User Guide

Waste and Recycling Calculator

August 2020

Queensland Government

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Feedback

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Contents

1 Introduction

This document explains how to use the Waste Estimation and Calculator V1.0, August 2020, developed by the Queensland Department of Transport and Main Roads.

The Waste and Recycling Calculator has been developed to assist projects with:

1. estimating the amount of waste a project will generate
2. estimating the waste disposal levy charges attributed to the quantity of waste sent to landfill
3. provide a mechanism to track actual waste quantities generated monthly
4. provide a mechanism for projects to record actual waste quantities generated at practical completion, and
5. provide a mechanism to record the extent of recycled materials used in a project.

1.1 Definition of terms

The terms used in this User Guide shall be as defined in Table 1.1 below.

Table 1.1 – Definition of terms

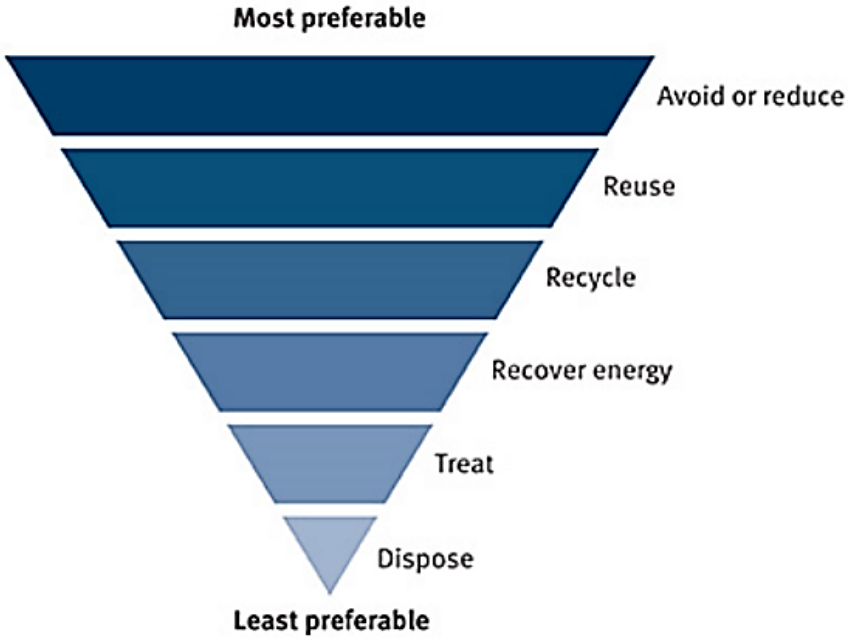
Term	Definition
Disposed	Quantity of discarded or discharged material waste that has been disposed of at landfill facilities in accordance to prescribed legislation.
Generated	Quantity of material or products that enters a waste stream before composting, incinerating, landfilling, or recycling.
ISCA	Infrastructure Sustainability Council of Australia
Recycled	Quantity of waste material that is recovered and used as an input or resource product (for example, item or components are put to some similar or new purpose).
Reused	Quantity of waste material reused before replacing (for example, update computer rather than get rid of. Reusing without further manufacturing).

1.2 Waste Policy

Transport and Main Roads *Waste Reduction and Recycling Plan (2016 – 2021)* sets out the department's objectives and implementation plan relating to waste. Transport and Main Roads approach to waste management is guided by the principles set out in Figure 1.2 below. Projects are encouraged to adopt these waste principles where the avoidance or reduction of waste generation is the most preferable option.

The *Waste Reduction and Recycling Plan* document is available at: https://www.tmr.qld.gov.au/Community-and-environment/Environmental-management/Land/Waste-management.

Figure 1.2 – Waste and resource hierarchy



1.3 Scope

1.3.1 In scope

The Waste and Recycling Calculator V1.0 (herein referred to as the Calculator) is applicable to a variety of transport infrastructure projects including road, rail and boat ramp infrastructure.

The Calculator has been developed with consideration of the waste-related requirements under the Infrastructure Sustainability Council of Australia rating scheme V1.2 and is therefore a purpose-built Calculator to aid projects with complying with Was-1 and Was-2 credits.

Typical contract types that the Calculator applies to are:

- Transport Infrastructure Contracts (TIC) including: Contract Only (TIC-CO), Sole Invitation (TIC-SI), Design and Construct (TIC-DC)
- Minor Infrastructure Contracts (MIC)
- Road Asset Management Contracts (RAMC)
- Collaborative Project Agreements (CPA), and
- Consultants for Engineering – Functional Specifications for Detailed Design.

The project specific waste-related requirements are specified within the project's contractual documentation.

1.3.2 Out of scope

Out of scope for project waste reporting includes:

- suppliers' waste (to avoid double reporting)
- litter outside of project generated waste
- septic waste that is connected to sewer

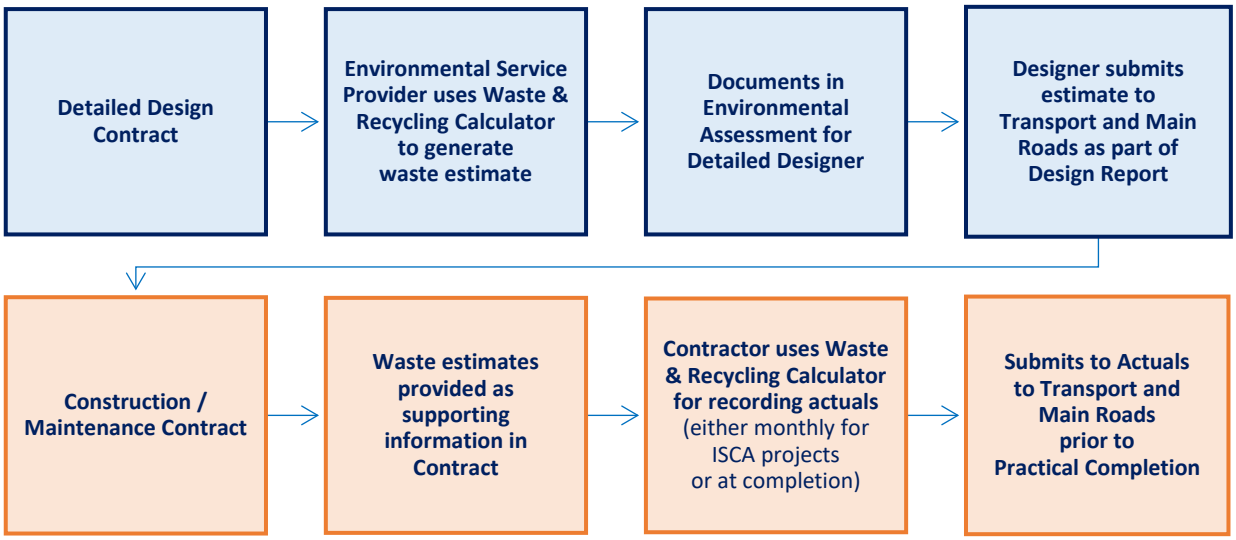
- emissions
- naturally occurring radionuclides / asbestos, and
- water captured in sediment basins.

1.4 How the calculator applies to project delivery phases

Typically, the Calculator will be used during detailed design and construction phase of an infrastructure project in the following ways:

- the Calculator can be used in detailed design phase to generate a waste estimate for the project
- the Calculator can be used during construction phase to track and report actual waste volumes for projects, and
- the Calculator can also be used for operational works contracts (maintenance contracts) to estimate waste volumes and record waste volumes.

