Greenhouse Gas Emissions Annual Report

FOR THE YEAR ENDED 30 JUNE 2024

environment SOUTHLAND REGIONAL COUNCIL
Te Taiao Tonga

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Environment Southland
is the brand name of
Southland Regional Council

Contents

1. Executive Summary

This report is a calculation of the GHG emissions due to activities by, or under the control of, Environment Southland for the financial year ended 30 June 2024.

Environment Southland's total GHG emissions for the year ended 30 June 2024 are calculated to be 2,085.84 tonnes of carbon dioxide equivalent gas, which equates to 10.75 tonnes per FTE employee and 20.37 kg per Southland resident.

The total represents a 30.76 tonnes (1%) reduction in GHG emissions over the previous / baseline year which reported 2,116.60 tonnes of emissions.

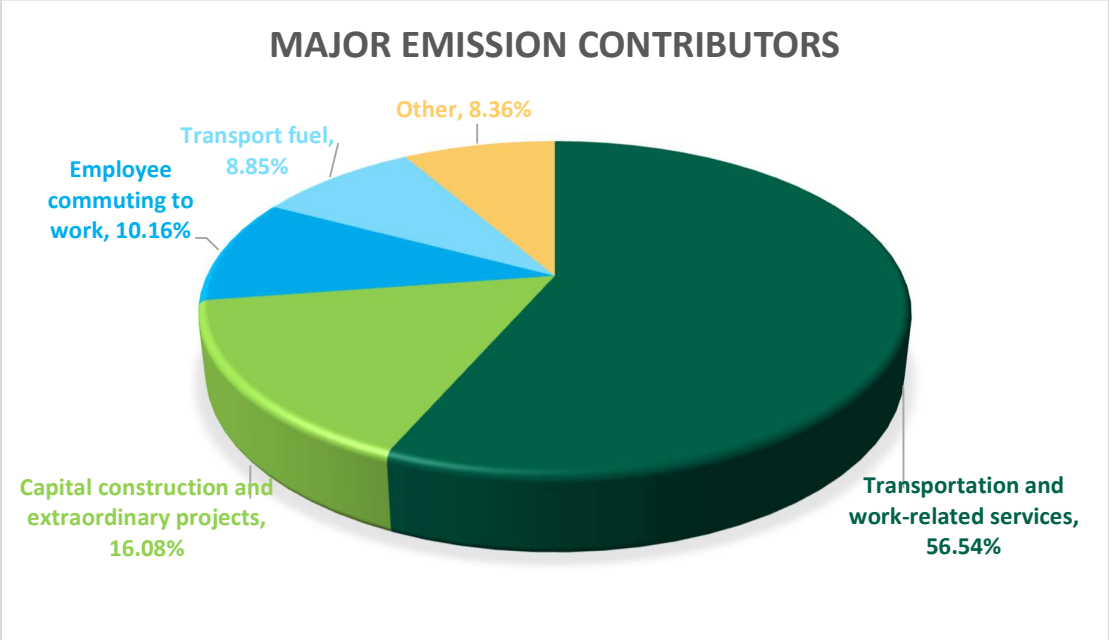
The following table lists the GHG emissions, by Council's categories and subcategories, for the financial year ended 30 June 2024.

Category	Description	T CO2e	%
4.1	Works related products and services	740.78	35.51%
3.1	Transportation and related services	545.74	26.16%
4.5	Capital and extraordinary projects (works)	365.84	17.54%
3.4	Employee commuting to work	231.28	11.09%
1.3	Transport fuel	201.41	9.66%
3.3	Business travel	69.25	3.32%
4.6	Embodied emissions on capital construction materials	65.50	3.14%
2.1	Purchased energy - electricity use	42.99	2.06%
4.4	Disposal of solid and liquid waste	5.87	0.28%
4.2	Energy transmission and distribution losses	3.14	0.15%
1.2	Stationary combustion - Biomass (N2O and CH4)	2.41	0.12%
3.5	Employee working from home	0.71	0.03%
4.3	Provision of water supply	0.27	0.01%
1.1	Stationary combustion - Diesel	0.18	0.01%
1.4	Refrigerant and other gases	0.00	0.00%
1.6	Forestry - managed (land use changes)	0.00	0.00%
3.2	Freight of other goods	0.00	0.00%
1.5	Forestry - natural (removal)	-189.53	-9.09%
	Total	**2,085.84**	**100.00%**

Table 1: Category summary GHG Emissions Report for the year ended 30 June 2024

Major emission contributors

Capital construction and extraordinary projects, transportation and work-related services, transport fuel, and employee commuting to work, are the major contributors to Environment Southland's GHG emissions, accounting for approximately 92 % of total emissions.



Graph 1: Major Emission Contributors
(NB The percentages represented in the graph are the total percentages of emissions prior to the reduction from the Forestry – natural, and therefore differ from other percentages presented elsewhere in the report.)

Business as usual (BAU)

Included within this year's emissions are capital construction and extraordinary project (works) and capital transport emissions of 661.89 T (520.55 T Baseline) and embodied emissions on capital construction materials of 65.50 T (294.78 T Baseline).

These capital and extraordinary emission sources have been shown separately, as while we expect these types of projects to continue, they will fluctuate in size and timing, impacting Council's total emissions and potentially masking movements in the BAU emissions.

The council's BAU operations emissions (excluding construction and extraordinary works and capital transport) are 1,358.45 T. This represents a 4% increase of 57.18 T CO2e over the baseline year which reported 1,301.27 T.

Report development

Council and staff will be the primary users of this report. It has been prepared to provide transparency of emissions in order to inform decision making and emissions reduction activity.

The development of this report has followed:

- ISO 14064-1:2018 Greenhouse Gases – Part 1: Specification with guidance at the organisation level for quantification and reporting of greenhouse gas emissions and removals,
- MfE Measuring emissions: A guide for organisation (2024 detailed guide), and
- Carbon Neutral Government Programme (CNGP) – A guide to managing your greenhouse gas emissions (Version 3.0, May 2023), including the CNGP Guide Appendix 2 – A guide to measuring and reporting GHG emissions under the CNGP.

Verification

This report was independently verified by Toitu in September / October 2024. Toitu's verification statement is attached in Appendix 3.

2. Movement Summary

Environment Southland compiled its Organisational Greenhouse Gas (GHG) Emissions Baseline for the financial year ended 30 June 2023. This report is the first annual GHG report following the completion of the baseline and is for the financial year ended 30 June 2024.

The compilation of the first annual GHG report has validated the approach and findings from the Baseline year. There were no significant issues uncovered that compromise the Baseline report.

