



# NZGBC

## Green Star Construction & Demolition Waste Reporting Criteria 2.0

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Table of Contents

Executive Summary..... 3

About the New Zealand Green Building Council ..... 4

Definitions..... 5

Reporting Criteria ..... 10

Waste Contractors..... 11

C&D Sort Facilities: Criterion One..... 18

C&D Sort Facilities: Criterion Two..... 19

C&D Sort Facilities: Criterion Three ..... 24

Assessor Competencies and Responsibilities..... 28

Applicant’s Responsibilities..... 30

Alternative Compliance: Low Volume Construction & Demolition  
Sort Facilities (LVF) ..... 31

Appendix 1: Waste Contractor Margin of Error example calculations ..... 35

Appendix 2: C&D Sort Facilities Criterion Two: Margin of Error  
example calculations ..... 39

Appendix 3: C&D Sort Facilities Criterion Three, Part I,  
Diversion Rate example calculations ..... 40

| <b>Version</b> | <b>Release Date</b> | <b>Description of Changes</b> |
|----------------|---------------------|-------------------------------|
| <b>1.0</b>     | <i>21 June 2013</i> | <i>First release</i>          |
| <b>1.1</b>     | <i>October 2021</i> | <i>New Zealand release</i>    |
| <b>2.0</b>     | <i>July 2026</i>    | <i>New Zealand update</i>     |

## Executive Summary

The NZGBC Green Star Construction and Demolition Waste Reporting Criteria (Reporting Criteria), details the reporting criteria and Assessor requirements which accompany the Construction & Demolition Waste credit in the following Green Star rating tools:

- Green Star Design & As Built NZ and Interiors NZ credit 22 (released in New Zealand in 2019)
- Green Star Buildings NZ credit 2 (released in New Zealand in 2024)

Any mention of the Construction & Demolition Waste credit refers to either of these credits.

Version 2.0 has been developed with input from construction and demolition waste experts in Aotearoa and reflects current industry practice and service availability.

This update shifts focus toward encouraging and verifying management practices that genuinely minimise waste to landfill from both base building and interior fitout projects.

This document includes:

- Updated definitions to provide more clarity
- Requirements for verification of waste contractors
- Requirements for verification of C&D sort facilities
- Identifies Low Volume Construction and Demolition Sort Facilities (LVF)

***Note that all requirements for the Reporting Criteria, whether it be for a waste contractor or a C&D sort facility, are only applicable for Green Star projects. Although the NZGBC aims to raise the bar for all contractors and facilities servicing construction projects across Aotearoa New Zealand, these requirements have no direct bearing on non-Green Star projects.***

All compliance must be confirmed by an independent *Suitably Qualified Assessor*.

The interim grace period under version 1.1 has now expired.

## About the New Zealand Green Building Council

The New Zealand Green Building Council (NZGBC) is New Zealand's authority on sustainable buildings and communities. We are passionate advocates for better buildings, with our mission being "all homes and buildings in Aotearoa are green and sustainable, making healthier, happier Kiwis."

Created by the construction sector, we are Aotearoa's leading sustainable building not-for-profit. We represent hundreds of companies and organisations who believe we can transform our built environment, from large government departments, banks, energy companies, and insurers, to property and construction companies, architects, developers, designers and tertiary education providers.

We believe all New Zealanders deserve to be safe, healthy and happy - at home, at school, at work. Everywhere. To make that happen we:

- Connect the people who can make a difference
- Inspire the market to build quality, efficient buildings
- Campaign for regulatory reform and policy change
- Collaborate with industry to create best practice green building rating tools
- Provide education and training
- Hold events around New Zealand to share local and international expertise
- Supply access to networks, information and resources for our members about green building

## Definitions

The following definitions apply to the Green Star 'Construction and Demolition Waste' credit and the Green Star Construction and Demolition Waste Reporting Criteria (this document).

Please refer to the Waste Minimisation Act 2008 and the Ministry for the Environment's "Managing diversion at levied disposal facilities" fact sheet for any further clarification as it relates to these definitions:

### **Applicant**

Refers to the waste contractor and/or C&D sort facility (CDSF) commissioning an evaluation by a Suitably Qualified Assessor.

### **Clean Fill Materials**

Cleanfill materials are virgin excavated natural materials (VENM), such as clay, soil and rock that are free of combustible, putrescible, degradable or leachable components.

Incidental inert manufactured materials, such as concrete, bricks, tiles etc. cannot exceed 5% by volume, and incidental or attached biodegradable materials, such as vegetation, cannot exceed 2% by volume.

If not reused or repurposed, cleanfill materials should be sent to a class 5 landfill that accepts only virgin excavated natural materials (VENM).

Refer to the [WasteMINZ Technical Guidelines for the Disposal to Land Rev 3.1 2023](#) for more information.

Cleanfill materials are excluded from any recovery rate calculations, whether it be for a C&D sort facility's recovery rate or for a project's recovery rate.

*Note: Cleanfill is usually generated from excavation activities, and as per the Credit 2 - Responsible Construction in the Green Star Buildings NZ Submission Guidelines v1.0, excavation waste is excluded from the Responsible Construction requirement.*

### **Construction and Demolition Waste (C&D Waste)**

The waste material produced during the construction, renovation, demolition or deconstruction of buildings and their infrastructure. C&D waste materials typically include concrete, wood, metals, plasterboard, cardboard, plastics and asphalt. It can also include mixed site debris, such as soil and rocks mixed with the listed materials above. Note that special waste and excavation waste are excluded.

C&D waste materials are considered 'disposed of' if sent to a Class 1 - 5 landfill facility.

C&D waste materials are considered 'diverted from disposal' if the materials are a viable product for recycling, repurposing or reuse activities and are used for this application. Examples include:

- a material sent to a recovery facility for further processing
- a material sent to a recovery facility to be recycled into a new product
- a material sent to an end destination that utilises the material for a new purpose

### **Construction and Demolition Sort Facility (CDSF)**

A C&D sort facility refers to a business that accepts loads of mixed C&D materials for the purpose of separating the mixed materials into single stream materials and then transporting the single stream recoverable materials to suitable recovery facilities and the residual waste to a suitable landfill facility for disposal.

A CDSF may also accept single stream recoverable materials for the purpose of contamination removal, temporary storage, aggregation and then bulk delivery to a recovery facility.

A CDSF must undergo the compliance verification process to comply with the Green Star Reporting Criteria.

Only CDSFs with a valid CVS (or Waste Disclosure Statement) issued prior to work on a project are eligible to provide data accepted by NZGBC for the Green Star Construction and Demolition Waste credit.

### **Compliance Verification Summary (CVS)**

A signed and dated document issued by a suitably qualified assessor (SQA) that verifies and summarises the waste contractor's or CDSF's compliance with the Green Star Reporting Criteria.

A CVS is valid for 12 months from the date of issue. For waste contractors, the CVS covers their services across all locations wherein they operate. For CDSFs, each facility must be verified individually and have their own CVS.

If a waste contractor with a valid CVS or a company with an existing verified CDSF opens a new CDSF, this facility can be used for Green Star reporting, but it must be verified within the first 12 months of opening.

The waste contractor or CDSF must have a valid CVS for the duration of the time that they provide waste services and waste reports to a Green Star project.

It is acceptable to have a CVS lapse for a duration of up to 90 days, provided that the waste contractor or CDSF is actively engaging with a SQA to rectify the issue. If the 90-day limit is exceeded, the waste contractor or CDSF will be deemed non-compliant, and no services or reports provided will be accepted for the period from day 91 until the updated CVS is issued.

### **Excavation Waste**

Includes unwanted material resulting from excavation activities such as a reduced level dig and site preparation and levelling, and the excavation of foundations, basements, tunnels, and service trenches typically consisting of soil and stones.

### **Green Star Construction and Demolition (C&D) Waste Management Reporting Criteria**

Criteria that establish the minimum acceptable standard of operations and reporting for (1) waste contractors and (2) C&D sort facilities, which provide services and reports to Green Star projects.

### **Hardfill Materials**

Hardfill materials include a mixture of soils, rocks, gravel, sand and clay which are generated from site clean-up works which don't meet the cleanfill criteria, along with a mixture of the following list of materials as per the Christchurch City Council's Cleanfill and Waste Handling Operations Bylaw 2015:

- Asphalt (cured)
- Bricks
- Ceramics
- Chip seal (cured)
- Reinforced concrete including exposed reinforcing rods of less than 1 meter in length
- Concrete, un-reinforced (including dried concrete slurry)

- Glass, excluding glass that contains any non-glass material such as laminating, wire reinforcing, rubber lining
- Masonry blocks
- Pavers (clay, concrete, ceramic)
- Pipes (clay, concrete, ceramic)
- Tiles (clay, concrete, ceramic)
- Vegetative matter less than 2% by volume per load

Hardfill materials are considered 'disposed of' if sent to a Class 1 - 4 landfill facility.

Hardfill materials are considered 'diverted from disposal' if the materials are a viable product for repurposing or reuse activities and are used for this application. Examples include:

- a material that is used in construction activities
- a replacement of virgin aggregate
- a substitute for virgin materials for beneficial reuse such as (but is not limited to) land reclamation, and remediation, substitution of virgin material, use as aggregate, or in roading.

Hardfill can be deemed as a single stream material if a hardfill bin only contains hardfill materials. Hardfill can also be incorporated into a mixed C&D waste stream, with the material being designated as disposed of or diverted depending on whether the receiving C&D sort facility can recover hardfill from the mixed C&D waste bin.

Note: Hardfill materials, in general, cannot be repurposed as daily, intermediate or final cover for landfills, based on [MfE guidelines](#).

### **Hybrid Facility**

A hybrid facility is a facility that contains multiple facilities at a single location or within the boundaries of a single property. This facility can be made up of two or more facilities such as a

- C&D sort facility
- Recovery facility
- Refuse transfer station

A hybrid facility, if containing a CDSF that accepts mixed C&D waste, must undergo the compliance verification process to comply with the Green Star Reporting Criteria.

### **Landfill Facility**

Refers to a site where waste materials are disposed of by way of burial between layers of soil.

Refer to the [WasteMINZ Technical Guidelines for the Disposal to Land Rev 3.1 2023](#) for more information.

Landfill facilities are exempt from the compliance verification process required by Green Star Reporting Criteria.

### **Low Volume Construction and Demolition Sort Facility (LVF)**

Refers to any consented waste facilities capable of sorting mixed C&D materials with inbound mixed C&D materials totaling less than 1,500 metric tonnes of materials a year, or less than a daily operating average of 28m<sup>3</sup> of mixed C&D material loads within a 12-month period. They are often small regional and community-scale facilities that handle limited volumes of C&D

materials but may also undertake resource recovery and material reuse activities. These facilities are not required to have a Compliance Verification Summary. However, they must record data in volume or weight and have this information readily available for an assessment (refer to Alternative Compliance section).

Such facilities must fill out the CDSF Waste Disclosure statement prior to work on a Green Star project and in this document provide evidence of the compliance with this requirement.

### **Recovery Facility**

A recovery facility refers to a business that accepts single stream materials for the purpose of repurposing or recycling into new products. These facilities can accept more than one type of material, but the materials must arrive at the facility as single streams, as these facilities are not verified for separating mixed C&D waste.

Recovery facilities are exempt from the compliance verification process required by Green Star Reporting Criteria.

### **Refuse Transfer Station (RTS)**

A refuse transfer station is a facility that accepts general waste, residual waste, or single stream materials for the purpose of contamination removal, temporary storage, aggregation and then bulk delivery to a landfill facility for final disposal or a recovery facility for further processing.

Refuse transfer stations are exempt from the compliance verification process required by Green Star Reporting Criteria.

### **Residual Waste**

Refers to the waste material remaining after a CDSF processes mixed C&D materials and removes the recoverable materials. The residual waste will most likely be disposed of at a landfill facility.