Figure 1.4 – Use of Waste and Recycling Calculator through project delivery phases



Reporting is required for:

- Detailed Design Contracts and is specified in the functional specifications detailed design, and
- All Construction and Maintenance Contracts as part of MRTS51 *Environmental Management.*

2 Calculator layout

2.1 Range of tabs

The Calculator consists of a range of tabs as shown in Figures 2.1(a), 2.1(b) and 2.1(c) below.

The tabs will change depending on the user's input. For estimates, the estimate tabs appear in Figure 2.1(a). For actuals, the actuals tabs appear in Figure 2.1(b) and Figure 2.1(c).

Figure 2.1(a) – Estimate mode

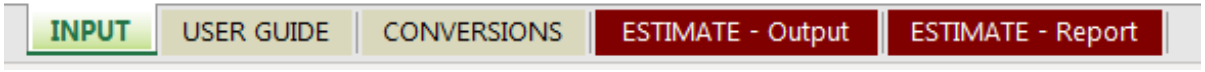


Figure 2.1(b) – Actual mode – ISCA

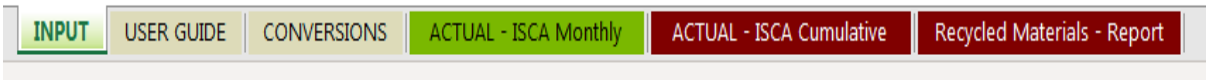


Figure 2.1(c) – Actual mode – Non-ISCA project

2.2 Tab descriptions

A brief description of each tab is provided in the Table 2.2 below.

Table 2.2 – Tab descriptions

Tab name	Tab description
INPUT	This tab is the starting point of the Calculator. • For 'Estimates', users enter a range of simple project information. • For 'Actuals', users enter the simple project information and enter the actual waste quantities and recycled materials quantities at Practical Completion.
USER GUIDE	This tab provides an 'in-Calculator' guidance on the various user inputs.
CONVERSIONS	This tab provides a useful guide for converting various waste volumes into a weight for different waste types.
ESTIMATE – Output	This tab provides estimated waste quantities for each waste stream. The quantities are automatically calculated based on the user inputs on the 'Input' tab, and a range of background calculations based on historical Transport and Main Roads data. The User may modify the Estimate-Output quantities based on project-specific information such as bills of quantity to improve accuracy from the generic estimate.
ESTIMATE – Report	This tab provides a summarized waste estimate report and is automatically populated based on the Estimate-Output. In addition to the waste Estimate Report, a Waste Levy Estimate is also provided which is automatically calculated based on the Estimate-Output.
ACTUAL – ISCA Monthly	This tab allows users to input monthly waste tracking data. This is relevant to projects undertaking an Infrastructure Sustainability Council of Australia (ISCA) rating.
ACTUAL – ISCA Cumulative	This tab provides cumulative waste quantities based on the ISCA monthly inputs.
ACTUAL – Report	This tab provides a summarized waste quantity report based on the actual recorded quantities. For ISCA projects, this tab is hidden and the final report is the ISCA cumulative Tab.
Recycled Materials – Report	This tab provides a summarised recycled materials report based on the recycled quantities on the 'Input' tab, if entered.

2.3 Colour coding

To assist with the usability of the Calculator, tabs and cells within the Calculator have been coloured based on the following criteria outlined in Figure 2.3 below.

Figure 2.3 – Colour coding

Input cell – users can input data whether a drop-down menu or user defined input.

Report cell – the Calculator automatically populates these cells.

3 How the Calculator works

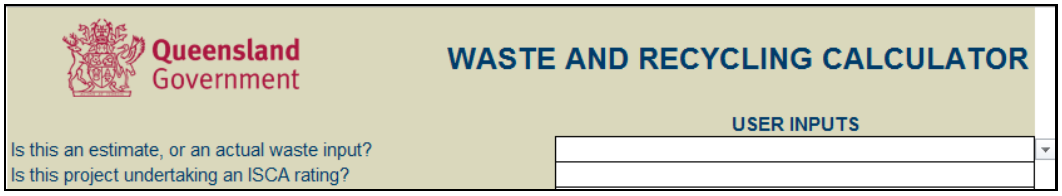
Fundamentally, the Calculator works based on a range of user defined inputs and automatic calculations driven by a range of formulas and background data from previous Transport and Main Roads projects.

3.1 Key questions

The Calculator functionality is based around two key questions:

1. Is this an estimate, or an actual waste input?
2. Is this project undertaking an ISCA rating?

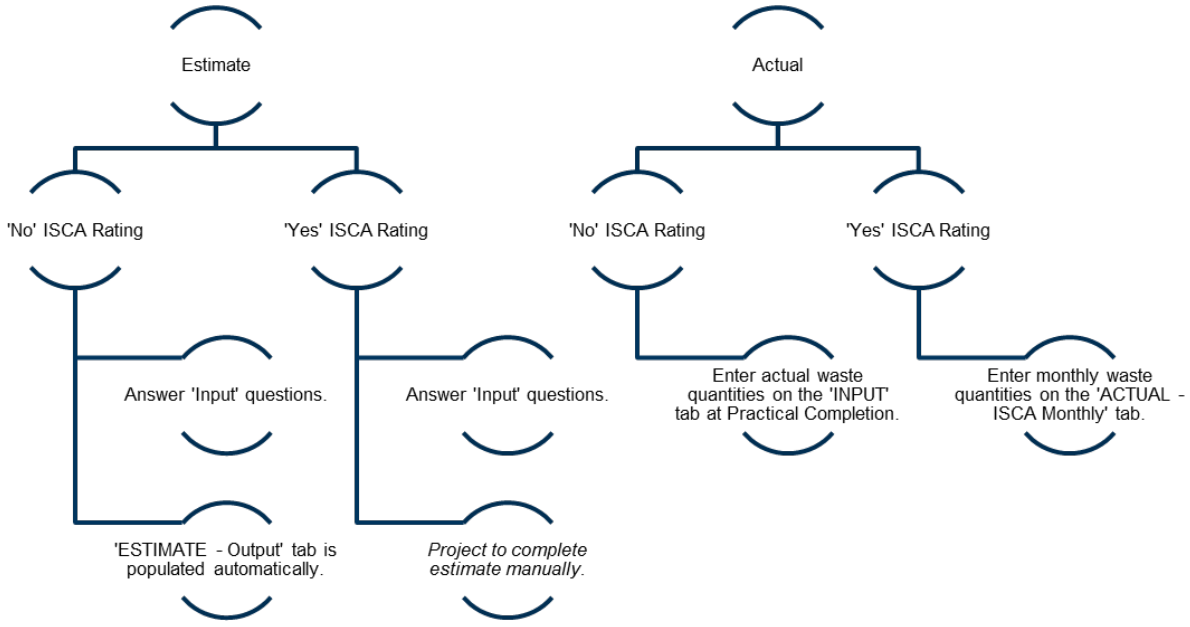
Figure 3.1 – Key questions



3.2 Logic of Calculator

The allowable inputs, and visibility of tabs and cells will automatically adjust depending on the combined answer to the two questions. The following flow-chart shown in Figure 3.2 below, describes the basic principle of this approach.

