

Peak population study for Thames-Coromandel District Council

April 2021



Infometrics

Economics put simply

Authorship

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Executive summary

Peak day was New Year's Eve

The peak day for population in Thames-Coromandel over the 2020/21 summer was the 31st of December 2020, which is consistent with previous peak population studies¹. The timing of the peak population is indicated by cell phone data, water supply and wastewater processing, and is corroborated by other indicators such as traffic flows and solid waste collection.

Peak population 2.02 times larger

Cell phone data indicates that the population swelled on the peak day to 2.02 times the normal population in the Coromandel Regional Tourism Organisation (RTO) area. This area includes Thames-Coromandel and Hauraki Districts. The population grew from 57,600 at the start of December 2020 to 116,300 on New Year's Eve (NYE).

The peak population was lower than found in previous studies, likely due to COVID-19 border restrictions which have prevented international visitors coming into the country and visiting the area.

Occupancy jumped from 1.5 persons per dwelling to 3.3

Occupancy swelled from 1.5 residents per dwelling to 3.3 on the peak day of 31st of December across Coromandel RTO. It is likely that occupancy was even higher in Thames-Coromandel, especially in settlements on the North and East of the Coromandel.

Population peaks mainly in East Coast settlement

Water supply and wastewater data shows that population peaks occurred in a number of settlements, predominantly on the East Coast of Thames-Coromandel.

Favourable weather encourages extended peak

The 2020/21 summer weather was favourable which may have encouraged an extended peak period. Maximum daily temperatures were in line with historic averages for Thames and Whitianga, and rainfall was insignificant until a downpour on the 7th of January.

Similar population peak in 2021/22

The peak population in 2021/22 is likely to be similar in size and composition to 2020/21. A travel bubble with Australia has now been announced, meaning Australians may contribute to an increase in the Coromandel peak population. However, this may be offset by an increase in New Zealanders heading to Australia for NYE celebrations, instead of visiting the Coromandel.

¹ TCDC carried out peak population studies for the 2016/17, 2009/10, 2007/08, 2003/04 summer periods

Introduction

Infometrics has been commissioned by Thames-Coromandel District Council (TCDC) to analyse Thames-Coromandel's peak population over the 2020/21 summer period. The District experiences a strong and distinct peak in population over this period as holidaymakers spend time and money in the District. The peak in population generates additional demand for council services which requires special consideration in council planning and operations. TCDC has commissioned peak population studies in the past, and this report represents a continuation of previous reports, most recently for the 2017/18 summer.

The focus of this report is the Thames-Coromandel District, however, some of the data coverage varies, with some data available at a settlement level, and other data covering the Coromandel Regional Tourism Organisation (RTO) area which includes both the TCDC area and Hauraki District. Differences in data coverage mean that the focus of this report is understanding the 2020/21 peak population, with some comparison to previous peak population reports.

This report is structured into three sections – a summary of the peak population findings, followed by more in-depth analysis of the peak population indicators, and finally an assessment of the outlook for peak population in the 2021/22 summer.

Peak population findings

Peak day was New Year's Eve

The peak day for population in Thames-Coromandel over the 2020/21 summer was the 31st of December, which is consistent with previous peak population studies. The timing the peak population is indicated by cell phone data, water supply, and wastewater processing, and is corroborated by other indicators such as traffic flows and solid waste volumes. Cell phone data, which records the daily population at 3am, indicates a peak on the 1st of January, which is consistent with the population peaking for NYE celebrations and staying in Thames-Coromandel overnight. Water use in Thames-Coromandel peaked on the 31st of December, indicating a peak population leading to peak consumption. Wastewater processing peaked on the 1st of January, which is consistent with a peak population staying overnight on the 31st of December and allowing for a lag time for wastewater to travel to treatment facilities.

Peak population 2.02 times larger

Cell phone data indicates that the population in the Coromandel RTO area swelled on the peak day to 2.02 times the normal population. The population grew from 57,600 at the start of December 2019 to 116,300 on NYE.

Although the peak population of Coromandel RTO cannot be directly compared with Thames-Coromandel, it suggests that the peak population in Thames-Coromandel was lower than previous years. Previous peak population studies found the peak population in Thames-Coromandel on NYE to be 126,300 (2016/17), 120,874 (2009/10), 137,700 (2007/08) and 142,375 (2003/04). Solid waste collection volumes were 18% lower in 2020/21 than 2019/20, indicating a lower peak population.

Population peaks mainly in East Coast settlement

Water supply and wastewater data shows that population peaks occurred in a number of settlements, predominantly on the East Coast of Thames-Coromandel.

Peaks were measured by comparing peak water supply and wastewater on the 31st of December and 1st of January to pre-Christmas period. The largest peaks were recorded in Oamaru Bay (waste water up 647%), Hahei (water 46%, wastewater 302%), Onemana (water supply 111%, wastewater 207%), Whangamatā (water supply 29%, wastewater 160%), Pauanui (water supply 54%) and Whitianga (water supply 26%, wastewater 34%).

The size of the peak can differ depending on how it is measured, as water supply and wastewater networks often have differing coverage areas.

