



New Zealand Green Star Construction & Demolition Waste Reporting Criteria

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Version	Release Date	Description of Changes
1.0	21 June 2013	First release
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Executive Summary

This document details the reporting criteria and auditor requirements which accompany the Construction and Demolition Waste credit in Green Star rating tools released in New Zealand in 2019 (Green Star Design and As Built NZ and Interiors NZ).

Numerous representatives of the Construction and Demolition waste industry here in New Zealand were interviewed and consulted to create this update to the GBCA Waste Reporting Criteria document to make it specific to the New Zealand market.

All Green Star rating tools include a Construction and Demolition Waste credit which aims to encourage and reward management practices that minimise the amount of construction and demolition waste from base building and/or interior fitout works that is disposed to landfill. The credit requires the use of waste contractors and waste processing facilities that have been independently verified for compliance with minimum standards of reporting. The introduction of such compliance standards and checks aims to ensure contractors and facilities are operating with environmentally responsible due diligence on behalf of Green Star projects.

Verification of compliance with these reporting criteria would be carried out by 'Suitably Qualified Auditors' who are engaged directly by a Green Star project applicant's waste contractor/s and waste processing facilities. An auditor's report is to be provided to Green Star projects by the waste contractor as supporting evidence for the project's 'Construction and Demolition Waste' credit claim. Only waste reports that have been generated by waste contractors whose compliance has been verified will be accepted in a Green Star project's 'Construction and Demolition Waste' credit submission.

About the Green Building Council of Australia and Green Star

The Green Building Council of Australia (GBCA) is Australia's authority on sustainable buildings and communities. Their mission is to accelerate the transformation of Australia's built environment into one that is healthy, liveable, productive, resilient, and sustainable. They work together with industry and government to encourage policies and programs that support our mission. They educate thousands of people each year on how to design and deliver sustainable outcomes for Australian buildings and communities. And they operate Australia's only national, voluntary, holistic rating system for sustainable buildings and communities - Green Star.

Green Star was developed for the property industry in order to:

- Establish a common language;
- Set a standard of measurement for green buildings;
- Promote integrated, whole building design;
- Recognise environmental leadership;
- Identify building life-cycle impacts; and Raise awareness of green building benefits.

About the New Zealand Green Building Council

The New Zealand Green Building Council (NZGBC) is New Zealand's authority on sustainable buildings and communities. Our mission is "All homes and buildings in Aotearoa green and sustainable, making healthier, happier New Zealanders." Here at the New Zealand Green Building Council (NZGBC) we are passionate advocates for better buildings, because we know that better buildings mean healthier, happier Kiwis.

Created by the 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 management 'Reporting Criteria' (this document):

Applicant

Refers to the waste contractor and/or waste processing facility commissioning an evaluation by an auditor.

Cleanfill facility:

A cleanfill facility is a class 5 landfill that accepts virgin excavated natural material as defined by the WasteMinz Technical Guidelines for the Disposal to Land.

Cleanfill materials:

Cleanfill material includes virgin natural materials such as clay, soil and rock, and other inert materials such as concrete or brick as defined in section 4.2.1 of the Ministry for the Environment A Guide to the Management of Cleanfills (2002).

Construction and demolition waste

The waste material produced during the construction, renovation, demolition or deconstruction of buildings and their infrastructure. Construction and demolition waste materials typically include concrete, wood, metals, plasterboard, cardboard, plastics, asphalt, and mixed site debris like soil and rocks and excludes spoil/fill and hazardous and prescribed materials.

Compliance Verification Summary

A signed and dated document issued by a 'Suitably Qualified Auditor' that verifies and summarises the waste contractor's or waste processing facility's (auditee's) compliance with the Green Star 'Reporting Criteria'. A Compliance Verification Summary is valid for 12 months from the date of issue and covers all waste processing facility's operated by the waste contractor including new facility's put into use during the following 12 months and must be current for the duration of the time that an auditee provides waste services and waste reports to a Green Star project.

Disclosure Statement

Where waste contractors or waste processing facilities do not hold a 'Compliance Verification they shall, at a minimum, disclose to the project team how much of the Reporting Criteria has been implemented. The 'Disclosure Statement' will take the place of the 'Compliance Verification Summary' in the project team's submission.

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

Are criteria that establish the minimum acceptable standard of operations and reporting for waste contractors and waste processing facilities that provide services and reports to Green Star projects. Waste contractors and waste processing facilities that provide waste management and reporting services to Green Star projects must achieve independent verification of their compliance with the criteria. Such verification of compliance is a prerequisite for the recognition and acceptance of the waste reports that are provided within Green Star 'Construction and Demolition Waste' credit submissions.

Landfill

Refers to a site where waste materials are disposed of by way of burial between layers of soil. This includes class 1 to 5 landfills as defined by the WasteMinz Technical Guidelines for the Disposal to Land. Class 5 landfills are also known as cleanfill facilities.

Reprocessing facility

'Reprocessing facility' refers to businesses that trade in specific waste material types for the purpose of transforming (recycling) it into new products. Examples include metal, concrete, paper and plastic recyclers.

Residual Waste

Refers to the material remaining after the resource recovery process has taken place. In accordance with waste hierarchy principles, this remaining material has no other viable fate than to be used as fuel for energy recovery or committed to landfill.

Suitably Qualified Auditor

Refers to an auditor who has the relevant knowledge, skills and experience necessary to provide advice to applicants on the issues addressed in the Reporting Criteria. Auditors 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 auditor). They must also provide evidence of their qualifications as defined in this document. See the “Auditor Competencies and Responsibilities” section of this document for further information.

