

# Informing UFTI:

## A summary of economic information for the Western Bay of Plenty sub-region

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# Executive Summary

*This report summarises the economic information currently available about the western Bay of Plenty sub-regional economy. Its purpose is to assist in informing the Urban Form and Transport Initiative (UFTI), which considers the urban forms and transport needs of the sub-region over the next 50 years. The economic areas of interest identified by the UFTI Team have guided the content of this report. The report draws solely on existing information, and:*

- (i) Summarises key economic information.*
- (ii) Comments on the currency and reliability of the information.*
- (iii) Suggests where and how information could be updated or improved.*

*The economy and employment in the sub-region has been extensively studied. Research has been undertaken to investigate where the sub-region could better utilise resources to improve economic, employment and social outcomes for its people and in particular for Māori.*

*There is good quality data available about the structure and trends of the sub-regional economy and labour market. The data can be broken down to 54 sectors, enabling useful analysis. The data shows the economy to be reasonably diverse and to have been growing strongly in recent years. The largest broad sectors are manufacturing, rental, hiring and real estate services, construction, and health care/social assistance.*

*Some sectors have a comparative advantage in the sub-region due to natural endowments such as climate, geology and a safe and accessible harbour. Examples include horticulture, tourism and Port of Tauranga. The development of these sectors and the associated support sectors over time has further increased their comparative advantage.*

*Over the past eight years, population growth has a big influence on the economy – driving GDP growth, particularly in construction, real estate services, wholesale trade and retail trade. Future reductions in the rate of population growth could be expected to reduce economic activity in these sectors. Some economic sectors which have grown over the past eight years are likely to be less affected by reductions in population growth. These include manufacturing, health care and social assistance, agriculture, forestry and fishing.*

*The shape of population growth in terms of age group has implications for the economy. For example, the health care services to older people form an important sector in the economy. Good access to services (e.g. retail, health) is and will, continue to be important for this demographic.*

*Many jobs in the sub-region tend to be poorly paid relative to other areas, partly because they are low skilled jobs. These include jobs in retail, agriculture and in health care/social assistance.*

*Access to affordable housing and transport is important. Housing affordability is an issue in the sub-region, both in terms of buying and renting. This is likely to exacerbate financial issues experienced by people in low paid work.*

*Planning for growth relies on reasonably accurate population projections. Updated population projections based on the 2018 New Zealand Census of Populations and Dwellings (census) will help to inform assessments of future economic activities. These projections should be of assistance to UFTI in terms of employment and location of employment.*

*The 2017 (Market Economics) analysis by of employment projections to inform traffic modelling is out-of-date due to inaccurate population projections. The project was well designed, but the faster than anticipated population growth has brought forward industrial development of locations relative to the expected timeframes.*

*Means of travel to work is a question in the census. The most recently available information is from 2013. This is outdated, particularly given the large changes in population in the sub-region since that time. Data from the 2018 census will enable this information to be updated. The census question does not address travel to school by school age and tertiary students; however, anecdotal evidence suggests that this group are significant road users.*

*Traffic delays represent a cost to the sub-region for businesses and for individuals. The added costs of traffic delay to individuals could be estimated based on travel to work data from the 2018 census.*

*The following opportunities have been identified to gather additional information to assist the UFTI project:*

- Market Economics (2017) undertook a project designed to inform transport modelling based on employment projections by sector and location. This report should be reviewed using up-to-date population projections and planning information. Some checking of the expectations regarding industry growth may also be required. It may be useful to map the findings of the reviewed report, which in its original form, provided quantitative information of where employment growth could be expected to occur by area unit.*
- Market Economics (2019) have modelled projections of occupational sectors, based on updated population data. The model results are yet to be analysed and reported. They could potentially be used to cross-reference to residential and industry growth areas to help inform future traffic flows.*
- Statistics New Zealand (Stats NZ) has released population counts from the 2018 Census which confirms very high population growth in the western Bay of Plenty. Updated population projections based on the new population counts will assist in informing UFTI about future travel needs.*
- Traffic delay on the key transport corridors is a growing issue. The census includes a question about means of travel to work. The results currently available are based on the 2013 census, and are out-of-date – particularly given recent population growth. While travel to work data has not yet been released by Stats NZ, the 2018 Census population counts could be used alongside assumptions about travel patterns to inform UFTI.*
- The existing data on the sub-regional economy and employment could be further interrogated to provide more insight into specific areas of interest to UFTI.*



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## Introduction

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- Summarises key economic information.
- Comments on the currency and reliability of the information.
- Suggests where and how information could be updated or improved.

The geographic focus is the western Bay of Plenty sub-region (the sub-region), comprising the Tauranga city and the Western Bay of Plenty district. Where the document refers to the Bay of Plenty region, the information is about the wider region within the Bay of Plenty Regional Council boundaries, rather than the sub-region.

Table 1 provides the economic areas of interest identified and brief comments about availability of information.

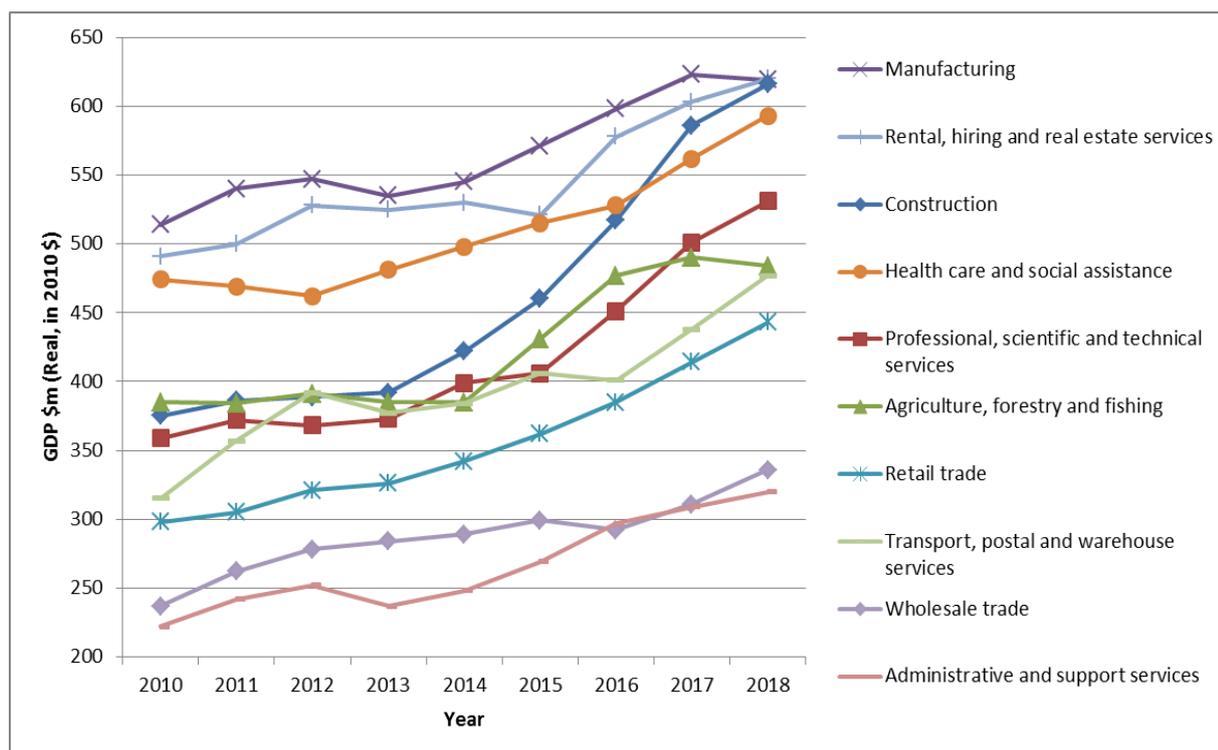
*Table 1 Economic areas of interest and available information*

<b>Topic</b>	<b>Available information</b>
Diversity of the economy and main sectors.	<i>Reliable and current data and information.</i>
Future wage and income growth per economic sector.	<i>Some information about the future of sectors.</i>
Dependency of the economy on specific sectors, e.g. construction (housing growth), tourism, agriculture and the Port of Tauranga.	<i>Good information about the current and past situation in these sectors.</i>
Future job growth and location of job growth.	<i>The 2017 study of employment location and sector growth. Differences in actual and projected population data mean the findings of the analysis differ from the reality. A model completed in 2019 is likely to be useful.</i>
Importance of transport access to key destinations.	<i>Information about commuter traffic is dated (2013). General information about requirements of the Port of Tauranga available.</i>
Future opportunities and what is necessary to achieve them in each sector.	<i>Qualitative information available at a sector level specific to the Bay of Plenty economy.</i>
Current constraints and missed opportunities per sector.	<i>Information on future opportunities provides some information.</i>
Significance of key economic flows into and through the region (tourism, labour/commuters, healthcare, education, etc.).	<i>Census information on commuter traffic is dated (2013). No specific information about access to healthcare and education, or tourism traffic.</i>

## Size and diversity of the sub-regional economy

The Bay of Plenty's central North Island location, close to Auckland and Hamilton/Waikato, is seen as a major strategic advantage to the region<sup>1</sup>. In 2018 the Gross Domestic Product (GDP) for the sub-regional economy was <sup>2010</sup>\$7,257m, or 3% of New Zealand GDP.<sup>2</sup> In recent years the sub-regional economy has grown faster than the national economy, with 4.1% growth in the 2018 year, compared to 3.2% nationally.

In 2018 the largest sectors<sup>3</sup> in the sub-regional economy were manufacturing (8.5%), rental, hiring and real estate services (8.5%), construction (8.5%), and health care and social assistance (8.2%) (Figure 1). These sectors have been the top four sectors for the past 10 years, although the growth of individual sectors has varied.



Source: Infometrics Economic Profile

Figure 1 Size and trends of larger sectors in the sub-region (ANZSIC Level 1)

While manufacturing has increased over the 2010-2018 period, its growth has been fairly muted – about 20%. By contrast, the professional, scientific and technical services sector grew by about 50%. The changes in these sectors mirror changes seen in large cities overseas and in New Zealand (although Tauranga is a medium sized city) (NZPC, 2019a). A general fall in manufacturing in large cities reflects the fact that this sector benefits less from being located in cities. Conversely, the professional services sector achieves greater ‘agglomeration benefits’ from location in big cities (NZPC, 2019a).

