

UNDER

the Resource Management Act 1991
("RMA")

IN THE MATTER

of the Proposed Waikato District Plan:
Hearing 25 – Zone Extents.

**STATEMENT OF EVIDENCE OF JOHN DOUGLAS PARLANE ON
BEHALF OF KĀINGA ORA-HOMES AND COMMUNITIES**

TRANSPORTATION

17 February 2021

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LAWYERS
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1. EXECUTIVE SUMMARY

- 1.1 My full name is John Douglas Parlane. I am a traffic engineer and a director of Parlane and Associates Limited. I am providing transportation evidence on behalf of Kāinga Ora-Homes and Communities (“**Kāinga Ora**”) (formerly Housing New Zealand Corporation) in relation to the submissions it made on the Proposed Waikato District Plan (“**PDP**” or “**Plan**”) insofar as they relate to this hearing.
- 1.2 The proposed medium density zone (“**MDRZ**”) that Kāinga Ora is proposing be applied to rural towns in the Waikato District has the potential to increase housing options in locations where it would lead to an increase in walking and cycling and where the housing would support future improvements to public transport.
- 1.3 Medium density zones should reduce car use through enabling alternative modes to be used. By comparison locating all new houses on the periphery of towns is likely to result in an increase in car use.
- 1.4 Each of the towns has its own unique travel characteristics. Tuakau and Pokeno due their location are home to many people who commute to Pukekohe or further north. However, both towns have the capacity for further growth without creating adverse traffic effects and in my view the MDRZ is an appropriate way to accommodate that growth.
- 1.5 Te Kauwhata, Huntly and Ngaruawahia are more self-contained in that many local residents work or study in the same area where they live. All three towns were once part of the SH1 route and have been bypassed by the new motorway route. Te Kauwhata was bypassed in the 1970s, and the other two towns more recently. The road networks within all three towns now have ample capacity to accommodate residential growth. Again, I consider the proposed MDRZ a good way to achieve that.
- 1.6 Raglan sits out on its own as a quiet coastal village throughout the year that gets considerably busier at holiday times. In my view the proposed zoning is a good way to increase the opportunity for people to live close to the town centre where they will not have to use their car for all of their trips out from their residence.

2. INTRODUCTION

2.1 My full name is John Douglas Parlane. I am a Traffic Engineer. I am a Director of Parlane and Associates Limited.

Experience

2.2 I have a Bachelor's Degree in Civil Engineering and Certificates of Proficiency (Masters Level) in Traffic Engineering, Transportation Planning, and Environmental Law from the University of Auckland. I hold a Bachelor of Applied Economics from Massey University.

2.3 I am a Chartered Member of the Engineering New Zealand (CENgNZ).

2.4 For the last thirty-three years I have worked as a specialist Traffic Engineer and transportation Planner, first as a staff member of Auckland City Council and then North Shore City Council and then in private practice both in London and Auckland. I have been involved in the transport planning for new infrastructure and in providing access to developments on busy roads for most of my career.

Involvement in the Proposed Waikato District Plan Review

2.5 I have been commissioned by Kāinga Ora to prepare this statement of evidence to address matters raised by the relief sought in Kāinga Ora's primary and further submissions¹ in relation to Hearing 25 of the PDP covering the zone extents.

2.6 I am familiar with all of the towns covered by my statement of evidence having lived in the Waikato and Auckland areas for all of my life with the exception of two years in London.

2.7 I was involved in planning work associated with the Pokeno Structure Plan from 2006 for the then land owners.

Code of Conduct

2.8 I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2014. I have complied with the Code of Conduct in

¹ Submission No 749, Further Submission No 1269. For the purposes of s2A RMA Kāinga Ora is the successor to Housing New Zealand Corporation.

preparing this statement of evidence and confirm that I will do so in presenting my evidence to the Court. Unless I state otherwise, this evidence is within my sphere of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

Scope of Evidence

2.9 In summary, the work carried out by me for the current project comprised the following:

- (a) Reviewed the proposed MDRZ provisions and zonings including the walking catchment areas prepared by Beca and Barker & Associates;
- (b) Assessing the potential transport benefits of a MDRZ ;
- (c) Reviewing Census travel data for the various towns where the zoning is proposed; and
- (d) Considering the potential adverse effects of the MDRZ on traffic and transport.

3. THE TRANSPORT BENEFITS OF INCREASED DENSITY

3.1 The positive impacts of increasing density have been understood since the early 1960's². Following the end of World War II most Australasian and North American towns and cities provided for rapid growth through subdividing land on their periphery. These new suburbs were significantly or entirely dependent on access by private motor vehicles. Subdivision patterns favoured the cul-de-sac form to reduce the impact of through traffic making walking and cycling routes more circuitous. Street patterns and urban form together with the availability of cheaper cars meant car trips replaced walking as the major transport mode in most towns and cities.

3.2 Medium density developments have become more common since the early 1990's as a means of reversing that trend. Higher density residential

² Levinson, H. S & Wynn, F.H. (1963) Effects of Density on Urban Transportation Requirements. Special Committee on Urban Transportation Research.

areas have been encouraged in town centres and in nodes of cities where people can walk or cycle to shops, workplaces and schools. These higher density areas also allow for greater use of public transport.

3.3 Most of the work on intensification has focused on rejuvenating cities where traditional centres and towns that merged with the cities have suffered due to the growth of car-based suburbs. Examples of the intensification projects include the Auckland Unitary Plan which has focussed on developing a range of centres from neighbourhoods, town centres and the CBD. The Australian State of Victoria has a useful concept called the 20 minute neighbourhood which seeks to achieve similar goals (inspired by a similar idea in Portland, Oregon, USA).



Figure 1: The 20 Minute Neighbourhood, State of Victoria, Australia

3.4 To be able to provide more housing across a variety of settlements in New Zealand, the housing choices on offer will need to adapt to change. New Zealand has concentrated most of its residential housing development in cities and has not fully utilised the existence of attractive smaller towns as great places to live and work. There are many small villages and towns in the United Kingdom for example that have medium density residential zones in the centre of the settlement and residents walk to the local

amenities rather than drive. They are attractive places to live and the density has not detracted from that, especially in that car use is reduced.

- 3.5 Social change brought about by fast broadband enabling people to work from anywhere, combined with an environmental need to reduce our carbon footprint, will increase the demographic shift of people moving out of the peripheral suburbs of cities and into the walkable residential centres of small towns. The recent problems of dealing with the Covid-19 pandemic have accelerated these concerns about lifestyle and sustainability. Satellite towns and more rural locations can gain considerable benefits from intensification of residential areas (especially medium density residential zones) both in terms of walking and cycling. It also means that future connections to larger cities can be provided by public transport as a need arises. Providing new or improved public transport services is much more likely when the number of residents in a catchment area increases.
- 3.6 The choice that most smaller towns face when attempting to plan for growth is to add residential properties to the periphery of the town through sprawl (also known as greenfield development) or to intensify the areas closest to the town centre (also known as brownfield development or regeneration). We have seen from larger towns and cities that focussing only on growth at the edges increases the level of private car use and makes it difficult to encourage more walking, cycling and the use of public transport.

Walkability

- 3.7 One of the key methods of designing medium density areas is to locate them within a 5 to 10 minute walk of a town centre. Typically, we use a catchment area of up to 400 metres to represent a 5 minute walk and 800 metres to represent a 10 minute walk. Some people will choose to walk further. However, beyond these distances the option to drive a car becomes more attractive.
- 3.8 I have reviewed the diagrams of walking catchments prepared for Kāinga Ora. In my view these, together with the analysis of slopes in an area, form a very good basis for planning medium density zones in the towns under consideration.

Public Transport

- 3.9 Low density residential areas are difficult to serve well with public transport. Even when a town or suburb grows to be large enough to have sufficient demand for public transport services the fact that the possible ridership is spread over a wide area makes it difficult to create an efficient route. Transit Oriented Design principles focus on creating sufficient density of activities around a public transport stop to create a greater number of potential users within a walk-up catchment. While these ideas have been used extensively on nodes and corridors in larger cities the same ideas can easily be applied to satellite towns and even more rural locations. The key is to reduce the length of walk needed from the home to the bus stop as that can make the difference between someone choosing to use a bus or take their car.
- 3.10 Many of the towns currently have quite limited public transport. However medium density housing is regarded as a public transport supportive land use and could assist in creating better services in the future.

Car Ownership

- 3.11 Houses located close to shops and public transport are often preferred by people who do not drive. Some people are unable to drive due to their age, disability or economic reasons, and some people choose not to drive for environmental reasons.
- 3.12 Car ownership data for the 2018 Census of Population and Dwellings is not yet available however the data from the 2013 Census is set out below in Table 1 for the relevant Census areas:

Number of motor vehicles	No motor vehicle	One motor vehicle	Two motor vehicles	Three or more motor vehicles	Total households Stated
Area					
Pokeno	12	132	261	177	576
Tuakau	87	531	537	210	1365
Raglan	81	504	378	93	1056
Te Kauwhata	30	201	201	90	522
Huntly West	174	324	228	75	801
Huntly East	153	618	501	168	1437
Ngaruawahia	159	705	525	198	1587

Table 1: 2013 Census of Population and Dwellings Car Ownership³

3.13 The important point to note here is that a significant number of households in each of the areas do not have a car (refer Table 2 below).