Occupancy jumped from 1.5 persons per dwelling to 3.3

Across the Coromandel RTO area, occupancy is relatively low at 1.5 residents per dwelling, reflecting the high prevalence of unoccupied holiday houses in the area. This occupancy rate swelled to 3.3 people per dwelling on the peak day of 31st of December. Given the higher prevalence of holiday houses in Thames-Coromandel, it is likely that occupancy was even higher in Thames-Coromandel, especially in settlements on the

North and East of the peninsula. This trend can be seen in water supply and wastewater data, which shows no increase in demand associated with NYE in Thames township.

Table 1

Population per dwelling

Source: Infometrics, based on Stats NZ and Data Ventures

| Area | Dwellings (2019) | Residents population dwelling (2019) | Peak population per dwelling (2020/21) |
|---------------------------|------------------|--------------------------------------|--|
| Thames-Cormandel District | 25,655 | 1.2 | |
| Hauraki District | 9,923 | 2.1 | |
| Coromandel RTO | 35,578 | 1.5 | 3.3 |

Population elevated over a four-week period

Although the peak population was concentrated around NYE, the population was elevated over a four-week period, starting in the week prior to Christmas Day and continuing until the weekend of the 16th of January. This may have been aided by favourable weather, other than heavy rain on the 7th of January.

Analysis of summer 2020/21

Base population

The Thames-Coromandel District was home to 31,500 residents in 2019, with the wider Coromandel RTO area being 52,500, including 21,000 in Hauraki District. Residents are defined as having their primary residence within the area – this means that owners of holiday houses in the district are not counted as residents.

The two Districts differ substantially in the number of dwellings, and residents per dwelling. In Thames-Coromandel, holiday houses are far more prevalent, with 44% of dwellings estimated as unoccupied, compared to 11% in Hauraki, according to Infometrics estimates for 2019, based on the 2018 Census. The higher number and proportion of unoccupied dwellings in Thames-Coromandel means that the majority of Coromandel RTO's peak population is likely to be accommodated in Thames-Coromandel. However, the distribution of the peak population within the RTO area cannot be quantified for 2020/21 as available cell phone data covers the RTO area overall without specific insights on Thames-Coromandel.

Table 2

2019 Resident Population

Source: Infometrics, based on Stats NZ

| Area | Resident population (2019) | Dwellings (2019) | Residents per dwelling (2019) |
|---------------------------|----------------------------|------------------|-------------------------------|
| Thames-Cormandel District | 31,500 | 25,655 | 1.2 |
| Hauraki District | 21,000 | 9,923 | 2.1 |
| Coromandel RTO | 52,500 | 35,578 | 1.5 |

Effect of COVID-19

Thames-Coromandel's population has been impacted by COVID-19 in several ways. Closure of international borders has prevented international tourists from coming to New Zealand, dramatically reducing the number of international visitors in the District's peak population. Additionally, border constraints have prevented New Zealanders from holidaying overseas, which has led to a strong increase in domestic tourism. Domestic tourism spending in Thames-Coromandel was 31% higher in December 2020 than December 2019. These factors have changed the composition of Thames-Coromandel's peak population.

Tourist spending

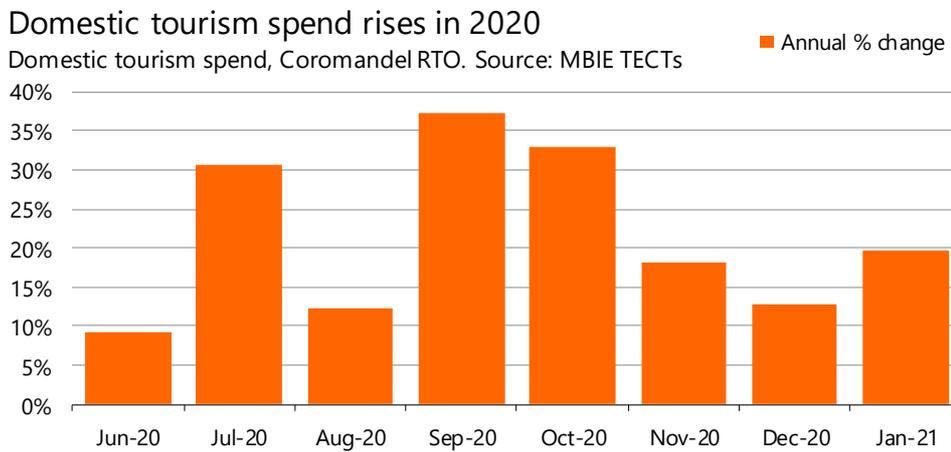
The Coromandel RTO area has historically been a popular destination for New Zealanders, with 71% of tourist electronic card spending coming from domestic visitors.

This domestic tourism focus means that the impact of lower international visitor numbers due to COVID-19 border restrictions has been relatively limited. Additionally, there has been a large increase in domestic tourism as New Zealanders have had their travel options restricted by border closures. This increase in domestic tourism has benefited all regions, but particularly those in close proximity to major population centres, as people seek out destinations within driving distance.