### **Single Stream Materials**

Single stream materials refer to C&D waste materials that have been separated based on their material types.

C&D projects can separate materials on-site as the waste is generated, ensuring that single stream materials leave the site. Alternatively, mixed C&D materials can be sent to C&D sort facilities to separate materials into single streams.

Examples of single stream materials include scrap metal, timber, plasterboard, clean fill, plastic, cardboard, etc.

Note that in some cases, single stream materials can contain a combination of materials from the same category of waste. For example, scrap metal can contain ferrous and non-ferrous metals or timber may contain treated and untreated wood.

A material is deemed single stream if it can be sent to a recovery facility, and that facility can repurpose or recycle the combination of materials from the same category of waste. This may be regionally dependent. For example, one region may have a facility that can process both treated and untreated timber together, where another region may have a facility that can only process them separately. In the first region, a combination of treated and untreated would be deemed single stream, but in the second region, treated and untreated timber would need to be separated to qualify as single stream for Green Star reporting.

Exceptions:

- Mixed Recycling (including materials such as plastic bottles and containers, metal tins and cans, glass bottles and jars etc.) is considered a single stream. The exact acceptable materials within the Mixed Recycling will be regionally dependent, but the group of acceptable materials are deemed one single stream.
- Hardfill, depending on the composition and facility it is sent to (see Hardfill definition)
- Reusable / saleable materials such as doors, windows, timber, bricks, pavers, equipment, whiteware etc. that can be accepted by a secondhand store or community center for reuse or resale. This is a mixture of materials, but are considered 'single stream' materials if all the materials have been sorted and prepared onsite and the load is not mixed with any other recyclable or waste materials.

### **Third-Party Waste Contractor**

Refers to an organisation engaged by a Waste Contractor to manage the containerisation, collection and transportation of C&D waste from a construction site to a CDSF, recovery facility, RTS or class 1 - 5 landfill facility.

A Waste Contractor is likely to use a Third-Party Waste Contractor in locations where they do not usually service or where their vehicles are occupied and a movement is urgent.

### **Waste Contractor**

Refers to the company or person(s) engaged by a builder, developer, or owner of a structure to manage the containerisation, collection and transportation of C&D waste from a construction site to a CDSF, recovery facility, RTS or class 1 - 5 landfill facility.

Only a Waste Contractor with a valid CVS (or Waste Disclosure Statement) issued prior to work on a project are eligible to provide data accepted by NZGBC for the Green Star Construction and Demolition Waste credit.

### **Weighing Systems**

This would include onboard scales, weighbridges or alternative systems which would give quantitative weight data, in kilograms or tonnes, related to the weight of different types of C&D waste materials from a CDSF, recovery facility, RTS or class 1 - 5 landfill facility.

Alternatives to weighbridges at the company's location include the following options:

- Using another nearby organisation's weighbridge
- Using vehicles with systems to measure loading weight (rather than total vehicle weight)
- Sensors positioned on the vehicle's suspension
- Portable axle scales

The above weighing system alternatives are approved. Any other similar alternatives should be approved with the NZGBC via a Technical Query prior to being utilised by any waste contractor, CDSF or Green Star project.

## Reporting Criteria

The reporting criteria outlined in this document supports the Green Star 'Construction and Demolition Waste' credit, and attempts to provide additional assurance to Green Star customers, by creating assessment pathways to ensure:

1. Waste contractors (transport and handlers) servicing Green Star buildings provide:
  - accurate reporting on waste collection and diversion from disposal
  - evidence of C&D materials going to a CDSF, hybrid facility or recovery facility for diversion
  - evidence of C&D materials going to an RTS, hybrid facility or class 1-5 for disposal
  - undertake independent and external assessments every 12 months to confirm accuracy of reports provided to customers.
2. C&D sort facilities that accept Green Star project mixed C&D waste:
  - operate legally with applicable council approvals.
  - have systems in place to prepare accurate reports on inbound mixed C&D waste and outbound single stream materials, ensuring reports provided to waste contractors correctly state the diversion percentages from mixed C&D waste.
  - undertake independent and external assessments every 12 months to confirm accuracy of reports provided to waste contractors.

## Waste Contractors

### Criterion Aim

To ensure that the waste contractors that service Green Star building sites provide accurate waste reports to the client for the duration of the project.

### Compliance Requirement

The waste contractor must provide accurate monthly and cumulative waste reports that detail the dates of service, types of C&D waste collected, weights of C&D waste collected, and confirmation of waste sent for disposal and materials recovered (diverted from disposal).

Accuracy must be within an average 5% margin of error when comparing reported weights and dockets that use weighbridge data.

If volume data is utilised, a NZGBC approved volume-to-weight conversion table should be used to convert volume dockets to reported weights for the project. If an alternative volume-to-weight conversion table is utilised by the waste contractor, it is the duty of the waste contractor to provide suitable evidence to their SQA to justify the metrics and prove its accuracy.

### Criterion Expectation

The waste contractor is expected to have an established process in place for recording and reporting of waste across all projects. This process will define how the waste contractor obtains reports from destination facilities.

### Assessor Verification Guidance

Assessors should verify compliance by sampling customer records for **at least three projects**, with the waste contractor providing a list of customer projects to choose from, and the Assessors choosing at least three projects (Green Star projects being preferred samples, noting that those contractors being assessed for the first time will have no Green Star samples).

It is the waste contractor's responsibility to collate and present all waste data associated with their services provided for the projects, including data from CDSFs, recovery facilities, RTSs, hybrid facilities and/or class 1 - 5 landfill facilities. If the sample project is not a Green Star project, the waste contractor must still provide applicable dockets, receipts and customer reports to showcase compliance. If this information is not available, the Waste Contractor cannot be assessed.

Note: Once assessed and verified, it is mandatory for waste contractors to adhere to all Reporting Criteria for the Green Star projects they service. It is not required (although highly recommended) for non-Green Star projects. The waste contractor must ensure they have at least 3 sample projects with the necessary documentation for each annual assessment.

To award compliance with the criterion, all sample jobs must be fully compliant, and the average percentage variation findings must be within the approved margin of error.

Required documentation must be collected and collated by the waste contractor prior to the assessment taking place. At least three projects must be assessed, and the following documentation must be provided to the SQA:

1. Up to 100 records (covering 3 different jobs over a continuous period) must be presented to the SQA. Each job must obtain at a minimum 10 records. If the total number of records across 3 projects is less than 100, then all of the records must be reviewed.
2. Obtain copies of the waste contractor reports provided to the customer projects for the sample periods. This can be scanned paper reports or electronic reports that were sent to the project. The customer reports must be able to confirm what has been removed from their site, noting that evidence of the project acknowledging receipt of these reports is not required.
3. Obtain waste contractor's disposal docket records for sample jobs over sample periods.
4. Obtain verification from any utilised CDSFs, recovery facilities, RTSs, hybrid facilities and/or class 1 - 5 landfill facilities for sample jobs to ensure alignment with disposal dockets.

Note:

- If the waste contractor subcontracts their service to other companies at least one project which uses a third party waste contractor must be included in the above documentation.
- Where the waste contractor report provides waste disposal figures in tonnes, but disposal dockets are reported in volume, the waste contractor must utilise a NZGBC approved volume-to-weight conversion table convert volume dockets to reported weights for the project. If an alternative volume-to-weight conversion table is utilised by the waste contractor, it is the duty of the waste contractor to provide suitable evidence to their SQA to justify the metrics and prove its accuracy.
- It is the responsibility of the waste contractor to engage with the Assessor to ensure the necessary data is available for the assessment. The reports provided to projects by waste contractors often do not state the end destination of the waste collected, but rather the waste service (e.g. Timber) or the solution (e.g. Timber Recycling). For example, the report may state that 100kg of timber was collected and recycled, but the report won't necessarily state that the 100kg of timber was sent to the local recovery facility named 'ABC Timber Ltd'. Therefore, it will be the duty of the waste contractor to make it clear to the Assessor how to link the customer reports and the facility dockets.

### **Compaction Services**

Some projects may choose to use compaction waste collection services where the waste contractor cannot weigh individual bins at a weighbridge (typically smaller waste collections in front load or wheelie bin services). Waste contractors can only provide these services to Green Star projects if they provide a weight for the collection, either by:

1. using scales on the bin lifter to measure the net weight of the bin, provided that:
  - a. the scales are zeroed daily; and
  - b. the waste contractor commissions an 'annual calibration check' performed by an independent third party to check the accuracy of the scales; or
2. an average weight is provided using one of the following methods:
  - a. supplying an average weight for the bin generated using historic actual weight data; or
  - b. supplying a weight generated using the approved Volume to weight conversion table.

Note that compaction services are not suitable for mixed C&D waste, unless:

- the servicing truck is only collecting mixed C&D waste
- the collected materials are taken to a CDSF with a valid CVS

To award compliance with the requirements for compaction service accuracy, the waste contractor must provide the following to the Assessor:

- evidence that scales are zeroed daily and valid calibration certificate for any onboard scales. The calibration must be performed by an independent third party, not be older than 12 months and must be valid for the duration of the project; or
- confirm the process within the waste contractor's system to calculate and report average weights or weight-volume conversions.

## Multiple Location Waste Contractor Company Assessment Protocol

In the interest in encouraging the uptake of the Reporting Criteria while allowing some flexibility, waste contractors which have more than one area of operation across New Zealand may use the following protocol for determining the number and location of random sampling of their sites for assessments. The same number of projects/data need to be reviewed and assessed for each representative site. In other words :

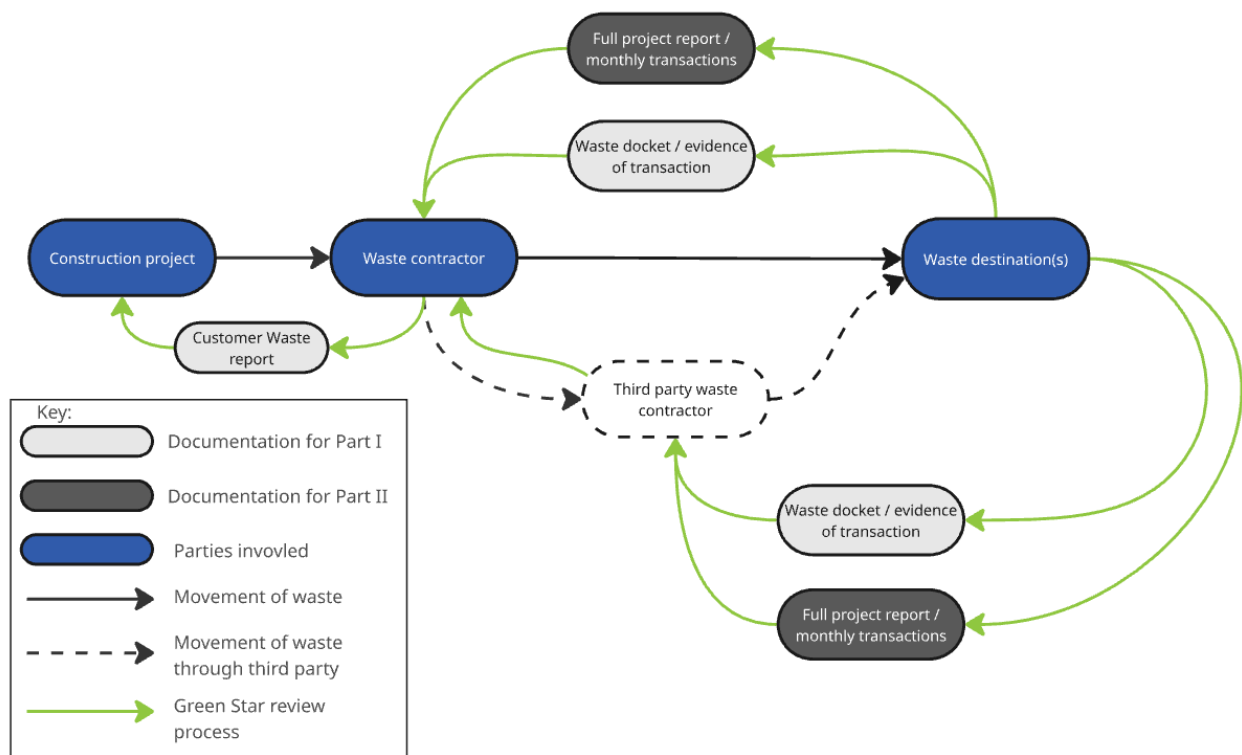
1. Select sites for inclusion in verification assessment. This number is the population total.
2. To calculate the sample size for assessments, take the square root of the population total and round up.
3. If the sites are found to be lower risk, future sample size calculations may be reduced by rounding down.

