COROMANDEL PENINSULA

Peak Population Study 2007/08

Policy and Planning Group 2008

THAMES COROMANDEL DISTRICT COUNCIL

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1 EXECUTIVE SUMMARY

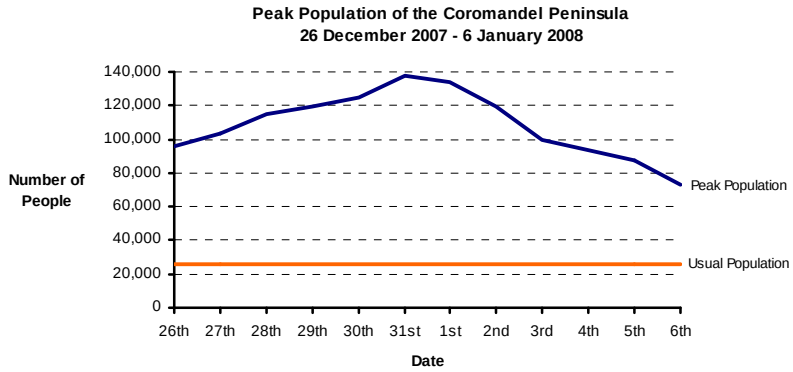
This report summarises the findings of the Thames-Coromandel 2007/08 Peak Population Study. The study was undertaken to determine the population of the Coromandel Peninsula over the peak holiday period – from the 22nd of December 2007 until the 6th of January 2008. The methodology used also provided information on the peak population of each of the main settlements and popular summer holiday destinations on the Peninsula.

The main approaches used to determine the peak population were:

- A count of dwellings in the settlements of the Peninsula using the 2006 Census information and building consent approvals for new dwellings since March 2006.
- A door to door survey of dwellings in the main settlements to determine the average number of people per house for each of the settlements.
- Information on campground and commercial accommodation capacity and occupancy.
- Information gained from a set of traffic counters strategically placed around the District.
- Extrapolation using Council wastewater, water and solid waste data in each of the settlements (where available).

Anecdotal evidence was also collected from people who were surveyed and from key organisations around the District. A flight over the Peninsula on New Years Day was undertaken to help assess the level of 'informal' camping, the number of moored boats and the activity in towns.

The population of the Thames-Coromandel District peaked on New Years Eve – the 31st of December 2007 – with an estimated **137,700** people. There was a gradual increase in the population from the beginning of the study period to the peak day – the 31st of December 2007 – which was followed by a gradual decline in the population out to the 6th of January 2008 when the study period ended.



On the peak day, the population of the District was over five times the usual population.

2 INTRODUCTION

The Thames-Coromandel District is regarded as one of New Zealand's most attractive areas to live and visit. Encompassing almost the entire Coromandel Peninsula, the District features stunning coastline, dramatic landscapes, abundant bush and wildlife. The District is also home to diverse settlements and communities, with a mixture of permanent and part-time residents, and it is within close proximity to three major cities – Auckland, Hamilton and Tauranga.

Over the Christmas and New Year holiday period, the District experiences a large influx of visitors from both New Zealand and overseas, causing the population to increase to many times that of the usually resident population.[1] This is known as the 'peak' population.

It is important that information is available on the peak population of both the Thames-Coromandel District and the individual settlements. Such information can be used for making informed decisions regarding future planning, services and infrastructure.

[1] The place of 'usual residence' is the place where a person considers himself or herself to usually live.

Every attempt has been made to make the findings as accurate as possible by using and cross-referencing many sources of information.

3 AIMS

The aims for this project were as follows:

- Determine the time-frame within which the population of the Coromandel Peninsula is at its peak.
- Determine the population of the Thames-Coromandel District and its settlements over the peak holiday period.
- Provide information to assist in planning for future infrastructure and development in the settlements around the Peninsula.
- Determine where visitors to the Coromandel Peninsula over the peak period originate from.
- Assess the effectiveness of the information used to determine the peak population and make recommendations for future studies.

4 METHODOLOGY, FINDINGS AND DISCUSSION

The methods employed for this study were based on refined methods used in the 2003/04 peak population study and 2005/06 update and similar studies carried out in 1995/96, 1996/97 and 1997/98.

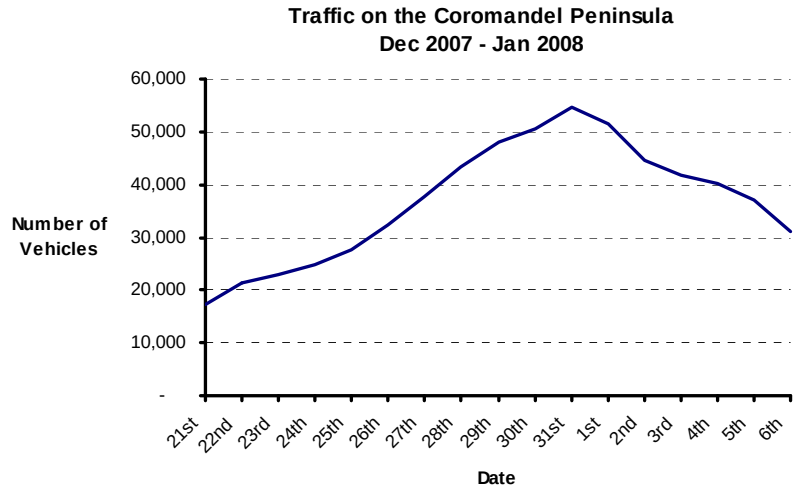
The 2007/08 peak population study found, as did the previous studies, that there is no single way to measure the peak population of the Coromandel Peninsula or the individual settlements. However, by using a number of sources of information and constantly cross-checking between them, figures have been obtained that are thought to be within an accuracy of +/- 5%.

The sources of information used to help assess peak populations on the Peninsula included a residential accommodation survey, a commercial accommodation survey, traffic counts, water, wastewater and solid waste data, an aerial observation, anecdotal evidence and weather information.

4.1 The Peak Period

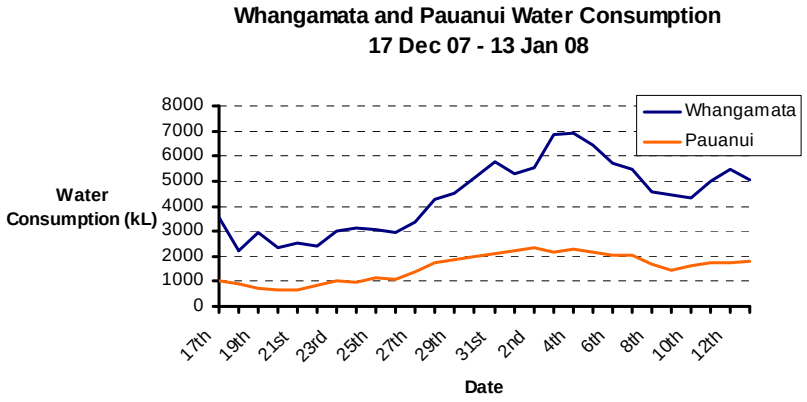
From the previous peak population studies and Council staff experience, the likely peak holiday period was predicted to be from the 22nd of December 2007 until the 6th of January 2008. Hence, the study commenced at 00:00 on Saturday 22 December 2007 and concluded at 23:59 on Sunday 6 January 2008.

The actual peak holiday period for the 2007/08 Christmas and New Year was determined using traffic count data, wastewater, water and solid waste data and anecdotal evidence. Some of these data sources are graphed below to indicate the duration and highs and lows of the peak period.