<sup>1</sup> MPI 2015

<sup>2</sup> Unless stated otherwise, quantitative information about the sub-regional economy was sourced from Infometrics Tauranga-Western Bay Sub-Regional Economic Profiles.

<sup>3</sup> By ANZSIC Level 1 categories. These groupings can be broken down further; for example, the classification construction is made up of construction services (residential and non-residential, heavy and civil engineering construction and building construction (land development and site preparation services, building structure services, building installation services, building completion services and other construction services).

The Tauranga City and Western Bay district economies differ by size and composition. The Tauranga economy makes up 77% of the sub-regional economy and its largest sectors are health care and social assistance (9.4%) and construction (8.9%). In the Western Bay district agriculture, forestry and fishing is the largest sector (19.6%), mostly due to horticulture contribution (5.2%), followed by renting, hiring and real estate services (9.8%).

The sub-regional economy grew by 35% from 2010-2018. This was led by the construction sector (averaging 6.4% per year), transport, postal and warehouse services<sup>4</sup> (5.3% per year), professional, scientific and technical services (5% per year), and retail (5.1% per year).

Manufacturing has been the largest sector of the sub-regional economy for years, and was first-equal in 2018 (Figure 1). Eighteen sub-sectors make up the manufacturing sector, contributing a diverse range of products, and each around 1% or less of regional GDP. The largest contributors are fruit, cereal and other food, and machinery and other equipment. The smallest is dairy product manufacture. In 2015, MPI (Ministry of Primary Industries) noted that the main constraint to growing the manufacturing sector was lack of scale and critical mass. The Ministry of Primary Industries' (MPI's) observation is likely to relate to the fragmented nature of the sector because although sizable in total, the manufacturing sector comprises a large number of very different activities that are each small at the sub-regional level.

Construction has grown very strongly since 2013, and is discussed in relation to housing growth later in this report.

Healthcare and social assistance is a high growth sector in the sub-region. From 2013-2018 the sub-regional population increased by nearly 14% (22,700 people)<sup>5</sup>. Of these, about one-third (36%) were aged 65 years or older. In an area already known for its aged population, the percentage of the population aged over 65 years increased from 19% to 21% in that five year period. The healthcare and social assistance sector includes hospitals, medical services, pathology and diagnostic imaging, and residential care services. The high population growth and the increase in the aged population are strong drivers for this sector.

In 2018, agriculture, forestry and fishing accounted for 6.7% of sub-regional GDP (Figure 1). Horticulture is the biggest single sector under that classification, accounting for 21% of the sector income, followed by dairy cattle farming (16%). Forestry and logging, sheep and beef farming and fishing are also part of the sector, but relatively small in the sub-regional economy. The agricultural sector was flat from 2010-2014, but experienced strong growth from 2015 to 2017.

The strong growth seen in the agricultural, fishing and forestry sector is driven mostly by agricultural support services, which increased by 65% from 2010 to 2018. A significant amount of that growth was in 2015 and 2016. Agricultural support services provide rural contracting services, and the contribution of this sector is fairly evenly divided between Tauranga City and the Western Bay district. The increase in agricultural support services corresponds with the period when kiwifruit growers were dealing with the Psa issue (*Pseudomonas syringae* *pv.* *Actinidiae*), so may be associated with it. The economic contribution of horticulture and fruit growing increased by 10% from 2010-2018 or about 1.2% per year. Substantial reductions in production in 2014 and 2015 reduced the economic contribution of the sector.

The New Zealand kiwifruit sector is forecasting strong growth. A Waikato University report commissioned by Zespri in 2017, estimated the contribution of kiwifruit to the Bay's GDP would increase by 135% to \$2.04 billion by 2030 and employment would grow from 10,700 full-time equivalent (FTE) jobs to 25,000 FTE jobs. This forecast included an assessment of flow-on effects of production, such as services provided by road transport and agricultural contractors.

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<sup>4</sup> Transport postal and warehousing includes the Port of Tauranga.

<sup>5</sup> Stats NZ have released population figures for the sub-region, but at the time of writing the figures in this report for age groups are still based on Stats NZ estimates.

Development of Māori land is seen as an important step to achieving the potential of horticulture in the wider Bay of Plenty region.<sup>6</sup>

From 2010 to 2018 the economic contribution of the poultry, deer and other livestock sector increased by 73%, albeit from a low base (0.2% of GDP in 2018). Nevertheless it is a fast growing sub-sector, managing 7.1% year-on-year growth.

The contribution of some sectors to sub-regional GDP has decreased in the 2010-2018 period. Most notable is mining, which was the smallest single sector in 2010, and declined by 64% (0.5% of the sub-regional economy in 2010, to 0.1% in 2018).

Some sectors make a small but vital contribution to the sub-regional economy. One such is electricity and gas supply, at 0.8% of the sub-regional economy. However, energy supply is an essential input into most other sectors; the assessment provided here is based on direct contributions, and doesn't account for the indirect contribution of sectors.

Tourism is a significant contributor to the sub-regional economy, at 6.4% (<sup>2010</sup>\$466m) in 2018, up from 5.7% (<sup>2010</sup>\$306.1m) in 2010. The tourism sector is made up of a range of other sectors, and is not defined by its goods and services (as are other sectors), but by the particular group of consumers (tourists) who purchase its output. For this reason tourism is not represented as a stand-alone sector in Figure 1.

The contribution of tourism to the economy is an aggregate of parts of output from other sectors such as accommodation, food and beverage services and retail. In 2018 the accommodation and food services sector contributed about 2.2% to the sub-regional economy, but was a standout in the relatively smaller sectors, growing 5% per annum on average from 2010 to 2018. The growth in the retail sector can be partly attributed to an increase in tourism spending in the sub-region<sup>7</sup>.

Some sectors have a comparative advantage in the sub-region, reflecting the degree of specialisation of a given sector, relative to the national situation. A comparative advantage comes about through various means, including an area's natural endowments (e.g. climate), location (e.g. near a busy port), and the skill profile of a region. Sectors in the sub-region with comparative advantage include horticulture (e.g. kiwifruit and avocado growing) and associated sectors such as agricultural support services (e.g. packaging services), fruit and vegetable wholesaling and beekeeping (a subset of Other Farming), and activities associated with the Port of Tauranga, such as postal courier and warehousing services (e.g. stevedoring services), and manufacturing (e.g. basic inorganic chemical manufacturing)<sup>8</sup> (Patterson et al. 2017). Comparative advantage tends to lead to clustering of like or supporting businesses, yielding additional benefits based on proximity.

Sectors with less specialisation in the sub-region relative to New Zealand as a whole, include forestry and logging, dairy cattle farming, pulp and paper manufacturing.

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<sup>6</sup> Bay of Connections 2016

<sup>7</sup> Patterson et al., 2017

<sup>8</sup> Ibid.

## Population growth

The western Bay of Plenty sub-region is an attractive place to live. Its benefits include the good climate, access to beaches, attractive scenery, and proximity to larger centres.<sup>9</sup> From 2013-2018 the sub-regional population increased by nearly 14% (Table 2), with most of that growth in the Tauranga area.<sup>10</sup> The population growth is responsible for some of the region's economic growth, driving construction, real estate services and wholesale trade.

*Table 2 Population growth from 2013 to 2018 (Stats NZ: Usually resident popn)*

	2013	2018	% change
<b>Tauranga City</b>	119,800	136,713	+14.1%
<b>Western Bay District</b>	45,500	51,321	+12.8%
<b>Sub-region</b>	165,300	188,034	+13.8%

In spite of high population growth, the age composition of the sub-region has remained similar (Table 3). The sub-regional population differs from the national population in having a lower proportion of 15-39 year olds (34% nationally) and a higher proportion of people aged 65+ years (15% nationally).

The age composition of the population influences the growth of economic sectors. For example, a large older population increases the healthcare and social assistance sector<sup>11</sup>, while a relatively smaller proportion of prime working age people may lead to labour shortages.

*Table 3 Population growth from 2013 to 2018, by age group (Stats NZ estimates)*

	2013	% of population (2013)	2018 (est.)	% of population (2018)
<b>Total</b>	165,300		188,034	
<b>0-14</b>	33,800	20%	37,607	20%
<b>15-39</b>	45,100	27%	50,769	27%
<b>40-64</b>	54,900	33%	60,171	32%
<b>65+</b>	31,400	19%	39,487	21%
<b>85+ (subset of 65+)</b>	3,940	2%	5,641	3%

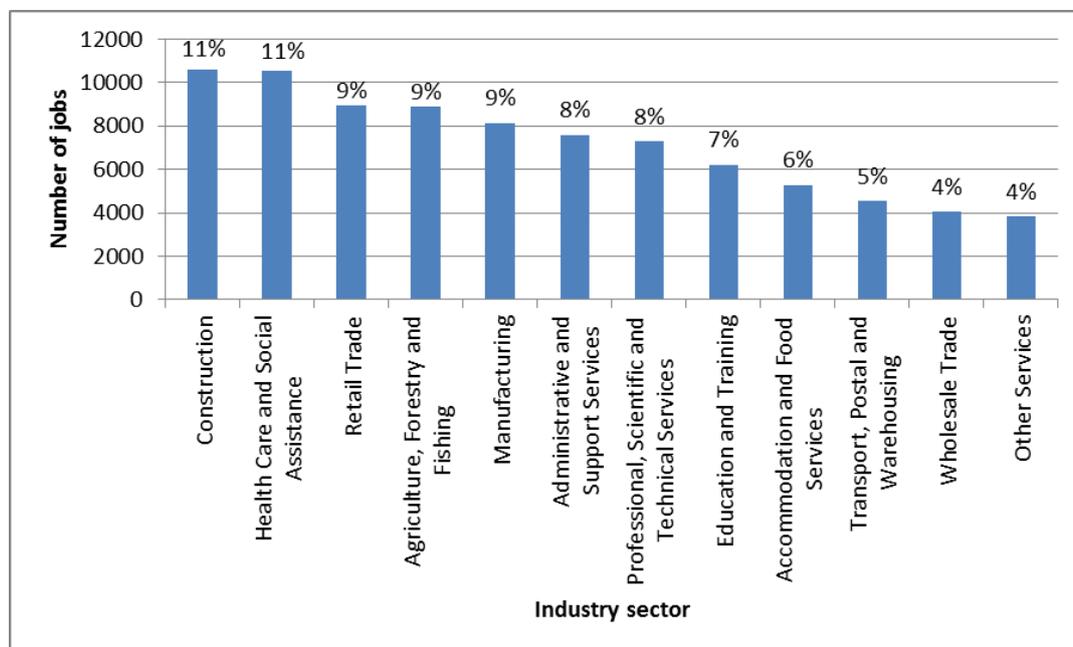
<sup>9</sup> The NZPC (2019a) records the importance of 'consumption amenities', such as good climate and attractive scenery, for population and employment increases in medium-sized urban areas – 'they are nicer places to live'. Tauranga is described as a medium-sized urban area, along with Hamilton, Rotorua, New Plymouth, Dunedin and others.

