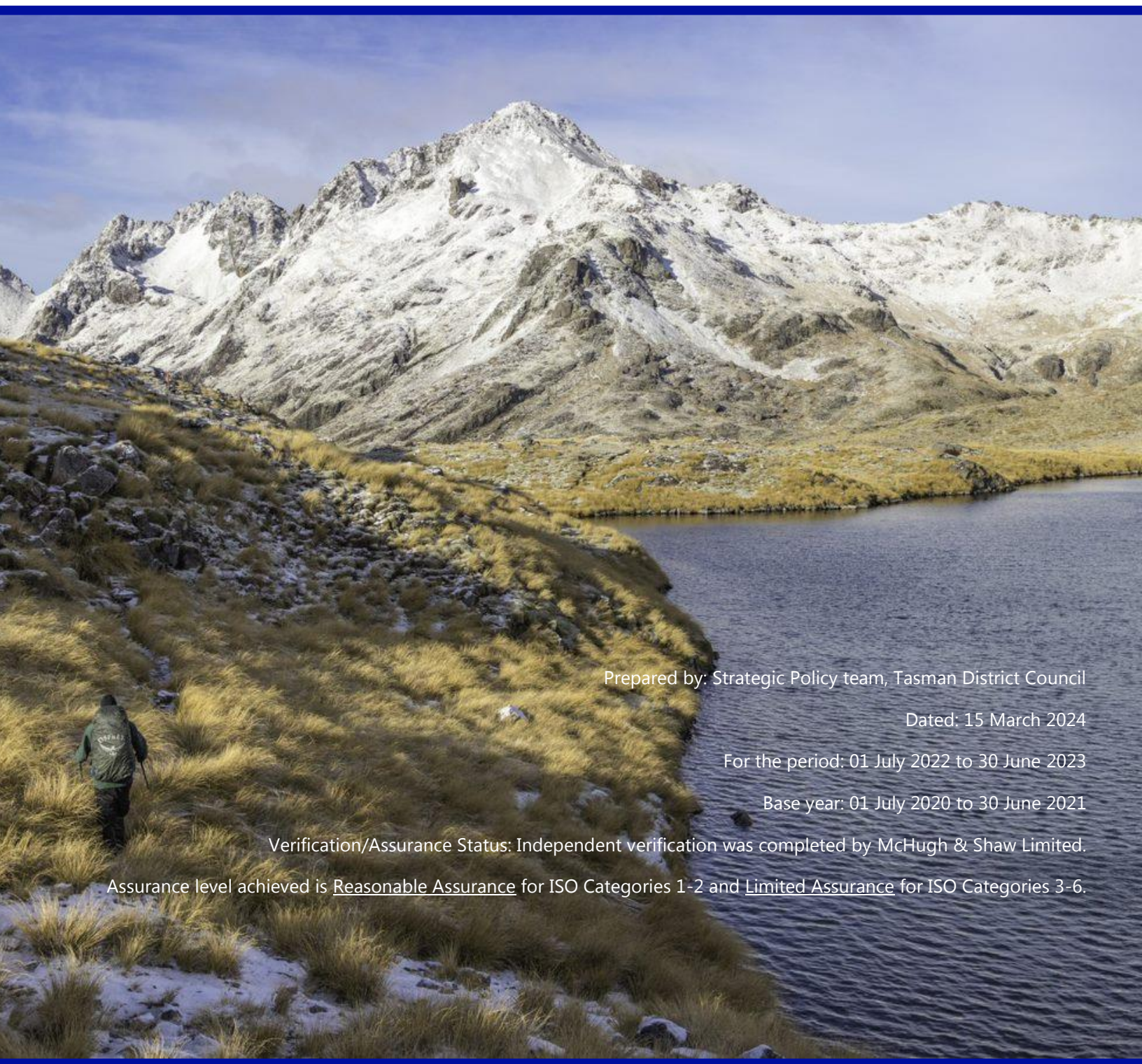


# Greenhouse Gas Emissions Inventory Report

2022 – 2023

Prepared in accordance with ISO 14064-1:2018



Prepared by: Strategic Policy team, Tasman District Council

Dated: 15 March 2024

For the period: 01 July 2022 to 30 June 2023

Base year: 01 July 2020 to 30 June 2021

Verification/Assurance Status: Independent verification was completed by McHugh & Shaw Limited.

Assurance level achieved is Reasonable Assurance for ISO Categories 1-2 and Limited Assurance for ISO Categories 3-6.

# Contents

Executive Summary .....	1
1 Introduction .....	6
1.1 Organisational description.....	6
1.2 People responsible.....	8
1.3 Third-party verification .....	8
1.4 Intended use and users .....	8
1.5 Dissemination policy.....	9
1.6 Documentation retention and record-keeping.....	9
1.7 Base year recalculation policy.....	9
1.8 Reporting period, base year, and frequency of reporting .....	9
1.9 Performance against targets.....	9
1.10 GHG information management procedures.....	9
1.11 Methodological changes.....	10
2 Organisational boundaries included for this reporting period.....	11
3 Reporting boundaries.....	13
3.1 GHG emission source exclusions.....	13
3.2 Emission source identification method and significance criteria.....	15
3.3 GHG emission source inclusions .....	15
3.4 Impact on uncertainties on the accuracy of GHG emissions and removals .....	26
3.5 Suppliers.....	26
4 Quantified inventory of emissions and removals .....	27
4.1 Methodology .....	27
4.2 GHG inventory .....	27
4.3 Historical recalculations.....	30
4.4 Biogenic GHG emissions from landfill .....	34
4.5 Anthropogenic biogenic CO <sub>2</sub> emissions .....	34
4.6 Forestry emissions.....	34
5 Emission trends over time.....	35
6 References.....	39

<b>Figure 1:</b> Gross greenhouse gas (GHG) emissions by category (2022/23) .....	4
<b>Figure 2:</b> GHG emissions by source (2022/23) .....	4
<b>Figure 3:</b> Percentage of gross GHG emissions attributed to sources .....	5
<b>Figure 4:</b> Tasman District Council's organisational structure .....	7
<b>Figure 5:</b> Organisational boundary for Tasman District Council emissions measurement, using the operational control consolidation approach.....	12
<b>Figure 6:</b> Comparison of original vs revised calculated landfill emissions, based on MfE and UEF emission factors.....	31
<b>Figure 7:</b> Comparison of landfill emissions vs all other GHG emissions (landfill emissions recalculated using UEF and all other emissions recalculated using operational control method) .....	31
<b>Figure 8:</b> Comparison of net GHG emissions (verified) vs net GHG emissions (recalculated) .....	33
<b>Figure 9:</b> Gross greenhouse gas (GHG) emissions by category compared to previous years .....	37
<b>Figure 10:</b> Net greenhouse gas (GHG) emissions compared to the Tasman Climate Action Plan targets for Council emissions .....	37
<b>Figure 11:</b> Comparison of top four GHG operational emissions between base year and 2022/23 ...	38
<b>Table 1:</b> GHG emissions summary (tCO <sub>2</sub> e).....	1
<b>Table 2:</b> GHG emissions inventory summary for 2022/23 .....	2
<b>Table 3:</b> Methodological changes from the last reporting period .....	10
<b>Table 4:</b> Business units, facilities, and activities excluded from emissions measurement .....	13
<b>Table 5:</b> GHG emission sources and sinks included in the inventory.....	17
<b>Table 6:</b> Suppliers and contractors included in the Council's emissions inventories.....	26
<b>Table 7:</b> Global warming potential (GWP) of selected greenhouse gases .....	27
<b>Table 8:</b> GHG emissions inventory summary (tCO <sub>2</sub> e): comparison of 2022/23 period to base year .	28
<b>Table 9:</b> Comparison between emissions calculated using the UEF and MfE emissions factor methodologies .....	30
<b>Table 10:</b> Differences between MfE and UEF Waste-to-landfill reporting methodologies.....	32
<b>Table 11:</b> Comparison of Council's total emissions across reporting periods .....	35
<b>Table 12:</b> Comparison of major suppliers' emissions across reporting periods .....	36
<b>Table 13:</b> Comparison of Joint Committee emissions across reporting periods.....	36

## Executive Summary

This is the annual greenhouse gas (GHG) emissions<sup>1</sup> inventory report for Tasman District Council (the Council) covering the measurement period 1 July 2022 to 30 June 2023. The Council's net emissions for the 2022/23 period were 14,713 tCO<sub>2</sub>e (tonnes of carbon dioxide equivalents).

The Council's primary emissions sources were from supplier transport fuels and Joint Committee emissions<sup>2</sup>. The Council's other large emission sources were other wastewater treatment plants, purchased electricity, and Council's transport fuels. Together, these sources make up 97% of our gross carbon emissions for the 2022/23 period.

**Table 1:** GHG emissions summary (tCO<sub>2</sub>e)<sup>3</sup>

Category (ISO 14064-1:2018)	2020/21 (Base year)	2021/22	2022/23
Category 1: Direct emissions	1,970	1,725	1,666
Category 2: Indirect emissions from imported energy (location-based method)	668	777	485
Category 3: Indirect emissions from transportation	35	27	44
Category 4: Indirect emissions from products used by the organisation <sup>4</sup>	2,731	2,695	7,457
Category 5: Indirect emissions associated with the use of products from the organisation	0	0	0
Category 6: Indirect emissions from other sources	0	0	0
<b>Total gross GHG from TDC</b>	<b>5,404</b>	<b>5,223</b>	<b>9,652</b>
Joint Committee emissions (external)	45,239	23,723	5,227
<b>TOTAL</b>	<b>50,642</b>	<b>28,946</b>	<b>14,879</b>
Category 1 direct removals	(37)	(35)	(166)
<b>Total net GHG emissions</b>	<b>50,606</b>	<b>28,911</b>	<b>14,713</b>

Emissions intensity for 2022/23 period	Total emissions
Total gross GHG emissions (tCO <sub>2</sub> e) per rateable unit <sup>5</sup>	0.57
Total gross GHG emissions (tCO <sub>2</sub> e) per resident <sup>6</sup>	0.25

<sup>1</sup> Throughout this document 'emissions' means GHG emissions.

<sup>2</sup> Joint Committee emissions are the Council's 50% share of emissions from York Valley Landfill, Bell Island WWTP and Nelson-Tasman Civil Defence and Emergency Management (CDEM). The remaining 50% of these emissions are included in Nelson City Council's GHG inventory.

<sup>3</sup> The figures in this summary table have been recalculated for all years using the operational control method and UEF for landfill emissions.

<sup>4</sup> PF Olsen, the contractor who manage Council's plantation forestry, provided data on consumption of transport fuels and other emissions sources for the first time in 2022/23.

<sup>5</sup> Total number of rateable rating units as of 1 July 2023: 25,910

<sup>6</sup> Total population as of June 2023 estimated: 59,800

Table 2 describes the Council's GHG emissions in detail. This table is organised by emissions category, as recommended by ISO 14064-1:2018.

**Table 2:** GHG emissions inventory summary for 2022/23<sup>7</sup>

	Category (ISO 14064-1:2018)	GHG emissions <sup>8</sup>			
	Source	tCO <sub>2</sub> e	tCO <sub>2</sub>	tCH <sub>4</sub>	tN <sub>2</sub> O
Scope 1	<b>Category 1: Direct emissions</b>				
	Wastewater (7 WWTPs, excludes Bell Island WWTP)	1,425	0	1,102.9	322
	Transport fuels	231	224.8	1.5	4.8
	Fertiliser <sup>9</sup>	9.7	1.1	0	8.6
	Refrigerants <sup>10</sup>	-	-	-	-
	<b>Total Category 1/Scope 1 emissions</b>	<b>1,666</b>	<b>226</b>	<b>1,104</b>	<b>335</b>
Scope 2	<b>Category 2: Indirect emissions from imported energy</b>				
	Purchased electricity	485.3	471.6	12.7	1
	<b>Total Category 2 /Scope 2 emissions</b>	<b>485.3</b>	<b>471.6</b>	<b>12.7</b>	<b>1</b>
Scope 3	<b>Category 3: Indirect emissions from transportation and distribution</b>				
	Rental car	0.6	0.6	-	-
	Air travel	35	34.4	0.1	0.5
	Accommodation	3.7	-	-	-
	Freight	1.8	1.7	-	-
	Helicopter fuel (environmental monitoring)	2.7	2.7	-	-
	<b>Total Category 3 emissions</b>	<b>43.8</b>	<b>39.4</b>	<b>0.1</b>	<b>0.6</b>
	<b>Category 4: Indirect emissions from products used by the organisation</b>				
	Electricity transmission and distribution losses	56.3	54.7	1.5	0.1
	Cloud storage	2.3	-	-	-
	Employee office waste	3.2	-	-	-
	Suppliers' transport fuels	6,991.6	6,874.7	10.8	97.9
	Suppliers' helicopter fuel (plantation forestry and wilding pine control)	59.9	59.4	0	0.5
	Suppliers' stationary combustion	77.9	77.2	0.3	0.3
	Suppliers' construction materials	79.3	268.8	246.2	24
	Suppliers' electricity	141.3	135.9	3.7	0.3
Suppliers' waste	37.3	-	-	-	

<sup>7</sup> Numbers in brackets indicate converted tCO<sub>2</sub>e units. Numbers may not add up to tCO<sub>2</sub>e due to rounding or lack of data. Numbers may not be reported if they are minimal (<0.5 tCO<sub>2</sub>e). Some emission sources were only reported as tCO<sub>2</sub>e rather than split into constituent gases.