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 construction and demolition waste from a construction site to direct to a reprocessing facility, to waste processing facilities, or landfills. Waste contractors must provide their customers with reports on the contents, dates, volumes or weights of construction and demolition waste, as well as the waste processing facility destinations and registration numbers of the vehicles transporting waste from the site to processing facilities.

Waste Processing Facility

Is a lawfully operating facility that receives construction and demolition waste for processing. The facility recovers recyclable materials from the waste stream, including for energy, thereby minimising the amount of residual waste committed to landfill. Waste processing facilities include resource recovery facilities, transfer stations where waste is sorted. Reprocessing facilities are NOT included in this definition. Any of the above listed facilities operating on the same site as a landfill are included under this definition; however, landfill itself is not.

Weighing Systems

This would include weighbridges or alternative systems which would give quantitative data related to the weight of different types of waste products from a waste processing facility, reprocessing facility, or landfill. Alternatives to weighbridges at the company’s location include the following options:

- 1) Using another nearby organisation’s weighbridge (e.g., Concrete batching plants/asphalt producers),
- 2) Using vehicles with systems to measure loading weight (rather than total vehicle weight),
- 3) sensors positioned on the vehicle’s suspension,
- 4) portable axle scales.

Before waste is generated at the project site, the above alternatives or similar alternatives should be approved with NZGBC via a Technical Query.

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 auditable pathways to ensure:

1. Waste Contractors (transport and handlers) servicing Green Star buildings: Provide accurate
 - reporting on waste collection and diversion from landfill; and
 - Take all of a project's construction and demolition waste to a waste processing facility that meet the Reporting Criteria, or to a reprocessing facility or a landfill, or a waste reprocessing facility.

2. Waste processing facilities that accept Green Star project construction and demolition waste:
 - Operate legally with Council approvals for waste collectors and operators of waste management facilities, required resource recovery facilities and donation collection bins, including approval applications and conditions, consents all relevant activity and discharge consents; and
 - Have auditable systems in place to prepare accurate reports on inbound and outbound waste; and
 - Undertake annual reporting of the independently verified gross diversion rates of waste from landfill, and the percentage of residual waste committed to landfill from their operations.

INTERIM PERIOD

A 12-month interim period for establishing compliance with the Reporting Criteria commenced with the release of this Reporting Criteria document on 08 October 2021. Allowances for interim measures are provided for some, but not all criteria. The Reporting Criteria list which components are subject to such allowances.

In the interim period waste contractors and waste processing facilities which do not have a Compliance Verification Summary shall, at a minimum, disclose to the project team how much of this Reporting Criteria has been implemented. The Disclosure Statement documents can be found on the NZGBC website. It is expected waste contractors and waste processing facilities will fill out the Disclosure Statement form in good faith and will show how they will be fully compliant with the Reporting Criteria in 12 months. A Disclosure Statement can only be used once.

During the 12-month interim period, non-conformities and corrective actions issued by the auditor in relation to the compliance requirement of some criteria will be accepted on the basis of a signed 'Interim Measure Declaration' from the applicant containing the following:

- 1) Where reporting systems are insufficient or non-existent, but where equipment certification or enough historical data exist to carry out thorough evaluation of compliance with a criterion, the auditor may issue a corrective action to resolve the situation. The criterion will assume the status of 'Interim Period Pending Compliance' and be stated as such on the applicant's Compliance Verification Summary during the interim period. Interim Measure Declarations must be provided on official company letterhead, be signed by a company senior executive and containing the following:
 - each non-conformance and corrective action, as issued by the auditor;
 - a statement that the non-conformances and corrective actions are understood by the applicant and that the corrective actions must be affected before the end of the interim

period;

- the steps the applicant commits to undertake in order to institute the corrective action(s);
- the timeframe in which the corrective actions will be implemented and confirmed through a re-audit of the outstanding matter; and
- a confirmation that the applicant understands that the consequences of not implementing all corrective actions, and the verification of such, by way of a re-audit before the end of the interim period, will be a ruling of non-compliance with the Reporting Criteria, meaning Green Star projects may no longer use their services.

- 2) During the interim period, and while corrective actions remain outstanding, the applicant's Interim Measure Declaration must be attached to the Compliance Verification Summary that they provide to Green Star customers.

Waste Contractors

CRITERION AIM

To ensure that the waste contractors that service Green Star building sites provide accurate reports on both the amount of construction and demolition waste removed from site and where such waste is disposed.

COMPLIANCE REQUIREMENT

The waste contractor must provide accurate monthly and cumulative waste reports that detail both the total weight of waste removed from their customers' construction sites, as well as the destination (waste processing facilities, reprocessing facilities, and landfills) where all loads are disposed. Reporting accuracy must be within an average five per cent margin of error.

AUDITOR VERIFICATION GUIDANCE

Auditors should verify compliance by sampling customer records for at least three medium to large size job sites (select Green Star projects if available). The two-part methodology set out below should be used to determine the accuracy of a waste contractor's reporting practices. Worked examples of the calculation methodology to determine reporting accuracy are provided for parts I and II. It is the Waste Contractor's responsibility to collate and present all inbound waste dockets forwarded by waste processing facilities.

In order to award compliance with the criterion, the average percentage variation findings for both Part I and Part II must be within a five per cent margin of error.

