



# DIVERSION DATA ADDITIONAL GUIDANCE

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## Overview

The purpose of this document is to guide project teams to an understanding of the materials allowed in the diversion calculations within the TRUE program's scope and how to account for either the diversion or non-diversion amounts for each of these materials to achieve an annual average 90% diversion rate by weight. This document should be used in conjunction with the TRUE Rating System document. In case of a conflict between this guidance and the TRUE Rating System, the guidance in this document will supersede the guidance in the rating system.

It is strongly recommended that project team members also earn the [TRUE Advisor](#) credential for the greatest understanding of zero waste, TRUE credits, and data requirements.

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## TRUE Material Scope

Projects may generate a wide variety of materials that can be difficult to categorize, and it may be unclear whether to track their weights for TRUE certification. This section defines material types and gives guidance on whether they should be included or excluded in the diversion data sets submitted to GBCI for certification:

**Materials** are defined as solid, non-hazardous discards that are generated within the project boundaries. This includes materials generated during regular operations as well as those generated during episodic activities (construction and demolition, special events, etc.). Any materials the project takes ownership of and needs to dispose of or divert, regardless of whether it was originally generated on-site or off-site, must be included in the diversion data set. For example, the project team manufactures soap in plastic bottles, but the plastic bottles are shipped into the project boundaries by a third party. Those plastic bottles now become a component in the project's material stream and must be included in the diversion calculations.

**Hazardous materials** are defined by the project's local jurisdiction, state, or country. If a material is considered hazardous by the local jurisdiction, state, or country then it should be excluded from the material scope; but if the material is not considered hazardous, then it should be included in the material scope. For example, batteries are considered hazardous by some jurisdictions and nonhazardous by others. If they are considered hazardous, then the weight of the batteries should be excluded completely from the calculations. If they are not considered hazardous and are recyclable, then their weight should be included in the diversion calculations under the recycling category. If they are not considered hazardous and aren't recyclable, then their weight should be included in the non-diversion numbers.

**Liquids** are included in the scope of materials if they are accepted in the landfill by the local jurisdiction, state, or country. If they are accepted in the landfill by the local jurisdiction, then they should be considered part of the project material scope and included in the diversion or non-diversion numbers depending on whether they were diverted or not. For example, some jurisdictions accept kitchen oils as liquids into the landfill. Therefore, they would be included in either the recycling or non-diversion numbers depending upon whether they were recycled, sent to the landfill, or diverted via some other method accepted by TRUE.

**Sludge** is not typically considered part of the material scope, however it may be included if the following conditions are met:

- The material would be allowed in the jurisdiction’s landfill
- It doesn’t include human waste/biosolids
- It is not going to a wastewater treatment plant

**Wastewater** of any kind should not be included in the TRUE materials scope. This is regardless of whether it is recycled or not diverted.

## Allowable Diversion Methods

The guiding principles to consider when determining if a material can/should be counted in the diversion numbers are:

1. Each end-product must have a productive use in nature or the economy, other than as a fuel
2. The material must not be burned in the process of creating that new end-product
3. The diversion method has little to no harmful effects on people, the environment, and the economy
4. The diversion method doesn’t support energy or destructive disposal systems that are dependent upon the product to be continually discarded
5. The diversion method upholds the integrity and credibility of zero waste to support a circular economy

Table 1 below provides a list of common technologies and processes and identifies whether they are acceptable or not as diversion in TRUE, based on the above principles:

**Table 1: Allowable Diversion Technologies or Methods**

Technology/Diversion Method	✓ Yes    ✗ No
Technology/Diversion Method	Allowed as Diversion in TRUE?
Anaerobic digestion	✓
Animal feed Note: feeding wild animals is allowed as diversion if scientific evidence (case studies, research, published works, etc.) is provided showing that it does not negatively impact the animals or the ecosystem.	✓
Alternative Daily Cover (ADC) at landfills	✗
Biodigesters – end product recovered for productive use	✓
Biodigesters – end product to wastewater treatment	✗