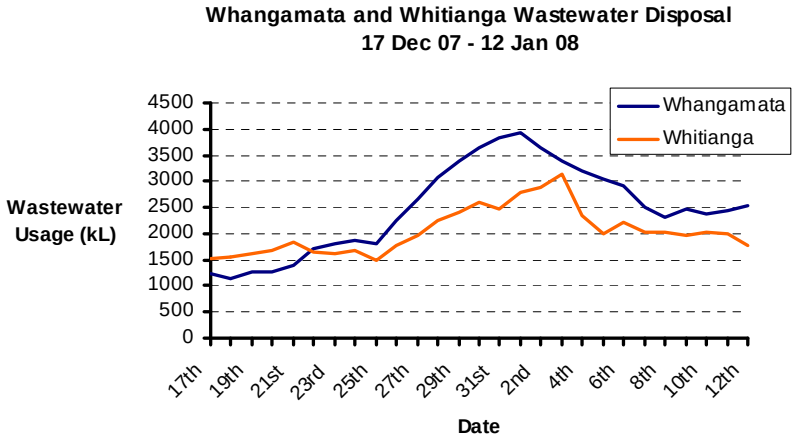


Traffic flows into and out of the Coromandel Peninsula clearly demonstrate that the peak day was the 31st of December 2007. By the end of the study period vehicle numbers were still high which

shows that although there had been a significant decrease in holidaymakers by the 6th of January 2008 there were still a large number of non-residents staying on the Peninsula.



Graphing water consumption in Whangamata and Pauanui and wastewater disposal in Whangamata and Whitianga enables conclusions to be drawn as to the timing and extent of the peak period to some degree. An increase in usage appears to begin around the 21st to 23rd of December and the higher usage tails out around the 8th to 10th of January although usage is not yet back to off-peak amounts.



From these graphs it can be concluded that beginning the study period on the 22nd of December 2007 was reasonable. Furthermore, ending the study on the 6th of January 2008 was also sensible as, although the population was by no means back to usual resident levels, it had reduced significantly by this date.

4.2 Residential Accommodation Survey

A residential accommodation survey was carried out in the main settlements and major holiday destinations in the District including Cooks Beach, Coromandel, Hahei, Matarangi, Pauanui, Tairua, Thames, Thames Coast, Whangamata, Whangapoua and Whitianga. The survey was used to indicate the average number of

people per residential property and was completed over a 12 day period from the 26th of December 2007 until the 6th of January 2008.

The total number of dwellings, both occupied and unoccupied, in each settlement at the end of December 2007 was determined using 2006 Census data and building consent dwelling approvals since March 2006 (when the last census was undertaken).

Over the 12 days, 2,518 residential properties (11% of the District total) were surveyed on the Coromandel Peninsula. This survey was undertaken to determine the number of people who stayed on the property the night before last, the previous night, the number expected to be staying on the property that night, and the number anticipated for the following night. In this way, four days worth of data could be collected from each day of surveying.

Average Number of People Per Residential Property

The survey indicated that there were considerable differences between the average number of people per residential property for the main settlements and major holiday destinations. However, this is to be expected given the different 'character' of each settlement.

Settlement	Average number of people per house 31st December 2007	Average number of people per house – off peak
Cooks Beach	8.56	0.36
Coromandel	4.15	1.66
Hahei	6.34	0.77
Matarangi	7.13	0.27
Pauanui	5.20	0.33
Tairua	5.74	0.88
Thames	3.40	2.20
Thames Coast	4.00	1.50
Whangamata	6.03	0.85
Whangapoua	6.65	0.38
Whitianga	5.76	1.14

The photo below shows many cars parked outside some houses in Matarangi, corroborating the high average people-per-house figure calculated for Matarangi.

Matarangi: New Years Day 2008

The survey indicated that in the 5 days leading up to the 31st of December (the peak day) there was a steady increase in the average number of people per residential property, particularly for the settlements on the eastern seaboard (Whangamata, Paunui, Tairua, Cooks Beach, Hahei, Whitianga and Matarangi). The overall District average number of people per house was 5.40 which is significantly higher than the off-peak average of 1.14 people per house.[2]

Total Number of People Staying at Residential Properties Per Settlement

For each of the main settlements and major holiday destinations, the total number of people staying at residential properties on each day during the peak period was estimated by multiplying the average number of people per house by the total number of houses. Results for the 31st of December are shown as an example in the table below.

Location	Estimated peak population in residential accommodation (31st Dec)
Cooks Beach	7,700
Coromandel	4,100
Hahei	4,300
Matarangi	6,900
Pauanui	11,500
Tairua	8,600
Thames	11,800
Thames Coast	4,500
Whangamata	25,500
Whangapoua	2,500
Whitianga	17,100
Total District	125,400

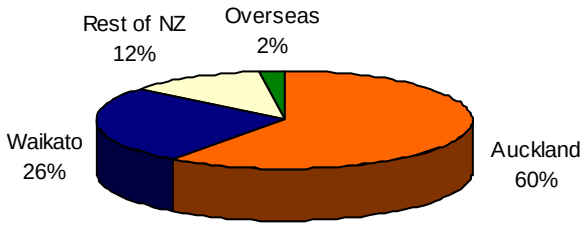
Comparing the usually resident population and the peak population for people staying in private houses in the main settlements and major holiday destinations shows a population increase of between 1.5 times (for Thames) and 26 times (for Matarangi).

4.3 The Holiday Makers

As well as gathering information on the number of people staying in each house, the door-to-door surveyors requested information on the place of usual residence of holiday makers. The majority of people holidaying on the Coromandel Peninsula in private houses were from Auckland, with the Waikato region a distant second.

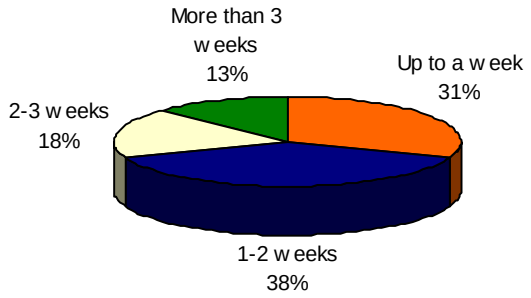
[2] Based on 2006 Census results for average number of usual residents per household.

Usual Home of Visitors to the Coromandel Peninsula



Data was also gathered on the amount of time holiday makers planned to spend on the Coromandel Peninsula. This is shown on the following graph.

Holidaying Time on the Coromandel Peninsula



4.4 Commercial Accommodation Survey

The residential accommodation survey does not capture data for people staying in commercial accommodation (hotels, motels, bed and breakfasts, farm stays, backpackers, campgrounds etc) in the Thames-Coromandel District over the peak holiday period. Such data must therefore be collected in another way as it is necessary for determining the peak population of the main settlements and the District.

Statistics New Zealand Commercial Accommodation Survey

Statistics New Zealand carries out a monthly commercial accommodation survey,[3] gathering data about capacity, occupancy rates and guest nights for the commercial accommodation industry. This type of information can be used as an indicator of peak population trends by comparing data at peak times with off-peak times. Data for the holiday periods of 2005/06 and 2006/07 was used as data for the 2007/08 summer period was not yet available.

The data was useful for identifying general commercial accommodation trends across the Coromandel Peninsula on a

[3] While Statistics New Zealand takes care in processing, analysing and extracting information, all statistical data are subject to error, either through incompleteness of response or by way of limitations imposed by the design of the survey. Therefore, the information presented in the Commercial Accommodation Survey should be treated with some caution as to its accuracy.