Figure 3.2 – Flow-chart



3.3 Tab visibility

The following Table 3.3 shows the tab visibility for each input combination.

Table 3.3 – Tab visibility

Is this an estimate, or an actual waste input?	**Estimate**	**Estimate**	**Actual**	**Actual**
Is the project undertaking an ISCA rating?	**Yes**	**No**	**Yes**	**No**
ESTIMATE – Output Tab	Visible	Visible	Hidden	Hidden
ESTIMATE – Report Tab	Visible	Visible	Hidden	Hidden
ACTUAL – ISCA Monthly Tab	Hidden	Hidden	Visible	Hidden
ACTUAL – ISCA Cumulative Tab	Hidden	Hidden	Visible	Hidden
ACTUAL – Report Tab	Hidden	Hidden	Hidden	Visible
ACTUAL – Recycled Materials Tab	Hidden	Hidden	Visible	Visible

3.4 Estimates for projects undertaking ISCA assessments

The Calculator will provide a generic estimate, based on the current *IS Technical Manual* for the purposes of ISCA verification. In order to provide the level of robustness required for ISCA verification, it is strongly recommended that projects review and verify or adjust the provided estimate based on project-specific details and bills of quantity. The documentation of the estimation and the review process and final estimate quantities should be documented for evidence as part of the ISCA rating submission.

4 How to use the Calculator

4.1 Input tab – All projects

The Input tab is the heart of the Calculator (Figure 4.1). Regardless of the project, Transport and Main Roads projects should complete both an estimate and an actual waste report.

Figure 4.1 – Input tab

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WASTE AND RECYCLING CALCULATOR

	USER INPUTS
Is this an estimate, or an actual waste input?	**Estimate**
Is this project undertaking an ISCA rating?	Yes
Is this project in a waste levy zone?	Yes
TMR District	Metropolitan
Contract Name	Motorway A
Reporting Date (dd/mm/yyyy)	30/06/2020
Submitted By (Name of Contractor)	
Investment ID	12345
Contract ID (CN-XXXXX)	CN-4321
Are there any other contracts associated with this project?	No
List any other related contracts	
Infrastructure Type	Road
Project Value	<$20M
Project type	Upgrade / Programmed Maintenance
Area of pavement surface works (m²)	20000
Extent of Clearing and Grubbing (m²) (Standard Item 32001)	10000
Contract duration (months)	3
Average width of paved surface (m)	10
Length of road (km)	2

The following Table 4.1 summarises the user actions required for each of the input questions.

Table 4.1 – User actions

Input question	User action
Is this an estimate, or an actual waste input?	Select "Estimate" or "Actual" format the drop-down list. Projects should undertake a waste estimate prior to construction works starting, and input the Actual waste quantities at Practical Completion.
Is this project undertaking an ISCA rating?	Select "Yes" or "No" from the drop-down list. In Queensland, all projects >100M are required to undergo an Infrastructure Sustainability Council of Australia (ISCA) Assessment.
Is this project in a waste levy zone?	Select "Yes" or "No" from the drop-down list. The levy zone includes 39 out of 77 local government areas in Queensland, which covers around 90% of Queensland's population and is where the majority of waste is generated and disposed. Refer to the levy zone map for further guidance, or find additional information here: https://www.qld.gov.au/environment/pollution/management/waste/recovery/disposal-levy/about/waste-levy-map
Transport and Main Roads District	Select the Transport and Main Roads district project from the drop-down list. For contracts over District boundaries, simply nominate a primary District to refer to.
Contract Name	Enter the Contract Name.
Reporting Date (dd/mm/yyyy)	Enter the Reporting Date in dd/mm/yyyy format. For Estimates, the reporting date should be the date the Calculator is used to generate an estimate. For Actuals, the reporting date should be the Practical Completion date to capture final actual waste quantities for the project.
Submitted By (Name of Contractor)	Enter the name of the Contractor Company.
Investment ID	Enter the Transport and Main Roads Investment ID.
Contract ID	Enter the Transport and Main Roads Contract ID.
Are there any other contracts associated with this project?	Select "Yes" or "No" from the drop-down list. In some cases, a number of separate contracts may exist under the same project.
List any other related contracts	Where known, enter the Contract Name and or Contract ID of any known related contracts.
Infrastructure Type	Select the infrastructure type from the drop-down list.
Project Value	Select the Project Value from the drop-down list. Projects >$100M would be expected to be answer "Yes" to Question 2 "Is this project undertaking an ISCA rating?".
Project Type	Select the Project Type from the drop-down list. Refer to the 'Additional Guidance' section embedded within the Calculator for further guidance.
Area of pavement surface works (m²)	Enter the area, or footprint (in square metres) of pavement surface works.

Input question	User action
Extent of Clearing and Grubbing (m²) (Standard Item 32001)	Enter the area, or footprint (in square metres) of vegetation clearing and grubbing. Refer standard Item 32001.
Contract duration (months)	Enter the Contract Duration to the nearest whole month. Enter only numerical values, for example "6".
Average width of paved surface (m)	Enter the average width of the paved surface throughout the project, to one-decimal-place. Enter only numerical values, for example "4.0". Refer to the 'Additional Guidance' section embedded within the Calculator for further guidance.
Length of road (km)	Enter the length of the road project, to one-decimal-place. Enter only numerical values, for example, "3.0" Refer to the 'Additional Guidance' section embedded within the Calculator for further guidance.

5 Estimate mode

5.1 Input tab

In ‘Estimate’ mode, projects shall populate each of the white user input boxes on the Input Tab by either selecting the drop-down menu option which is applicable or entering in text as required.

5.2 Estimate – Output tab

On completion of the Input questions, the Calculator will automatically calculate an estimated waste output for the project (Figure 5.2). The automatic estimates are based on the answers to the questions on the Input page as well as a range of background data from historical Transport and Main Roads projects.

DISCLAIMER: The waste estimate provided is a generic estimate based on a typical infrastructure project and previous waste reporting. The volumes are indicative only and should be reviewed for each project with consideration to the scope of works and specific site conditions. The actual volumes generated from projects are likely to differ from the estimate provided.

The background data which drives the estimation model within the Calculator is based on data collected from projects completed over 2018, 2019 and 2020. It is anticipated that the quality and consistency of data available to drive the background estimation model will significantly improve over time. By extension it is anticipated that the accuracy of waste estimation through the Calculator will improve in future versions.

Figure 5.2 – Output tab

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Infrastructure Project Waste Estimate

Project teams must check estimated waste volumes against project schedule of rates, Bills of Quantity and cut-fill balances.