Chemical recycling - solid material end product recovered for productive use	✓
Chemical recycling – liquid end product used as fuel	✗
Cement kiln or other types of kilns	✗
Composting	✓
Incineration	✗
In-sink disposal to wastewater (Insinkerator, etc.)	✗
Recycling	✓
Reduction	✓
Reuse	✓
Upcycling	✓
Waste to fuel (liquid fuel, oil, and pellets) Examples: Pyrolysis, Solid Recoverable Fuel (SRF)	✗
Waste-to-energy	✗
Wastewater treatment	✗

## Steps for gathering diversion data:

Step 1: Determine **what** items should be tracked and **who** would have the information needed on each tracked item (weights, diverted/non-diverted category)

Step 2: Determine **how** the items should be weighed

Step 3: **Record** weights in a tracking system and **calculate diversion performance**

Step 4: **Collect** at least 12 consecutive months of data for all items in material scope and **report** in the Diversion Data tab of the TRUE Application Form.

*Note: Weight data for the most recent 12-month period must be included with the certification application. If a baseline period is submitted, this is typically the 12 months prior to the reporting year, however, it can be any 12 consecutive months prior to the reporting year.*

**STEP 1:** Determine **what** items should be tracked and **who** would have the information needed on each tracked item

This step requires the project team to determine what items are included in the project boundary's material stream, who would have the information needed on each tracked item, which TRUE category each item falls under, and if the items are being used at their highest and best use. All this information should be tracked monthly by the project team in the reporting format or program that works best for the team.

### Perform Audits and Assessments

The best place to start the information gathering process is for the project team to conduct on-site audits of all materials in the waste stream and complete an assessment of the findings.

## Use a Zero Waste Audit to Gather Data

- Complete a zero-waste audit of all landfill/incineration/waste-to-energy (WTE) bound materials, compostable materials, and of recyclables to determine what materials are produced in each TRUE category within the project boundary material stream. These audits can sometimes be performed by the project's material collection service provider. If the service provider offers this service, they will do a one-time pull of the project's bins when they are full and take them directly to their facility to sort and weigh.
- Review the project boundary by area to evaluate if the correct material is in the correct bin and determine the project specific contamination rate, if any. Contamination is defined as materials or substances that are mixed with recyclables or compostables that diminish or destroy the utility or value of the recyclables or compostables. According to the minimum program requirements in the TRUE Rating system, the contamination rate must be less than 10% for any materials that leave the site. Note that the contamination rate must be project specific. While some material collection service providers are able to report project specific contamination rates, others may not be able to provide that information. If the service provider is unable to provide a project specific contamination rate, an audit will need to be performed at the project site to determine the project's specific contamination rate. The contamination rate should be determined for each material type.

Contamination Rate Calculation Example: If during an audit, 50 pounds of food scraps were found in the recyclables and the total amount of materials was 200 pounds then the contamination rate of the recycling stream is 25% (50/200 pounds). As the project must not exceed a 10% contamination level for any material type leaving the site, it would not be able to apply for TRUE certification.

### *Additional Zero Waste Audit Actions:*

The zero waste audit should include more than gathering data for your diversion tracking system. Along with the above steps to gather information and data on material types, TRUE recommends adding the following aspects and actions to the audit to achieve TRUE credits and provide a more comprehensive picture of the zero waste program:

- In addition to performing the zero waste audit, perform a right-sizing audit by determining whether the bin sizes and pickups per week meet the needs of each project area. This can help save money and GHG emissions by reduced truck trips. For example, if the bins being picked up 3X a week are only half full each time they are picked up then it's time to discuss less pickups per week with the vendor. This should be reviewed for each area and outside bins.
- Document any materials found during the audit that could possibly be reduced, reused, recycled, composted, or used in some type of anaerobic digestion process. This is discussed more under the "Calculating Reduction and Reuse" section.
- Complete an assessment of the project's compliance with solid waste and recycling regulations for the project's jurisdiction, determining what materials might be considered hazardous or non-recyclable. Note: If the material is considered hazardous and is not accepted by the local landfill, it is outside the scope of TRUE and should not be included in the diversion calculations.