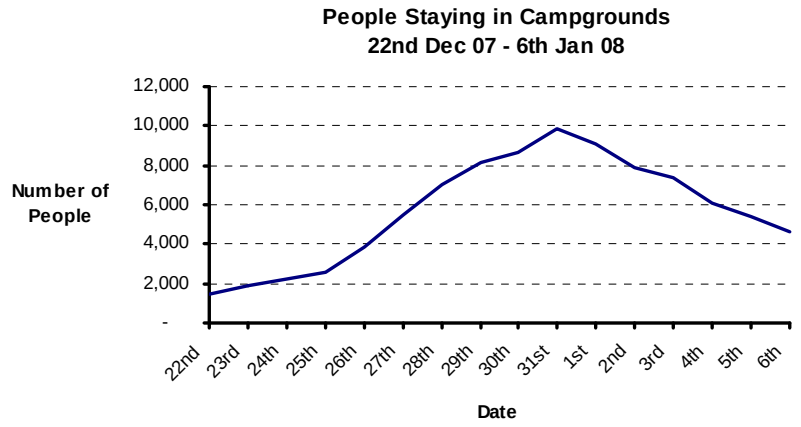
monthly basis. As Council staff undertook a separate campground accommodation survey, campground and caravan park results were removed from the Statistics New Zealand survey. The trends can be summarised as follows:

- January is the peak visitor month in terms of guest nights,[4] followed by February, March and then December.
- There were 39,354 guest nights during December 2006 which significantly increased to 59,601 guest nights for January 2007.
- The average number of guest nights during the rest of the year (off-peak) was 23,933 guest nights per month.[5]

Campground Survey

Given that some caution needs to be taken with the reliability of the Statistics New Zealand Commercial Accommodation Survey due to inaccurate results in the past, a campground accommodation survey was also used to gain insight into commercial accommodation trends. All campgrounds on the Coromandel Peninsula, including Department of Conservation campgrounds, were asked to record the daily total number of campers staying in the campgrounds over the 16 day survey period. Campground managers were contacted in early December asking for their participation in the peak population study and information was collected soon after the completion of the survey period.

The Council received a fairly good response to the campground accommodation survey, receiving occupancy data from 28 of the 36 campgrounds in the District. For the eight campgrounds from which data was not received, results were estimated. The graph below shows the number of people staying in campgrounds in the District over the peak period.[6]



[4] A guest night is equivalent to one guest spending one night in an establishment. For example, a motel with 15 guests for two nights would report provision of 30 guest nights of accommodation.

[5] The off-peak monthly average for guest nights was calculated using data from 2006 excluding data for the peak months of January and December.

[6] Actual and estimated campground occupancy data.

The information received illustrated the following trends over the study period:

- There was a significant increase in the number of people staying in campgrounds from the 25th to the 31st of December 2007.
- The 31st of December 2007 has the largest number of people staying with an estimated total of nearly 10,000 people camping in the District on that night.
- There was a fairly steady decrease in the number of people staying in campgrounds after New Years Eve, although numbers remained relatively high until the end of the survey period.

Fletcher's Bay Campground: New Years Day 2008

4.5 Vehicle Movements

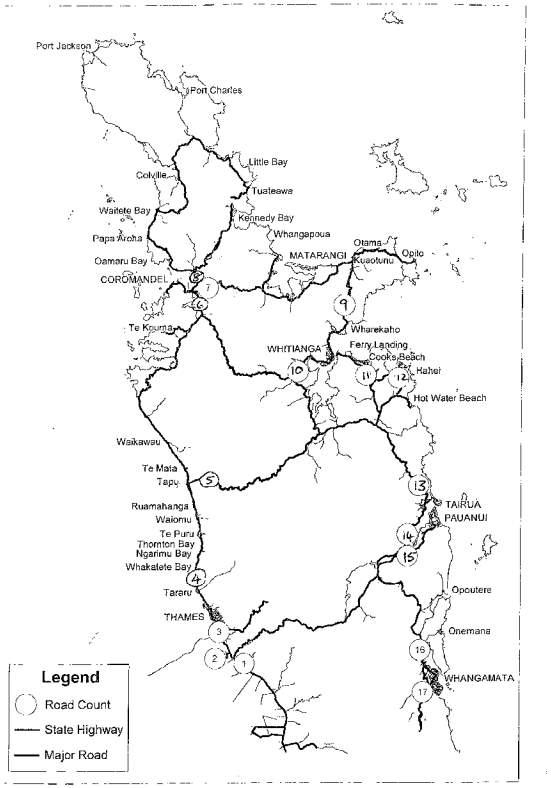
Traffic Counts

Traffic counters were situated at the three entry points to the Coromandel Peninsula to measure the number of vehicles coming onto and leaving the Peninsula on a daily basis. One traffic counter was located at the Kopu Bridge (State Highway 25), which is considered to be the western gateway to the Coromandel Peninsula. A second counter was located on the Kopu-Hikuai Road (State Highway 25A), which is a main arterial route to the eastern seaboard. A third counter was located south of Whangamata (State Highway 25) to gauge traffic movement towards the south-east of the Peninsula.

14 other traffic counters were situated in strategic locations on the Peninsula to collect data on vehicle movements (shown on the following map). Furthermore, vehicle movement information was able to be collected for individual settlements where there was only one road into and one road out of the settlement.

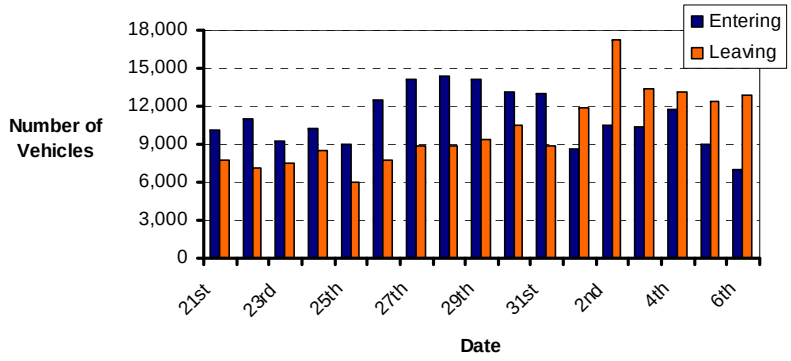
Traffic count data was used as an indication of the length of the peak holiday period as well as to indicate the highs and lows which occurred during that period.

Map of traffic count locations around the Peninsula



Results from the traffic counters located at the three entrances / exits to the District show that a large number of vehicles were both entering and leaving the Peninsula every day over the study period.

Traffic Entering and Leaving the Coromandel Peninsula
21 Dec 07 - 6 Jan 08

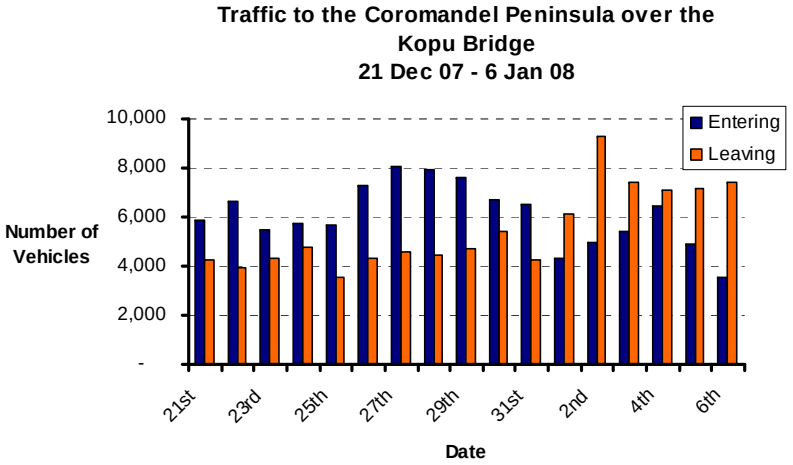


There were more cars arriving on the Peninsula than leaving from the 21st until the 31st of December 2007. From the 1st of January 2008 there were more cars leaving the Peninsula each day than arriving.