Stream Type	Waste Stream	Generated	Reused	Recycled	Landfill	Override Comment
Bulk earthworks and clearing	Excess Earthworks / Embankment / Fill	#N/A	#N/A	#N/A	#N/A	
	Vegetation	0	0	0	0	
Contaminated and Regulated Waste	Acid Sulphate Soil	*No Quantity Estimated*	*No Quantity Estimated*	*No Quantity Estimated*	*No Quantity Estimated*	
	Other Contaminated Earthworks	*No Quantity Estimated*	*No Quantity Estimated*	*No Quantity Estimated*	*No Quantity Estimated*	
	Regulated Waste Cat 1	*No Quantity Estimated*	*No Quantity Estimated*	*No Quantity Estimated*	*No Quantity Estimated*	
	Regulated Waste Cat 2	*No Quantity Estimated*	*No Quantity Estimated*	*No Quantity Estimated*	*No Quantity Estimated*	
	Septic General	#N/A	#N/A	#N/A	#N/A	
Construction Waste	Asphalt and Profiles (RAP)	0	0	0	0	
	Other Recovered Pavement Materials	*No Quantity Estimated*	*No Quantity Estimated*	*No Quantity Estimated*	*No Quantity Estimated*	
	Concrete	#N/A	#N/A	#N/A	#N/A	
	Metal	#N/A	#N/A	#N/A	#N/A	
	Other Construction Waste (Timber, glass, plastic, bricks)	#N/A	#N/A	#N/A	#N/A	
	Tyres and Rubber	*No Quantity Estimated*	*No Quantity Estimated*	*No Quantity Estimated*	*No Quantity Estimated*	
	General Refuse	#N/A	#N/A	#N/A	#N/A	
	Illegally Dumped Refuse	*No Quantity Estimated*	*No Quantity Estimated*	*No Quantity Estimated*	*No Quantity Estimated*	
Site office waste	Office – General and Foodwaste	#N/A	#N/A	#N/A	#N/A	
	Office – Recyclables	#N/A	#N/A	#N/A	#N/A	
	Office – Paper and cardboard	#N/A	#N/A	#N/A	#N/A	

See User Guide for further description of Waste Streams

NOTES:
1. All units in Tonnes
2. Vegetation estimation is based on assumption of clearing heavily timbered areas.
3. Users can override the estimates based on project-specific information (IE Bills of Quantity)

Project teams to note the following:

- Not all waste streams are populated with an estimate. This is due to either insufficient background data at this point in time, or a unique waste stream with quantities that are likely to be bespoke for each project.
- Where a waste stream is not automatically populated, “No Quantity Estimated” is automatically entered.
- All projects are encouraged to review the waste estimates and where applicable ‘override’ the estimate where applicable. Where this occurs, projects are encouraged to make a comment to justify the override.
- Projects can override the Estimates – Output Tab but not the Estimates – Report Tab.
- Projects should note that the ‘Generated’ waste quantity should be equal to the sum of the reused, recycled and landfilled quantities.

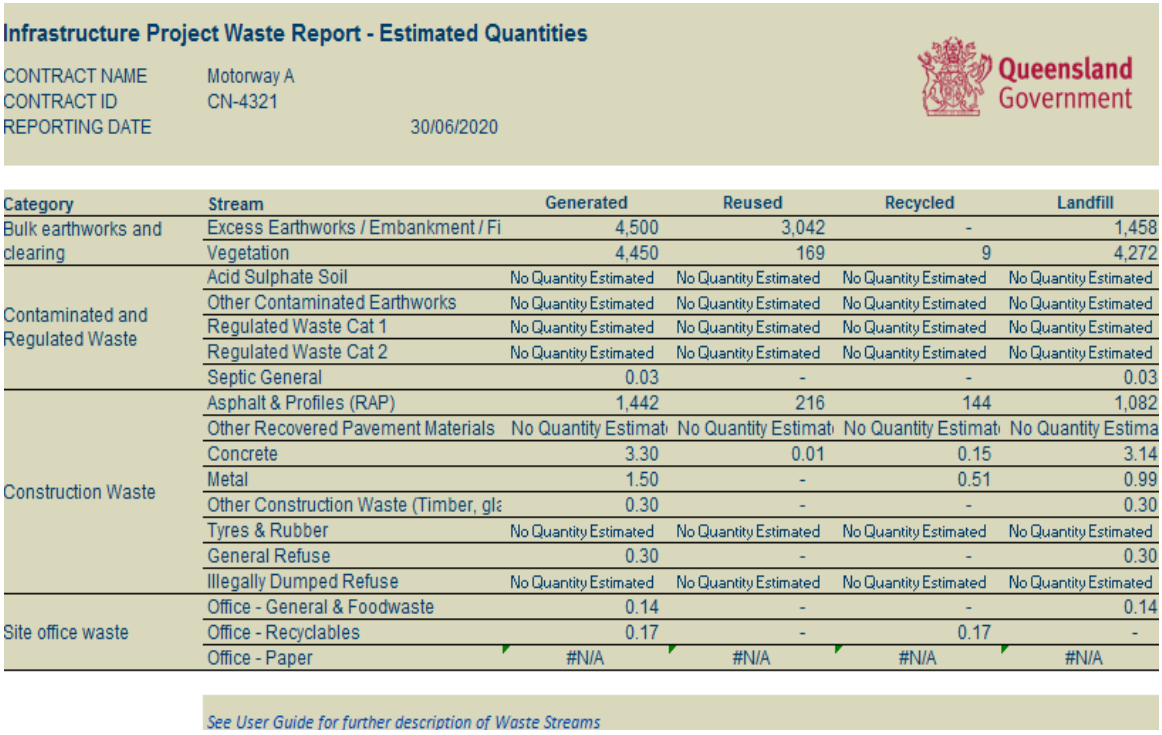
Reminder – Estimates for projects undertaking ISCA assessments

The Calculator will provide a generic estimate, based on the current Infrastructure Sustainability Technical Manual for the purposes of ISCA verification. In order to provide the level of robustness required for ISCA verification, it is strongly recommended that projects review and verify or adjust the provided estimate based on project-specific details and bills of quantity. The documentation of the estimation and the review process and final estimate quantities should be documented for evidence as part of the ISCA rating submission.

5.3 Estimate – Report tab

All quantities entered into the ‘ESTIMATE – Output’ tab automatically populate the ‘ESTIMATE – Report’ tab (Figure 5.3(a) – Estimate – Report tab). The intention of this tab is to produce a standardised report style table for any reporting purposes. Projects are unable to change or alter any of the data displayed on this tab.

