the first year of the stewardship program. The goal will be to determine the % of Manitobans within 30 minutes of the return collection facility.

6.3 Product Collection

6.3.1 Collection Volumes

This is simply the volume (measured in kilograms) of Lead-Acid Batteries (LABs) collected by the stewardship program.

Measurement of the volume of collected core LABs will be through shipping records of CBA members. Shipments of LABs within Manitoba are not required to be manifested; however, shipping LABs to smelters will require permits and manifests under CEPA.

The CBA members will report the volume of LABs shipped every quarter. In addition, the CBA is exploring the possibility to track the volumes of LABs from Manitoba to smelters so that the collection volume will also reflect the volumes transported by independent metal recyclers.

6.3.2 Collection Rate

The Collection Rate is the percentage of the kilograms of LABs sold vs. the kilograms of LABs collected.

The recovery rate for Manitoba will be calculated by dividing the volume of LABs transported (see Section 6.3.1) by the volume of LAB sold.

$$\text{Collection Rate} = \frac{\text{Weight of LABs Transported}}{\text{Number of LABs Sold}}$$

6.4 Post – Collection Management of Residuals

Once the LABs have been recovered by the CBA members, there are a variety of residual components that are recycled. Within the first year of the Stewardship Program, the CBA will collect the relevant information from the smelters and estimate the weight of recycled commodities and their fate within the context of the 4 R's.

This analysis will include packaging and shipping materials in addition to the components of the LABs.

6.5 Operational Efficiency

The CBA intends to establish an effective and efficient stewardship program that minimizes the costs for collection, transportation and recycling.

In rural and urban areas of Manitoba, the inherent value of lead will provide sufficient incentive to ensure its safe collection, storage and transportation to recycling facilities.

Within the first year of the stewardship program, the CBA will conduct pilots to determine the distribution of expenses and the cost per unit of recovered LABs from remote locations.

6.6 Quality of Service

To track customer satisfaction, the CBA will integrate into the consumer awareness program an estimate of community and partner satisfaction, number and nature of complaints, number and nature of service disruptions.

6.7 Management Performance

The CBA has established an ambitious program for Manitoba that is linked into a National Program for LABs.

6.7.1 Progress against Business Plan Goals and Targets

The CBA will publish on its website, its performance measures, long-term goals and annual strategies and actions as well as the historical and current data on those metrics.

In addition, the CBA will publish on its website:

- The Stewardship Plan for Manitoba;
- Annual reports to the Ministry of Environment;
- Results of its stakeholder consultations;
- Priorities, goals and targets set by the Board of Directors;
- News and events for the next three months.

7 Program Implementation Schedule

The CBA will ensure that the following actions and milestones will be completed to prior to the April 1, 2011 launch of the Stewardship Program for Manitoba.

7.1 Phase 1: Fall 2010

- Complete the consultation with affected parties in Manitoba;
- Compilation of locations for return collection facilities in urban and rural areas;
- Preparation of communication materials to LAB retailers and wholesalers in Manitoba.

7.2 Phase 2: Q1 2011

- Begin tracking the Manitoba sales and recovery rates for Lead-Acid Batteries (LABs) effective January 1, 2010.
- Undertake consumer awareness survey to establish baseline for Stewardship Program and complete website www.recyclemybattery.ca;
- Prepare and fund the annual business plan for Manitoba in 2011.

7.3 Phase 3: April 1, 2011

Begin full implementation effective April 1, 2010 by:

- Initiating event planning in remote locations;
- Initiating developed public awareness programs for the safe collection, storage and transportation of recovered LABs;
- Monitoring of return collection facilities and transporters to ensure that LABs are being recovered and recycled to CBA policies.

Appendix 1: Retail Collection Facilities in Manitoba

| Retailer | Retail Outlets |
|-----------------|--|
| Canadian Tire | 20 Stores |
| Federated Coop | 43 Stores |
| Kal Tire | 8 Stores |
| Piston Ring | 25 Corporate Stores 12 Associate Stores |

Appendix 2: Canadian Battery Association Practices for Palletizing Core Lead-Acid Batteries

Procedures

Step 1) The Department of Transportation (DOT) specifies that core batteries are to be stacked on pallets in good condition. A piece of cardboard must be placed on an empty pallet before stacking first layer of core batteries.

Step 2) A piece of cardboard must be placed between each layer and on top. Batteries should not be stacked more than 3 layers high. Each pallet may contain 50-70 core batteries total.

Step 3) Arrange batteries so that terminals do not touch that could lead to a short circuit

Step 4) Load batteries 2 layers high, then shrink wrap. Wrap tightly 3 or 4 times around, making sure to catch top of pallet to help anchor load.

Step 5) Load third layer and place honeycomb cardboard on top. Shrink wrap entire load. Wrap tightly 3 or 4 times around overlapping bottom layers.

NOTE: Full wheel weight buckets and damaged batteries should be stacked in the middle of the top layer of the core pallet.

NOTE: Damaged batteries that are not visibly leaking electrolyte should be placed in strong poly bags and properly closed with an adjustable plastic tie. Bagged batteries must also be properly secured to the pallet.

DO NOT STACK PALLETS OF BATTERIES!

Responsibility of Return Collection Facilities

- Return your core batteries and wheel weights to your battery vendor (do not sell them locally)
- Strip labels off or spray paint the warranty returns and cores to prevent theft
- Cores batteries should be palletized and ready for pick-up prior to the arrival of the truck and broken batteries placed in plastic bags provided by the manufacturer;
- Battery shipments must be tracked;
- Place DNI (Do Not Inventory) tag on top of battery pallets