Collecting audit documentation:

1. Choose a three-month sample operating period or 50 records covering a continuous period where less than 50 records have been generated in any continuous three months period, for each job site;
2. Obtain copies of waste contractor's waste reports to customer for sample periods;
3. Obtain waste contractor's disposal docket records for sample jobs over sample periods;
4. Obtain copies of the corresponding inbound waste dockets from the waste processing facilities for sample jobs over sample periods; and
5. Where the contractor waste report provides waste disposal figures in volume, but disposal dockets are reported in weight, the auditor must convert results to mass using the same volume-to-mass conversion factors applied by the contractor or receiving facility. The contractor and auditor are encouraged to use Table 22.2: Waste Volume to Weight Conversion Factors found in the Design and As Built Construction and Demolition credit.

Visual assessment of commingled construction-waste

On occasion projects choose to commingle construction waste in a single bin as waste facilities do not have the infrastructure or capacity to sort and weigh materials on a per bin project basis. In these instances, the contractor must complete a visual assessment of the commingled construction waste arriving at a waste processing facility. This methodology is acceptable provided that:

1. Assessors are suitably trained to correctly define the split between waste to landfill and diverted recyclable material as evidenced by initial and ongoing training documentation.
2. The total diversion percentage established from the visual assessment during the audit period must be within $\pm 5\%$ of a waste processing facility diversion rate as defined in the Waste Processing Facility Criterion 3 for the same period.

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 frontload or wheelie bin services). Contractors can only provide these services to Green Star project if they have waste truck scales on the bin lifter in accordance with the following approach:

1. use scales on the bin lifter to measure the net weight of the bin provided that:
 - a. the scales are zeroed daily; and
 - b. commission an 'Annual Calibration Check' performed by an independent third party to check the accuracy of the scales.
2. If there is an error capturing the weight, the contractor may:
 - a. supply an average weight for the bin generated using historic collections for that bin for that project; or
 - b. supply a weight generated using the weight-volume conversions.

MULTIPLE LOCATION WASTE CONTRACTOR COMPANY AUDITING PROTOCOL

In the interest in encouraging the uptake of the Reporting Criteria while allowing some flexibility, companies which have more than one area of operations may use the following protocol for determining the number and location of random sampling of their sites for audits.

- 1) Select sites for inclusion in verification assessment. This number is the population total.
- 2) If sites activities vary, separate into subgroups and treat each group as a separate population total. E.g., mass balance sites vs sites which weigh skips to send direct to reprocessing facilities vs sites visually assessed.
- 3) To calculate the sample size for actual site visits, take the square root of the population total and round up; shared amongst the site activities as decided by the auditor in discussion with the auditee.
- 4) If the sites are found to be lower risk, future sample size calculations may be reduced by rounding down.

PART I: COMPARING CUSTOMERS' WASTE REPORTS WITH WASTE CONTRACTOR'S DISPOSAL DOCKETS:

1. Compare the waste disposal weight totals stated in the waste reports issued to customers against the waste contractor's disposal docket weight totals for each sample job;
2. Check that the waste processing facilities stated in the waste reports correspond with the waste processing facilities used by the waste contractor(s), as evidenced by the disposal dockets. Also check that the amounts disposed correspond with the amounts stated in the customer's waste report;
3. Record variations in the respective totals for each sampled job as a percentage of the difference to the total reported to the customer. Average the percentages and state if the variation in reporting for each sample job complies with the five per cent margin of error allowance. Where major discrepancies in the reporting arise (for example where dockets show waste disposed at facilities not reported to customer or no disposal dockets are provided to support figures in customer waste reports) then the discrepant amount should be carried forward as a whole and added to the total's component of the 'Kg Variation in Comparison of Records' column. This figure will be used in the percentage variation calculation for that sample job (see example below for clarification); and

Sample Job 1	Sample Period Reported Total Waste disposed	Sample Period Disposal Dockets totals	kg Variation in comparison of records	Percentage Variation in total reported to docket records
Waste Processing Facility 1	2500 kg	1800 kg	-700 kg	-38.89%
Concrete & Brick Recycler	4000 kg	2950 kg	-1050 kg	-35.60%
Waste Processing Facility 2	3166 kg	2800 kg	-366 kg	-13.1%
Back Yard Boys Waste Disposal	not reported	2616 kg	2616 kg	100%
Plasterboard Recycler	2500 kg	2000 kg	-500 kg	-25%
TOTAL DISPOSED	12166 kg	12166 kg	0 kg 2616 kg	0% -27.39%
Percentage variation between reported totals and disposal records of corresponding totals				0% -27.39%

Non-Compliant reporting issue! See guidance item Part I (c) for protocol

Non-Compliant reporting accuracy margin of error

Sample Job 2	Sample Period Reported Total Waste disposed	Sample Period Disposal Dockets totals	kg Variation in comparison of records	Percentage Variation in total reported to docket records
Waste Processing Facility 1	3000 kg	2900 kg	-100 kg	-3.45%
Concrete Recycler	3000 kg	3000 kg	0 kg	0%
Waste Processing Facility 2	3000 kg	2850 kg	-150 kg	-5.26%
Metal Recycler	1000 kg	900 kg	-100 kg	-11%
TOTAL DISPOSED	10000 kg	9650 kg	-350 kg	-3.63
Percentage variation between reported totals and disposal records of corresponding totals				-3.63%

Compliant reporting accuracy margin of error

Sample Job 3	Sample Period Reported Total Waste disposed	Sample Period Disposal Dockets totals	kg Variation in comparison of records	Percentage Variation in total reported to docket records
Waste Processing Facility 1	2122 kg	2000 kg	-122 kg	-6.1%
Concrete Recycler	500 kg	600 kg	100 kg	16.67%
Waste Processing Facility 2	3500 kg	2900 kg	-600 kg	-23.1%
TOTAL DISPOSED	6122 kg	5500 kg	-622 kg	-11.31%
Percentage variation between reported totals and disposal records of corresponding totals				-11.31%

Non-Compliant reporting accuracy margin of error

- Take the average percentage variations in reporting from each sample job and state whether or not the average variation of all sampled jobs complies with the five per cent margin of error allowance. This figure determines the applicant's compliance with part II of the criterion.