Figure 5.3(a) – Estimate – Report tab



Infrastructure Project Waste Report - Estimated Quantities

CONTRACT NAME Motorway A
CONTRACT ID CN-4321
REPORTING DATE 30/06/2020

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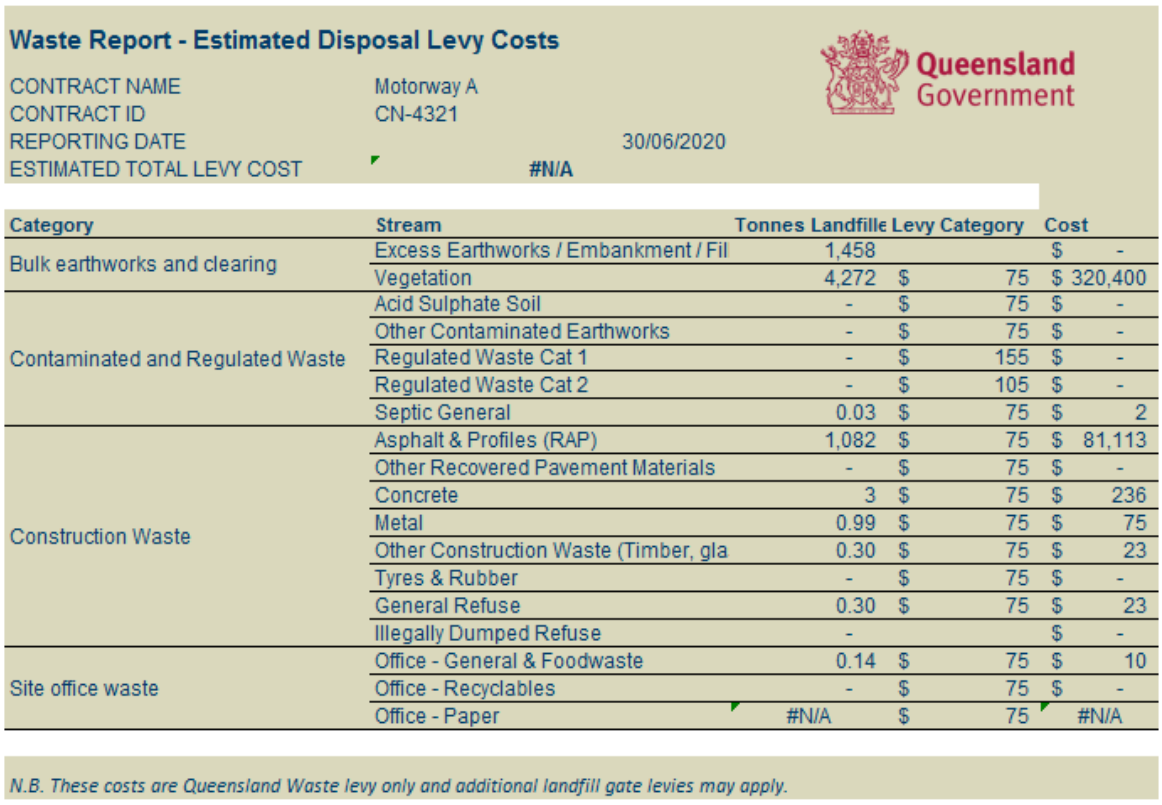
Category	Stream	Generated	Reused	Recycled	Landfill
Bulk earthworks and clearing	Excess Earthworks / Embankment / Fi	4,500	3,042	-	1,458
	Vegetation	4,450	169	9	4,272
Contaminated and Regulated Waste	Acid Sulphate Soil	No Quantity Estimated	No Quantity Estimated	No Quantity Estimated	No Quantity Estimated
	Other Contaminated Earthworks	No Quantity Estimated	No Quantity Estimated	No Quantity Estimated	No Quantity Estimated
	Regulated Waste Cat 1	No Quantity Estimated	No Quantity Estimated	No Quantity Estimated	No Quantity Estimated
	Regulated Waste Cat 2	No Quantity Estimated	No Quantity Estimated	No Quantity Estimated	No Quantity Estimated
	Septic General	0.03	-	-	0.03
Construction Waste	Asphalt & Profiles (RAP)	1,442	216	144	1,082
	Other Recovered Pavement Materials	No Quantity Estimat	No Quantity Estimat	No Quantity Estimat	No Quantity Estima
	Concrete	3.30	0.01	0.15	3.14
	Metal	1.50	-	0.51	0.99
	Other Construction Waste (Timber, gla	0.30	-	-	0.30
	Tyres & Rubber	No Quantity Estimated	No Quantity Estimated	No Quantity Estimated	No Quantity Estimated
	General Refuse	0.30	-	-	0.30
	Illegally Dumped Refuse	No Quantity Estimated	No Quantity Estimated	No Quantity Estimated	No Quantity Estimated
Site office waste	Office - General & Foodwaste	0.14	-	-	0.14
	Office - Recyclables	0.17	-	0.17	-
	Office - Paper	#N/A	#N/A	#N/A	#N/A

See User Guide for further description of Waste Streams

In addition to the Waste Estimate Report, a Waste Levy Report (Figure 5.3(b)) is also automatically populated based on the quantities entered into the 'ESTIMATE – Output' tab. Projects should note that the waste levy estimate is based on the levy rates set by the Queensland Government and may differ from rates a landfill operator charges their customers to cover their levy liability.

Figure 5.3(b) – Waste Levy Report



Waste Report - Estimated Disposal Levy Costs

CONTRACT NAME Motorway A
CONTRACT ID CN-4321
REPORTING DATE 30/06/2020
ESTIMATED TOTAL LEVY COST #N/A

Queensland Government

Category	Stream	Tonnes Landfille	Levy Category	Cost
Bulk earthworks and clearing	Excess Earthworks / Embankment / Fil	1,458		$ -
	Vegetation	4,272	$ 75	$ 320,400
Contaminated and Regulated Waste	Acid Sulphate Soil	-	$ 75	$ -
	Other Contaminated Earthworks	-	$ 75	$ -
	Regulated Waste Cat 1	-	$ 155	$ -
	Regulated Waste Cat 2	-	$ 105	$ -
	Septic General	0.03	$ 75	$ 2
Construction Waste	Asphalt & Profiles (RAP)	1,082	$ 75	$ 81,113
	Other Recovered Pavement Materials	-	$ 75	$ -
	Concrete	3	$ 75	$ 236
	Metal	0.99	$ 75	$ 75
	Other Construction Waste (Timber, gla	0.30	$ 75	$ 23
	Tyres & Rubber	-	$ 75	$ -
	General Refuse	0.30	$ 75	$ 23
	Illegally Dumped Refuse	-		$ -
Site office waste	Office - General & Foodwaste	0.14	$ 75	$ 10
	Office - Recyclables	-	$ 75	$ -
	Office - Paper	#N/A	$ 75	#N/A

N.B. These costs are Queensland Waste levy only and additional landfill gate levies may apply.

6 Actual mode

In ‘’Actual’ mode, the method for populating project waste quantities depends on whether the project is undertaking an ISCA Rating or not.

What is an ISCA rating?

The IS Rating Scheme (IS) is Australia and New Zealand’s only comprehensive rating system for evaluating sustainability across the planning, design, construction and operational phases of infrastructure programs, projects, networks and assets.

IS evaluates the sustainability performance of the quadruple bottom line (Governance, Economic, Environmental and Social) of infrastructure development. The IS rating tool is developed and administered by the Infrastructure Sustainability Council of Australia (ISCA).

Further information can be found at www.isca.org.au.

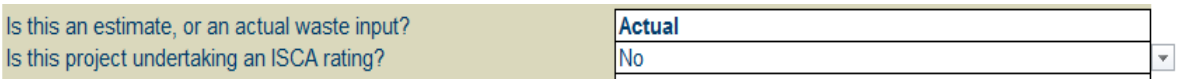
All Transport and Main Roads infrastructure projects with a value >$100M are required to undertake an ISCA rating.

6.1 Projects not undertaking an ISCA rating

6.1.1 Actual waste input

Projects not undertaking an ISCA rating should populate each of the white user input boxes provided under the Input Tab questions list (Figure 6.1.1(a)).

Figure 6.1.1(a) – Project undertaking no ISCA rating



When these options are selected in the Input Tab, a table appears on the Input Tab for users to input the actual waste quantities for a project (Figure 6.1.1(b)).

