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Ruamāhanga Social Assessment Project 1:

Baseline information – scoping report

A report to the Ruamāhanga Whaitua Committee and Greater Wellington Regional Council

from

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1 Introduction

1.1 Background

Greater Wellington Regional Council (GWRC) has initiated a community led collaborative planning process to address a number of land and water management issues and to carry out its obligations under the National Policy Statement for Freshwater Management (NPS). This process is catchment based, with the region divided into five whaitua or catchments. These committees are a partnership between GWRC, iwi, territorial authorities and the community. They will make recommendations to the Council through a Whaitua Implementation Programme (WIP).

The first of these committees to develop a WIP is the Ruamāhanga Waitua Committee (RWC), covering the catchment of the Ruamāhanga River in the Wairarapa subregion of GWRC. Their WIP will contain strategies and actions, forming a programme of work in the catchment area of the Whaitua Committee. These will include recommendations for both statutory and non-statutory actions and methods. Proposed regulatory provisions in the WIP will be incorporated into the Regional Plan through a plan change process. Non-regulatory programmes will also be developed and implemented in conjunction with partners.

Collaborative modelling is a fundamental step that GWRC is taking to support the Whaitua Committees and their communities in setting freshwater objectives and limits and developing their WIP. A strategic Social impact assessment (SIA) is an integral part of the modelling and related policy development and assessment. The Ruamāhanga Whaitua Committee is the client for the SIA. It has identified values and attributes of the catchment and provided a number of issues and potential management scenarios that the modelling should address.

The SIA is one part of the collaborative modelling, alongside inputs from bio-physical and economic assessment and mātauranga Māori. Four interrelated projects are contributing to the SIA:

1. baseline information and assessment of scenarios – this project this has several sub-components as outlined below
2. understanding the process of change to inform policy design and implementation
3. developing a vision for the Ruamāhanga
4. assessing change in people's connection to water.

A social science group is guiding the development and progress of these four projects. The group comprises Natasha Tomic (RWC), Dr Jim Sinner (Cawthron Institute),Ra Smith (RWC/Ngati Kahungungu), Dr Margaret Kilvington (Independent consultant), Dr Will Allen (Landcare Research) and Dr Nick Taylor (Taylor Baines). Originally, project 1 was to develop a social baseline. However, the group has identified the need to expand the proposed baseline information study to become a full SIA, in order to meet a tight timeline for the RWC to deliver a WIP early in the first quarter of 2017.

1.2 Water management issues

The following is a summary of the issues identified by the Whaitua Committee as critical to management of the catchment.

General	The natural state of rivers, lakes and wetlands is modified, in some cases significantly, and there has already been loss of natural character and habitat. The management of land and water by regulatory agencies could be better co-ordinated and integrated. Climate change needs to be reflected in future resource management decisions. Iwi values and interests are not well recognised in the current water management system.
Water quality	Many rivers do not meet the National Objectives Framework standard for primary contact recreation (swimming) but the secondary contact level (wading) is met everywhere. Periphyton (algae) growth in rivers and streams in the Eastern Hills and the Parkvale Stream can be excessive (below national bottom lines). Nitrate toxicity in the Parkvale Stream exceeds the national bottom line. Sediment generation from soil and streambank erosion is affecting water bodies. Phosphorus levels in Lake Wairarapa exceeds the national bottom line. Lakes are seriously degraded. Lake Wairarapa is super-eutrophic (the worst level of quality) and Lake Onoke is eutrophic.
Water quantity	Current allocation, based on a 'first in first served' approach, is not always the most efficient system for allocating water, particularly in fully allocated catchments. The efficiency of water use is variable between users and there is room to improve. This includes efficient use by individuals taking water and the use of water taken in a community water supply. Reliability of supply differs across the Ruamahanga catchment, leading to inequities between users. Groundwater takes directly affecting surface water bodies do not have to cease when rivers reach minimum flows. River low flows are getting lower over time and there are questions on whether current minimum flows and allocation are supporting ecosystem health. This includes the methods used for developing minimum flows and allocation limits, and the way water takes are managed as they approach minimum flows. Permitted activity water takes are not currently accounted for as part of limits on the amount of water taken in a catchment, and there is currently poor information on the amount of water taken.

Source: Ruamāhanga Whaitua Co.

1.3 Expanded objectives of the SIA

The revised objectives of this project are to:

1. describe the social baseline, conditions and trends for social parameters that can be affected by land and water use in the catchment
2. work from this baseline to inform and conduct the full SIA, including information from projects 2–4 above, scenario analysis and later policy evaluation.

This report sets out the scope, approach, assessment frameworks, and an initial analysis of baseline parametres, and identifies the tasks and milestones for the next phase of work.

2 Approach

The approach to the SIA is to undertake three, overlapping phases of work (scoping, baseline and assessment). The first phase, scoping, is outlined here in detail, with this report as its final output. The second phase will involve developing the baseline in full. The third phase involves using the baseline for assessment of scenarios and policy proposals, and related actions, being considered by the RWC.

Scoping the baseline – the subject of this report – initiates the social baseline and at the same time scopes the full assessment. Key tasks of scoping have included:

- investigating and confirming the parameters of the profile
- outlining the variables (indicators) to be used for each parameter
- identifying the sources of data to be used and any limitations in obtaining suitable data
- identifying the areas or map layers (includes any sub catchments) to be used
- identifying key social issues for the catchment (Wairarapa region) of concern to the SIA
- developing an assessment framework
- identifying matters that require further investigation.

Wherever possible secondary data are used and relevant data mapped at either the census area unit or meshblock[1] level. Aggregated meshblocks are necessary in order to define and understand the social profile of the catchment and will be needed to understand particular sub catchments as required during detailed assessment work. The team have assembled a spatial framework by coding each meshblock in the wider Ruamāhanga Catchment that can be used to define sub-catchments or land-use areas. This framework is defined in more detail below and in Annex 1.

A combination of quantitative and qualitative data is being used in the SIA. Sources are indicated and discussed in the list of parameters below. Data are being presented as appropriate in temporal and spatial form either as tables or maps. The full baseline will include trends and projections of key variables to give an understanding of how values and social conditions relating to land and water have changed over time, and might change in the future. Projections are based on those developed by Statistics New Zealand for the three local bodies in the catchment and calculated to the household level using a household framework developed by Market Economics (ME).

This scoping report shows how the team is developing the detailed social baseline using secondary data plus some qualitative primary data obtained through key-informant interviews. The baseline will include the parameters listed below and reflect the full range of social values in the catchment. The baseline report will be in a final draft form (subject to updating as the assessment work continues through to the full SIA report).

A third phase of the SIA will involve assessment of the scenarios developed by the RWC and the policy evaluation work that builds on it towards a regional plan change. This phase will draw on the full SIA work stream (Projects 1–4). The scenario work will involve assisting the RWC to model and explore future conditions in the catchment depending on possible settings for policies and plans. The RWC will undertake a process of engaging with stakeholders and the wider community to

[1] Meshblocks are the smallest area (level) used by Statistics NZ for compiling and reporting census data. The boundaries of the next spatial level up (Census Area Units) do not necessarily fit catchments or sub catchments.

consider possible futures or scenarios for the catchment depending on different regimes for land and water management and possible interventions through new or improved infrastructure (e.g. water storage and irrigation, waste water management, flood protection). At this scoping stage of the SIA, two main scenarios are in consideration. These are the status quo (baseline continued into the future as an extension of current trends and any likely disruptions as a result of no policy response) and an aspirational ("gold") future, recognising that the final package of policies and other interventions will most likely fall somewhere in between these scenarios – an "achievable future".

2.1 Scenario assessment

Methods used for the scenario assessment will include review of other assessments (bio-physical, economic and cultural), discussions with those members of the technical team, participation at RWC community workshops, review of comparison cases, and expert judgements by the SIA team. As the SIA scenario work proceeds, it will be possible to update the baseline with information that becomes available during the later (assessment) stages. Therefore, the final baseline will form part of the final SIA report.