<sup>8</sup> During the 2022/23 period there were no emissions from HFCs, SF<sub>6</sub> or NF<sub>3</sub>, hence their omission from this table.

<sup>9</sup> Pre-verified data from the supplier (Nelmac).

<sup>10</sup> Based on refrigerants purchased, not refrigerants used. No refrigerants were purchased this year.

	Category (ISO 14064-1:2018)	GHG emissions <sup>8</sup>				
	Source	tCO <sub>2</sub> e	tCO <sub>2</sub>	tCH <sub>4</sub>	tN <sub>2</sub> O	
	Suppliers' emissions <sup>11</sup>	8.0	-	-	-	
	Suppliers' refrigerants (Richmond Aquatic Centre)	-	-	-	-	
	<b>Total Category 4 emissions</b>	<b>7,457</b>	<b>7,470</b>	<b>262</b>	<b>123</b>	
	<b>Category 5: Indirect emissions associated with the use of products from the organisation</b>					
	Not reported	N/A	-	-	-	
	<b>Category 6: Indirect emissions from other sources</b>					
	Not reported	N/A	-	-	-	
	<b>Joint Committee emissions</b>					
	Waste landfilled LFGR Garden and Food	1	-	-	-	
	Waste landfilled LFGR Mixed waste	3,355	-	-	-	
	Waste landfilled LFGR Wood	147	-	-	-	
	Waste landfilled LFGR Inert waste	190	-	-	-	
	Wastewater Bell Island	1,303	-	-	228	
	Electricity + Electricity losses: Bell Island WWTP, York Valley landfill and CDEM	231	-	-	0.05	
<b>Total Joint committee emissions</b>	<b>5,227</b>					
<b>Total Scope 3 emissions</b>		<b>12,728</b>	<b>7,510</b>	<b>263</b>	<b>124</b>	
Scopes 1-3	<b>All emission sources</b>					
	Total direct emissions	1,666				
	Total indirect emissions	13,213				
	<b>Total gross emissions</b>	<b>14,879</b>				
Scope 1	<b>Removals</b>					
	Sink	tCO <sub>2</sub> e	tCO <sub>2</sub>	tCH <sub>4</sub>	tN <sub>2</sub> O	
	Exotic forestry planting for permanent forest cover	(86.5)	-	-	-	
	Native forestry planting	(79.3)	-	-	-	
	<b>Total removals</b>	<b>(165.8)</b>				
<b>Total net emissions</b>		<b>14,713</b>				

Please note the GHG emissions inventories for the 2020/2021 base year and the 2021/22 period (published online at <https://www.tasman.govt.nz/my-region/climate-change/what-is-council-doing/>) are not comparable to the 2022/23 GHG emissions inventory for the following reasons:

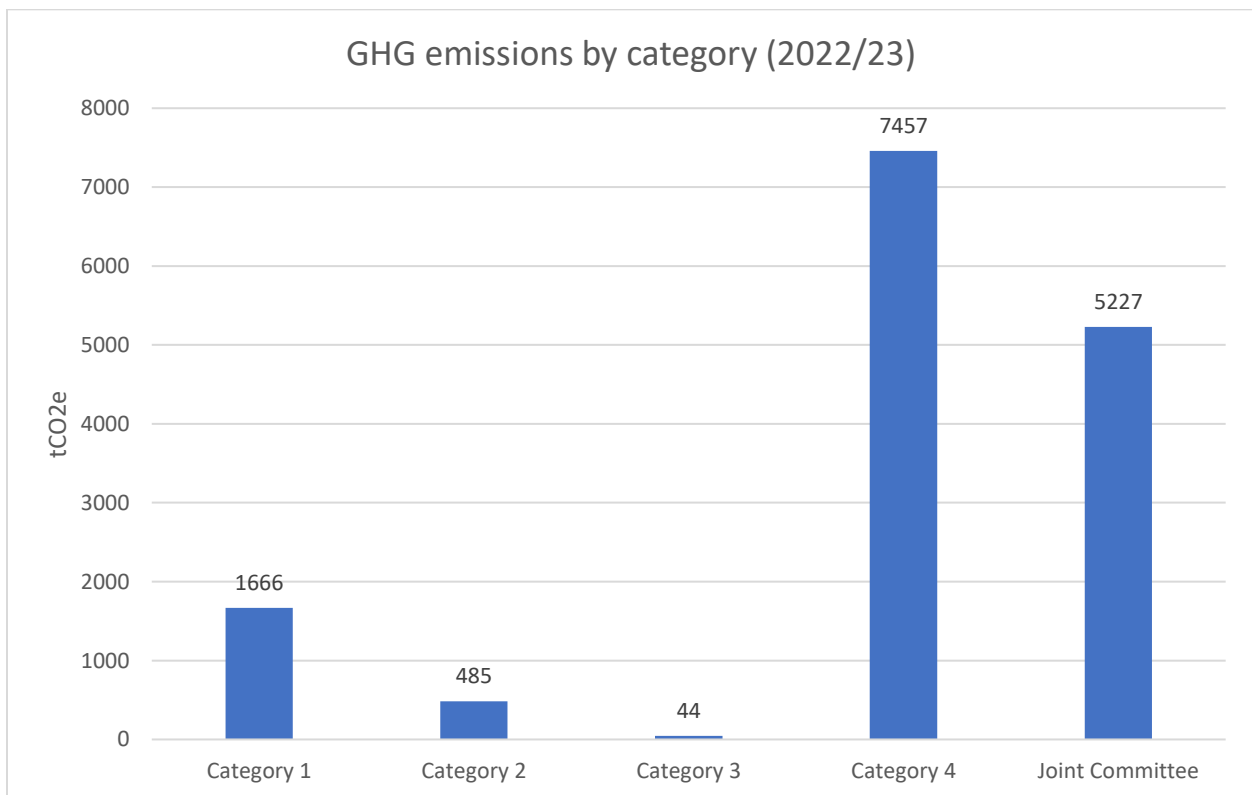
- The methodology used to prepare the 2022/23 inventory was the operational control consolidation approach, whereas in previous years the equity share approach was used.

<sup>11</sup> Data on Scope 3 emissions provided by one of our suppliers (Tonkin & Taylor) was not separated by source. Instead they reported a combined total of 7.95 tCO<sub>2</sub>e for their business travel, working from home, transmission and distribution losses, and well to tank emissions.

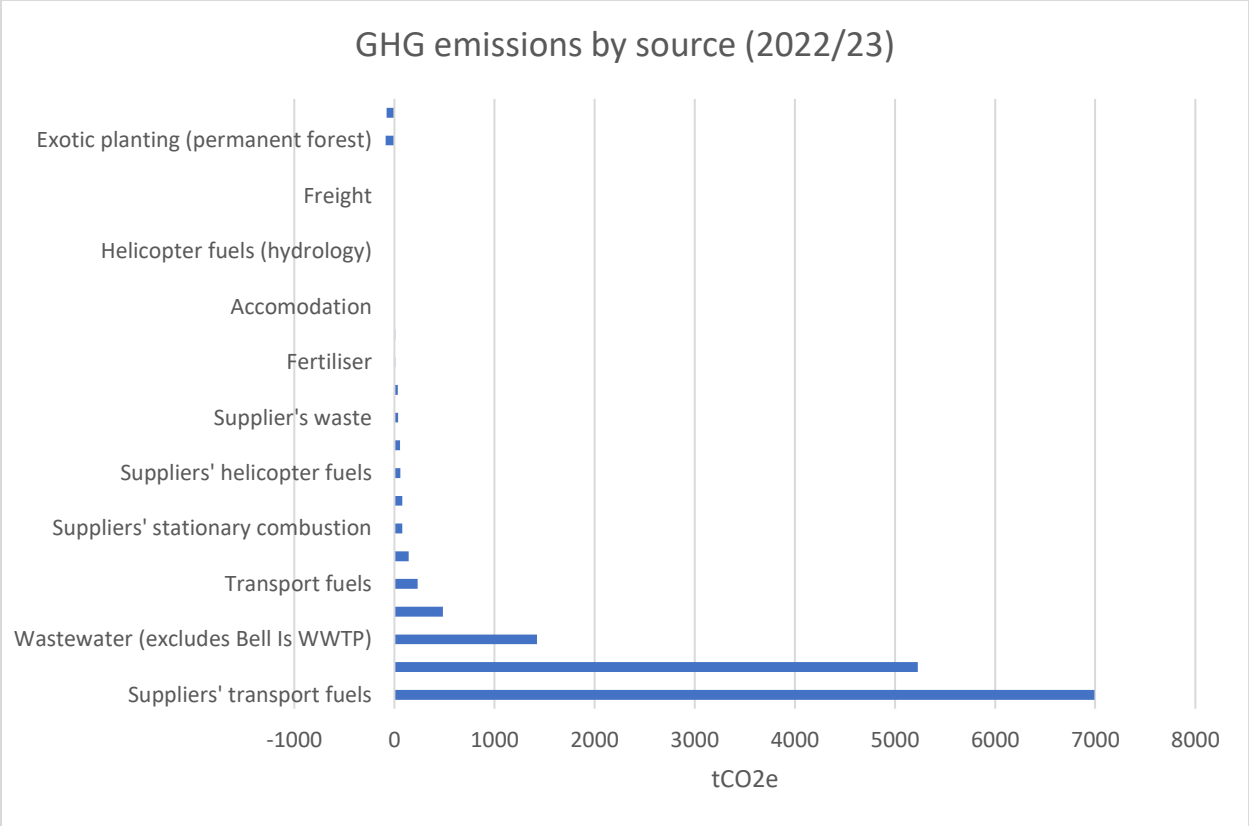
- As part of the move to an operational control approach, the 2022/23 inventory includes a new category of emissions: 'Joint Committee emissions'. Emissions from the three Joint Committee business units (i.e. the York Valley regional landfill, Bell Island wastewater treatment plant, and Nelson-Tasman Civil Defence and Emergency Management CDEM) had been included as Category 1-4 emissions in previous inventories.
- A unique emissions factor was used to calculate emissions from the regional York Valley Landfill for the 2022/23 period, whereas the Ministry for the Environment (MfE) national average emissions factor had been used in previous years.
- PF Olsen (the contractor who manages Council's plantation forests) provided data on their transport fuel usage for the first time in 2023. This additional information makes it look like there has been a significant increase in the suppliers' transport fuel total for the 2022/23 period, when compared to previous years.

Based on these changes in methodology and additions to the inventory since 2021, the Council has recalculated landfill emissions for the previous two reporting periods, to ensure reasonable comparisons can be made between the baseline year and most recent inventory results. The recalculated landfill emissions comprise part of the total Joint Committee emissions described in Table 1 and other sections of this report. The figures included within tables comparing reporting periods also have been recalculated using the operational control method, for consistency of comparison and identification of accurate trends over time.

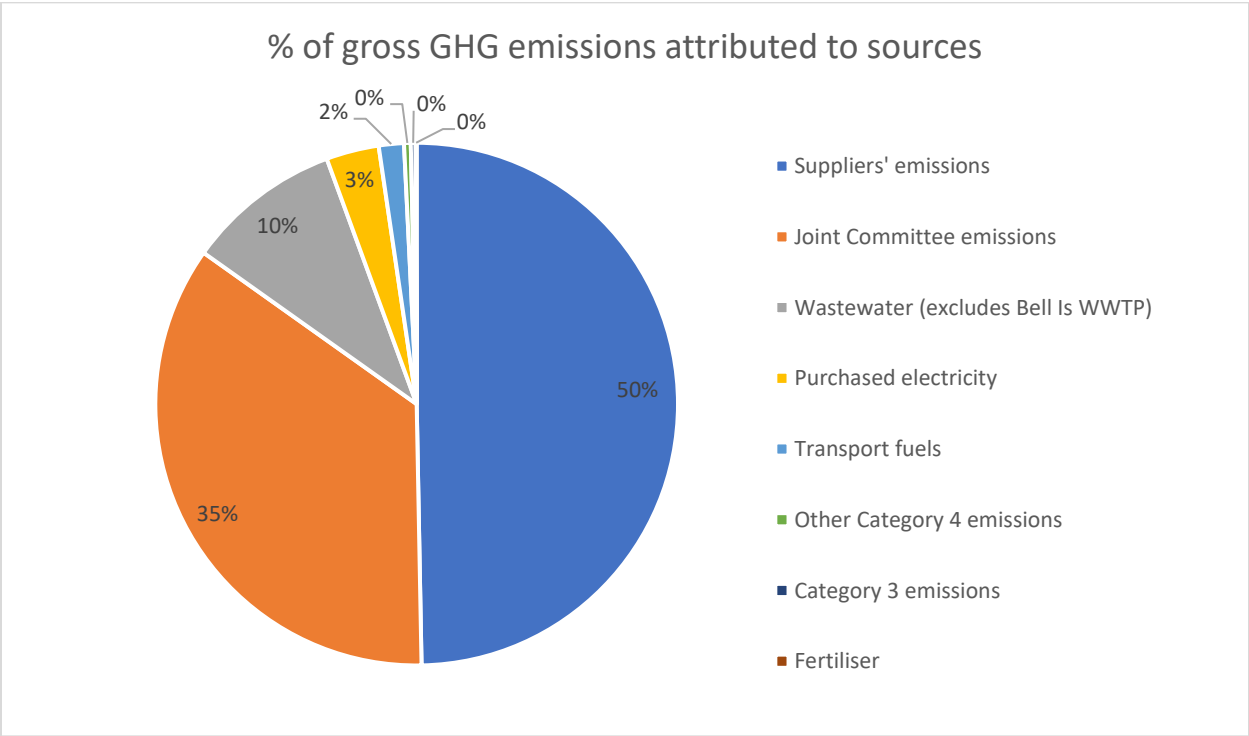
**Figure 1:** Gross greenhouse gas (GHG) emissions by category (2022/23)



**Figure 2:** GHG emissions by source (2022/23)



**Figure 3:** Percentage of gross GHG emissions attributed to sources





# 1 Introduction

This report is the annual greenhouse gas (GHG) emissions inventory for Tasman District Council.