MfE has made a number of changes to their 2024 emissions factors however none are deemed significant enough to warrant a retrospective update to the emission factors used in the Baseline calculation. The Baseline report used the MfE 2023 Emission factors.

The following table sets out Council's emissions for the year ended 30 June 2024, compared to the Baseline year ended 30 June 2023.

EMISSIONS (measured in tonnes p.a.)		FY24 CO2e Total	Baseline CO2e Total	Variance CO2e Total	Variance CO2e %age
	DIRECT EMISSIONS				
1	**Category 1: Direct emissions and removals**				
1.1	Stationary combustion - Diesel	0.18	0.51	-0.33	-64%
1.2	Stationary combustion - Biomass (N2O and CH4)	2.41	0.27	2.14	793%
1.3	Transport fuel	201.41	212.88	-11.47	-5%
1.4	Refrigerant and other gases	0.00	0.00	0.00	0%
1.5	Forestry - natural (removal)	-189.53	-189.65	0.12	0%
1.6	Forestry - managed (land use changes)	0.00	0.00	0.00	0%
	Total direct emissions and removals	**14.47**	**24.00**	**-9.53**	**-40%**
	INDIRECT EMISSIONS				
2	**Category 2: Indirect emissions from purchased energy**				
2.1	Purchased energy - electricity use	42.99	36.41	6.58	18%
	Total indirect emissions from purchased energy	**42.99**	**36.41**	**6.58**	**18%**
3	**Category 3: Indirect emissions from freight and transportation**				
3.1	Transportation and related services	545.74	420.92	124.82	30%
3.2	Freight of other goods	0.00	0.00	0.00	0%
3.3	Business travel	69.25	89.04	-19.79	-22%
3.4	Employee commuting to work	231.28	239.46	-8.18	-3%
3.5	Employee working from home	0.71	1.22	-0.51	-42%
	Total indirect emissions from freight and transportation	**846.98**	**750.64**	**96.34**	**13%**
4	**Category 4: Indirect emissions from products and services**				
4.1	Works related products and services	740.78	479.47	261.31	55%
4.2	Energy transmission and distribution losses	3.14	4.22	-1.08	-26%
4.3	Provision of water supply	0.27	0.29	-0.02	-6%
4.4	Disposal of solid and liquid waste	5.87	6.25	-0.38	-6%
4.5	Capital and extraordinary projects (works)	365.84	520.55	-154.71	-30%
4.6	Embodied emissions on capital construction materials	65.50	294.78	-229.28	-78%
	Total indirect emissions from products and services	**1,181.40**	**1,305.56**	**-124.16**	**-10%**
	Total Organisational GHG Emissions	**2,085.84**	**2,116.60**	**-30.76**	**-1%**

Council's total emissions reduced by 30.76 tonnes of CO2e over the year to 30 June 2024.

The significant subcategory variances are:

EMISSIONS (measured in tonnes p.a.)		FY24 CO2e Total	Baseline CO2e Total	Variance CO2e Total	Variance CO2e %age
1.2	Stationary combustion – Biomass (N2O and CH4)	2.41	0.27	2.14	793%
	There was a change in MfE's emission factor, that is responsible for this variance.				
1.3	Transport fuel	201.41	212.88	-11.47	-5%
	There was a reduction of 2,630 litres in Council's fuel usage, along with a transition from diesel toward petrol. These factors will be largely due to the change in the make-up of Council's fleet.				
2.1	Purchased energy – electricity use	42.99	36.41	6.58	18%
	There was an increase in activity, with Council assets consuming 589,768 kWh in FY24, compared with 490,683 in the baseline year. The Stead Street pump house was the most significant contributor consuming an extra 73,060 kWh.				
3.1	Transportation and related services	545.74	420.92	124.82	30%
	There were increases in aircraft services and vehicle transport, however the most significant contributor was heavy haulage which was rock transportation relating to flood bank works and construction.				
3.3	Business Travel	69.25	89.04	-19.79	-22%
	While emissions were down, this was due to a change in MfE's emission factor, as actual air travel activity was 304,487 passenger.kms, up from 268,841 passenger.kms in the baseline year.				
4.1	Works related products and services (BAU)	740.78	479.47	261.31	55%
	There has been a swing from 4.5 Capital and extraordinary projects (works) activity which accounts for much of this increase. Included within the swing is the Undaria Works activity, which has reduced to a BAU level and been included within this subcategory.				

	In addition, there has been an increase in the amount of works activity, in particular excavation activity, which was up on the baseline year.				
4.5	Capital and extraordinary projects (works)	365.84	520.55	-154.71	-30%
	There has been a swing to 4.1 Works related products and services (BAU), which offsets this reduction. Included within the swing is the Undaria Works activity, which has reduced to a BAU level and been removed from this subcategory.				
4.6	Embodied emissions on capital construction materials	65.50	294.78	-229.28	-78%
	This reduction is reflective of the substantial reduction in the amount construction materials (concrete and steel) used in the Stead Street pump house.				

3. Defining Boundaries

The purpose of defining boundaries is to provide transparency of what is included within an organisation's GHG emissions baseline report. This will prevent double counting (i.e. counting by multiple organisations) and assist the production of future GHG emission reports.

Organisational Boundary

The organisational boundary is the boundary of the organisation as it applies to the measurement of GHG emissions. This typically aligns with legal and organisational structures.

An organisation may set its boundaries by one of the following approaches:

1. Control - the organisation accounts for 100 % of the GHG emissions and removals over which it has financial or operational control. The organisation can choose between financial or operational control.
2. Equity share - the organisation accounts for its portion of GHG emissions and removals from respective operations that it has a share of ownership.

To seek consistency and alignment among local councils, a staff inter-agency group was established (as a sub-group of the staff-level Regional Climate Change Working Group). The group has agreed to apply the operational control approach to establishing organisational boundaries.

Under this approach councils include 100 % of an organisation's GHG emissions within its organisational boundary when it has operational control over the organisation. Operational control has been defined as the authority (or greatest authority) to introduce and implement operating policies, health and safety policies, or environmental policies.

To ensure consistent treatment among the inter-agency group, the group developed an Inter-Agency Organisational GHG Boundaries diagram (appendix 1), setting out the agreed treatment of agencies the inter-agency group have in common.

For organisations that Council is involved with, but does not have operational control, it could look to influence the organisation to self-report its GHG emissions and removals.

Environment Southland's Organisational Boundary is set out in figure 1. While Council is involved with a range of organisations, the only one that meets the control criteria and is included within its organisational boundary is Emergency Management Southland.