Figure 6.1.1(b) – Input actual waste quantities

USER INPUT - Actual Waste Quantities

Category	Waste Streams	Generated (Tonnes)	Reused (Tonnes)	Recycled (Tonnes)	Landfilled (Tonnes)
Bulk earthworks and clearing	Excess Earthworks / Embankment / Fill				
	Vegetation				
Contaminated and Regulated Waste	Acid Sulphate Soil				
	Other Contaminated Earthworks				
	Regulated Waste Cat 1				
	Regulated Waste Cat 2				
	Septic General				
Construction Waste	Asphalt & Profiles (RAP)				
	Other Recovered Pavement Materials				
	Concrete				
	Metal				
	Other Construction Waste (Timber, glass, plastic, bricks)				
	Tyres & Rubber				
	General Refuse				
	Illegally Dumped Refuse				
Site office waste	Office - General & Foodwaste				
	Office - Recyclables				
	Office - Paper				

Project teams to note the following:

- The waste quantities should be based on the total quantities recorded over the project contract period (that is, the date the contract was signed through to Practical Completion).
- All input quantities should be in metric Tonnes. A conversion chart is provided on the 'Conversion' tab of the Calculator to assist projects in converting other units of measure (IE kg) to Tonnes.
- Where there is no quantity for a particular stream, leave blank.
- Projects should note that the 'Generated' waste quantity should be equal to the sum of the reused, recycled and landfilled quantities. The Calculator will automatically return an error when the sum of the reused, recycled and landfilled wastes per stream do not equal the generated quantity.

6.1.2 Actual – Report

All 'actual' quantities entered on the Input tab will automatically populate the 'ACTUAL – Report' tab (Figure 6.1.2). The intention of this tab is to produce a standardised report style table for any reporting purposes. Projects are unable to change or alter any of the data displayed on this tab.

Figure 6.1.2 – Waste actuals report tab

Infrustructure Projects - Waste Actuals Report - Practical Completion

CONTRACT NAME	Motorway A
CONTRACT ID	CN-4321
REPORTING DATE	44012
Quantities Complete	Yes

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Stream Type	Waste Stream	Generated (Tonnes)	Reused (Tonnes)	Recycled (Tonnes)	Landfill (Tonnes)
Bulk earthworks and	Excess Earthworks / Embankment / Fill	-	-	-	-
	Vegetation	-	-	-	-
Contaminated and	Acid Sulphate Soil	-	-	-	-
	Other Contaminated Earthworks	-	-	-	-
	Regulated Waste Cat 1	-	-	-	-
	Regulated Waste Cat 2	-	-	-	-
	Septic General	-	-	-	-
Construction Waste	Asphalt & Profiles (RAP)	-	-	-	-
	Other Recovered Pavement Materials	-	-	-	-
	Concrete	-	-	-	-
	Metal	-	-	-	-
	Other Construction Waste (Timber, glass, plastic, b	-	-	-	-
	Tyres & Rubber	-	-	-	-
	General Refuse	-	-	-	-
	Illegally Dumped Refuse	-	-	-	-
Site office waste	Office - General & Foodwaste	-	-	-	-
	Office - Recyclables	-	-	-	-
	Office - Paper	-	-	-	-

6.2 Projects undertaking an ISCA rating

6.2.1 Actual – ISCA Monthly

Projects that are undertaking an ISCA rating will be unable to enter waste quantities on the 'Input' tab (Figure 6.2.1(a)). Instead, ISCA projects should populate waste quantities on the 'ACTUAL – ISCA Monthly' tab each month over the project duration. The below instruction will appear for users to inform them of where to enter their monthly waste data (Figure 6.2.1(b)).

Figure 6.2.1(a) – Project undertaking an ISCA rating

Is this an estimate, or an actual waste input?	**Actual**
Is this project undertaking an ISCA rating?	Yes

Figure 6.2.1(b) – Instruction – Enter monthly waste data

Note: ISCA Projects should use the ACTUAL - ISCA Monthly tab for monthly waste tracking.

The users then select the "ACTUAL – ISCA Monthly" tab to enter monthly waste quantities (Figure 6.2.1(c)).

Figure 6.2.1(c) – Actual – ISCA monthly tab

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Infrastructure Project ISCA Monthly Waste - Actuals

This monthly input sheet can be used by projects undertaking an Infrastructure Sustainability Council of Australia (ISCA) rating, to contribute towards the attainment of the Was-1 and Was-2 credits.

Contract Start Date	17/06/2020	MONTH, YEAR				MONTH, YEAR				MONTH, YEAR			
Stream Type	**Waste Stream**	Generated (Tonnes)	Reused (Tonnes)	Recycled (Tonnes)	Landfill (Tonnes)	Generated (Tonnes)	Reused (Tonnes)	Recycled (Tonnes)	Landfill (Tonnes)	Generated (Tonnes)	Reused (Tonnes)	Recycled (Tonnes)	Landfill (Tonnes)
Bulk earthworks and clearing	Excess Earthworks / Embankment / Fill												
	Vegetation												
Contaminated and Regulated Waste	Acid Sulphate Soil												
	Other Contaminated Earthworks												
	Regulated Waste Cat 1												
	Regulated Waste Cat 2												
	Septic General												
Construction Waste	Asphalt & Profiles (RAP)												
	Other Recovered Pavement Materials												
	Concrete												
	Metal												
	Other Construction Waste (Timber, glass, plastic, bricks)												
	Tyres & Rubber												
	General Refuse												
	Illegally Dumped Refuse												
Site office waste	Office - General & Foodwaste												
	Office - Recyclables												
	Office - Paper												

Project teams to note the following:

- The waste quantities should be based on the total quantities recorded each calendar month.
- All input quantities should be in metric Tonnes. A conversion chart is provided on the 'Conversion' tab of the Calculator.
- Where there is no quantity for a particular stream, leave blank.
- Projects should note that the 'Generated' waste quantity should be equal to the sum of the reused, recycled and landfilled quantities. The Calculator will automatically return an error when the sum of the reused, recycled and landfilled wastes per stream do not equal the generated quantity.

6.2.2 Actual – ISCA Cumulative tab

All 'actual' quantities entered on the 'ACTUAL – ISCA Monthly' tab will automatically populate the 'ACTUAL – ISCA Cumulative' tab (Figure 6.2.2). The intention of this tab is to produce a standardised report style table for any reporting purposes. Projects are unable to change or alter any of the data displayed on this tab.

In addition to the cumulative totals report, the Calculator will automatically calculate the achievement the diversion targets for spoil, non-hazardous and office waste from landfill, under the IS Was-2 credit. These benchmarks are shown in the following Table 6.2.2.

Table 6.2.2 – Credit benchmarks

Waste type	Infrastructure Was-2 credit benchmark		
	L1	L2	L3
Spoil	70% to <80% by volume of spoil	80% to <100% by volume of spoil	100% by volume of spoil
Inert and non-hazardous waste	25% to <50% by volume of inert and non-hazardous waste	50% to 90% by volume of inert and non-hazardous waste	>90% by volume of inert and non-hazardous waste
Office waste	25% to <40% by volume of office waste	40% to 60% by volume of office waste	>60% by volume of office waste

Notes:

Depending on the diversion rates, the achievement of each benchmark level per Infrastructure Sustainability Was-2 category, and overall, will be displayed.