This general approach recognises the importance of iterations between the four SIA projects, as well as the economic assessment, the cultural assessment and the bio-physical assessments. Ongoing iteration is expected between the SIA work streams and the development of scenarios and early policy work by the Committee and GWC. Early iterations during this scoping phase of the assessment have included two scenario workshops with the RWC and the full modelling team, plus other discussions with GWC and technical staff and consultants.

As the scenario work proceeds it is anticipated that sub catchment, land-use and other maps (such as drinking water wells) and relevant bio-physical and economic data will be made available to the researchers as required.

The major focus of the Committee and technical modelling team in preparing the scenarios is on the effects of animal-based agriculture and the Wairarapa's future as an agricultural region with a higher standard of farm environment planning and mitigation, increased pockets of wetlands as well as widely used riparian planting, a re-plumbed Lake, and perhaps the removal of some areas from agricultural production. There is consideration as well of the role of indigenous and exotic forestry and associated products, including a possible new National Park in the Rimutaka ranges.

In these scenarios the towns in the catchment and their surrounding lifestyle blocks are seen as significant because they are home to water consumers who need potable water supplies and produce waste and stormwater without full processing and with continued disposal largely to the rivers. It is recognized that these residents also use the waterways for swimming, fishing, picnicking, baptizing (i.e. are able to recreate and engage culturally in the rivers unless they are impeded by algae, poor water quality or too little water).

A social science perspective, as brought by the SIA, recognises these places and waters as part of a multi-functional rural space, growing and processing an array of economic and cultural activities with global links, many dependent on amenity values for their development and futures. These activities consume varying amounts of water and produce varying effects on water quality, while also varying in the amount of employment and income that they generate.

The future combination of animal and non-animal primary production and the characteristics of the associated human population – residents and visitors/tourists – and their settlements are difficult to factor into the models, especially over longer time frames. Even so, it is possible to assess potential land and water futures in a general sense and assists the committee and community to deliberate possible futures and policy/planning options. By taking part in the scenario process and assisting through the additional perspectives they add into the collaborative modelling process, the SIA team add an understanding of the linkages between people and water and inform a long-term vision for the catchment.

It is important to recognize that social futures are very difficult to predict because the people at the centre of a scenario are also in a strong position to influence the direction that scenario takes – the very purpose of participatory processes. Some social trends such as ageing population are "heavy" and difficult to change. But an intervening factor such as immigration can be highly variable depending on numerous political, economic and social influences.

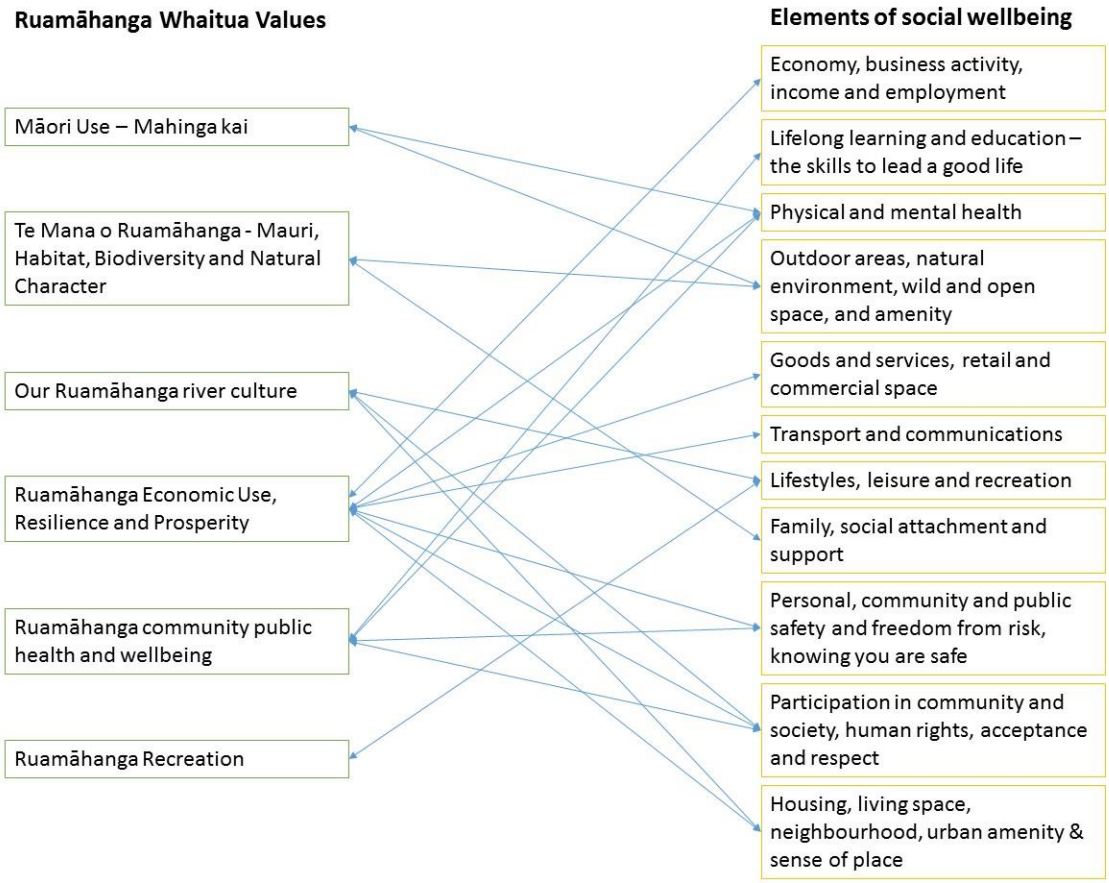
In the medium and longer terms very significant new land uses, economic activities, or social and cultural developments could emerge, resulting from economic and cultural experimentation in and outside the catchment. These changes will almost certainly transform the catchment more than once in the planning horizon of over 50 years. They could have considerable effects on the environment and economy of the region in very positive ways, including improving water quality, its amenity and reputation, and changing the population mix, for instance. Consider, for example, the changes since grapes were first planted in the Martinborough wine region on a commercial basis in 1980 (only 36 years ago). Since then Greytown has now gentrified thoroughly and Featherston is on the same trajectory. These changes have attracted new people, new values and new sources of ideas and capital to the Wairarapa region and brought a process of gentrification to the settlements and surrounding areas. Socio-economic and environmental changes can occur in relatively short spaces of time making it essential to develop a flexible policy/planning regime whereby the people of the catchment are able to adapt and achieve a range of desirable social, cultural, economic and environmental outcomes.

3 Assessment framework

3.1 Social wellbeing, parameters and variables

As a framework to guide the assessment, the SIA team has used a standard list of social wellbeing elements[2] and matched these as best as possible with the values and attributes developed by the RWC[3] (Figure 1), subject to discussions with the Committee.

Figure 1: Mapping of RWC Catchment (shortened) values and elements of social wellbeing



The attributes that the RWC attached to the values they listed were considered in terms of how they could be assessed, measured or described and the likely ability of the team to obtain data on these for the purposes of the assessment, including developing the baseline. These indicators are listed in Table 1 (below) alongside the elements of wellbeing. The full framework is under development in a supplementary spread sheet, which is subject to input from the RWC through a workshop.

[2] Derived from a Taylor Baines list and also the Oxfam Humankind Index.
[3] Ruamāhanga Waitua Committee Values and Attributes for the Ruamāhanga Catchment.