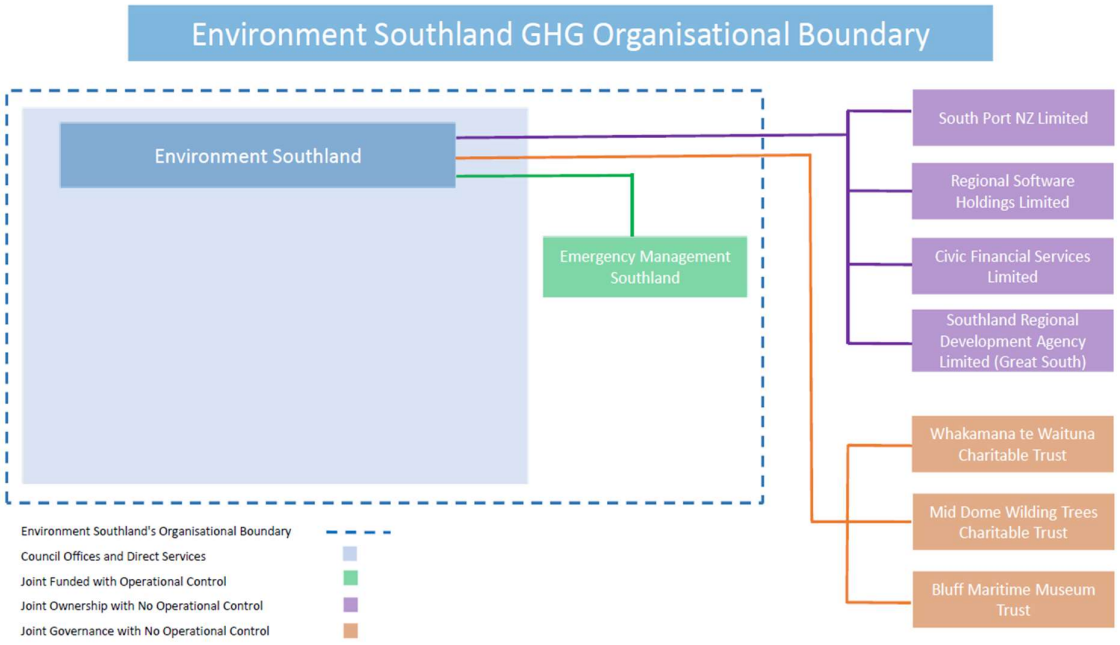


Figure 1. ES's Organisational Boundary

Emergency Management Southland

Emergency Management Southland (EMS) is co-funded by the region's councils and its financial results are apportioned to all councils, however the EMS Joint Arrangement states that Environment Southland (ES) will provide operational management, giving ES operational control in accordance with the organisational boundary approach. Consequently, EMS has been included with Environment Southland's organisational boundary.

South Port NZ Limited (SPNZ)

Environment Southland holds a majority equity stake in SPNZ (66.48 %) and is instrumental in appointing its governance, however SPNZ is a publicly listed company on the NZX stock exchange and Council ensures that it remains at arm's length and has no operational involvement.

Regional Software Holdings Limited

Environment Southland is a minor stakeholder without operational control.

Civic Financial Services Limited

Environment Southland is a minor stakeholder without operational control.

Southland Regional Development Agency Limited (Great South)

Environment Southland is a minor stakeholder without operational control.

Whakamana te Waituna Trust

Environment Southland provides two of six trustees, so does not hold operational control.

Mid Dome Wilding Trees Charitable Trust

Environment Southland is one of several partners involved in this operation and does not have operational control.

Bluff Maritime Museum Trust

Environment Southland provides some governance but does not have operational control.

Operational (Reporting) Boundary

Council's GHG Emissions Baseline report includes the emissions that are the result of operations within Council's organisational boundary over the reporting period.

Council's operations include the activities of, or under the control of, Council. This includes ordinary operations, extraordinary operations, and capital developments. The extraordinary operations and capital developments are inconsistent in nature and not expected to occur year on year. They have been reported separately to provide transparency of standard operations.

Where Council has co-funded operational services with partner agencies, the default expectation is that Council will account for the portion of emissions relating to its percentage of funding. For further explanation of the proposed approach see Proposed Approach to Co-funding with Partner Agencies (appendix 2).

4. Emission Calculation Methodology

In general, the process for calculating the emissions is:

1. Identify emission sources;
2. Collect the sources activity data over the reporting period (measured by the activity unit); and
3. Determine the sources emission factor (which sets out the activity unit).

The GHG inventory comprises a list of the emission sources and the sources activity (measured by the activity unit). The source's activity is then multiplied by the source's emission factor to determine the total emissions for the source.

An example being a diesel utility vehicle (an emissions source) that is driven (a source activity) and consumes one litre of diesel (activity unit) emits 2.68 kg CO2 e (activity unit emission factor).

The emissions from all organisational sources are added to determine the total organisations emissions.

Emission Source Identification

The data source summary tables set out the identified emission sources within Council's GHG inventory.

Identifying the emission sources within some of the subcategories was relatively straight forward as there was either a single emission source and/or single supplier, however for many subcategories it required a detailed review of suppliers' invoices to identify sources amongst the range of procured goods and services.

The following process was used to identify sources from supplier invoices:

Step 1: Obtain a full list of active suppliers for the period.

Step 2: Identify those suppliers that are likely to use emission sources to provide the goods and services to Council. This included:

- Accommodation providers (e.g. hotels, motels, motor lodges)
- Heavy freight transporters (e.g. rock and quarry transport)
- Heavy earthmoving vehicle users (e.g. diggers, cranes)
- Aerial works services (e.g. helicopters, aircraft)
- Passenger transporters (e.g. flights, taxis, rental vehicles)
- Other suppliers deemed worthy of inclusion.

Step 3: Identify other suppliers with annual spend over $50,000 and review their invoices to determine whether they have emission sources and activity.

Step 4: Work through the identified suppliers' invoices to obtain data on emission sources and source activity.

Step 5: Compile a register of suppliers, their emission sources and their source activity.

Step 6: Add this data into Council's GHG inventory.

Supplier Data

A significant amount of emission data was obtained from Council's suppliers.

While Council seeks robust data that provides clear visibility of emission causes that can lead to good decision making and emission reduction, Council also recognises the need to be pragmatic and to accept that suppliers often do not (yet) have the systems or processes required to capture and retain the required data.

In instances where detailed, measured data was not available, Council has derived satisfactory data from calculations and extrapolations. The data quality has been disclosed in the data source summary tables.