The purpose of this report is to quantify the GHG emissions that can be attributed to the Council's operations within the declared boundary and scope for the July 2022 to June 2023 period.

The Council has prepared this inventory following the requirements of the *Ministry for the Environment Detailed Guide for Organisations*, the *Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition 2015)*, and *ISO 14064-1:2018 Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals*<sup>12</sup>.

To ensure the representativeness of the base-year inventory, Council has re-calculated the GHG emissions to account for substantial cumulative changes in the base-year emissions resulting from a change in one emission factor. The MfE default emission factor previously used for landfill emissions was replaced by the Unique Emissions Factor (UEF) developed for York Valley landfill. For comparison purposes, the UEF was not only replaced for base-year, but also in the intervening period (2021/22). This is discussed further in Section 4.3 of this report.

This inventory is part of the Council's ongoing commitment to measure and reduce its operational emissions, as set out in our *Climate Action Plan*<sup>13</sup>.

## 1.1 Organisational description

Tasman District Council/Te Kaunihera o te Tai o Aorere (Council) is the territorial authority for the Tasman District of New Zealand. The Tasman District spans 9,786 square kilometres of Te Tau Ihu (the top of the South Island), extending from Richmond to Golden Bay/Mōhua in the north-west and Murchison in the south.

We are one of six unitary councils in Aotearoa, meaning we do the work of both a regional council and a district council. We provide a wide-ranging of services to our communities, including:

- Water supply and regulation
- Wastewater collection and treatment
- Stormwater management
- Solid waste management
- Parks, reserves and community facilities
- Libraries and museums
- River and flood control
- Environmental protection and monitoring
- Biosecurity and pest control
- Civil defence and emergency management
- Maritime navigation and safety
- Commercial enterprises
- Food premises and liquor licensing

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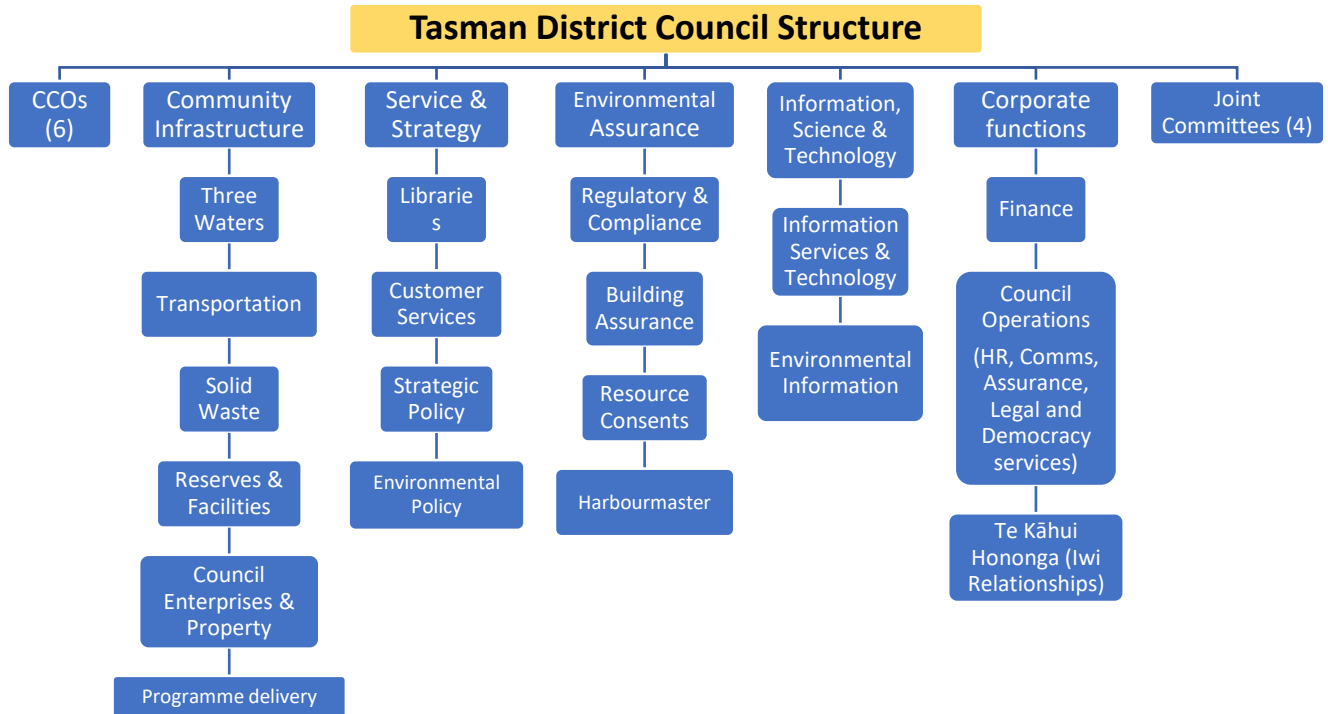
<sup>12</sup> Throughout this document 'GHG Protocol' means the *GHG Protocol Corporate Accounting and Reporting Standard* and 'ISO 14064-1:2018' means the *International Standard Specification with Guidance at the Organizational Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals*.

<sup>13</sup> Our Tasman Climate Action Plan and progress reports are available on our [website](#).

- Transportation infrastructure and street lighting
- Subdivision, building and resource consents processing
- Animal control
- Policy and planning
- Community partnerships
- Responding to climate change

The activities and services that each business unit within Council manages is shown in Figure 4.

**Figure 4:** Tasman District Council’s organisational structure



Council jointly controls four Council Controlled Organisations (CCOs). These are Waimea Water Ltd (who manage the Waimea Community Dam), Port Nelson Ltd (a port company), Nelson Airport Ltd and Tasman Bays Heritage Trust (who operate the Nelson Provincial Museum). Council is also a minority shareholder in two national organisations with CCO status: Civic Financial Services Ltd and Local Government Funding Agency Ltd.

Management and funding of the following activities/services is shared jointly with Nelson City Council and governed by Joint Committees, with equal representation from elected members of both councils:

- the Nelson-Tasman Civil Defence and Emergency Management (CDEM) Group oversees CDEM activities in both regions (the CDEM office is located in Tasman District)
- the Nelson Tasman Regional Landfill Business Unit (NTRLBU) manages the regional landfill (located at York Valley in Nelson City)
- the Nelson Regional Sewage Business Unit (NRSBU) manages the wastewater treatment plant at Bell Island (located in Tasman District)

- the Saxton Field Joint Committee is responsible for the regional sportsfield facility, Saxton Field (located in Nelson City).

Council owns many properties and administers many reserves across Tasman District. Council directly manages many of its properties and facilities, while contracting the operation to others. For example, community housing is managed in-house, whereas maintenance of most parks and reserves is contracted to Nelmac, the Richmond Aquatic Centre is contracted to CLM and bus services are contracted to SBL. Some of the buildings on Council-administered lands are leased to businesses at market rates, while others are leased at a subsidised rate to community organisations such as sports clubs and community groups.

The Tasman region, like many other parts of the world, is grappling with the impacts of climate change. Urgent action is required to mitigate emissions and respond effectively to the challenges already affecting us.

Our *Climate Action Plan* sets out the Council's response to these issues. It serves as our roadmap, steering us toward a low-carbon, resilient, and innovative Tasman District. Key focus areas include reducing greenhouse gas emissions, building climate resilience, leading by example, and empowering communities to take action. Priority actions include emission reduction measures in the transport, energy, and waste sectors, along with initiatives to build the resilience of our communities and ecosystems.

This report helps us understand how we're tracking our efforts to reduce the Council's emissions.

## 1.2 People responsible

Council's Strategic Policy team is responsible for overall emission inventory measurement and reduction performance, as well as reporting results to management and elected members. The Senior Data Analyst - Waters and Wastes is responsible for sourcing data, populating the MfE workbook and calculating emissions.

## 1.3 Third-party verification

Independent verification was completed by McHugh & Shaw Limited. The assurance level achieved is Reasonable Assurance ISO Categories 1-2 and Limited Assurance ISO Categories 3-6.

## 1.4 Intended use and users

The Council has developed this report to help our staff and elected members identify, mitigate, and reduce our greenhouse gas emissions. This report forms part of the Council's commitment to measure and reduce our emissions, as stated in our *Climate Action Plan*. We share these results yearly to keep our community informed about the Council's emissions and our efforts to reduce our carbon footprint.

## 1.5 Dissemination policy

We will make this report publicly available on our website at: <https://www.tasman.govt.nz/my-region/climate-change/what-is-council-doing/>, and present this report to the Strategy and Policy Committee of Council.

## 1.6 Documentation retention and record-keeping

The Council keeps records associated with our GHG emissions on a secure cloud-based server. The Council handles these documents following our GHG information management procedures.

## 1.7 Base year recalculation policy

We will consider a base-year recalculation in the case of changes to reporting boundaries, improvements in reporting methodology (such as additional ISO Category 3-6 emission sources), or the identification of significant errors in the methodology.

## 1.8 Reporting period, base year, and frequency of reporting

This inventory covers the period from July 1 2022 to June 30 2023. This choice aligns with global standards and the Council's financial reporting. The base year is July 1 2020 to June 30 2021. We will continue to measure our emissions annually.

## 1.9 Performance against targets

The Council's *Climate Action Plan* aims to reduce emissions from Council activities by 16% by 2030 and 34% by 2035, compared to our 2020-2021 baseline. This target is based on the annual averages of the emissions budgets<sup>14</sup> set in the national *Emissions Reduction Plan*<sup>15</sup>. Our baseline net GHG emissions were 50,606 tCO<sub>2</sub>e (recalculated using a UEF for landfill and the operational control method). This means our targets are: 42,509 tCO<sub>2</sub>e by 2029/2030; and 33,400 tCO<sub>2</sub>e by 2034/2035.

The Council is already exceeding these targets by a significant margin, with net emissions decreasing to 28,911 in 2021/22 and further decreasing to 14,713 in 2022/23 (see Figure 10).

## 1.10 GHG information management procedures

The Council has established GHG information management procedures that conform with *GHG Protocol* and *ISO 14064-1:2018* standards. These information management procedures provide regular checks to ensure the accuracy and completeness of our inventory. Our information management procedures document the following:

- Staff responsible for GHG inventory development

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<sup>14</sup> [Emissions budgets and the emissions reduction plan - Ministry for the Environment](#)

<sup>15</sup> [Emissions reduction plan - Ministry for the Environment](#)

- Training procedures for staff responsible for GHG inventory development
- Organisational boundaries and how we review them
- GHG sources, sinks, and how we review them
- Quantification approaches (including data and models used for quantification) and how we review them
- Use, maintenance, and calibration of measurement equipment
- Data collection systems and how we review them
- How regular accuracy checks, internal audits, and reviews of information management take place
- Triggers for recalculating base-year emissions, for consistency of comparison and identification of accurate trends over time.

### 1.11 Methodological changes

We have made the following methodological changes from previous year.

**Table 3:** Methodological changes from the last reporting period

Change	Reason
Change from equity share approach (used for our two previous inventories) to operational control consolidation approach to account for the Council's emissions.	We decided to change to the operational approach because the equity share approach was not providing a good reflection of the actual emissions that the Council had direct control over. Most other local authorities in New Zealand, including NCC, use the operational control approach, therefore it makes sense for us to switch to this approach for consistency.
Review of organisational boundaries (see section 2 of this report) to exclude a number of business units we had previously reported on.	We were not receiving full and complete data from our Council Controlled Organisations (CCOs) and a few of our major suppliers, which added uncertainty to our inventory.
The MfE default emission factor used for landfill emissions was replaced by the Unique Emissions Factor (UEF) developed for York Valley landfill.	To align with emissions reporting from the Nelson Tasman Regional Landfill Business Unit and NCC. To ensure the representativeness of the base-year GHG inventory, Council has re-calculated the GHG emissions to account for substantial cumulative changes in the base-year emissions resulting from a change in one emission factor. For comparison purpose, the UEF was not only replaced for base-year, but also in the intervening period (2021/22). This is discussed further in Section 4.3 of this report.

## 2 Organisational boundaries included for this reporting period

Organisational boundaries were set with reference to the methodology described in the *GHG Protocol* and *ISO 14064-1:2018* standards. The *GHG Protocol* allows two distinct approaches to consolidate GHG emissions: the equity share or control (financial or operational) approaches. We used an operational control consolidation approach to account for emissions.

We previously used an **equity share consolidation approach** to account for the Council's emissions. For the 2022/2023 reporting period, we have changed to an **operational control approach**. An equity share approach accounts for GHG emissions based on the Council's proportionate share of equity in an entity, even if the Council doesn't have operational control over that entity. An operational control approach focuses on GHG emissions that the Council directly controls and manages through its operational activities.

We decided to change to the operational approach because the equity share approach was not providing a good reflection of the actual emissions that the Council had direct control over. In addition, we were not receiving full and complete data from our Council Controlled Organisations (CCOs) and a few of our major suppliers, which added uncertainty to our inventory.