<sup>10</sup> 2018 Census population and dwelling counts, by territorial authority.

<sup>11</sup> Ibid.

## Employment

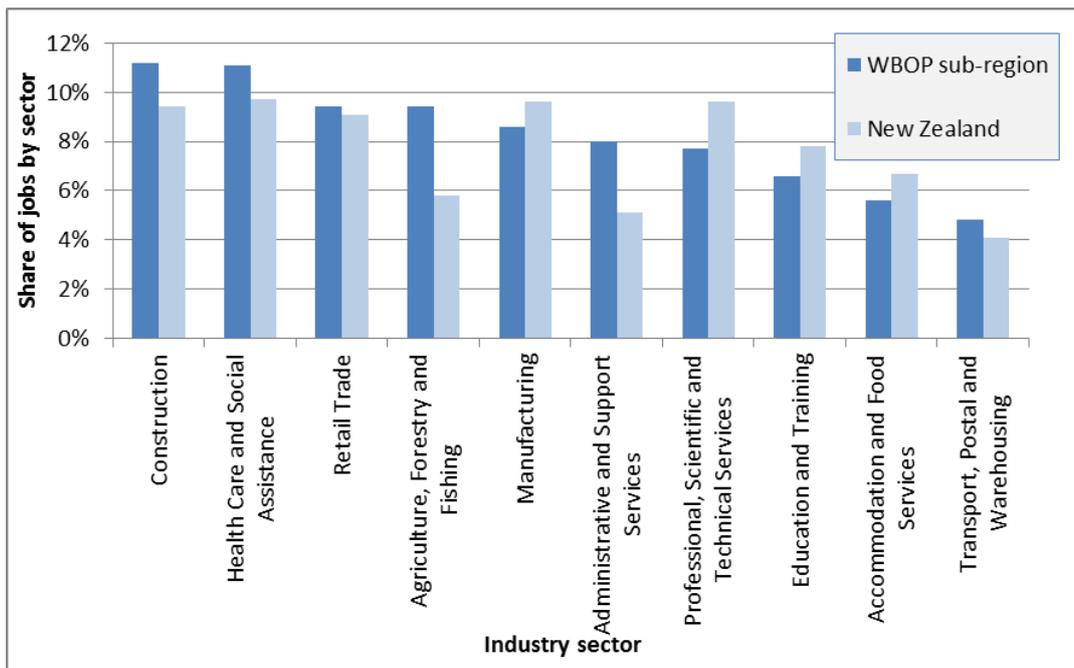
The top sectors in 2018 in terms of employment were construction and healthcare and social assistance, each providing 11% (about 10,500 each) of the jobs in the sub-region (Figure 2). Other large employment sectors included retail trade, agriculture and manufacturing. Construction became the biggest employer in 2018, rising from fifth position in 2010.



Source: Infometrics Economic Profile

Figure 2 Jobs in the sub-region, but industry sector (ANZSIC 1)

Employment in the construction sector is large relative to New Zealand as a whole, providing 11.2% of jobs in the sub-region, compared to 9.4% nationally (Figure 3). Other larger employment sectors are health care and social services (in part due to the large retired demographic), agriculture, forestry and fishing (due to the horticultural sector and services to that sector), transport, postal and warehousing (due in part to Port of Tauranga) and administrative and support services. The sub-region has fewer jobs in manufacturing, professional, scientific and technical services, educational and training services, and accommodation and food services relative to the national situation.



Source: Infometrics Economic Profile

Figure 3 Jobs in the sub-region and nationally, by percentage (ANSIC Level 1)

Potential opportunities for economic development and investment in the Bay of Plenty region include agriculture, horticulture, tourism, specialised manufacturing, and geothermal energy (MPI, 2015). Growing the education and skills of the workforce is essential to achieving the economic potential of the region.

Market Economics recently (2019) completed a model for occupation projections for by sector, based on 48 sectors and the priority sectors for the sub-region. This model was developed for Priority One. This model includes refined occupation data (358 occupation types), and looks forward 20 years in five yearly terms. It is an extension of work done by Market Economics in 2017 (described later in this report). The 2019 model splits the geographic areas by Tauranga City, the Western Bay of Plenty District, and the sub-region. The projections are based on updated population and employment projections by Stats NZ. Modelling analysis will be underway later this year. The types of questions this modelling could address would be around the types of skills required for the future, enabling strategic planning for skill development. The projections could also be used to cross reference the occupational sectors geographically to residential and industry growth areas to get a better understanding of future traffic flows.

## Salaries and wages

Households are on average slightly less well-off relative to New Zealand, and to their Hamilton neighbours (Table 4). The median household income is the level at which half households earn above and half below, so is a good indication of relative economic wellbeing of households.

Table 4 Median household income to March 2018

	New Zealand	Tauranga	WB District	Hamilton
Median household income	\$89,100	\$87,500	\$87,300	\$94,100

Source: Ministry of Business Innovation & Employment

While demographics has some of the answers as to why household incomes are lower (e.g. a higher than average number of retirees), the structure of the sub-regional economy towards lower paying jobs and a tendency of firms to pay lower wages than in other regions also contribute<sup>12</sup>:

- The sector mix compared to the national sector mix
  - Low wage sectors are growing faster than high wage sectors
  - Lower share of jobs in knowledge services (although growing fast) and capital intensive sectors
- The wage gap in sectors compared to national wages
  - Lower wages in almost all sectors but especially in knowledge intensive sectors (although this is improving)
  - Lower skills and fewer professional people
  - Lower incidence of tertiary qualifications
  - A Bay of Plenty 'amenity discount'

The wage gap is more pronounced for Māori (on average).

Poor pay may be partly responsible for the shortage of workers in the sub-region. Reducing amenity such as by traffic delays (particularly on key corridors), expensive housing and a dearth of culture (e.g. lack of museum, stadium etc.) may further discourage the immigration of the workers needed to meet the expected ongoing demand<sup>13</sup>.

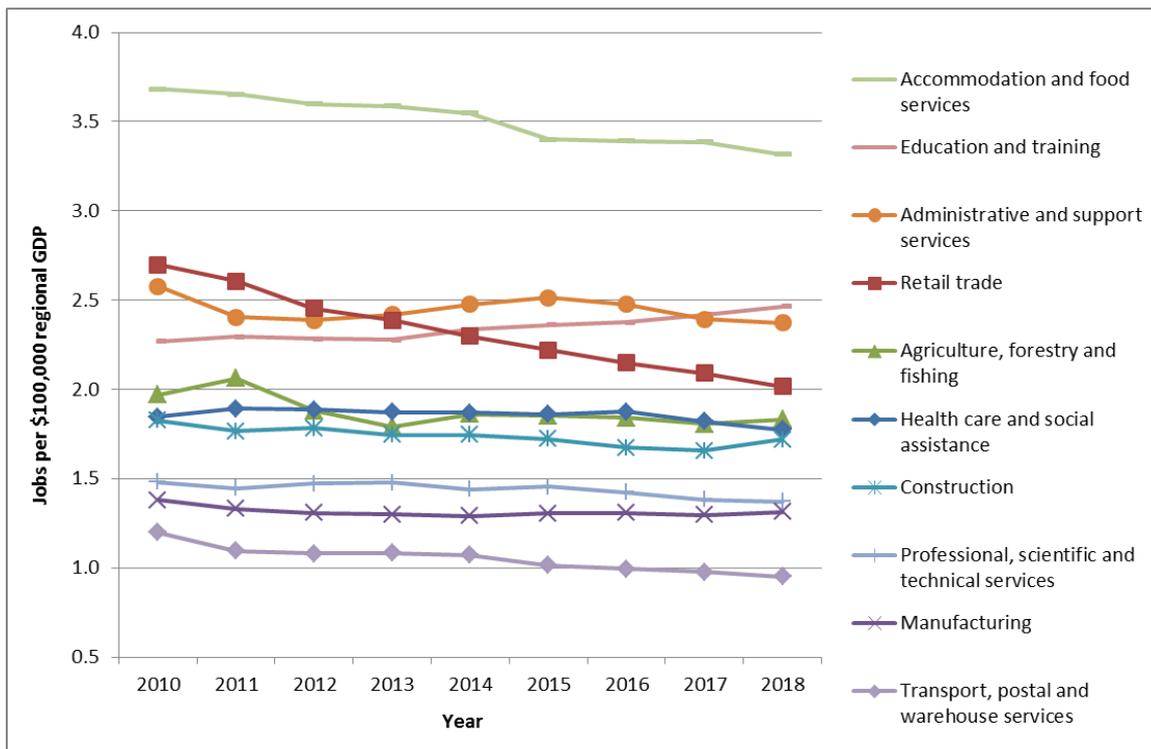
Different sectors employ at different rates relative to GDP (Figure 4). Service jobs, such as in accommodation and food services, administrative and support services, and retail tend to have relatively high number of employees. The extent to which jobs in the sub-region will grow will be influenced by the type of sectors that grow.

The sector rental, hiring and real estate services makes a particularly high contribution to regional GDP, but is one of the lowest employers, at about 0.41 jobs per \$100,000 of regional GDP over the 2010-2018 period. This job rate remains unchanged regardless of the GDP contribution.

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<sup>12</sup> Stakeholder Strategies, 2019

<sup>13</sup> Ibid.



Source: Infometrics Economic Profile

Figure 4 Job rate in the larger employment sectors for sub-region

A future economic slowdown is likely to see a reduction in jobs in construction and related sectors towards levels seen in earlier years (see for example Figure 1). Some sectors, such as health care and social assistance, are not solely driven by population growth. Aged care work is expected to grow by at least 50% (from 2,000 to 2,900 jobs<sup>14</sup>) in the period from 2014 to 2063<sup>15</sup>. It must be noted though that growth in any sector will be subject to the accuracy of underlying assumptions, such as population projections.