The number of vehicles arriving on the Peninsula peaked on the 28th of December 2007 – with 14,337 vehicles arriving on the Peninsula on that day. The peak day for vehicles leaving the Peninsula was the 2nd of January 2008 with 17,264 vehicles leaving on that day.

The Kopu Bridge traffic count results mirrored those of the combined results from all three entry / exit points to the Coromandel Peninsula. For vehicles entering or leaving the Coromandel Peninsula via the

Kopu Bridge the busiest day was the 2nd of January 2008 with 14,243 vehicles crossing the bridge on that day.



Over the 17 days of the study period a total of 196,062 vehicles crossed the Kopu Bridge. The traffic counters revealed that 55% of vehicles (103,083 vehicles) entering the Coromandel Peninsula came by way of the Kopu Bridge.

Traffic at the Kopu Bridge: 4 January 2008

Traffic counters located on either side of Whangamata showed a significant influx of vehicles on New Years Eve followed by an exodus on New Years Day and the 2nd of January 2008. This peak traffic increase and subsequent exodus also occurred in other main settlements (Whitianga, Pauanui, Tairua, Cooks Beach, Hahei) but was most significant in Whangamata with a net increase of over 1,300 cars in Whangamata on New Years Eve and a net decrease of 2,500 over the following two days.

Appendix 2 contains a table of all traffic count results.

Average Number of People-Per-Vehicle

In order for the traffic count data to be transposed into estimated population data it was necessary to have some idea of how many people there were in each vehicle. Therefore, a people-per-vehicle survey was undertaken at the Kopu Bridge. The survey was undertaken on three days during the study period and approximately 7,700 vehicles were surveyed in total. The survey assessed inbound and outbound traffic at different times during the day and was based on the assumption that traffic at Kopu Bridge was representative of traffic coming onto and leaving the Peninsula at the other entry points. The survey was undertaken at the beginning of the potential peak period (the 22nd of December), the middle of the peak period (the 31st of December) and towards the end of the peak period (the 4th of January).

The data collected on the three days of the people-per-vehicle survey showed that the average number of people in each vehicle coming on to the Coromandel Peninsula at the Kopu Bridge was 2.15. The average number of people in each vehicle leaving the Coromandel Peninsula at the Kopu Bridge was 2.03.

These figures were multiplied by the net number of vehicles in the main settlements and the District as a whole in order to calculate population numbers from traffic data. These fed into and corroborated the final population estimations.

4.6 Aerial Observation

A flight around the Peninsula on New Years Day enabled observation of any significant areas of informal camping, moored boats and general activity in each of the settlements and on the beaches. As well as recording any observations, a series of photographs was taken of each settlement and campground and later examined to help determine numbers camping on residential sections and on rural land without dwellings (eg at Otama and Opito Bays). Furthermore, for those campgrounds for which completed survey forms were not received the number of people staying in the campground was able to be estimated from the photographs.

4.7 Wastewater, Water and Solid Waste Data

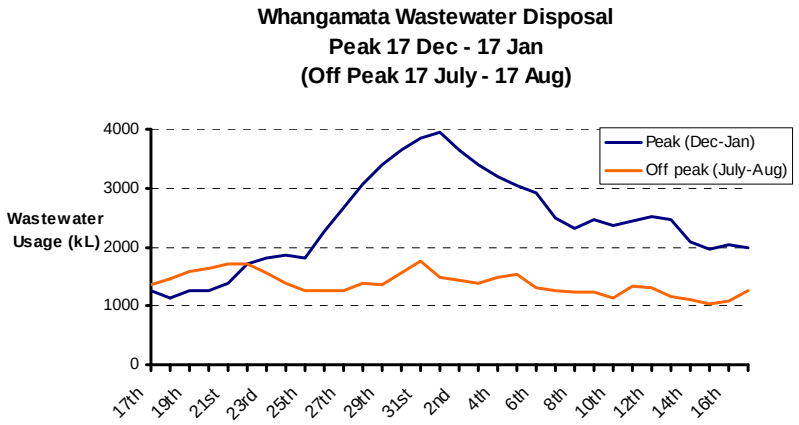
Not every residential property on the Coromandel Peninsula receives Council water, wastewater and solid waste services. However, this type of information can be used as an indicator of peak population trends by comparing data at peak times with off-peak times. While this data cannot provide an estimated number of people staying in serviced areas, it does assist in verifying the peak period and increased demand.

Wastewater

Daily data collected from a number of Council-provided wastewater treatment schemes was analysed to determine general trends in wastewater flows. The wastewater schemes analysed for this study were Cooks Beach, Coromandel, Hahei, Matarangi, Oamaru Bay, Onemana, Pauanui, Thames, Whangamata and Whitianga. It is important to note that in some settlements there are also other private disposal methods such as septic tanks. Furthermore, rainfall can affect the inflow and infiltration of wastewater.

Wastewater data shows a very definite increase in disposal during the peak summer period. The following graph shows that in Whangamata the increase, when compared to off-peak times, started around the 21st of December 2007. Following Christmas Day there was a steep increase in wastewater disposal and the peak

occurred on the 1st of January 2008. Usage then began to tail off but remained higher than usual right out until the end of January. By the second week of February wastewater disposal was once again back around off peak levels (not visible on the graph).

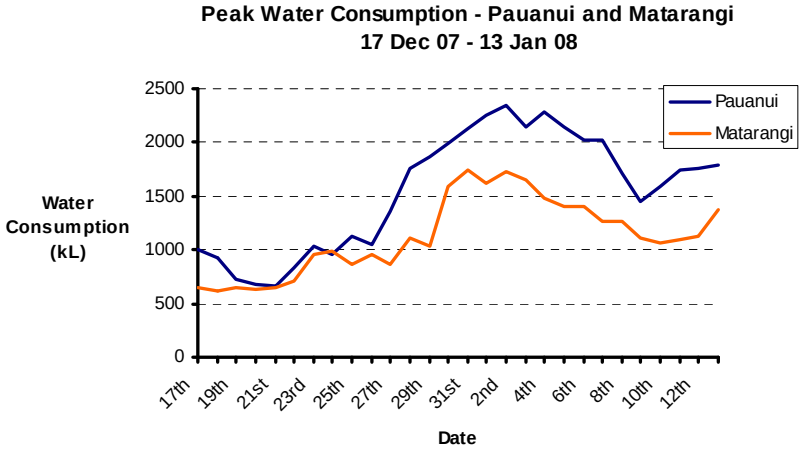


Water

Daily data collected from a number of Council provided water schemes was analysed to determine general trends in water usage. Using water consumption as an indicator of peak population trends can be complicated given that there are two key factors to consider when analysing the data, namely:

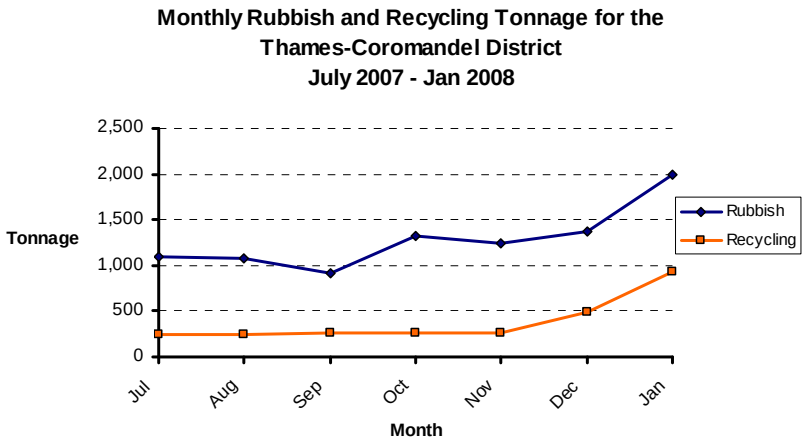
- For some water schemes there is a lag between water extraction and use by the public (lag time of approximately one day); and
- Many of the settlements analysed for water flows had water bans imposed over the summer period (as a result of hot and dry weather conditions) which would have affected water use.

The water schemes analysed for this study included Coromandel, Hahei, Matarangi, Onemana, Pauanui, Tairua, Whangamata and Whitianga. It is important to note that in several of these settlements there are also private water sources including bores and water tanks. However, by graphing water consumption data across the peak period the peak water trends can be identified. The following graph shows water consumption for Pauanui and Matarangi during the peak period. Clearly there was a significant increase in water consumption which began around the 23rd – 27th of December 2007.



Solid waste

Rubbish and recycling data is only available on a monthly basis so is limited in helping to identify the peak period. However, it does show quite clearly that the amount of rubbish and recycling collected in the District is slightly higher than usual in December and significantly higher than usual in January.



4.8 Observation and Anecdotal Evidence

While completing field work for the residential accommodation survey (from the 26th of December to the 6th of January), Council surveyors recorded observations of any significant general activity in the main settlements and major holiday destinations. The residential accommodation survey also enabled Council surveyors to collect anecdotal evidence from both residents and visitors which was corroborated with informal conversations with other Council staff after the survey period.

The main observation made by Council staff and members of the public was that there were fewer people staying in Whangamata. Furthermore, Whangamata was not dominated by large numbers of young people as it had been in previous years.

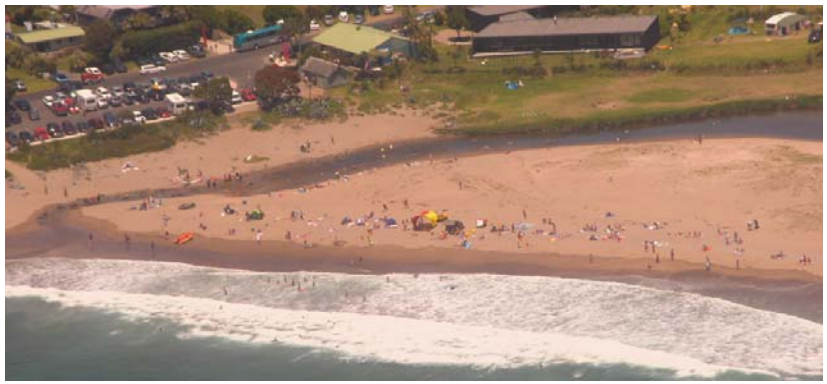
4.9 Weather Information

Previous peak population studies have illustrated that the weather can play a key role in influencing peak population trends. The 1996/97 peak population period was severely affected by cyclone Fergus which caused a mass exodus of holidaymakers from the Coromandel Peninsula. This undesirable weather resulted in a low peak population at that time compared to the other peak population studies.

For this study, the weather forecast for the key days leading up to and including the peak period was monitored and compared to the actual daily weather results. The forecast predicted that the peak period would feature fine, sunny days with very little rain or wind.

This was proved to be correct. There was a small amount of rain on Boxing Day but with that only exception, the entire peak period was dry and sunny with temperatures over 30°C at times.

Given the link between human behaviour and weather conditions, it can be assumed that the fine, settled weather on the Peninsula influenced the number of people visiting or staying in the area over the peak period.



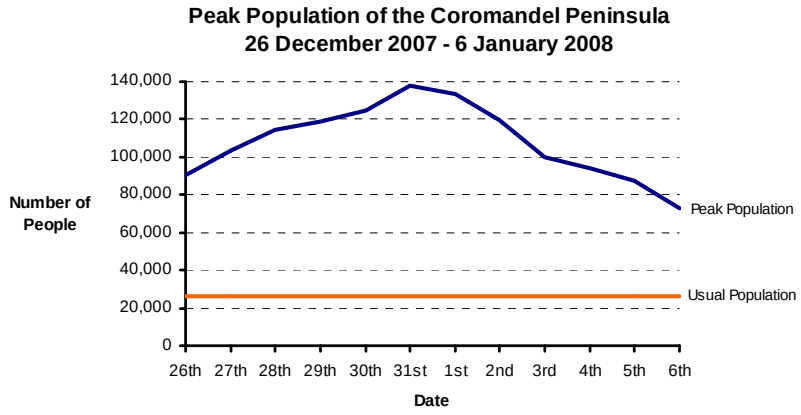
Hot Water Beach: New Years Day 2008

5 RESULTS

The results from the data sources discussed above were analysed and combined to create population estimates for the settlements and main holiday destinations on the Peninsula as well as the Coromandel Peninsula as a whole.

5.1 The Coromandel Peninsula

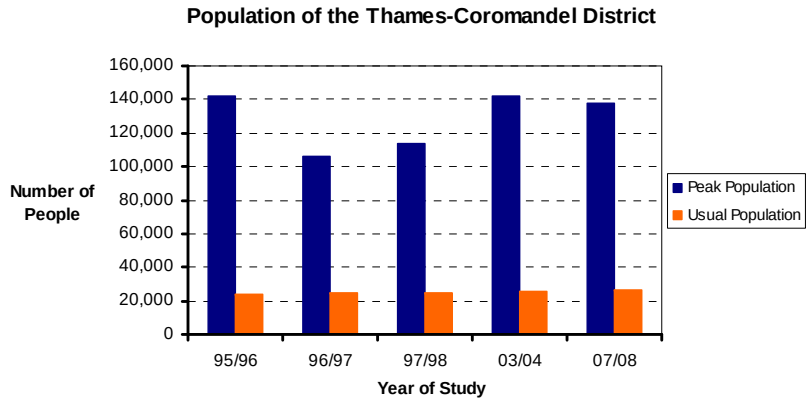
The population of the Coromandel Peninsula peaked on the 31st of December 2007 (New Years Eve) when there was an estimated 137,700 people staying on the Peninsula.



As can be seen on the previous graph, from the 26th to the 31st of December 2007 there was a steady increase in the number of people in the District. Following the New Years Eve peak there was a fairly steady population decrease through to the conclusion of the study on the 6th of January – when there were around 73,200 people staying on the Peninsula.

The increase in the population of the Coromandel Peninsula from the 26,000 usual residents to the estimated peak population of 137,700 people represents a 430% population increase – or a population over five times the usually resident population.