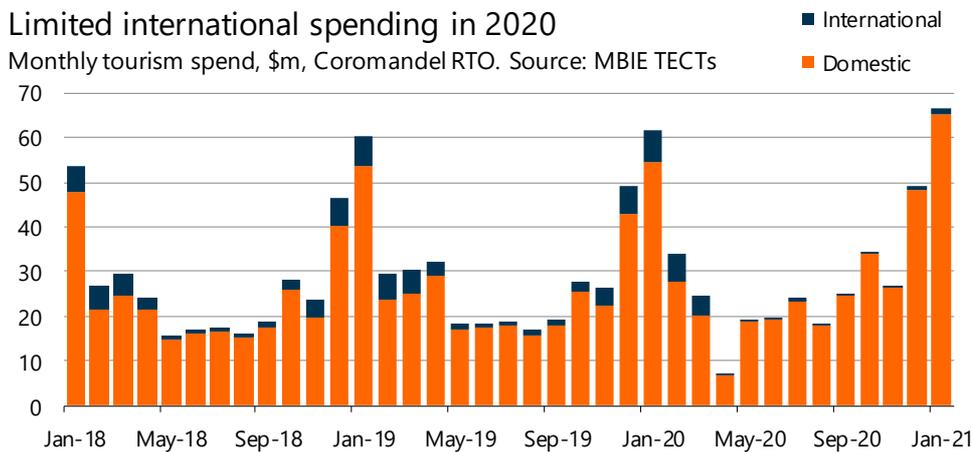
Coromandel RTO has benefited from its proximity to Auckland in this drive-based domestic travel trend, with a strong increase in domestic visitor spending since the national COVID-19 restrictions were eased in June 2020. This travel trend has also meant that spending in Coromandel is sensitive to COVID-19 Alert Levels in Auckland, with notably weaker spending in August 2020 coinciding with Alert Level 3 restrictions in Auckland.

The surge in domestic visitor spending post-COVID has meant that visitor spending in Coromandel was higher in January 2021 than January 2020 (see Graphs 1 and 2).

Graph 1



Graph 2



Events

Several notable events took place within the peak summer period. Annual galas with record attendance were held in Cooks Beach, Hahei, Whitianga, Whangamatā, Pauanui, and Coromandel. A New Year's Eve (NYE) concert was held at Joe's Farm near Whangamatā, with peak attendance of 15,600 on the 31st of December. A concert was held at Whitianga on the 31st of January, with 7,500 attendees.

Accommodation

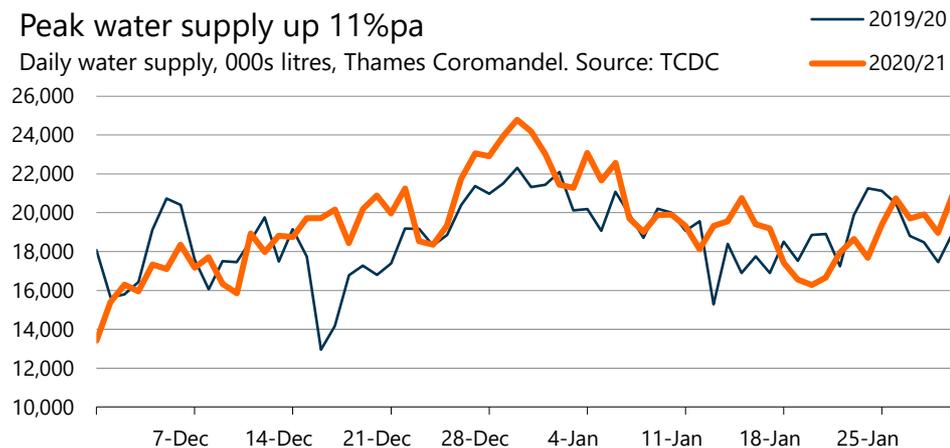
No longitudinal accommodation data was available, however data for the 2020/21 summer alone was available for Department of Conservation (DOC) managed camp sites north of Coromandel township, and separately from commercial accommodation providers. DOC reported lower peak occupancy and a longer peak season in 2020/21 compared to previous years but noted a change in management including fewer camping sites being available and implementation of a booking system has driven at least some of these occupancy changes.

Across commercial holiday park and campgrounds in the Coromandel RTO area, 86.3% occupancy was reported in December 2020, and 84.4% in January 2021. These insights are based on data from MBIE's Accommodation Data Programme (ADP), which does not cover the previous summer period.

Water supply

Peak water supply in Thames-Coromandel occurred on the 31st of December 2020, the same as in previous years. Notably, peak supply was 24.8 million litres, ahead of a 22.3 million peak on the same day in the 2019/20 summer (see Graph 3).

Graph 3

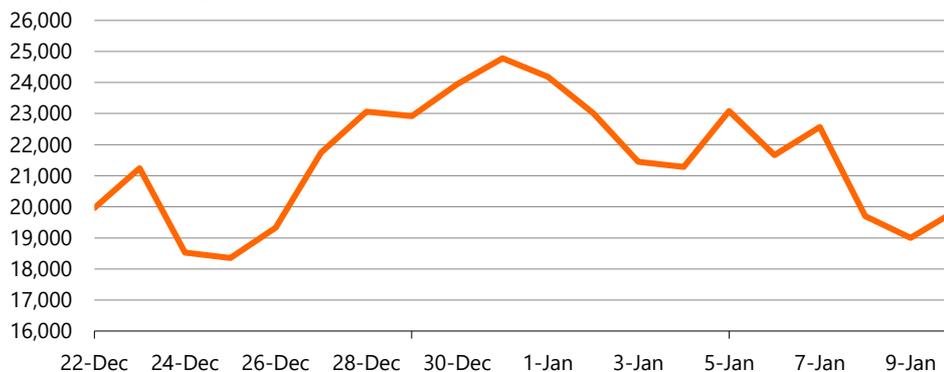


Graph 4 focuses on water supply between the 22nd of December and 10th of January, which shows the rapid ramp up in population between Christmas and NYE, followed by a slow ramp down after NYE.