It is expected that the availability and quality of supplier data will improve as suppliers develop their GHG emissions source and activity measurement systems. As systems develop, the reporting process will become easier and the supplier's data will move up Council's data quality table (Table 2), improving its quality and the accuracy of Council's emission reporting.

Council has the opportunity to use its influence and procurement processes to support and encourage this transition.

	Data Quality		
	Questionable	**Satisfactory**	**Robust**
Emission Source	Unknown	Similar	Known
Source Activity	Estimated	Derived	Measured
Emission Factor		Default (MfE)	Measured (MfE)

Table 2: Council's data quality table

Significance Criteria

While compiling the GHG inventory, consideration has been given to the significance of the emissions source data and the source activity data.

Consideration involved assessing:

- The availability of information.
- The volume of the emissions and its impact on the overall baseline.
- The cost and benefit associated with obtaining better quality data.

The process involved determining if the required information was readily available, and if not, then determining the impact of the probable emissions on the overall baseline. The approach taken to obtain data ensured that the effort applied to obtain it was relative to the probable impact it had on the baseline.

Underpinning this process has been Council's intention to be pragmatic, while providing adequate information to inform Council's reduction planning.

Council's GHG Inventory Framework

Council's GHG inventory framework sets out the identified source activity types, the emitting activity and the activity units that were used to measure the level of activity. The activity units are those used in the MfE Emission factors.

Cat	Classification	Source activity type	Activity	Activity unit
1	**Direct GHG emissions and removals**			
1.1		Stationary combustion	Diesel used	L
1.2		Stationary combustion	Wood used	Kg
1.3		Transport fuel	Petrol and diesel used	L
1.4		Refrigerant gases	Gases leaked	L
1.5		Forestry – natural	Regeneration	Hectares
1.6		Forestry – managed	Land use change	Hectares
2	**Indirect GHG emissions from purchased energy**			
2.1		Purchased energy	Electricity used	KWh
3	**Indirect GHG emissions from freight and transportation**			
3.1		Transportation and related services:		
		Heavy haulage	Transport	L
		Vehicle transport fuel	Diesel used	L
		Helicopter services	Flight time	Hours
		Aircraft services	Av gas used	L
3.2		Freight of other goods	Transport	T.km
3.3		Business travel	Air travel	Passenger.km
			Hotel nights	Guest nights
			Rental	Km
			Taxi	$
3.4		Employee commuting to work	Fuel used	L
3.5		Employee work from home	Electricity and waste	Days
4	**Indirect GHG from products and services**			
4.1		Works related products and services:		
		Earthmoving works	Diesel used	L
		Tractor services	Diesel used	L

4.2	Energy transmission and distribution losses	Electricity used	KWh
4.3	Provision of water supply	Water used	Staff No.
4.4	Disposal of solid and liquid waste	Solid waste Liquid waste	Kg Staff No.
4.5	Capital construction and extraordinary project works	Diesel used Transport	L L
4.6	Embodied emissions in capital construction materials	Various	Various

Emission Source Exclusions

The following emissions have been excluded from the GHG baseline:

Potential emission source	Reason for exclusion
Category 3: Freight of other goods (subcategory 3.2).	Council's freight of other goods was insignificant with limited available data.
Embodied emissions in purchased goods (non-capital). **NB. Embodied emissions in purchased goods (capital) are included in subcategory 4.6.**	Council was unable to obtain meaningful data on the embodied emissions relating to its purchase of non-capital goods and, as its objective is to obtain emission transparency to inform reduction activity, Council has opted not to include spend based emission factor calculations.
Category 5: Indirect GHG emissions associated with the use of products from the organisation.	This category does not apply to Council as it does not produce products.
Category 6: Indirect GHG emissions from other sources.	No other sources are known.
Emissions from leasehold land owned by Council	Council does not have direct operational control over the leaseholder's activity so, in accordance with the Organisational Boundary criteria set in Section 3, this has been excluded as outside of Council's organisational boundary.

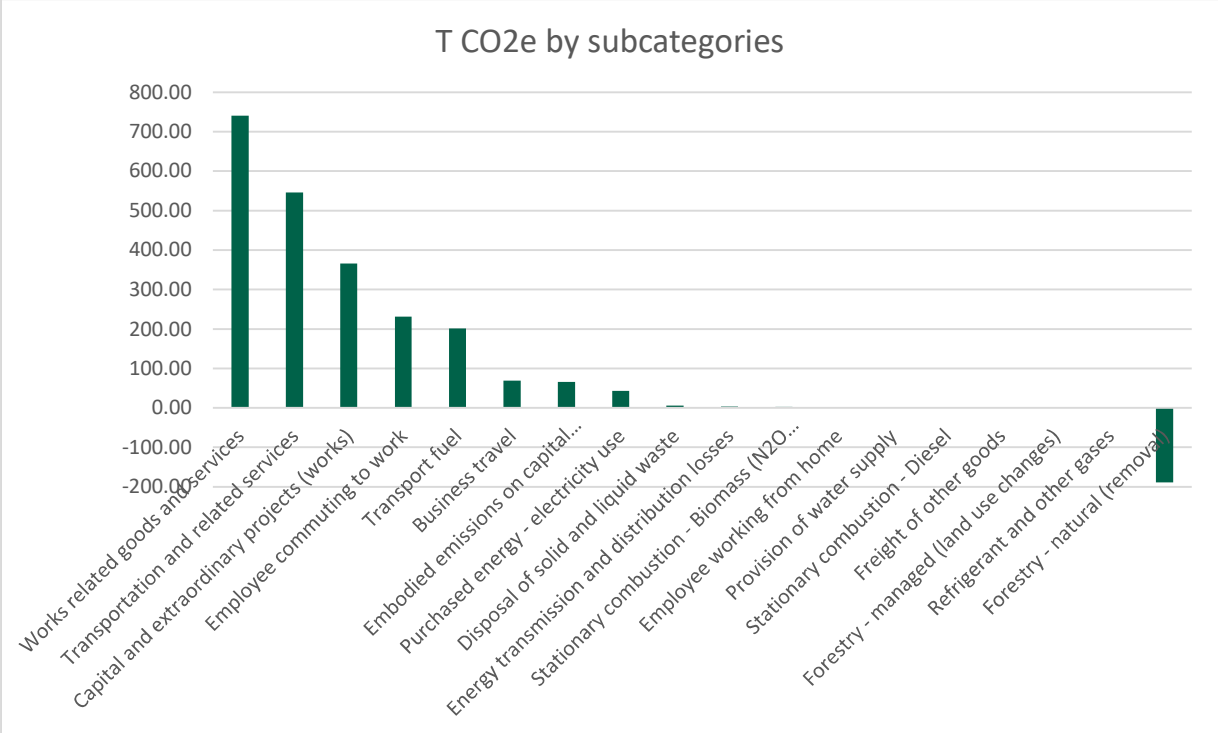
5. GHG Inventory

GHG Emissions Report for the year ended 30 June 2024

(the following report presents the total of each category and subcategory of Council's GHG inventory.)