The 2007/08 peak population of 137,700 compares to an estimated peak population of 142,400 people in 2003/04 when the full study was last undertaken. The graph below shows a comparison of peak populations calculated five times over the past 12 years. Note that during the 1996/97 peak period Cyclone Fergus reached the Coromandel Peninsula causing chaos and flooding on the Peninsula and leading to a mass exodus of holidaymakers and a consequently low peak population.



While the peak population has varied over the past 12 years it is clear that there is a consistent pattern of extreme peaks during the Christmas and New Years period.

5.2 The Settlements

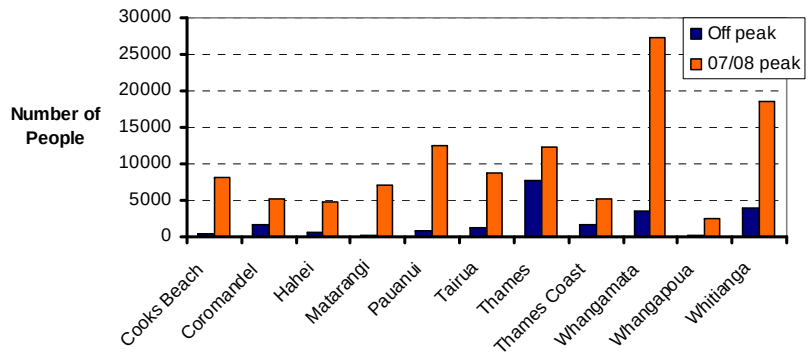
The study provided peak population information down to the individual settlement / area level. Different settlements experience different peak populations, determined mainly by the number of residential properties and the character of the settlement. All main settlements in the District experienced an increase in population during the peak summer period.

Overall, Whangamata had the highest peak population at 27,200 people, followed by Whitianga with 18,600 people and Pauanui with

12,500 people. The estimated peak population of Whangamata alone is more than the usually resident population of the entire Thames-Coromandel District. The table below gives the usual population, the estimated peak population and the number of times increase for each of the main settlements and holiday destinations in the District.

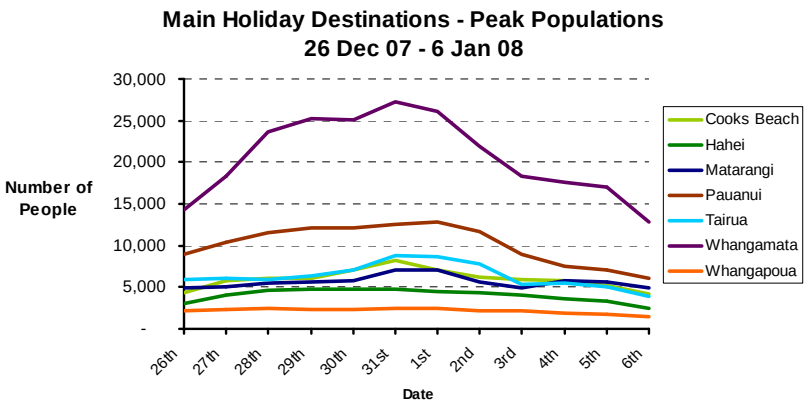
Location	Usually Resident Population	Estimated peak population (31st Dec 07)	Number of times larger than usual population
Cooks Beach	327	8,200	25.1
Coromandel	1,642	5,100	3.1
Hahei	524	4,800	9.2
Matarangi	265	7,100	26.8
Pauanui	733	12,500	17.1
Tairua	1,316	8,800	6.7
Thames	7,637	12,300	1.6
Thames Coast	1,700	5,300	3.1
Whangamata	3,603	27,200	7.5
Whangapoua	144	2,500	17.4
Whitianga	3,978	18,600	4.7

Population of the Thames-Coromandel District During Off Peak and Peak Times

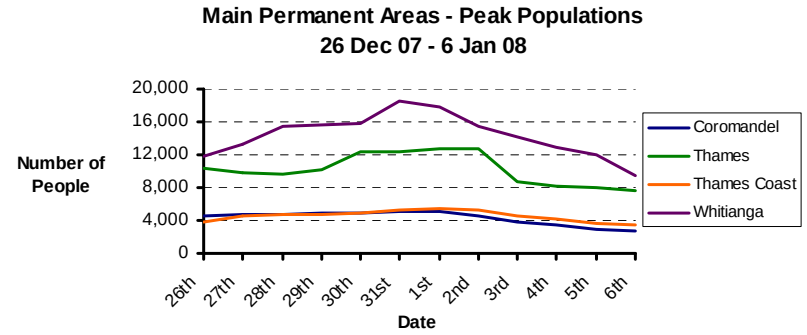


The greatest percentage increase occurred in Matarangi where the population increased to an amazing nearly 27 times the usual population. The low usually resident population of Matarangi and huge increase during the peak period shows the principal nature of Matarangi as a holiday destination. This characteristic is also seen for Cooks Beach, Hahei, Pauanui, Whangapoua and to some extent for Tairua and Whangamata.

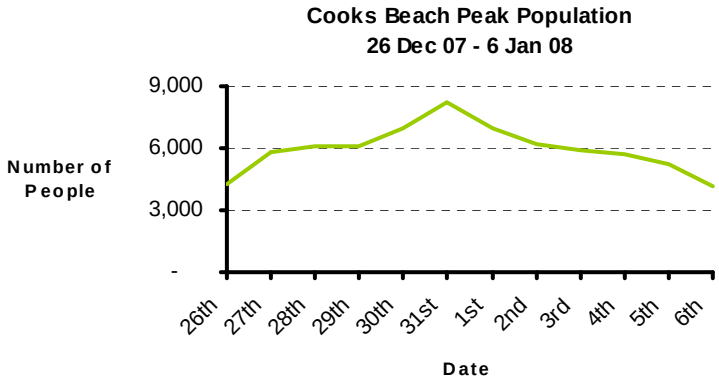
The changing population over the peak period of these main holiday destinations is graphed below.



The settlements on the Peninsula with a more permanent population – Coromandel, Thames, Thames Coast and Whitianga – also all show an increase in population over the peak period although not as dramatic as the holiday destinations. The graph below shows the peak populations of the more permanent settlements over the study period.



It is clear from the previous two graphs that the population of most of the settlements on the Peninsula peaked on New Years Eve. Following the peak day, Whangamata experienced quite a steep decline in population whereas many of the other settlements, including Pauanui, Matarangi, Tairua and Hahei experienced a more gradual decrease in the population. Cooks Beach was interesting in that it experienced a very distinctive peak on New Years Eve with steep population changes on either side of the peak day.



When comparing the 2007/08 final settlement population figures with the 2003/04 study a number of interesting differences are apparent. Firstly, the population of Whangamata on New Years Eve 2003 was estimated to be 48,400 people. The estimate for New Years Eve 2007 was 27,200. It has been suggested that this much lower peak may have been due to the expected police presence and liquor bans

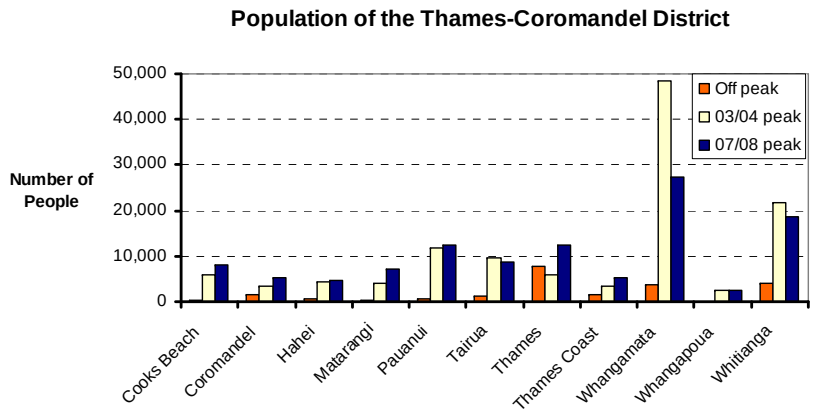
in Whangamata leading to fewer young people spending New Years Eve in Whangamata. Furthermore, anecdotally it was noted that there was a different crowd in Whangamata over the 2007/08 peak period – a more family orientated and young teen crowd rather than the 'boy-racer' late teens/early twenties crowd of earlier years.

