

**BEFORE INDEPENDENT HEARING COMMISSIONERS APPOINTED BY THE  
WAIMAKARIRI DISTRICT COUNCIL**

**IN THE MATTER OF**

The Resource Management Act 1991 (**RMA** or  
**the Act**)

**AND**

**IN THE MATTER OF**

Hearing of Submissions and Further  
Submissions on the Proposed Waimakariri  
District Plan (**PWDP** or **the Proposed Plan**)

**AND**

**IN THE MATTER OF**

Hearing of Submissions and Further  
Submissions on Variations 1 and 2 to the  
Proposed Waimakariri District Plan

**AND**

**IN THE MATTER OF**

Submissions and Further Submissions on the  
Proposed Waimakariri District Plan by **Mark  
and Melissa Prosser**

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**EVIDENCE OF ROBERT (BOB) CHRISTOPHER WILSON  
IN RESPONSE TO OFFICER REPORT  
ON BEHALF OF MARK AND MELISSA PROSSER  
REGARDING HEARING STREAM 12C**

DATED: 8 July 2024

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## INTRODUCTION

- 1 My name is Robert (Bob) Christopher Wilson.
- 2 I hold a Bachelor of Engineering (Honours) in Mechanical Engineering from Monash University, Australia. I am a NABERS Accredited Assessor, Green Star Buildings Accredited Professional, Infrastructure Sustainability Accredited Professional and a registered member of the Chartered Institute of Engineers Australia.
- 3 I am an Energy & Sustainability National Lead at Lucid Consulting Australia.
- 4 As an Energy & Sustainability National Lead at Lucid Consulting Australia I have 13 years of experience delivering some of Australia's leading projects in sustainability. This experience includes working across the entire value chain of portfolios, from top level sustainability strategy advice down to asset level audits and opportunities assessments.
- 5 I have worked on multiple projects encompassing the life cycle Green House Gas (GHG) emission analysis and reduction duties including Momentum Development GHG Emissions Study, RMIT City Campus Decarbonisation project, and multiple Life Cycle Assessment (LCA) projects.
- 6 My role in relation to the Waimakariri Proposed District Plan is as an independent expert witness to Mark and Melissa Prosser (the **Submitter**) on Greenhouse Gas emissions analysis and reduction.
- 7 Although this is not an Environment Court proceeding, I have read the Environment Court's Code of Conduct and agree to comply with it. My qualifications as an expert are set out above. The matters addressed in my evidence are within my area of expertise, however where I make statements on issues that are not in my area of expertise, I will state whose evidence I have relied upon. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in my evidence.

## SCOPE OF EVIDENCE

8 My evidence is presented on behalf of Mark and Melissa Prosser, a submitter in these proceedings.

9 In my evidence I address the following issues:

- (a) Analysis of location-based transportation Greenhouse Gas (GHG) emissions from the Prosser Proposal compared to other LLRZ candidate locations.

## SUMMARY OF EVIDENCE

10 My evidence encompasses this statement of evidence document and the following appendices:

- **Appendix A** – Emissions Inventory
- **Appendix B** - Transport GHG Emissions Supporting Calculations

11 My evidence has been prepared to discuss how well the proposed Prosser development proposal aligns with the objectives and policies of the **NPS-UD**, namely whether the urban environments that form part of the Proposal:

- (a) support reductions in greenhouse gas emissions

12 The approach of my evidence is based on the New Zealand Government Ministry for the Environment Measuring emissions: A guide for organisations: 2023 detailed guide, and with reference to EN16258:2013 - Methodology for calculation and declaration of energy consumption and GHG emissions of transport services.

13 The scope of my assessment is confined to the operational location based transportation GHG emissions of the Prosser Proposal site compared to other LLRZ candidate locations identified in the supplementary evidence of David John Robert Smith<sup>1</sup>.

14 The assessment analyses the operational GHG emission associated with person transport of the Prosser proposal development over a 1 year period, compared to the aforementioned alternative candidate locations in the Waimakariri District.

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<sup>1</sup> namely: Oxford, Pegasus Bay, Fernside, Ashley-Sefton, Waikuku.