*Completing the above actions will support achievement of Zero Waste Analysis Credits 1 and 3; Redesign Credit 3; MPR #3 and #5; and Hazardous Waste Prevention Credit 1.*

## Assessment

Analyze the information gathered from the audits of diverted and non-diverted materials to assess current diversion performance and propose future recommendations to increase diversion through the following tasks:

- Compile a report of the zero waste audit findings that shows the weight and percentage of recyclables and materials not diverted in each project area. This data can be used later to compile material and contamination weights.
- Determine if any of the materials found in the audit are sellable as commodities such as cardboard boxes, glass, or metals to name a few.
- Include recommendations in the report to reduce, reuse, recycle or compost more of the items found in the non-diverted material stream. This is discussed more in the "Calculating Reduction and Reuse" section below.

### Tips:

- Include employees from different areas within the project in the audits, if possible, to show them what materials the bins contain.
- Include the employees in the assessment/analysis of the findings to help propose recommendations to decrease contamination and increase the diversion percentage

*Completing the above actions will support achievement of Zero Waste Analysis Credits 2, 4, and 5.*

## **STEP 2: Determine **how** the items should be weighed and/or counted**

### **A. Calculation for all materials (except for reduction and reuse)**

For all materials in the project scope, the project team should collect weights using one of the options below to measure current diversion performance for the 12-month reporting period.

- Actual Weight Method
- Estimated Weight Method

Note that the monthly weights by material must be included in the diversion tab in the TRUE Certification Application Form.

#### **i. Actual Weight Method**

Using actual weights of the materials is the preferred and the most accurate method. They can be obtained in several ways by the project team.

- Direct weights using an in-house scale
- Documents from vendors of the materials, a donation recipient, or a service provider. This includes documents such as weight tickets, reports, and invoices that show the dates of the pickups and the weights for recycling, compost, or materials that are not diverted. Typically, vendors will provide weights for materials collected in compactors and open top containers but not in totes or front-load dumpsters.

#### **ii. Estimated Weight Method**

Estimated weights are not ideal but are sometimes necessary in cases where actual weights are unavailable. For some estimation methods, actual scale weights may be combined with estimation factors.

Acceptable estimation methods:

- Volume to weight conversion: In this method, the volume of the material is used to estimate the weight of the material.
  - This methodology is used most often for calculating weights of single stream recycling, compost, or non-diverted materials
  - There are several sources for volume-to-weight conversion factors such as the [US EPA](#). More sources are included in the Resources list at the end of this document.
  - Example of volume to weight conversion:

**Calculating the volume per month:**

Trash is collected in a 4 CY bin 3 X per week  
4 CY x 3 pickups = 12 CY/week x 4.33 weeks per month = 51.6 CY per month

**Converting the CY per month to a weight:**

51.6 CY x 138 lbs/CY = 7,120.8 lb (assuming each CY=138 lbs based on a conversion factor chart or other method for obtaining a conversion factor)  
7120.8 lb / 2000 lbs = 3.56 tons per month

- Extrapolation from known weights: In this method, weights for a specific period in time are gathered and then extrapolated out over a longer period of time.
  - This methodology is used most often for calculating weights of single stream recycling, compost, or non-diverted materials. Tenants in a multi-tenant building especially use this method to estimate weights for all material types.
  - These weights can be taken from the project's zero waste audit data or any known weights from a given point in time
  - Example weight calculation:

Average weight for wood pallets	= 23 lbs.
Number of pallets reused monthly	= 100
Total weight of pallets reused monthly	= 2300 lbs.
2300 lbs / 2000 lbs	= 1.15 tons
  - Example time period calculation:

Grasscycling weight for a week	= 1350 lbs
1350 lbs x 4.33 weeks per month	= 5845.5 lbs for the month
5845.5 lbs / 2000 lbs	= 2.93 tons for the month
- Per item or unit: In this method, the weight of an item is used to estimate a larger total of multiple items.
  - Each item weight will be needed and may be obtained from the manufacturer, through online research for product specs, on the packaging, or by weighing one of the items on a small scale
  - The total number of items being diverted needs to be included in the calculation
  - Example calculation:

1 plastic bottle	= 1 lb.
32 plastic bottles per case	= 32 lbs.
100 cases	= 3200 lbs.
3200 lbs / 2000 lbs	= 1.6 tons

**B. Calculation for Reduction and Reuse**

There are two methods for calculating potential diversion numbers through reduction and reuse of materials in the project site's material stream.

### Calculating Reduction

Many projects find ways to reduce the amount of materials being purchased and generated by implementing more efficient practices within the project boundary. When a project switches to a new strategy, like a reusable container, and prevents the generation of material in the process, then this action would be documented under the Reduction category in your diversion data tracking system. The weights of materials not generated due to a reduction action are tracked and used in calculations in the same way as the weights for actual materials.

- Examples of reduction:
  - Making routine office processes, like printing paychecks, paperless which reduces the number of boxes of paper to order each month
  - Purchasing items in bulk to reduce the amount of packaging put into the project boundary's material stream
- Calculation method for reduction:
  - Measure the weight of the object that was used and disposed of before the switch to the new object
  - Multiply the weight of that object by the number of objects no longer being purchased
  - Subtract the current weight total of the object from the weight total that is no longer being purchased to get the reduction
  - Enter this number on the diversion spreadsheet
- Calculation Example:  
2018: Purchased 100 boxes of paper that each weigh 40 pounds  
2019: All office processes went paperless requiring only 20 boxes of paper to be purchased

100 boxes x 40 lbs	= 4000 pounds	(prior to the process change)
20 boxes X 40 lbs	= 800 pounds	(after the process change)
4000 lbs – 800 lbs	= 3200 pounds of paper reduced	
3200 lbs / 2000 lbs	= 1.6 tons reduced	

Tips:

- Reduction weights can continue to be counted every year regardless of when the initial reduction event took place as long as the original reduction strategy is still in place and being implemented.
- Get employees involved to create new ways of reducing items purchased.

### Calculating Reuse

Reuse calculations work with items that are reused either multiple times within the project boundary or are donated to another entity as a one-time donation. In some cases, reuse weights are obtained in the same way as the weights of other materials outlined above. For example, some charities provide receipts with the weight of donated food or furniture items, or a volume to weight conversion calculation may be needed to estimate a bin of food scraps going to animal feed. In other cases, reuse weights may need to be calculated on a per item or per use basis.

- Examples of reuse:
  - Durable shipping totes
  - Pallets
  - Ceramic coffee mugs, washable plates and silverware, microwaveable dishes
  - Office supply exchange
  - Donating office supplies or furniture to non-profit organizations
  - Donating leftover food items to non-profit organizations
- Calculation method for reuse:
  - Measure the weight of the item being reused
  - Multiply the weight of the item by the number of items being reused
  - Enter this number on the diversion spreadsheet
- Calculation Example:
 

2019: The project reuses 46 wooden pallets every month  
 Each pallet weighs on average 23 pounds  
 46 pallets X 23 lbs = 1,058 pounds  
 1058 lbs / 2000 lbs = .53 tons  
 Enter the .53 tons under the Reuse category for pallets each month

Tips:

- Repairing an item to keep using it instead of disposing it counts as reuse.
- Typically, most reusable items won't be the exact same number each month, so the items will need to be tracked monthly on how many times they are reused. Estimates may be used here at times as long as the estimate methodology is noted in the diversion spreadsheet.

*Completing the above actions will support achievement of Reduction credits 1, 4 and 5; Reuse credits 1- 5; Zero Waste Reporting Credit 1; Diversion credits 1-5.*

### Step 3: Record weights in a tracking system and calculate diversion performance

Now that all the materials and items are weighed and being tracked, it's time to enter those numbers into your diversion data tracking system by month for the 12-month reporting period and calculate the diversion rate.