Whangamata: New Years Day 2008

Secondly, it appears that Cooks Beach and Matarangi are becoming the Peninsula's popular 'hot spots' for New Years. The Cooks Beach peak was up around 2,000 on the 2003/04 peak at 8,200 and the Matarangi peak was up over 3,000 on the 2003/04 peak at 7,100.

Thirdly, the increase in the population of Thames over the peak period is interesting as the 2003/04 peak population study found that the population of Thames decreased over the peak period. However, the 2003/04 study did not include Tararu, Kopu and the Kauaeranga Valley in its definition of 'Thames' so a comparison is not terribly useful. The 2007/08 study shows that the population of Thames increased to 1.6 times the usually resident population. Surveyors in Thames found that while many houses contained only the usual residents there were others where family and friends were staying which meant that the population was higher than the usually resident population.

The graph below allows a comparison to be made between the off peak populations and the 2003/04 and 2007/08 peak populations of the main settlements.



6 LOOKING TOWARDS THE FUTURE

The results presented in this 2007/08 peak population study suggest a number of implications for peak population trends in the future.

- There is a clear trend showing an extreme peak population occurring each year which is likely to continue to put pressure on services and infrastructure.
- The peak period extends significantly on either side of the peak day, particularly when the weather is fine and settled.
- It appears that the New Years 'hot spots' in the District change periodically and this will be an interesting trend to follow.
- The settlements which appear to be becoming more popular in the District are Cooks Beach and Matarangi. However, Whangamata is, and is likely to remain, the settlement with the greatest population in the District as it has a much higher number of houses. The settlement with the greatest percentage increase in population is likely to remain Matarangi due to its low proportion of permanent residents and high proportion of holiday homes.
- If the price of petrol continues to rise it may affect the peak population of the Peninsula.

7 RECOMMENDATIONS FOR FUTURE STUDIES

- The 2003/04 peak population study recommended that the survey period be extended further into January due to the fact that the peak was felt to be continuing into January and information on this period would be useful. This was done and it is believed that it will be constructive to continue to do this. This is due to the fact that, although the actual peak continues to occur on New Years Eve, the peak period extends significantly on either side of this peak day.
- It would be useful to have a traffic counter located on the road into Matarangi in order to use this data source to help more accurately calculate the population of Matarangi.
- It would be useful to collect traffic count data for a longer period of time during the peak period as it clearly shows the extent of the peak period on either side of the peak day. However, this data source is expensive.
- The people-per-vehicle survey was undertaken on three separate days at the Kopu Bridge in order to gather people-per-vehicle data for the beginning, middle and end of the peak period. However, the differences in the averages calculated were statistically insignificant so it is recommended that the people-per-vehicle survey only be undertaken on one day for future studies.
- Door-to-door surveying was difficult to carry out on the Thames Coast due to the low number of houses in each small settlement

and the spread of the settlements. It is recommended that for future studies Thames Coast is not surveyed but is simply allocated Coromandel's people-per-dwelling figure.

8 CONCLUSION

The 2007/08 peak population study was carried out successfully and estimated the population of the District on New Years Eve 2007 to be around 137,700 people. This was fairly similar to the 2003/04 estimate of 142,400. The peak settlement was Whangamata with 27,200 people followed by Whitianga with 18,600 people. Some of the smaller holiday settlements such as Matarangi have the most dramatic percentage increase in population over the peak period.

9 APPENDIX 1: Table of final population figures

	26th	27th	28th	29th	30th	31st	1st	2nd	3rd	4th	5th	6th
Cooks Beach	4,300	5,800	6,100	6,100	7,000	8,200	7,000	6,200	5,900	5,700	5,200	4,200
Coromandel	4,500	4,700	4,800	4,900	4,900	5,100	5,100	4,500	3,900	3,500	3,000	2,800
Hahei	3,100	4,100	4,600	4,700	4,700	4,800	4,400	4,300	4,000	3,600	3,300	2,400
Matarangi	4,900	5,100	5,500	5,600	5,700	7,100	7,100	5,600	4,900	5,700	5,600	4,900
Pauanui	9,000	10,400	11,500	12,100	12,100	12,500	12,800	11,700	8,900	7,500	7,000	6,100
Tairua	5,900	6,100	5,900	6,300	7,000	8,800	8,600	7,800	5,400	5,500	5,100	3,900
Thames	10,400	9,800	9,600	10,200	12,400	12,300	12,800	12,700	8,800	8,200	8,000	7,700
Thames Coast	3,900	4,500	4,700	4,800	5,000	5,300	5,500	5,300	4,500	4,200	3,700	3,400
Whangamata	14,300	18,300	23,600	25,200	25,100	27,200	26,100	21,900	18,300	17,600	17,000	12,800
Whangapoua	2,200	2,300	2,400	2,300	2,300	2,500	2,500	2,100	2,100	1,900	1,800	1,500
Whitianga	11,900	13,300	15,400	15,700	15,800	18,600	17,900	15,400	14,200	13,000	12,000	9,500
Colville / North	2,000	2,400	2,800	3,100	3,300	3,200	3,200	2,800	2,200	2,000	1,800	1,700
Kennedy Bay / Little Bay / Tuateawa	1,800	2,400	2,500	2,500	2,900	3,400	2,900	2,500	2,400	2,300	2,100	1,700
Kuaotunu	2,000	2,700	2,900	3,000	3,300	3,900	3,300	3,000	2,800	2,700	2,500	2,000
Manaia	1,100	1,200	1,200	1,300	1,100	1,400	1,500	1,400	1,200	1,100	1,000	1,000
Onemana	1,600	2,200	2,300	2,300	2,700	3,100	2,700	2,400	2,200	2,200	2,000	1,600
Opito Bay / Otama	1,100	1,500	1,600	1,600	1,800	2,100	1,800	1,600	1,500	1,500	1,300	1,100
Opoutere	400	500	600	600	700	800	700	600	500	500	500	400
Thames South	1,200	1,200	1,100	1,100	1,500	1,500	1,500	1,500	1,000	900	900	900
Rest of District	4,700	5,100	5,400	5,600	5,800	5,700	6,000	5,800	4,700	4,100	3,800	3,500
TOTAL DISTRICT	**90,200**	**103,500**	**114,800**	**119,100**	**124,900**	**137,700**	**133,600**	**119,400**	**99,600**	**93,900**	**87,700**	**73,200**