- 15 My evidence demonstrates that the Prosser Proposal supports reductions in greenhouse gas emissions compared to the majority of LLRZ candidate locations.
- 16 As shown in Figure 2, the Prosser Proposal site location of Mandeville-Ohoka results in the third lowest transport GHG emissions of analysed locations with approximately 555 tCO<sub>2</sub>e per year.
- 17 The only assessed locations with lower GHG emissions are Fernside and Pegasus Bay with approximately 489 and 445 tCO<sub>2</sub>e per year respectively.

#### **PURPOSE OF ASSESSMENT**

- 18 A Transportation Greenhouse Gas (GHG) Emissions Study is required to support the rezoning application of the Prosser Proposal. The purpose of my evidence is to present the findings of the Prosser Proposal Transportation GHG Emissions Study. The Study and my evidence provides an assessment on the operational GHG emissions associated with person transport over a 1 year period.
- 19 My evidence provides a comparative analysis location based transportation GHG emissions of the Prosser Proposal site in Mandeville-Ohoka compared to other LLRZ candidate locations identified in the supplementary evidence of David John Robert Smith, namely:
- a) Oxford
  - b) Pegasus Bay
  - c) Fernside
  - d) Ashley-Sefton
  - e) Waikuku

#### **PLANNING FRAMEWORK**

- 20 The NPS-UD sets out objectives and policies for urban development under the Resource Management Act 1991. Councils must give effect to these objectives and policies.
- 21 The relevant objectives of the NPS-UD are:

(a) **Objective 1:** *New Zealand has well-functioning urban environment that enable all people and communities to provide for their social, economic, and cultural wellbeing, and for their health and safety, now and into the future.*

(b) **Objective 8:** *New Zealand's urban environments:*

(a) *Support reductions in greenhouse gas emissions.*

22 These objectives are supported by several policies including Policy 1, the relevant clauses of which are copied below.

(a) **Policy 1:** *Planning decisions contribute to well-functioning urban environments, which are urban environments that, as a minimum:*

(e) *Support reductions in greenhouse gas emissions; and*

#### **PROSSER PROPOSAL**

23 In broad terms, the Prosser Proposal seeks rezoning of a 70ha site on northern boundary of Mandeville from Rural Lifestyle Zone to Large Lot Residential Zone.

24 The 70ha site with Frontage to Ashworths Road (north) and Dawsons Road (west) is seeking change from rural to rural residential with a minimum lot size of 2,500m<sup>2</sup>, and an average lot size of 5,000m<sup>2</sup>. The potential site yield is approximately 115 lots (**Prosser Proposal**).

#### **APPROACH AND METHOD OF ANALYSIS**

25 The approach of my evidence is based on the New Zealand Government Ministry for the Environment Measuring emissions: A guide for organisations: 2023 detailed guide, and with reference to EN16258:2013 - Methodology for calculation and declaration of energy consumption and GHG emissions of transport services.

26 It is a comparative analysis assessment examining the operational location based person-transportation GHG emissions of the Prosser Proposal site compared to other LLRZ candidate locations for the same scale of development over a 1 year period.

- 27 My evidence sets the framework for sustainable outcomes for the Prosser Proposal to demonstrate its alignment with the objectives and policies of the NPS-UD. This is accomplished by quantifying the Prosser Proposal's operational Transport GHG emissions footprint and comparing this to the alternative potential LLRZ locations in the Waimakariri District.
- 28 I have undertaken detailed analysis with the use of a custom Microsoft Excel based tool that has been quality assured and utilised in similar studies, with input data and calculations available in the Appendices of this evidence.
- 29 The following provides an overview of my methodology and calculations consistent with MfE and EN16258:2013 requirements.
- 30 Table 1 details the methodology employed to complete the GHG Emissions assessment.

