

## A “HOW TO” GUIDE ON SETTING UP A NETWORK OF BATTERY COLLECTION POINTS FOR RECYCLING

This guide provides a how to guide for setting up household battery collection sites in order to:

- reduce risk of harm to the natural environment from battery waste
- save valuable and recyclable material from ending up in landfills, and
- reduce risk of harm to Council facilities and workers from batteries entering the kerbside collection system

In 2019 two councils introduced household battery collections : [Christchurch City Council](#) and [Marlborough District Council](#). This “how-to” guide is based on their experiences.

This guide is a living document which will be updated as more research is done in this area.

**Disclaimer:** This document is intended as a guide only for points to be considered on setting up a network. This guide is not considered to be exhaustive and councils/interested parties are advised to supplement this document with their own research

### 1. Identifying collection locations

The Christchurch City Council household battery collection includes three council transfer station collection points and four commercial locations (one supermarket and three hardware stores).

The Marlborough District Council collection includes collection points across the entire Marlborough region; three collection points at i-sites, six at council resource recovery centres or transfer stations and ten at commercial or charity locations such as supermarkets, hardware stores, pharmacies, and op shops.

Christchurch City Council chose locations based on geographic location and by identifying places where new batteries are sold and that have lots of visitor traffic. The Christchurch collection program collects around 1000kgs a month across seven sites.

It is advised that the regional Fire and Emergency New Zealand office be told about these collection locations.

## 2. Official agreement with locations

Once locations are identified, official terms need to be agreed between the council and the location. The agreement should include:

- Details of agreement, e.g. points of contact and commitment to participate
- Health and Safety including locations, emergency management and training details

Roles and responsibilities – Two people from each location should be assigned to look after the collection box. They need to be trained in safe handling procedures for batteries (see section 4 for a description of the role of the assigned people). One person to be the main person in charge and one is the back up in case the main person is not at work.

## 3. The drop off box

The drop off box should be:

- Fire resistant plastic
- Strong
- Lid with ventilation (to avoid the build-up of pressure)
- Be inaccessible to children
- Clearly labelled – dangerous goods labelling as well
- Keep separate from combustible materials

Examples: The Christchurch City Council collection trial uses an especially designed plastic (Perspex) receptacle which has four compartments for four different categories/types of batteries. However, it is advised the batteries do not need to be collected separately as the mixed chemistries provide some insulation against the fire risks of lithium-ion batteries.



*Christchurch City Council Drop-off Box*

Each compartment is clearly labelled

*Specifications:*

Overall 1300mm high x 540mm wide x 500mm deep

This box was made by a local joinery company

## 3.1 Damaged batteries



Lithium batteries that are swollen or damaged in any way are extremely volatile and must be treated appropriately and with extreme care.

Damaged batteries must be packaged appropriately to both minimise the likelihood of combustion and, in the event that they do combust, to contain the extreme heat from the resultant fire to prevent the fire spreading.

It is extremely important to handle and store any damaged batteries separately from all other batteries to prevent any fire from spreading to other cells (lithium battery fires are extremely hot and almost impossible to extinguish).

Damaged batteries should ideally be packed in “vermiculite” in separate bags or boxes, and these should be in turn placed into larger pails or containers also packed with vermiculite with appropriate labels. Vermiculite is a natural, lightweight, cushioning material with extremely good thermal and electrical insulation properties. It is widely available through garden centres and many hardware stores. It is also re-usable and / or recyclable.

As a minimum, damaged batteries should be packed into sand and stored / shipped a separate container.

Preferably, damaged cells should not be handled or stored at collection locations in retail or public spaces, and councils should set up specific stations with appropriately trained staff, PPE, and environment to accept and handle these.

Note: As a general rule of thumb, if you are unsure whether a battery is damaged or not, you should assume that it is and treat it accordingly.

## 3.2 Drop off box location instore

The drop off box should be put in a place that has been agreed in advance between the council and location manager. It should be:

- highly visible to customers and close to the front door entrance way, but not adjacent to the customer service desk
- easy to access and deposit batteries into
- weatherproof
- not in direct sunlight/prone to becoming hot
- in proximity to an appropriate fire extinguisher and fire exits
- Bins should be away from flammable material that could result in fire eg do not store next to paper waste

The location of the drop off box is to be marked on a floor plan of the location and a copy provided to the council and collector.

## 3.3 Transport receptacles

Transportation receptacles also need to be provided to collection locations. At least two should be provided with one being filled while the other is in use (and then returned).