Note: For clarity each site must have at least three projects documents assessed associated with that location.

### Example of Multiple Location Assessment Protocol

| Waste Contractor Sites (Population Total) | Sample Size ( $\sqrt{\text{Pop Total}}$ ) | Sample Size (Round Up) | Sample Projects (Per Location) | Total Projects |
|---|---|------------------------|--------------------------------|----------------|
| 5   | 2.24                                      | 3                      | 3                              | 9              |
| 10  | 3.16                                      | 4                      | 3                              | 12             |
| 15  | 3.87                                      | 4                      | 3                              | 12             |
| 20  | 4.47                                      | 5                      | 3                              | 15             |

Schematic depicting flow of information and documentation for Waste Contractors.



## Part I: Comparing Customer Reports with Waste Contractor's Disposal Dockets

1. Customer report must provide:
  - The total weight per material/waste container collected for the assessed period, or a weight per collection of each material/waste container for the assessed period.
  - The date for each collection performed during the assessed period.
  - The diversion from landfill as a weight and percentage for each material/waste container collected or for all materials/waste containers collected during the period.
  - Proof that the data was made available to the customer (i.e. an email).
2. The waste contractor must provide the assessor with the relevant corresponding disposal dockets from the facilities the materials were transported to, making it clear how these align and match with the customer report. This includes matching:
  - The dates of collection from the customer's project and the date on the disposal docket. Any discrepancies will need to be clearly outlined and explained by the waste contractor, such as overnight storage of bins post-collection with early morning deliveries first thing the next morning.
  - The material collected and the material noted on the docket
  - The weight reported and the weight on the docket, noting that if volume is used, an appropriate volume-to-weight conversion table must be utilised.
3. The Assessor must record any weight variations between customer reports and disposal dockets, with the docket variation percentage calculated by dividing the variation (kg) by the disposal docket (kg).
  - For records where disposal dockets report weight, the average docket variation percentage must not exceed the 5% margin of error.
  - If volume data is utilised, a NZGBC approved volume-to-weight conversion table should be used to convert volume dockets to reported weights for the project. If an alternative volume-to-weight conversion table is utilised by the waste contractor, it is the duty of the waste contractor to provide suitable evidence to their SQA to justify the metrics and prove its accuracy.

### Example docket:

```

FACILITY NAME
Tax Invoice

GST # 123 456 789

Exit Ticket : 12345
Printed   : Date; Time
Customer  : Waste Contractor Name
Order #   : REF Project Name
Vehicle ID : ABC123

Product ID: Mixed Construction

Gross Weight :      8680kg
In Weight    :      8680kg
Tare Weight   :      6500kg
Out Weight    :      6500kg
Net Weight    :      2180kg

Total Net Weight      2180 kg
    
```

Please see **Appendix 1: Waste Contractor Margin of Error example calculations**

### **Summarising Findings And Awarding Compliance:**

Compliance is achieved and can be awarded by the Assessor if

- Each sample job per project is compliant.
- Each project (at least three assessed) is compliant.
- Each site, as per sample size, is compliant (for waste contractors applying for a multiple location verification)

## Part II: Comparing Waste Contractor's Disposal Dockets With Receiving Facility Records

1. Compare the waste contractor's disposal docket for each sample job with the receiving facilities' records (e.g. a monthly inbound waste report listing the waste contractor visits).

Note: It is the responsibility of the Waste Contractor to have both the waste dockets and the receiving facility data available before the Assessment is conducted.

2. The waste contractor disposal dockets need to correspond to the receiving facilities' records by utilising a logical data metric that is agreed to by the SQA. Ideally, weighbridge data should be utilised to compare tonnage, but if no weighbridge is available, volume (L or m<sup>3</sup>) can be utilised. In addition to either weight or volume data, other metrics to confirm the dockets and records correspond include:
  - a. Waste Contractor name
  - b. Vehicle registrations
  - c. Date and time stamps
  - d. Project ID or Customer ID (if applicable)
3. If weight is used, note variations between the waste contractor's disposal dockets (kg) and the receiving facility records (kg), with the docket variation percentage calculated by dividing the variation (kg) by the receiving facility's records weight (kg). The average docket variation percentage must not exceed the 5% margin of error.

Please see **Appendix 1: Waste Contractor Margin of Error example calculations**

4. If a metric other than weight is used, such as matching the date and time of delivery with the number of bins delivered, it is the duty of the Waste Contractor to provide this information to the SQA in a form that is agreed between the two parties and meets the SQA's requirements.

### Summarising Findings And Awarding Compliance:

Compliance is achieved and can be awarded by the SQA if:

- each of the sample jobs are 100% compliant
- none of the average docket variations exceed the approved margin of error.

## C&D Sort Facilities: Criterion One

### Criterion Aim

To ensure that C&D sort facilities (CDSF) servicing Green Star building sites are legitimately operating businesses that are recognised by the relevant regulatory authorities.

### Compliance Requirement

The CDSF must hold all current licenses and approvals required by the relevant local authority to operate a CDSF, including any waste-facility or operator licenses that cover the activities which take place on the site (for example storage, handling, transfer or processing of mixed C&D waste). Additional permits or approvals may be requested by the SQA to demonstrate compliance with local district or regional plans.

### Assessor Verification Guidance

Compliance should be verified by the suitably qualified Assessor (SQA) by undertaking the following steps:

1. The CDSF to provide a copy of the current operating licence or other council approval to the SQA. These documents should specifically cover the activities undertaken at this site (e.g. storage, handling, transfer or processing of mixed C&D waste). The licence should be valid (current and not expired) with an expiry date clearly visible.
2. The CDSF should provide evidence to the SQA to confirm that the site is operating in compliance with the conditions of the operating license. Evidence could include the following: written confirmation from the regulator, reports from a qualified auditor or monitoring records in line with the requirements for the licence, or similar evidence.
3. Non-conformances for this criterion are not permitted. Corrective actions may be issued by the Assessor but shall result in criterion non-compliance until the corrective action has been verified by the Assessor.

### Multiple Location Assessment Protocol

There are no multiple location assessment protocols for this criterion. If a company owns or manages multiple CDSFs, each CDSF, and not a sample size of CDSFs, must go through this assessment process.

### Interim Measure

There are no interim measures available for this criterion.

### Low Volume CDSF Alternative Compliance

Low Volume Construction & Demolition Sort Facilities that have submitted compliant LVF registration documentation to NZGBC are exempt from Criterion One having already demonstrated legitimacy. Refer to 'alternative compliance' at the end of this section.

## C&D Sort Facilities: Criterion Two

### Criterion Aim

The key aim of this criterion is to ensure that accurate data can be created by CDSFs. This data will be used to create reports for Green Star projects, with the accuracy of the reports covered in Criterion Three.

Criterion Two is essentially used to ensure that data and claims made within customer reports will be accurate, and that the right information is created to meet the requirements of Criterion Three, which includes what happens to the waste processed at a CDSF and what amount of the mixed C&D materials end up being recovered and diverted from disposal.

To ensure data accuracy, the CDSF must provide clear separation and accountability for all inbound and outbound weights of materials in line with Compliance Requirements Part I, II and III.

### Compliance Requirements

Part I, II and III must be met to comply with this criterion.

#### **PART I - Separation of All Inbound and Outbound Waste for CDSF or Hybrid Facilities**

CDSFs must operate as a separate facility to any other facility that may be located within the same site. For example, a CDSF may share a site with a refuse transfer station, recovery facility or landfill. This site would be known as a hybrid facility.

Access between the CDSF and any of the above mentioned facilities must either be clearly separated (e.g. having its own controlled road access and weighbridges) or have a means to clearly separate inbound and outbound loads to and from the CDSF and loads that go to and from the other facility (e.g. having a data management system that records vehicle registrations, the weight of waste and can assign data to either the CDSF or the other facility).

This separation ensures that the data associated with the waste processed at the CDSF can be clearly separated from the data associated with the other facility within the same site. This is crucial to ensure that accurate recovery rates (diversion from disposal) from mixed C&D waste can be calculated and reported to Green Star projects.

This separation must create a clear data delineation between what was recovered from processing mixed C&D waste, and what was recovered from processing any single stream materials or general waste materials.

#### **PART II - Certified Weighing System**

The CDSF must use a weighing system (most commonly a weighbridge) that holds a valid calibration certification (certified annually), along with a clear maintenance schedule with evidence that this schedule is followed. This will ensure the weighing system is certified, maintained, and suitable for Green Star reporting.

If a CDSF does not have its own weighbridge, they will have to demonstrate to the SQA how the weights of waste are calculated and confirm how compliance with Part II can be achieved. As per the "Weighing Systems" definition, the accepted alternatives are:

- Using another nearby organisation's weighbridge

- Using vehicles with systems to measure loading weight (rather than total vehicle weight)
- Sensors positioned on the vehicle's suspension
- Portable axle scales

The above weighing system alternatives or similar alternatives must be approved with the NZGBC via a Technical Query prior to being utilised by any CDSF.

### PART III - Data Management

The CDSF must have procedures in place to create and maintain data records on the following information for C&D waste:

- For all inbound and outbound loads
  - vehicle registration, weight of load, date and time
- Additionally, for all inbound loads
  - source of materials (e.g. customer name or number)
  - type of waste material (e.g. mixed C&D waste, steel, timber, general waste, etc.)
- Additionally, for all outbound loads
  - destination of materials (e.g. destination name)
  - type of waste materials (e.g. steel, timber, clean fill, residual waste, etc.)
  - designation of materials (e.g. disposal, diverted from disposal)

If any inbound loads are rejected by the CDSF or outbound loads are rejected by the destination facility, the CDSF will need to have systems in place to ensure this does not affect the recovery calculations. For example, if the CDSF sends 10 tonnes to a timber recovery facility and the facility rejects the load, this load will either need to return and be re-processed, or sent for disposal. If sent for disposal, the 10 tonnes must be designated as disposal even though the original facility was a recovery facility.

For any outbound loads, the CDSF must maintain records and possess evidence of delivery from the destination facility. These records must match the outbound data from the CDSF. For example, if the CDSF data states that 10 tonnes of steel went to a metal recovery facility, corresponding evidence from the metal recovery facility should be kept on file. This process is to ensure that the material flow is traceable, and that the data is accurate. If the receiving facility does not have a weighbridge, then other ways to verify the transfer of material are acceptable such as volume recordings.

## Low Volume CDSF Alternative Compliance

Low Volume Construction & Demolition Sort Facilities that have submitted compliant LVF registration documentation to NZGBC are exempt from Criterion Two. Refer to 'alternative compliance' at the end of this section.