*Table 1 - Methodology Summary*

Stage	Description
1 Identifying the purpose of the assessment	The purpose of the assessment is to demonstrate the alignment of the Prosser Proposal with relevant objectives and policies of the NPS-UD 2020.
2 Specification of the object of the assessment	The object of this assessment is the location based person-transport GHG emissions related associated with the Prosser Proposal.
3 Scenarios for defining the assessment object	A comparative analysis assessment examining the location based person-transportation GHG emissions of the Prosser Proposal site compared to 5 alternative potential LLRZ location scenarios in the Waimakariri District.
4 Quantifying the defined assessment object	The Prosser Proposal uses the specific site layout and location, combined with expert evidence on travel distances and modes as required.  The 5 alternative potential LLRZ locations and travel distances are provided by expert evidence and assumptions based on relevant technical information and expertise where required.
5 Selection of environmental data and other information	Where possible environmental data from ISO 14044 compliant life cycle inventory datasets are used. New Zealand Government MfE transport emissions factors and benchmark data is also used. Assumptions based on relevant technical

Stage	Description
	information and expertise are utilised where required.
6 Calculation of the environmental indicators	Global Warming Potential in the form of tCO <sub>2</sub> -e is used as the environmental indicator.
7 Reporting of the assessment of results	Results from the Transport GHG emissions assessment are summarised in this evidence by comparative analysis showing emissions by transport mode and activity for greater clarity.
8 Verification of results	Not within scope of this study.

31 The calculations and associated inputs are detailed in **Appendix B** of this evidence.

### MODEL INPUTS

32 The transport loading is based on the Prosser Proposal site lot yield of 115 dwellings. It is assumed that at least one private vehicle is available per lot.

33 I have compared the location of the Site with other candidate LLRZ sites that have capacity in the District. Mr Allan has provided me with a map of the location of these candidate sites which I have included in Figure 1 below. The Stars indicated the Prosser Site and five other candidate sites where there is proposed rezoning to LLRZ either in the PDP or through submissions on the PDP.

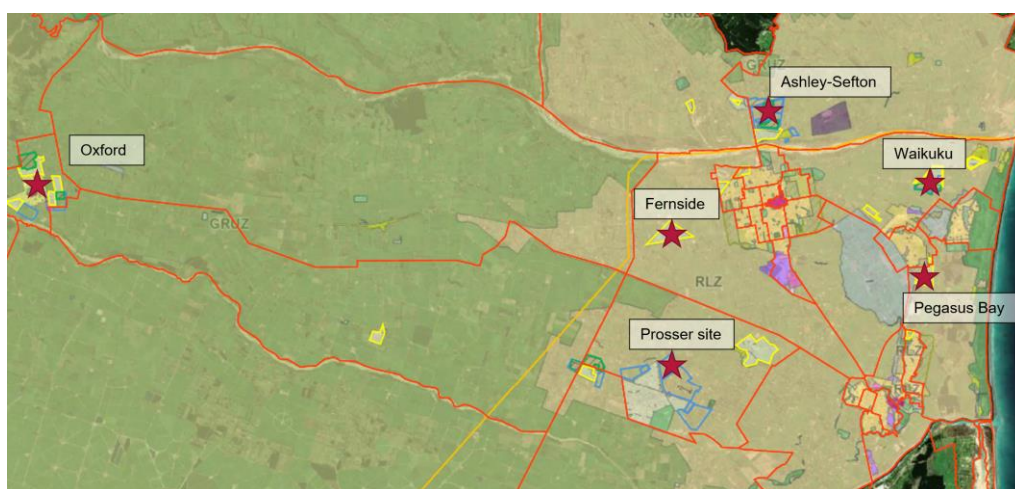


Figure 1 - Locations of Proposed LLRZs.

34 Mr Smith has provided me with the trip distance and transport mode data for the six sites from the 2018 census<sup>2</sup> summarised in Table 2.

*Table 2 - Summary Transport Distanced (km) one way*

Location	Site	Employment Travel Distance (km) one-way	Education Travel Distance (km) one-way	Retail Travel Distance (km) one-way
Mandeville-Ohoka	Prosser Site	14.29	12.07	14.94
Oxford	Oxford	13.30	7.11	34.52
Pegasus Bay	244 Woodend Beach Road	8.82	8.26	11.30
Fernside	247 Oroarkes Road	10.01	9.22	14.71
Ashley-Sefton	19 Dixon Road	13.05	7.78	17.47
Waikuku	58 Tulls Road	11.49	9.25	14.82

35 Using the varying distances in each location scenario while assuming a consistent number of dwellings and commuting trips.