While horticultural production will not change as a result of an economic downturn, prices for produce may change, resulting in less income to growers and flow on economic impacts. There may be a greater number of local workers willing to take jobs currently filled by imported labour. Employment in horticulture is likely to be affected by automation in the future (although industry sources believe this is at least a decade away), and also likely to be affected by changes in land use that result in a contraction of land available to agriculture.

NZPC (2019a) records that the recovery of urban areas from negative shocks is a function of industry type, and the recovery path for some sectors will be more difficult than others. Manufacturing was explicitly investigated, and the authors observed that recovery tends to be more difficult for rural processing industries than other types of manufacturing industries. In terms of employment, where manufacturing is located in larger cities workers tend to be absorbed into other sectors. Conversely, where manufacturing is in smaller towns workers have fewer options which can lead to a long and difficult recovery.

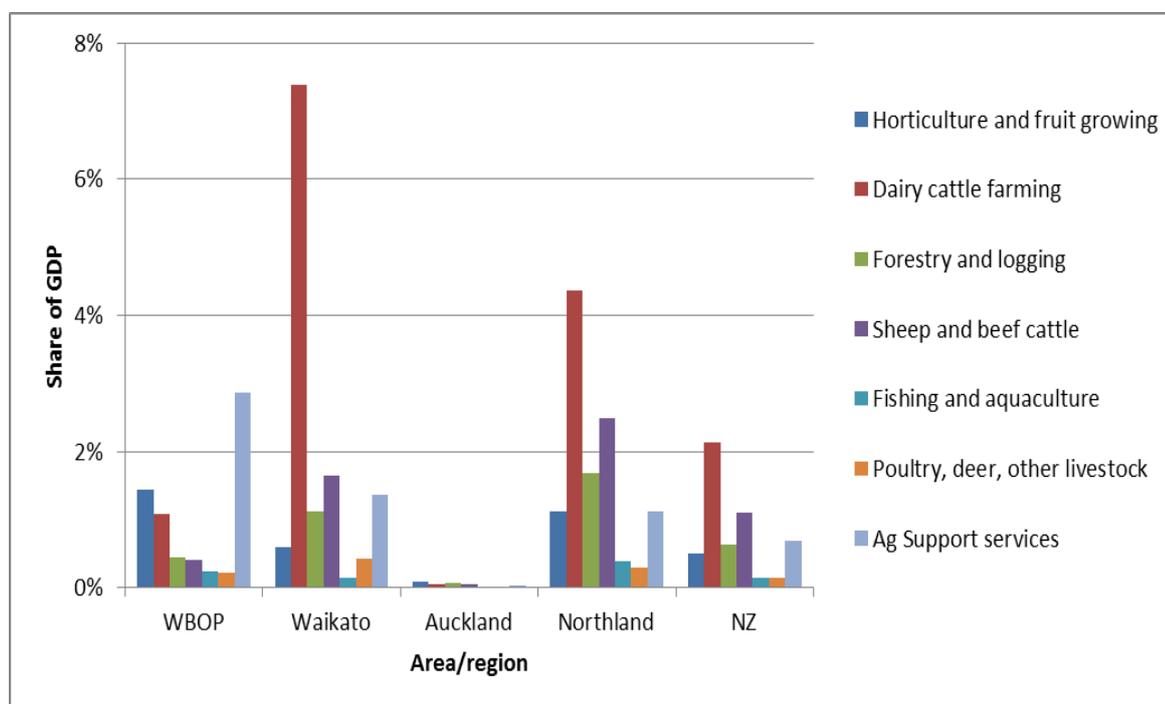
<sup>14</sup> This is likely to be an underestimate because population projections were lower than actual growth.

<sup>15</sup> Market Economics, 2017

The global financial crisis occurred in 2008, followed by a worldwide recession. New Zealand employment fell in 2008-09, rising again to reach pre-recession levels in 2011. While unemployment increases during recessions, changes occur that bring growth to other sectors and help to offset job reductions. In New Zealand, from 2008-2010, the number of students in the 15-24 year age group increased by 10%.<sup>16</sup> Nevertheless, large numbers of people can lose their jobs in a recession and can be out of work for substantial periods of time.

## Primary production

The pattern of agricultural activities in sub-regional GDP differs from neighbouring regions because of the relatively high importance of horticulture and support services. In most regions dairy farming is the dominant agricultural activity (Figure 5). Nearly 7% of the sub-regional GDP is based on the primary sector. The majority of the primary sector activities, including agricultural support services, occur in the Western Bay district (rather than Tauranga), with the exception of fishing, which is probably attributed to the Tauranga economy because the port is located in Tauranga, although the activity itself does not take place in Tauranga.



Source: Infometrics Economic Profile

*Figure 5 Primary sector industries' share of GDP (2018) in the sub-region and neighbouring regions*

Nearly half the sub-region's horticultural output (avocado, kiwifruit, mandarins and oranges) is consumed outside the region – either exported overseas or to other NZ regions<sup>17</sup>. The sector has a high dependence on the transport sector to carry fresh produce to the point of exit from New Zealand, and then to its final destination.

<sup>16</sup> Stats NZ (undated)

<sup>17</sup> Patterson et al., 2017

The horticulture sector relies on Central Government policy to enable a large quantity of cheap and willing labour to pick and pack the annual crop. It is estimated that 12,000-18,000<sup>18</sup> people are employed in the sub-region during the kiwifruit harvest season (Patterson et al. 2017), most of these on the Recognised Seasonal Employer (RSE) Programme or on working holiday visas. In 2018 the New Zealand kiwifruit industry produced 140m trays of kiwifruit, up 20m on the previous year. In spite of the imported labour, the kiwifruit sector had 1,200 job vacancies in 2018. Kiwifruit production is expected to increase to 190m trays in 2027, which will require a substantial increase in labour for picking, packing and associated jobs.

Fruit farming has a comparative advantage in the sub-region due to 'the very good conditions for growing kiwifruit, mandarins, oranges, avocado and a variety of other commercial horticultural crops'<sup>19</sup>. The comparative advantage is probably also due to the ability to import most of its labour, which is in turn assisted by proximity to Auckland (international airport) and the size and population of the region (availability of temporary housing).

The seasonal nature of horticultural work, low wages and casual contracts tends to make the sector unattractive to New Zealand workers. For visitors on RSE and working holiday visas, the wages and conditions may be less of an issue; however, the reputation of the sector has suffered due to poor working conditions. The sector competes in offering no, or low-skilled jobs to people on working holiday visas, and may have to meet the market to get its share of workers, particularly given the forecast increase in kiwifruit production. Compulsory registration and audit of employers through GLOBALG.A.P. (Good Agricultural Practices) should assist the sector in regaining its reputation.

Kiwifruit packing facilities tend to be in rural or semi-rural areas, and the absence of an appropriate public transport system in these areas means that pickers and packers rely on local accommodation and/or private vehicles to travel to their workplaces.

In the longer term, the sub-region is expected to move away from pastoral farming towards horticulture and associated activities such as beekeeping<sup>20</sup>. The anticipated growth in horticulture and related activities is consistent with opportunities identified (MPI, 2015). Available water for irrigation, markets for product, and refrigeration techniques for avocado are challenges to developing this sector (MPI, 2015). The ability to take advantage of the opportunities will also be subject to the availability of suitable land.

Horticulture is one of the key sectors identified in the Regional Growth Strategy (BOPRC, 2018). The strategy includes the establishment of PlantTech, described as a research and development organisation, specialising in scientific research to address challenges to the horticulture sector, such as environmental, productivity, climate change, biosecurity, and also labour market challenges<sup>21</sup>. The establishment of PlantTech is likely to increase productivity, and support further development of horticulture in the sub-region.

Climate changes expected in the Bay of Plenty region<sup>22</sup> include higher temperatures, more hot days, warmer autumns and winters, drier winters and wetter summers, more easterly winds in summer, and westerly winds in winter. Frosts are expected to become a rarity. Climate change will impact primary production in the Bay of Plenty region, with some crops not currently grown becoming viable, and others currently viable, not. No specific information beyond the high level observations has been located for this report.

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<sup>18</sup> Stuff.co.nz, April 2019

<sup>19</sup> Patterson et al., 2017

<sup>20</sup> Coordinating the development and delivery of skills training for beekeeping, Mānuka oil production and other horticultural crops has been completed as part of the Regional Growth Strategy (BOPRC, 2018).

<sup>21</sup> PlantTech, 2019

<sup>22</sup> BOPRC (undated)

## Port of Tauranga

The Port of Tauranga (the Port) is nationally significant; it handles 30% of all New Zealand cargo, 35% of New Zealand exports, and 37% of all shipping containers.<sup>23</sup> The economic activities of the Port are included in the transport, postal and warehousing services sector (Figure 1), which is made up of road transport, rail, water, air and other transport, and postal, courier and warehousing services. Warehousing services include storage of goods prior to export or following import, such as bulk liquids, refrigerated goods, and self-storage<sup>24</sup>.

The Port provides the sub-region with a comparative advantage (specialisation) in some sectors, including<sup>25</sup>:

- petroleum and industrial chemical manufacturing, mainly due to the activities of Ballance Agri-Nutrients in manufacturing fertilisers – located close to the Port,
- water and rail transport – mainly due to the activities of the Port of Tauranga, and
- road transport.

The transport, postal and warehousing services sector contributed 6.6% (\$477.4m) to the sub-regional economy in 2018, with 86% of that in Tauranga. Water and rail transport, which is mainly due to the activities of Port of Tauranga, is one of five most specialised sectors in the sub-regional economy<sup>26</sup>.

The introduction of larger freight-carrying vessels in 2016 required deeper harbour access and logistical changes at the Port, including additional off-site marshalling arrangements<sup>27</sup>. The Port is now 'big ship capable', and in the 2018/19 year, the Port's container volumes exceeded 1.2m twenty foot equivalent units<sup>28</sup> and total trade reached 26.9m tonnes<sup>29</sup>.