## Assessor Verification Guidance

Compliance should be verified by the suitably qualified Assessor (SQA) by undertaking the following steps:

### 1. Compliance with Part I:

- Confirm if the CDSF is a standalone facility, or a hybrid facility which includes another facility type on the same property
- Confirm a system is in place to separate the data between inbound mixed C&D waste that is processed by the CDSF and any inbound single stream materials or general waste materials
- Confirm a system is in place to separate the data between the outbound single stream materials recovered from mixed C&D waste, and any other materials leaving the facility

### 2. Compliance with Part II:

- Sight the applicant's weighbridge calibration certificate(s)
- Ensure certificate(s) are current and valid
- Sight maintenance schedules
- Ensure evidence of compliance with these schedules is provided

### 3. Compliance with Part III:

- The CDSF provides data covering all the metrics outlined in Part III for the assessment period
- For inbound waste, the SQA is to request at least 5 random samples of inbound loads per material entering the CDSF for the assessment period. This is to check that customer data is entering the CDSF's system correctly and data flow is accurate.
- For outbound waste, the SQA is to request at least 5 random samples of outbound loads per recovered material from the mixed C&D waste for the assessment period. There must be at least one sample from each destination facility used by the CDSF. For each of these samples, the CDSF must provide the corresponding evidence from the destination facility to prove material flow traceability and data accuracy. If there were less than 5 outbound loads for the assessment period for a recovered material, all the outbound loads for that material must be sampled.
- The CDSF's outbound records need to correspond to the receiving facilities' inbound records by utilising a logical data metric that is agreed to by the SQA. Options include, but are not limited to:
  - Weight (kg or tonnes) and/or Volume (L or m<sup>3</sup>)
  - Vehicle registrations along with date and time stamps
- If weight (kg or tonnes) is used as the metric to link documentations, a 5% margin of error is allowed between the outbound weights of the CDSF and the receiving facility's weights.

- The SQA must be provided with evidence as to how the CDSF processes mixed C&D waste, with each of the outbound recovered streams accounted for in the evidence. The reason for this is to prevent CDSFs from artificially inflating their recovery rates by accepting inbound single stream materials that weren't part of a mixed C&D load and can't actually be recovered by the CDSF's sorting process. For example, hardfill materials may be accepted by a CDSF, but if the CDSF can't recover hardfill from a mixed C&D load, the CDSF can't use outbound hardfill in its recovery calculations. If the CDSF claims to have hardfill materials as an outbound material, they must provide evidence to the SQA as to how this material is processed and separated by the CDSF. Evidence can be photographic or video evidence, or an in-person walk through the CDSF sorting process on the day of the assessment.

Note: A CDSF's sorting process can be used to remove contamination from a single stream materials. For example, the facility may use the CDSF's sorting process to remove any contamination from timber skips. This is an acceptable practice, but it will be the responsibility of the applicant to ensure that this process does not artificially inflate the reportable recovery percentage of the CDSF, as this is not deemed a mixed C&D load. Therefore, the outbound timber from this process should not be included in the CDSF's reportable recovery percentage calculations.

If a CDSF is located on the same premises as the facility or project that will recover or utilise an outbound material, it is the responsibility of the CDSF to provide suitable evidence to the SQA to prove that the material has been utilised for an appropriate application. This clarification is important for transparency and data integrity, as the material may not be leaving the premises, and/or the material may be utilised by the owner of the CDSF. For example, if a CDSF is located on the same premises as a landfill, and the landfill utilises the CDSF's outbound hardfill for an agreed reuse or repurpose activity that is considered 'diverted from disposal', the CDSF must provide the SQA with suitable evidence.

The evidence provided to the SQA can include:

- Vehicle data such as registration numbers, dates, loads delivered etc.
- Photographic evidence
- Weight data
- Frequency of the repurposing activity i.e. one-off or ongoing
- If available, metrics to determine material requirements for the repurposing activity e.g. tonnes of hardfill needed per kilometer of road graded
- Evidence of "landfill levy" exemption on inbound load marked for repurposing

Note: Where possible, the Assessor should use the available data to assess whether the scale of repurposing activity can justify the diversion (repurposing) tonnage.

Please see **Appendix 2: C&D Sort Facilities Criterion Two: Margin of Error example calculations**

### Multiple Location Assessment Protocol

There are no multiple location assessment protocols for this criterion. If a company owns or manages multiple CDSFs, each CDSF, and not a sample size of CDSFs, must go through this assessment process.

### Interim Measure

There are no interim measures available for this criterion.

## C&D Sort Facilities: Criterion Three

### Criterion Aim:

To ensure that CDSFs provide accurate reporting to Green Star projects, with clear and concise metrics relating to materials recovered from mixed C&D waste and residual waste sent for disposal.

### Compliance Requirements:

Part I and II must be met to comply with this criterion.

### **PART I - The CDSF must undergo an assessment every 12 months to confirm the diversion rate from processed mixed C&D waste is reported accurately to Green Star projects**

Utilising the CDSF's data from Criterion Two, the SQA must confirm that the diversion rates reported by the CDSF to its customers are accurate. This includes:

- Confirming the reported monthly diversion rate achieved by the CDSF from processed mixed C&D waste. The reportable monthly diversion rate may be calculated from the inbound and outbound materials of the current month, the previous month, or a rolling monthly period up to a period of 12 months. The main reason for allowing a rolling reporting period is most CDSFs will not clear their floors monthly, so waste received in one month may only leave the next month which creates an imbalance.

Example: A CDSF chooses a rolling period of 3 months prior to the reporting month

| Reporting Month | Rolling Data Period | Inbound Mixed C&D Waste (t) | Outbound Disposal (t) | Outbound Diversion (t) | Diversion (%) |
|-----------------|---------------------|-----------------------------|-----------------------|------------------------|---------------|
| January 2026    | Oct 2025 - Dec 2025 | 1000 t                      | 750 t                 | 250 t                  | 25%           |
| February 2026   | Nov 2025 - Jan 2026 | 1500 t                      | 1200 t                | 300 t                  | 20%           |
| March 2026      | Dec 2025 - Feb 2026 | 1200 t                      | 900 t                 | 300 t                  | 25%           |
| April 2026      | Jan - March 2026    | 1600 t                      | 1150 t                | 450 t                  | 28.13%        |
| May 2026        | Feb - April 2026    | 1800 t                      | 1400 t                | 400 t                  | 22.22%        |
| June 2026       | March - May 2026    | 1400 t                      | 1000 t                | 400 t                  | 28.57%        |

- If the CDSF also accepts single stream recoverable materials, the customer report must make it clear what the diversion rate is from the processed mixed C&D waste, and not use the overall diversion rate of the entire facility.

Example: A Green Star project sends three skips to a CDSF - one skip of metal, one of timber and one of mixed C&D waste. The CDSF used by this project reports at diversion rate of 25% for processed mixed C&D materials, and the entire facility has an overall diversion rate of 80% (recovery from single stream materials and mixed C&D waste).

The table below shows compliant reportable diversion rates:

| GS Project | C&D Waste       | CDSF Receiving Dockets (kg) | Diversion (%) | Project Diversion (%) | Compliant |
|------------|-----------------|-----------------------------|---------------|-----------------------|-----------|
| Skip 1     | Metal           | 1500 kg                     | 100%          | 71.88%                | Yes       |
| Skip 2     | Timber          | 1000 kg                     | 100%          |                       |           |
| Skip 3     | Mixed C&D Waste | 1500 kg                     | 25%           |                       |           |

The table below shows non-compliant reportable diversion rates, as the 'facility-wide' rate is not applicable:

| GS Project | C&D Waste       | CDSF Receiving Dockets (kg) | Diversion (%) | Project Diversion (%) | Compliant |
|------------|-----------------|-----------------------------|---------------|-----------------------|-----------|
| Skip 1     | Metal           | 1500 kg                     | 100%          | 92.50%                | No        |
| Skip 2     | Timber          | 1000 kg                     | 100%          |                       |           |
| Skip 3     | Mixed C&D Waste | 1500 kg                     | 80%           |                       |           |

It is very important that the diversion rate from processed mixed C&D loads is utilised, and not the diversion rate of the entire facility. The reason for this is to ensure projects understand the actual diversion potential of mixed C&D waste without this being artificially inflated by including single stream recoverable materials that have a diversion potential of >95%.

It is acknowledged that the reportable recovery rate from mixed C&D loads is based on a mass balance calculation, and that this percentage is the average recovery from mixed C&D loads by the CDSF. This means that the reported materials recovered from mixed C&D loads are independent of the project's individual waste services and material makeup, but this limitation is noted and understood.

## PART II - The CDSF must make its diversion rate publicly available

The CDSF must make its diversion rate from mixed C&D materials processing available upon request. The CDSF may decide to post its diversion rate on its website or another public forum to allow it to be fully accessible, but at a minimum, it must be made available upon request.

### Low Volume CDSF Alternative Compliance

Low Volume Construction & Demolition Sort Facilities that have submitted compliant LVF registration documentation to NZGBC are exempt from criterion three. Refer to 'alternative compliance' at the end of this section.

### Assessor Verification Guidance

The CDSF must provide evidence to the SQA for review for the purpose of determining whether the monthly reported diversion rates are accurate.

Please see **Appendix 3: C&D Sort Facilities Criterion Three, Part I, Diversion Rate example calculations** for further guidance.

Depending on the CDSF's chosen reporting period (monthly, rolling period etc.), a summary of the relevant inbound and outbound data for the CDSF and/or hybrid facility must be provided so the SQA can confirm the reported diversion rates are correct. The SQA must cross check:

- The summary data, ensuring it matches the data reviewed for Criterion Two
- The claimed monthly diversion rates for each month of the assessment period, ensuring they match what is publicly shared and what is utilised for customer reporting
- The SQA should also randomly check a minimum of five customer diversion reports to ensure the monthly CDSF diversion rates are correctly applied to customer reports.

*Note: There is a potential loophole that can be exploited to artificially inflate the CDSF's reportable recovery percentage. The facility may receive an inbound single stream material (e.g. timber) but assign the material type as 'mixed C&D waste' instead of 'timber'. There is technically nothing stopping a facility from following this process, but from a customer reporting perspective, the facility cannot report the waste material collected as 'timber' to their customer and conversely record it as 'mixed C&D waste' on their inbound records. The records must match, and the reportable recovery percentage to the customer must also match.*

Example: A Green Star project utilises a CDSF that processes all inbound loads as mixed C&D waste, even though some loads are single stream and some are mixed C&D waste. In this example, the CDSF has a reportable recovery rate of 50% for the entire facility.

| GS Project | C&D Waste       | CDSF Receiving Dockets (kg) | Diversion (%) | Claimed Project Diversion (%) | Compliant |
|------------|-----------------|-----------------------------|---------------|-------------------------------|-----------|
| Skip 1     | Metal           | 1500 kg                     | 100%          | 81.25%                        | No        |
| Skip 2     | Timber          | 1000 kg                     | 100%          |                               |           |
| Skip 3     | Mixed C&D Waste | 1500 kg                     | 50%           |                               |           |

| GS Project | C&D Waste       | CDSF Receiving Dockets (kg) | Diversion (%) | Claimed Project Diversion (%) | Compliant |
|------------|-----------------|-----------------------------|---------------|-------------------------------|-----------|
| Skip 1     | Mixed C&D Waste | 1500 kg                     | 50%           | 50%                           | Yes       |
| Skip 2     | Mixed C&D Waste | 1000 kg                     | 50%           |                               |           |
| Skip 3     | Mixed C&D Waste | 1500 kg                     | 50%           |                               |           |

To provide some guidance for the Assessor, some simplified examples of how to review and confirm diversion rates for CDSFs and hybrid facilities are shown below:

1. If the CDSF does not have inbound single stream materials, this means the outbound recoverable single streams have all come from sorting the mixed C&D waste. The diversion rate calculation will be:

$$\frac{\text{Recoverable single streams OUT (t)}}{\text{Mixed C\&D waste IN (t)}}$$

2. If the CDSF does have inbound single stream materials, and these are processed and sorted along with the inbound mixed C&D waste, the data will need to be separated to calculate the diversion rate for the processed mixed C&D waste only. The diversion rate calculation will be:

$$\frac{[\text{Recoverable single streams OUT (t)}] - [\text{Recoverable single streams IN (t)}]}{\text{Mixed C\&D waste IN (t)}}$$

3. Inbound single stream materials often have a level of contamination. To ensure this does not lower the reportable recovery rate from mixed C&D processing, an allowance of up to 5% for contamination can be utilised in the diversion rate calculation:

$$\frac{[\text{Recoverable single streams OUT (t)}] - [0.95 \times \text{Recoverable single streams IN (t)}]}{\text{Mixed C\&D waste IN (t)}}$$

Please see **Appendix 4: C&D Sort Facilities Criterion Three Part I Diversion Rate example calculations** for more in-depth examples.