36 The transportation distances data is input on a trips per household frequency approach based on the following assumptions:

- Retail trips – 1 round-trip to an urban centre per dwelling per day for 6 days per week, 50 weeks per year.
- Employment trips – 1 round-trip per dwelling per day for 5 days per week, 48 weeks per year.
- Education trips - 1 round-trip per dwelling per day for 5 days per week, 40 weeks per year.

37 Mr Smith and I have received MarketView data capturing retail spend in Greater Christchurch for July 2014 through January 2020 inclusive supplied by Mr Colegrave. This data demonstrated that the total retail spend of Waimakariri residents over this period (by value) was distributed as follows:

- 33% in Christchurch City,
- 54% in Waimakariri District, and
- 13% other (elsewhere in New Zealand or overseas).

38 Although the spend data was not broken down further, Mr Smith suggested for the purposes of my assessment that the Waimakariri data be further

<sup>2</sup> See Attachment one of the Supplementary Evidence of David Smith



distributed to 10% local spend acknowledging that all LLRZ locations including the Prosser site are located adjacent to a shopping centre, with the remainder of spend split evenly between Rangiora and Kaiapoi as the two Key Activity Centres in the District.

39 The transport modal share of each trip is based on 2018 census data for each location. Working From Home (WFH) and car passenger data was not included in the model share data as these were assumed not to require a designated trip and to avoid potential double counting or over-counting of GHG emissions.

40 For each transport mode the following GHG emissions factor from the New Zealand Government Ministry for the Environment (MfE) Measuring emissions: A guide for organisations: 2023 detailed guide were utilised:

- Car – 0.252 kgCO<sub>2</sub>e/km - MfE default private car emission factor
- Public Transport (PT) - 0.155 kgCO<sub>2</sub>e/km - MfE national average bus emissions factor
- Walking & Cycling – 0 kgCO<sub>2</sub>e/km – assumed zero GHG emissions

41 Transport GHG emissions model inputs are utilised as per the methodology stated above and shown in **Appendix B**.

## MODEL RESULTS

42 Using the above stated model inputs and methodology the following results were produced.

### Transport GHG Emissions per Location by Mode

Travel Component ● Private Vehicle ● Public Transport

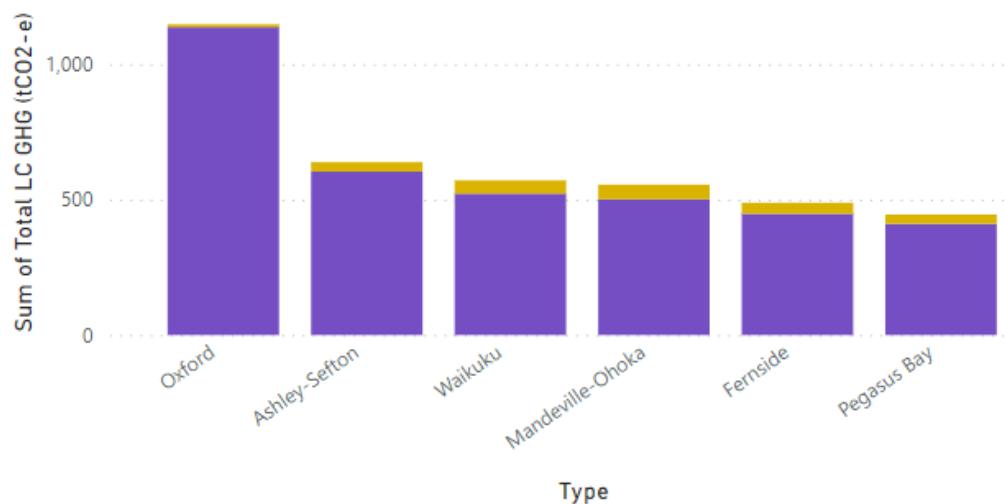


Figure 2 Transport GHG Emissions per Location by Mode

43 As shown in Figure 2, the Prosser Proposal site location of Mandeville-Ohoka results in the third lowest transport GHG emissions of analysed location with approximately 555 tCO<sub>2</sub>e per year.

44 The only assessed locations with lower GHG emissions are Fernside and Pegasus Bay with approximately 489 and 445 tCO<sub>2</sub>e per year respectively.

45 The remaining candidate locations of Waikuku, Ashley-Sefton and particularly Oxford result in greater annual transport GHG emissions based on this analysis.

