



Carbon Neutral NZ Trust

# Analysis of Household Carbon Data for Kerikeri

5 December 2019



## Introduction

Carbon Neutral NZ Trust launched its **Carbon Calculator** in late October 2018.

The primary objective is to measure the emissions and the carbon sequestration of households through the use of our online carbon calculator. The Trust calculator is unique in that it does allow households to measure their carbon sequestration and calculate a net emissions value. We are focussed on achieving positive outcomes for the communities of Kerikeri in Northland and Waiheke Island in Auckland. The objective being to make these communities carbon neutral.

The trust has a very limited number of volunteers who do endeavour to encourage residents within those communities to participate. This encouragement has been via public meetings, school visits, a presence at local events and word of mouth. Brochures, cards, books and even an advertisement at the Cathay cinema (in Kerikeri) have been used as a way of reinforcing the opportunity to manage household carbon emissions.

While the response rates have been below expectations, we have had 105 Kerikeri\* households representing 251 people who have registered and set up a calculator. Not all have completed it but we do have 89 households where key data has been completed. A summary of that data from those households is detailed in this report. The total number of participating households from the BOI / Whangaroa Community Board area is 124 representing representing 294 residents. The total number from neighbouring Kaikohe / Hokianga Community Board area is 25 households representing 75 residents.

Due to the calculator being accessible to anyone on the web, a total of 570 households from around NZ have created a calculator record. I have not studied these other areas in detail.

\*Kerikeri includes households with the following postal codes: 230, 245, 293, 294, 295

## Overall Activity on the Carbon Neutral Trust Website

Since launching, we have had a total 5,449# visits (sessions) to the site. 92% of those visits are from New Zealand and 886 visits have been from the Northland Region. Visitors to the site spend an average of 6.12minutes on the site. Around 49% of visits have included some form interaction with the calculator. Some of these visits will be households returning to update their records (multiple visits by same household).

#data from Google Analytics

## Overview of the Kerikeri Data

We have grouped the Kerikeri data into urban and rural. "Urban" includes the post codes 0230 which covers the actual township. The 'rural' areas incorporate post codes; 245\*\*, 293, 294 & 295. Households numbers, where the data looked complete, were:

- ➔ Urban 46
- ➔ Rural 43

The average number of people per household was 2 for urban Kerikeri and three for rural Kerikeri. This has the most impact on the food emissions per household and also potentially impact on transport as households are more likely to have multiple vehicles.

\*\* 0245 is the CBD but the data entered (1 household) was clearly rural - as such I have included it in the rural data.

## Emissions

The emissions data is relatively uniform across all households with only minor variations reflecting consumption choices of the individual households. Rural households have higher overall emissions, when you translate this to a per person basis, they are only slightly higher with little difference between the two (See Charts 1 & 2 below). The total Kerikeri emissions per person were a little lower with those from other areas. The average for all completed surveys was 6.927kg of CO2 per person.