Road and rail transport is necessary for carrying exports and imports to and from the Port. Traffic delays on key transport corridors have the potential to impact on the activities of the Port and other businesses reliant on road transport.<sup>30</sup>

Rail is one of the transport methods for goods to and from the Port. Export products such as milk powder and logs produced in the Waikato-Bay of Plenty region are transported via rail. The rail connection between the Tauranga Container Terminal and the inland freight hub (Metroport) Auckland resulted in a 24% increase in the volume of containers carried in 2015, and volumes have continued to trend upwards.<sup>31</sup> A benefit of rail is that reduces the costs to the public associated with Port traffic, such as traffic delay on the roads around the Port, road maintenance, road accidents and air emissions.<sup>32</sup>

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<sup>23</sup> Port of Tauranga, 2019

<sup>24</sup> Patterson et al., 2017

<sup>25</sup> Ibid.

<sup>26</sup> Ibid.

<sup>27</sup> MPI, 2015

<sup>28</sup> Twenty foot equivalent units (TEU) is a unit of measure to describe the number of containers. For example, one 40 foot container is equivalent to 2 TEUs (<https://www.port-tauranga.co.nz>).

<sup>29</sup> Port of Tauranga 2019

<sup>30</sup> Simmonds and Gardner, 2018

<sup>31</sup> Port of Tauranga, 2019

<sup>32</sup> Ernst and Young, 2016

The employment:GDP ratio in this sector is not particularly high, at about one employee per \$100,000 of regional GDP. In 2018 the sector provided 4,500 jobs in the sub-region, which is 5% of the total jobs. Employment in this sector is forecast to grow at around 2.2%/year over the next 10 years, being the fastest growing sector across New Zealand<sup>33</sup>.

The Port employs about 230 permanent and 30 casual staff.<sup>34</sup> The contribution to employment is indirectly increased through businesses that provide services to the Port, such as warehousing and road and rail transport.

Many of the growth opportunities identified for the Bay of Plenty region<sup>35</sup> involve exports, for example, forestry and wood products, agriculture and related processing, increased fruit production and related processing, apiculture and aquaculture. While transport has not been identified as a constraint to development of those sectors, growth in goods for export will require efficient transport to a seaport or an airport.

Access to rail increases logistics efficiency, and in the next 10-20 years capacity is planned to handle a 200% increase in rail freight to the Port. In 2015, MPI identified the need for identification and zoning of suitable sites with rail access for new logistics facilities, in order to accommodate the greater freight volumes to the Port, on the basis that cargo throughput is expected to grow by 82%-130% by 2040.

In terms of growth of operations at the Port of Tauranga, Market Economics (2017) notes that its landholdings are extensive and could accommodate substantial growth.

## Tourism

The natural attractions, including the beaches, native forests and mountainous ranges make the sub-region a popular tourist destination, particularly over summer. In 2018, tourism accounted for 6.4% of sub-regional GDP and 5.8% in national GDP. The Tauranga area gains the greatest economic benefit from tourism (7-8% of GDP), with relatively little coming from the Western Bay district (2-3% of GDP).<sup>36</sup> The contribution of tourism depends in part on the buoyancy of the national and international economies.

Tauranga is an increasingly popular stop for cruise ships, and gateway to other parts of the region such as Rotorua. In the 2018/19 season, 229,000 passengers arrived on 115 cruise ships. Passengers spent approximately \$91m in the Bay of Plenty region.<sup>37</sup>

The number of and spending by tourists has increased in the past five years. From 2013 to 2018, the number of international and domestic tourists visiting Tauranga increased by 14.8% and 11.5% respectively. The increase in tourists increased the sector's contribution to the sub-regional economy. In Tauranga, the visitor spend is highest for retail sales and food and beverage serving services.<sup>38</sup>

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<sup>33</sup> MBIE, 2019

<sup>34</sup> Port of Tauranga, 2019

<sup>35</sup> MPI, 2015

<sup>36</sup> Infometrics Economic Profile

<sup>37</sup> New Zealand Herald April 2019

<sup>38</sup> Colliers International, 2018

Domestic tourists provide the majority of tourism income to the sub-region, accounting for about 80% of the annual tourism expenditure.<sup>39</sup> In 2018, Auckland residents accounted for 42% of domestic visitor nights, followed by Waikato and Bay of Plenty residents at 22% and 14% respectively.

The Bay of Plenty tourism market is characterised by peak occupancy from Monday to Thursday; business visitors are an important market segment<sup>40</sup>. The presence of large organisations headquartered in Tauranga, such as Zespri, Port of Tauranga and Trustpower, contributes 'a significant number of room nights due to various meetings and corporate events'<sup>41</sup>. Growth in the tertiary education sector is likely to create additional demand for short-stay accommodation in the sub-region.

A 2018 study,<sup>42</sup> notes that conferencing options are limited in Tauranga, and that development of a convention centre or large conferencing facilities would increase business travel to Tauranga, and encourage further hotel and accommodation development. The need for more and better accommodation was identified in the sub-regional tourism strategy.

The Bay of Plenty tourism region has a growth target of \$1.5b tourist spending by 2028 - which equates to annual growth of 4%. The sub-regional strategy relies on making the area more attractive to domestic and international tourists including by building on heritage and culture, increasing recreational opportunities such as in the Kaimai Ranges, developing walking tracks and improving walking cycleway connections.<sup>43</sup> Given that the majority of tourism income is from the domestic market and Auckland and the Waikato are Tauranga's largest domestic tourist markets, efficient transport links between these regions will be important to achieving the growth target.

Rotorua is a particularly popular destination for international tourists, and has been identified as an opportunity for 'wellness' tourism growth<sup>44</sup>. International tourists driving south from Auckland (International airport) travel through the Waikato or the Western Bay of Plenty. Good, safe transport links are important.

In 2015, MPI recorded that Tauranga's 'air connectivity' was relatively poor, and a constraint to business and tourism development. An airport upgrade, completed in December 2018, was undertaken to meet existing and increasing capacity demands up to and beyond 2027. Improvements included a doubling of floor area to accommodate more passengers, separate check-in and arrival areas, and a new, larger regional lounge.<sup>45</sup> A recent report noted that air links to and from other key tourism locations are limited<sup>46</sup>. Of the airport location, Market Economics (2017) noted that it is 'a location that has strategic value and the airport operations need to be protected'.

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<sup>39</sup> TRC Tourism, 2018

<sup>40</sup> Colliers International, 2018

<sup>41</sup> Ibid.

<sup>42</sup> Ibid.

<sup>43</sup> TRC Tourism, 2018; BOPRC, 2018

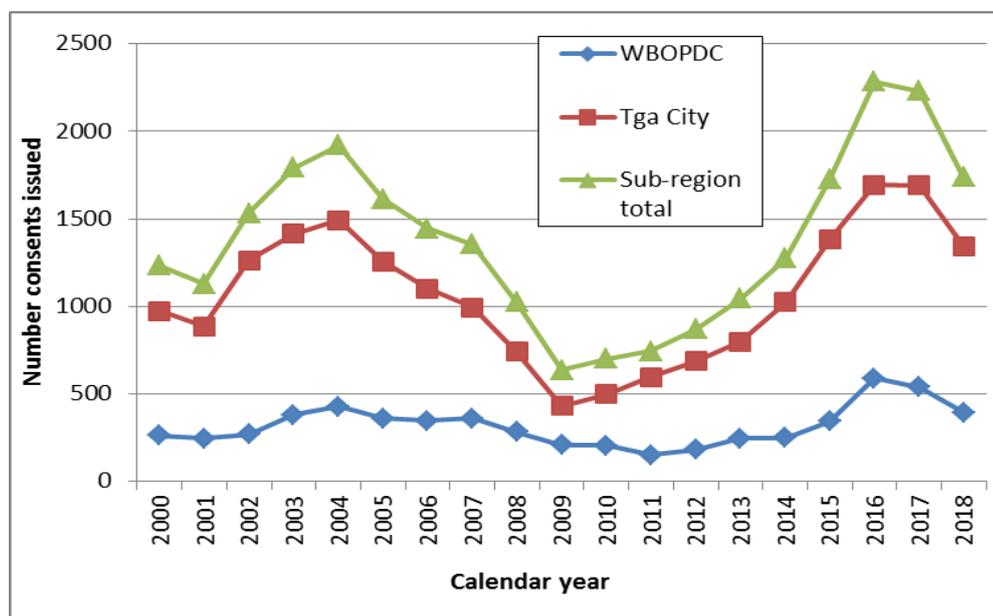
<sup>44</sup> MPI, 2015

<sup>45</sup> Tauranga Airport

<sup>46</sup> TRC Tourism, 2018

## Housing growth

Residential housing has grown strongly in the Tauranga city area, particularly since 2013 (Figure 6). The Western Bay district saw particularly high growth in consent applications in 2015.



Source: Stats NZ.

Figure 6 Resource consents for residential buildings, 2000-2018 (calendar year)

Housing growth is strongly associated with population growth (Figure 7). Using the Stats NZ sub-regional population estimates from 2011-2018, there is roughly one new residential consent application for every two new residents (on average). The relatively high number of older residents influences the number of residential consent applications and the type of dwelling. Nationally the population increase is associated with 2.4 people per application (2011-2018). The differences are in part because of the larger population in the older age groups in the western Bay of Plenty.

Nationally, retirement village units make up 7% of residential consent applications (2010-2018). The percentage is similar in the Western Bay district, where retirement village units made up 7% of applications for 2010-2018, peaking numerically at 57, or 11% in 2017. In Tauranga, retirement units accounted for 12% of applications for 2010-2018, reaching their numeric peak in 2016, at 252, or 15%.

The pace of (estimated) population growth slowed in the Western Bay district in 2018, from 2.5% growth in 2017 to 2.2% growth in 2018; 2017 was the peak year. For Tauranga, growth peaked in 2016 at 2.9% (2017 - 2.6%; 2018 - 2.7%). The slowing growth is associated with a reduction residential consents applications.