Table 1: Elements of social wellbeing by potential social indictors

Elements of Social Wellbeing	Social Indicators
Economy, business activity, income and employment (secure, suitable and satisfying work)	Expenditure by location
	Business size and types by location
	GDP by sector
	Employment by sector
	Employment status
	Sources of income by industry group and occupation
	Individual and household incomes
	Domestic and international visitor numbers (including seasonally and by area and type of activity)
	Tourism activity/links to water resources
	Bed nights
	Tourism products
	Tourism businesses
Physical and mental health	Place identity
	Health status of the population
	Incidences of water-borne diseases
	Incidences of health warnings relating to water
	Health status of the population
Outdoor areas, natural environment, green, wild and open space, and amenity	Amount and quality of aquatic life collected for food and cultural purposes
	Quality of water for consumption for Mahinga Kai
	Numbers of participants in sports fishing in lake and rivers
Lifestyles, leisure and recreation	Types of recreational activities
	Number of participants per activity
	Spatial location of activities and relationship to water
	Quality of recreation experience
	Social value of recreation locations (e.g. rivers, lakes, wetlands)
Lifelong learning and education – the skills to lead a good life	School rolls
	Tertiary education and skills availability by sector
	Educational status of the population
Personal, community and public safety and freedom from risk, knowing you are safe	Water quality ranking
	Standard of water supply infrastructure
	Wastewater disposal infrastructure
	Incidences of drinking water restrictions
	Warnings and public health events
	Flood management infrastructure quality / maintenance
	Levels of crime
Housing, living space, neighbourhood, urban amenity & sense of place	Instances of public debates or disputes over water, water use and rural land uses
	Population by settlement and area
	Housing by type
Goods and services, retail and commercial space	Level of commercial activity by type
	Social and community services
Transport and communications	Access to motor vehicles
	Access to and use of public transport
	Travel to work by area
Population, family, social attachment and support – relationships with family and friends	Social deprivation
	Total population and population change
	Age
	Ethnicity
	Born overseas and Length of residence
	Household size
Participation in community and society, human rights, acceptance and respect	Leadership
	Business networks
	Community organisations and volunteerism
	Assimilation of newcomers

3.2 Global multifunctional rural spaces

The SIA team has used recent research on the globalisation of rural areas and their increasingly multifunctional character as a framework to guide its thinking about recent, and future, social, cultural, economic and environmental change in the Wairarapa region. In these terms, it is useful to think of the region as a globalising rural space[4]. It is home to networks of people who are connected to ideas, products, processes, and markets with global reach. Locally, because the effects of these global connections and their interaction with local activities are uneven, regional differentiation and competition for investment are found *between* regional and sub-regional areas (rural and urban) and local government jurisdictions. This in turn creates and sharpens divisions *between* regional communities. Divided by local government boundaries and with some distinct spatial social-economic differences (as discussed further below) the Wairarapa is a good example of how these processes work themselves out both within the Welligton region and internally. It follows that the work of the RWC has the capacity to contribute to greater or lesser regional differentiation and to enhance or detract from the ability of the Wairarapa to compete for future investment.

Apart from its global connections, the Wairarapa region is increasingly multifunctional. Once the site largely of primary production, relatively stable social and cultural relations, and small country towns, it is increasingly dynamic and diverse, and a place where there are contested modes of *production*, *consumption* and *protection*. *Production* in this case refers to the mix of primary, secondary and tertiary economic activities that use land, water, labour and capital to produce value. As in much of rural New Zealand, this production is in well-established agricultural and horticultural enterprises making and selling an array of familiar food and fibre staples. Some of these commodities are today also being produced in new, expanded ways and places, often influenced by new technologies, regulations, investment strategies and market opportunities. Irrigated dairying and wind farming are good examples.

There are also very clear signs in the Wairarapa of diversification of rural production into niche primary products catering particularly for well-resourced consumers. This underscores the role of the region as a site of *consumption*. These consumer products are also underpinned by technological innovation, and influenced more particularly by changes associated with consumer lifestyle, health and fashion. Included here are high value niche foods and beverages[5]. The key to high returns for such products revolves around branding and advertising strategies, such as those referred to as “gate-to-plate”, that combine desirable images of the places where these goods can be produced and consumed, as in local wineries or restaurants. There is an emphasis on novelty, style, social status, natural environment, health and personal experience in this type of production. In some instances, however, there are conflicts between the processes and practices inherent in agro-industrial agriculture and those associated with the production and marketing of high-value, niche goods and services.

These niche products are linked closely to the processes of amenity migration, the movement of formerly urban residents into rural areas, to small rural settlements, small-holdings or stand-alone housing in peri-urban areas, within commuting distance of significant urban centres – another form of *consumption*. The Wairarapa is a destination for amenity migrants. Amenity migration also

[4] Amin (2004).
[5] Perkins et al. (2015).

includes the movement of urban residents to rural areas to retire from full-time employment or to take advantage of employment-related computer and telecommunications technology to make a living in the countryside that relies on their former urban connections. These amenity migrants often also establish new rural enterprises not associated with agriculture or horticulture. Their arrival can have a gentrification impact on rural towns and significantly affect rural landscapes, long-established social patterns, employment opportunities and property markets. These affects are making themselves felt in parts in the Wairarapa, being concentrated in and round particular settlements.

A common way that both long-established rural residents and amenity migrants can create new consumption-oriented livelihood opportunities in rural areas is by providing commercial recreation and tourism activities, ranging from small-scale, leisure-related activities for local and urban residents to the establishment of tourist accommodation and activities for international visitors. Associated with these activities are regionally focused brochures, guide books, and other, usually now electronic, media promoting the area. The development of recreational opportunities, hospitality and associated place-promotion is very evident for the Wairarapa. Local environmental and cultural features are used by residents to generate and diversify economic activity. This has occurred with the rise of post-mass tourism (particular independent travellers looking for unique or "authentic" experiences) and the demand from urban visitors to consumer the products of a multi-functional "countryside". These tourists like to recreate in high quality natural and cultural environments and take advantage of new land uses and landscapes such as vineyards and wineries, as well gaze at, and perhaps experience, aspects of traditional agro-industrial activity. A number of traditional farmers, in fact, have become part of this new activity, providing such services as hospitality and accommodation.

This proliferation of new recreational and tourism activities in the Wairarapa is linked to the ways protection of natural and heritage environments is now given high priority by many residents, supported by national agencies such as the Department of Conservation and the Historic Places Trust and local agencies such as local councils, the GWRC and Fish and Game Wellington. Their work is complemented actively by local and national NGOs, community groups, iwi/runanga, firms and individuals who in combination have greatly increased the range of protected natural and heritage sites and areas in the countryside. Apart from their contribution to environmental health and integrity these conservation attempts provide opportunities for recreation, enjoyment of nature and heritage, and employment. Inevitably there are sometimes conflicts between those wishing to conserve nature and heritage and advocates of productivist economic activity, and for this reason that protection is the third major element of the multifunctional countryside, along with production and consumption.

The SIA uses this global multifunctional rural space model as an important starting point in understanding the Ruamāhanga catchment and the ways that the WIP might change things.

3.3 Intensification of farming

A further important part of the assessment framework is a model of land use change under irrigation, as large-scale irrigation through the Wairarapa Water Use Project[6] is an important option for policy and planning in the catchment to consider. The assessment framework will use a model of social changes resulting from land uses under irrigation that has been developed in a series of New Zealand studies since the 1980s[7]. This has resulted in an understanding of the likely increase and other farming activity such as arable, mixed cropping and horticulture from a base primarily of sheep and beef farming. Experience has shown there are numerous influences which underpin the model of social change.

Originally, the model focused on generational changes in the social structure of farming, either by sale of a property or farm succession, along with a major shift in land use such as dairy conversion and consequent social changes. Yet, experiences in Canterbury, such as the Opuha case in South Canterbury and Hinds catchment in mid-Canterbury, found that major conversion to dairying can take place during the first five years after irrigation, or new irrigation technology, are introduced.

Underlying factors such as commodity price cycles, proximity to processing, scale of production (herd size), the structure of farm ownership and employment, and the availability of skilled workers can all influence the extent and timing of changes in farming systems. When farm systems do change under irrigation, it is very evident that there will be changes to the ownership of farms, some farm consolidation is likely, and a greater reliance on farm managers, share milkers and employees versus family farming. Overall the number of employees is likely to increase along with an increase in population, with a younger, more highly educated and diverse population as a result. It is evident that these social outcomes can be mixed, however, unless the community takes a proactive approach to managing change and maximising positive social outcomes.