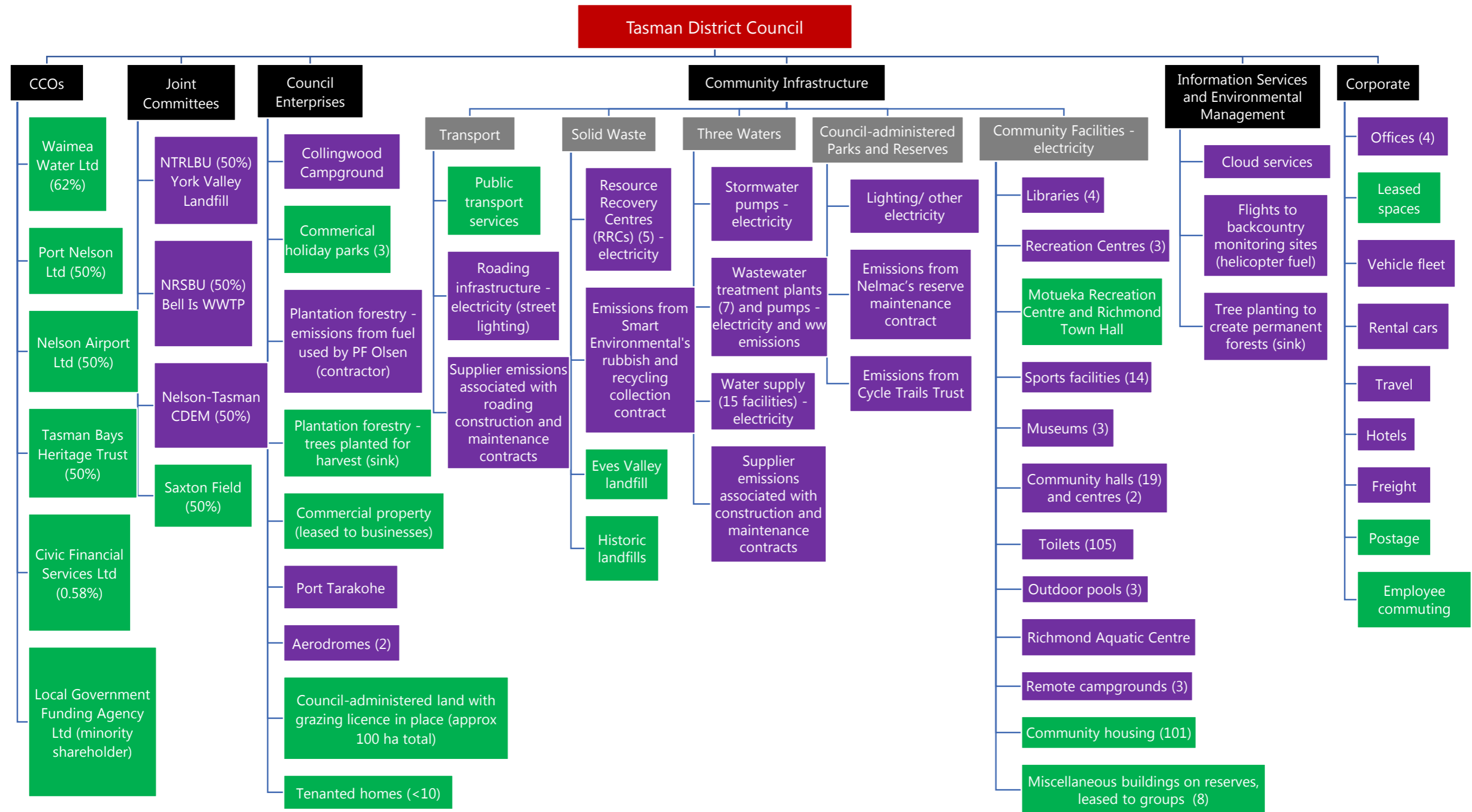
The operational control consolidation approach enables us to account for the emissions from operations we control, and include indirect emissions from major suppliers of services such as reserves maintenance and rubbish/recycling collection in our inventory. We do not account for emissions from operations in which we own a financial interest but have no control.

In 2021 we engaged Toitū Envirocare to run a scope and boundary workshop with staff, to help decide what sources we would include when using the equity share approach. For this report, staff have reviewed Council operations against the *GHG Protocol* and *ISO 14064-1:2018* to determine which should be included or excluded from our inventory under the operational control approach. Figure 5 shows the resulting reporting structure chosen for accounting for Council's emissions.

The organisational boundary chart outlines the core business units of Council, as well as CCOs and Joint Committees. The purple boxes indicate units that have been included in the emissions inventory, while the green boxes indicate units that are excluded from the inventory reporting.

For the purposes of the 2022/23 emissions inventory, the Council's emissions are reported at an organisational level, rather than by business unit. Tasman District Council is based at 189 Queen Street, Richmond; however, it has many sites across the region.

**Figure 5:** Organisational boundary for Tasman District Council emissions measurement, using the operational control consolidation approach



## 3 Reporting boundaries

### 3.1 GHG emission source exclusions

We excluded several emissions sources from our inventory. Table 4 explains why we excluded these sources.

**Table 4:** Business units, facilities, and activities excluded from emissions measurement

Business unit/facility	Reason for exclusion
Waimea Water Ltd (62.2% share)	Each of these six Council Controlled Organisations (CCOs) are discrete business units with their own management and sites and use different data management systems. The Council has minimal influence and no operational control over their emissions. Therefore, they have been excluded from the inventory.
Nelson Airport Ltd (50% share)	
Port Nelson Ltd (50% share)	
Tasman Bays Heritage Trust (50% share)	
Civic Financial Services Ltd (0.58%)	
Local Government Funding Agency Ltd LGFA (minority shareholder)	
Saxton Field (Joint Committee)	The source is outside of the reporting boundaries. Saxton Field is located within Nelson City Council's (NCC) boundaries, but Tasman District Council owns approximately half of the land. A joint committee, with members from both councils, provide governance oversight. The Council provides funding to NCC for Saxton Field development and maintenance (approximately 50% of the total cost), but NCC has operational control of the day-to-day management of Saxton Field. All emissions relating to Saxton Field are included within the NCC emissions inventory, therefore excluded from our report to avoid double counting.
Council Enterprises – commercial holiday parks (3)	The Council owns/administers land in four locations that are managed as commercial holiday parks. Three of these (the Top 10 Holiday Parks in Pōhara and Motueka, and the Riverside Holiday Park in Murchison) are managed by commercial operators under long-term lease arrangements. The Council has minimal influence and no operational control over the emissions from those three campgrounds, therefore, they have been excluded from the inventory.
Council Enterprises – plantation forestry -	Almost all Council-administered land that is managed for commercial plantation forestry purposes is subject to the ETS. To



trees planted for harvest (sink)	avoid double counting of emission removal, this source has been excluded from our inventory.
Council Enterprises - commercial property leased to businesses	The Council owns land and buildings in several locations across the District that it leases to businesses. The Council has minimal influence and no operational control over the emissions from these businesses, therefore, they have been excluded from the inventory.
Council Enterprises – grazing licences	Council-administers approximately 100 hectares of land in various locations across the District that have grazing licences in place. However, no information is available about the type or numbers of stock that graze this land, as the Council has not required licencees to provide this information. The total length of time when stock are present on these lands is also unknown (most licencees also graze their stock on other land throughout the year, not solely on the land subject to the grazing licence). Due to the lack of data availability, this source has been excluded from the inventory.
Council Enterprises - tenanted homes (<10)	The Council has minimal influence or control. The behaviour and energy usage patterns of tenants significantly influence these emissions, making it challenging for the Council to assert direct control. Each tenant pays their chosen electricity provider individually.
Transport - public transport services	The Council has minimal influence or control. Public transport services are contracted to an external provider (SBL), who operate a bus service within the Richmond and Nelson urban area under a shared arrangement with NCC.
Solid Waste - historic landfills, including Eve's Valley landfill	Most historic landfills in the District have been closed for 30 years or more, with the exception of the Eve's Valley landfill, which closed in 2017. Emissions from historic landfills have been excluded due to the challenging nature of accurately quantifying and attributing emissions over time. The Council's ability to directly control these emissions is limited.
Community Facilities - Motueka Recreation Centre and Richmond Town Hall	The Council leases these two community facilities to Sport Tasman, a not-for-profit company. The Council has minimal influence and no operational control over the emissions from Sport Tasman, therefore, they have been excluded from the inventory.
Community Facilities - community housing (101 units)	The Council has minimal influence or control. The behaviour and energy usage patterns of tenants significantly influence these emissions, making it challenging for the Council to assert direct control. Each tenant pays their chosen electricity provider individually.
Community Facilities - miscellaneous community buildings on reserve land (8)	The Council has minimal influence or control. These buildings are leased to non-profit community groups (e.g. playcentre, church group, drama group, RSA, community library, toy library, Plunket, Rotary).

Corporate - leased office space	The emissions intensity is low, and the Council has limited operational control.
Corporate - Richmond office diesel generator	Emissions are minimal – this generator is rarely used.
Corporate - taxis	Emissions are minimal.
Corporate - personal vehicle use	Emissions are minimal.
Corporate - postage/ small courier package	Emissions are minimal.
Corporate - paper use in offices	Emissions are minimal.
Corporate - working from home	Data not available.
Corporate - employee commuting	Data not available.
Many of our smaller suppliers	We have prioritised seeking emissions data from the 16 suppliers who collectively add to 74% of our supplier spend. We have not requested data from the hundreds of smaller suppliers (such as providers of office stationery) who represent the remaining 26% of our supplier spend, and have therefore excluded them.

### 3.2 Emission source identification method and significance criteria

The GHG emissions sources included in this inventory were identified with reference to the methodology described in the *GHG Protocol* and *ISO 14064-1:2018* standards.

Significance of emissions sources within the organisational boundaries has been considered in the design of this inventory. The significance criteria used comprise:

- All direct emissions sources that contribute more than 1% of total Category 1 and 2 emissions
- All indirect emissions sources that are required by the ISO 13064-1:2018 standard.

### 3.3 GHG emission source inclusions

As adapted from the *GHG Protocol*, the emissions sources deemed significant for inclusion in this inventory were classified into the following categories:

- **Category 1: Direct GHG emissions and removals:** emissions and removals from sources and sinks inside the organisational boundary that are owned or controlled by the Council. This includes seven wastewater treatment plants (WWTP), but not the Bell Island WWTP (the latter falls within the Joint Committee category).

- **Category 2: Indirect GHG emissions from imported energy:** emissions from the generation of purchased electricity consumed by the Council.
- **Category 3: Indirect GHG emissions from transportation:** mobile emission sources located outside the organisational boundary, mostly due to fuel burnt in transportation equipment.
- **Category 4: Indirect GHG emissions from products and services used by Council:** emissions from sources located outside the organisational boundary, associated with all types of goods and services purchased by Council (includes emissions associated with the production of energy purchased). Examples include emissions from plantation forestry activity (contracted out to PF Olsen) and emissions from development and maintenance of Council-administered parks and reserves (contracted out to Nelmac).
- **Joint Committee GHG emissions:** emissions from three of the four Joint Committees were included: the regional landfill at York Valley, the Bell Island WWTP, and Nelson-Tasman Civil Defence and Emergency Management (CDEM). All are shared 50% with Nelson City Council.
- **Category 5: Indirect GHG emissions associated with the use of products from the organisation** (No emissions reported because the Council does not manufacture or create physical products for customers to purchase).
- **Category 6: Indirect GHG emissions from other sources:** emissions that occur as a consequence of the Council's activities but occur from sources not owned or controlled by the Council, that cannot be reported in any other category.

Table 5 provides detail on the categories of emission sources and sinks included in our inventory, an overview of how activity data were collected for each emissions source, and an explanation of any uncertainties or assumptions made based on the source of activity data.

**Table 5:** GHG emission sources and sinks included in the inventory

Business unit/facility	GHG emission source	GHG emissions Category	Data source	Data collection unit	Level of accuracy/uncertainty
Environmental Management and Reserves & Facilities	Tree planting to create permanent forests	1 (sink)	Jobs for Nature project managers	ha	We only counted planting of native and exotic species, for the purpose of creating permanent forest cover, that met the New Zealand parameters to define a forest (minimum area 1 ha, with the potential to reach a minimum height of 5 metres and a minimum crown cover of 30%). We assumed the likelihood of planting areas to reach this parameter, but as growing conditions are variable this will have a low level of accuracy.
All business units and facilities that directly purchase electricity via Council's contract with Genesis Energy <sup>16</sup>	Purchased electricity <sup>17</sup>	2	Electricity usage information provided by Genesis Energy	kWh	We assume the supplier has provided complete and accurate invoice data.
All business units and facilities that directly purchase electricity via Council's contract with Genesis Energy	Electricity - transmission and distribution losses	4	Electricity usage information provided by Genesis Energy	kWh	We assume the supplier has provided complete and accurate invoice data.

<sup>16</sup> Council directly purchases electricity from Genesis Energy to power Council-owned buildings, facilities and equipment at 235 installation connection points (ICPs) across the District. Our calculations of Category 2 emissions from purchased electricity are based on the total kWh consumed within the reporting period. Rather than listing each individual facility each ICP relates to, we've grouped the main types of facilities by business unit in Table 5. However, we do not count these emissions twice in our calculations.