	EMISSIONS (measured in tonnes p.a.)	CO2e TOTAL	Carbon dioxide CO2	Methane CH4	Nitrous Oxide N2O
	DIRECT EMISSIONS				
1	**Category 1: Direct emissions and removals**				
1.1	Stationary combustion - Diesel	0.18	0.18	0.00	0.00
1.2	Stationary combustion - Biomass (N2O and CH4)	2.41	0.00	2.14	0.27
1.3	Transport fuel	201.41	197.25	0.78	3.46
1.4	Refrigerant and other gases	0.00	0.00	0.00	0.00
1.5	Forestry - natural (removal)	-189.53	-189.53	0.00	0.00
1.6	Forestry - managed (land use changes)	0.00	0.00	0.00	0.00
	Total direct emissions and removals	**14.47**	**7.90**	**2.92**	**3.73**
	INDIRECT EMISSIONS				
2	**Category 2: Indirect emissions from purchased energy**				
2.1	Purchased energy - electricity use	42.99	41.40	1.53	0.05
	Total indirect emissions from purchased energy	**42.99**	**41.40**	**1.53**	**0.05**
3	**Category 3: Indirect emissions from freight and transportation**				
3.1	Transportation and related services	545.74	538.57	0.65	6.82
3.2	Freight of other goods	0.00	0.00	0.00	0.00
3.3	Business travel	69.25	68.97	0.02	0.37
3.4	Employee commuting to work	231.28	223.75	2.12	5.60
3.5	Employee working from home	0.71	0.69	0.03	0.00
	Total indirect emissions from freight and transportation	**846.98**	**831.98**	**2.82**	**12.79**
4	**Category 4: Indirect emissions from products and services**				
4.1	Works related products and services	740.78	729.72	1.11	10.34
4.2	Energy transmission and distribution losses	3.14	3.03	0.12	0.00
4.3	Provision of water supply	0.27	0.26	0.01	0.00
4.4	Disposal of solid and liquid waste	5.87	0.36	4.14	1.37
4.5	Capital and extraordinary projects (works)	365.84	360.38	0.55	5.11
4.6	Embodied emissions on capital construction materials	65.50	65.50	0.00	0.00
	Total indirect emissions from products and services	**1,181.40**	**1,159.25**	**5.93**	**16.82**
	Total Organisational GHG Emissions	**2,085.84**	**2,040.53**	**13.20**	**33.39**

	DIRECT EMISSIONS IN TONNES OF CO2 FROM BIOMASS		
	Biogenic GHG emissions (outside of boundary) - Biomass CO2	28.56	28.56
	LIABILITY TYPE		
	Contingent liability (carbon sequestered since the base year)	-379.18	



Graph 2: Tonnes of CO2e by subcategories

6. Data Source Summary Tables

The following tables set out the details relating to the data source activity types included in Councils GHG inventory.

Category 1: Direct GHG emissions and removals

1.1 Stationary combustion – Diesel

Sources included:	Emergency generator based at Price Street.
Activity data:	Supplier invoiced litres.
Data quality:	Robust data obtained.
Emission factor:	MfE Summary of Emission Factors 2024 – Fuel Table.

1.2 Stationary combustion – Biomass

Sources included:	Heating boiler based at Price Street.
Activity data:	Supplier invoiced wood volume.
Data quality:	Satisfactory / robust derived data obtained. The activity data was received as wood volume and was converted to weight on the basis of 1m3 equals 210kg.
Emission factor:	MfE Summary of Emission Factors 2024 – Fuel Table.
Comments:	As per the MfE emissions factors, the GHG calculation includes the CH4 and N2O emissions but excludes the CO2 emitted. For transparency the CO2 is shown separately as Direct emissions of CO2 from Biomass.

1.3 Transport fuel

Sources included:	All vehicles owned and leased by Council.
Activity data:	Supplier invoiced litres.
Data quality:	Robust data obtained.
Emission factor:	MfE Summary of Emission Factors 2024 – Fuel Table.

1.4 Refrigerant and other gases

Sources included:	All heat pumps and refrigeration appliances on Council premises.
Activity data:	Activity is measured based on gas top ups provided by suppliers.
Data quality:	No data available as there was no activity in the reporting period.
Emission factor:	MfE Summary of Emission Factors 2024 – Refrigerant Table.
Comments:	MfE guidance recommends the use of a top up activity method where we determine leakage by the amount of gas required to fill the equipment.

1.5 Forestry - Natural

Sources included:	All Council owned natural forests and high value asset (HVA) sites.
Sources excluded:	Managed forests.
Activity data:	Hectares of regenerating forestry that comply with specified size and age criteria were obtained from Council's Biodiversity HVA register.

Data quality:	Satisfactory / robust derived data obtained.
Emission factor:	MfE Summary of Emission Factors 2024 – Agriculture, Forestry and Land Use Table. Pre 1990 regenerating natural forest factors were used.
Comments:	Where the mean height of a forest area is less than its expected maturity height, it has been assumed that the forest is between 30 – 100 years old and therefore regenerating.

1.6 Forestry – Managed (land use changes)

Sources included:	All Council owned managed forests.
Sources excluded:	Natural forests.
Activity data:	Hectares of land use changed, however there were no changes this year so there was no activity.
Data quality:	No data available as there was no activity in the reporting period.
Emission factor:	MfE Summary of Emission Factors 2024 – Agriculture, Forestry and Land Use Table.
Comments:	Council has applied the averaging accounting method. Under this approach Council will account for land use changes, which includes the removals resulting from the first rotation of a newly planted forest. Council will hold those removals until there is another land use change such as deforestation, when Council will then account for the emissions. Under this approach there is no requirement to account for activity that is not land use change, such as subsequent harvesting and replanting of rotations of the managed forest.

Category 2: Indirect GHG emissions from purchased energy

2.1 Purchased energy

Sources included:	All Council owned and operated properties, including various powered monitoring sites.
Sources excluded:	Council leased out properties as Council does not control usage.
Activity data:	KWh obtained from supplier invoices.
Data quality:	Robust data obtained.
Emission factor:	MfE Summary of Emission Factors 2024 – Purchased Energy Table.