3.4 National Objectives Framework

The NPS includes two compulsory values that apply to freshwater bodies: ecosystem health and human health for recreation. Numeric attribute states (minimum acceptable states) have been developed for primary and secondary contact recreation. Under the NPS, meeting the secondary contact recreation value, which relates to activities involving occasional immersion such as wading or boating, is compulsory. Meeting the higher standard – water suitable for swimming – is optional. The social assessment framework will consider effects on health as well as the swimability of waterways.

3.5 The assessment area – spatial framework

The Ruamāhanga Catchment extends across a wide area (355,685 ha or 44% of the Greater Wellington Region) with the northern boundary aligned with the territorial authority (TA) boundary between Masterton District and Tararua District, and the western boundary running from north to south along the TA boundaries of Masterton, Carterton and South Wairarapa Districts. The southern extent of the boundary hugs the coastline of the South Wairarapa District. The eastern extent of the catchment runs from north to south dividing the districts in two. The catchment crosses through meshblocks on this eastern boundary, and for the purpose of this assessment we have categorised

[6] now Water Wairarapa http://www.waterwairarapa.co.nz/
[7] Taylor et al. (2014, 2015).

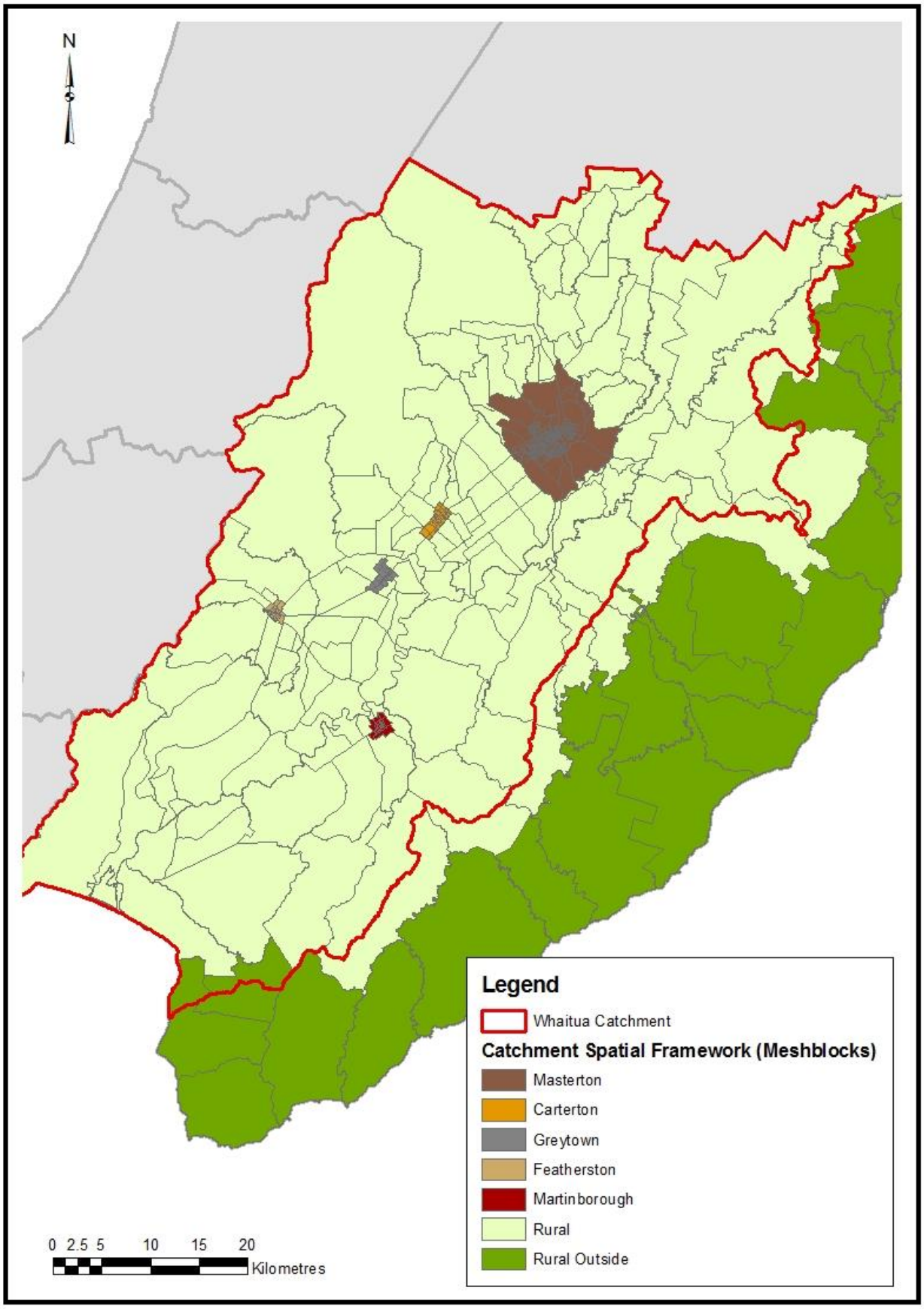
meshblocks in terms of whether they lie within or outside the catchment based on topography and the location of the majority of population and/or farmland (Figure 2). Annex 1 provides a list and rationale for the inclusion or exclusion of meshblocks that the eastern boundary intersects.

This report uses Statistics New Zealand's definitions of urban and rural areas to define the spatial communities in the catchment, which are aggregations of meshblocks. Particular focus is placed on the larger settlements of Masterton, Carteron, Greytown, Featherston and Martinborough. The rest of the catchment is treated as rural in the discussion below.

Wairarapa Moana is a significant water feature in the catchment. For the purposes of this assessment we have followed the convention established in the book *Wairarapa Moana: the lake and Its People.* With its multiple, well-known local authors this book provides a strong social and cultural background. For the purposes of the book, Wairarapa Moana is defined as "Lakes Wairarapa and Onoke and the rivers, streams, wetlands, lagoons and adjacent land that are all part of the same interconnected ecosystem"[8].

[8] Grant (2012). Publishers Note, page v.

Figure 2: Ruamāhanga Catchment



4 Baseline characteristics of the assessment area

In this section of the scoping report we consider a number of variables identified by the social science group as a starting point for the work. Initial findings are provided to give a sense of the scope of the baseline and a basic profile of the assessment area. There is also discussion of the sources of data and the likely further work to be undertaken in the next phase – detailed baseline.

4.1 Population and settlement

In 2016, there are approximately 42,490 people living in 17,960 households in the catchment (Table 2). Just over three quarters of the population resides in the five main urban areas, with Masterton (21,040 people in 8,950 households) and Carterton (5,040 people in 2,210 households) having the greatest concentrations of population. The remaining 10,180 people (4,030 households) living in the rural areas are distributed relatively evenly, with slightly higher concentrations in the southern Districts of Carterton and South Wairarapa than in Masterton.

Table 2: Catchment Population and Households, 2016

Location	Population	Pop Share	Households	Hhlds Share	Ave Hhld Size
Masterton	21,040	49.5%	8,950	49.8%	2.35
Carterton	5,040	11.9%	2,210	12.3%	2.28
Greytown	2,330	5.5%	1,010	5.6%	2.31
Featherston	2,340	5.5%	1,070	6.0%	2.19
Martinborough	1,560	3.7%	690	3.8%	2.26
Urban Areas	**32,310**	**76.0%**	**13,930**	**77.6%**	**2.32**
Rural Masterton	2,700	6.4%	1,080	6.0%	2.50
Rural Carterton	3,850	9.1%	1,490	8.3%	2.58
Rural South Wairarapa	3,630	8.5%	1,460	8.1%	2.49
Rural Total	**10,180**	**24.0%**	**4,030**	**22.4%**	**2.53**
Catchment Total	**42,490**	**100.0%**	**17,960**	**100.0%**	**2.37**
Wellington Region	**498,180**	**n/a**	**191,710**	**n/a**	**2.60**

Source: Market Economics adjusted Statistics NZ CAU estimates

The number of people and households living in the catchment was relatively stable in the period between 2001 and 2006, but over the last ten years there has been growth of approximately 4,060 people and 2,780 households, an annual average increase of 278 households (Table 3). There has been significant growth, particularly in the southern half of the area, in the towns of Carterton (19.7%), Martinborough (14.7%), and Greytown (10.4%) and the rural areas of Carterton District (31.0%) and South Wairarapa (23.1%) over the last ten years.