	Sample Period Reported Total Waste disposed	Sample Period Disposal Dockets totals	kg Variation in comparison of records	Percentage Variation in total reported to docket records
Sample Job 1	12166 kg	9550 kg	-2616 kg	-27.39%
Sample Job 2	10000 kg	9650 kg	-350 kg	-3.63%
Sample Job 3	6122 kg	5500 kg	-622 kg	-11.31%
Average percentage variation between reported totals and disposal records of corresponding totals				-14.11%

Non-Compliant reporting accuracy margin of error

PART II: COMPARING WASTE CONTRACTOR'S DISPOSAL DOCKETS WITH WASTE PROCESSING FACILITY RECORDS:

- Compare the waste contractor's disposal docket weight totals for each sample job against the corresponding inbound waste dockets from the waste processing facilities for the sample jobs over the sample periods;
- Record variations in the respective totals for each sampled job as a percentage of the difference to the total waste received as reported in the waste processing facilities records.

Average the percentages and state if the variation complies with the five per cent margin of error allowance. Where major discrepancies in the reporting arise (for example where waste processing facility records do not exist or cannot be obtained to support a waste contractor's docket) then the discrepant amount shall be carried forward as a whole and added to the total's component of the 'Kg variation in WC Dockets and WPF Records' column. This figure will be used in the percentage variation calculation for that sample job (see the example calculation for Sample Job 1 below for clarification); and

Sample Job 1	Sample Period WC Disposal Dockets totals	Sample Period WPF Receiving Dockets totals	kg Variation in WC Dockets & WPF records	Percentage Variation in total WC docket to WPF records
Waste Processing Facility 1	1800 kg	1800 kg	0 kg	0%
Concrete & Brick Recycler	2950 kg	2950 kg	0 kg	0%
Waste Processing Facility 2	2800 kg	2800 kg	0 kg	0%
Back Yard Boys Waste Disposal	2616 kg	no record	-2616 kg	100%
Plasterboard Recycler	2000 kg	2000 kg	0 kg	0%
TOTAL DISPOSED	12166 kg	9550	-2616 kg	-27.39%
Percentage variation between reported totals and disposal records of corresponding totals				-27.39%

Non-Compliant reporting issue! See guidance item Part II (b) for protocol

Non-Compliant reporting accuracy margin of error

Sample Job 2	Sample Period WC Disposal Dockets totals	Sample Period WPF Receiving Dockets totals	kg Variation in comparison of records	Percentage Variation in total WC docket to WPF records
Waste Processing Facility 1	2900 kg	2900 kg	0 kg	0%
Concrete Recycler	3000 kg	3000 kg	0 kg	0%
Waste Processing Facility 2	2850 kg	2500 kg	-350 kg	-14%
Metal Recycler	900 kg	900 kg	0 kg	0%
TOTAL DISPOSED	9650 kg	9300 kg	-350 kg	-3.76%
Percentage variation between reported totals and disposal records of corresponding totals				-3.76%

Compliant reporting accuracy margin of error

Sample Job 3	Sample Period WC Disposal Dockets totals	Sample Period WPF Receiving Dockets totals	kg Variation in comparison of records	Percentage Variation in total WC docket to WPF records
Waste Processing Facility 1	2000 kg	2000 kg	0 kg	0%
Concrete Recycler	600 kg	600 kg	0 kg	0%
Waste Processing Facility 2	2900 kg	2900 kg	0 kg	0%
TOTAL DISPOSED	5500 kg	5500 kg	0 kg	0%
Percentage variation between reported totals and disposal records of corresponding totals				0%

Compliant reporting accuracy margin of error

3. Take the average percentage variations in reporting from each sample job and state whether or not the average variation of all sampled jobs complies with the five per cent margin of error allowance. This figure below determines the applicant's compliance with Part II of the criterion.

	Sample Period WC Disposal Dockets totals	Sample Period WPF Receiving Dockets totals	kg Variation in comparison of records	Percentage Variation in total WC docket to WPF records
Sample Job 1	12166 kg	9550 kg	-2616 kg	-27.39%
Sample Job 2	10000 kg	9650 kg	-350 kg	-3.76%
Sample Job 3	5500 kg	5500 kg	0 kg	0%
Average percentage variation between reported totals and disposal records of corresponding totals				-10.38%

Non-Compliant reporting accuracy margin of error

SUMMARISING FINDINGS FROM REPORTING ACCURACY AUDIT AND AWARDING CRITERION COMPLIANCE:

In order to award compliance with the criterion, the average percentage variation findings for both Part I and Part II must be within the five per cent margin of error allowance.

In the example calculation, the applicant's records for the audited sample jobs and periods were found to exceed the five per cent error margin allowance. Therefore, in this example, the applicant is non-compliant with the criterion.

Part I	Part II
Average Percentage Variation in Reporting Accuracy between Customers' Waste Reports and Waste Contractor's Disposal Dockets	Average Percentage Variation in Reporting Waste Contractor's Disposal Dockets and Waste Processing Facility Receiving Records
-14.11%	-10.38%

INTERIM MEASURE

There are no interim measures available for this criterion.