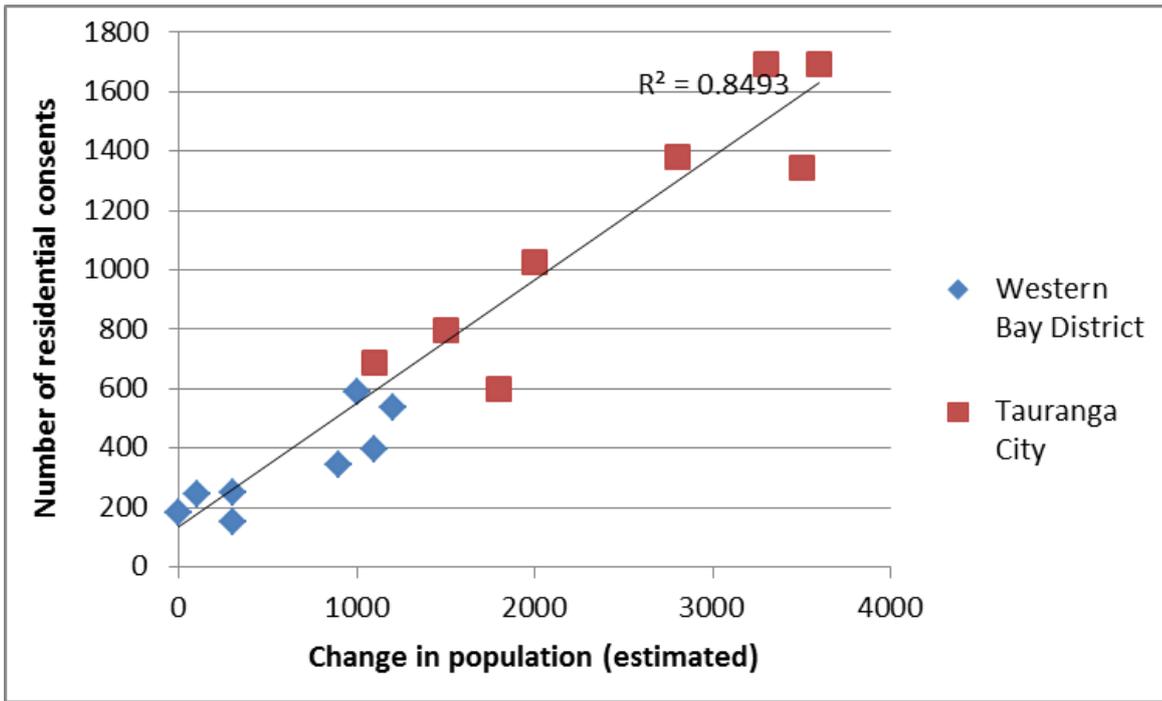


Figure 7 Relationship between the increase in population and increase in residential consent applications

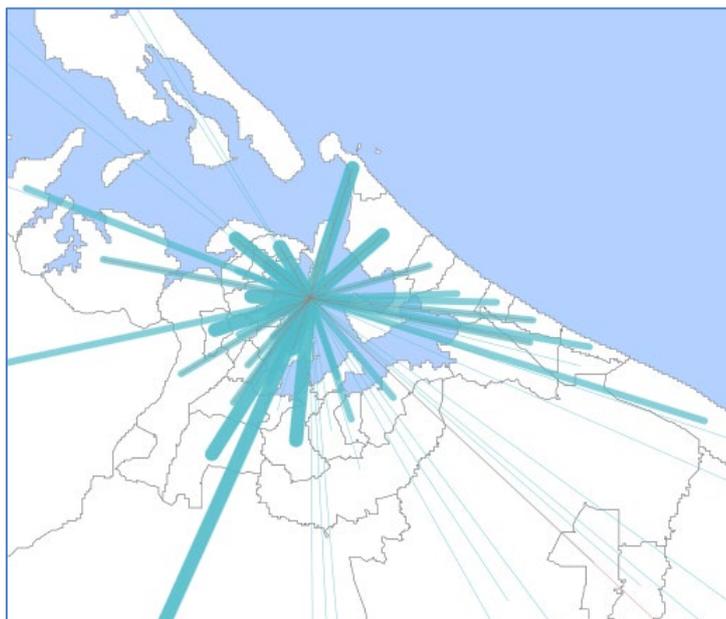
Employment in the construction sector is expected to continue to grow strongly until 2023, with an average annual growth of about 2.2% per annum, slowing to about 1.3% per annum from 2023-2028<sup>47</sup>. Ongoing immigration to the sub-region is seen as essential to maintain and grow the local workforce,<sup>48</sup> which in turn will keep pressure on housing growth.

<sup>47</sup> MBIE, 2019

<sup>48</sup> Stakeholder Strategies, 2019

## Travel to work

The Bay of Plenty Labour Market Strategy (2018) identified transport (traffic delays; availability of public transport), and housing (availability of affordable rentals/owned homes for new arrivals and incumbents) as issues having an impact on people's ability to participate in the labour market. These two issues are linked; housing may be more affordable outside the main urban centres, but high costs of private transport and lack of public transport may inhibit labour market participation.



The 2013 census provides the most recent data on travel to work, although that data will soon be updated. In the western Bay of Plenty sub-region, the Tauranga Central and Tauranga Central and Ōmanu (Mount Maunganui) are two common commuting destinations, and provide an example of commuting patterns. In 2013, of the 9,306 people working in the Tauranga Central Area Unit, 95% (8,847 people) commuted from outside that area unit (Figure 8). The blue lines are people commuting inwards, and thicker lines indicate a greater number of people travelling from a particular area. The people travelling to the Tauranga Central area unit represent a fraction of the total number of commuters to the city.

*Figure 8 Commute to Tauranga Central area unit for work (NZ Census, 2013)*

The sub-regional working age population increased by about 10% from 2013-2018 (Table 2). Assuming similar growth in the commuting population, the number of people commuting into Tauranga Central would now be about 1,020. While Tauranga Central is the most common central Tauranga area unit destination, there are other popular work destinations, such as the Tauranga Hospital, Tauranga South, Bethlehem, and Greerton. Private vehicle is the most common mode of transport to work.

Ōmanu is the area unit in the Mount Maunganui area that draws the largest number of commuters. In the 2013 census 7,089 people recorded that they worked in the Ōmanu area unit, and 87% (3,198 people) commuted from other area units. In 2018, again assuming a 10% commuter growth, 3,600 would commute into the Ōmanu area unit for work (Figure 9). Much of the commuter traffic is from the Pāpāmoa direction, but commuters travel from all sides of the harbour, and must travel the main roads that link the wider Western Bay area to Mount Maunganui.

Ōmanu differs from Tauranga Central because it has a higher resident population, represented by the thick orange line of people commuting from Ōmanu into Tauranga and other parts of the sub-region (Figure 9).

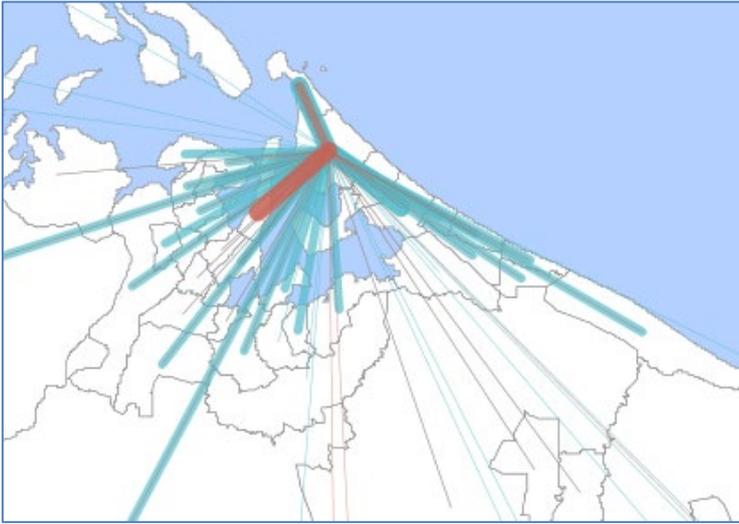


Figure 9 Commute to Ōmanu Census, 2013)

The number of commuters to any particular destination tends to be understated, because to be recorded as travelling to Tauranga Central (for example), a person must have a work address in that area unit. Commuters who do not have a fixed workplace (e.g. some builders) and those who have not supplied a workplace address are not included. School children and tertiary students are not represented in the travel to work data, however, most of this group use the roads at the morning commute time and add to traffic delays and travel times.

Users of State Highway 2 report a reduction in travel times during school holidays, and the influence occurs at both ends of the day, but particularly in the mornings (anecdotal).

Since 2013, the sub-region has experienced strong population growth. The 2018 Census population counts are now available. The release of 2018 data about travel to work will enable a full analysis, alongside assumptions about place of work, including school and tertiary student travel.

While travel costs accrue to businesses in time taken to conduct business, costs also accrue to individuals. For example, commuting from Katikati to the central city can add 30 minutes to each end of the working day because of high traffic levels. The added costs of traffic delay to individuals in the sub-region could be assessed based on the travel-to-work data.

## Workplace sectors and locations in the future

In 2017, Market Economics prepared employment projections showing the employment outlook by location and sector in the sub-region. Traffic modelling was the key objective of this work. Market Economics drew on a wide range of sources for this project, including planning zones, industry interviews, growth outlooks, prospects and issues, and population projections.<sup>49</sup> The study period was 2018-2063, and scenarios were based on two growth scenarios. The first was a Greenfields scenario based on current trends, with growth occurring primarily in existing growth areas and then further growth areas in the eastern and western corridors. The second scenario was an intensification scenario described as 'a more aspirational compact city scenario', applying to the Tauranga area. In this second scenario, the location of Greenfield Development was consistent with the Greenfields scenario, but with less need for growth in the western corridor.

<sup>49</sup> Jackson et al., 2014

The following points summarise the main results for the modelled Greenfield scenario (Market Economics 2017). Not all remain relevant, which is discussed further below.