Graph 4

Rapid increase, but slower ramp down after NYE

Daily water supply, 000s litres, Thames Coromandel. Source: TCDC



At a settlement level, peaks in water supply largely occurred around NYE, with the exception of Thames, Coromandel Town and Tairua which exhibited a flat water supply profile over the NYE period. Water supply peaked strongly on NYE in Matarangi (up 48% on pre-Christmas), Whitianga (26%), Hahehi (46%), Pauanui (54%), Onemana (111%), Whitianga (26%) and Whangamatā (29%).

Water supply volumes in Whangamatā and Whitianga fell away quickly after peaking on NYE, returning to normal volumes by the 3rd of January. However, water supply in Hahei, Pauanui and Onemana remained elevated for some time, sitting well above normal volumes even on the 10th of January.

Wastewater

Peak wastewater volumes were treated on the 1st of January 2021. There is likely a lag between wastewater being generated and being counted at wastewater treatment facilities. This lag means that the peak on the 1st of January 2021 reflects a peak population overnight on the 31st of December 2020 (see Graph 5).

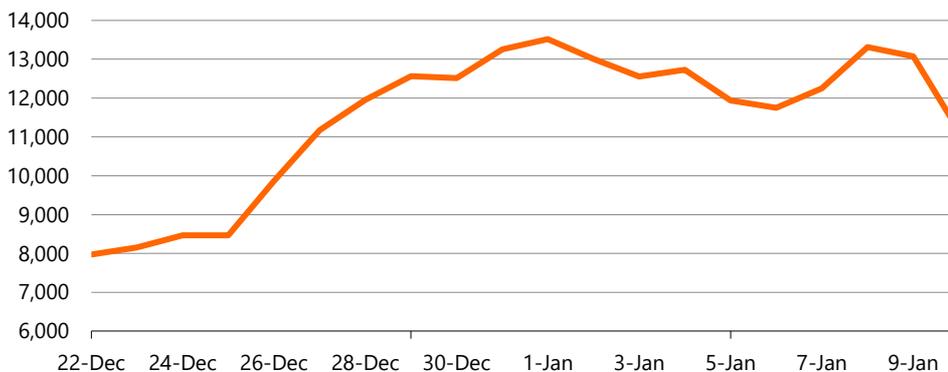
Wastewater volumes also spiked on the 8th and 9th of January, reflecting heavy rainfall on the 7th of January which led to large increases in wastewater in Thames and Matarangi. This spike may reflect the vulnerability of these networks to rainwater infiltration and cross-connections between stormwater and wastewater.

With the exception of Thames, wastewater volumes started to rise after Christmas Day, and remained elevated by the 10th of the January.

Graph 5

Peak wastewater confirms NYE population peak

Daily wastewater, 000s litres, Thames Coromandel. Source: TCDC



Wastewater volumes peaked for most settlements on NYE or New Year's Day (NYD) – this includes Coromandel Town (up 27% on pre-Christmas), Oamaru Bay (647%), Hahei (302%), Pauanui/Tairua (151%), Onemana (207%), Whitianga (34%) and Whangamata (160%).

By the 10th of January, wastewater volumes remained elevated in most settlements, again reflecting the slow decrease in holiday populations after NYE. Wastewater volumes for Pauanui and Tairua are combined as both settlements use a single wastewater treatment plant – however water supply data indicates that the peak for this area is likely due to a peak population in Pauanui, not Tairua.

In Thames, volumes peaked on the 27th of December, potentially reflecting visitors stopping over in Thames before holidaying in the East or North of the District. Wastewater volumes in Thames fell after the 27th, potentially reflecting locals travelling away from home for NYE.

Traffic

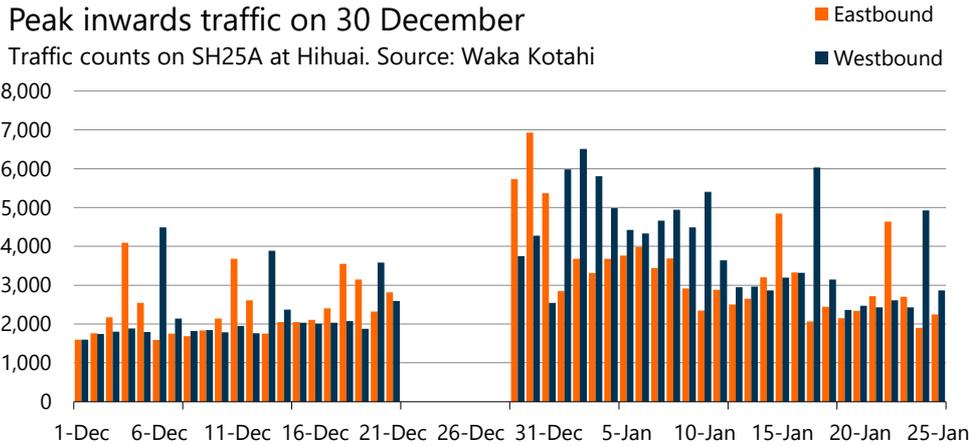
Limited data was available to compare traffic volumes between summers. Waka Kotahi NZ Transport Agency (Waka Kotahi) continually monitors traffic on SH25A near Hikuai, however this site experienced data issues this summer. TCDC records traffic counts for transport planning purposes, but their typically mobile traffic counters are rarely recording in the same location year-to-year to enable a measure of the peak population.