46 In all locations, transport GHG emissions is dominated by private vehicle transport, which is the dominant transport mode in the district.

47 The transport activities of retail and employment related travel are the main drivers behind transport GHG emissions for each location as shown in Figure 3.

### Transport GHG Emissions per Location by Activity

**Description** ● Education Transport ● Employment Transport ● Retail Transport

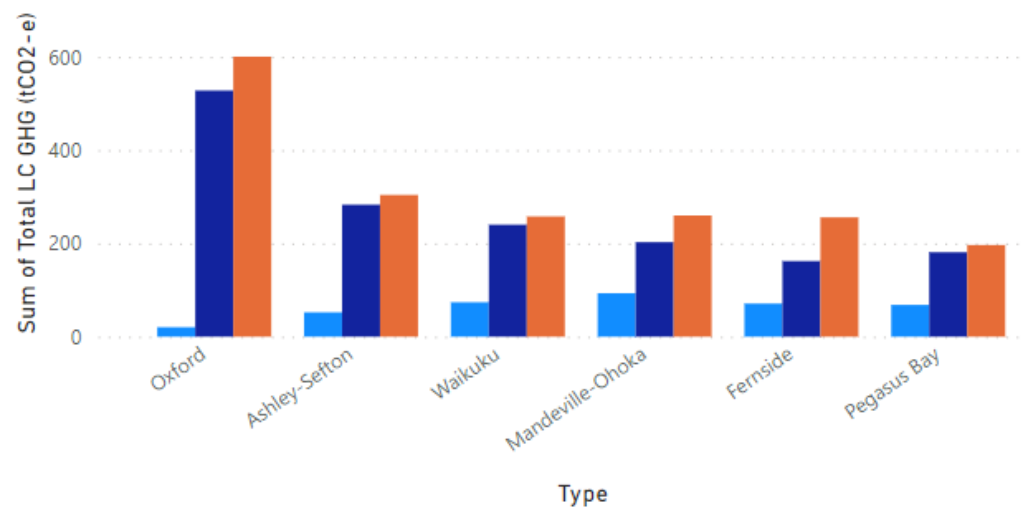


Figure 3 - Transport GHG Emissions per Location by Activity

48 The greater proximity of Pegasus Bay, Fernside and Mandeville-Ohoka to retail and employment centres enables a reduction in transport GHG emissions compared to the alternative locations.

### CONCLUSION

49 The location of a proposed LLRZ directly affects the sustainability and lifecycle GHG emissions of a development through transport related GHG emissions.

50 This study completed a comparative analysis assessment of the operational GHG emission associated with person-transport for 6 candidate LLRZ locations in the Waimakariri District, including the Prosser Proposal site in Mandeville-Ohoka.

51 As shown in Figure 2, the Prosser Proposal site location of Mandeville-Ohoka results in the third lowest transport GHG emissions of analysed location with approximately 555 tCO<sub>2</sub>e per year.

52 The only assessed locations with lower GHG emissions are Fernside and Pegasus Bay with approximately 535 and 488 tCO<sub>2</sub>e per year respectively.

53 The greater proximity of Pegasus Bay, Fernside and Mandeville-Ohoka to retail and employment centres enables a reduction in transport GHG emissions compared to the alternative locations.