# Assessor Competencies and Responsibilities

## Assessor Qualifications

Verification of compliance with the Reporting Criteria must be carried out by Suitably Qualified Assessors (SQAs) who are engaged directly by the waste contractors and C&D sort facilities (Applicants).

As per the Definitions section, a SQA refers to an Assessor who has the relevant knowledge, skills and experience necessary to provide advice to applicants on the issues addressed in the Reporting Criteria. Assessors must be independent with a particular focus on how they manage conflicts of interest with applicants (i.e. they must be an external, independent, third-party Assessor).

They must also provide evidence of their qualifications in one of the following ways:

### 1. Certification

The Assessor must be an approved ISO 14001 Assessor at the time of assessment. If the Assessor has an alternative certification, such as Enviromark Diamond approval, this certification must be submitted to the NZGBC or Green Star Certified Assessors for approval prior to performing any assessments.

**OR**

### 2. Qualifications Statement

The Assessor must demonstrate their professional skills, knowledge and experience in waste management in a 'Qualifications Statement' that provides affirmative responses to all the questions listed below:

2.1 Knowledge: Can the person demonstrate they have relevant knowledge in waste management or environmental compliance audits in a related field through the completion of a qualification? If no formal qualifications exist, can the person, through alternate means, establish that they understand the current state of knowledge on the criteria, best practice waste management principles and legislation?

2.2 Competency: Has the person worked in the waste management industry, with C&D sort facilities of like size and structure or dealt with similar issues as those addressed in the criteria?

2.3 Reputation: Is the person reputable and able to provide referees who can attest to the quality and utility of their work?

2.4 Legislative understanding: Is the person familiar with local waste legislation?

The responses must be submitted to the NZGBC or Green Star Certified Assessors for approval prior to performing any assessments to determine the suitability of their qualifications for the purpose of carrying out assessments against the Reporting Criteria.

## Conflicts Of Interest

The Assessor must have no conflicts of interest with applicant companies, or the Assessor must report any potential conflict of interest. Any issues that may be construed as a potential conflict of interest must be disclosed in the assessment report and CVS. An explanation must also be

provided that clearly demonstrates the independence of the services provided by the Assessor for the compliance verification job.

Previous and existing independent external auditing business relationships (i.e. ISO 14001 auditing and certification services) are not regarded as a conflict of interest, however, the Assessor must disclose all such auditing relationships in the CVS.

### **Compliance Verification Summary**

The Compliance Verification Summary (CVS) is the Assessor's primary deliverable to the applicant. This document is issued by a SQA and verifies and summarises the applicant waste contractor or CDSF's compliance with these Reporting Criteria.

It is valid for 12 months from the date of issue and must be current for the duration of the time that the applicant provides waste services and waste reports to a Green Star project, with some leeway provided as per the Definitions section.

The CVS must:

- state the applicant's compliance or non-conformance with each of the criteria
- provide a summary of the corrective action(s) required of the applicant in cases where non-conformances are identified
- be signed and dated by the Assessor, along with confirmation of expiry date
- include a copy of the Assessor's Certification or Qualification Statement, and their CV

## Applicant's Responsibilities

### Appointing An Assessor

It is the responsibility of the applicant to only use Assessors that meet the definition of a Suitably Qualified Assessor. The applicant must request the Assessor's evidence of qualifications prior to appointing the Assessor, and if the qualifications require approval from the NZGBC or Green Star Certified Assessors, this approval must be supplied to the applicant.

The SQA must be given access to any records, facilities and staff for the entity they are assessing and assessments must be conducted every 12 months.

### Waste Contractor Responsibility

Waste contractors hired to provide waste management and reporting services to a Green Star project must provide their customer and/or Green Star consultant with a copy of their Compliance Verification Summary (CVS).

Only waste reports generated by compliant waste contractors and CDSFs will be accepted as supporting evidence for a project's Green Star Construction and Demolition Waste credit claim, so it is the responsibility of the waste contractor to ensure they are compliant, and only compliant CDSFs or LVFs are utilized for Green Star projects pursuing the Construction and Demolition Waste credit.

### No Direct NZGBC Involvement With Assessment Process:

To maintain transparency, the NZGBC will not be involved in the assessment process and will have no direct involvement in the application of the Reporting Criteria. Although the NZGBC may be involved with confirming whether or not an Assessor meets the SQA requirements, they cannot be involved in selecting the SQA for the applicant.

## Alternative Compliance: Low Volume Construction & Demolition Sort Facilities (LVF)

### Intent

To enable small regional and community-scale facilities that process limited volumes of mixed C&D materials to participate in the Green Star framework through a proportionate and assessable verification pathway, while maintaining data transparency and national consistency.

### Objective

To ensure that only facilities demonstrating legitimate low-volume operations and verifiable inbound and outbound data qualify for LVF registration. This alternative compliance pathway recognises that such facilities often lack commercial weighbridges or assessment resources, yet play a critical role in their local community by improving regional material recovery and landfill diversion.

### Eligibility Conditions

1. The facility may not exceed the weight/volume thresholds for inbound mixed C&D materials:
  - a. 1,500 tonnes for a 12 month period excluding single stream materials such as cleanfill, green waste or reusable items.
  - b. Daily operating average totaling 28m<sup>3</sup> of bin volume for a 12 month period

The annual threshold of 1,500 tonnes can be tracked by ensuring a rolling monthly average of less than 125 tonnes:

| Months          | 1    | 3    | 6    | 9     | 12     |
|-----------------|------|------|------|-------|--------|
| Monthly Tonnage | <125 | <375 | <750 | <1125 | <1,500 |

The daily operating average of 28m<sup>3</sup> of bin volume can be tracked by confirming the number of operating days per month, and the total inbound loads per day:

| Months         | 1     | 3      | 6      | 9      | 12     |
|----------------|-------|--------|--------|--------|--------|
| Operating Days | 22    | 64     | 129    | 196    | 262    |
| Monthly Volume | < 616 | <1,792 | <3,612 | <5,488 | <7,336 |

Daily average examples:

- Less than 2 x 9m<sup>3</sup> skips + 10 x 1m<sup>3</sup> trailer loads
- Less than 6 x 3m<sup>3</sup> bags + 10 x 1m<sup>3</sup> trailer loads
- Less than 28 x 1m<sup>3</sup> trailer loads

2. The reporting period must cover the most recent 12 consecutive months.
3. The LVF designation applies to a single physical site operating under one resource consent boundary and one legal entity.
4. The operator must hold a current resource consent or local authority approval for its activities.

## Compliance Requirements

Low Volume Construction & Demolition Sort Facilities that have submitted compliant LVF registration documentation to the NZGBC must meet the following alternative compliance requirements:

### PART I - LVF Registration

The facility must register as an LVF prior to accepting mixed C&D materials from a Green Star project and maintain registered status. The following information must be provided for registration:

#### A. LVF Registration Form

- Facility name and address.
- Summary table of annual mixed C&D material inputs, and single stream or residual waste outputs by destination category:
  - Materials disposed to class 1 - 5 landfill facilities
  - Materials sent to recovery facilities
  - Materials sent for repurposing, reuse or on-sold
- Statement of operational period covered (e.g. 1 July 2024 - 30 June 2025).

#### B. Evidence Package

- Copies of invoices, weighbridge tickets, or receipts from all inbound mixed C&D material loads, as well as final destinations of single stream materials covering the 12-month period
- Where weights are unavailable and volume data is utilised, a NZGBC approved volume-to-weight conversion table should be used to convert volume to reported weights for the project. If an alternative volume-to-weight conversion table is utilised by the LVF, it is the duty of the LVF to provide suitable evidence to justify the metrics and prove its accuracy.
- Copies of relevant consent documents

#### C. Declaration of Accuracy

- Signed statutory declaration by the authorised company or trust representative confirming:
  - The accuracy of data supplied,
  - Awareness of potential random NZGBC assessment checks.

### **Registration Verification & Renewal**

**Initial verification:** Desktop review by NZGBC or nominated Assessor confirming documentary sufficiency and calculation integrity.

**Validity period:** 12 months from date of approval.

**Renewal:** Submission of updated 12-month output data and evidence prior to expiry.

**Random assessment:** NZGBC or nominated Assessor may request supporting invoices or visit the site at any time within the validity period.

## PART II - Measurement and Data Management

When a LVF accepts waste from a Green Star Project they shall:

- Record the volume (m<sup>3</sup>) or weight (kg) for all inbound loads
  - Measurements must be undertaken by trained staff using declared methods (e.g. truck box dimensions, bin volume or calibrated reference markers, scales or weighbridges)
  - Vehicle registration, date and time
- Capture photographic evidence of each inbound load
- Additionally, for all inbound loads
  - source of materials (e.g. originating Green Star project)
  - waste contractor information (i.e. entity transporting the C&D materials)
- LVFs must retain all records and images for three years from the date of final project delivery.

## PART III - Waste diversion calculation and Reporting

The LVF can calculate its reportable diversion rate by using one of the following methodologies:

- 1) Diversion rate per load
- 2) Mass balance diversion rate over a select period

### **Diversion rate per load:**

Each inbound load of mixed C&D materials from a Green Star project must be sorted for diversion immediately. The inbound load's weight or volume must be captured, along with the weight or volume of the outbound single stream materials recovered from the sorting process.

If volume is used, this must be converted into a weight by utilising a NZGBC approved volume-to-weight conversion table. If an alternative volume-to-weight conversion table is utilised by the LVF, it is the duty of the LVF to provide suitable evidence to justify the metrics and prove its accuracy.

The diversion rate is calculated by dividing the weight of recovered materials from the sorted load (either actual or converted) by the weight of the inbound mixed C&D materials (either actual or converted). This diversion rate must be recorded, and this exact diversion rate must be provided to the Green Star project for that specific load.

This methodology will result in a different reportable diversion rate for every load of mixed C&D materials processed.

### **Mass balance diversion rate:**

Inbound loads of mixed C&D materials from Green Star projects can be stored together, with the consolidated materials stored separately from other materials processed by the facility. The consolidated materials can be sorted at a later time (i.e. not necessarily at the time of arrival) once the volume is economically viable to sort, or the facility has available personnel to do so.

The weight or volume of each inbound load of mixed C&D materials must be recorded. The collective weight or volume of each of the outbound single stream materials recovered from the sorting process must also be recorded.

If volume is used, this must be converted into a weight by utilising a NZGBC approved volume-to-weight conversion table. If an alternative volume-to-weight conversion table is utilised by the LVF, it is the duty of the LVF to provide suitable evidence to justify the metrics and prove its accuracy.

The diversion rate is calculated by dividing the weight of all recovered materials from the sorting process (either actual or converted) by the weight of all the inbound mixed C&D materials (either actual or converted). This diversion rate must be recorded, and this exact diversion rate must be provided to the Green Star projects that provided material for this 'batch sort'.

This methodology will result in the same reportable diversion rate for every load of mixed C&D materials that was 'batch sorted'.

## Appendix 1: Waste Contractor Margin of Error example calculations

### Part I

The variation percentage between customer reports and disposal dockets is calculated by dividing the variation (docket weight minus reported weight) by the disposal docket weight. This is because the disposal docket is normally tied to the source of the weight data (i.e. weighbridge), so we need to assess how the reported weight differs from this docket.