TCDC has a permanent traffic count recorder on the road to Hot Water Beach, which does enable measurement of the summer peak there. Average daily traffic flows into Hot Water Beach were down 3.6% in the 2020/21 summer compared to 2019/20. Peak daily flows were down 18.0%. These trends indicate a flatter peak period in the 2020/21 summer than previously.

Traffic data from Waka Kotahi for the 2020/21 summer featured missing data over the week ending 28 December, which misses some of the inward flow associated with Christmas and the New Year's period. Based on the available data for SH25A, the peak day for traffic into the Thames-Coromandel's East Coast (Eastbound) was the 30th of December, with 6,928 vehicles. The peak day for vehicles leaving (Westbound) was the 2nd of January, with 6,505 vehicles. Westbound traffic remained elevated until the 10th of

January, indicating that visitor arrivals are concentrated ahead of NYE, but departures are staggered over a longer period of time (see Graph 6).

Graph 6



Cell phone population

TCDC provided cell phone data supplied from Data Ventures to indicate the peak population. The Data Ventures data is based on the number of cell phones connected to the Spark and Vodafone networks, with an adjustment made for connections on other networks. It is important to note that this peak population is for the Coromandel Regional Tourism Organisation (RTO) which includes both Thames-Coromandel and Hauraki Districts.

The cell phone population data differs conceptually from the Stats NZ-based resident population estimates in several ways. Stats NZ resident population estimates include all persons who have a permanent residence in the area. However, at any given time, some residents will be out of the area, for example, travelling for work or leisure. The cell phone population estimates only count residents who are in the area on a given night, as well as any visitors present.

Infometrics estimates of the resident population, based on Stats NZ data, indicate a resident population of 52,500 in 2019. Cell phone data for 1-4 December 2020 (i.e. prior to peak population) indicates there were 47,500 residents present in the area, and a further 10,800 visitors. Cell phone data is used as the basis for estimating the peak population, as it represents the number of people in the district using local resources at a given point in time.

Cell phone data indicates that the peak population was reached on the 1st of January 2021 with 116,300 people, 2.02 times larger than at the start of December 2020. As this estimate is based on the population present at 3am on the 1st of January 2021, this effectively means that the peak is reached on the night of the 31st of December – NYE.

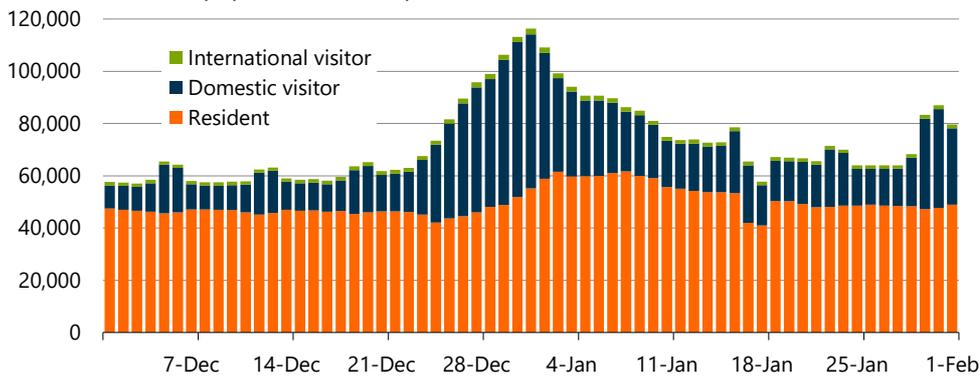
Consistent with the traffic counts, the peak population grows strongly between Christmas Eve and NYE, but slowly dissipates thereafter, with population in late-January elevated compared to early December.

Data Ventures defines cell phones as being local if they have been present in an area at 3am (overnight) continuously for two weeks. This definition means that a person’s holiday in the District for longer periods (typically holiday house owners) start to be counted as residents in this data after two weeks. This trend can be observed in Graph 7 where the number of residents rises steadily by around 10,000 between Christmas and NYE, reflective of visitors who arrived in the weeks leading into Christmas. This data artefact does not skew the total population figures as both residents and visitors count towards the peak population.