*Recommendations for a transportation receptacle are fire-resistant plastic containers that can hold up to 15kg max and have a snap lid and handle for carrying.*

A collector who adheres to health and safety guidelines for the safe transportation of batteries will need to be contracted by the Council.

*For freight, snap down plastic containers (above) should be taped closed, palletised, and wrapped to avoid spillage. Transport freight should be arranged with suitable Dangerous Goods signage.*

## 4. Hosting a collection point

One person should be assigned to be responsible for the inspection and management of the drop-off box (with a backup if the assigned person is not at work).

Recommended daily inspection of container:

- visually inspect the collection container (referring to the Battery Handling Procedure in Appendix 2)
- remove any rubbish/items other than batteries where the rubbish/items are obstructing the slot of the collection container or preventing the collection container from being utilised correctly
- answer any questions about the recycling of batteries from customers
- Empty the collection container when the batteries reach the marked level, keeping the collection chamber accessible to the public

When the collection container is ready to be emptied, the assigned staff member needs to:

- tape over the terminals of any lithium-based batteries (including button cells) and any batteries that have both terminals on one side (e.g. 6V & 9V). If a battery has lead wires these should be removed, or the bare wire ends covered in sticky tape
- Empty each category of battery into the correct (same category) Transport Bucket provided
- ensure not to go over the limit line in the Transport Bucket or over 15kg for safe handling
- ensure that the Transport Buckets are sealed properly once the batteries are inside
- store the Transport Buckets in a cool, dry, and ventilated place as notified and agreed with the council and in accordance with the agreed location as set out in Schedule 1
- wash their hands with soap after handling batteries

#### 4.1 Storage recommendations:

- Store in an area preferably with a fire sprinkler or fire detection system as a minimum
- Limit amount stored to 8 collection containers up to 15kg).
- Store in mixed form rather than being separated because of different chemistries can provide different insulation.
- Keep damaged batteries separate (in lidded bucket containing sand)
- Storage area should be well ventilated

#### 5. Role of collection contractor

- All filled Transport Buckets to be collected within the agreed timeframe of a collection request
- The full Transport Buckets need to be removed and swapped for the same number of empty Transport Buckets. Additional Transport Buckets will also be delivered at this time if requested. Complete all agreed paperwork, i.e. collection docket
- The contractor should have their own health and safety guidelines for the safe handling and transportation of the batteries
- How to choose a good collector/recycler – storage requirements and verified disposal of discarded cells
- Seal batteries
- Downstream agent needs to have independent auditing done and to meet safety criteria

## APPENDIX 1: HEALTH AND SAFETY

The collection location must comply with the following health and safety obligations in relation to the collection container and the handling of batteries, including:

- Wearing appropriate protective clothing when handling the batteries, including, as a minimum, coated gloves, safety glasses, covered shoes and a visibility vest
- Include the battery handling requirements in the location's Health and Safety Plan, including a multipurpose dry powder fire extinguisher (ABE) within reach of the collection container
- Providing a copy of their Health and Safety Plan as it pertains to this Information Sheet to the council
- A fire evacuation scheme approved by Fire and Emergency New Zealand (see <https://onlineservices.fire.org.nz/Home/EvacuationSchemes>)
- Ensuring any guideline documents provided by the council apply to the location's environment.
- Notifying the council if you have any concerns about items/batteries left in the collection container, who will arrange to visit your premises and deal with the incident(s)
- Notifying the council of any health and safety incidents related to the collection container or battery handling.

### RISKS

There is a small risk of fire associated with storing quantities of batteries. This risk can be mitigated by ensuring as much as possible that:

- the correct handling procedures are followed as set out in this document including the Battery Handling Procedure set out below
- the batteries are kept in a cool, dry, ventilated location
- rubbish that is covering/obstructing the slot in the collection container is removed
- the collection container remains in the agreed position at the premises (and only moved when the councils is notified)
- appropriate firefighting equipment is available

In addition the location must have in place adequate insurance that protects them against the risk of fire or damage at their premises. The council is not responsible and will not be held liable for any damage, loss, cost, or expense, including indirect, consequential, or special loss that the location suffers or incurs as a result of taking part in the Trial.

## APPENDIX 2: BATTERY HANDLING PROCEDURE

The following Handling Procedure provides the base instructions for the safe handling of batteries collected through council trials. These instructions should be provided during the Council training session.