### Sample Job 1 (note that the actual sample size must be at least 20 records)

The average docket variation percentage is calculated as follows:

$$[\text{sum of absolute value of docket variation \%}] / [\text{count of line items}]$$

$$[38.89\% + 35.59\% + 13.07\% + 100\% + 25\%] / [5] = 42.51\%$$

| Destination                     | Material           | Reported Total Waste (kg) | Disposal Dockets (kg) | Variation (kg) | Docket Variation (%) |
|---------------------------------|--------------------|---------------------------|-----------------------|----------------|----------------------|
| CDSF 1                          | Mixed Construction | 2500 kg                   | 1800 kg               | -700 kg        | -38.89%              |
| Concrete Recovery Facility      | Hardfill           | 4000 kg                   | 2950 kg               | -1050 kg       | -35.59%              |
| CDSF 2                          | Mixed Construction | 3166 kg                   | 2800 kg               | -366 kg        | -13.07%              |
| Fly by Night Waste Disposal     | General Waste      | 0 kg                      | 2616 kg               | 2616 kg        | 100%                 |
| Plasterboard Recovery Facility  | Plasterboard       | 2500 kg                   | 2000 kg               | -500 kg        | -25%                 |
| <b>Average Docket Variation</b> |                    |                           |                       |                | <b>42.51%</b>        |

**Result:** Non-compliant as exceeds 5% margin of error.

**Sample Job 2 (note that the actual sample size must be at least 20 records)**

The average docket variation percentage is calculated as follows:

$$[\text{sum of absolute value of docket variation \%}] / [\text{count of line items}]$$

$$[3.45\% + 0\% + 5.26\% + 11.11\%] / [4] = 4.96\%$$

| Destination                     | Material           | Reported Total Waste (kg) | Disposal Dockets (kg) | Variation (kg) | Docket Variation (%) |
|---------------------------------|--------------------|---------------------------|-----------------------|----------------|----------------------|
| CDSF 1                          | Mixed Construction | 3000 kg                   | 2900 kg               | -100 kg        | -3.45%               |
| Concrete Recovery Facility      | Hardfill           | 3000 kg                   | 3000 kg               | 0 kg           | 0%                   |
| CDSF 2                          | Mixed Construction | 3000 kg                   | 2850 kg               | -150 kg        | -5.26%               |
| Metal Recovery Facility         | Metal              | 1000 kg                   | 900 kg                | -100 kg        | -11.11%              |
| <b>Average Docket Variation</b> |                    |                           |                       |                | <b>4.96%</b>         |

**Result:** Compliant as within 5% margin of error.

**Sample Job 3 (note that the actual sample size must be at least 20 records)**

The average docket variation percentage is calculated as follows:

$$[\text{sum of absolute value of docket variation \%}] / [\text{count of line items}]$$

$$[53.85\% + 14.29\% + 8.70\%] / [3] = 25.61\%$$

| Destination                     | Material | Reported Total Waste (kg) | Disposal Dockets (kg) | Variation (kg) | Docket Variation (%) |
|---------------------------------|----------|---------------------------|-----------------------|----------------|----------------------|
| Timber ABC                      | Timber   | 2000 kg                   | 1300 kg               | -700 kg        | -53.85%              |
| Concrete Recovery Facility      | Hardfill | 4000 kg                   | 3500 kg               | -500 kg        | -14.29%              |
| Metal Recovery Facility         | Metal    | 7500 kg                   | 6900 kg               | -600 kg        | -8.70%               |
| <b>Average Docket Variation</b> |          |                           |                       |                | <b>25.61%</b>        |

**Result:** Non-compliant as exceeds 5% margin of error.

Using the examples provided above, the applicant is non-compliant with Part I.

| Samples                  | Average Docket Variation (%) | Margin of Error (%) | Compliance |
|--------------------------|------------------------------|---------------------|------------|
| Job 1                    | 42.51%                       | 5%                  | No         |
| Job 2                    | 4.96%                        | 5%                  | Yes        |
| Job 3                    | 25.61%                       | 5%                  | No         |
| <b>Compliance Status</b> |                              |                     | <b>No</b>  |

**Example Result:** Non-compliant.

## Part II

The reason for Part II is to ensure the waste contractor has not fabricated a disposal docket, so the docket needs to match with the receiving facility's records. Although the variation should be 0%, a 5% margin of error is allowed. The variation percentage is calculated by dividing the variation (facility records weight minus disposal docket weight) by the facility records weight.

### Sample Job 1

The average docket variation percentage is calculated as follows:

$$[\text{sum of absolute value of docket variation \%}] / [\text{count of line items}]$$

$$[0\% + 0\% + 0\% + 100\% + 0\%] / [5] = 20\%$$

| Sample Job 1                               | Disposal Dockets (kg) | Receiving Facility Records (kg) | Variation (kg) | Docket Variation (%) |
|--|-----------------------|---------------------------------|----------------|----------------------|
| CDSF 1                                     | 1800 kg               | 1800 kg                         | 0 kg           | 0%                   |
| Concrete Recovery Facility                 | 2950 kg               | 2950 kg                         | 0 kg           | 0%                   |
| CDSF 2                                     | 2800 kg               | 2800 kg                         | 0 kg           | 0%                   |
| Fly by Night Waste Disposal                | 2616 kg               | 0 kg                            | -2616 kg       | -100%                |
| Plasterboard Recovery Facility             | 2000 kg               | 2000 kg                         | 0 kg           | 0%                   |
| <b>Average docket variation percentage</b> |                       |                                 |                | <b>20%</b>           |

**Result:** Non-compliant as exceeds 5% margin of error.

### Sample Job 2

The average docket variation percentage is calculated as follows:

$$[\text{sum of absolute value of docket variation \%}] / [\text{count of line items}]$$

$$[0\% + 0\% + 14\% + 0\%] / [4] = 3.50\%$$

| Sample Job 2                               | Disposal Dockets (kg) | Facility Receiving Dockets (kg) | Variation (kg) | Docket Variation (%) |
|--|-----------------------|---------------------------------|----------------|----------------------|
| CDSF 1                                     | 2900 kg               | 2900 kg                         | 0 kg           | 0%                   |
| Concrete Recovery Facility                 | 3000 kg               | 3000 kg                         | 0 kg           | 0%                   |
| CDSF 2                                     | 2850 kg               | 2500 kg                         | -350 kg        | -14%                 |
| Metal Recovery Facility                    | 900 kg                | 900 kg                          | 0 kg           | 0%                   |
| <b>Average docket variation percentage</b> |                       |                                 |                | <b>3.50%</b>         |

**Result:** Compliant as within 5% margin of error.

### Sample Job 3

The average docket variation percentage is calculated as follows:

$$[\text{sum of absolute value of docket variation \%}] / [\text{count of line items}]$$

$$[0\% + 0\% + 0\%] / [3] = 0\%$$

| Sample Job 3                               | Disposal Dockets (kg) | Facility Receiving Dockets (kg) | Variation (kg) | Docket Variation (%) |
|--|-----------------------|---------------------------------|----------------|----------------------|
| Timber ABC                                 | 2000 kg               | 2000 kg                         | /              | 0%                   |
| Concrete Recovery Facility                 | 600 kg                | 600 kg                          | /              | 0%                   |
| Timber Ltd                                 | 2900 kg               | 2900 kg                         | /              | 0%                   |
| <b>Average docket variation percentage</b> |                       |                                 |                | <b>0%</b>            |

**Result:** Compliant as within 5% margin of error.

Using the examples provided above, the applicant is non-compliant with Part II.

| Samples                  | Average Docket Variation (%) | Margin of Error (%) | Compliance |
|--------------------------|------------------------------|---------------------|------------|
| Job 1                    | 20%                          | 5%                  | No         |
| Job 2                    | 3.50%                        | 5%                  | Yes        |
| Job 3                    | 0%                           | 5%                  | Yes        |
| <b>Compliance Status</b> |                              |                     | <b>No</b>  |

**Example Result:** Non-compliant.

Overall, the applicant in the above examples is non-compliant with the criterion.

| Summary           | Part I | Part II | Compliance Requirement |
|-------------------|--------|---------|------------------------|
| Samples           | 3      | 3       |                        |
| Compliant Samples | 1      | 2       |                        |
| Compliance (%)    | 33.33% | 66.67%  | 100%                   |
| Compliance        | No     | No      | No                     |

## Appendix 2: C&D Sort Facilities Criterion Two: Margin of Error example calculations

Example: The assessed CDSF accepts mixed C&D waste, sorts out metal and timber, with the remaining materials leaving as residual waste. Over the assessment period, the CDSF sent metal to four recovery facilities, timber to one recovery facility and residual waste to two disposal facilities.

| Metal                                      | CDSF Outbound Dockets (kg) | Destination Facility | Receiving Facility Records (kg) | Variation (%) | Compliant |
|--|----------------------------|----------------------|---------------------------------|---------------|-----------|
| Sample 1                                   | 5000 kg                    | ABC Metals           | 5000 kg                         | 0%            | Yes       |
| Sample 2                                   | 4500 kg                    | ABC Metals           | 4500 kg                         | 0%            | Yes       |
| Sample 3                                   | 4800 kg                    | Metal Inc            | 4750 kg                         | 1.04%         | Yes       |
| Sample 4                                   | 4850 kg                    | 123 Metals           | 4825 kg                         | 0.52%         | Yes       |
| Sample 5                                   | 4900 kg                    | Metal Ltd            | 4910 kg                         | 0.20%         | Yes       |
| <b>Average docket variation percentage</b> |                            |                      |                                 | 0.35%         | Yes       |

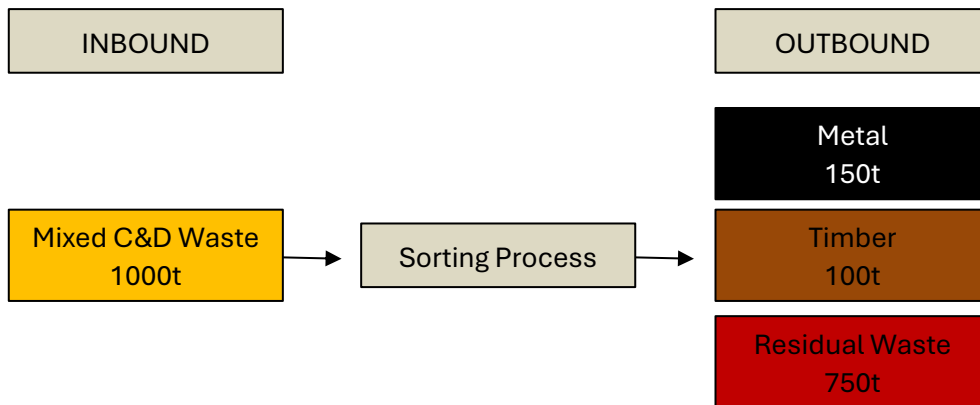
| Timber                                     | CDSF Dockets (kg) | Destination Facility | Receiving Facility Records (kg) | Variation (%) | Compliant |
|--|-------------------|----------------------|---------------------------------|---------------|-----------|
| Sample 1                                   | 3800 kg           | Timber 123           | 3800 kg                         | 0%            | Yes       |
| Sample 2                                   | 3500 kg           | Timber 123           | 3500 kg                         | 0%            | Yes       |
| Sample 3                                   | 3750 kg           | Timber 123           | 3750 kg                         | 0%            | Yes       |
| Sample 4                                   | 4100 kg           | Timber 123           | 4100 kg                         | 0%            | Yes       |
| Sample 5                                   | 3900 kg           | Timber 123           | 3900 kg                         | 0%            | Yes       |
| <b>Average docket variation percentage</b> |                   |                      |                                 | 0%            | Yes       |

| Residual Waste                             | CDSF Dockets (kg) | Destination Facility | Facility Receiving Records (kg) | Variation (%) | Compliant |
|--|-------------------|----------------------|---------------------------------|---------------|-----------|
| Sample 1                                   | 7000 kg           | ABC Landfill         | 7010 kg                         | 0.14%         | Yes       |
| Sample 2                                   | 6000 kg           | ABC Landfill         | 6010 kg                         | 0.17%         | Yes       |
| Sample 3                                   | 6500 kg           | ABC Landfill         | 6520 kg                         | 0.31%         | Yes       |
| Sample 4                                   | 6900 kg           | Landfill Inc         | 6910 kg                         | 0.14%         | Yes       |
| Sample 5                                   | 6500 kg           | Landfill Inc         | 6510 kg                         | 0.15%         | Yes       |
| <b>Average docket variation percentage</b> |                   |                      |                                 | 0.18%         | Yes       |

If receiving facility records utilise 'per load' or volume reporting, then other metrics such as bin volume, vehicle registrations and date and time stamps can be utilised.