	Number of Households with No motor vehicle	Total households Stated	Proportion of Households
Pokeno	12	576	2.1%
Tuakau	87	1365	6.4%
Raglan	81	1056	7.7%
Te Kauwhata	30	522	5.7%
Huntly West	174	801	21.7%
Huntly East	153	1437	10.6%
Ngaruawahia	159	1587	10.0%

Table 2: Proportion of Households with No Car

3.14 The lowest proportion without a car is Pokeno, with 2% of households not owning a vehicle. This can be compared with Huntly West which has the highest levels of non-ownership, being 21.7% of households not owning a vehicle. It is important to remember that this is household data collected from the Household questionnaire of the Census and most households have more than one person living in them, so the number of people without access to a car is even higher.

3.15 A medium density zone is one way to assist those who do not drive to be able to live close to shops and public transport. As New Zealand moves to decarbonise the economy the number of houses without a car is expected to grow. The cost of electric cars will mean more households will choose not to own a car and there may be a move towards more car sharing.

Traffic Generation

3.16 Trip rates used for planning for residential housing can be up to around 10 vehicle trips per household per day (where trips are defined as one vehicle leaving or one vehicle arriving). These higher rates tend to occur in outer suburban areas where the areas have been designed for people who drive.

³ Statistics New Zealand 2013 Census of Population and Dwellings

- 3.17 We know that rates as low as around 2.5 to 3.0 trips per day are generated by high density flats in metropolitan areas. Medium density homes in cities have a rate between these two limits with surveys showing typical trip rates of between 4.0 and 6.5 trips per household depending on the size and location of the homes. Again these are city based surveys.
- 3.18 The absolute number of trips generated by homes in rural towns may differ from the city rates reported in published research, however the general trend that lower density housing generates trips at a higher rate will still apply. This is because medium density and higher density homes will tend to be located closer to a town or village centre where walking and cycling can be more convenient than getting out a car from a garage, driving, finding parking and then parking in a garage again.
- 3.19 There is clear evidence that increasing density is a very successful means of reducing trip rates.

4. 2018 CENSUS - POPULATION AND DWELLINGS JOURNEY DATA

- 4.1 Each of the towns has a unique form and its own set of transportation patterns. In the following sections I have made use of the 2018 Census of Population and Dwellings compiled by Statistics New Zealand to review the appropriateness of the MDRZ for each of the towns in the following sections. The specific datasets I have used are the Journey to Work data and Journey to School data collected on each individual census form. These datasets present information from questions that ask how you travelled to work or school and where that workplace or school is located.
- 4.2 The Census Journey to Work and Journey to Education datasets do not include all the other trips people might make in a day such as trips to the shops, social and family trips, or trips for leisure and recreation. However, these two data sets do capture a large proportion of the trips that are likely to occur during peak travel periods. Some of the lessons we can learn from these datasets can also be applied to the various other trips people make. For example, reducing the length of walking trips to public transport will also have benefits for people walking to the local shops and services.
- 4.3 **Attachment 1** shows a series of plots taken from the Statistics New Zealand Commuter Waka tool showing travel patterns of trips originating

from residences in each of the towns. The Statistics New Zealand tool can also show the origin and mode of trips arriving in these towns or a total of arrivals and departures. Since the proposed rezoning will result in new housing I have filtered the results to only show traffic originating in these towns.

- 4.4 In interpreting this data we need to consider some limitations. Firstly, not all respondents to the Census complete all of the questions correctly. The data relies on being able to match the origin house (which is very accurate) with the destination workplace or educational establishment. Sometimes the address of the destination is not known so the Statistics NZ staff have to adjust the response. Mode share numbers are all based on the completed (or stated) responses, which can be a lower number than the total households. Finally numbers of trips are all rounded to the nearest multiple of 3 by Statistics NZ to preserve privacy. For example if the actual number is 2, 3 or 4 then it will be reported to the users of the datasets as 3. For larger numbers and aggregate totals this rounding will not cause any significant error. However for smaller numbers the errors will be proportionately larger.
- 4.5 In my view while this data is not perfect, it is still of a very high quality that I consider appropriate for this type of planning.
- 4.6 In the following sections I have set out my analysis of the data for each town which is repeated in **Attachment 1**. However, **Attachment 1** also includes the actual plots showing the data for completeness.

5. TUAKAU

- 5.1 Tuakau is a rural service town that provides a wide range of goods and services to its population and to the surrounding rural area. It also has a secondary school, Tuakau College that has an Enrolment Scheme or zone that includes Pokeno.
- 5.2 Bus services connecting Tuakau with Pukekohe are provided by Auckland Transport with bus stops in St Stephens Avenue. A new regional service from Pokeno to Pukekohe via Tuakau is also shown on the Busit website with stops in St Stephens Avenue and by Tuakau College.

Journey to Work for Tuakau Residents

- 5.3 Pukekohe is by far the most common destination with many others travelling to the rural area around Tuakau for employment with many others working in the industrial areas near the airport or Manukau. Some 66% of people who work leave Tuakau for their employment, with 34% employed within Tuakau.
- 5.4 Private car is by far the most popular mode, with company car or truck the next most popular mode. Currently very few people use the bus as their main means of commuting to and from work.

Trips for Education from Tuakau

- 5.5 The vast majority of education trips occur locally to schools in or just outside of the Tuakau census areas with a small number of longer distance trips to the Otahuhu Central (2.49%) and Auckland University census area (1.66%).
- 5.6 48% of education trips are as car passengers, 24% walk and 23% use the bus.

Potential Traffic Congestion Issues

- 5.7 Tuakau does not attract a high level of through traffic and the roads serving Tuakau have adequate capacity to cater for expected future flows. The proposed MDRZ is unlikely to create any adverse transportation effects.

6. POKENO

- 6.1 Pokeno has grown significantly as a result of a plan change adopted back in 2009. That plan change was the culmination of a significant level of planning and transport planning that started in 2006. I was the principal transport planning advisor to Dines Group throughout that process.
- 6.2 Pokeno was a busy town serving SH1 traffic until it was bypassed in the 1990s. Following the 2009 plan change it has grown rapidly with many new houses built and new employers locating there such as Hynds and the Yashili Dairy factory.
- 6.3 Pokeno is served by the bus service to Pukekohe that travels through Tuakau mentioned above. The planning for Pokeno also preserved the

option of reinstating a railway station that could serve future rail services to Pukekohe.

Journey to Work for Pokeno Residents

- 6.4 Current travel destinations for people living in Pokeno are shown in the heat map below (Figure 6, **Attachment 1**). The heat-map indicates that Pukekohe is the most popular work destination followed by East Tamaki and the airport area.
- 6.5 Only some 25% of people living in Pokeno are currently employed in the town, with 75% commuting out. The bubble map below shows the range of destinations, some of which involve long distance commuting. The Auckland CBD census zones account for some 33 work trips combined.
- 6.6 Once again, most people drive a private car or a company vehicle to work. The other category is mostly people who work at home.

Trips for Education from Pokeno

- 6.7 Tuakau and Pukekohe show up strongly in the data as they are the destination of many high school students in the Journey to School data. The dataset also includes longer distance trips to the Auckland University census zone (7.32%)

Potential Traffic Congestion Issues

- 6.8 The Pokeno Bypass significantly reduced traffic flows through the town and the provision of high quality on and off-ramps at either end of the town ensure there will be adequate capacity for current and future growth. The traffic assessment that accompanied the Plan Change in 2009 provided for a higher intensity of development than has subsequently occurred with some of the employment areas having since been developed as lower intensity more expansive industrial activities. The MDRZ is unlikely to create adverse traffic congestion within the town or on the motorway ramps.

7. TE KAUWHATA

- 7.1 Te Kauwhata is located just to the east of SH1 having been bypassed by the highway in the 1970's. The data indicates Te Kauwhata is very self-sufficient in terms of both education and employment with a high proportion of local employees and students.

Journey to Work for Te Kauwhata Residents

7.2 The Journey to Work data shows some 50% of employees residing in Te Kauwhata work within Te Kauwhata, with another 18% working in the nearby Rangiriri census area. A further 12 % of employees residing in Te Kauwhata work in Huntly or in the rural area around Huntly.

7.3 61% of employees drive a private car to their work while a further 18% drive a company car or truck.

Trips for Education from Te Kauwhata

7.4 Some 246 students stay in Te Kauwhata for their education with only 6 students going to the nearby Waerenga area.

Potential Traffic Congestion Issues

7.5 The proposed MDRZ is unlikely to create any traffic or transportation issues for Te Kauwhata.

8. HUNTLY

8.1 Huntly has until recently carried a very large volume of traffic on SH1 through the centre of the town. The opening of the bypass has reduced the level of traffic entering and leaving Huntly by a very significant level.

8.2 Census data for Huntly is divided into Huntly West and Huntly East. In my assessment I have combined both Census areas into a single area.

Journey to Work for Huntly Residents

8.3 Most of the employees resident in Huntly find work in Huntly, with some 57% of employees travelling within Huntly. Rangiriri and the northern parts of Hamilton are the next most popular work locations, with a small number of people making longer commutes to Auckland.

Trips for Education from Huntly

8.4 Around 72% of students in Huntly do not travel outside of Huntly for their education.

8.5 Approximately 40% of students resident in Huntly travel as car passengers, while 23% walk and 18% go by bus.

Potential Traffic Congestion Issues

- 8.6 The recent reduction in traffic through Huntly means that the roads that were quite heavily loaded are now available for local trips. The addition of medium density residential housing near the centre of Huntly is unlikely to generate sufficient trips to create any noticeable congestion issues.