Table 3: Catchment Population and Household Growth, 2001–2016

Location	2001	2006	2013	2016	Change (%) 2001-2006	Change (%) 2006-2016
Population						
Masterton	19,990	19,980	20,720	21,040	-0.1%	5.3%
Carterton	4,210	4,210	4,810	5,040	0.0%	19.7%
Greytown	2,110	2,110	2,270	2,330	0.0%	10.4%
Featherston	2,380	2,400	2,320	2,340	0.8%	-2.5%
Martinborough	1,390	1,360	1,510	1,560	-2.2%	14.7%
Urban Areas	**30,090**	**30,060**	**31,630**	**32,310**	**-0.1%**	**7.5%**
Rural Masterton	2,440	2,470	2,640	2,700	1.2%	9.3%
Rural Carterton	2,720	2,940	3,550	3,850	8.1%	31.0%
Rural South Wairarapa	2,800	2,950	3,480	3,630	5.4%	23.1%
Rural Total	**7,960**	**8,360**	**9,680**	**10,180**	**5.0%**	**21.8%**
Catchment Total	**38,050**	**38,430**	**41,310**	**42,490**	**1.0%**	**10.6%**
Wellington Region Total	**440,320**	**466,300**	**486,700**	**498,180**	**5.9%**	**6.8%**
Households						
Masterton	7,990	7,920	8,690	8,950	-0.9%	13.0%
Carterton	1,700	1,710	2,080	2,210	0.6%	29.2%
Greytown	880	870	970	1,010	-1.1%	16.1%
Featherston	980	980	1,050	1,070	0.0%	9.2%
Martinborough	590	580	660	690	-1.7%	19.0%
Urban Areas	**12,140**	**12,060**	**13,450**	**13,930**	**-0.7%**	**15.5%**
Rural Masterton	870	910	1,040	1,080	4.6%	18.7%
Rural Carterton	1,010	1,060	1,370	1,490	5.0%	40.6%
Rural South Wairarapa	1,060	1,150	1,380	1,460	8.5%	27.0%
Rural Total	**2,930**	**3,120**	**3,800**	**4,030**	**6.5%**	**29.2%**
Catchment Total	**15,070**	**15,180**	**17,250**	**17,960**	**0.7%**	**18.3%**
Wellington Region Total	**166,870**	**173,350**	**185,380**	**191,710**	**3.9%**	**10.6%**

The distribution of population across age groups for the catchment as a whole, when compared to the Wellington region, reveals:

- the average proportion of over 65s living in the urban areas of the catchment is higher than the average proportion living in the Wellington region, 21% compared to 13%
- in the rural areas of the three districts, the average proportion of 40–64 year olds is higher than the average for Wellington region, 40% compared to 33%
- the average proportion of the population between the ages of 15 and 39 years old, is lower in the catchment (both across the urban and rural areas), than the average for the Wellington region, 25% compared with 34%
- the average proportion of children[9] living in the catchment is very similar to the average for the Wellington region.

The catchment is made up of largely European residents (>85%), with Maori and Pacific peoples being the second largest group (>15%) and a small group (<10%) of residents making up the remaining ethnic groups.[10] In the Wellington region, Europeans make up around 77 per cent of the population, Maori and Pacific peoples just over 20 per cent and Asian people just over 10 per cent.

[9] 0-14 year olds.
[10] Note – respondents can identify more than one ethnicity so percentages do not add to 100%.

Table 4 shows location quotients that reveal that the average proportion of Maori living in the catchment is higher than in the Wellington region, whereas the proportion of Pacific peoples, Middle Eastern, Latin American, African (MELAA) and Asian peoples, is significantly lower than in the Wellington region as a whole.

Table 4: Catchment Ethnicity Profile, 2013

	European	Māori	Pacific Peoples	Asian	MELAA	Other
Masterton	85%	20%	3%	2%	0%	2%
Carterton	89%	15%	3%	2%	0%	2%
Greytown	92%	10%	2%	2%	0%	3%
Featherston	88%	18%	3%	3%	0%	3%
Martinborough	86%	17%	3%	4%	0%	2%
Urban Areas	**87%**	**18%**	**3%**	**2%**	**0%**	**2%**
Rural Masterton	94%	10%	1%	0%	0%	2%
Rural Carterton	95%	9%	1%	1%	0%	2%
Rural South Wairarapa	93%	11%	1%	1%	0%	2%
Rural Total	**94%**	**10%**	**1%**	**1%**	**0%**	**2%**
Catchment Total	***88%***	***16%***	***3%***	***2%***	***0%***	***2%***
Wellington Region	**77%**	**13%**	**8%**	**11%**	**1%**	**2%**
Location Quotient - Ethnicity compared with Wellington Region Average						
Masterton	1.11	1.53	0.43	0.23	0.20	1.02
Carterton	1.15	1.12	0.33	0.17	0.14	1.31
Greytown	1.20	0.74	0.23	0.17	0.10	1.54
Featherston	1.14	1.41	0.36	0.26	0.19	1.67
Martinborough	1.12	1.33	0.42	0.34	-	0.93
Rural	1.22	0.76	0.15	0.08	0.07	1.14
Catchment Total	1.15	1.25	0.34	0.19	0.15	1.14

Source: Statistics NZ, Census 2013

The proportion of residents in the catchment born overseas is much lower than the average for the Wellington Region, 14% compared to 25%. The proportions have slightly changed over recent time (2001–2013), increasing from 11 per cent to 14 per cent of the population born overseas.

The patterns of people moving into the catchment are very similar to the Wellington Region, with around half of the population living in the same residence as they had 5 years ago. The proportion is somewhat higher for the rural population (54%), than for the urban residents (48%). Of people moving into the catchment, around 40 per cent have moved in from elsewhere in NZ, and between 3 and 6 per cent have moved into the area from overseas[11]. For Wellington region the figures are similar, except around 8% of people moving into the region were living overseas 5 years ago.

Further analysis of the age structure, ethnicity and birthplace/length of residence of the population will be included in the full baseline based on census data. The baseline will also include projections of population, households and household size out to 2046 by deriving mesh-block projections from the respective Census Area Units using Statistics NZ projections and applying these to various

[11] The remaining share represents the population that were not yet born 5 years ago.

household types. These projections of current trends into the future will underpin the status quo scenario in the first instance and form the basis for considering the aspirational scenario as well.

Further analysis of the population of each of the five main settlements is available in Annex 2.

4.2 Employment and livelihoods

The predominant economic activity in the Catchment is agriculture, forestry and fishing (Table 5) although the share of businesses operating in those industries has declined over time from 38.4% in 2000 (1,700 businesses) to 26.9% in 2014 (1,450). Employment in that sector has also declined from 4,150 jobs (MEC[12]s) in 2000 to 3,470 MECS in 2014, a 16% decrease (Table 5). The second largest sector, rental, hiring and real estate services has increased its share of activity from 13.8% in 2000 to 19.5% in 2014. However, employment has fluctuated in the sector between a low in 2011 and a high in 2003 and 2005. Other sectors with high shares of employment are health care and social assistance (11.4%, 2,110 MECs), retail trade (11.0%, 2,040 MECs), manufacturing (9.8%, 1,820 MECs), education and training (8.1%, 1,500 MECs),construction (7.8%, and 1,440 MECs) and accommodation and food services (7.4%, 1390 MECs), a sector that fluctuates but is growing overall. The three single, largest employers are in timber processing, meat processing and hospital services.