## Appendix 3: C&D Sort Facilities Criterion Three, Part I, Diversion Rate example calculations

**Example 1:** A CDSF that accepts only mixed C&D waste, sorting the materials into metal, timber and residual waste. This CDSF has a diversion rate of 25%.



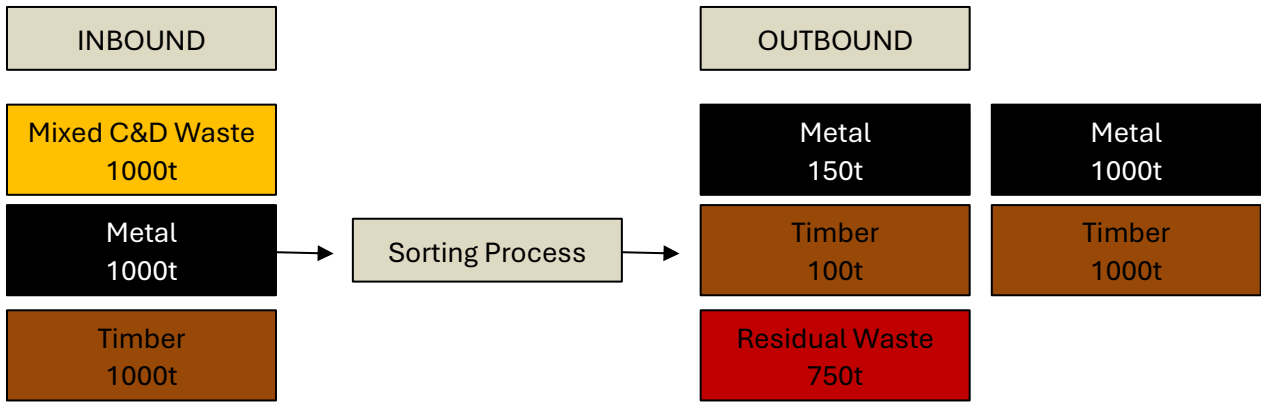
$$\text{Recovery rate} = \frac{150 + 100}{1000} = 0.25$$

**Example 2:** A CDSF that accepts mixed C&D waste, sorting the materials into metal, timber and residual waste. The CDSF also accepts single stream metal and timber for consolidation and bulk transportation. This CDSF has a mixed C&D diversion rate of 25% (recovering 15% metal and 10% timber from mixed C&D waste), with an overall facility diversion rate of 75% (2,250 tonnes diverted from a total of 3,000 tonnes).

The CDSF will need to show the SQA how the 25% diversion factor is created. There are multiple options to go about this.

Option 1:

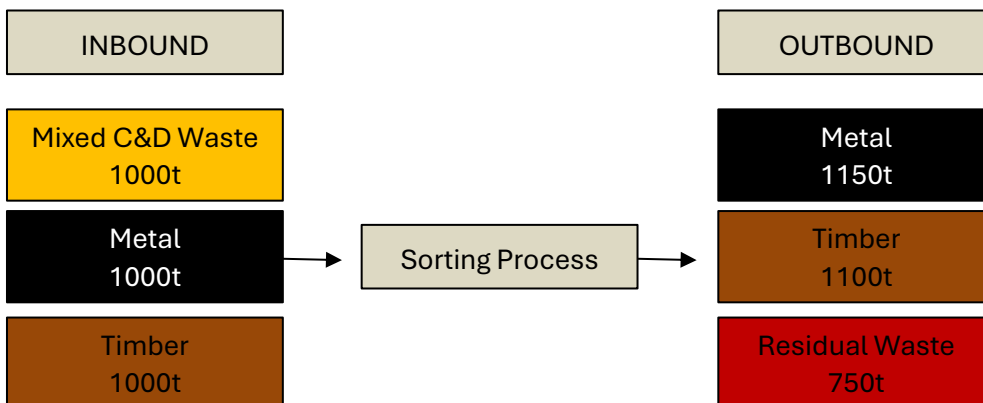
- The CDSF weighing system clearly identifies that 1,000t of inbound mixed C&D waste entered the facility for processing
- The CDSF has dedicated bins for the output from the sorting process, and once these bins are full, they are weighed out
- This method provides a very clear dataset to calculate the recovery from mixed C&D waste, but is reliant on the facility having the space to have dedicated outbound bins for the sorted waste



$$Recovery\ rate = \frac{150 + 100}{1000} = 0.25$$

Option 2:

- The CDSF weighing system clearly identifies that 1,000t of inbound mixed C&D waste entered the facility for processing, as well as 1,000t of inbound single stream timber and 1,000t of inbound single stream metal.
- The CDSF has a timber bin that gets filled with the inbound single stream timber, as well as the timber output from the sorting of mixed C&D waste
- The CDSF has a metal bin that gets filled with the inbound single stream metal, as well as the metal output from the sorting of mixed C&D waste
- Once the timber and metal bins are full, they are weighed out
- The timber bin weighs 1,100t and the metal bin weighs 1,150t
- The CDSF records show that 1,000t of the timber and 1,000t of metal came from inbound single stream loads, so the remainder of the weight (250t) must have come from the sorting process
- This method is not as accurate as Option 1, but most CDSFs will not have the space to have separate outbound bins for the same material



$$Recovery\ rate = \frac{(1150 - 1000) + (1100 - 1000)}{1000} = 0.25$$

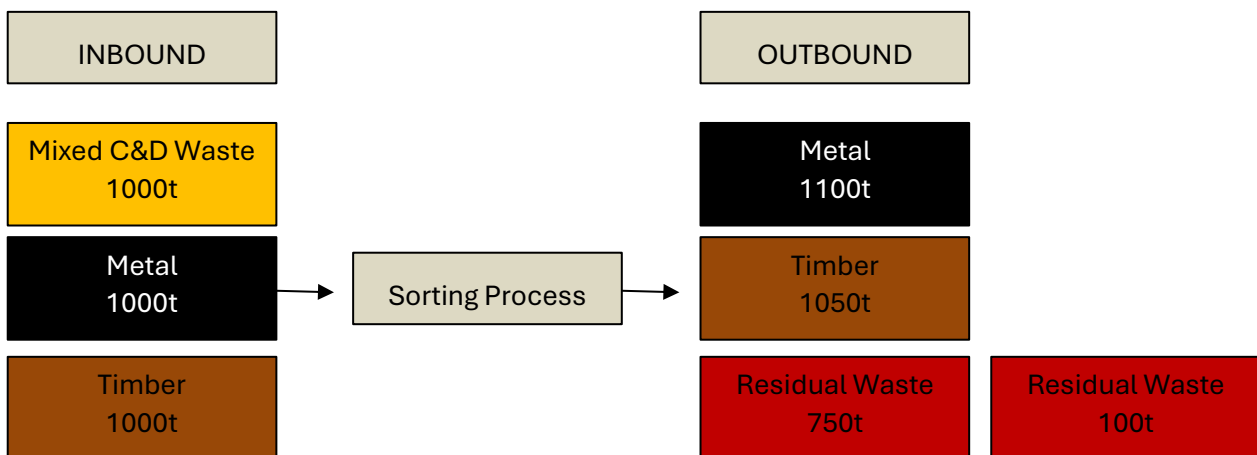
Other options may be suitable, but the methodology needs to be approved by the SQA.

**Example 3:** Inbound single stream materials often have small amount of contamination, and the CDSF's sorting process is used to remove this contamination.

A CDSF that accepts mixed C&D waste, sorting the materials into metal, timber and residual waste. The CDSF also accepts single stream metal and timber for contamination removal, consolidation and bulk transportation. This CDSF has a mixed C&D diversion rate of 25% (recovering 15% metal and 10% timber from mixed C&D waste), with an overall facility diversion rate of 71.67% (2,150 tonnes diverted from a total of 3,000 tonnes). Note that a 5% contamination rate within inbound single streams has been identified.

The CDSF will need to show the SQA how the 25% diversion factor is created.

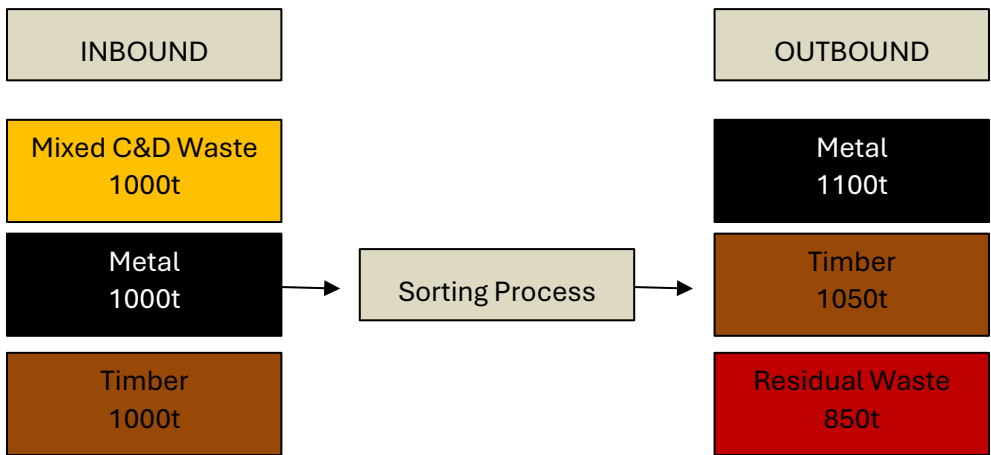
- The CDSF weighing system clearly identifies that 1,000t of inbound mixed C&D waste entered the facility for processing, as well as 1,000t of inbound single stream timber and 1,000t of inbound single stream metal.
- The CDSF has a timber bin that gets filled with the inbound single stream timber, as well as the timber output from the sorting of mixed C&D waste
- The CDSF has a metal bin that gets filled with the inbound single stream metal, as well as the metal output from the sorting of mixed C&D waste
- Once the timber and metal bins are full, they are weighed out
- The timber bin weighs 1,050t and the metal bin weighs 1,100t
- The CDSF records show that 1,000t of the timber and 1,000t of metal came from inbound single stream loads, but there will be some level of contamination removal during the consolidation process.
- If the CDSF puts the contamination from inbound single streams into a separate residual waste bin and weighs this, then it is a simple process to calculate the diversion rate from mixed load processing separately.



$$Recovery\ rate = \frac{(1100 + 1050) - (1000 + 1000 - 100)}{1000} = 0.25$$

- If the CDSF does not put the contamination from inbound single streams into a separate residual waste bin, as single streams are processed along with mixed C&D waste, then the CDSF must calculate the split, with a maximum allowance of 5% contamination

allowed to be claimed.