9. NGARUAWAHIA

- 9.1 Ngaruawahia has also been bypassed by SH1 which removed a significant level of through traffic from the town. This has reduced the level of traffic at key intersections such as at Ellery Street which was formerly SH39. Similarly there is also less traffic using River Road to access the north-eastern suburbs of Hamilton. These changes mean there is now an opportunity to improve local amenity in Ngaruawahia and plan for significant growth in housing without creating congestion or traffic safety problems.

Journey to Work for Ngaruawahia Residents

- 9.2 Of the resident employees in Ngaruawahia, 36% are employed in the town. The remaining 64% travel to Hamilton, Horotiu, Huntly or the surrounding rural areas for their work.
- 9.3 Private cars are used by 69% of the resident work force for their journey to work, and a further 13% drive a company vehicle.

Trips for Education from Ngaruawahia

- 9.4 The journey for education heat-map shows some 52% of students travel outside of Ngaruawahia for their studies. Destinations include Huntly, Horotiu, Te Rapa, Hamilton and Hillcrest where the University of Waikato is located.

Potential Traffic Congestion Issues

- 9.5 Traffic patterns in Ngaruawahia were previously dominated by SH1 through traffic and SH39 which is commonly used as a route to National Park by skiers coming from Auckland. The Waikato Expressway has removed a very large amount of traffic from the town which can now become of a town centre and less of a through route.
- 9.6 There is now capacity to accommodate a very large amount of growth in Ngaruawahia without causing any significant congestion. In my view the

proposed medium density zone can be accommodated without any adverse transportation issues.

10. RAGLAN

- 10.1 Raglan is a self-contained coastal village that experiences a significant increase in population and activity at holiday times. There is also a sizeable resident population, some of whom commute out for work or education.

Journey to Work for Raglan Residents

- 10.2 Most Raglan residents work within the town, with only 33% commuting to other areas. Most of these (105 people) travel to the neighbouring Te Uku area which includes the rural areas around Raglan. Te Rapa (both north and south) attracts 60 people, while Frankton Junction gets 51 and Hamilton Central 45.

Trips for Education from Raglan

- 10.3 Of the students resident in Raglan 67% do not travel elsewhere for their education each day.
- 10.4 Almost all students living in Raglan go to school in Raglan or Te Uku (where the kindergarten is located). Waikato University attracts 33 students from Raglan and a small number of students attend schools in Hamilton.

Potential Traffic Congestion Issues

- 10.5 Raglan gets busier at holiday periods and long weekends when holidaymakers and visitors flow into the town. There is little congestion at regular commute times. There can be problems with visitor parking at times during busy periods. An increase in residential housing in walking distance to the shops and services will actually help to alleviate this problem as more people will be able to walk rather than have to use their car.
- 10.6 A medium density residential zone is not likely to create any noticeable increase in traffic and will not in my view lead to any adverse effects.

11. CONCLUSIONS

- 11.1 I have reviewed the proposal to amend the Waikato District Plan to include a medium residential zone in selected rural towns in the district. In my view a medium density zone is the preferred way to accommodate some of the expected growth as it allows residents to walk and cycle to local amenities and allows for an improved public transport system in the future.
- 11.2 In my view the MDRZ will increase the number of homes available for those who do not drive or who increasingly in the future may choose to not own their own car.
- 11.3 I have reviewed the specific transport characteristics of each of the towns where the MDRZ will be applied, and I support the MDRZ as is proposed.

John Douglas Parlane

Date: 17 February 2021

Attachment 1

2018 Census Travel to Work and Travel to Education

1. Tuakau

Journey to Work for Tuakau Residents

- 1.1 Figure 2 below shows a map of destinations where people who live in Tuakau travel to daily for work. The darker the red of the destination zone the greater the number of people who travel to that destination from Tuakau. We can see from the map that Pukekohe is by far the most common destination with many others travelling to the rural area around Tuakau for employment with many others working in the industrial areas near the airport or Manukau. Some 66% of people who work leave Tuakau for their employment with 34% employed within Tuakau.

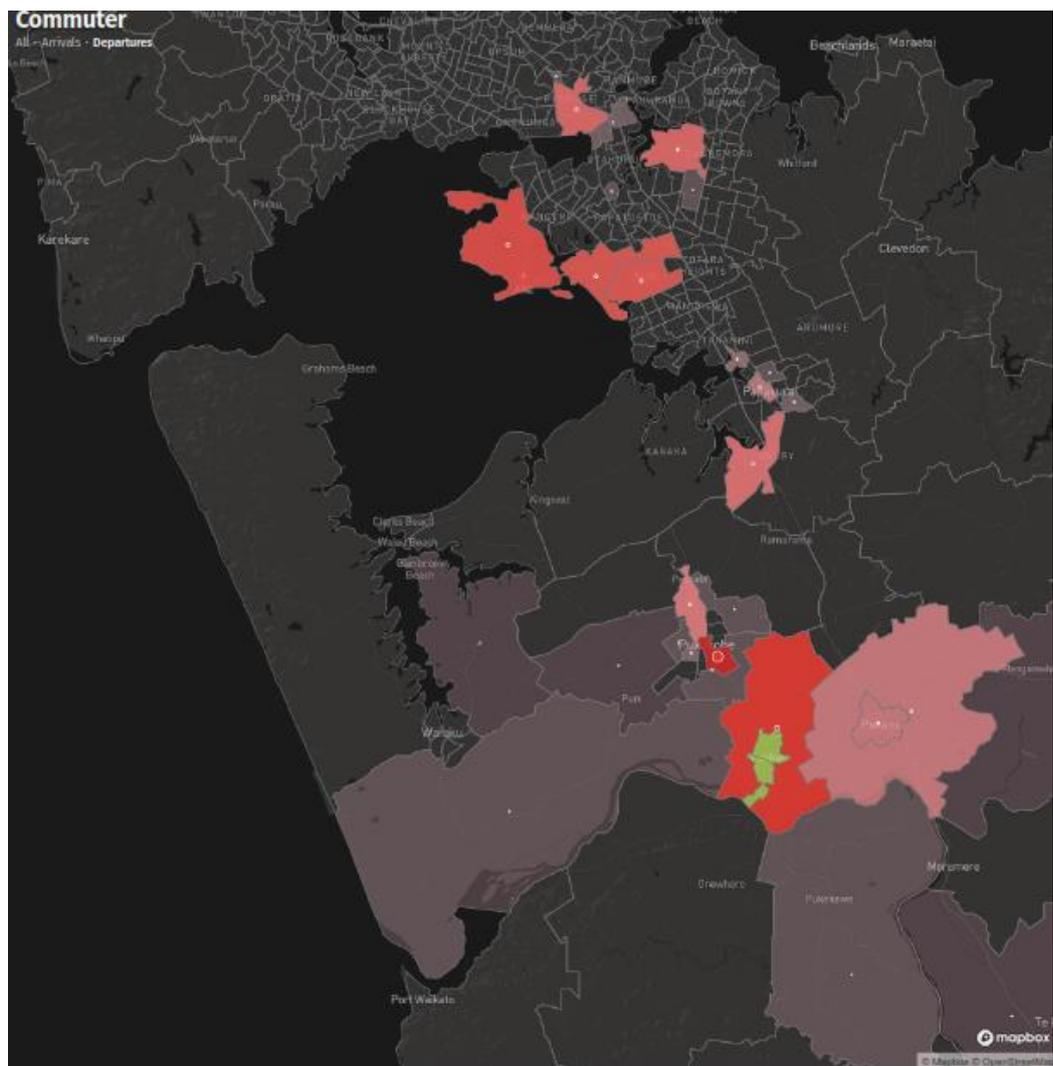


Figure 2: Tuakau Work Trip Destinations (Tuakau shown in Green)

1.2 The bubble map below shows those destinations in more detail as well as their travel modes. Private car (bright orange) is by far the most popular mode, with company car or truck (pale orange) the next most popular mode. The 'Other' category includes those who work at home.