Comprehensive data is also available regarding the agricultural land uses in each territorial authority, in terms of types and size of farms, forestry, horticulture and activities that support those industries, in the Statistics NZ Agricultural Census. However the most recent information is for 2012. The Agricultural Census shows the most dominant forms of agricultural activity occurring in the three territorial authorities are sheep and beef cattle farming, with 340 sheep farms, 230 beef cattle farms and a further 220 sheep-beef cattle farms. Forestry (190 farms), Dairy cattle farming (170 farms), and grape growing (70 farms) are other important agricultural activities. Geographically, the majority of Masterton District has nearly three quarters of forestry farms (73%), and just over one half of sheep farms (58%) and sheep-beef cattle farms (51%). Beef cattle farming is relatively evenly distributed throughout the three TAs. Nearly three quarters of grape growing enterprises were located in the South Wairarapa District. There was approximately 860 ha planted for wine grapes and a further 170 ha planted for olive growing.

The business and employment data set shows that since 2000, the agriculture, forestry and fishing sector has seen significant changes in the following ways.

- An increase in the number of businesses and employment in the “Other” Agriculture and Fishing Support Services.
- An increase in the number of businesses and employment classified as Sheep-Beef Cattle Farming
- An increase of 30 Olive Growing businesses, however only accompanied by a slight increase in employment of 10 MECs
- The number of Sheep Farming (Specialised) businesses has declined by 41% (150 units) and 520 MECs (-237%).
- The number of Dairy Cattle Farming business units has declined by 31% (100 units) and 220 MECs (+78%).

[12] MEC = Modified Employment Count, a measure of total employment (jobs) that includes all paid employees and working proprietors, from Statistics NZ’s Business Frame and Linked Employer Employee Database.

- A decline in the number of businesses operating in Beef Cattle Farming (Specialised) (-48 units, -20%) and employment (-170 MECs, +91%).
- An increase in the number of businesses involved in Other Crop Growing (30 units, 208%), with a slight decline in employment (-2 MECs, -12%).
- An increase in the number of Beekeeping businesses (10 units, 183%), and a significant increase in the number of employees (+180 MECs, +2000%).
- A decline in the number of businesses operating in Vegetable Growing (outdoors) (-25 units, -77%) and employment (-40 MECs, +186%).
- A decline in the number of businesses operating in Apple and Pear Growing (-20 units, -77%) but a very slight increase in employment (+5 MECs, +21%).
- A decline in the number of businesses (-25 units, -23%) and employment (-50 MECs, -50%) in the forestry sector.

Employment in the catchment's Hospitality sector (Accommodation and Food Services) increased by 310 MECs (28%) to reach 1,390 MECs in 2014. That level is slightly below the 1,440 MECs peak reached in 2008 prior to the economic crisis, although employment in the sector is relatively stable, having fluctuated between 1,340 and 1,440 MECs since 2008. Recreation services employment has fluctuated in a similar way, and is now at 250 MECs, up 23% from 2000, but slightly off the peak of 280, which has been hit in several years since then.

Table 5: Catchment Employment by Industry Category, 2000–2014

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Change 2000-2014 (n)	Change 2000-2014 (%)
Agriculture, Forestry and Fishing	4,150	4,230	4,560	4,160	4,080	4,110	3,870	3,620	3,400	3,330	3,340	3,360	3,420	3,460	3,470	- 680	-16.4%
Mining	30	30	30	40	40	40	40	20	20	20	10	20	30	20	30	-	3.9%
Manufacturing	2,120	2,070	2,020	2,040	2,090	2,120	1,950	1,860	1,910	1,760	1,790	1,780	1,700	1,770	1,820	- 300	-14.0%
Electricity, Gas, Water and Waste Services	40	70	60	80	60	60	40	30	30	30	30	10	50	50	60	20	35.4%
Construction	1,020	1,100	1,120	1,210	1,250	1,380	1,560	1,720	1,770	1,660	1,500	1,410	1,420	1,720	1,440	420	41.7%
Wholesale Trade	380	370	360	400	430	490	540	530	500	510	550	490	580	550	540	160	39.5%
Retail Trade	2,010	2,010	2,090	2,140	2,140	2,130	2,140	2,170	2,200	2,210	2,130	2,160	2,120	2,130	2,040	30	1.4%
Accommodation and Food Services	1,080	1,220	1,290	1,260	1,250	1,280	1,310	1,430	1,440	1,400	1,390	1,340	1,350	1,360	1,390	310	28.4%
Transport, Postal and Warehousing	560	530	540	540	520	530	500	530	590	550	490	490	470	460	480	- 80	-13.7%
Information Media and Telecommunications	240	240	260	730	130	130	220	210	170	180	180	170	190	190	180	- 60	-23.5%
Financial and Insurance Services	220	220	230	240	230	220	240	260	250	260	250	260	260	200	210	- 10	-4.6%
Rental, Hiring and Real Estate Services	450	390	460	460	440	460	450	360	440	380	340	310	320	320	400	- 50	-11.5%
Professional, Scientific and Technical Services	470	540	520	590	630	710	750	800	840	860	820	840	910	920	990	520	112.2%
Administrative and Support Services	250	460	370	500	560	550	500	570	550	560	500	590	520	470	500	250	102.7%
Public Administration and Safety	490	490	470	470	470	500	530	520	540	620	570	520	580	470	530	40	8.6%
Education and Training	1,270	1,310	1,210	1,260	1,270	1,250	1,260	1,450	1,480	1,410	1,440	1,480	1,580	1,450	1,500	230	18.2%
Health Care and Social Assistance	1,650	1,600	1,680	1,760	1,710	1,800	1,830	1,870	2,000	2,050	2,090	2,100	2,030	2,120	2,110	460	27.5%
Arts and Recreation Services	200	190	200	200	220	270	280	280	250	230	250	280	270	270	250	50	22.7%
Other Services	630	610	590	580	590	570	560	580	510	580	570	540	540	540	580	- 50	-7.0%
Total	**17,260**	**17,660**	**18,070**	**18,670**	**18,110**	**18,590**	**18,570**	**18,820**	**18,890**	**18,610**	**18,230**	**18,140**	**18,310**	**18,480**	**18,520**	**1,260**	**7.3%**

The urban areas currently account for 59.4% of businesses (3,190 units) and 74.0% of employment (13,710 MECs) in the catchment. There has been modest growth in employment in the urban areas between 2000 and 2014, with 515 new businesses (19.2%) and 875 new jobs (6.8%), an annual average increase of 37 businesses and 62 jobs.

The most important industry sectors in the urban areas in terms of employment activity are:

- Health Care and Social Assistance, 2,090 MECs (160 units), average size 13.1 MECs
- Retail Trade, 1,810 MECs (290 units), average size 6.3 MECs
- Education and Training, 1,300 MECs (85 units), average size 15.3 MECs
- Accommodation and Food Services, 1,220 MECs (170 units), average size 7.3 MECs
- Construction, 1,180 MECs (375 units), average size 3.2 MECs.

In percentage terms, the industry sectors that have shown the most significant growth are:

- Professional, Scientific and Technical Services, 140 businesses (units) (97.8%) and 425 jobs (MECs) (107.3%)
- Administrative and Support Services, 40 units (74.1%) and 205 MECs (100.9%)
- Construction, 110 units (39.4%) and 265 MECs (28.6%)[13].

The industry sectors showing the greatest decline in percentage terms were:

- Mining, -1 units (-33.3%) and -19 MECs (-84.0%)
- Agriculture, forestry and fishing, -158 units (-31.9%) and -370 MECs (-26.2%)
- Manufacturing, -27 units (-16.3%) and -340 MECs (-26.0%).

Further analysis of farm activity by farm in the 2012 agricultural census[14] will be provided in the full baseline. Analysis of employment by detailed sectors also will be provided in the full baseline report, focusing in particular on sectors that might be affected by different regulatory settings and other interventions, and on differences between urban settlements and rural areas of the catchment.