Chart 1: Average Kerikeri Household Carbon Emissions

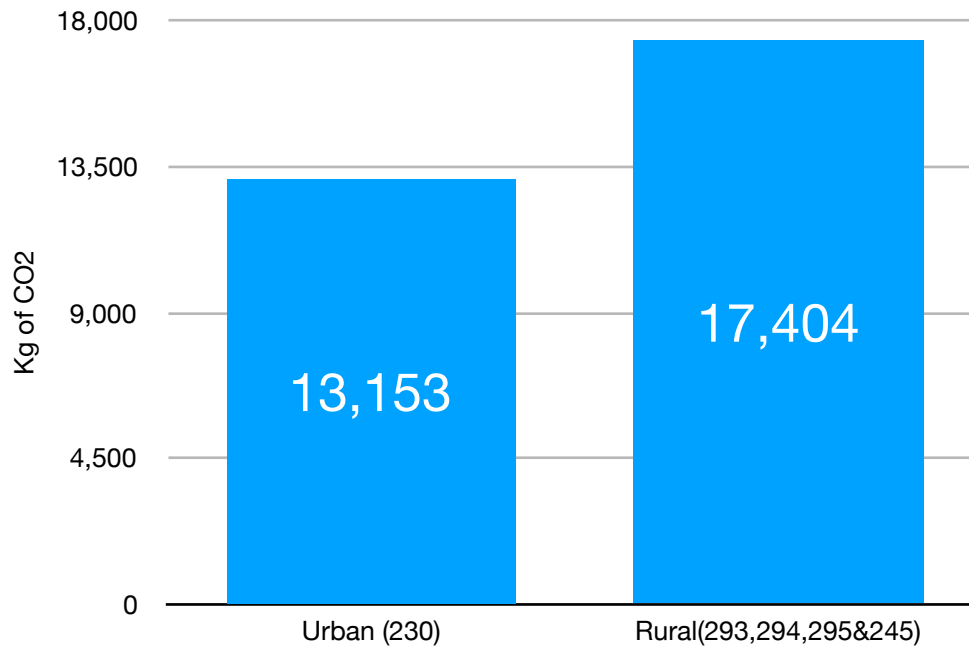
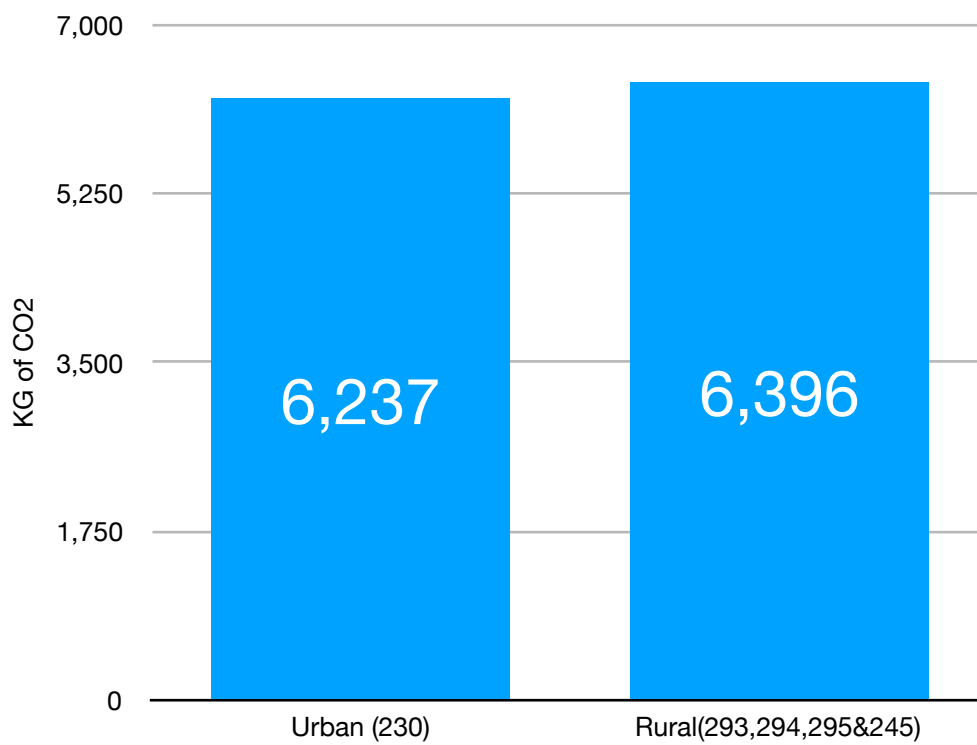
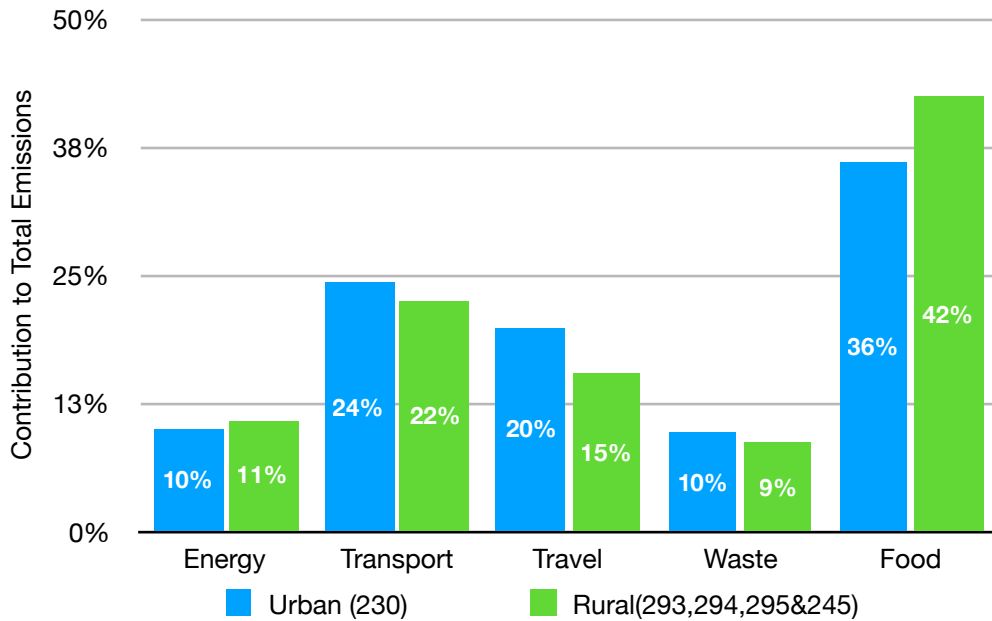