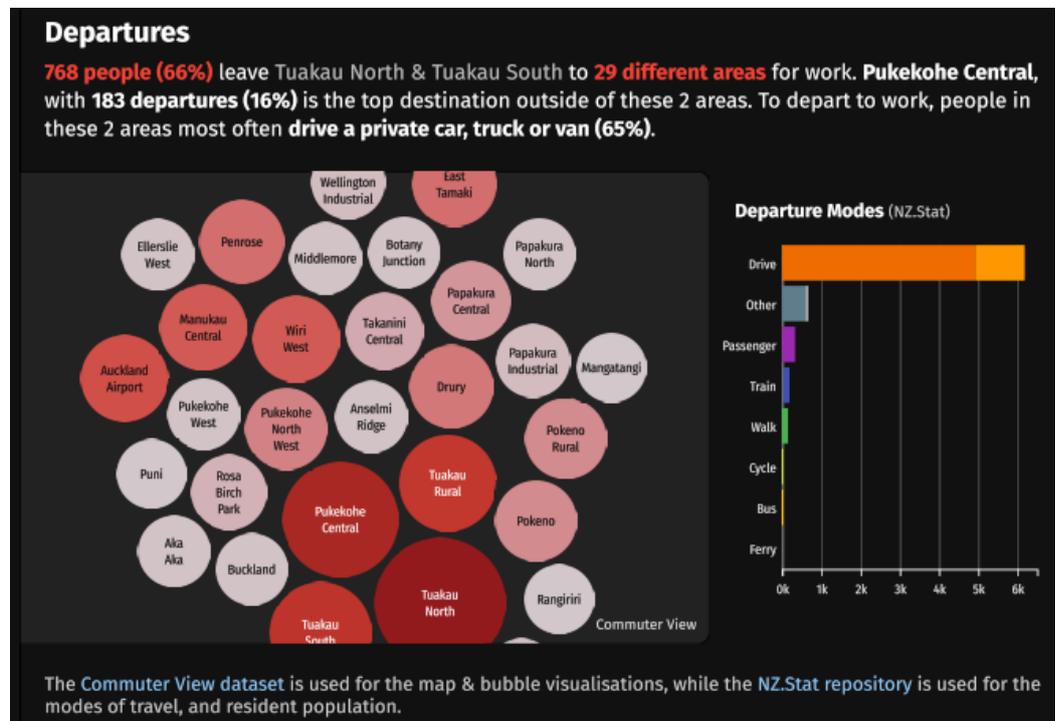


Figure 3: Tuakau Work Departures

1.3 Currently very few people use the bus as their main means of commuting to and from work.

Trips for Education from Tuakau

1.4 The heat map below shows destinations of education trips for people living in the Tuakau North and Tuakau South census areas. The map shows that the vast majority of education trips occur locally to schools in or just outside of the Tuakau census areas with a small number of longer distance trips to the Otahuhu Central (2.49%) and Auckland University census area (1.66%).

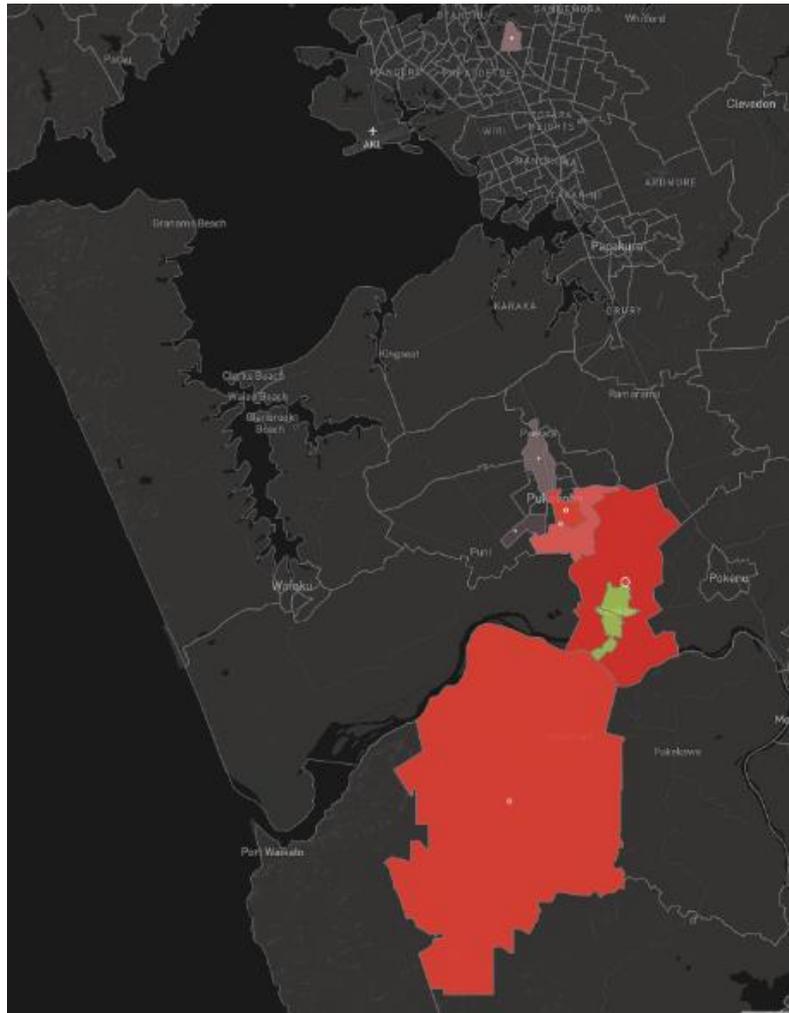


Figure 4: Tuakau School Trip Destinations

1.5 The bubble map shows that 48% of education trips are as car passengers, 24% walk and 23% use the bus.

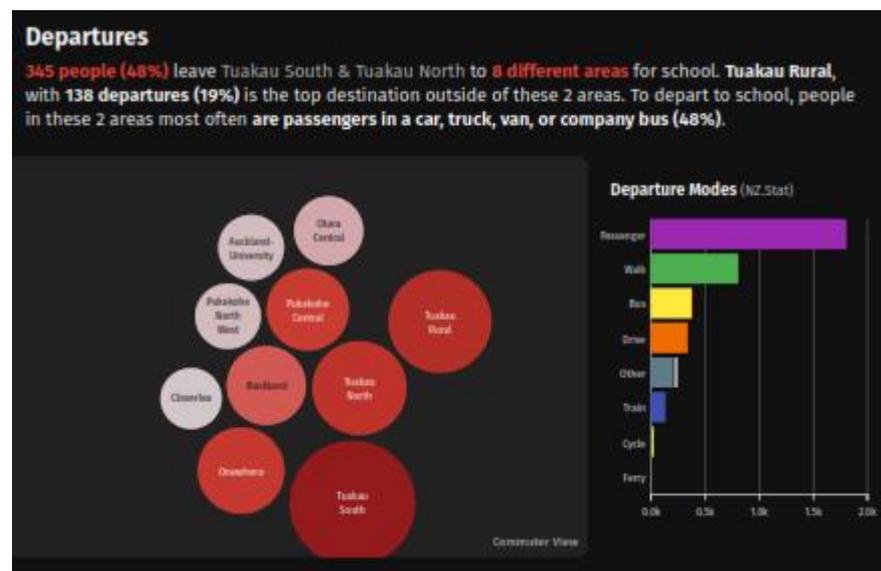


Figure 5: Tuakau School Departures

2. POKENO

Journey to Work for Pokeno Residents

- 2.1 Current travel destinations for people living in Pokeno are shown in the heat map below. The heat-map indicates that Pukekohe is the most popular work destination followed by East Tamaki and the airport area.

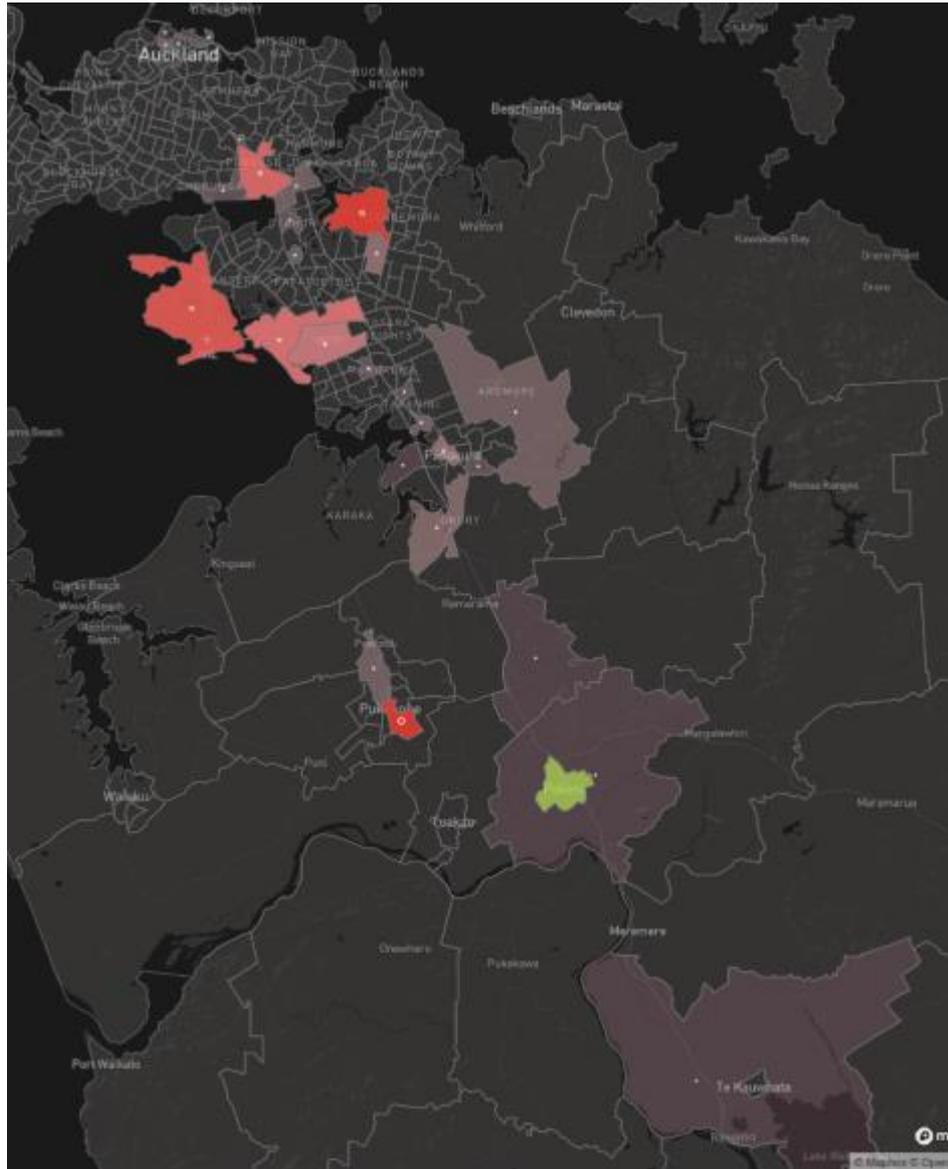


Figure 6: Pokeno Work Trip Destinations

- 2.2 Only some 25% of people living in Pokeno are currently employed in the town with 75% commuting out. The bubble map below shows the range of destinations, some of which involve long distance commuting. The Auckland CBD census zones account for some 33 work trips combined.