<sup>17</sup> We used a location-based reporting approach (using a national "grid average" emissions factor for electricity consumption provided by MfE) to source electric consumption data.

Business unit/facility	GHG emission source	GHG emissions Category	Data source	Data collection unit	Level of accuracy/uncertainty
Corporate - Council owned offices at Richmond, Motueka, Murchison and Tākaka	Purchased electricity	2	Electricity usage information provided by Genesis Energy	kWh	We assume the supplier has provided complete and accurate invoice data.
Corporate – vehicle fleet	Transport fuels - diesel	1	NPD Monthly Reports, Supplier data	L	We assume the suppliers have provided complete and accurate invoice data.
Corporate – vehicle fleet	Transport fuels – petrol premium	1	NPD Monthly Reports, Supplier data	L	We assume the suppliers have provided complete and accurate invoice data.
Corporate – vehicle fleet	Transport fuels – petrol regular	1	NPD Monthly Reports, Supplier data	L	We assume the suppliers have provided complete and accurate invoice data.
Corporate – rental cars	Hire car average (fuel type unknown)	3	Orbit Travel	km	We assume the supplier has provided complete and accurate invoice data
Corporate – travel	Air travel domestic (average)	3	Orbit Travel	Passenger/km	We assume the supplier has provided complete and accurate invoice data.
Corporate – travel	Air travel shorthaul	3	Orbit Travel	Passenger/km	We assume the supplier has provided complete and accurate invoice data.
Corporate – accommodation	Accommodation – NZ hotel	3	Orbit Travel	Room nights	We assume the supplier has provided complete and accurate invoice data.
Corporate – accommodation	Accommodation – Australian hotel	3	Orbit Travel	Room nights	We assume the supplier has provided complete and accurate invoice data.
Corporate – freight	Freight	3	Library and Environmental Management teams, Supplier data	Tonne/km	This figure is an estimate calculated by calculating the average parcel weight and distance travelled. We assume our suppliers have provided complete and accurate invoice data. For Council's direct freight emissions, the figure only includes the two Council teams that are

Business unit/facility	GHG emission source	GHG emissions Category	Data source	Data collection unit	Level of accuracy/uncertainty
					responsible for the vast majority of our freight.
Community Facilities – libraries (Richmond, Motueka and Tākaka) <sup>18</sup>	Purchased electricity	2	Electricity usage information provided by Genesis Energy	kWh	We assume the suppliers have provided complete and accurate invoice data.
Community Facilities – Recreation Centres at Tākaka, Upper Moutere and Murchison	Purchased electricity	2	Electricity usage information provided by Genesis Energy	kWh	We assume the suppliers have provided complete and accurate invoice data.
Community Facilities – 14 sports facilities (various locations)	Purchased electricity	2	Electricity usage information provided by Genesis Energy	kWh	We assume the suppliers have provided complete and accurate invoice data.
Community Facilities – Museums at Collingwood, Tākaka and Motueka	Purchased electricity	2	Electricity usage information provided by Genesis Energy	kWh	We assume the suppliers have provided complete and accurate invoice data.
Community Facilities – 19 community halls and 2 community centres (various locations)	Purchased electricity	2	Electricity usage information provided by Genesis Energy	kWh	We assume the suppliers have provided complete and accurate invoice data.
Community Facilities – 105 toilet facilities (various locations)	Purchased electricity	2	Electricity usage information provided by Genesis Energy	kWh	We assume the suppliers have provided complete and accurate invoice data.
Community Facilities – 3 remote campgrounds	Purchased electricity	2	Electricity usage information	kWh	We assume the suppliers have provided complete and accurate invoice data.

<sup>18</sup> There is also a library located within the Murchison Service Centre. However, electricity use of that building is covered by the first row above (Corporate – Council owned offices at Murchison etc), hence it is not included in this row, to avoid double-counting.

Business unit/facility	GHG emission source	GHG emissions Category	Data source	Data collection unit	Level of accuracy/uncertainty
(Kina, Ruby Bay, Owen River)			provided by Genesis Energy		
Community Facilities – 3 outdoor community pools (various locations)	Purchased electricity	2	Electricity usage information provided by Genesis Energy	kWh	We assume the suppliers have provided complete and accurate invoice data.
Community Facilities - Richmond Aquatic Centre	Refrigerants	4	Data on refrigerants provided by CLM	kg	We assume the operator (CLM) has provided complete and accurate invoice data.
Community Facilities - Richmond Aquatic Centre	Electricity used by CLM to power the Aquatic Centre facility	4	Electricity usage information provided by CLM	kWh	We assume the operator (CLM) has provided complete and accurate invoice data.
Parks and Reserves – lighting/other electricity use	Purchased electricity	2	Electricity usage information provided by Genesis Energy	kWh	We assume the suppliers have provided complete and accurate invoice data.
Parks and Reserves maintenance - fertiliser	Fertiliser use - nitrogen	1	Suppliers' data	kg	We assume the supplier (Nelmac) has provided complete and accurate data.
Parks and Reserves maintenance - fuel	Transport fuels - diesel	4	Suppliers' data	L	We assume the supplier (Nelmac) has provided complete and accurate data.
Parks and Reserves maintenance - fuel	Transport fuels - diesel	4	Suppliers' data	L	We assume the supplier (Nelmac) has provided complete and accurate data.
Parks and Reserves maintenance - waste	General waste to landfill	4	Suppliers' data	kg	We assume the supplier (Nelmac) has provided complete and accurate data.
Parks and Reserves – maintenance - electricity	Electricity used at Nelmac offices/buildings	4	Electricity usage information provided by Nelmac	kWh	We assume the supplier (Nelmac) has provided complete and accurate data.
Council Enterprises – Collingwood Campground	Purchased electricity	2	Electricity usage information	kWh	We assume the suppliers have provided complete and accurate invoice data.

Business unit/facility	GHG emission source	GHG emissions Category	Data source	Data collection unit	Level of accuracy/uncertainty
			provided by Genesis Energy		
Council Enterprises – Port Taranaki	Purchased electricity	2	Electricity usage information provided by Genesis Energy	kWh	We assume the suppliers have provided complete and accurate invoice data.
Council Enterprises – Motueka and Tākaka Aerodromes	Purchased electricity	2	Electricity usage information provided by Genesis Energy	kWh	We assume the suppliers have provided complete and accurate invoice data.
Information Services and Environmental Management	Cloud storage	4	Storage provider	kWh	This inventory includes pre-verified data. We assume the supplier has provided complete and accurate data. The figure is an average of two calendar years to match our financial year.
Information Services and Environmental Management	Helicopter fuel – flying staff to hydrology monitoring sites in backcountry	3	Hydrology manager	L	The hydrology component is an estimate.
Council Enterprises – plantation forestry, Environmental Management	Helicopter fuel – plantation forestry management and wilding pine control	4	PF Olsen (forestry contractor)	L	We assume that the forestry contractor has provided complete and accurate data.
Council Enterprises – plantation forestry	Transport fuels - diesel	4	Data on fuel usage provided by contractor (PF Olsen)	L	We assume that the forestry contractor has provided complete and accurate data.
Transport/Roading - Street lights and traffic lights	Purchased electricity	2	Electricity usage information provided by Genesis Energy	kWh	We assume the suppliers have provided complete and accurate invoice data.



Business unit/facility	GHG emission source	GHG emissions Category	Data source	Data collection unit	Level of accuracy/uncertainty
Waste and Recycling – Resource Recovery Centres (transfer stations) (5)	Purchased electricity	2	Electricity usage information provided by Genesis Energy	kWh	We assume the suppliers have provided complete and accurate invoice data.
Waste and Recycling – contracted service: collection of rubbish and recycling and transportation to RRCs	Transport fuels - diesel	4	Data on fuel usage provided by contractor (Smart Environmental)	L	We assume that the contractor has provided complete and accurate invoice data.
Waste and Recycling – contracted service: collection of rubbish and recycling and transportation to RRCs	Transport fuels - petrol	4	Data on fuel usage provided by supplier (Smart Environmental)	L	We assume the suppliers have provided complete and accurate invoice data.
Waste and Recycling – contracted service	Electricity use at Smart Environmental Office	4	Electricity usage information provided by contractor (Smart Environmental)	kWh	We assume the supplier has provided complete and accurate data.
Water Supply – water treatment plants	Purchased electricity	2	Electricity usage information provided by Genesis Energy	kWh	We assume the suppliers have provided complete and accurate invoice data.
Water Supply - water pump stations, bores and telemetry sites	Purchased electricity	2	Electricity usage information provided by Genesis Energy	kWh	We assume the suppliers have provided complete and accurate invoice data.
Stormwater pumps/ Stormwater pump stations	Purchased electricity	2	Electricity usage information provided by Genesis Energy	kWh	We assume the suppliers have provided complete and accurate invoice data.

Business unit/facility	GHG emission source	GHG emissions Category	Data source	Data collection unit	Level of accuracy/uncertainty
Wastewater pumps/ Wastewater pump stations – excluding Bell Island	Purchased electricity	2	Electricity usage information provided by Genesis Energy	kWh	We assume the suppliers have provided complete and accurate invoice data.
Wastewater treatment plants (7) – excluding Bell Island WWTP	Wastewater precalculated (tCO <sub>2</sub> e)	1	Data and calculations provided by the Council's Project Engineer – Water (Graeme Fox)	t	We calculated these figures using <a href="#">Water NZ guidelines</a> (2021). Some deviations were made from the guidelines to account for the proportion of holidaymakers during the year and more accurate monitoring data for the Motueka and Tākaka areas.
Bell Island wastewater treatment plant	Purchased electricity	Joint Committee – NRSBU (50% share)	Electricity usage information provided by Meridian Energy	kWh	We assume the suppliers have provided complete and accurate invoice data.
Bell Island wastewater treatment plant	Transmission and distribution losses	Joint Committee – NRSBU (50% share)	Electricity usage information provided by Meridian Energy	kWh	We assume the supplier has provided complete and accurate invoice data.
Bell Island wastewater treatment plant	Wastewater precalculated (tCO <sub>2</sub> e)	Joint Committee – NRSBU (50% share)	Data provided by NRSBU Operations Manager (Brad Nixon)	t	Based on tests at site and NZ Water Carbon Accounting Guidelines for wastewater treatment. We assume the NRSBU have provided complete and accurate data.
York Valley Landfill	Purchased electricity	Joint Committee – NTRLBU (50% share)	Electricity usage information provided by Meridian Energy	kWh	We assume the suppliers have provided complete and accurate invoice data.
York Valley Landfill	Transmission and distribution losses	Joint Committee – NTRLBU (50% share)	Electricity usage information provided by Meridian Energy	kWh	We assume the supplier has provided complete and accurate invoice data.

Business unit/facility	GHG emission source	GHG emissions Category	Data source	Data collection unit	Level of accuracy/uncertainty
York Valley Landfill	Waste landfilled LFGR Garden and Food	Joint Committee – NTRLBU (50% share)	Weighbridge returns and a unique emission factor (UEF) provided by NRSBU	kg	<p>It is assumed that the load descriptions provided by truck drivers are accurate. It is assumed that the provided UEFs can be applied to Financial Years (1 July – 30 June), as they were originally applicable to calendar years. This will cause deviations from the landfill's reported emissions, as we are applying just their UEF to a financial year landfill tonnage.</p> <p>Note that for 2020-21 the UEF used is 0.885 Kg CO<sub>2</sub>e, for 2021-22 the UEF used in calculations is 0.518 Kg CO<sub>2</sub>e, and the 2022-23 UEF is 0.091. These UEFs coincide with updates from the landfill infrastructure timeline, excerpted from the NTRLBU Carbon Journey report (2023).</p> <p>Also note that for 2022-2023, Inert waste tonnage/emissions has been included due to the Landfill UEF being calculated with total annual tonnage rather than organic-relevant waste, so must be included for consistency.</p>
York Valley Landfill	Waste landfilled LFGR Mixed waste	Joint Committee – NTRLBU (50% share)		kg	
York Valley Landfill	Waste landfilled LFGR Paper and textiles	Joint Committee – NTRLBU (50% share)		kg	
York Valley Landfill	Waste landfilled LFGR Wood	Joint Committee – NTRLBU (50% share)		kg	
York Valley Landfill	Waste to landfill Inert waste	Joint Committee – NTRLBU (50% share)		kg	
Nelson-Tasman Civil Defence and Emergency Management (CDEM)	Purchased electricity – CDEM office in Richmond	Joint Committee – CDEM (50% share)	Electricity usage information provided by Meridian Energy	kWh	We assume the supplier has provided complete and accurate invoice data.
CDEM	Transmission and distribution losses	Joint Committee – CDEM (50% share)	Electricity usage information provided by Meridian Energy	kWh	We assume the supplier has provided complete and accurate invoice data.

Business unit/facility	GHG emission source	GHG emissions Category	Data source	Data collection unit	Level of accuracy/uncertainty
Community Infrastructure – a range of construction projects across the District	Supplier construction materials	4	Data provided by 6 suppliers (Fulton Hogan, Donaldson Civil, Tasman Civil, Downer 3 Waters, Downer Roading and WSP)	Kg	We assume the suppliers have provided complete and accurate data.
Community Infrastructure	Supplier electricity	4	Suppliers' data	kWh	This inventory includes some pre-verified data. This figure will have a low level of accuracy and will be an underestimate because it is the estimated data from 12 of our 16 significant suppliers.
Community Infrastructure	Supplier transport fuels	4	Suppliers' data	L	This inventory includes some pre-verified data. This figure will have a low level of accuracy and will be an underestimate because it is the estimated data from 12 of our 16 significant suppliers.
Community Infrastructure	Supplier waste	4	Suppliers' data	kg	This inventory includes some pre-verified data. This figure will have a low level of accuracy and will be an underestimate because it is the estimated data from 12 of our 16 significant suppliers.