[13] While the Financial and Insurance Services sector has shown the largest percentage increase in businesses (216.0% or 110 units), the sector has experienced a decline in the number of people employed (-3.1% or -6 MECs). Similar patterns have occurred in the Rental, Hiring and Real Estate Service sector (55.0% units and -3.5% MECs), and Information Media and Telecommunications (34.8% units and -27.3% MECs).

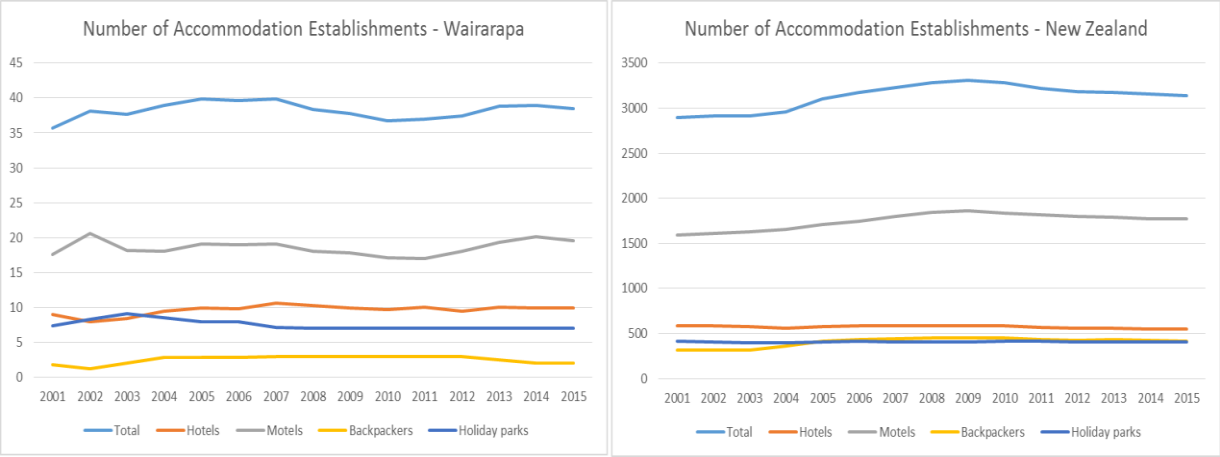
[14] Enquiries with Statistics NZ found the next agricultural census is this year (2016).

4.3 Visitors and tourism

There are a total of 38 accommodation establishments[15] in Wairarapa. The region has experienced very similar growth patterns as for the rest of New Zealand, i.e. little growth overall in the number of accommodation establishments. Growth in the number of hotels has been higher in the Wairarapa than for the rest of NZ (where negative growth has been reported), but growth in backpacking lodges has been slower in Wairarapa than in NZ overall. Despite the relatively slow growth in the number of establishments, both capacity and total guest nights have grown, and once again very similar patterns of growth for the sector as a whole can be seen in Wairarapa as in the rest of NZ.

Overall, the average total capacity[16] as measured in stay-unit-nights available, has increased slightly both in Wairarapa and for the whole of NZ. The growth over time is quite stable for all of the providers with the most significant growth in capacity in backpackers accommodation.

Figure 2: Number of Wairarapa Accommodation Establishments, 2001–2015



NZ is currently experiencing a tourism boom, with total guest nights[17] having grown by some 4 million over the past five years (2011–2015[18]), or 13% growth. By comparison, total guest nights in Wairarapa has only grown a total of 4.6% over the same period. The five-year period before that (2006–2010[19]) saw only a 3% growth in total visitor nights for NZ as a whole, and 1.5% for Wairarapa. Growth in Wairarapa has not kept pace with the tourism boom in the rest of the country. In the longer term, it is expected that there will be a general upward trend in total guest nights for NZ as a whole, with the growth set to continue over the next five years[20].

[15] An "establishment" is the smallest statistical unit operating within a single physical location and owned by a single enterprise. The term is used to represent what is usually called the 'geographic unit' in other Statistics NZ publications.

[16] The basic measure of an establishment's capacity is described as stay-unit nights available. It is defined as one stay unit multiplied by one night. For example, 10 units in a motel available for guest use (whether occupied or not) for the full 31 days in July would have a capacity of 310 stay-unit nights.

[17] The guest night measure is equivalent to one guest spending one night at an establishment. For example, a motel with 15 guests spending two nights would report that they had provided 30 guest nights.

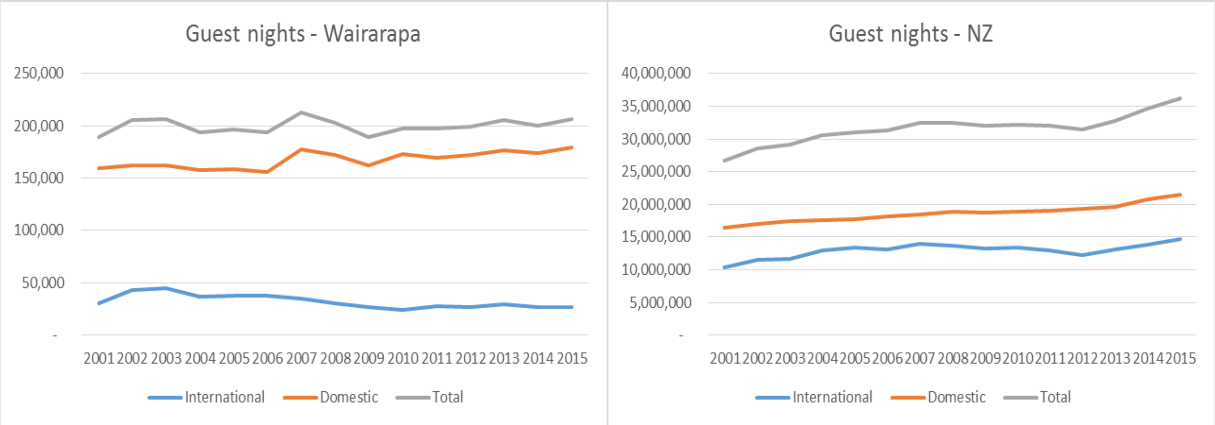
[18] Figures are reported as at the end of each year, therefore the period 2011–2015 includes 2011, making it a 5 year period.

[19] Same as footnote 11.

[20] *New Zealand Tourism Forecasts 2016–2022.* Ministry of Business, Innovation & Employment. (May 2016).

When examining the guest night split between international[21] and domestic[22] nights (Figure 3), Wairarapa has seen a 3% decline in international visitors over the last five years, and a 12.7% total decline from 2001 to 2015. This pattern is contrary to the NZ trend overall which has seen a 13% increase in international visitor nights over the period between 2011 and 2015, and a total increase of around 42% (2001–2015). The data show that with a strong domestic base the Wairarapa is well placed to expand its international visitor sector.

Figure 3: Wairarapa International and Domestic Guest Nights, 2001–2015



Visitor statistics for the Wairarapa Region are regularly reported in media releases posted and archived on the website of the Regional Tourism Authority (RT0) – Destination Wairarapa[23]. For the recent summer of 2015–16, the organisation points to a marked increase in domestic and international travellers and, in that same commentary, makes note of growing visitor demand for information about local wine, outdoor activities, beaches and walks – the pillars of the area's tourism mix[24]. Strong growth in the local tourism sector was also reported in 2015[25]. Current commentary[26] suggests that the tourism sector is continuing to perform well.

While domestic tourism is critically important, stakeholders have also noted strong growth in the Chinese visitor market and spend (the latter up 150% on 2013) and, in response, the RTO is now working closely with local operators to ensure they are "China Ready"[27]. This includes holding a series of 'China Visitor Insights Workshops'. Masterton District Council are supporting a proposed extension to the Wellington Airport runway, anticipating that it will provide a significant boost to Wairarapa's GDP, in part via a marked increase in the Asian tourism market[28].