COMPACTION SERVICE ACCURACY

To award compliance with the requirements for compaction service accuracy the auditor must:

- Sight standard operating procedures that detail the steps
- Verify the scales on trucks used or the audited projects have been calibrated by an independent third party within the last 12 months.

VISUAL ASSESSMENT ACCURACY

To award compliance with the requirements for visual assessment accuracy the auditor must:

- Sight evidence of suitable training materials and certificates of completion for the assessors for each waste processing facility
- Calculate the average gross diversion rates of input waste from landfill by visual assessment for a three-month period (sum of gross diversion rates of input waste from landfill published in the monthly customer reporting divided by the total number of projects)

$$\frac{\text{Project 1 Diversion Rate} + \text{Project 2 Diversion Rate} + \text{Project 3 Diversion Rate}}{\text{Total Number of Projects (3)}}$$
- Calculate the actual average gross diversion rates of input waste from landfill for the entire facility as outlined in Waste Processing Facilities: Criterion Three)
- Subtract the actual diversion rate with the visual assessment diversion rate. To award compliance the result must be $\pm 5\%$.
- This approach will only be considered if such a process has been proven by a third-party auditor before going forward and will be reassessed on an annual basis. If it is determined the variation is beyond 5% the facility will stop using this procedure and return to the standard procedure using weighbridges only.

	Month 1	Month 2	Month 3	Average
Project 1 (visual)	75%	73%	80%	76%
Project 2 (visual)	69%	85%	75%	76.3%
Project 3 (visual)	74%	76%	77%	75.7%
Total Visual Assessment 3-month average				76%
Total facility (actual)	71%	75%	77%	74.3%
Difference between visual and actual 3-month average				1.7%

Compliant reporting accuracy margin of error

Waste Processing Facilities: Criterion One

CRITERION AIM

To ensure that waste processing facilities servicing Green Star building sites are legitimately operating businesses that are recognised by the relevant regulatory authorities.

COMPLIANCE REQUIREMENT

The waste processing facility must hold resource consent for the activities it undertakes (for example storage, handling, transfer or processing of construction and demolition waste) and be meeting the requirements of those consents. This may include approved licenses issued by Council or activity/discharge consents Resource Consents Local Authority.

AUDITOR VERIFICATION GUIDANCE

Compliance should be verified by undertaking the following steps:

1. Sight the facility's licenses or resource consent; and
2. Confirm the obligations under those approvals resource are current and conditions are complied with to the extent relevant to the scope of the verification.

Non-conformances for this criterion are not permitted. Corrective actions may be issued by the auditor but shall result in criterion non-compliance until the corrective action has been verified by the auditor.

In some areas specific licensing for the storage, handling, transfer and processing of construction and demolition waste may not be required. The auditor should seek independent confirmation that such licensing requirements do not exist.

MULTIPLE LOCATION WASTE PROCESSING COMPANY AUDITING PROTOCOL

In the interest in encouraging the uptake of the Reporting Criteria while allowing some flexibility, companies which have more than one area of operations may use the following protocol for determining the number and location of the random sampling of their sites for audits.

- 1) Select sites for inclusion in verification assessment. This number is the population total.
- 2) If sites activities vary, separate into subgroups and treat each group as a separate population total. E.g., mass balance sites vs sites which weigh skips to send direct to reprocessing facilities vs sites visually assessed.
- 3) To calculate the sample size for actual site visits, take the square root of the population total and round up; shared amongst the site activities as decided by the auditor in discussion with the auditee.
- 4) If the sites are found to be lower risk, future sample size calculations may be reduced by rounding down.

INTERIM MEASURE

There are no interim measures available for this criterion.

Waste Processing Facilities: Criterion Two

CRITERION AIM

To ensure that waste processing facilities servicing Green Star building sites have the capacity to prepare accurate reports on the source and fate of all inbound waste received as well as all outbound waste diverted from and to landfill.

COMPLIANCE REQUIREMENTS

All of the following requirements to support auditable and accurate reporting systems must be met to comply with this criterion:

Requirement 1 - Clear separation of waste processing facility from landfill:

Waste processing facilities must operate as a separate facility to landfill. Where the waste processing facility is located on the same site as a landfill then access between the waste processing facility and landfill must be clearly separated (for example by controlled road access, fences or weighbridges). This separation ensures all waste input, as well as recyclables and residual waste outputs, are clearly traceable to and from the waste processing facility and reported separately from general solid waste landfill inputs not passing through the waste processing facility's resource recovery process.

Requirement 2 - Clear tracking system to separate residual waste from recyclables (weighbridge):

The waste processing facility must have at least one weighbridge to quantify and provide an auditable trail for weights of inbound waste as well as weights of outbound recyclables and residuals. If the waste processing facility is located on the same site as a landfill, then it must have separate weighbridge receipts. If the auditor cannot verify to their satisfaction that there is clear separation of recycling from residual, compliance with this criterion cannot be awarded.

Requirement 3 - Certified weighbridge and operational procedures:

The waste processing facility must hold a current weighbridge maintenance certificate (certified annually) for the use of an appropriate weighbridge ensuring the weighbridge is fit for purpose and regularly maintained. The facility must also have weighbridge operational procedures in place to create and maintain weighbridge records on the following information for waste materials received, outgoing recyclables and residual waste:

- vehicle registration and date and time received;
- weight of vehicle and material incoming;
- source of material incoming (for example customer numbers);
- weight of vehicle and material outgoing;
- fate of material outgoing (by product type, including residual waste to energy recovery or landfill and the entity/customer removing it); and
- any rejected loads.