Figure 6.2.2 – Actuals cumulative tab

Infrastructure Project Waste Report - Actuals Cumulative Totals

CONTRACT NAME Motorway A
CONTRACT ID CN-4321
REPORTING DATE 44012

Queensland Government

Stream Type	Waste Stream	Generated (Tonnes)	Reused (Tonnes)	Recycled (Tonnes)	Landfill (Tonnes)
Bulk earthworks and clearing	Excess Earthworks / Embankment / Fill	-	-	-	-
	Vegetation	-	-	-	-
Contaminated and Regulated Waste	Acid Sulphate Soil	-	-	-	-
	Other Contaminated Earthworks	-	-	-	-
	Regulated Waste Cat 1	-	-	-	-
	Regulated Waste Cat 2	-	-	-	-
	Septic General	-	-	-	-
Construction Waste	Asphalt & Profiles (RAP)	-	-	-	-
	Other Recovered Pavement Materials	-	-	-	-
	Concrete	-	-	-	-
	Metal	-	-	-	-
	Other Construction Waste (Timber, glass, plasti	-	-	-	-
	Tyres & Rubber	-	-	-	-
	General Refuse	-	-	-	-
	Illegally Dumped Refuse	-	-	-	-
Site office waste	Office - General & Foodwaste	-	-	-	-
	Office - Recyclables	-	-	-	-
	Office - Paper	-	-	-	-

Comparison with ISCA Was-2 Benchmark Targets	Cumulative % Diverted from Landill	L1	L2	L3
Spoil	Incomplete	Yes	Yes	Yes
Invert and Non-hazardous waste	Incomplete	Yes	Yes	Yes
Office Wase	Incomplete	Yes	Yes	Yes
Credit Benchmark Achieved		**YES**	**YES**	**YES**

7 Recycled material quantities

7.1 Input tab – Recycled material quantities

All projects, regardless of whether they are undertaking an ISCA rating or not, are asked to enter quantities of recycled materials used in the project on the 'Input' tab (Figure 7.1). Recycled materials should be selected from the listed material type or custom materials can be entered into the table.

The quantities provided should be of the specific recycled material constituent (IE quantity of recycled glass cullet used in unbound granular pavement) rather than the quantity of the mixed product.

The User is prompted to identify the application the recycled material was used in and where possible the applicable work item.

Figure 7.1 – Input tab – Recycled material quantities

USER INPUT - Recycled Material Quantities				
Recycled Material Type	Application	Applicable Work Item #	Quantity used on project (Tonnes)	Additional Comment (If Required)
Crushed Concrete				
Crushed Brick				
Crushed Glass / Manufactured Sand / Glass Cullet				
Reclaimed Asphalt Pavement (RAP)				
Recovered Pavement Material (other than RAP)				
Crumbed Rubber				
Fly ash				
Slag				
Insitu Material				
Recycled Plastic				
Other (specify)				
Other (specify)				
Other (specify)				
Other (specify)				
Other (specify)				

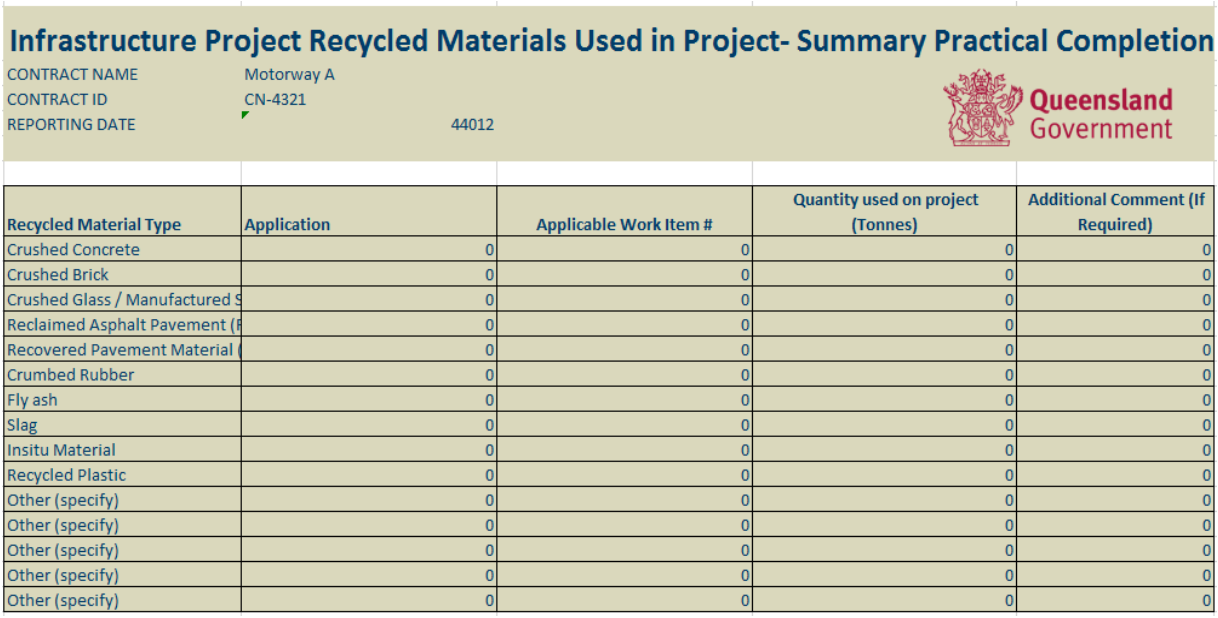
Project teams to note the following:

- All projects are encouraged to populate recycled material quantities, where known.
- Recycled material quantities should be based on the 'actual' quantities over the project contract period (that is, the date the contract was signed through to Practical Completion).
- All input quantities should be in metric Tonnes. A conversion chart is provided on the 'Conversion' tab of the Calculator.
- Where there is no quantity for a particular material type, leave blank.

7.2 Recycled materials – Report

All 'actual' recycled material quantities entered on the Input tab will automatically populate the 'Recycled Materials – Report' tab (Figure 7.2). The intention of this tab is to produce a standardised report style table for any reporting purposes. Projects are unable to change or alter any of the data displayed on this tab.

Figure 7.2 – Recycled materials – Report tab



Infrastructure Project Recycled Materials Used in Project- Summary Practical Completion

CONTRACT NAME Motorway A
CONTRACT ID CN-4321
REPORTING DATE 44012

Queensland Government

Recycled Material Type	Application	Applicable Work Item #	Quantity used on project (Tonnes)	Additional Comment (If Required)
Crushed Concrete	0	0	0	0
Crushed Brick	0	0	0	0
Crushed Glass / Manufactured S	0	0	0	0
Reclaimed Asphalt Pavement (F	0	0	0	0
Recovered Pavement Material (	0	0	0	0
Crumbed Rubber	0	0	0	0
Fly ash	0	0	0	0
Slag	0	0	0	0
Insitu Material	0	0	0	0
Recycled Plastic	0	0	0	0
Other (specify)	0	0	0	0
Other (specify)	0	0	0	0
Other (specify)	0	0	0	0
Other (specify)	0	0	0	0
Other (specify)	0	0	0	0

8 User guide tab

The Calculator includes a User Guide Tab which provides references and instructions to the user on how to use and complete the Calculator.

8.1 Waste categories and waste streams

8.1.1 Waste categories

The Calculator is built around four defined waste categories, as per the following Table 8.1.1.