#### Calculating the Diversion Rate

The diversion rate should represent all activities within the project boundaries and include all materials generated within the project boundary.

It is not required to meet the 90% diversion rate each month in the reporting year but it must average out to a 90% diversion rate for the year. The project may have some months that are below 90% and some months that are above 90% averaging out to a diversion rate at or above 90% for the whole year

The Diversion Rate should be calculated by weight as follows:

**Diversion Generation** = (Reduce + Reuse + Compost + Recycle) material weights  
**Total Materials Generation** = (Landfill + WTE + Incineration + Reduce + Reuse + Compost + Recycle) material weights

$$\text{Diversion Rate} = \frac{\text{Diversion Generation}}{\text{Total Generation}}$$

Tips:

- As stated above, **hazardous materials** are defined by the project's local jurisdiction, state, or country and will determine if they are included in the recycle numbers for the project
- Liquids are outside the scope of the TRUE Rating System unless they are accepted in the local landfill.
- Grease and oil, if solidified and accepted by the local landfill, should be included in the recycled numbers if they are being recycled
- Facilities closed for several months, such as seasonal operations or during COVID-19, are allowed to have no data for some months since no operations took place during those months and no materials were generated. The overall average diversion rate for the reporting period must still be a minimum of 90%.
- Weights for materials should only be recorded in the months the weights are actually diverted or disposed of. These weights should not be spread out or averaged over the 12-month reporting period. So, when the material moves out of the project boundary for diversion or disposal, record it in the diversion spreadsheet.
- The most preferred method to track weights is the project's specific material weights rather than using estimates
- Keep a database on individual item weights specific to the project site's material stream to have on hand for monthly calculations so those items don't have to be weighed each month
- Track all service providers/vendors, the materials they collect, the main point of contact, and their contact information.
- Post all information and tracking systems on a shared network so any internal team member can access it.

*Completing the above actions will support achievement of Zero Waste Reporting Credit 1 and Diversion credits 1-5.*

**Step 4: Collect** at least 12 consecutive months of data for all materials in project scope and **report** in the Diversion Data tab of the TRUE Application Form

Once Steps 1 through 3 are completed, acquiring 12 consecutive months of data will be manageable. Track the 12 months of data using a data tracking program or app or create a spreadsheet to record all of the information. For the greatest ease, GBCI recommends using [TRUE templates or forms](#) to track your data so that it is already in or easily transferrable to your application. The 12 months could be a fiscal or calendar year of data, however, keep in mind that TRUE requires data be recent for the certification application- ending within the last 3 months. Thus, the data must be for a distinct 12-month period. Project teams may also backfill 12 months of past data using records and estimates if they do not wish to wait and track over a 12 month timeframe.

When preparing an application for TRUE certification, transfer the monthly totals by category into the Diversion Tab on the [TRUE Certification Application form](#) . It is required for data to be submitted via the TRUE Certification Application form. However, if the project team has a special circumstance or need that necessitates submittal of diversion data in other formats please [contact GBCI](#).

## FAQs

### **When collecting data, does the project team need to account for items brought in by employees, or other things not directly purchased where documentation showing weights and costs are not available?**

All materials used and subsequently collected within the project boundary for disposal or diversion should be reflected in the data diversion spreadsheet. The TRUE program does accept estimates on weight and cost data where actual data is not available. All calculation methodologies must be explained.

### **How do we track diversion and cost data for our multi-tenant building?**

If the building or complex aggregates materials from all tenants at one or more central collection points, weight data may be available from the service provider. The best, most accurate method would be to perform a zero-waste audit on each tenant by purchasing a scale and weighing the outgoing material by tenant. Volume-to-weight conversion calculations can be used to estimate material weights when actual data is not available.