If a waste processing facility does not have a weighbridge, they will have to demonstrate to the Suitably Qualified Auditor how the weights of waste are calculated. As mentioned in the definition section under "Weighing Systems" the accepted alternatives are:

- 1) Using another nearby organisation's weighbridge (e.g., Concrete batching plants/asphalt producers),
- 2) Using vehicles with systems to measure loading weight (rather than total vehicle weight),
- 3) sensors positioned on the vehicle's suspension,
- 4) portable axle scales.

Before waste is generated at the project site, the above alternatives or similar alternatives should be approved with NZGBC via a Technical Query.

Requirement 4 -Source and fate of inbound and outbound waste:

The waste processing facilities must be able to account for the source of all inbound waste and fate of all outbound recyclables and residual waste.

GUIDANCE

The key issue that this criterion attempts to address is assurance of a clear and quantifiable percentage of diversion of waste from landfill back to productive reuse. Paramount to this outcome is clear separation and accountability for the weights of outbound recyclables and residuals. The transparency of reports generated by a single weighbridge that is shared between a waste processing facility and landfill operation is questionable and difficult to audit thereby potentially compromising the accuracy of a waste processing facility's waste diversion rate claims.

Where a waste processing facility is located on a landfill site, best practice operation includes the separation of weighbridges and access points for the respective landfill and recycling facilities. However, there are operational protocols and computer systems that can be implemented to better control separation and produce separable weighbridge receipts from a single weighbridge that is shared between landfill and waste processing facilities.

Figure 1. below provides an illustrated example of best practice operation of a waste processing facility which operates on a landfill site, as well as the intent of this criterion's guidance on the source and fate of waste inputs and recycled/residual outputs described in the compliance requirements.

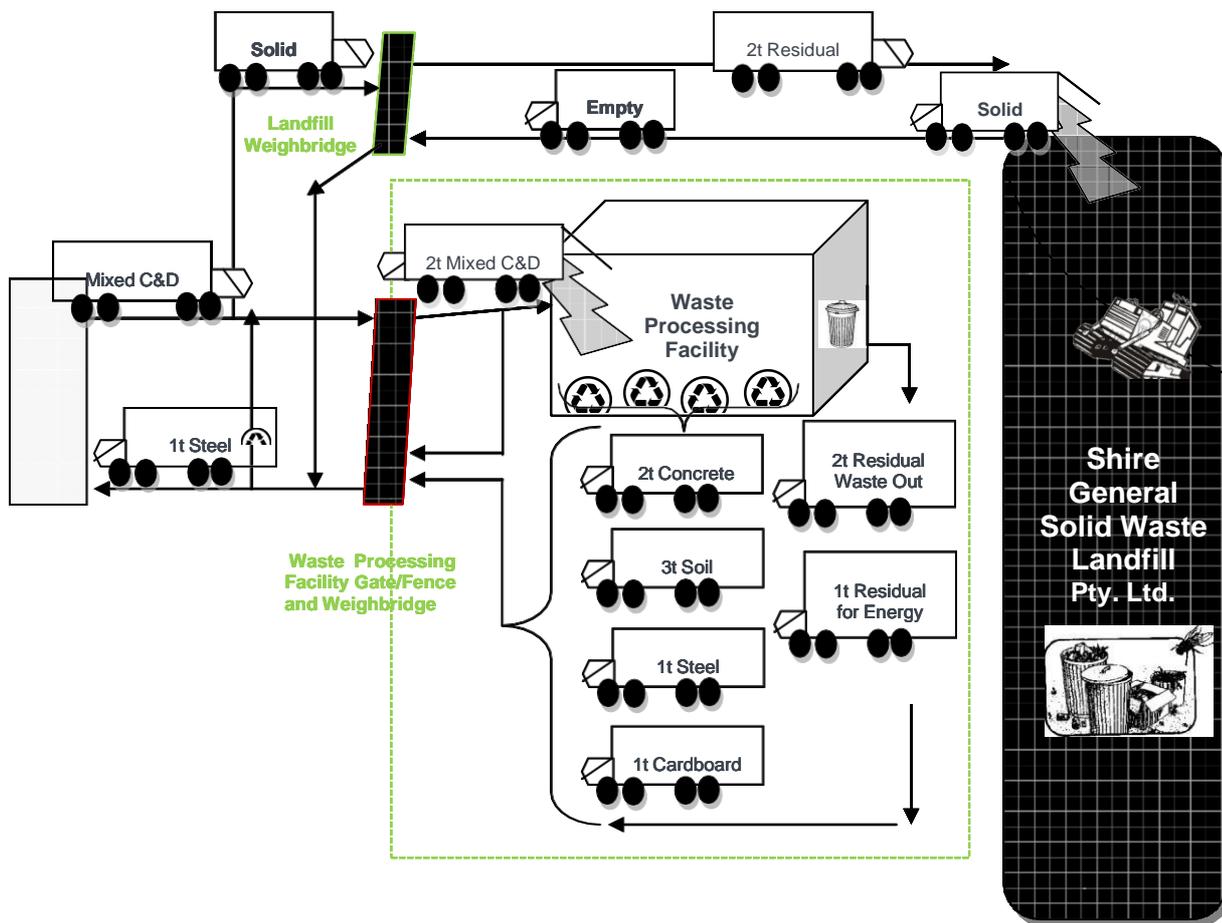


Figure 1. Separately operating waste processing facility on a shared landfill site with clear tracking of waste inputs and recycled / residual outputs by source and fate.