### Task list for assigned person:

Undertake a visual inspection of the battery recycling station daily for:

- Excessive liquid
- Heat
- Smoke
- If you notice any of these elements, follow your emergency procedure
- Obvious rubbish blocking the slots
- If you notice any rubbish that does not cause a blockage of the slots, leave it. The contractor will sort it out after collection

If the Battery collection container requires removal of blockage:

- Put on the mandatory Personal Protection Equipment prior to opening the receptacles
- Remove the blockage and place in the appropriate bin (recycling or rubbish)

Battery collection container emptying and storage:

- Put on the mandatory Personal Protection Equipment prior to attempting to empty the station
- Get an empty Transport Bucket from the storage location that is labelled with the same category of battery you intend to tip in
- Remove the collection container lid
- Do not undertake any battery sorting, the contractor will do this
- Slowly lift and tip the batteries into the Transport Bucket
- Put back the collection container on the station and the lid on
- Place the lid on the Transport Bucket and bring it back to the agreed location in the storage area.
- Ensure that the weight of the container being lifted is within the ability of the person making the collection and that appropriate manual handling techniques are used.
- Make sure NOT to leave any Transport Bucket near the Drop Off Box or within reach of the public

## APPENDIX 3: COLLECTION REQUEST TEMPLATE

Email to: xxxxxxxx, CC : xxxxxxxx

- Request date:
- Name of contact person requesting:
- Contact person email:
- Contact person phone number:
- Pick up address:
- Number of Transport Buckets to be collected and replaced:
- Best time to collect:
- Additional notes: (site access, contact, additional buckets if needed, etc.)

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## APPENDIX 4: COMMUNICATION AND BRANDING

A communications strategy will be provided by the council to the location. This could include:

- Key messages about the battery recycling service and the deposit system to be relayed to customers in order to communicate participation in the trial to your customers and encourage them to use the Drop Off Box.
- The Drop Off Box should be clearly branded with the Council's logo and branding details, and these must not be removed or altered in any way.

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## APPENDIX 5: EXAMPLE LETTER TO RETAILERS

Kia ora koutou

This letter is to inform of the availability of a domestic battery collection receptacle, as a retailer identified as a potentially interested host.

The purpose of this council run collection scheme is to provide a free and convenient drop off point for residents for handheld domestic batteries. These are not able to be processed through kerbside collection bins or transfer station drop offs, as they are a fire hazard when compacted.

By having a collection point, you are helping with both providing a safe alternative disposal option and enabling their recycling by an e-scrap collector.

Please see a copy of the draft Battery Recycling Trial Information Sheet and Agreement. This document outlines the requirements for a store to participate. We note the success of the trial so far, which includes collections at Hardware Stores, Supermarkets, and our Transfer Stations.

A committee representative will visit the collection point periodically to check on and certify it. Responsibility for a receptacle falls under each individual sites management, SOPs and operations, ensuring that appropriate training is in place for staff, after the initial induction. You will need to ensure your insurance cover allows this collection site.

If you think it would be possible to host a collection point or have any questions about how the trial works, please get in touch. To see what a setup involves, please see the attached checklist.

Kind regards

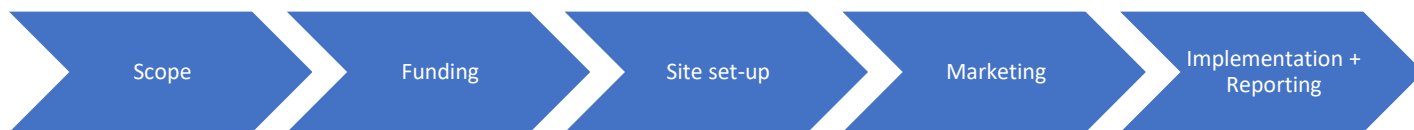
**Battery Group**

### **Retailer Setup Steps:**

- Read through the agreement and confirm your participation (by signing page xx)
- Complete the floor plan (page xx) to show where in the store the collection point will be located and where full pails can be stored, awaiting collection
- Book in a time for collections contractor to bring in the receptacle, and provide a brief training induction for staff, explaining the service including handling and storage requirements
- Once confirmed, Council will add your store to our website as a new location, we might also run some communications/media release about this, to help promote your store

## APPENDIX 6: BATTERY COLLECTION SCHEME SETUP (Administrator)

Councils looking to establish a collection network for handheld batteries are advised to consider the below stages in establishing a collection model.