- Tauranga Central Business District (CBD) was expected to remain the key business location, with strong employment growth. An estimated 30,900 additional jobs would be created – adding nearly half again the currently available 66,200 jobs.<sup>50</sup> The Tauranga jobs were mainly in services (16,000 jobs) and industry (9,200 jobs). Other areas of additional employment include retail (3,700 jobs), education (2,200 jobs), and agriculture (1,100 jobs). The distribution of growth by area unit is provided in the report appendices and could be mapped if deemed relevant.
- Retail employment was concentrated in retail centres in existing locations (e.g. CBD, Palm Beach, Bayfair, Gate Pā).
- Employment in the Western Bay of Plenty district was projected to increase by 6,900 jobs, from 18,900 currently, to 25,600 jobs. These jobs were spread mainly across the service sector (2,600), agriculture (2,200) and industry (1,680), with some in retail (530) and education (215), occurring in the towns (e.g. Katikati, Te Puke) and growth areas (e.g. Ōmokoroa, Rangiuru). The types of jobs were related to the land resource, population growth and some industry.
  - Employment growth in the Western Bay of Plenty district was noted as being less certain, indicating a need to review the projections.
- Most of the industrial growth was expected to concentrate at Tauriko, the Belk Road Extension and Te Maunga. Te Maunga growth was not expected to occur until the 2050s, and had some uncertainty due to issues around development. To a lesser extent, industrial growth occurred at Mount Maunganui, Oropi (Maleme Street), and Judea through redevelopment of Brownfield sites. A large amount of future employment (about 15,600 jobs) was expected to occur in 'out of zone' locations, mostly in services. Out of zone means outside of zoned business areas. This included service type business and some trade (e.g. construction), and also schools and retirement villages. For context, the number of out of zone jobs is half again the total number of jobs created in the Tauranga city area.
- In terms of location of employment, high population growth in the Western Bay of Plenty district would have a flow-on effect on Tauranga employment, but high growth in Tauranga has a much lesser effect on Western Bay of Plenty district employment.

The modelling suggested that if growth was accommodated through intensification of existing areas (Scenario 2), then the geographic location of jobs would differ, with more employment occurring in the central city areas relative to the Greenfields scenario. The intensification scenario would draw employment into Tauranga city from areas further out such as Te Tumu. For example, under intensification employment in the Tauranga CBD, Eleventh Avenue and Mount Maunganui increases by 12%, 54% and 11% respectively (1,040 jobs), while at Te Tumu, the number of jobs decreases by 54% (440 jobs). Some jobs are less sensitive to the placement of population growth, such as those in the industrial sector.

The short and longer term economic impacts on individuals and the wider economy of Greenfield Development versus the intensification were not assessed, but the authors noted that there would be an economic trade-off, particularly for a sub-region with a high reliance on horticulture for GDP and employment.

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<sup>50</sup> Market Economics uses Modified Employment Count (MEC) as a measure of employment. MEC includes working proprietors and employees (count). Using this count, the number of jobs is not the same as full-time equivalent jobs.

## Inputs into the Market Economics Report

The population projections were an integral input in the Market Economics (2017) modelling:

*The [employment] projections rely heavily on the National Institute of Demographic and Economic Analysis (NIDEA's) population projections as it informs the economic model...population is a source of labour (i.e. workers) and people also consume goods and services (demand)...Statistics New Zealand recently released a new set of population projections. Over the short term, these projections are higher than NIDEA's. This implies that population growth (and therefore the employment activities that are associated with the population) could be higher than anticipated (and used in the employment projections). Higher growth will have two important effects:*

- *Firstly, a larger population will require more goods and services (i.e. stimulating demand).*
- *Secondly, provide access to a larger labour force.*

The projections provided by NIDEA underestimated the short term population growth in the sub-region. The difference between the projections of NIDEA and Stats NZ were that the latter projected higher population growth in the short-medium term (next 15 years) and NIDEA projections were higher over the medium to long term<sup>51</sup>. In 2018, the Tauranga city and Western Bay of Plenty district populations were an estimated 6.4% and 2.5% higher (respectively) than the NIDEA projections (Figure 10). The release of 2018 Census data on population confirmed the significant gaps between projections and reality.

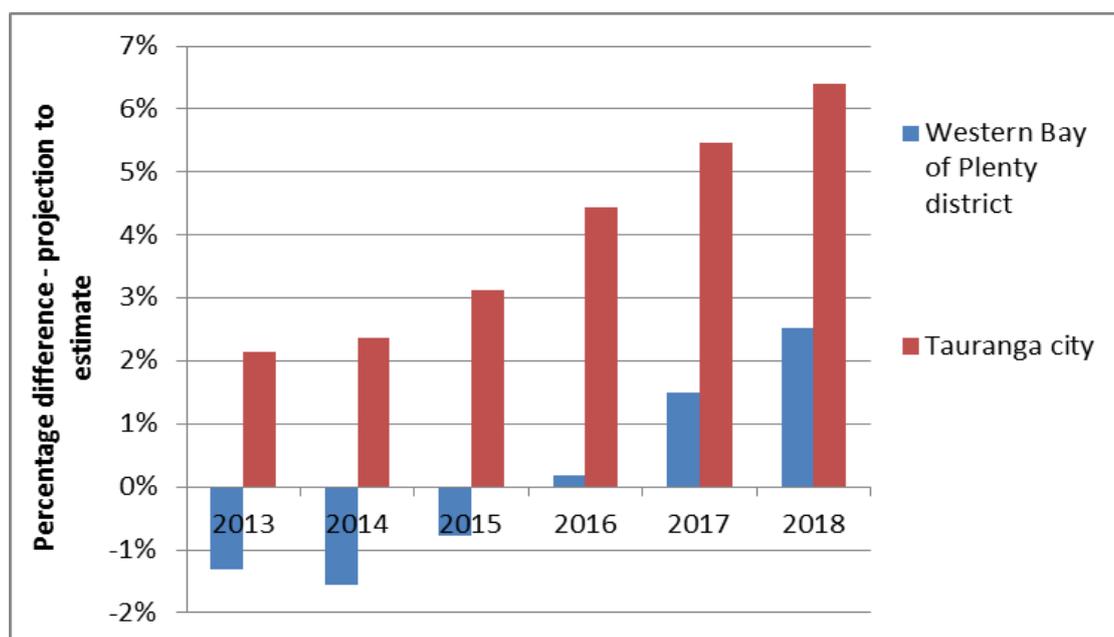


Figure 8 Percentage differences between NIDEA population projection and estimated population

<sup>51</sup> Market Economics, 2017

Market Economics (2017) did not model the effects of the Stats NZ projections, but made the following comments about the likely impacts of bringing the population growth forward and concentrating it in the shorter term:

- A larger population base would put additional pressure on the sub-region's infrastructure, including but not limited to roads, wastewater, parks and environmental assets, natural amenity and general environment.
- Near-term population growth would result in a shorter timeframe to make investment to accommodate the growth – so prioritisation of investment would be needed.
- There would be uncertainty about the scale of growth that could be expected (and sustained) over the longer term.

These comments appear to be consistent with reality. Relatively high population has occurred in the short term. The Tauriko industrial area is now almost at capacity, and Te Maunga, which was not expected to grow until 2050 (in the 2017 report), has been growing strongly over the past two years and has a large building project underway.

A final point made by Market Economics (2017) was that the long timeframe (to 2063) means considerable uncertainty, the location of jobs depends on Councils enabling additional development to enable growth, the results were dependent on the reliability of the population projections, and the work was started one year into the projections, so had a lag time of one year.<sup>52</sup> External factors such as global and national recessions and changes in Government policy direction also impact on the actual versus projected results.

## National Policy Statements

The National Policy Statement of Urban Development Capacity (NPS-UDC) 2016 directs local authorities to provide sufficient development capacity in their resource management plans, supported by infrastructure, to meet demand for housing and business space. Market Economics (2017) anticipated that the employment projections would be useful for the requirements of the NPS-UDC, although the timeframes of the NPS-UDC are shorter than the employment projections. Market Economics suggested refining the timeframes to better reflect the volatility and shorter timeframes, recent growth trends, local development pressures and emerging issues. They also suggested using a more aggressive set of growth projections, to ensure sufficient land was available for development over the short to medium term. At this time a further assessment has not been undertaken.

The Proposed National Policy Statement on Highly Productive Land (NPS-HPL) will require local authorities to identify highly productive land based on a set of defined criteria (e.g. soil capability, climate, water availability, size). Land Use Capability classes 1-3 are the default criteria to determine highly productive land until the process that develops the NPS-HPL is completed. At the time of writing this, the Proposed NPS-HPL is being consulted on.

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<sup>52</sup> Market Economics (2017) discusses the limitations of future-focused studies.

## Technological change and employment

Technological changes bring changes to employment, including automation of jobs. In general, jobs that are at risk from automation tend to attract lower wages and require lower levels of education, although new jobs are created when new business models are developed.

New Zealand's reliance on primary industries mean it may be more impacted by automation of jobs than many other countries,<sup>53</sup> although a recent study suggests that a sharp rise in professional occupations (since early 1990s) and managerial occupations in New Zealand (since 2010) may make New Zealand less susceptible than many other countries in the OECD.<sup>54</sup> These conflicting predictions take a high level view, but in the end, technological changes that affect jobs will affect individuals.

Automation is attractive to businesses when it reduces the costs of production and increases economies of scale. It is reasonable to expect that when technologies that enable automation of processes become reliable, efficient and cheaper than employing staff, businesses are likely to invest. Changes suggested in terms of automation include<sup>55</sup>:

- Employment has been steadily declining in kiwifruit and citrus and cut flowers over the past 15 years, where automation processes reduce labour requirements. However, avocado and plant nurseries have shown a steady level of employment with increases in production offsetting reductions in labour requirements.
  - The data on the sub-region shows that in the early 2000s horticulture and fruit growing provided about 3,500 jobs. These numbers fell around 2014 when Psa was an issue for kiwifruit growers. Currently employment in horticulture and fruit growing in the sub-region is about 2,500 jobs.
- Jobs in transportation and logistics, office and administration support and production are at high risk of automation.
- Service jobs are highly susceptible to computerisation. These include labourers, machinery operators and drivers, clerical and administrative. Those with a moderately high risk include sales workers and technicians and trades.
- Community and personal services require 'soft skills', such as social intelligence, and therefore have a relatively low likelihood of automation.
- Professional and management jobs have a low likelihood of automation.

The sub-region is characterised by a large number of service jobs, such as in aged care and in the horticultural sector. Employment in the former involves 'soft skills', and would be expected to grow in response to population increases, while jobs in horticulture would be expected to contract due to automation. The extent to which these changes impact on the sub-region will depend on the future economic activities in the region, the cost and availability of labour, and the cost and availability (and practicality) of automation in individual sectors.

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<sup>53</sup> CAANZ, 2015

<sup>54</sup> Nedelkoska and Quintini (2018), referenced in New Zealand Productivity Commission (2019b).