Graph 7

Population peak of 2.02 times start of December 2020

Coromandel RTO pop. based on cell phone data. Source: Data Ventures



Weather

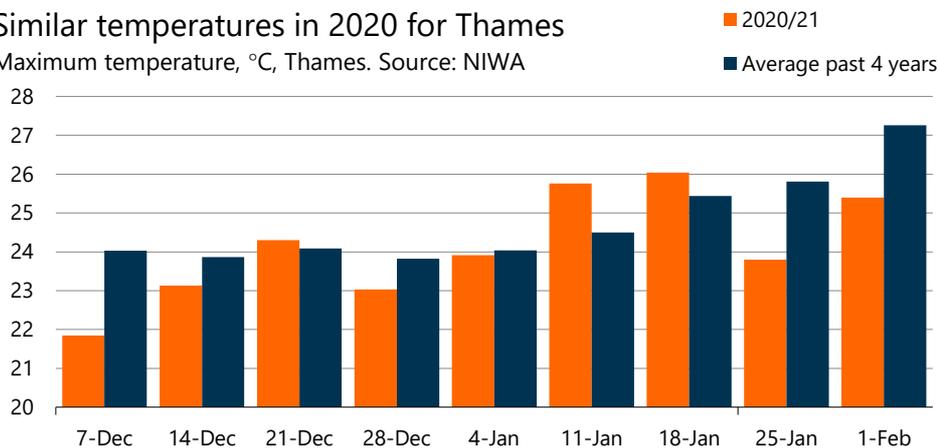
Thames

The weather in Thames over the 2020/21 summer was broadly comparable to previous years. The maximum temperature in the weeks of Christmas and NYE were close to the average of the 2016-2019 summers (see Graph 8).

Graph 8

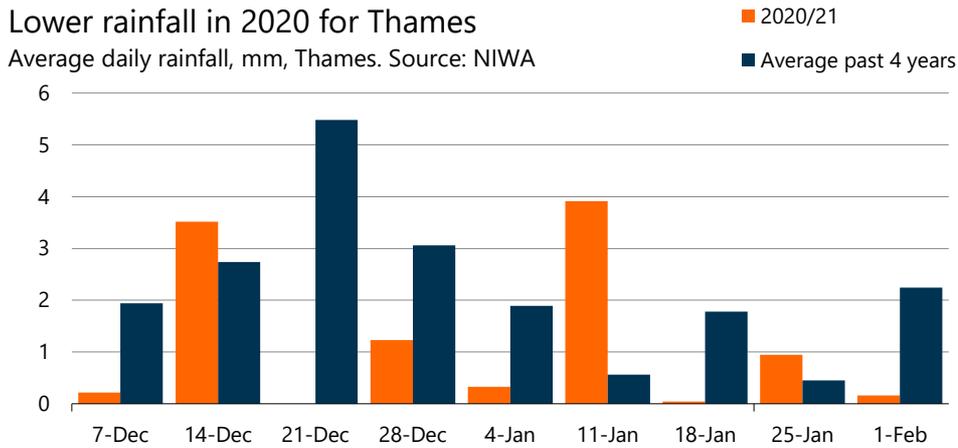
Similar temperatures in 2020 for Thames

Maximum temperature, °C, Thames. Source: NIWA



Average daily rainfall was notably lower over Christmas and the New Year’s period than the average of the past four years (see Graph 9).

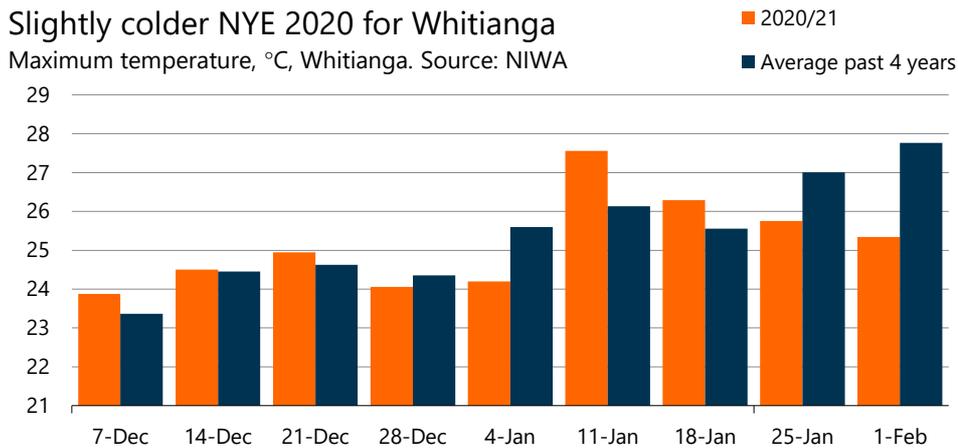
Graph 9



Whitianga

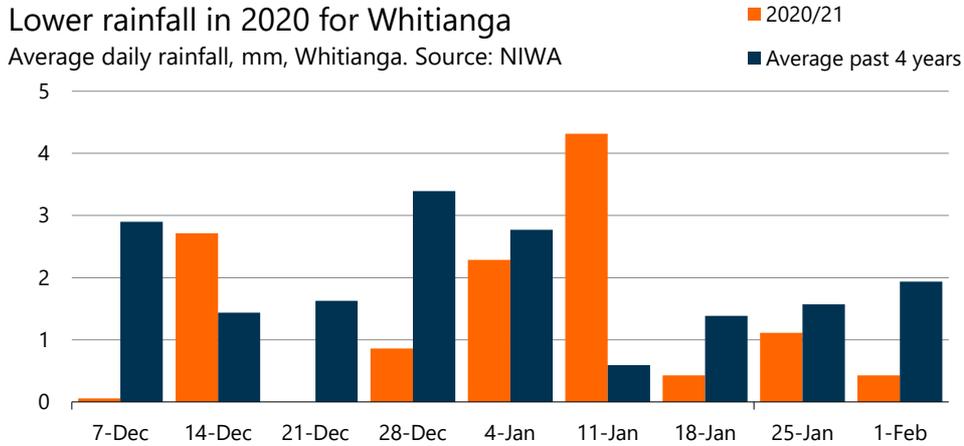
The weather in Whitianga over the 2020/21 summer was broadly comparable to previous years. The maximum temperature in the week of Christmas was close to the 2016–2019 summer average. The maximum temperature over NYE was slightly colder than previous New Year’s, but still a relatively warm 24°C (see Graph 10).