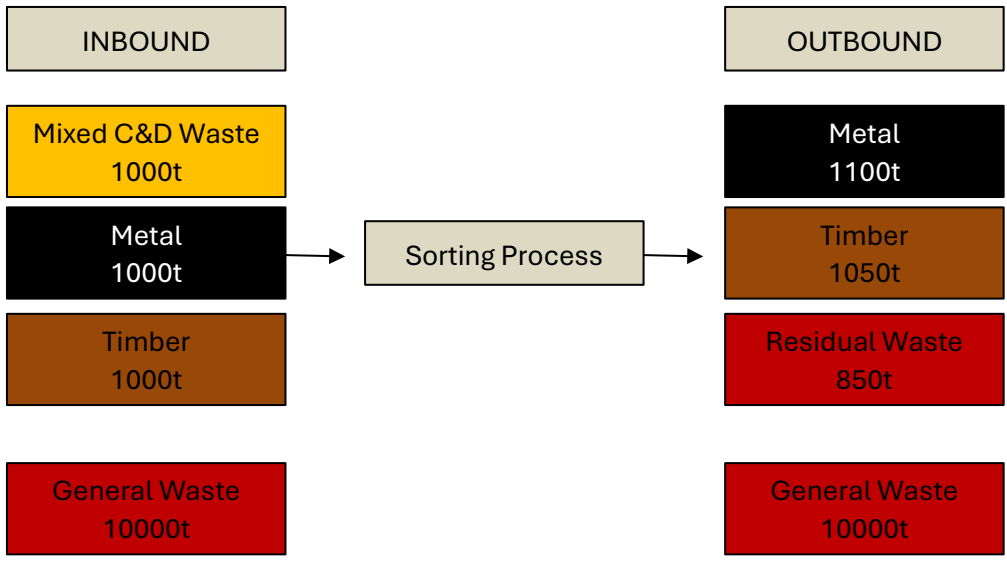
$$Recovery\ rate = \frac{(1100 - (0.95 \times 1000)) + (1050 - (0.95 \times 1000))}{1000} = 0.25$$

It is important to note that a **maximum of 5% allowance for contamination is acceptable** for the single stream tonnages that feed into the diversion percentage calculation. The reason for this is real-world practicality and an acknowledgement that even though a single stream skip of recoverable materials will be reported as 100% diversion to customers, the skip will most likely have a few materials within it that do not meet acceptance criteria for that recovery service. This 'contamination' will be removed and placed into the residual waste.

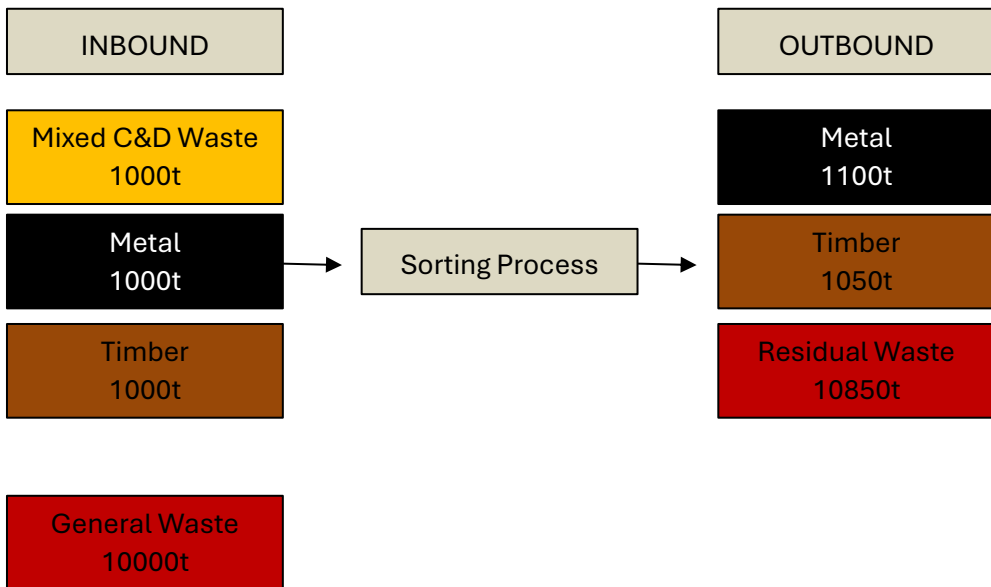
Other options may be suitable, but the methodology needs to be approved by the SQA.

**Example 4:** A hybrid facility includes a CDSF that accepts mixed C&D waste, sorting the materials into metal, timber and residual waste. The CDSF also accepts single stream metal and timber for contamination removal, consolidation and bulk transportation. The hybrid facility also includes a RTS (Refuse Transfer Station), that receives general waste for consolidation and bulk transportation. This CDSF has a diversion rate of 25% (15% metal and 10% timber), with the hybrid facility having an overall diversion rate of 16.54% (2,150 tonnes diverted from a total of 13,000 tonnes, noting that 5% of the single stream metal and timber ended up in the residual waste).

The CDSF will need to show the SQA how the 25% diversion factor is created. The options outlined in Example 3 can be followed.



Or



$$Recovery\ rate = \frac{(1100 - (0.95 \times 1000)) + (1050 - (0.95 \times 1000))}{1000} = 0.25$$

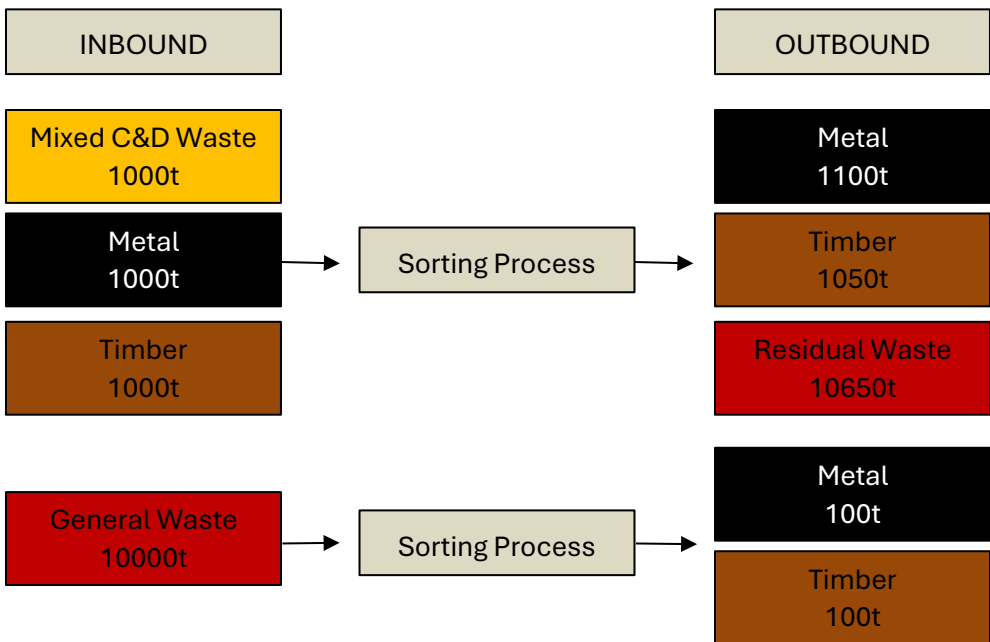
**Example 5:** A hybrid facility that includes a CDSF that accepts mixed C&D waste, sorting the materials into metal, timber and residual waste. The CDSF also accepts single stream metal and timber for contamination removal, consolidation and bulk transportation. The hybrid facility also includes a RTS (Refuse Transfer Station), that receives general waste for consolidation and bulk transportation.

There is one specific difference in process between Example 4 and Example 5. The hybrid facility in Example 5 has implemented a process to extract recoverable materials out of the inbound general waste. This process is separate to the CDSF that processes mixed C&D waste, but the hybrid facility is pulling out materials such as metal and timber from the general waste.

This process of extracting valuable and recoverable materials from a waste stream that was

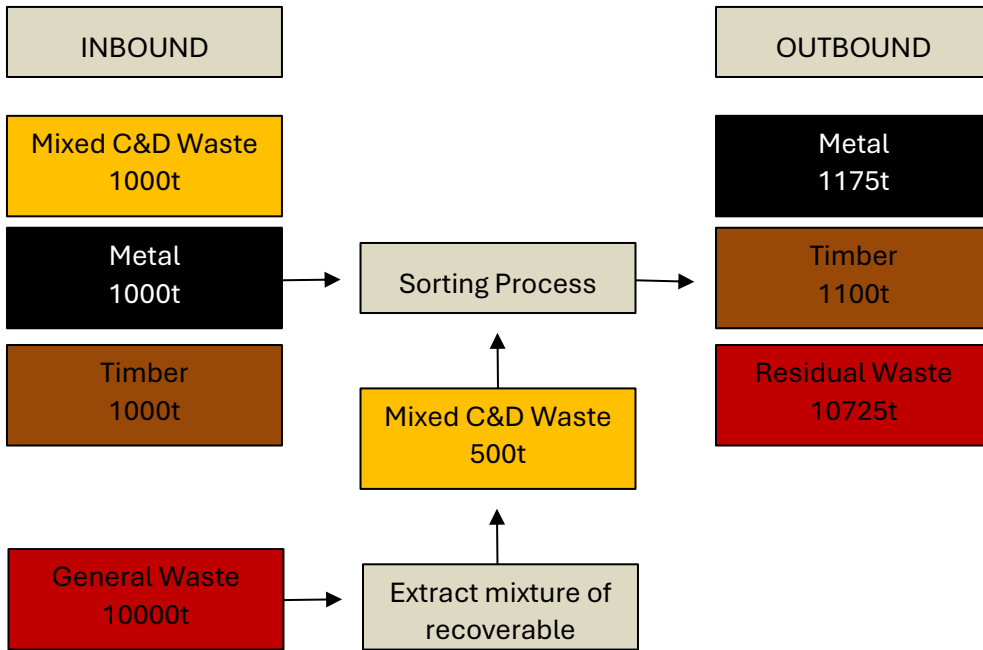
destined for disposal should be rewarded, but the previous v1.1 Reporting Criteria did not directly cover this type of process, the result of which required the facility to include the inbound general waste into the mass balance diversion calculation. This negatively affected the facility's overall recovery rate, and disincentivised any facilities trying to recover more materials - a negative outcome for New Zealand.

The new Reporting Criteria in this document no longer disincentivises this process, as it is only the diversion rate from sorting mixed C&D waste that is utilised for customer reporting and not the overall diversion of the hybrid facility. However, it is the responsibility of the applicant to ensure that data and tonnage associated with the materials recovered out of the general waste is not merged with data used for calculating the CDSF's mixed C&D diversion rate.



$$Recovery\ rate = \frac{(1100 - (0.95 \times 1000)) + (1050 - (0.95 \times 1000))}{1000} = 0.25$$

The only exception to this is if a mixture of materials is pulled from the general waste and placed into a mixed bin (i.e. metal + timber + residual) to create a mixed C&D waste stream, which is then processed by the CDSF as an inbound mixed C&D load. The applicant will need to provide very clear and concise processes for the SQA to approve this process and ensure its transparency and legitimacy.



$$Recovery\ rate = \frac{(1175 - (0.95 \times 1000)) + (1100 - (0.95 \times 1000))}{1500} = 0.25$$

Note: The recovery tonnages created from the 5% allowance for contamination within inbound single stream loads will need to be capped. This is important, as it will over-inflate the reportable recovery rate from mixed C&D waste processing if the CDSF or Hybrid Facility processes a higher proportion of single stream vs mixed C&D waste.

It is the duty of the applicant to ensure that no more than a 5% increase in reportable recovery rate is added when comparing the calculation of (1) no contamination used in the equation vs (2) a 5% contamination factor.

Once a CDSF exceeds the processing ratio of single stream to mixed C&D waste of 50:50, the utilisation of a 5% contamination factor will increase the reportable recovery rate by 5%.

Example: CDSF with ratio of 50:50

| Recovery Rate (0% cont rate) | Recovery Rate (incl 5% cont rate) | Compliant |
|------------------------------|-----------------------------------|-----------|
| 20%                          | 25%                               | Yes       |
| 25%                          | 30%                               | Yes       |
| 30%                          | 35%                               | Yes       |
| 40%                          | 45%                               | Yes       |
| 50%                          | 55%                               | Yes       |