### 3.4 Impact on uncertainties on the accuracy of GHG emissions and removals

Table 5 provides an overview of how data was collected for each GHG emissions source, the source of the data and an explanation of any uncertainties or assumptions made. The uncertainty of Category 1 emissions is medium because there is uncertainty within the Water New Zealand methodology used to calculate our wastewater emissions. The uncertainty for Category 2 emissions is low because there was only one source of emissions, and we assume our suppliers provided complete and accurate data. Uncertainty is high for Category 4 as we only received data from 12 out of 16 suppliers.

### 3.5 Suppliers

Where data is available, the Council reports on emissions from the suppliers and contractors we use to conduct Council business. These suppliers are not contractually required to report their emissions to us at present, so we are reliant on voluntary reporting of emissions to us.

As the Council has hundreds of suppliers, we have decided to only procure information from the 16 suppliers who collectively represent 74% of the Council's expenditure on suppliers and contractors. Table 6 shows those we requested data from and whether they provided it.

**Table 6:** Suppliers and contractors included in the Council's emissions inventories

Supplier	Provided data for inventory		
	2020/2021	2021/2022	2022/2023
Downer New Zealand Limited - 3 Waters	✓	✓	✓
Fulton Hogan Limited	✓	✓	✓
Smart Environmental Limited	✓	✓	✓
Donaldson Civil Limited	✓	✓	✓
Tasman Civil Limited	✓	✓	✓
Stantec New Zealand	✓	✓	✓
WSP New Zealand Limited	✓	✓	✓
Downer New Zealand Limited - Roading	X	✓	✓
Nelmac	X	✓	✓
Tonkin & Taylor Limited	X	✓	✓
Taylor's Contracting Co Limited	X	X	✓
PF Olsen Limited	X	X	✓
Waimea Water Ltd	✓	X	X
Process Flow Limited	X	X	X
Coman Construction Ltd	X	X	X
CJ Industries Limited	X	X	X
<b>Total</b>	8/16	10/16	12/16

## 4 Quantified inventory of emissions and removals

### 4.1 Methodology

The Council used an Interactive Workbook (April 2023) developed by the Ministry for Environment (MfE) to complete this inventory. MfE recommends that organisations use this workbook and it is widely used by local government to report emissions. The workbook automatically calculates our emissions: emissions source activity data is multiplied by GHG emissions or removal factors.

We chose this quantification model to ensure our results align with the sector. MfE's [Detailed Guide to Measuring Emissions 2023](#) documents this model and the GHG emission and removal factors used, based on New Zealand's Greenhouse Gas Inventory 1990-2021.

A recalculation of landfill emissions for all years was undertaken during the audit process for this report (see section 4.3), due to the decision to switch to a unique emission factor (UEF) for the landfill emissions.

### 4.2 GHG inventory

ISO 14064-1:2018 recommends reporting six different greenhouse gases. Each gas has a *global warming potential* (GWP)<sup>19</sup>. The Global Warming Potential (GWP) allows comparison of global warming impacts of different gases. Specifically, it is a measure of how much energy the emissions of one ton of a gas will absorb over a given timeframe relative to one ton of carbon dioxide (CO<sub>2</sub>) emissions. The larger the GWP, the more that a given gas warms the Earth compared to CO<sub>2</sub> over a given timeframe (commonly 100 years). GWP is a metric that enables analysts to add up emissions estimates of different gases and policymakers to compare emissions reduction opportunities across sectors and gases. Table 7 states the GWP of the greenhouse gases reported in this inventory.

**Table 7:** Global warming potential (GWP) of selected greenhouse gases<sup>20</sup>

Common name	Gas	GWP
Carbon dioxide	CO <sub>2</sub>	1
Methane	CH <sub>4</sub>	25
Nitrous oxide	N <sub>2</sub> O	298
Hydrofluorocarbons	HFCs <sup>21</sup>	3,985 <sup>22</sup>
Sulfur hexafluoride	SF <sub>6</sub>	23,500
Nitrogen trifluoride	NF <sub>3</sub>	16,100

<sup>19</sup> Greenhouse Gas Protocol – [Global Warming Potential Values](#)

<sup>20</sup> The listed potentials for CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O are provided by MfE in their [Interactive Workbook 2023](#).

<sup>21</sup> Weighted average stated in ISO 4064-1. MfE does not state what GWP they use for HFCs.

<sup>22</sup> Average GWP for HFC-125 and HFC-143a used in refrigerant AZ50R507.

Table 2 in the Executive Summary of this report describes our GHG emissions for the 2022/23 period in detail. Table 8 compares the total emissions (tCO<sub>2</sub>e) for 2022/23 within each Category to our baseline (2020/21) period. We have included the recalculated landfill emissions using UEF for both periods, and presented the information from the baseline inventory using the operational control method of categorising emissions. This enables consistency of comparison and identification of accurate trends over time.

**Table 8:** GHG emissions inventory summary (tCO<sub>2</sub>e): comparison of 2022/23 period to base year<sup>23</sup>

Scope (ISO 14064-1:2006)	Category (ISO 14064-1:2018)	GHG emissions (tCO <sub>2</sub> e)	
	Source	2020/21 (Base year)	2022/23
Scope 1	<b>Category 1: Direct emissions</b>		
	Wastewater (7 WWTPs, excludes Bell Island WWTP)	1,752	1,425
	Transport fuels	218	231
	Fertiliser	No data received from supplier	9.7 <sup>24</sup>
	<b>Total Category 1/Scope 1 emissions</b>	<b>1,970</b>	<b>1,666</b>
Scope 2	<b>Category 2: Indirect emissions from imported energy</b>		
	Purchased electricity	668	485.3
	<b>Total Category 2 /Scope 2 emissions</b>	<b>668</b>	<b>485.3</b>
Scope 3	<b>Category 3: Indirect emissions from transportation and distribution</b>		
	Rental car	0.2	0.6
	Air travel	25.2	35
	Accommodation	1.9	3.7
	Freight	2.1	1.8
	Helicopter fuel (environmental monitoring)	5.3	2.7
	<b>Total Category 3 emissions</b>	<b>34.7</b>	<b>43.8</b>
	<b>Category 4: Indirect emissions from products used by the organisation</b>		
	Electricity transmission and distribution losses	60.7	56.3
	Cloud storage	75.3	2.3
	Employee office waste	2.8	3.2
	Supplier transport fuels	1,769	6,992
	Supplier helicopter fuel (plantation forestry and wilding pine control)	105	59.9
	Suppliers' stationary combustion	-	77.9

<sup>23</sup> Numbers in brackets indicate converted tCO<sub>2</sub>e units. Numbers may not add up to tCO<sub>2</sub>e due to rounding or lack of data. Numbers may not be reported if they are minimal (<0.5 tCO<sub>2</sub>e). Some emission sources were only reported as tCO<sub>2</sub>e rather than split into constituent gases.

<sup>24</sup> Pre-verified data from supplier (Nelmac)

Scope (ISO 14064-1:2006)	Category (ISO 14064-1:2018)	GHG emissions (tCO <sub>2</sub> e)		
	Source	2020/21 (Base year)	2022/23	
	Supplier construction materials	130.4	79.3	
	Supplier electricity	178.2	141.3	
	Supplier waste	10.8	37.3	
	Supplier emissions (Tonkin & Taylor, combined Scope 3 emissions)	-	8.0	
	Supplier refrigerants <sup>25</sup> (Richmond Aquatic Centre)	398.5	-	
	<b>Total Category 4 emissions</b>	<b>2,731</b>	<b>7,457</b>	
	<b>Category 5: Indirect emissions associated with the use of products from the organisation</b>			
	Not reported	N/A	N/A	
	<b>Category 6: Indirect emissions from other sources</b>			
	Not reported	N/A	N/A	
	<b>Joint Committee emissions</b>			
	Waste landfilled LFGR Garden and Food	43,640 (recalculated using UEF)	1	
	Waste landfilled LFGR Mixed waste		3,355	
	Waste landfilled LFGR Wood		147	
	Waste landfilled LFGR Inert waste		190	
	Wastewater Bell Island	1,288	1,303	
	Electricity + Electricity losses: Bell Island WWTP, York Valley landfill and CDEM	311	231	
<b>Total Joint committee emissions</b>	<b>45,239</b>	<b>5,227</b>		
<b>Total Scope 3 emissions</b>	<b>48,004</b>	<b>12,728</b>		
Scopes 1-3	<b>All emission sources</b>			
	Total direct emissions	1,970	1,666	
	Total indirect emissions	48,672	13,213	
	<b>Total gross emissions</b>	<b>50,642</b>	<b>14,879</b>	
Scope 1	<b>Removals</b>			
	Sink	tCO <sub>2</sub> e		
	Exotic forestry planting for permanent forest cover	-	(86.5)	
	Native forestry planting	(36.9)	(79.3)	
<b>Total removals</b>	<b>N/A</b>	<b>(165.8)</b>		
<b>Total net emissions</b>		<b>50,606</b>	<b>14,713</b>	

<sup>25</sup> Based on refrigerants purchased, not refrigerants used. No refrigerants were purchased in 2022/23.



## 4.3 Historical recalculations

### Waste to landfill emissions methodology changes

The methodology used to account for emissions generated by waste deposited at York Valley Landfill has changed for this report.

In our previous two inventories, we measured landfill emissions using emissions factors sourced from MfE. These emission factors are averages from across New Zealand and do not account for the differences in emission reduction initiatives at individual landfills.

The Nelson Tasman Regional Landfill Business Unit (NTRLBU) reports its emissions to the Emissions Trading Scheme (ETS) using a Unique Emissions Factor (UEF). This UEF is individualised to NTRLBU<sup>26</sup> and accounts for the emissions reduction efforts they are making.

For this report, we have recalculated the emissions from York Valley Landfill using the verified UEFs provided by NRSBU. The emissions factor was changed across years to provide consistency across business units (NRSBU and Council), ensure accuracy, capture variance in methane gas capture and destruction in the landfill, and recognise changes in quantity and type of waste entering the landfill. Table 9 sets out emissions from the York Valley Landfill generated across the 2020/21 to 2022/23 reporting years, using the historic and new methodologies<sup>27</sup>.

**Table 9:** Comparison between emissions calculated using the UEF and MfE emissions factor methodologies

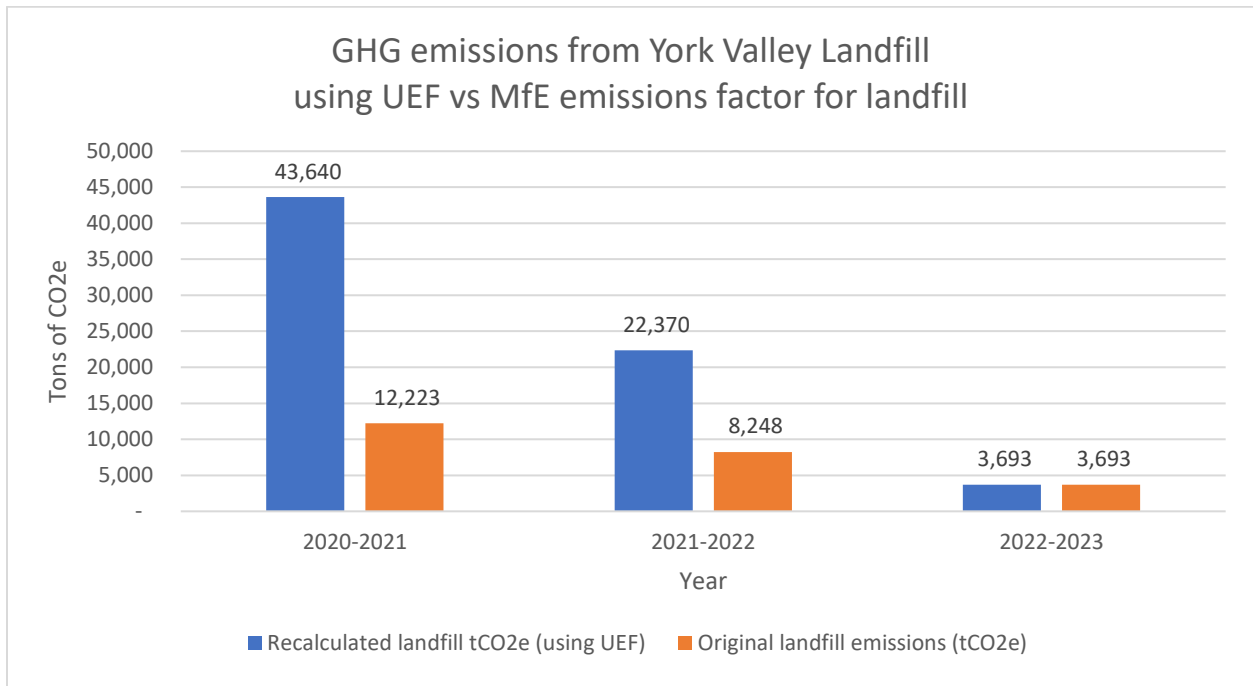
Reporting year	Waste to landfill (kg) TDC portion	Emissions calculation (tCO <sub>2</sub> e)			Change against baseline (%)	
		Historic (MfE emissions factors) methodology	UEF tCO <sub>2</sub> e	New (UEF) methodology	Historic (MfE emissions factors) methodology	New (UEF) methodology
2020/21	49,310,800	12,223	0.885	43,640	N/A - baseline	N/A - baseline
2021/22	43,186,120	8,248	0.518	22,370	-33	-49
2022/23	40,581,540	3,693	0.091	3,693	-70	-92

Figure 6 shows the side-by-side comparison between old and recalculated landfill-specific emissions on a year-by-year basis.