### Establish scope (trial vs programme)

- Scope – the development of a collection trial was instigated to address the ongoing risk of fires and help to recover valuable resources from landfill – also developing an effective model that could be funded by the producers and retailers of batteries in the future.
- Collection network and containers - in Christchurch we wanted to include retailer collection points so approached supermarket and hardware stores, sites were selected based on the geographic distribution and supplemented by 3 collection sites at Council’s public transfer stations. Key requirement: Sites need to be able to manage the receptacle, have suitable insurance in place and be able to manage the container in accordance with the H & S criteria developed for the collection scheme. Because of the different collection environments, we developed two collection receptacles, an indoor version for the retailer sites (made from Perspex) and an outdoor collection cabinet.
- Knowing your problem – whether the risk to waste and resource recovery infrastructure, environmental concerns or wanting to establish a product stewardship scheme.
- Establish foundational knowledge around battery chemistries, the current industry, and issues

### Source Funding and Build Assets

- Source CAPX and OPEX funding, In Christchurch we built the collection containers (capex) and arranged a collection contract (opex) where we pay a servicing fee (per collection from site) and a rate (per kg) to process collected batteries. In ChCh, funding was provided through a contestable fund, regional council support and councils operating waste minimisation budget.
- Put collector RFP to market via Getz, or as an alternative collection service may be available through an existing hazardous waste contract (as per MDC example)
- Establish monthly governance meeting with stakeholders. Recommendations of continuous improvement of data collection, management, and reporting, to be on the agenda

### Site Establishment

- Confirm site acceptance of health and safety protocols and agree key contacts including emergency processes for the collection site.
- Install collection receptacles safely at the site in accordance with site plan
- Before any batteries are collected, safety induction to be provided to staff, as per the current training sessions at the Christchurch sites.
- Ensure the site has a safe storage facility (back of house) for full collection containers awaiting collection.
- Ensure signed off safety induction document (time, date and attendees) and record a photo of collection receptacle and battery storage site.

## Marketing and Communications

- Establish a “Brand” name or marketing and signage for the collection.
- Have a QR code or similar lookup tool to communicate program success with users and location name established for each site
- Have this linked to a central reporting page that users can link to and see volumes collected

## Battery and Data Collection

- Recommend an automated ordering protocol whereby for example sites inform collector when approximately 150kg has been reached – book a collection.
- Collections to be completed within an agreed timeframe (e.g., 48 hrs) from collection sites, with replacement containers provided and all containers cleared.
- For freight options, Collector to provide hazardous materials stickers, sent to the transport operator, who will put pails on a pallet, shrink wrapped and transported. Replacement pails to be provided.
- Any H & S incidents to be immediately informed to the governance group or contact.
- Collector to provide a monthly report on the number of collections, weight by chemistry, and new pail requirements
- Minutes of monthly meetings provided, and a shared folder set up to store collection dockets, invoices, and data collection/ management reporting
- Contractor to supply evidence of all offshore processing including export notes and relevant permit documentation. Any report to be included in monthly minutes.

## Case Study – Marlborough District Council’s Small Battery Collection Program

Marlborough District Council (MDC) operate their Small Battery Collection Program through their hazardous waste contractor, who manages the Marlborough Hazardous Waste Centre located at the Blenheim Resource Recovery Park.

The Program services 19 small battery collection bins strategically placed around the Marlborough region. The contractor installed these with the site managers and staff who would be supervising them and provided a poster to go alongside the bin explaining what can and cannot go in the bin. The bins themselves are also labelled with this info, as well as the contractor contact details and a fill line.

All small batteries are accepted including alkaline, NiCd, NiMH, lithium polymer and lithium ion, button, zinc carbon. The public can drop off any of the above in the bins around the region, provided they are not damaged, leaking, swollen, modified, or batteries other than those specified such as car batteries or other lead acid batteries (people can get in touch with the contractor directly and bring these to the Hazardous Waste Centre for recycling, they just cannot go in the bins for safety reasons).

Participants in the scheme call the contractor when they are ready for a collection, and they can also call them at any time if they have any queries or issues, e.g. if customers have batteries they cannot accept etc. The contractor collects the batteries from each site and transfers them to the Hazardous Waste Centre where they are then sorted into type, processed, and packaged for transport up to Wellington for recycling. While MDC is the liable owner of materials collected, the contractor maintains responsibility for the batteries from collection until handed over to the processor.

## + BATTERY - - RECYCLING +

Many batteries contain hazardous metals which can have a harmful impact on the environment if disposed of improperly.

Look out for batteries in the following items:

Power tools, mobile phones, laptops, cordless phones, hearing aids, remotes, watches, cameras...

And many other devices



Drop them off HERE to be recycled and keep hazardous waste out of the landfill and the environment.

We can accept all small batteries: alkaline, lithium, nickel-cadmium, nickel metal-hydrate, and button batteries

- No car batteries, no modified batteries +



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