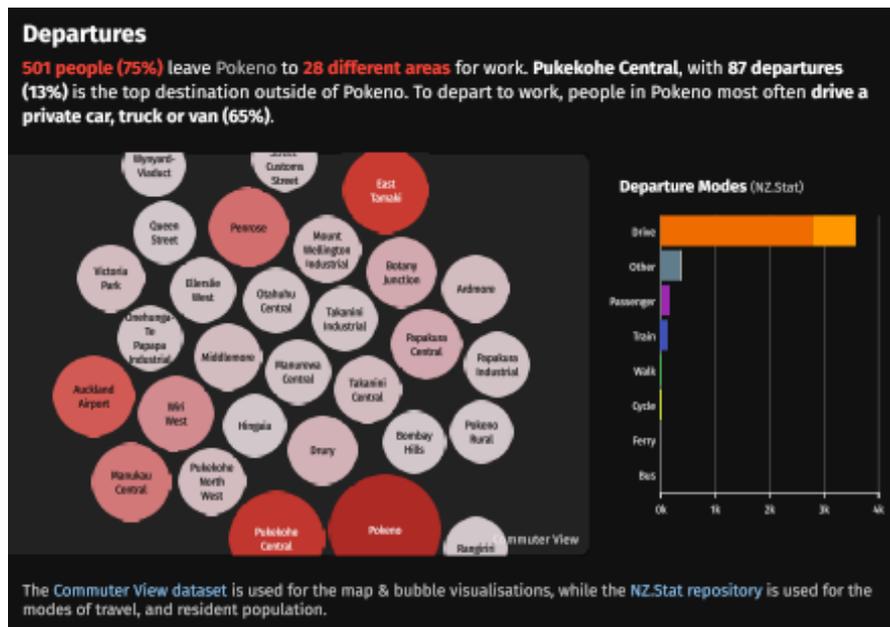


Figure 7: Pokeno Work Departures

2.3 Once again most people drive a private car or a company vehicle to work. The other category is mostly people who work at home.

Trips for Education from Pokeno

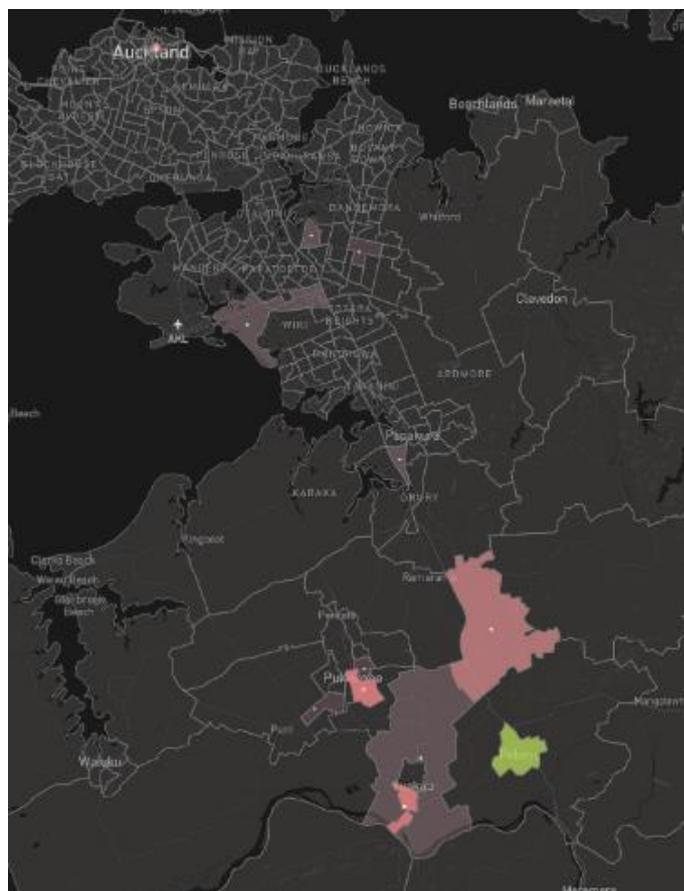


Figure 8: Pokeno School Trip Destinations

- 1.1 Tuakau and Pukekohe show up strongly in the heat map as they are the destination of many high school students in the Journey to School data. The dataset also includes longer distance trips to the Auckland University census zone (7.32%)

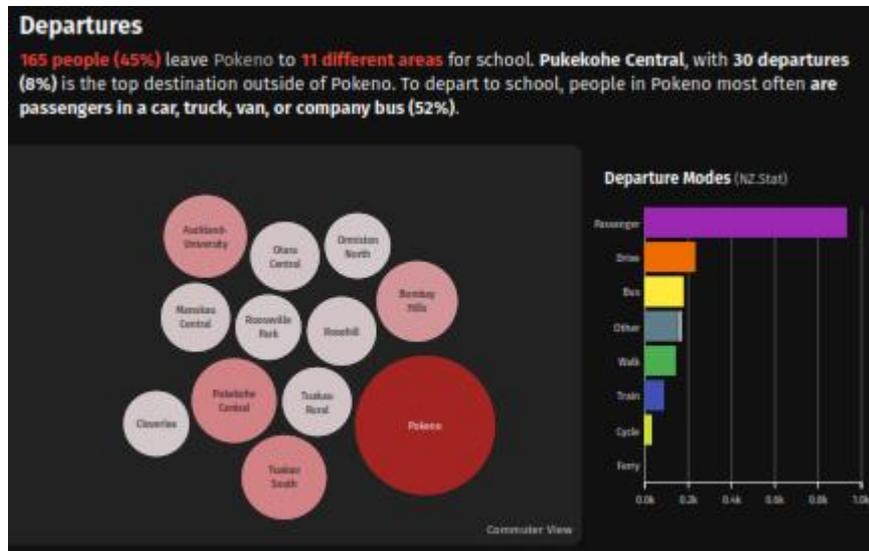


Figure 9: Pokeno School Departures

3. TE KAUWHATA

Journey to Work for Te Kauwhata Residents

- 3.1 The Journey to Work data shows some 50% of employees in Te Kauwhata work within Te Kauwhata with another 18% working in the nearby Rangiriri census area. A further 12 percent of employees work in Huntly or in the rural area around Huntly.

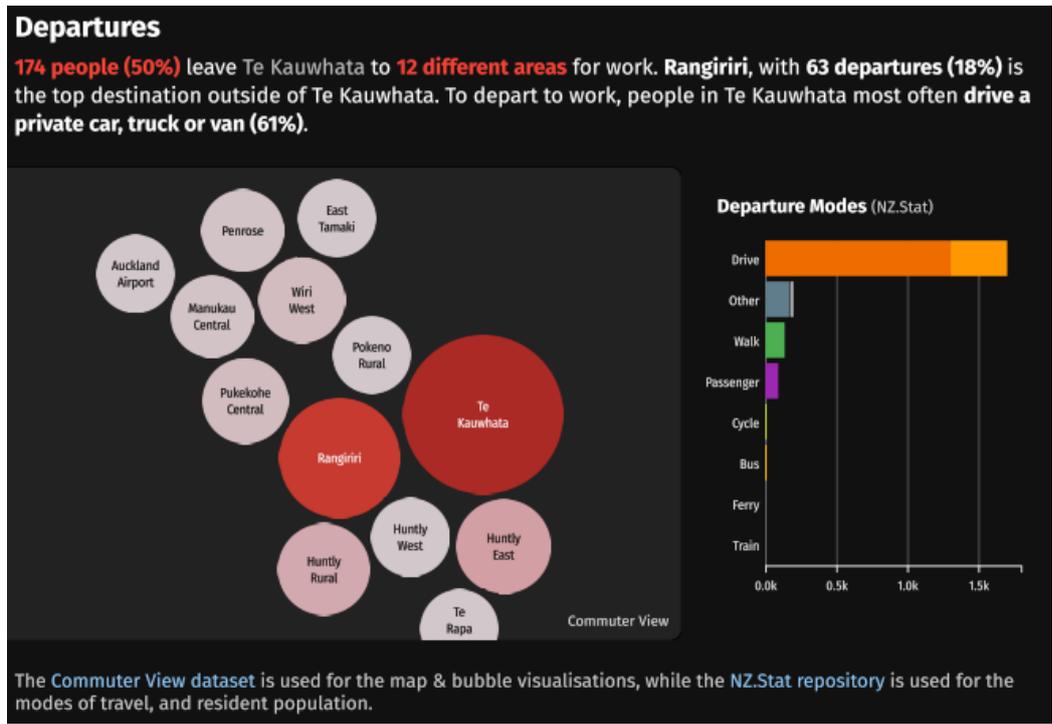


Figure 11: Te Kauwhata Work Departures

Trips for Education from Te Kauwhata



Figure 12: Te Kauwhata School Trip Destinations

3.3 246 students stay in Te Kauwhata for their education with only 6 students going to the nearby Waerenga area.