<sup>26</sup> A notice of approval of a unique emissions factor for York Valley Landfill (0.091 tCO<sub>2</sub>e/t waste) was published in the New Zealand Gazette on 13 March 2023: <https://gazette.govt.nz/notice/id/2023-au3444>

<sup>27</sup> This table only shows Tasman District Council's 50% share of the landfill's emissions. The UEF used is the UEF reported at the start of the relevant financial year – for example, the 2020/2021 uses the 2020 UEF reported to the Emissions Trading Scheme.

**Figure 6:** Comparison of original vs revised calculated landfill emissions, based on MfE and UEF emission factors.



**Figure 7:** Comparison of landfill emissions vs all other GHG emissions (landfill emissions recalculated using UEF and all other emissions recalculated using operational control method)

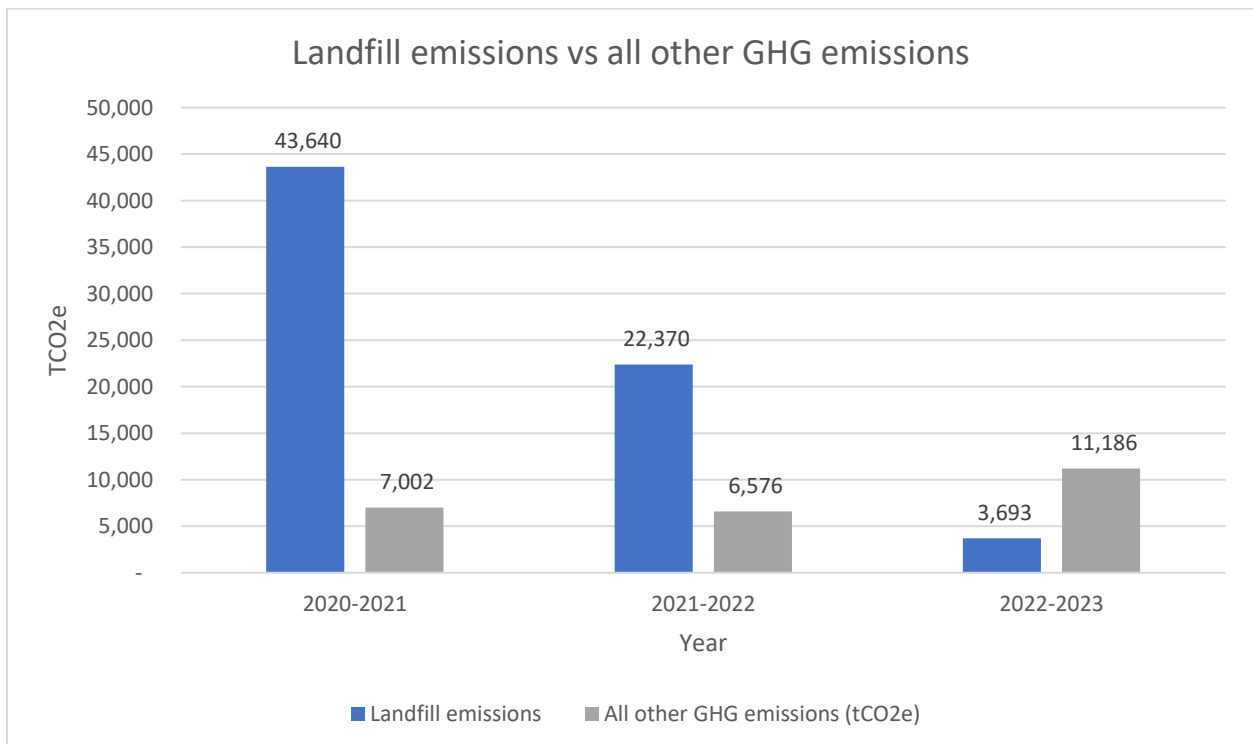


Figure 7 compares the revised UEF landfill emissions with all other emissions (recalculated using the operational control method) from base year to present. The landfill emissions during base year represents 86% of total emissions. This decreases to 77% in 2021/22 as the UEF improves. Landfill emissions account for 25% of total emissions in 2022/23. Note that non-landfill emissions almost doubled in the 2022/23 reporting period, when compared to previous years. This was due to the Council’s plantation forestry contractor (PF Olsen) reporting their emissions for the first time during the current period.

The technical differences between the historic and new methodologies for calculating landfill emissions, discussed in further detail below, can be summarised as follows:

**Table 10:** Differences between MfE and UEF Waste-to-landfill reporting methodologies

	Historic (MfE emissions factors) methodology	New (UEF) methodology
In-scope emissions	Emissions associated with reporting year waste entering landfill.	Emissions generated by the whole landfill asset in the reporting year, including emissions associated with waste that has historically been deposited.
Reporting responsive to quantity and type of waste entering landfill	Both methodologies can be responsive to changes in the quantity and type of waste entering landfill.	
Reporting responsive to variance in gas capture and destruction	Due to the flat rate of gas capture and destruction built into the emissions factors, this methodology is not responsive to variance in gas capture and destruction.	This methodology is responsive to variance in gas capture and destruction, although it is limited by default destruction factors in the absence of assets’ destruction efficiency being certified.
Alignment with regional emissions inventory	Does not align well with regional emissions inventory.	Aligns reasonably well with regional emissions inventory.
Alignment with ETS reporting	Does not align with ETS reporting.	Achieves alignment with ETS reporting.

#### *MfE emissions factor methodology*

Historically, the Council has determined a waste-to-landfill emissions footprint using generic Ministry for the Environment (MfE) emissions factors coupled with NTRLBU data on the composition of waste entering York Valley Landfill. MfE emissions factors assume 68% of the landfill gas emitted is collected and destroyed at landfill, and do not take into account emissions from waste historically deposited in landfill.

*Unique Emissions Factor methodology*

The Emissions Trading Scheme requires use of an Unique Emissions Factor (UEF) for the York Valley Landfill. While the quantum of waste emissions increases in the change to the UEF method, it provides a more accurate and comprehensive picture of emissions generated by the landfill in any given year:

- It takes into account emissions from waste historically deposited, as well as waste deposited in the current year.
- It is also responsive to changes in landfill gas collection and destruction.

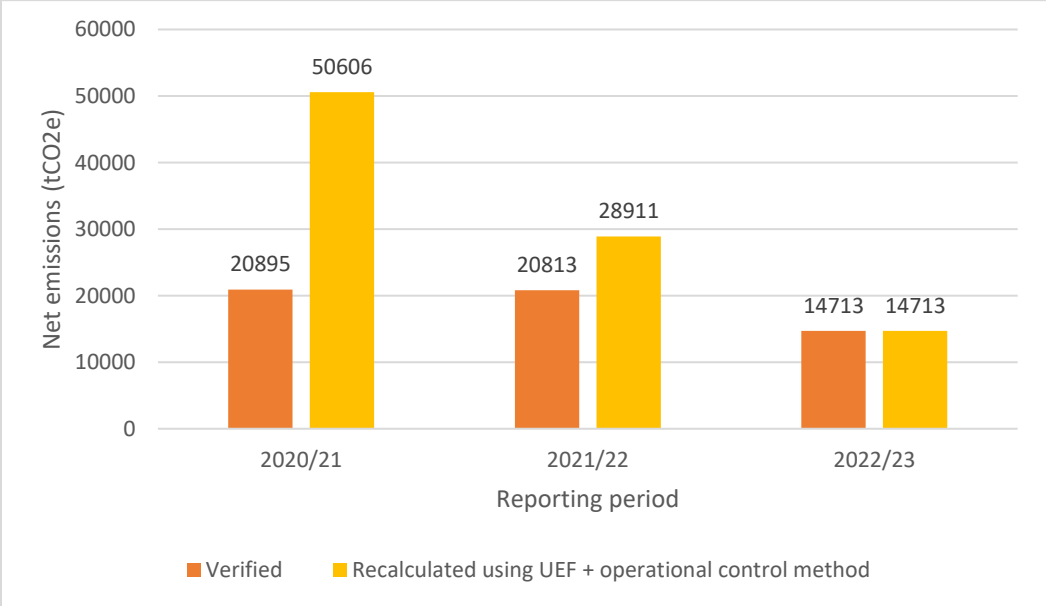
In the last few years, the NTRLBU have made significant progress towards emissions reduction at both regional landfills, including installing a flare at the closed Eves Valley landfill.

**Recalculation of emissions from previous reporting periods using operational control method**

The original two GHG inventories, published on Council’s website, have not been revised. However, for the purpose of this report, the emissions for both reporting periods have been recalculated using the operational control method of categorising emissions. This enables consistency of comparison and identification of accurate trends over time. See section 5 of this report for an overview of emission trends over time.

Figure 8 shows the originally calculated and verified total net emissions (orange) compared to the application of the UEFs to landfill emissions and recalculation of total net emissions using the operational control method for those years (yellow). The figures for the current 2022-2023 reporting period are unchanged, as the UEF was already applied for landfill emissions.

**Figure 8:** Comparison of net GHG emissions (verified) vs net GHG emissions (recalculated)



The significant decrease in emissions across the reporting years coincides with the implementation of landfill infrastructure upgrades. In 2022, the methane flare at York Valley landfill was upgraded, which has caused a substantial drop in emissions.

#### 4.4 Biogenic GHG emissions from landfill

Biogenic methane emissions from landfill have reduced substantially, from 43,640 tCO<sub>2</sub>e in 2020/21 to 3,693 tCO<sub>2</sub>e in 2022/23: a 91.5% reduction in emissions since the baseline year. This reduction is largely due to improved accuracy in emission factors, by applying the UEF for York Valley landfill, along with improvements to infrastructure and methodology for capturing/flaring excess methane from landfill that would otherwise be dissipated into the atmosphere.

The landfill business unit, NTRLBU, is covered by the NZ Emission Trading Scheme (ETS) and has undertaken the following actions:

- 2018/19 - applied for a Unique Emission Factor (UEF), this was gazetted in 2022
- 2019/20 - planning and funding request
- 2020/21 – installed new flare at York Valley landfill, moved the old flare to the Eves Valley landfill and also installed a gas system at the latter landfill
- 2021/22 - gas system improvements
- 2022/23 - new gas pipework at York, new gas extraction wells at York.
- 2023 - gas reuse plan being developed.

#### 4.5 Anthropogenic biogenic CO<sub>2</sub> emissions

Anthropogenic biogenic emissions result from biomass combustion caused by human activity. Examples of this include burning biofuel or decomposition of organic matter.

We followed the Ministry for the Environment's [Detailed Guide to Measuring Emissions 2023](#), which states that users should separately report biogenic emissions from biofuel or biomass combustion. Council does not have biofuel or biomass combustion sources. We used Water New Zealand's methodology to quantify our wastewater emissions, which excludes biogenic emissions.

We will report any other anthropogenic biogenic emissions separately and in our consolidated statement in future years.

#### 4.6 Forestry emissions

Since the Emissions Trading Scheme accounts for emissions from our commercial forestry activity, we do not report them here.

The Council only accounts for native or exotic permanent forest planted or removed on Council-administered land after July 1, 2021 (the baseline period), due to the complexity associated with this task.

## 5 Emission trends over time

As discussed in section 1.8 of this report, the Council has made good progress in reducing its emissions over the past three years.

The figures in tables 11 to 13 have been recalculated for all years using the operational control method and UEF for landfill emissions, for ease of comparison.