Chart 2: Average CO2 emissions per person - Kerikeri

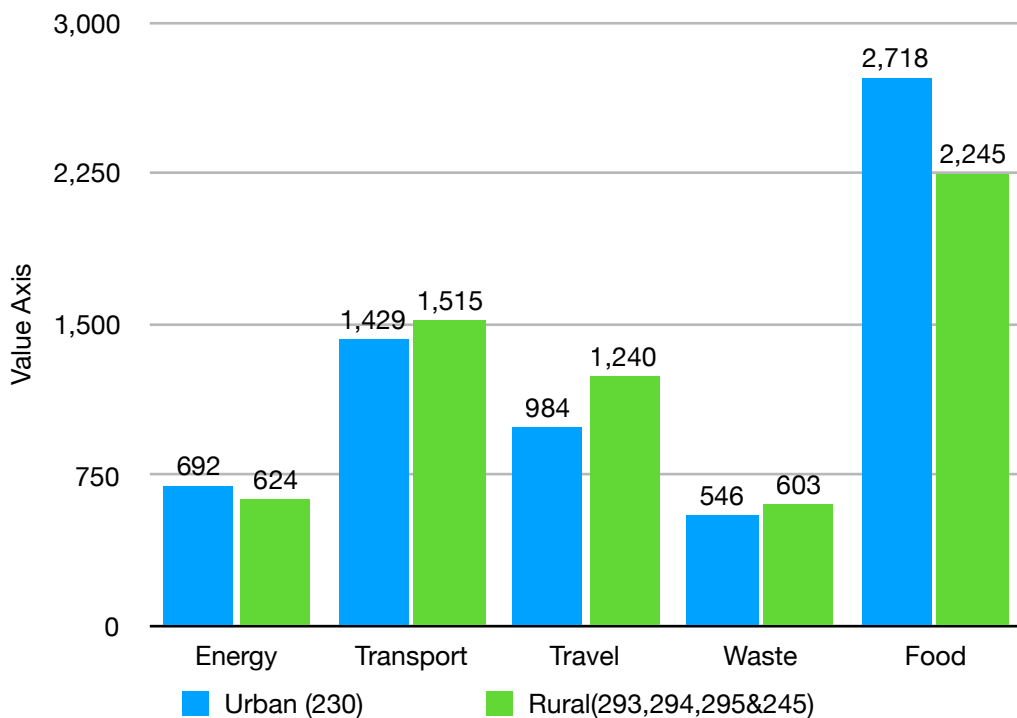


Breaking out the household emissions by the major categories; food, transport and travel are the major contributors. The main way to influence the food figure is by reducing the intake of red meat. Travel is often discretionary and trips could be reviewed as to their necessity - changing the mode of transport for overseas travel is not an option that we enjoy in NZ. The options for reducing transport emissions are to move to an EV or hybrid but again these are not options available to every household. More efficient use of vehicles may need to be considered. Chart 4

**Chart 3: Breakdown of household emissions by category - Kerikeri**



**Chart 4: Breakdown of average personal emissions by category - Kerikeri**



shows the emission break down in kg of CO2 per person.

A general observation, the sample size, even though it is modest, would seem to be a reasonable reflection of the carbon emissions of households in the town. Especially when viewed relative to data from other areas of the country. You could probably scale this data across all households and derive a reasonable assessment of total Kerikeri carbon emissions.

## Sequestration

Trees are the overwhelming source of sequestration (see Chart 5). Data varies significantly between households with some individual Households recording very high levels of sequestration from trees. Using average data in these circumstances is misleading. Chart 6 highlights the variations by post code ( I excluded 245 as there was only 1 household)