<sup>55</sup> CAANZ, 2015; Patterson et al., 2017

The job market has always been dynamic and while it is possible to see the jobs being automated, it is not always possible to see where new jobs might arise. For example, while picking and packing jobs in the horticulture sector may become automated, the introduction of drones is bringing new efficiencies to orchard management, and has potential to decrease the costs and increase the efficiency of regulatory management. The costs of this include developing expertise in managing and interpreting drone-captured data.

There has not been an assessment of changes from automation of jobs specific to the sub-region, so comments can only be general in nature. Understanding the potential or possible impacts for the sub-region would require assumptions about rate and location of changes, tailored to the conditions in the sub-region, and the response of the workers whose jobs have been lost (such as through retraining).

Technological changes can be positive for workers. Reliable and affordable access to high speed broadband contributes to job flexibility such as working from home. Nationally, the number of people working from home is reported to have changed little in recent years.<sup>56</sup> There is no information on how widespread the practice is in the sub-region, although the census travel to work question includes a category for 'worked at home' that may provide an indication.

In general, looking ahead at employment in New Zealand, MBIE (2019) expect strong employment growth over the next 10 years in highly-skilled occupations, including managers and professionals, particularly in the fields of advertising, public relations, sales, and information and communications technology (ICT). The opportunities for unskilled and low skilled workers are expected to be fewer, with very low growth.

In the dynamic job market workers will have to be resilient, and are likely to have to retrain, possibly several times within their working lives. Developing the local labour market is part of the Regional Growth Strategy, with a strong focus on supporting Māori in terms of engagement with education, training, and employment outcomes (BOPRC, 2018).

## Māori economy

In 2013 the Māori Economy in the Bay of Plenty region was estimated at \$1,200m (around 11% of GDP at that time), with assets of \$8,600m – about one-third of the total collective Māori asset base<sup>57</sup>. The contribution of the Māori economy to GDP is included in the contribution of GDP for all sectors (e.g. Figure 1).

Māori engagement is seen as critical to the Bay of Plenty region's economic performance, including improving participation and educational outcomes for Māori to support the future need for skilled labour<sup>58</sup>. Toi Kai Rawa Trust has recently been established as the Bay of Plenty's Māori economic development organisation and has a strong focus on increasing Maori educational attainment and skills to improve participation in the region's growing high-value economy.

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<sup>56</sup> The New Zealand Productivity Commission (2019) state there has been little change in the share of people working remotely or from home in the recent past.

<sup>57</sup> MPI, 2015

<sup>58</sup> Ibid.

A high level analysis of industry was undertaken by MPI in 2015.<sup>59</sup> It identified the extent of Māori involvement across industry sectors in the Bay of Plenty region, and identified the potential for growing Māori economic influence through land ownership reform, improving governance and management, increasing population and skill development. The development of Māori land is seen as key to unlocking the economic potential of the region, particularly in areas such as horticulture<sup>60</sup>. Māori land utilisation is part of the Regional Growth Strategy (BORPC, 2018).

The improved use of Māori assets is one criterion for funding through the Provincial Growth Fund. Other criterion, such as job opportunities, community benefits and sustainable use of natural assets could be expected to align with Māori values and aspirations.

An analysis of future trends in the Māori economy could be usefully informed by information about the extent and location of areas of undeveloped land and access to resources such as water (e.g. for irrigation).

## Future opportunities

Observations about future opportunities that have emerged through the course of providing this summary report i:

- The high dependency on temporary workers in the horticultural sector. Workers are generally housed near workplaces including in on-site accommodation, but also in private accommodation in areas such as Te Puke, Katikati and Ōmokoroa, where workers share private transport. Growing horticulture is likely to be dependent on availability of more workers. Better transport options would provide more options for worker accommodation (e.g. living in Tauranga). In the medium to longer term automation may reduce the dependence on human input.
- Housing affordability link to transport. Where incomes are low and affordable housing is increasingly further from work, accessible and affordable transport is needed travel to work from outside the city.<sup>61, 62</sup>
- Automation of jobs suggests that worker resilience will depend on good work and social skills and a good education. This in turn relies on access to schooling (including tertiary education), after school activities, weekend activities. Achieving this for our children means either living within walking or biking distance, or having a reliable and affordable transport system.
- The Bay of Plenty is recognised as a 'surge' region<sup>63</sup> for investment in regional economic development, and as a result there has been an acceleration of investment from the Provincial Growth Fund in the wider region. This provides the potential for funding projects that boost productivity potential, provides jobs and community benefits, improve use of Māori assets, use natural assets sustainably, and help in mitigation of or adaption to climate change.

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<sup>59</sup> This was a Bay of Connections project. Bay of Connections has shifted away from a sector-based approach towards a more holistic approach that focuses on priority areas common across the wider region, such as infrastructure, workforce, Māori economic development, and the low carbon/circular economy.

<sup>60</sup> Bay of Connections, 2016

<sup>61</sup> The issue of housing affordability and access to work extends beyond low skilled work, to jobs such as teaching and nursing which are highly skilled, but not highly paid. See for example, stuff.co.nz (October 2016).

<sup>62</sup> Simmonds and Gardner, (2018)

<sup>63</sup> While all provinces are eligible for funding through the Provincial Growth Fund, surge regions have been identified as needing early investment. The Bay of Plenty is a surge region.

- Where population growth is accommodated through Greenfield Development and the distance to activities becomes greater, the reliable and affordable transport becomes more important. Lack of access to education and social activities prevents participation. Available housing and accessible transport reduces barriers<sup>64</sup>. The implications of restrictions in participation have flow on negative impacts on society and the economy.
- Reliable access to health services, including centrally based hospitals, such as the Tauranga Hospital (central Tauranga) and Grace Hospital (southern edge of the city) is limited by the ability to travel. The ability to work and fully participate in the community relies on access to appropriate health services.
- Lack of skilled labour is seen as a constraint to realising industry opportunities because of the changing skills needs and the ageing population<sup>65</sup>, although arguably, ageing does not limit ability to work, and age can bring a wide range of skills and experience.

## Conclusions

### Availability of information

- There is a range of good information and data available to answer many of the questions posed in this project. This includes the reports that make projections based on possible future scenarios, and the sub-regional data which provides information about where the economy and employment is now, and trends. The sub-regional data can be further broken down, and could be interrogated to answer specific questions on the economy and employment.
- Statistics New Zealand Census data will continue to be released, and will provide valuable information about communities and commuter flows.
- Some sectors have undertaken research to identify future directions, such as Port of Tauranga and Horticulture New Zealand. This type of sector specific information is useful to provide more in-depth analysis, and can be helpful in identifying future constraints for the sector. However, these tend to be difficult to source, and tend not to be available for widely distributed sectors such as manufacturing.
- In terms of questions around key economic flows through the region, no specific work on this was identified.

### The sub-regional economy

- Horticulture, tourism and Port of Tauranga are sectors with a comparative advantage in the sub-region due to natural endowments such as climate, geology and a safe and accessible harbour. The development of these sectors and the associated support sectors over time has further increased the comparative advantage.
- Economic activities which have grown over the eight years, likely to be less affected by reductions in population growth include manufacturing, health care and social assistance, agriculture, forestry and fishing.

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<sup>64</sup> Ibid.

<sup>65</sup> MPI, 2015

- The short and longer term economic impacts of Greenfield Development on primary production have not been assessed, but there is an economic trade-off, particularly for a sub-region with a high reliance on horticulture for GDP and employment.

## Population growth

- Population growth has a big influence on the economy. The sub-regional population has grown by 17% in the eight years to 2018 (and 14% since the 2013 Census). The strong population growth has driven GDP growth particularly in construction, real estate services, wholesale trade and retail trade. Future reductions in the rate of population growth could be expected to reduce economic activity in these sectors.
- The shape of the population growth in terms of age group has economic implications. The services to older people remain an important sector of the sub-regional economy. Good access to services (e.g. retail, health) will continue to be important for this demographic.
- International research suggests that amenity values in the Western Bay of Plenty, such as the good climate and the attractive natural surrounds, will continue to attract people to the area.

## Population projections

- Planning for growth relies on reasonably accurate population projections. The 2018 Census population counts have been released, and updated population projections will follow. These will help to inform assessments of future economic activities. This will be of assistance to UFTI in terms of employment and location of employment.
- Market Economics undertook a project in 2017 to inform transport modelling. The work was well-designed, and relied on a range on sources of information including planning zones, industry information and population projections. Real population growth differed from the projected, and high short term growth occurred. The variance in the projections relative to actual growth mean this report is now out-of-date.

## Jobs and housing

- There is no forecast in the various reports of a sudden structural shift towards automation, although clearly automation is occurring. A strategy to develop resilience in the workforce through education and work skills is likely to put the sub-region in the best position to fill current and future jobs.
- Jobs in the sub-region tend to be poorly paid relative to other areas for many reasons including low skills. Access to affordable housing and transport will continue to be important particularly for low income households.
- Housing affordability is an issue in the sub-region, both in terms of buying and renting. It may be further exacerbated by the seasonal influx of temporary workers occupying houses and crowding out other renters.

## Travel

- Means of travel to work is a question in the census. The currently available information is outdated (2013), but will be updated with further releases of 2018 Census information.
- There is no data on travel to school by school age and tertiary students, although anecdotal evidence suggests that this group are significant road users.

- Traffic delays represent a cost to the sub-region for businesses and for individuals. The added costs of traffic delay to individuals could be estimated based on travel to work data from the 2018 census.

## Recommendations

- 1 Market Economics (2017) undertook a project designed to inform transport modelling based on employment projections by sector and location. This report should be reviewed using up-to-date population projections and planning information. Some checking of the expectations regarding industry growth may also be required. It may be useful to map the findings of the reviewed report, which in its original form provided quantitative information of where employment growth could be expected to occur by area unit.
- 2 Market Economics (2019) have modelled projections of a large range of occupations, based on updated population data. The model results are yet to be analysed and reported. They could be used to cross-reference to residential and industry growth areas to help inform future traffic flows.
- 3 Stats NZ have released population counts from the 2018 Census which confirms very high growth in the western Bay of Plenty. Updated population projections based on the new and accurate population data will assist in informing UFTI about travel needs.
- 4 Traffic delay on the roads in the sub-region is a growing issue. The census includes a question about means of travel to work. The results currently available are based on the 2013 census, and are out-of-date – particularly given recent population growth. While travel to work data has not yet been released by Stats NZ, the 2018 Census population counts could be used alongside assumptions about travel patterns to inform UFTI.

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