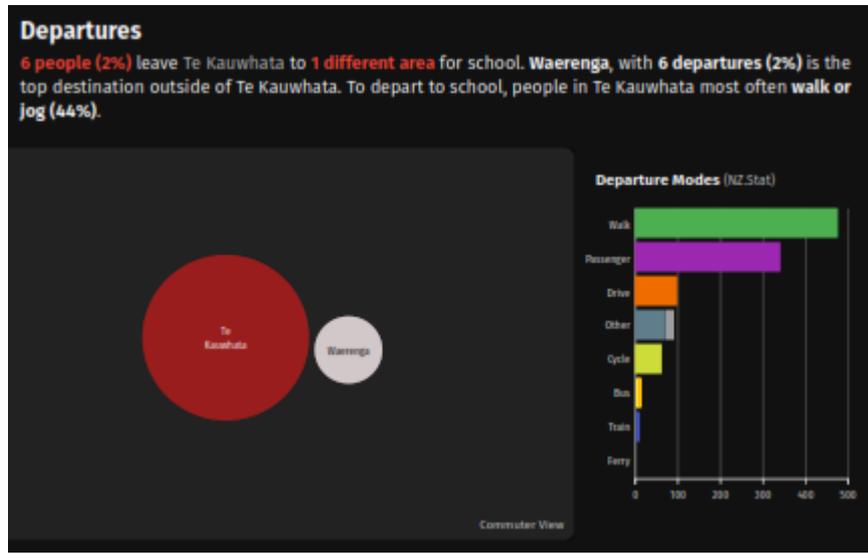


Figure 13: Te Kauwhata School Departures

4. HUNTLY

Journey to Work for Huntly Residents

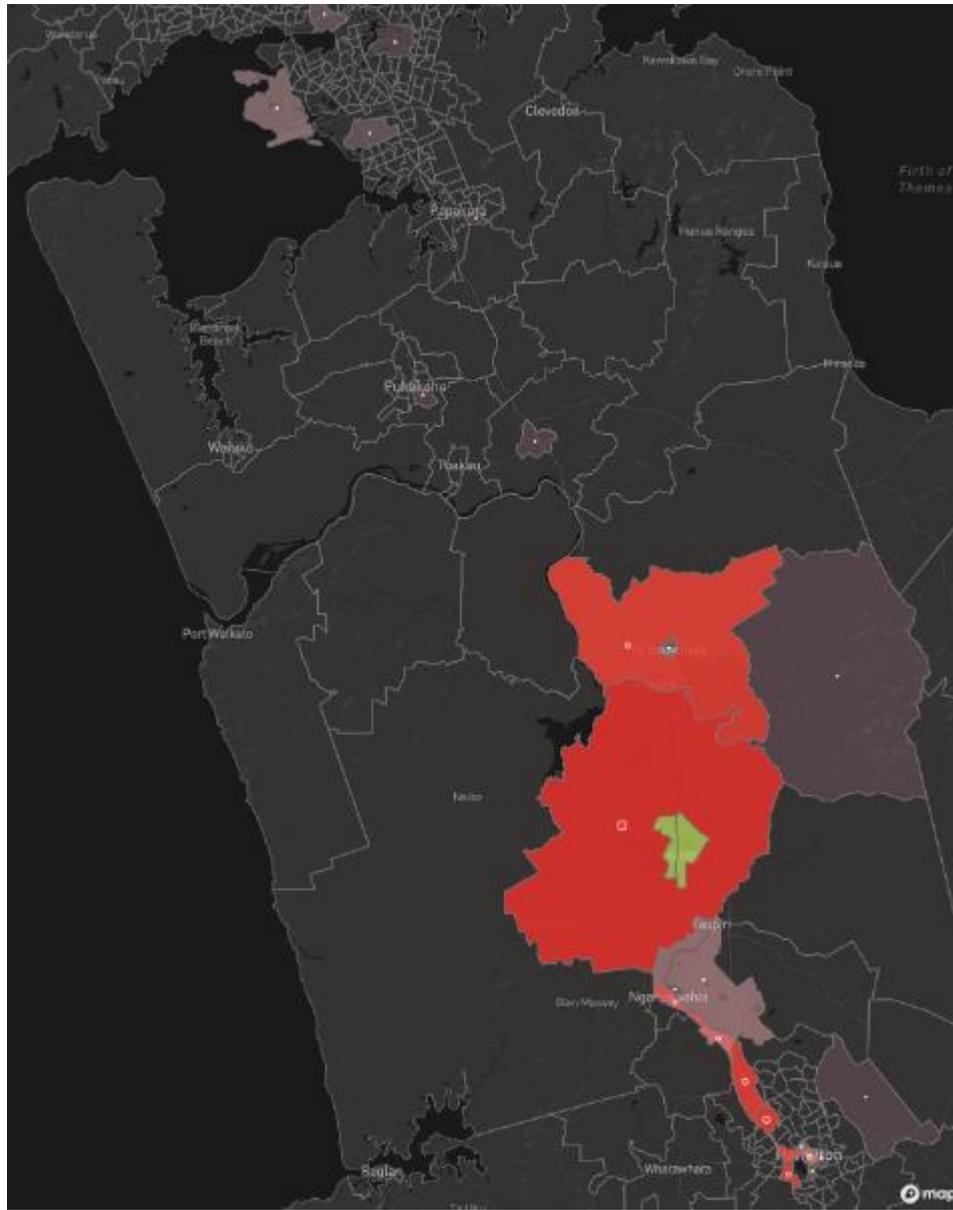


Figure 14: Huntly Work Trip Destinations

- 4.1 Most of the employees resident in Huntly find work in Huntly with some 57% of employees travelling within Huntly. Rangiriri and the northern parts of Hamilton are the next most popular work locations with a small number of people making longer commutes to Auckland.

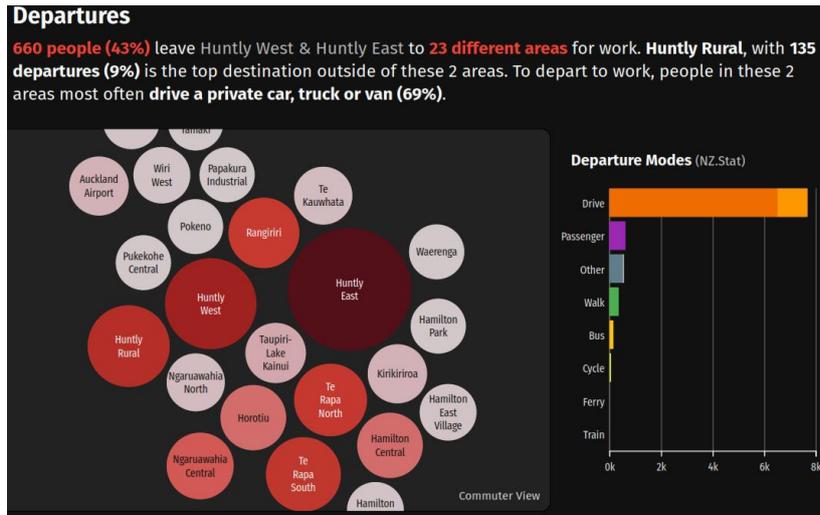


Figure 15: Huntly Work Departures

Trips for Education from Huntly

4.2 Around 72% of students in Huntly do not travel outside of Huntly for their education.

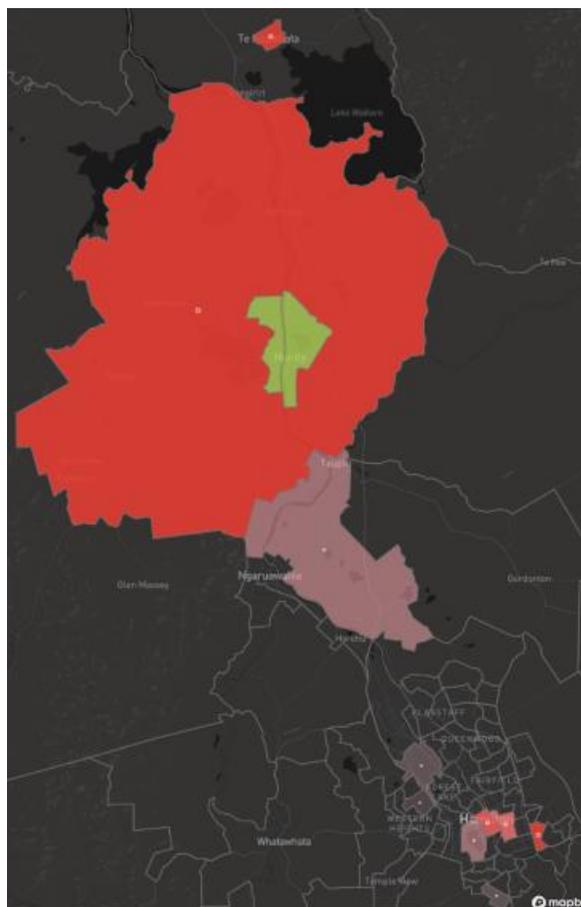


Figure 16: Huntly School Trip Destinations

- 4.3 Around 40% of students resident in Huntly travel as car passengers while 23% walk and 18% go by bus.