**Table 11:** Comparison of Council's total emissions across reporting periods

Category	Source	Total emissions (tCO <sub>2</sub> e)			% change from baseline	% change from 2021/2022
		2020/2021 baseline	2021/2022	2022/2023		
1	Exotic forestry planting	-	-	(86.5)	NA	NA
1	Native forestry planting	(36.9)	(34.9)	(79.3)	115%	127%
1	Transport fuels	217.7	233.5	231.4	6%	-1%
1	Wastewater (7 WWTP, excludes Bell Is WWTP)	1,752	1,491	1,425	-19%	-4%
1	Fertiliser	-	16.4	9.7	NA	-41%
2	Purchased electricity	668.3	776.8	485.3	-27%	-38%
3	Accommodation	1.9	1.9	3.7	95%	95%
3	Air travel	25.2	16.1	35.0	39%	117%
3	Car hire	0.2	0.6	0.6	200%	0%
3	Freight	2.1	1.8	1.8	-14%	0%
3	Helicopter fuels	5.3	6.4	2.7	-49%	-58%
4	Cloud computing	75.3	0.6	2.3	-97%	283%
4	Transmission and distribution losses	60.7	71.3	56.3	-7%	-21%
4	Waste	2.8	2.7	3.2	14%	19%
4	Suppliers' emissions (total)	2,592	2,603	7,395	185%	184%
-	Joint Committee emissions (total)	45,239	23,723	5,227	-88%	-78%
<b>Total gross emissions</b>		<b>50,643</b>	<b>28,945</b>	<b>14,879</b>	<b>-71%</b>	<b>-49%</b>
<b>Total net emissions</b>		<b>50,606</b>	<b>28,911</b>	<b>14,713</b>	<b>-71%</b>	<b>-49%</b>

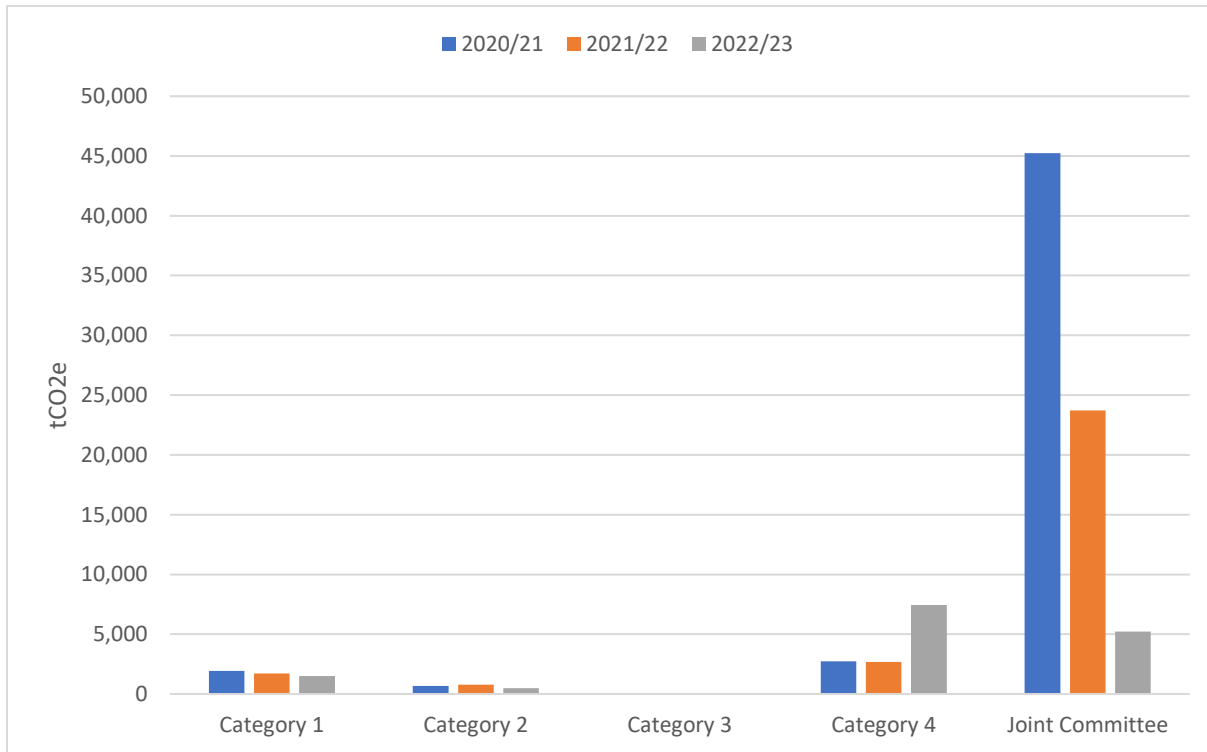
**Table 12:** Comparison of major suppliers' emissions across reporting periods

Source	Total emissions (tCO <sub>2</sub> e)			% change from baseline	% change from 2021/2022
	2020/2021 baseline	2021/2022	2022/2023		
CLM (Richmond Aquatic Centre)	571.4	176.9	118	-79%	-33%
Collingwood Holiday Park	2.7	2.7	No data	NA	NA
Donaldson Civil	256.5	108.4	27.6	-89%	-75%
Downer – Three Waters	357.1	349.2	315	-12%	-10%
Downer - Roading		400.4	573	NA	43%
Fulton Hogan	688	685	370	-46%	-46%
Nelmac	No data	241.3	248	NA	3%
Nelson Tasman Cycle Trails Trust	1.3	No data	No data	NA	NA
PF Olsen	105	No data	3,745.5	3467%	NA
Smart Environmental	435.8	479.3	440	1%	-8%
Stantec	1.2	7.8	8	567%	3%
Tasman Civil	124.7	125.2	156	25%	25%
Taylor's Contracting	-	-	1,376	NA	NA
Tonkin and Taylor	-	24.3	17.7	NA	-27%
WSP	48.8	2.8	0.5	-99%	-82%
<b>Total</b>	<b>2,593</b>	<b>2,603</b>	<b>7,395</b>	<b>185%</b>	<b>184%</b>

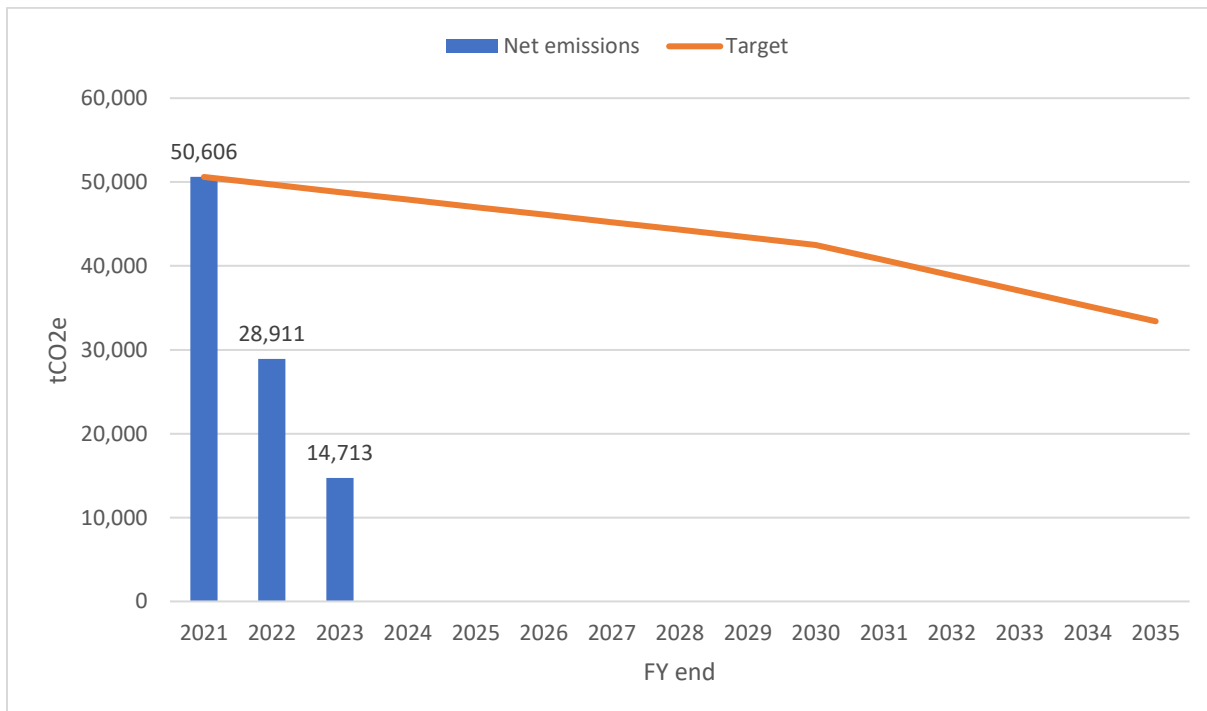
**Table 13:** Comparison of Joint Committee emissions across reporting periods

Source	Total emissions (tCO <sub>2</sub> e)			% change from baseline	% change from 2021/2022
	2020/2021 baseline	2021/2022	2022/2023		
CDEM – purchased electricity + losses	1.3	0.9	1.0	-23%	11%
Landfill* (*recalculated using UEF)	43,640	22,370	3,693	-92%	-83%
Landfill – purchased electricity + losses	20.1	23.7	7	-65%	-70%
Bell Is WWTP – wastewater precalculated	1,288	973.8	1,303	1%	34%
Bell Is WWTP – purchased electricity + losses	289.2	354.7	223	-23%	-37%
<b>Total</b>	<b>45,239</b>	<b>23,723</b>	<b>5,227</b>	<b>-88%</b>	<b>-78%</b>

**Figure 9:** Gross greenhouse gas (GHG) emissions by category compared to previous years



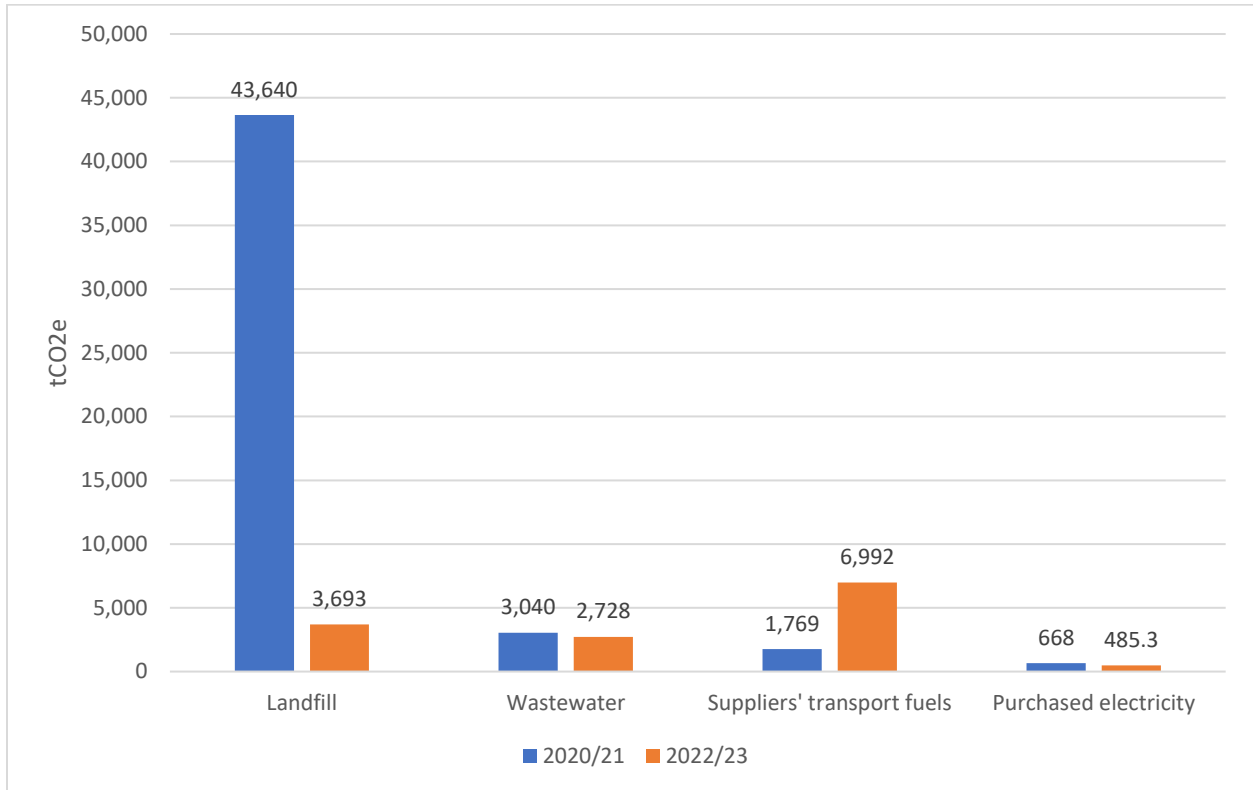
**Figure 10:** Net greenhouse gas (GHG) emissions compared to the Tasman Climate Action Plan targets for Council emissions<sup>28</sup>



<sup>28</sup> The targets are 16% reduction by 2030, 34% reduction by 2035 and net zero emissions by 2050.



**Figure 11:** Comparison of top four GHG operational emissions between base year and 2022/23



The emission reduction at York Valley landfill is a combination of the re-routing of NCC green waste from landfill to composting companies, as well as this year's unique emission factor (UEF) because of significantly increased methane capturing ability at the landfill. Also note that UEFs have been applied to previous years.

Emissions at the Bell Island WWTP have been slightly affected by the secondary clarifier and aeration basin being out for maintenance for several months, during which time the primary treatment effluent was rerouted directly to the oxidation ponds.

PF Olsen (the contractor who manages Council's plantation forests) provided data on their transport fuel usage for the first time in 2023. This additional information makes it look like there has been a significant increase in the suppliers' transport fuel total for the 2022/23 period, when compared to previous years. A similarly intensive harvesting programme has been underway for Council's forests during the last few years, meaning the baseline figure for suppliers' transport fuels was likely similar to the figure for 2022/23.

The decrease in electricity emissions is due to changes in MfE emission factors and implementation of a range of energy efficiency measures across various Council buildings and infrastructure, including pump stations.

## 6 References

2023 Interactive Workbook – Ministry for the Environment, 2023

2023 Summary of Emissions Factors – Ministry for the Environment, 2023

Carbon Accounting Guidelines for Wastewater Treatment – Water New Zealand, 2021

Climate Change 2022: Mitigation of Climate Change – IPCC, 2022

Emissions Reduction Plan – Ministry for the Environment, 2022

Global Warming Potential Values – Greenhouse Gas Protocol, n.d

Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (revised) – Greenhouse Gas Protocol, 2015

ISO14064-1:2018. Greenhouse gases – Part 1: Specification with guidance at the organisation level for quantification and reporting of greenhouse gas emissions and removals – International Organization for Standardization, 2018 (revised)

Measuring Emissions: A Guide for Organisations – Ministry for the Environment, 2023

Tasman Climate Action Plan – Tasman District Council, 2019