AUDITOR VERIFICATION GUIDANCE

Compliance should be verified by undertaking the following steps (see notes on non-conformance allowances in 'Interim Measures' section):

1. Ensure there is clear separation of waste processing facility from landfill:

Verify that the applicant waste processing facility operates as a 'separate facility' from adjacent landfill operations in accordance with the intent of Requirement 1 of Criterion Two.

2. Ensure there is a clear tracking system to separate residual waste from recyclables (weighbridge):

To award compliance with this component of the criterion, the auditor must verify that there is clear separation of recycling from residual as follows:

- Verify that the applicant has an acceptable weighing system; and
- Verify that the applicant is able to quantify and provide an auditable trail for weights of waste into as well as recyclables and residuals out of the waste processing facility.

If the site includes a landfill, in addition to the above, the auditor must verify that the applicant has the capability to:

- a) Produce separate weighbridge receipts for landfill and recycling operations by having separate weighbridges in place and in operation; or
- b) Effectively control the separation of recyclables and residual waste through existing operational protocols and technologies which enable the production of separate weighbridge receipts where a single weighbridge is shared between the waste processing facility and landfill.

3. Verify the certification of weighing system and operational procedures (for both on-site and off-site weighing systems):

- a) Sight the applicant's weighbridge maintenance certificate(s);
- b) Ensure that the certificate is current and valid and that there is evidence of annual maintenance certification; and
- c) Verify that the applicant has weighbridge operational procedure(s) in place that address, at a minimum, the weighbridge operational procedures listed in Requirement 2 of Criterion Two.

4. Verify the Source and Fate of Inbound and Outbound Waste

- a) Where applicants are awarded compliance with requirement of Requirement 3 of Criterion Two, then compliance with Requirement 4 of Criterion Two can be fulfilled on a deemed-to-satisfy basis at the auditor's discretion; and
- b) Deemed-to-satisfy compliance shall be awarded on the basis that the weighbridge operational procedures outlined in Requirement 3 of Criterion Two establish sufficient record keeping protocols to facilitate the production of detailed reporting on the source and fate of the waste processing facilities' inbound and outbound waste. Where the auditor deems that this is not the case, they may issue corrective actions as they see fit to ensure that the intent of the criterion is satisfied.

INTERIM MEASURE ALLOWANCES

Interim measure allowances are provided for Requirements 2 and 3 of Criterion Two, on the basis that they are major infrastructure and system requirements upon which all other subsequent reporting and performance measures associated with the reporting criteria rely.

Facilities that comply with Requirements 1 and 2, but not with Requirements 3 and 4 of Criteria Two could still provide services to Green Star projects during the interim period. Waste processing facilities failing to comply with Requirements 1 and 2 may implement corrective actions and undergo re-audits during the interim.

Please refer to the 'Interim Measure' section of this document for full details of what is required of the applicant and auditor to claim interim measure allowances.

Waste Processing Facilities: Criterion Three

Rates of Waste Diversion and Residual Waste Committed to Landfill

CRITERION AIM:

To encourage waste processing facilities that service Green Star building sites to provide independently verified publicly available reports on the percentages of gross waste diversion from landfill and residual waste committed to landfill on an annual basis.

COMPLIANCE REQUIREMENTS:

Requirement 1 - The waste processing facility must undergo an independent annual facility-wide audit to establish and verify its:

- a) Gross diversion rates of input waste from landfill; and
- b) Percentage of residual waste output that is committed to landfill.

Requirement 2 - The waste processing facility must make these performance figures publicly available or, at a minimum, make them easily available upon request from Green Star customers or waste contractors acting on behalf of Green Star projects.

GUIDANCE

General Note: This criterion directly supports Green Star 'Construction and Demolition Waste' credit submission claims by providing builders, head contractors and Green Star Accredited Professionals (GSAPs) with publicly available and independently verified data regarding the diversion rates and residual waste contributions to landfill from specific waste processing facilities.

AUDITOR VERIFICATION GUIDANCE

Auditors must determine a facility's annual gross diversion rate of input waste from landfill and annual percentage of residual waste output committed to landfill by examining the applicant's cumulative waste balance reports. Assess these reports by cross checking:

- the quantities of inbound material;
- the quantities of recovered/reprocessed/recycled materials diverted from landfill; and
- the quantities of outbound residual waste sent to landfill.

Compliance with this criterion cannot be awarded where insufficient data or reporting procedures exist to determine the facility's annual gross diversion rates of input waste from landfill and annual percentage of residual waste output committed to landfill.

INTERIM MEASURE

An interim measure allowance is available for compliance Requirement 1 in this criterion. This interim measure is provided on the basis that some of these operators may not have sufficient systems in place to produce reliable waste balance reports because they have never before been required to generate such reports on a regular basis.

Where data or reporting procedures are insufficient to determine a reprocessing facility's annual percentage of residual waste output committed to landfill, then a default value of 50 per cent waste diversion to landfill may be awarded until the end of the interim period, or until the applicant can provide at least six months of operational waste balance data to the auditor for a re-audit of the criterion. Please refer to the 'Interim Measures' section for full details of what is required of the applicant and auditor to claim this interim measure allowance.

Auditor Competencies and Responsibilities

AUDITOR QUALIFICATIONS

Verification of compliance with the Reporting Criteria must be carried out by Suitably Qualified Auditors who are engaged directly by the waste contractors and waste processing facilities (Applicants).