If the building or complex does not aggregate all materials generated from tenants, data can be collected per tenant, floor, or operation type. This can then be added together to give facility totals. With this method, basic average weights can be established with a scale per indoor collection bin or collection vehicle (such as a tilt truck). This can then be multiplied by how many times per day/week it is collected. With these calculations, it is important to factor in bin fullness.

Getting total participation from tenants is key to ensuring high diversion and collecting data. Building owners can work with their attorney to develop language in the lease to address some of the needs and requirements for the zero-waste program.

### **I am a tenant in a multi-tenant building and my materials are mixed in with others. How do I obtain weights for my materials only?**

The first preference for obtaining weights is to purchase and use a small scale to weigh all materials before going out to shared service provider bins. Setting up a tracking and communication system is key to collecting this data for diversion calculations. If this is not possible, weights may be taken during a more defined period of time (such as during a zero-waste audit or for a weeklong period) and then extrapolated or used as a conversion factor in a volume to weight conversion calculation. If this methodology is used, it is recommended to check weights periodically and readjust (such as quarterly or bi-annually).

If the project team is not able to obtain a small scale, volumes of the smaller collection containers used within the project boundary may be used along with standard conversion factors to conduct a volume to weight conversion calculation. Alternatively, the volume to weight conversion calculation can be centered on the shared bins. After obtaining a total weight, the amount or percentage of materials that did not originate from the project would need to be deducted. However, both methods will require close monitoring of bin contents and has much less accuracy than using a scale.

## **Is environmental impact of materials taken into consideration in diversion data calculations for TRUE?**

It is currently not required to calculate the environmental impact of materials and it does not impact point scoring. However, the TRUE Rating System does have a credit (Zero Waste Reporting Credit 3) for using a calculator to estimate environmental impact of diversion program activities. Future versions of the rating system may integrate environmental impacts of diversion activities in the requirements and scoring methodologies.

## **We want to subtract contaminants out of our diversion calculations to make them as accurate as possible and achieve credits in the TRUE rating system. Our service provider can only give the general contamination rate from all its customers. No individualized reporting for our facility is available. Can we use this contamination rate for calculations in TRUE?**

No, it must reflect the contamination rate specifically of the facility's materials. This rate can also be determined internally with regular waste and recycling audits. The service provider or a 3<sup>rd</sup> party may also be able to come to the site and conduct an audit to help determine the actual contamination rate.

## **What happens if my site is no longer meeting the 90% diversion requirements after certification?**

Projects that can no longer meet one or more TRUE MPRs should contact GBCI at [true@gbci.org](mailto:true@gbci.org) describing the situation and which MPR(s) are affected. GBCI is dedicated to supporting projects with challenges, while also helping them retain the recognition they received from TRUE, and solutions may be available.

## **Does GBCI want us to submit data in a specific form or template?**

Yes, the [TRUE Certification Application form](#) contains a diversion data form and calculator where material weight data must be submitted.

## **We use a different format and reporting mechanism to track our diversion data. Can I submit data in a different format than what is in the Certification Application Form as long as it has all the required information?**

It is required for data to be submitted via the TRUE Certification Application form. However, if the project team has a special circumstance or need that necessitates submittal of diversion data in other formats please [contact GBCI](#).

## **TRUE Resources**

[TRUE website](#)

[TRUE Advisor](#)

[TRUE Articles](#)

[USGBC Education Hub](#) (featuring TRUE rating system and zero waste educational resources)

[Arc](#)

## Other Resources

[Convert-Me.com](#)

[U.S. EPA Portfolio Manager Data Tracking System](#)

[U.S. EPA Standard Volume to Weight Conversion Factors](#)

[Compiled U.S. Volume to Weight Conversion Factors](#)

[U.S. EPA Food and Packaging Waste Prevention Tool](#)

[Stop Waste GHG Reduction Calculator](#)

[List of Environmental Impact Calculators](#)

[Climate and Clean Air Coalition - Tool Database](#)

## Questions?

Email us at [true@gbci.org](mailto:true@gbci.org) with any questions or for more information on TRUE.