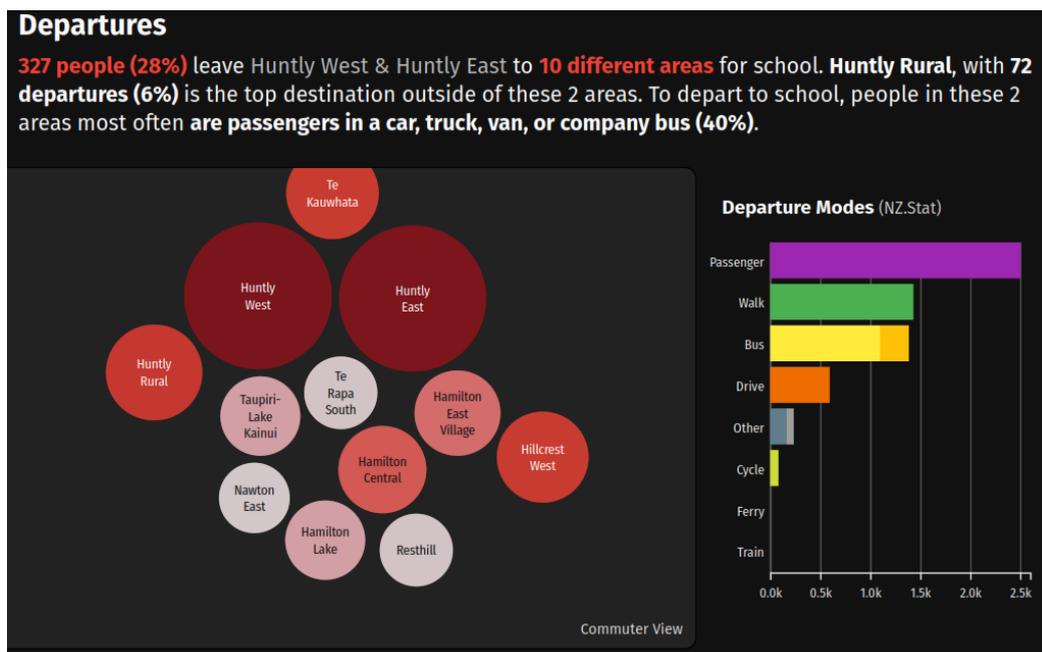


Figure 17: Huntly School Departures

5. NGARUAWAHIA

Journey to Work for Ngaruawahia Residents

- 5.1 Of the resident employees in Ngaruawahia 36% are employed in the town. The remaining 64% travel to Hamilton, Horotiu, Huntly or the surrounding rural areas for their work.

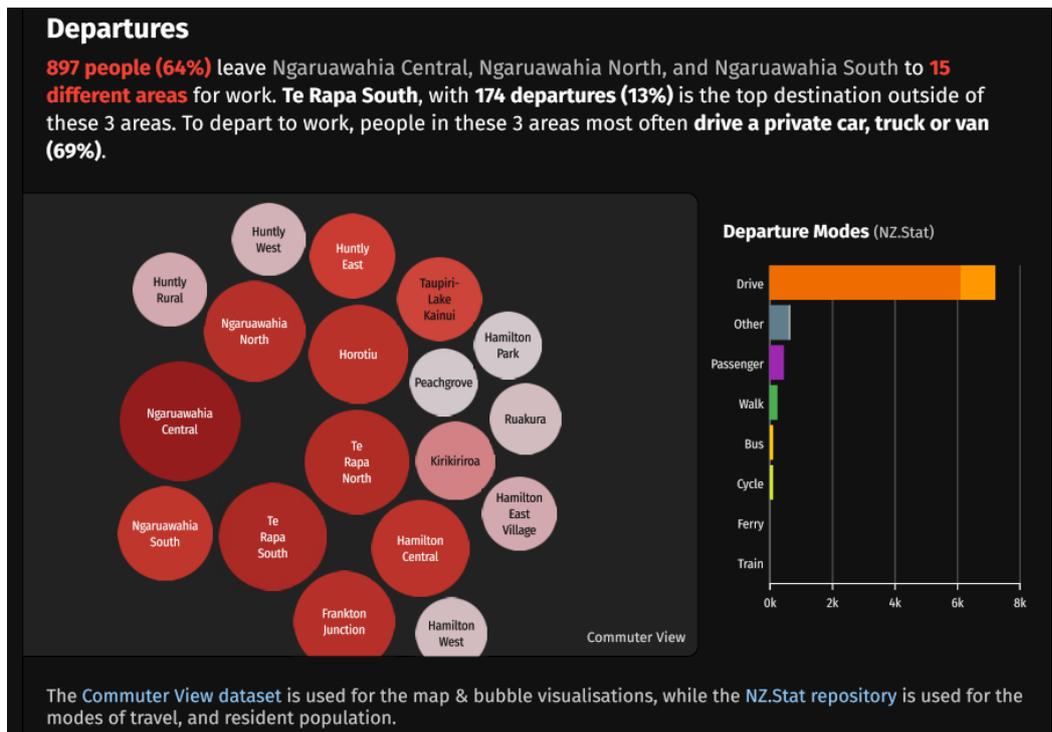


Figure 19: Ngaruawahia Work Departures

Trips for Education from Ngaruawahia

5.3 The journey for education heat-map shows some 52% of students travel outside of Ngaruawahia for their studies. Destinations include Huntly, Horotiu, Te Rapa, Hamilton and Hillcrest where the University of Waikato is located.