Table 8.1.1 – Waste category descriptions

Waste Category	Description
Bulk earthworks and clearing (Not contaminated)	This category includes 'natural' waste streams generated through bulk earthworks / civil engineering activities. This category includes any non-contaminated waste.
Contaminated and Regulated Waste	This category includes streams classified as regulated waste under *The Environmental Protection (Waste ERA Framework) Amendment Regulation 2018,* and which are not specified in any other category. Refer here for further guidance: https://environment.des.qld.gov.au/waste/review-reg-waste.html.
Construction Waste	This category includes streams which are 'man-made' and generated through construction activities.
Site Office Waste	This category includes any waste streams generated through office activities, such as general waste, recyclables, and paper.

8.1.2 Waste streams

Within each waste category, a wide range of waste streams are provided for project teams to report against. Streams have been selected for the Calculator based on an analysis of typical waste streams on Transport and Main Roads projects. A description of each stream is provided in the following Table 8.1.2.

Table 8.1.2 – Waste stream descriptions

Waste Stream	Description
Excess Earthworks / Embankment / Fill	Any excess earthworks, embankment or fill generated by a project which is then exported outside the project boundary for either reuse, recycle or landfill beyond the project boundary.
Vegetation	Timber vegetation, stripped grasses and so on.
Acid Sulphate Soil	Acid Sulphate Soils
Other Contaminated Earthworks	Any other contaminated earthworks, but not acid sulphate soils.
Regulated Waste Cat 1	Regulated waste is Category 1 regulated waste if it meets the requirements of Section 43 of the *Environmental Protection Regulation 2019.*
Regulated Waste Cat 2	Regulated waste is Category 2 regulated waste if it is not Category 1 regulated waste.
Septic General	Septic waste generated by projects
Asphalt and Profiles (RAP)	Asphalt only (not chip seals and other pavements)
Other Recovered Pavement Materials	Spray seal pavements, stabilised pavements (not asphalt)
Concrete	Structural concrete, shot crete, hardened grout, concrete washout
Metal	Sign posts, guardrails and so on
Other Construction Waste (timber, glass, plastic, bricks)	Any construction waste not accounted for in other construction waste categories, such as uncontaminated timber, glass, plastic and bricks
Tyres and Rubber	Waste tyres
General Refuse	Cardboard, plastic packaging
Illegally Dumped Refuse	Waste collected from road reserve
Office – General and Food waste	Putrescibles, kitchen waste, non-recyclable packaging
Office – Recyclables	Mixed recyclables including plastic plates, bottles, aluminium cans and so on.
Office – Paper	Paper and cardboard recyclable waste

8.2 Waste levy zone map

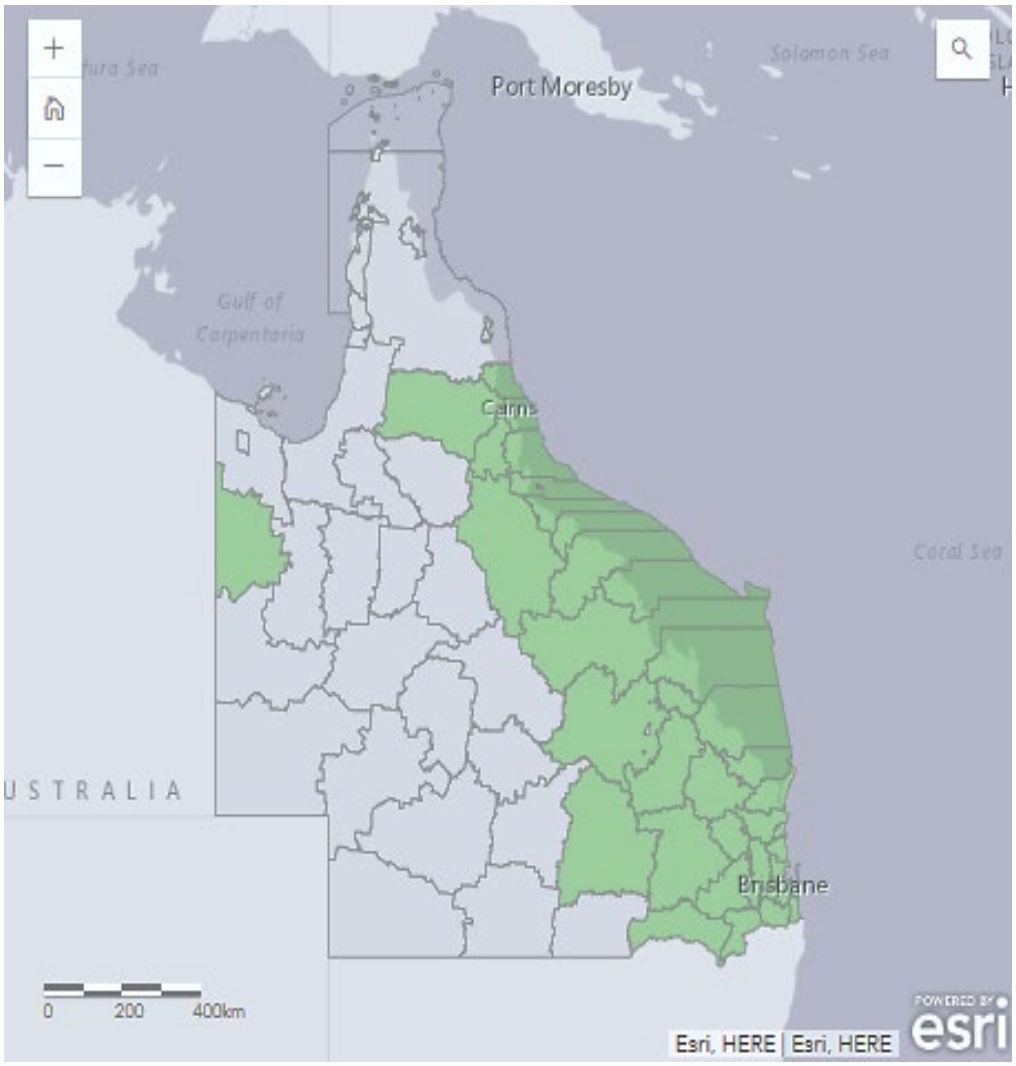
The levy zone includes 39 out of 77 local government areas in Queensland, which covers around 90% of Queensland's population and is where the majority of waste is generated and disposed.

The exclusion of some local government areas recognises the different circumstances faced by remote and less populated communities in Queensland, and removes the costs of administering, remitting and reporting against the levy in these regional areas.

The waste levy zone map (Figure 8.2) can be accessed via the following Queensland government webpage:

https://www.qld.gov.au/environment/pollution/management/waste/recovery/disposal-levy/about/waste-levy-map

Figure 8.2 – Queensland waste levy zones and boundaries



9 Submitting Waste Report to the department

Once the Consultant or Contractor has completed the applicable waste estimation or actuals within the Waste and Recycling Calculator, the completed Calculator shall be submitted to Transport and Main Roads for collation.

The User is required to name the file according to:

a) Contract ID

b) Contract name, and

c) whether the file is an estimate or an actual report.

For instance:

Contract#_ContractName_Estimate

For example, CN45678_BloggsRoadUpgrade_Estimate

The Calculator shall be submitted to the following email inbox, projectwasteregister@tmr.qld.gov.au

The Consultant and Contractor shall cc the contract administrator and/or Transport and Main Roads Project Manager to the email for contract administrative purposes.

For design contracts, the waste estimates shall be submitted prior to completion of the design contract.

For construction and maintenance projects, the completed actuals shall be submitted at Practical Completion.