54 Thank you for the opportunity to present my evidence.

Robert Wilson  
8 July 2024

### Transport GHG Emissions Inventory - Prosser Proposal Study

Type	Development Component2	Lifecycle Module	Travel Component	Description	Material/Activity Quantity	Quantity Unit	GHG Factor	Factor Unit	GHG (tCO2e)	Total or Per Annum	LCA Period	Total LC GHG (tCO2-e)
Mandeville-Ohoka	Transport	B6-B7: Use - Resources	Private Vehicle	Retail Transport	1030860	km/yr	0.252	kgCO2e/km	260	Per Annum	1	260
Mandeville-Ohoka	Transport	B6-B7: Use - Resources	Private Vehicle	Employment Transport	803809.8228	km/yr	0.252	kgCO2e/km	203	Per Annum	1	203
Mandeville-Ohoka	Transport	B6-B7: Use - Resources	Private Vehicle	Education Transport	154993.5189	km/yr	0.252	kgCO2e/km	39	Per Annum	1	39
Oxford	Transport	B6-B7: Use - Resources	Private Vehicle	Retail Transport	2381880	km/yr	0.252	kgCO2e/km	600	Per Annum	1	600
Oxford	Transport	B6-B7: Use - Resources	Private Vehicle	Employment Transport	2093758.612	km/yr	0.252	kgCO2e/km	528	Per Annum	1	528
Oxford	Transport	B6-B7: Use - Resources	Private Vehicle	Education Transport	37714.82176	km/yr	0.252	kgCO2e/km	10	Per Annum	1	10
Pegasus Bay	Transport	B6-B7: Use - Resources	Private Vehicle	Retail Transport	779700	km/yr	0.252	kgCO2e/km	196	Per Annum	1	196
Pegasus Bay	Transport	B6-B7: Use - Resources	Private Vehicle	Employment Transport	712439.1325	km/yr	0.252	kgCO2e/km	180	Per Annum	1	180
Pegasus Bay	Transport	B6-B7: Use - Resources	Private Vehicle	Education Transport	138961.6725	km/yr	0.252	kgCO2e/km	35	Per Annum	1	35
Fernside	Transport	B6-B7: Use - Resources	Private Vehicle	Retail Transport	1014990	km/yr	0.252	kgCO2e/km	256	Per Annum	1	256
Fernside	Transport	B6-B7: Use - Resources	Private Vehicle	Employment Transport	637458.3196	km/yr	0.252	kgCO2e/km	161	Per Annum	1	161
Fernside	Transport	B6-B7: Use - Resources	Private Vehicle	Education Transport	126305.5101	km/yr	0.252	kgCO2e/km	32	Per Annum	1	32
Ashley-Sefton	Transport	B6-B7: Use - Resources	Private Vehicle	Retail Transport	1205430	km/yr	0.252	kgCO2e/km	304	Per Annum	1	304
Ashley-Sefton	Transport	B6-B7: Use - Resources	Private Vehicle	Employment Transport	1113817.32	km/yr	0.252	kgCO2e/km	281	Per Annum	1	281
Ashley-Sefton	Transport	B6-B7: Use - Resources	Private Vehicle	Education Transport	75665.11936	km/yr	0.252	kgCO2e/km	19	Per Annum	1	19
Waikuku	Transport	B6-B7: Use - Resources	Private Vehicle	Retail Transport	1022580	km/yr	0.252	kgCO2e/km	258	Per Annum	1	258