Graph 10



Average daily rainfall was notably lower over Christmas and NYE than the average of the past four years (see Graph 11).

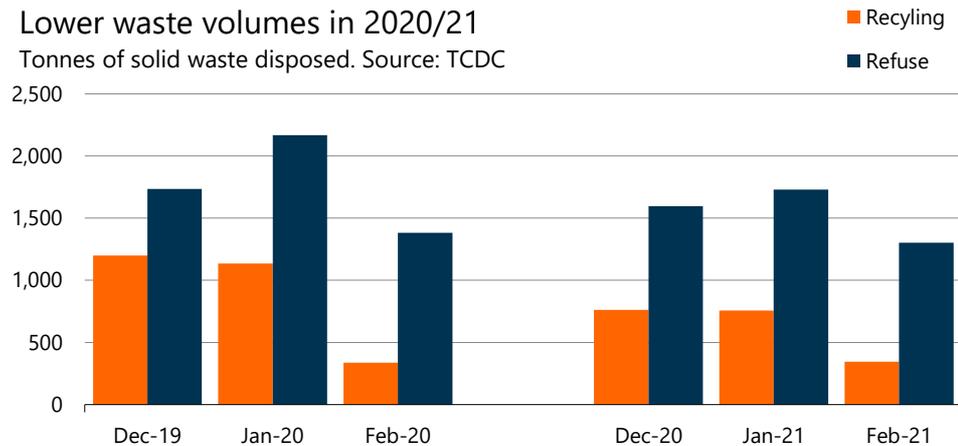
Graph 11



Solid waste

Solid waste volumes, including refuse and recycling, were 18% lower over the 2020/21 summer than for 2019/20. Over December 2020 to February 2021, 6,492 tonnes were collected across through kerbside collections and at transfer stations. Over December 2019 to February 2020, this figure was 7,957 tonnes.

Graph 12



The waste diversion rate – the percentage of solid waste collected as recycling – eased from 34% in 2019/20 summer to 29% in 2020/21.

Outlook for peak population

International spending

International visitors contributed 29% of tourist spending in Thames-Coromandel pre-pandemic (year to December 2019). This lower spending share means that as international tourists return to New Zealand, the impact on Thames-Coromandel and its peak population will be gradual.

Border reopening will take time

Although the trans-Tasman bubble has now been given the go-ahead, a Pacific bubble is still not underway. Importantly, given recent outbreaks of new COVID-19 variants there are concerns that the global vaccine rollout may be too slow to stop COVID-19 spreading if a variant unaffected by the vaccine emerges. New Zealand's vaccine rollout to the public, starting in July 2021, means there are risk that a fuller border re-opening occurs later than the current expectation of early 2022.

Foreign tourism faces headwinds in its recovery

Rebuilding our tourism industry from a standing start will take many years, as international travel will face a number of headwinds post-pandemic. These headwinds are particularly strong against long-haul international travel, so the relatively close Australian market will be critical for the initial stages of the tourism recovery.

These headwinds include:

- **Weak economic conditions globally.** Despite the impressive performance of New Zealand's economy in 2020, consensus forecasts indicate the global economy will undergo an extended recession. This recession will be associated with lower household incomes, denting demand for luxuries such as long-haul international travel to New Zealand
- **Aviation capacity.** In the face of a near-overnight slump in demand, airlines have restructured around the world. Recovering aviation capacity to pre-pandemic levels will take an extended period of time as aircraft have been scrapped or mothballed. Routes have been rationalised and it will take some time for markets to be developed again for routes to be re-established. Airlines will be looking to establish bi-directional demand to ensure the profitability of re-established routes. New Zealand's tourism sector benefited from an array of direct routes to Asia, North America, and South America over the past decade. These routes are unlikely to be reinstated swiftly until travel demand starts to approach pre-pandemic levels.
- **Higher cost of travel.** The cost of air travel is likely to increase as the aviation sector spreads its fixed costs across a smaller number of passengers. Potential health screening requirements will add further costs to international travel. Altogether, a higher cost of travel means fewer people can afford to travel.
- **Reluctance to travel.** Travelling during the outbreak of COVID-19 was a traumatic experience for many, with travellers stranded or nearly stranded on the other side of the world. Many travellers faced a loss of travel insurance cover

and struggled to obtain refunds. These memories will linger for several years and induce a reluctance to travel internationally, particularly long-haul.