Category 3: Indirect GHG emissions from freight and transportation

3.1 Transportation and related services

Council engages contractors to provide a range of services for the community. The tables set out the primary freight and transportation related services and the approach towards determining the associated emissions.

Sources included:	Heavy truck haulage.
Activity data:	Litres of diesel used was obtained from some suppliers, and for others the dollar spend on invoice was converted, at a standard haulage rate, to litres of diesel used.
Data quality:	Robust / satisfactory derived data obtained.
Emission factor:	MfE Summary of Emission Factors 2024 – Road Freight Table.

Sources included:	Vehicles used for passenger transport.
Activity data:	Kms travelled were obtained from supplier invoices.
Data quality:	Robust / satisfactory derived data obtained. The vehicles were taken to be diesel utilities.
Emission factor:	MfE Summary of Emission Factors 2024 – Passenger Transport Table.

Sources included:	Helicopter services.
Activity data:	Activity hours were obtained from supplier invoices. If hours weren't available a standard hourly rate was applied to determine activity hours.
Data quality:	Satisfactory derived data obtained. An AS350B Squirrel was deemed to be the standard emission source.
Emission factor:	MfE Summary of Emission Factors 2024 – Helicopter Table.

Sources included:	Aircraft services.
Activity data:	Suppliers advised aviation gas litres used.
Data quality:	Robust data obtained.
Emission factor:	MfE Summary of Emission Factors 2024 – Fuel Table.

3.2 Freight of other goods

Sources included:	There were no significant sources of other freight.
Activity data:	No significant activity.
Data quality:	No data obtained.
Emission factor:	MfE Summary of Emission Factors 2024 – Road Freight Table.

3.3 Business travel

Sources included:	Business travel – including flights, taxis, rentals, and accommodation.
Sources excluded:	Work related travel.
Activity data:	Flights = passenger.km Taxis = dollars spent (incl GST) Rental = kms Accommodation = room nights
Data quality:	Robust data obtained from a range of suppliers.
Emission factor:	MfE Summary of Emission Factors 2024 – Various Tables.

3.4 Employee commuting to work

Sources included:	Staff and councillors commuting to and from work and using their private vehicle for council work.
Activity data:	Kms travelled in private vehicles, obtained from staff survey and expense claim forms.
Data quality:	Satisfactory data obtained with the survey achieving a 64% response rate that was extrapolated to represent all staff.
Emission factor:	MfE Summary of Emission Factors 2024 – Private Transport Table.

3.5 Employee working from home

Sources included:	Home emissions relating to staff working from home.
Sources excluded:	Partial WFH days.
Activity data:	Work from home days, obtained from staff survey.
Data quality:	Satisfactory data obtained with the survey achieving a 64% response rate that was extrapolated to represent all staff.
Emission factor:	MfE Summary of Emission Factors 2024 – Work from Home Table.

Category 4: Indirect GHG emissions from products and services

4.1 Works related products and services

Council engages contractors to provide a range of products and services for the community. The tables set out the primary works related products and services and the approach towards determining the associated emissions.

Sources included:	Earthmoving works.
Activity data:	Activity hours were obtained from supplier invoices. If hours weren't available a standard hourly rate was applied to determine activity hours.
Data quality:	Satisfactory derived data obtained. A 20T excavation digger was deemed to be the standard emission source, which uses an average of 14 litres of diesel per hour.
Emission factor:	MfE Summary of Emission Factors 2024 – Fuel Table.

Sources included:	Tractor services (includes mowing).
Activity data:	Activity hours were obtained from supplier invoices.
Data quality:	Satisfactory derived data obtained. A 30 HP tractor was deemed to be the standard emission source, which uses an average of 6.6 litres of diesel per hour.
Emission factor:	MfE Summary of Emission Factors 2024 – Fuel Table.

4.2 Energy transmission and distribution losses

Sources included:	All Council owned and operated properties, including various powered monitoring sites.
Sources excluded:	Council leased out properties as Council does not control usage.
Activity data:	KWh obtained from supplier invoices.
Data quality:	Robust data obtained.
Emission factor:	MfE Summary of Emission Factors 2024 – Energy T&D Table.
Comments:	This category covers energy loss when purchased energy is transported from point of generation to Council owned locations.

4.3 Provisions of water supply

Sources included:	Usage of water at all Council owned and operated properties.
Sources excluded:	Council leased out properties as Council does not control usage.
Activity data:	Based on per capita calculations.
Data quality:	Satisfactory data obtained.
Emission factor:	MfE Summary of Emission Factors 2024 – Water Supply Table.

4.4 Disposal of solid and liquid waste

Sources included:	Solid and liquid wastage from all Council owned and operated properties.
Sources excluded:	Council leased out properties as Council does not control usage.
Activity data:	Based on per capita calculations.
Data quality:	Questionable / satisfactory data obtained.
Emission factor:	MfE Summary of Emission Factors 2024 – Waste Table.

4.5 Capital construction and extraordinary projects

Sources included:	Capital construction of: Stead St Pump House, Stop Bank development and extension works.
Sources excluded:	Typical annual stop bank maintenance. The embodied emissions in the significant capital materials as these are reported separately in 4.6 Embodied emissions on capital construction materials.
Activity data:	Various.
Data quality:	Various.
Emission factor:	MfE Summary of Emission Factors 2024 – Various Tables.
Comments:	The timing of the activity relating to capital projects has been included when the materials were delivered (as per invoice date) or when the services were performed.

4.6 Embodied emissions on capital construction materials

Sources included:	Significant construction materials used in the Stead Street Pump House project.
Activity data:	Based on volumes of concrete and steel materials used in the construction.
Data quality:	Robust data obtained.
Emission factor:	CO2NSTRUCT embodied emissions tool.

Comments:	The timing of the activity relating to capital projects has been included when the materials were delivered (as per invoice date) or when the services were performed.

Direct emissions of CO2 from biomass

Biogenic GHG emissions (outside of boundary) – Biomass

Sources included:	Heating boiler based at Price Street.
Activity data:	Supplier invoiced wood volume.
Data quality:	Satisfactory / robust derived data obtained. The activity data was received as wood volume and was converted to weight on the basis of 1m3 equals 210kg.
Emission factor:	MfE Summary of Emission Factors 2024 – Fuel Table.
Comments:	As per the MfE emissions factors, the GHG calculation includes the CH4 and N2O emissions but excludes the CO2 emitted. For transparency the emitted CO2 is shown here as being outside of the Council's reporting boundary.