Chart 5: Household Sequestration - By Category

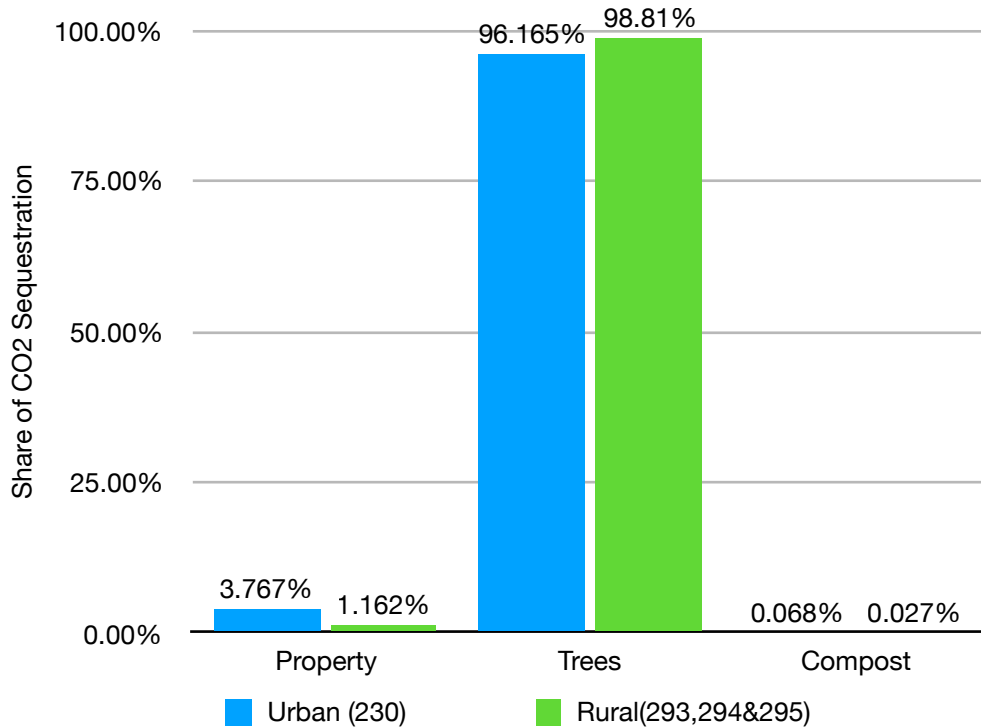
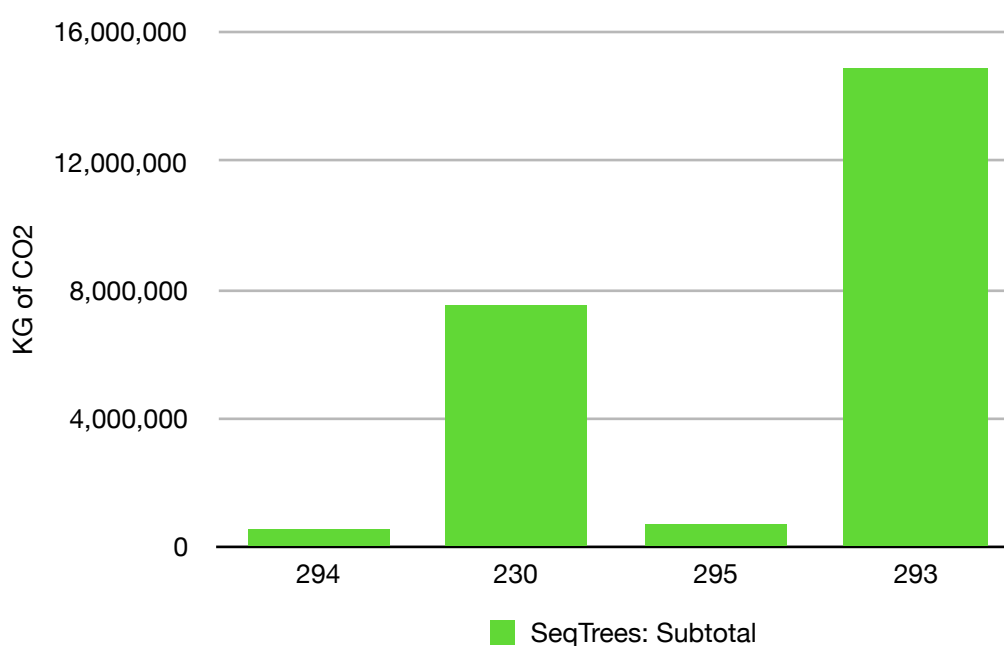


Chart 6: Total Sequestration from Trees - Kerikeri



## How are we performing?

If you look at the average emissions v average sequestration for the 89 households reviewed, then collectively it look very good with sequestration clearly outstripping emissions. However, if we look at the number of households that are net sequesters, the numbers are somewhat different but still positive with 56% of the 89 households being net sequesters. Being a net sequester is of course tied to property size and more urban dwellers are net emitters. Even in urban Kerikeri the average property size will be larger than those of other urban centres, especially larger cities, so we will be performing better than most. While Rural households have the ability to sequester more, not all urban households have that same option. Sequestration from new plantings takes time so the most immediate way to personally help to mitigate the climate emergency is to focus on emissions.