- **Precarious social license.** International tourism was starting to push the bounds of its social license in New Zealand pre-pandemic, with increasingly frequent complaints of over-tourism adversely affecting the environment and locals. Although we are unlikely to be picky about tourists once the borders reopen, a complete rebuild of our tourism sector is an opportunity to act strategically about the volume-versus-value paradigm. Because of this consideration, we expect it will take the best part of a decade to return to pre-pandemic visitor levels.

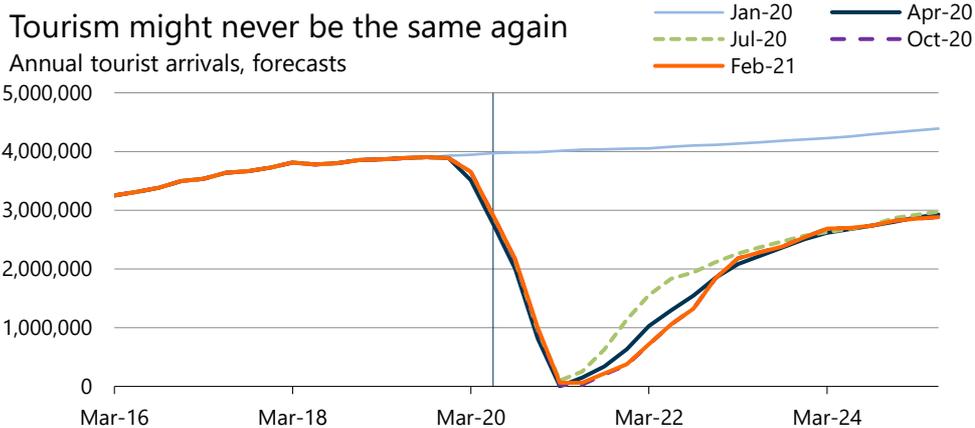
Australia will lead our tourism recovery...

There has been much discussion about a trans-Tasman or Pacific bubble, but the amount of political and media vacillation on the topic makes it difficult to predict the near-term tourism recovery with any confidence. Nonetheless, we expect to see stronger growth in visitor arrivals from Australia than the rest of the world in the initial stages of the tourism sector recovery. Visitor arrivals from Australia won't face the same headwinds post-pandemic as our other long-haul markets will.

By the end of 2022, we would expect to see visitor arrivals from Australia back to 60% of pre-COVID (2019) levels, while visitor arrivals from other countries will lag with 50% recovery. By 2025, arrivals from Australia are expected to be at 75% of their pre-COVID levels, while arrivals from all other countries will have recovered to 60%.

Overall recovery in tourist arrivals to New Zealand is still expected to be slow to fully recover (see Graph 13).

Graph 13



In the latter half of the 2020s, lingering health concerns around COVID-19 and hesitancy around travel is likely to fade. Growth in less mature tourism markets for New Zealand is likely to pick up and takeover growth in the mature Australian market. By 2030, we expect visitor arrivals from Australia and the rest of the world to overtake pre-COVID levels to reach 110% recovery.

The expected extended recovery from COVID-19 presents a significant challenge for the tourism sector, as it means that previous operating structures designed for 2019 visitor numbers will be largely irrelevant for the next decade – operators will need to cut their

cloth accordingly to suit smaller visitor numbers and continue to adapt as arrivals recover.

Similar population peak in 2021/22

The peak population in 2021/22 is likely to be similar in size and composition to 2020/21. A travel bubble with Australia has now been announced, By the end of 2021, we are likely to have travel bubble with Australia, meaning that a small number of Australians may contribute to the Coromandel peak population. Australians were small contributors to Coromandel's tourism spending pre-COVID, so are unlikely to have a large effect on their own. However, the bubble will also allow New Zealanders to easily travel to Australia for NYE celebrations. This alternative may slightly reduce the number of New Zealanders travelling into the Coromandel for NYE.

Appendix

Base population

The base population and number of dwellings is based on Infometrics report *Population projections 2018-2051 for Thames Coromandel District Council* which is built up from Stats NZ Census data and annual population estimates.

Tourist spending

Monthly tourism spending trends were based on Tourism Electronic Card Transactions (TECTs) sourced from MBIE, which are based on transactions on the Paymark network. Annual tourism spending was based on Monthly Regional Tourist Estimates, which also come from MBIE and are based on Paymark transactions.

Water supply, wastewater, and solid waste

Water supply, wastewater and solid waste data was provided by TCDC.

Traffic

State Highway traffic data was sourced from Waka Kotahi, based on automatic traffic counters on SH25A near Hikuai. Traffic counts on Hot Water Beach Road was sourced from TCDC.

Accommodation occupancy

Occupancy at DOC campsites was sourced from DOC via TCDC. Occupancy at commercial accommodation was based on Fresh Info's Accommodation Data Programme (ADP), which is a survey of commercial accommodation providers.

Cell phone population

Cell phone population data was sourced from Data Ventures, via Tourism NZ and TCDC. This data is for the Coromandel RTO area, which covers both Thames-Coromandel and Hauraki Districts.

1.3% of cell phones couldn't be attributed to resident, domestic tourist or international tourist categories. These were redistributed across the three categories relative to the size of each category.

Residents are defined as connections which have been present in a given area at 3am for a continuous period of two weeks. International is defined based on international roaming SIM cards.

Weather

Weather data was sourced from NIWA's Cliflo tool, based on recording from weather stations in Thames and Whitianga.