Liability type

Contingent liability (carbon sequestered since base year)

Sources included:	All Council owned natural forests and high value assets (HVA).
Sources excluded:	Natural forests.
Activity data:	Hectares of regenerating forestry that comply with specified size and age criteria were obtained from Council's Biodiversity HVA register.
Data quality:	Satisfactory / robust derived data obtained.
Emission factor:	MfE Summary of Emission Factors 2024 – Agriculture, Forestry and Land Use Table.
Comments:	The liability is the sum of the annual sequestered carbon since the base year.

7. GHG Management Opportunities

The following work streams will provide some opportunity for Council to improve its GHG management.

Improve data

Improving data availability and quality will result in better reporting efficiency and effectiveness.

For some suppliers there may be a need to include emission reporting as a requirement within their engagement contract and for others it will merely be a request to provide specific data on their invoices or to collate the data elsewhere and send through periodic reports.

Include GHG emissions in procurement

There is a need for emissions to become a criteria that is considered in the scoping, design and procuring of services. This may include considering emission sources, source activity and total emissions relating to a project and setting specific emission removal requirements as part of the Request for Proposal (RFP), and/or evaluating suppliers' proposals on the basis of their intended emission sources and expected total emissions in relation to their proposed provision of the required services.

As noted above there will likely be a need to include emission reporting within supplier engagement contracts.

Reduction strategies

It is considered best practice to reduce emissions prior to undertaking activity to remove emission, such as planting forests.

To reduce emissions consideration should be given to:

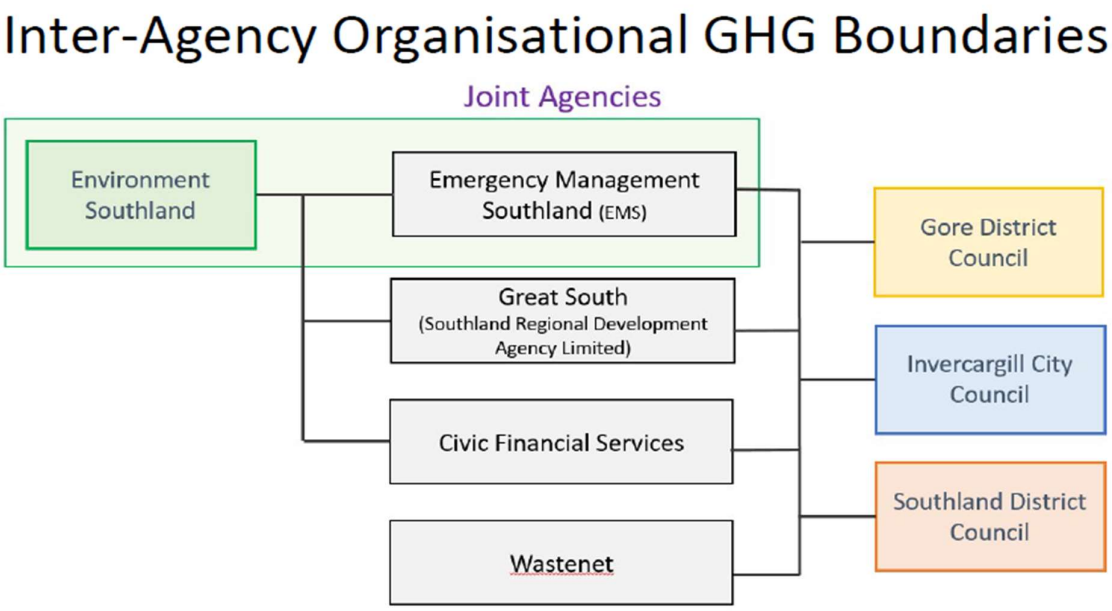
- Reducing activity – which involves designing different, more efficient ways to achieve the required outcome.
- Selecting more efficient sources – which will reduce the emissions from the activity undertaken.

8. Glossary

Biomass	Material of biological origin, excluding material embedded in geological formations and material transformed to fossilised material.
CO2-e	Carbon dioxide equivalent. The impact of each GHG is expressed in terms of its global warming potential (GWP) by converting its impact to a unit of CO2. CO2-e is the sum of all gases expressed in units of CO2.
Greenhouse Gas (GHG)	Gases that influence the way the Earth's atmosphere traps heat.
GHG inventory	A quantification of an organisations GHG sources, sinks, emissions, and removals.
Organisational boundary	The boundary applied to measure GHG emissions. Typically aligning with a legal or organisational structure.
Operating (reporting) boundary	The grouping of emissions sources to be included within the report, which include direct and indirect emissions that the organisation controls or influences.
Sequestered carbon	The CO2 removed from the atmosphere and captured in a GHG reservoir.

9. Appendices

Appendix 1: Inter-Agency Organisational GHG Boundaries



Emergency Management Southland

Emergency Management Southland (EMS) is co-funded by the region's councils and its financial results are apportioned to all councils, however the EMS Joint Arrangement states that Environment Southland (ES) will provide operational management, giving ES operational control in accordance with the agreed inter-agency organisational boundary approach. Consequently, 100 % of EMS is included within Environment Southland's organisational boundary.

Great South (Southland Regional Development Agency Limited)

All councils are shareholders in Great South with varying financial obligations, but no council has direct operational control. Consequently, Great South is outside of each council's organisational boundary.

Civic Financial Services Limited

All councils are shareholders in Civic Financial Services, but no council has direct operational control. Consequently, Civic Financial Services is outside of each council's organisational boundary.

WasteNet Southland

WasteNet is a joint committee of the Invercargill City, Southland District, and Gore District councils to provide the co-ordinated delivery of waste management and minimisation services across Southland. All three territorial authorities have representation in the governance group and have influence, but not operational control, over kerbside collection and the disposal of waste via the procurement of services. Consequently, WasteNet and its contractors remain outside the councils' organisational

boundaries. The creation and processing of waste and recycling is outside of each council's reporting boundary; however, each council is responsible for the collection, transfer, and transport of waste services by contractors and will include their portion of those procured services within their reporting boundaries.

Appendix 2: Approach to co-funding with partner agencies

(Partner agencies largely being local and central government agencies.)

Principle

Where Council is procuring operational services of a significant nature, the suppliers' operational emissions per dollar of funding will be used as the basis of attributing the emissions to each co-funder that is significantly influencing the operations and the procuring of the services.

If a co-funder is providing funds as a donation or a grant and is not significantly influencing the operations or procurement of services, emissions will be allocated amongst the remaining significantly influential co-funders.

The co-funding principles provide a default expectation; however, the approaches should be discussed during the development of the funding agreement and an allocation method agreed upon and written into the agreement. The overriding principle is that whichever approach is likely to result in better inclusion of emissions as a decision-making factor is the one that should be selected.