Waikuku	Transport	B6-B7: Use - Resources	Private Vehicle	Employment Transport	944863.92	km/yr	0.252	kgCO2e/km	238	Per Annum	1	238
Waikuku	Transport	B6-B7: Use - Resources	Private Vehicle	Education Transport	106344.086	km/yr	0.252	kgCO2e/km	27	Per Annum	1	27
Mandeville-Ohoka	Transport	B6-B7: Use - Resources	Public Transport	Retail Transport	0	km/yr	0.155	kgCO2e/km	-	Per Annum	1	-
Mandeville-Ohoka	Transport	B6-B7: Use - Resources	Public Transport	Employment Transport	0	km/yr	0.155	kgCO2e/km	-	Per Annum	1	-
Mandeville-Ohoka	Transport	B6-B7: Use - Resources	Public Transport	Education Transport	348735.4175	km/yr	0.155	kgCO2e/km	54	Per Annum	1	54
Oxford	Transport	B6-B7: Use - Resources	Public Transport	Retail Transport	0	km/yr	0.155	kgCO2e/km	-	Per Annum	1	-
Oxford	Transport	B6-B7: Use - Resources	Public Transport	Employment Transport	0	km/yr	0.155	kgCO2e/km	-	Per Annum	1	-
Oxford	Transport	B6-B7: Use - Resources	Public Transport	Education Transport	69143.8399	km/yr	0.155	kgCO2e/km	11	Per Annum	1	11
Pegasus Bay	Transport	B6-B7: Use - Resources	Public Transport	Retail Transport	0	km/yr	0.155	kgCO2e/km	-	Per Annum	1	-
Pegasus Bay	Transport	B6-B7: Use - Resources	Public Transport	Employment Transport	9018.216867	km/yr	0.155	kgCO2e/km	1	Per Annum	1	1
Pegasus Bay	Transport	B6-B7: Use - Resources	Public Transport	Education Transport	213074.5645	km/yr	0.155	kgCO2e/km	33	Per Annum	1	33
Fernside	Transport	B6-B7: Use - Resources	Public Transport	Retail Transport	0	km/yr	0.155	kgCO2e/km	-	Per Annum	1	-
Fernside	Transport	B6-B7: Use - Resources	Public Transport	Employment Transport	8614.301617	km/yr	0.155	kgCO2e/km	1	Per Annum	1	1
Fernside	Transport	B6-B7: Use - Resources	Public Transport	Education Transport	252611.0202	km/yr	0.155	kgCO2e/km	39	Per Annum	1	39
Ashley-Sefton	Transport	B6-B7: Use - Resources	Public Transport	Retail Transport	0	km/yr	0.155	kgCO2e/km	-	Per Annum	1	-
Ashley-Sefton	Transport	B6-B7: Use - Resources	Public Transport	Employment Transport	14465.16	km/yr	0.155	kgCO2e/km	2	Per Annum	1	2
Ashley-Sefton	Transport	B6-B7: Use - Resources	Public Transport	Education Transport	213238.0637	km/yr	0.155	kgCO2e/km	33	Per Annum	1	33
Waikuku	Transport	B6-B7: Use - Resources	Public Transport	Retail Transport	0	km/yr	0.155	kgCO2e/km	-	Per Annum	1	-
Waikuku	Transport	B6-B7: Use - Resources	Public Transport	Employment Transport	12270.96	km/yr	0.155	kgCO2e/km	2	Per Annum	1	2
Waikuku	Transport	B6-B7: Use - Resources	Public Transport	Education Transport	302671.6294	km/yr	0.155	kgCO2e/km	47	Per Annum	1	47