Suitably Qualified Auditor – refers to an auditor who has the relevant knowledge, skills and experience to provide advice to applicants on the issues addressed in these Reporting Criteria. Auditors must be independent from and have no conflicts of interest with applicants (i.e., they must be an external, independent, third-party auditor). They must also provide evidence of their qualifications in one of the following ways:

Certification

- The auditor must be an approved ISO 14001 Auditor at the time of audit (or similar alternative qualification may be submitted for pre-approval by NZGBC e.g., Enviromark Diamond approved Auditor); and

OR

Qualifications Statement

- The auditor must demonstrate their professional skills, knowledge and experience in waste management in a 'Qualifications Statement' that provides affirmative responses to all of the questions listed below.
- The auditors' responses to the following questions shall be used by the applicant and, in some cases Green Star Certified Assessors, to determine the suitability of their qualifications for the purposes of carrying out audits against the Reporting Criteria:
 1. Knowledge: Can the person demonstrate they have relevant knowledge in waste management or environmental compliance auditing 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. Competency: Has the person worked in the waste management industry, with waste processing facilities of like size and structure or dealt with similar issues as those addressed in the criteria?
 3. Reputation: Is the person reputable and able to provide referees who can attest to the quality and utility of their work?
 4. Legislative understanding: Is the person familiar with local waste legislation?

CONFLICTS OF INTEREST

The auditor must have no conflicts of interest with applicant companies, or the auditor must report any potential conflict of interest. Any issues that may be construed as a potential conflict of interest must be disclosed in the audit report and Compliance Verification Summary. An explanation must also be provided that clearly demonstrates the independence of the services provided by the auditor 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 auditor must disclose all such auditing relationships in the Compliance Verification Summary.

COMPLIANCE VERIFICATION SUMMARY

The Compliance Verification Summary is the auditor's primary deliverable to the applicant. This document is issued by a Suitably Qualified Auditor and verifies and summarises the applicant waste contractor or waste processing facility'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. Compliance Verification Summaries 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-conformance is identified;
- be signed and dated by the auditor; and
- include a copy of the auditor's ISO 14001 Certification and CV or Qualification Statement.

Applicant's Responsibilities

APPOINTING AN AUDITOR

It is the responsibility of the applicant to ensure that the auditor they appoint complies with the definition of Suitably Qualified Auditor, as provided in the 'Auditor Qualifications' section above.

Prior to appointing an auditor, the applicant should obtain a copy of the auditor's certification and brief CV demonstrating that individual's experience in the waste sector, or Qualification Statement, and make an assessment of the auditor's qualifications against the Auditor Competency and Responsibilities requirements.

Auditors must be given access to any records, facilities and staff that they deem necessary to carry out the audit and audits must be conducted at every 12 months as a minimum.

It is appropriate to ensure relevant auditor competencies via clauses in waste contracts.

WASTE CONTRACTOR RESPONSIBILITY

Waste contractors hired to provide waste management and reporting services to a Green Star project must provide the head contractor or Green Star consultant with a copy of their Compliance Verification Summary. They must also ensure that the waste processing facilities they plan to use for disposal of the construction and demolition waste from the Green Star building's construction site hold current valid Compliance Verification Summaries.

NZGBC recommends that waste contractors keep a record of all Compliance Verification Summaries from all waste processing facilities used for the Green Star project they are engaged to service and that these records are provided to the head contractor or Green Star consultant as early as possible after engagement by the project.

Compliance Verification Summaries will be used by Green Star project teams, along with regular waste reports from the waste contractor, as supporting evidence for the project's 'Construction and Demolition Waste' credit claim. Only waste reports generated by compliant waste contractors and waste processing facilities will be accepted.

NO DIRECT NZGBC INVOLVEMENT WITH AUDITOR SELECTION OR AUDITPROCESS:

In order to maintain transparency, the NZGBC will not provide confirmation that an auditor is suitably qualified. NZGBC must have no direct involvement in the application of the reporting criteria.

RESPONSIBILITY OF APPLICANT AND GREEN STAR BUILDING CONTRACTOR / GREEN STAR CONSULTANT

During the assessment of a Green Star building's 'Construction and Demolition Waste' credit, Green Star Certified Assessors will review the auditors' qualifications as attached to the applicants' Compliance Verification Summaries in order to confirm that they meet the definition of Suitably Qualified Auditor.

Appendix A: Additional information

Important information an Auditor will want to check

That the waste disposal organisation:

- 1) Understands the claim their client wishes to make.
- 2) Has clarity regarding the entire waste journey from collection on the Green Star Job to end/reuse/recycle.
- 3) Has ensured there are no un-verified stages in the journey.
- 4) Knows how much total waste (Landfill + other) is collected from each “Green Star job”?
- 5) Has identified points in the journey where waste separates into different streams and can explain they maintain an accurate understanding of the mass (normally weight) of each subsequent waste stream.
- 6) Confirmed the calibration status of each data point.
- 7) Can explain how they store collected data and can explain/defend any manipulations of that data during the creation of the Client’s report.
 - i. Are there additional participants in the process? Who provides which of the data points? E.g., if you only recycle who provides the waste to landfill portion of the % waste diverted calculation?

ECNZ EC-59-19 Construction and Demolition Waste Services specification clarification

Waste contractors and Waste Processing facilities which have been awarded the ECNZ EC-59-19 Construction and Demolition Waste Services specification fulfil this Reporting Criteria. They do NOT have to use this specification to fulfill this document requirements. This is an alternative to following all the procedures and requirements listed in the Reporting Criteria.