Rationale

There will often be a relationship between the emissions from the service and the cost of the service. The emissions per dollar allocation method allows each co-funder to jointly take responsibility for the emissions associated with the operation. This facilitates constructive discussion during the Request for Proposal evaluation phase as to the emissions related to the cost of the service and the selection of the best overall service provider with due consideration of emissions. If this approach is not taken, there is a risk of tension with some co-funders opting for the lower cost option with no consideration for the emissions.

Appendix 3: Toitu Verification Statement

INDEPENDENT AUDIT OPINION

Toitū Verification

TO THE INTENDED USERS

Organisation subject to audit:	Environment Southland (Southland Regional Council)
Audit Criteria:	ISO 14064-1:2018 ISO 14064-3:2019 Audit & Certification Technical Requirements 3.0
Responsible Party:	Environment Southland (Southland Regional Council)
Intended users:	Council and staff
Registered address:	220 North Road, Waikiwi, Invercargill, 9810, New Zealand
Inventory period:	01/07/2023 - 30/06/2024
Inventory report:	ES GHG Emissions 2024 Report.pdf

We have reviewed the greenhouse gas emissions inventory report ("the inventory report") for the above named
Responsible Party for the stated inventory period.

RESPONSIBLE PARTY'S RESPONSIBILITIES

The Management of the Responsible Party is responsible for the preparation of the GHG statement in accordance with ISO 14064-1:2018. This responsibility includes the design, implementation and maintenance of internal controls relevant to the preparation of a GHG statement that is free from material misstatement.

VERIFIERS' RESPONSIBILITIES

Our responsibility as verifiers is to express a verification opinion to the agreed level of assurance on the GHG statement, based on the evidence we have obtained and in accordance with the audit criteria. We conducted our verification engagement as agreed in the audit letter, which define the scope, objectives, criteria and level of assurance of the verification.

The International Standard ISO 14064-3:2019 requires that we comply with ethical requirements and plan and perform the verification to obtain the agreed level of assurance that the GHG emissions, removals and storage in the GHG statement are free from material misstatement.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit carried out in accordance with the ISO 14064-3:2019 Standards will always detect a material misstatement when it exists. The procedures performed on a limited level of assurance vary in nature and timing from, and are less in extent compared to reasonable assurance, which is a high level of assurance. The procedures performed on a limited level of assurance vary in nature and timing from, and are less in extent compared to reasonable assurance, which is a high level of assurance. Misstatements are differences or omissions of amounts or disclosures, and can arise from fraud or error. Misstatements are considered material if, individually or in the aggregate, they could reasonably be expected to influence the decisions of readers, taken on the basis of the information we audited.

GHG quantification is subject to inherent uncertainty because of incomplete scientific knowledge used to determine emissions factors and the values needed to combine emissions of different gases.

BASIS OF VERIFICATION OPINION

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

VERIFICATION

We have undertaken a verification engagement relating to the Greenhouse Gas Emissions Inventory Report (the 'Inventory Report')/Emissions Inventory and Management Report of the organisation listed at the top of this statement and described in the emissions inventory report for the period stated above.

The Inventory Report provides information about the greenhouse gas emissions of the organisation for the defined measurement period and is based on historical information. This information is stated in accordance with the requirements of International Standard ISO 14064-1 Greenhouse gases – Part 1: Specification with guidance at the organisation level for quantification and reporting of greenhouse gas emissions and removals (ISO 14064-1:2018).

VERIFICATION STRATEGY

Our verification strategy used a combined data and controls testing approach. Evidence-gathering procedures included but were not limited to:

- activities to inspect the completeness of the inventory;
- interviews of site personnel to confirm operational behaviour and standard operating procedures; —sampling of fuel records to confirm accuracy of source data into calculations;
- recalculation of emissions;
- review and confirmation of emission factor application;
- sampling of supplier and contractor invoices for accuracy of data transfer;
- testing of assumptions on relationship between $ expenditure and fuel use;
- reconciliation of business travel emissions;
- recalculation of energy usage;
- examination of staff commuting related emissions;
- review of assumptions related to type of machinery usage.
- The data examined during the verification were historical in nature.

QUALIFICATIONS TO VERIFICATION OPINION

The following qualifications have been raised in relation to the verification opinion:
Category 3 and 4 emission sources for purchased goods & services are heavily assumptions based, using dollar spend data and an industry average to estimate emissions. Changes in assumptions could significantly impact the measurement of these emissions.

VERIFICATION LEVEL OF ASSURANCE

	tCO_2e Location based	**Level of Assurance**
Direct Emissions:		
Category 1	204.00	**Reasonable**
Indirect emissions from imported energy:		
Category 2	42.99	**Reasonable**
Indirect emissions from transportation		
Category 3 freight and business travel	69.25	**Reasonable**
Indirect emissions from products used by organisation:		
Category 3 excluding freight and business travel	777.73	**Limited**
Indirect emissions from products used by organisation:		
Category 4	1,181.40	**Limited**
Indirect emissions from other sources:		
Total gross emissions	**2,275.38**	
Category 1 removals	-189.53	**Limited**
Total net emissions	**2,085.84**	

RESPONSIBLE PARTY'S GREENHOUSE GAS ASSERTION (CERTIFICATION CLAIM)

Southland Regional Council trading as Environment Southland has measured its greenhouse gas emissions in accordance with ISO 14064-1:2018 in respect of the operational emissions of its organisation.

VERIFICATION CONCLUSION

We have obtained all the information and explanations we have required. In our opinion, the emissions, removals and storage defined in the inventory report, in all material respects:

- comply with ISO 14064-1:2018 ; and
- provide a true and fair view of the emissions inventory of the Responsible Party for the stated inventory period.

OTHER INFORMATION

The responsible party is responsible for the provision of Other Information to meet Programme requirements. The Other Information may include climate related disclosures around Governance, Strategy and Risk management, emissions management, reduction plan and purchase of carbon credits, but does not include the information we verified, and our auditor's opinion thereon.

Our opinion on the information we verified does not cover the Other Information and we do not express any form of audit opinion or assurance conclusion thereon. Our responsibility is to read and review the Other Information and consider it in terms of the programme requirements. In doing so, we consider whether the Other Information is materially inconsistent with the information we verified or our knowledge obtained during the verification.

Verified by:		**Authorised by:**	
Name:	Tom Worley	Name:	Billy Ziemann
Position:	Verifier, Toitū Envirocare	Position:	Certifier, Toitū Envirocare
Signature:		Signature:	
Date verification audit:	17 September 2024	Date:	11 October 2024
Date opinion expressed:	1 October 2024		