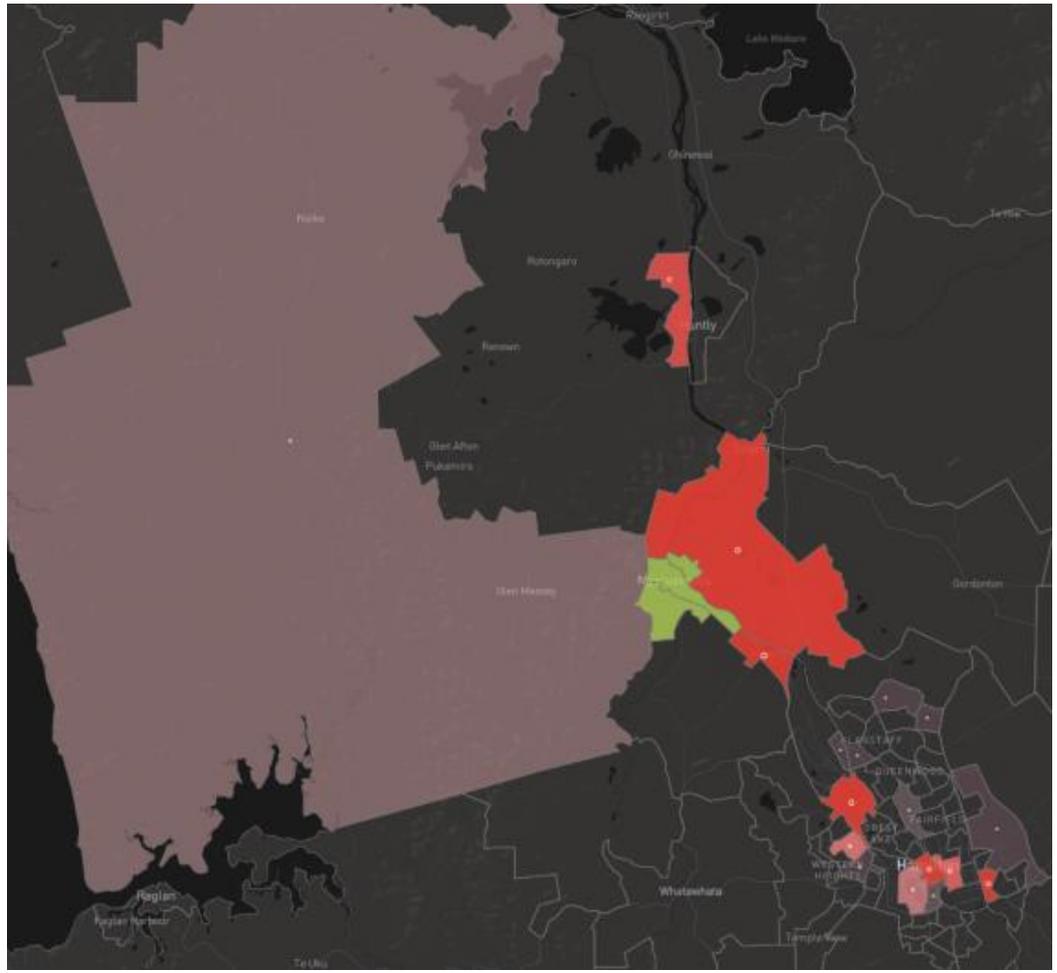


Figure 20: Ngaruawahia School Trip Destinations

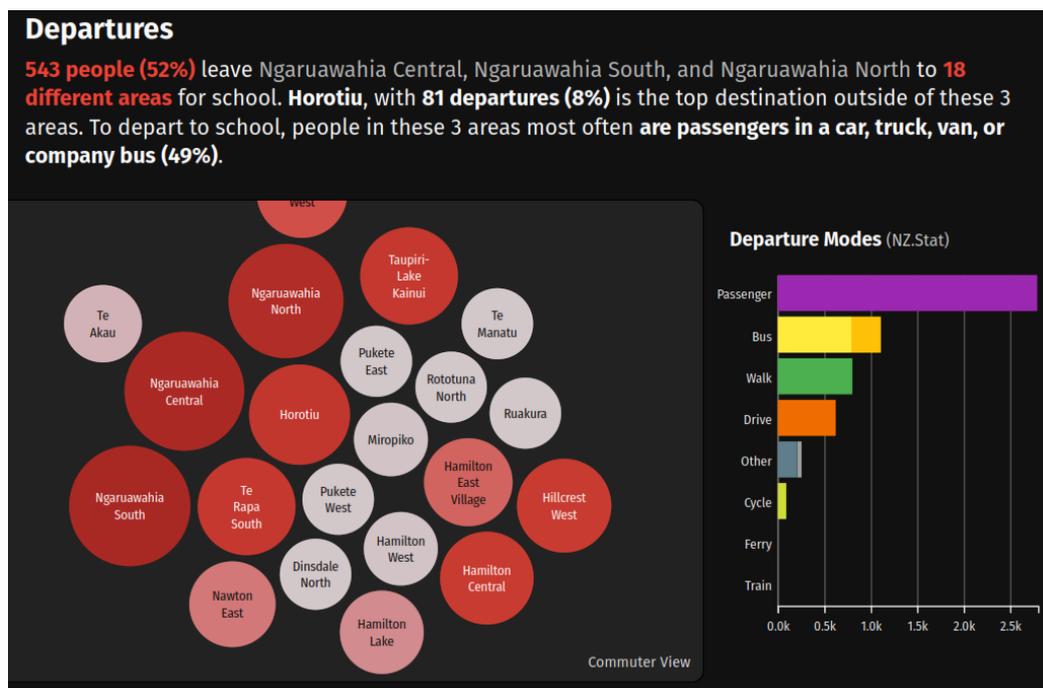


Figure 21: Ngaruawahia School Departures

6. RAGLAN

Journey to Work for Raglan Residents

- 6.1 Most Raglan residents work within the town with only 33% commuting to other areas. Most of these (105 people) travel to the neighbouring Te Uku area which includes the rural areas around Raglan. Te Rapa (both north and south) attracts 60 people while Frankton Junction gets 51 and Hamilton Central 45.



Figure 22: Raglan Work Trip Destinations

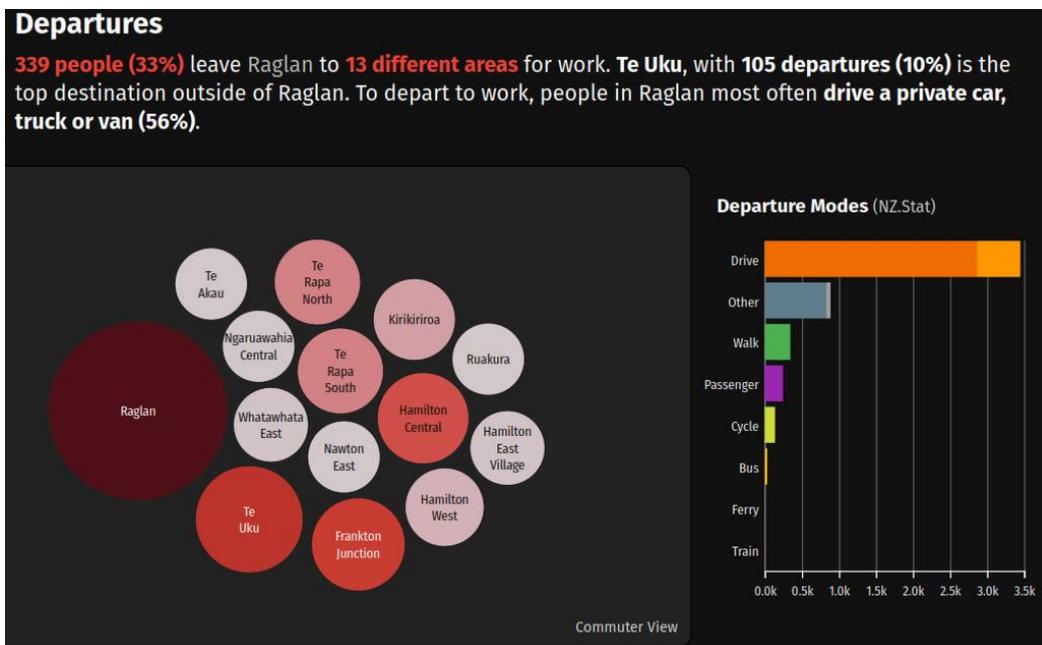


Figure 23: Raglan Work Departures

Trips for Education from Raglan

6.2 Of the students resident in Raglan 67% do not travel elsewhere for their education each day.

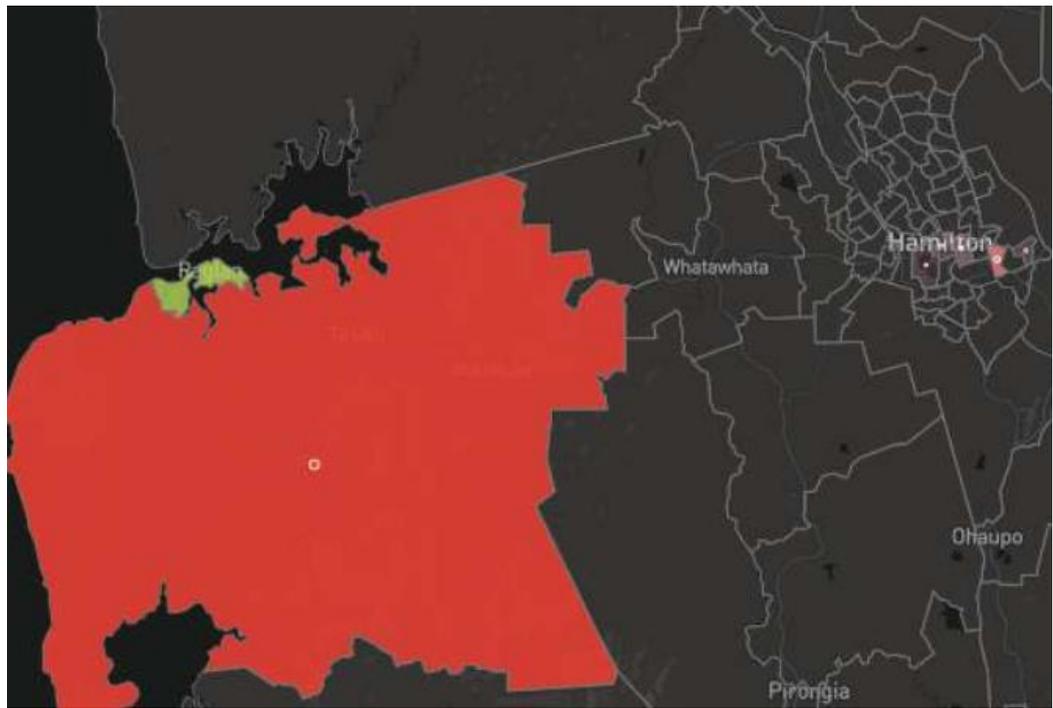


Figure 24: Raglan School Trip Destinations

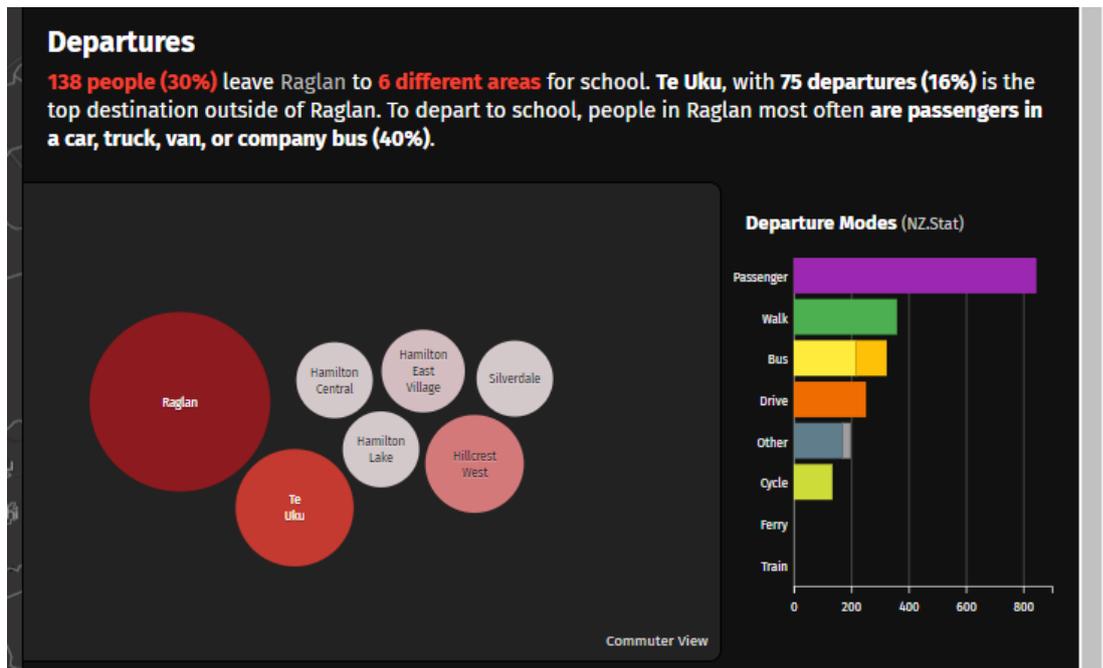


Figure 25: Raglan School Departures

6.3 Almost all students living in Raglan go to school in Raglan or Te Uku (where the kindergarten is located). Waikato University attracts 33 students from Raglan and a small number of students attend schools in Hamilton.