10 APPENDIX 2: Traffic count results

	Location	Direction	21st	22nd	23rd	24th	25th	26th	27th	28th	29th	30th	31st	1st	2nd	3rd	4th	5th	6th
1	South of Kopu	North	2,842	2,641	2,225	2,733	1,763	2,814	3,186	3,234	3,262	2,914	2,958	1,871	2,503	2,492	2,865	2,172	1,744
		South	2,436	2,081	1,853	2,314	1,376	1,847	2,215	2,259	2,217	2,161	2,087	2,487	3,666	2,941	3,208	2,652	2,501
Net entering District south of Kopu			388	560	372	419	387	967	971	975	1,045	753	871	-616	-1,163	-449	-343	-480	-757
2	Kopu Bridge	East	5,887	6,622	5,470	5,761	5,669	7,277	8,089	7,928	7,618	6,695	6,528	4,313	4,978	5,409	6,437	4,872	3,530
		West	4,243	3,930	4,313	4,786	3,536	4,310	4,576	4,458	4,718	5,390	4,271	6,132	9,265	7,404	7,089	7,148	7,410
Net entering District at Kopu Bridge			1,644	2,692	1,157	975	2,133	2,967	3,513	3,470	2,900	1,305	2,257	-1,819	-4,287	-1,995	-652	-2,276	-3,880
3	South of Thames	North	*	*	*	*	*	*	*	*	*	*	*	*	*	6,841	7,558	5,543	4,183
		South	*	*	*	*	*	*	*	*	*	*	*	*	*	7,539	8,084	6,641	5,563
4	North of Tararu	North	2,885	3,329	3,048	3,176	2,484	3,743	4,348	4,287	4,648	4,144	4,037	3,207	3,784	3,317	3,378	3,091	2,269
		South	2,246	2,175	2,545	2,774	1,659	2,437	2,755	2,817	3,358	3,640	3,130	3,783	5,475	4,048	3,941	3,980	3,581
Net Thames			*	*	*	*	*	*	*	*	*	*	*	*	*	33	37	-209	-68
5	East of Tapu	East	208	263	221	259	199	298	306	382	386	421	361	381	392	310	303	268	221
		West	195	241	197	255	190	215	296	324	363	355	351	404	419	349	305	317	269
Net Thames Coast			68	207	55	-4	169	93	225	192	99	-56	61	-53	-329	-117	-148	-125	-293
6	South of Coromandel	North	1,771	2,078	1,882	1,830	1,514	2,691	3,104	3,240	3,346	2,998	2,961	2,371	3,287	2,355	2,408	1,948	1,667
		South	1,213	1,153	1,458	1,428	867	1,561	1,746	2,020	2,178	2,504	2,125	2,871	4,622	2,930	2,821	2,663	2,638
7	East of Coromandel	East	754	904	803	765	727	1,178	1,332	1,455	1,517	1,516	1,354	1,198	2,044	1,204	1,169	999	787
		West	421	373	521	526	335	649	772	862	967	1,218	928	1,377	2,523	1,383	1,264	1,332	1,254
8	North of Coromandel	North	582	753	669	775	569	1,161	1,459	1,555	1,704	1,601	1,702	1,295	1,650	1,243	1,223	1,031	774
		South	440	507	564	664	413	683	890	1,086	1,266	1,451	1,525	1,645	2,101	1,399	1,462	1,257	1,035
Net Coromandel			83	148	37	52	99	123	229	158	180	46	233	29	-405	-240	-79	-156	-243
9	North of Whitianga	North	1,126	1,220	1,276	1,650	801	1,518	2,247	2,562	2,773	3,001	3,324	2,801	3,020	2,822	2,460	2,040	1,671
		South	1,127	1,117	1,233	1,646	818	1,429	2,060	2,513	2,665	3,019	3,278	2,889	3,309	3,064	2,734	2,226	1,819
10	South of Whitianga	North	1,978	1,943	1,706	1,924	1,313	2,438	2,989	3,314	3,603	3,864	3,990	2,684	3,277	2,920	2,806	2,298	1,805
		South	1,814	1,522	1,545	1,831	1,032	1,747	2,083	2,537	2,804	3,344	3,069	3,684	4,467	3,461	3,318	2,983	2,489
Net Whitianga			165	318	118	89	298	602	719	728	691	538	875	-912	-901	-299	-238	-499	-536
11	Road into Cooks Beach	North	764	945	869	983	649	1,122	1,540	1,859	2,125	2,163	2,286	1,802	1,945	1,885	2,375	1,414	1,154

	Location	Direction	21st	22nd	23rd	24th	25th	26th	27th	28th	29th	30th	31st	1st	2nd	3rd	4th	5th	6th
		South	623	639	747	919	500	841	1,154	1,432	1,700	1,868	1,947	2,105	2,628	2,052	2,591	1,714	1,522
Net Cooks Beach			141	306	122	64	149	281	386	427	425	295	339	-303	-683	-167	-216	-300	-368
12	Road into Hahei	North	850	1,060	1,077	1,146	835	1,436	1,803	1,988	2,261	2,490	2,396	2,240	2,501	2,311	2,314	1,872	1,480
		South	795	853	963	1,025	725	1,163	1,562	1,830	2,080	2,396	2,220	2,351	2,756	2,365	2,450	1,984	1,634
Net Hahei			55	207	114	121	110	273	241	158	181	94	176	-111	-255	-54	-136	-112	-154
13	North of Tairua	North	1,501	1,985	1,823	1,727	1,675	3,144	3,348	3,733	3,816	*	*	*	*	2,635	2,848	2,194	1,807
		South	1,142	1,078	1,399	1,416	1,069	1,611	2,167	1,995	2,537	*	*	*	*	3,762	3,612	3,528	3,041
14	South of Tairua	North	2,092	2,628	2,350	2,405	2,226	3,873	4,187	4,570	4,759	5,010	4,637	3,019	3,850	3,417	3,663	3,300	2,205
		South	1,549	1,434	1,801	1,932	1,360	2,021	2,711	2,565	3,166	3,705	3,085	4,599	6,187	4,590	4,236	4,631	4,197
Net Tairua			184	287	125	162	260	319	295	267	314	*	*	*	*	-46	191	3	-758
15	Road into Pauanui	East	1,022	1,230	1,116	1,230	1,091	1,525	2,049	2,140	2,300	2,301	2,442	1,841	2,034	2,058	2,057	1,892	1,299
		West	667	663	820	925	584	991	1,298	1,538	1,778	2,073	1,916	2,070	2,810	2,423	2,065	2,110	2,282
Net Pauanui			355	567	296	305	507	534	751	602	522	228	526	-229	-776	-365	-8	-218	-983
16	North of Whangamata	North	1,287	1,510	1,578	1,884	1,116	2,070	2,488	3,137	3,718	4,052	3,348	3,514	4,243	3,499	3,169	2,973	2,558
		South	1,585	1,757	1,668	1,935	1,395	2,260	2,938	3,294	3,904	4,016	3,676	3,316	4,067	3,439	3,263	2,927	2,407
17	South of Whangamata	North	1,424	1,680	1,522	1,722	1,566	2,463	2,885	3,175	3,285	3,541	3,454	2,486	3,018	2,486	2,442	1,956	1,777
		South	1,085	1,074	1,327	1,387	1,120	1,654	2,073	2,107	2,431	2,943	2,479	3,298	4,333	3,089	2,794	2,568	2,922
Net Whangamata			637	853	285	386	725	999	1,262	1,225	1,040	562	1,303	-1,010	-1,491	-663	-258	-658	-1,296
Net entering District			2,371	3,858	1,724	1,729	2,966	4,743	5,296	5,513	4,799	2,656	4,103	-3,247	-6,765	-3,047	-1,347	-3,368	-5,782

* data not available.