**Transport GHG Emissions Supporting Calculations**

Project	LCE 101801
Date	3/07/2024
Engineer	JS
Reviewer	BW
Revision	P1

0.252 kgCO <sub>2</sub> e/kr MFE 2023 Private Car factor
0.155 kgCO <sub>2</sub> e/kr MFE 2023 Nat. Avg. Bus factor
115 lots site potential houses yield

Area	Retail trips	Employment Trips	Education Trips
Mandeville-Ohoka	14.94 km one-way 29.88 km roundtrip	14.29 km one-way 29.88 km roundtrip	12.07 km one-way 24.14754 km roundtrip
	1 trip per dwelling per day for 6 days per week, 50 weeks per year	1 trip per dwelling per day for 6 days per week, 50 weeks per year	1 trip per dwelling per day for 5days per week, 48 weeks per year
	1 trip 6 days 50 weeks	1 trip 5 days 48 weeks	1 trip 5 days 40 weeks
	8964 km/yr 115 Dwellings	7171.2 km/yr 115 Dwellings	4829.508197 km/yr 115 Dwellings
	<b>1,030,860</b> km/yr	<b>824,688</b> km/yr	555,393 km/yr
	<b>1,030,860.0</b> Car km/y 100.0% - PT km/y 0.0%	<b>803,809.8</b> Car km/y 97.5% - PT km/y 0.0%	<b>154,994</b> Car km/y 27.9% <b>348,735</b> PT km/y 62.8%
Oxford	34.52 km one-way 69.04 km roundtrip	13.30 km one-way 69.04 km roundtrip	7.11 km one-way 14.21138 km roundtrip
	1 trip per dwelling per day for 6 days per week, 50 weeks per year	1 trip per dwelling per day for 6 days per week, 50 weeks per year	1 trip per dwelling per day for 5days per week, 48 weeks per year
	1 trip 6 days 50 weeks	1 trip 6 days 48 weeks	1 trip 5 days 40 weeks
	20712 km/yr 115 Dwellings	19883.52 km/yr 115 Dwellings	2842.276423 km/yr 115 Dwellings
	<b>2,381,880</b> km/yr	<b>2,286,605</b> km/yr	326,862 km/yr
	<b>2,381,880</b> Car km/y 100.0% - PT km/y 0.0%	<b>2,093,759</b> Car km/y 91.6% - PT km/y 0.0%	<b>37,715</b> Car km/y 11.5% <b>69,144</b> PT km/y 21.2%
Pegasus Bay	11.3 km one-way 22.6 km roundtrip	8.82 km one-way 22.6 km roundtrip	8.26 km one-way 16.51429 km roundtrip
	1 trip per dwelling per day for 6 days per week, 50 weeks per year	1 trip per dwelling per day for 6 days per week, 50 weeks per year	1 trip per dwelling per day for 5days per week, 48 weeks per year
	1 trip 6 days 50 weeks	1 trip 6 days 48 weeks	1 trip 5 days 40 weeks
	6780 km/yr 115 Dwellings	6508.8 km/yr 115 Dwellings	3302.857143 km/yr 115 Dwellings
	<b>779,700</b> km/yr	<b>748,512</b> km/yr	379,829 km/yr
	<b>779,700</b> Car km/y 100.0% - PT km/y 0.0%	<b>712,439.1</b> Car km/y 95.2% <b>9,018</b> PT km/y 1.2%	<b>138,962</b> Car km/y 36.6% <b>213,075</b> PT km/y 56.1%
Fernside	14.71 km one-way 29.42 km roundtrip	10.01 km one-way 20.03 km roundtrip	9.22 km one-way 18.4359 km roundtrip
	1 trip per dwelling per day for 6 days per week, 50 weeks per year	1 trip per dwelling per day for 6 days per week, 50 weeks per year	1 trip per dwelling per day for 5days per week, 48 weeks per year
	1 trip 6 days 50 weeks	1 trip 6 days 48 weeks	1 trip 5 days 40 weeks
	8826 km/yr 115 Dwellings	5767.836735 km/yr 115 Dwellings	3687.179487 km/yr 115 Dwellings
	<b>1,014,990</b> km/yr	<b>663,301</b> km/yr	424,026 km/yr
	<b>1,014,990</b> Car km/y 100.0% - PT km/y 0%	<b>637,458.3</b> Car km/y 96.1% <b>8,614</b> PT km/y 1.3%	<b>126,306</b> Car km/y 29.8% <b>252,611</b> PT km/y 59.6%
Ashley-Sefton	17.47 km one-way 34.94 km roundtrip	13.05 km one-way 34.94 km roundtrip	7.78 km one-way 15.55172 km roundtrip
	1 trip per dwelling per day for 6 days per week, 50 weeks per year	1 trip per dwelling per day for 6 days per week, 50 weeks per year	1 trip per dwelling per day for 5days per week, 48 weeks per year
	1 trip 6 days 50 weeks	1 trip 6 days 48 weeks	1 trip 5 days 40 weeks
	10482 km/yr 115 Dwellings	10062.72 km/yr 115 Dwellings	3110.344828 km/yr 115 Dwellings
	<b>1,205,430</b> km/yr	<b>1,157,213</b> km/yr	357,690 km/yr
	<b>1,205,430</b> Car km/y 100.0% - PT km/y 0%	<b>1,113,817</b> Car km/y 96.3% <b>14,465</b> PT km/y 1.3%	<b>75,665</b> Car km/y 21.2% <b>213,238</b> PT km/y 59.6%
Waikuku	14.82 km one-way 29.64 km roundtrip	11.49 km one-way 29.64 km roundtrip	9.25 km one-way 18.49462 km roundtrip
	1 trip per dwelling per day for 6 days per week, 50 weeks per year	1 trip per dwelling per day for 6 days per week, 50 weeks per year	1 trip per dwelling per day for 5days per week, 48 weeks per year
	1 trip 6 days 50 weeks	1 trip 6 days 48 weeks	1 trip 5 days 40 weeks
	8892 km/yr 115 Dwellings	8536.32 km/yr 115 Dwellings	3698.924731 km/yr 115 Dwellings
	<b>1,022,580</b> km/yr	<b>981,677</b> km/yr	425,376 km/yr
	<b>1,022,580</b> Car km/y 100.0% - PT km/y 0%	<b>944,864</b> Car km/y 96.3% <b>12,271</b> PT km/y 1.3%	<b>106,344</b> Car km/y 25.0% <b>302,672</b> PT km/y 71.2%