[21] International guest night: equivalent to one foreign guest spending one night at an establishment.
[22] Domestic guest night: equivalent to one New Zealand resident spending one night at an establishment.
[23] www.wairarapanz.com
[24] Destination Wairarapa (2016)
[25] Fulton (2015)
[26] Media release 18/05/2016 www.wairarapanz.com/media-releases/international-visitors-attracted-wairarapa
[27] Media release 08/09/2016 www.wairarapanz.com/media-releases/destination-wairarapa-work-local-business-ensure-they-are-china-ready
[28] Media release 08/09/2016 www.wairarapanz.com/media-releases/destination-wairarapa-work-local-business-ensure-they-are-china-ready

Over the last 10 years, events have become a key component of the Wairarapa region's economic and tourism development strategy and economy[29]. Destination Wairarapa promotes a 'portfolio' of events for the region[30]..

Most of these festivals have professional webpages containing information about the event, including the businesses involved and estimates for the number of people who attended. Wairarapa also benefits from events held in neighbouring jurisdictions. Further analysis on events and relationships between these events, water and land use will be provided in the full baseline report.

Rural retreats (farm-stays and bed and breakfast accommodation) are a key feature the Wairarapa tourism mix, particularly in Martinborough which is an anchor destination for visitors[31]. Small, home-based accommodation providers (i.e., those with a turnover of under $30,000) account for about 60 per cent of the region's tourism businesses. Sixteen per cent of all tourism businesses were combined with farming or other activities[32] pointing to a strong agri- and rural-tourism sub-sector.

Since the 1990s, a strong connection has developed between the local tourism industry, and the Wairarapa's niche food and boutique wine producers[33]. This link is expressed very strongly in place promotion material, visitor guide books and in the region's flagship events, particularly Toast Martinborough. Wine trails and a vineyard tour industry have also developed off the back of the success of the local wine industry[34]. An additional effect has been the growth in the number of cafes and restaurants selling local food and wine[35]. This trend combined with the region's close proximity to Wellington, has meant Wairarapa has become an attractive place in which to buy (rural) property and live. The influx of people to reside on lifestyle blocks has increased the diversity of the population, provided more employment opportunities, and expanded the range of restaurants and cafes in Wairarapa.

Wairarapa also has an abundance of heritage resources including Maori archaeological sites, waahi tapu, early European buildings and sites of historical significance, and museums. The findings of the 2014 TOI Wairarapa Survey of Arts, Culture and Heritage indicates that Maori heritage is particularly important to Wairarapa[36]. The vast majority of respondents to the survey agreed that raising the visibility of a Maori perspective of Wairarapa history (heritage and arts) would enrich the visitor and community experience (87%). Most also felt that bi-lingual signage should be visible throughout the region (67%).

Another element of Wairarapa's destination mix is the area's natural resource base which provides the setting for a variety of outdoor recreation opportunities. These are discussed in the next section Further information about tourism will be obtained from Destination Wairarapa's Strategic Plan 2014–2025[37], and analysis of business activity and employment by sector.

[29] Destination Wairarapa (n.d.); Go Wairarapa (2005); Smith (2008)
[30] For a full list see http://www.wairarapanz.com/about-wairarapa/wairarapa-events
[31] Alteljevic (2009); Howland (2014)
[32] Ateljevic (2009)
[33] Huang (2014)
[34] E.g. www.martinboroughwinetours.co.nz; www.winesfrommartinborough.com/visitor_information
[35] Taylor et al. (2015)
[36] TOI (2014)
[37] Destination Wairarapa (n.d.)

4.4 Outdoor recreation

The Wairarapa region is the setting for a wide variety of outdoor recreation activities. The website of Destination Wairarapa provides a resource from which the following recreation inventory has been derived.

- Tramping, hunting and walking in the Tararua Ranges
- Trekking and day walks[38]
- Canoeing on the Ruamāhanga River
- Horse Trekking
- Picnicking on the banks of the Ruamāhanga River and Lake Wairarapa
- Quad-biking
- Cycling
    - vineyard cycle tours
    - the Rimutaka Cycle Trail
    - the Greytown Trail – a 5km route used as a walking track and cycle trail connecting South Greytown to Woodside Station
    - Tora Tora Mountain Bike Park
    - Route 52 – a gently rolling road connects Hawkes Bay and Wairarapa and takes 2–3 days one way
    - the Rimutaka Rail Trail – a gently graded 18 km walk or mountain bike ride over the Rimutaka Ranges and part of the longer Rimutaka Cycle Trail
- Camping
- Golf (the region has 9 golf courses)
- Trout Fishing
- Swimming at key spots including:
    - Double Bridges (Ruamāhanga River, north of Masterton, on SH2 towards Opaki)
    - Black Rock Road swimming hole
    - Waiohine Gorge
    - Waiohine Bridge
    - Tauherenikau River swimming hole (at the end of the Tauherenikau Gorge)

Participants in a recent social mapping study[39] viewed rivers and lakes in the Wairarapa region as "extremely important for recreation" for both locals and tourists. Two key settings for water based recreation in the Wairarapa region are: (1) the Ruamāhanga River, and (2) Lake Wairarapa and its wetland area: Wairarapa Moana. Other sites of significance for water-based recreation are the Waiohine Gorge (swimming, tubing, rafting, kayaking, trout fishing, camping, picnicking and tramping, caving and hunting (red deer)),[40] and the Waingawa and Waipoua Rivers. Data pertaining to the recreational use of five further sites (Te Mara, Black Creek; Tividale, Mangaterere and White Rock Road) have been presented as part of the Wairarapa Water Use Project[41].

The Greater Wellington Regional Council conducts weekly recreational water quality monitoring to identify risks to public health from disease-causing organisms and toxic cyanobacteria.[42] Over the 2015/16 bathing season, recreational water quality in the Wellington Region was monitored at 24

[38] www.wairarapanz.com/see-and-do/walks
[39] Winstanley & Lange (2009).
[40] Chrystall (2007).
[41] OPUS (2014).
[42] Morar & Greenfield (2016).

river sites, one estuarine site and 63 coastal sites. The results from this monitoring are compared to national guidelines, and used to calculate an overall grade for each site. Results are published in publically available annual data reports and report cards for specific areas, including the Wairarapa[43].

Greater Wellington Regional Council has provided a comparison of river, stream and lake ecosystem health and water quality data collected within the Ruamāhanga catchment to NPS attributes for human health for recreation (E.coli, an indicator of faecal contamination) and planktonic cyanobacteria (toxic algae that live in the water column). Data is publically available for 33 sites[44].

Ruamāhanga River

A recent survey for river and coastal recreation use in the Wellington Region indicates that the Ruamāhanga River is the most popular site in the Wairarapa for river recreation, with fishing and swimming among the most predominant uses.[45] It is the Wairarapa area's principal trout fishery (Brown and Rainbow) offering a variety of fishing experiences from classic backcountry fishing in its upper reaches in the Tararua Conservation Park, to trolling for sea run browns in the tidal zone near its outlet to Lake Onoke[46]. The rivers close proximity to the road provides relatively 'easy access' (although anglers are reminded that sections of the riverbed are in private ownership which restricts access): Fishing maps for the area provide directions to and descriptions of key access points.[47] The level of use of the river for angling can be estimated by comparing results from the National Angling Survey (produced by NIWA for Fish and Game New Zealand)[48]. The Greater Wellington Regional Council routinely monitor recreational water quality at selected locations on the Ruamāhanga and its tributaries. Parts of the Ruamāhanga River are sometimes unsuitable for swimming.[49]

Lake Wairarapa and Wairarapa Moana

Lake Wairarapa – the 3rd largest lake in the North Island – is a key recreational site. It is the only waterbody in the catchment listed in Ministry for the Environment's 2004 inventory of *Potential Water bodies of National Importance for Recreation*[50]. The lake is surrounded by wetlands which drain into Lake Onoke and makes up a large part of Wairarapa Moana - the largest wetland in southern North Island (9000 hectares). Wairarapa Moana[51] provides opportunities for walking and wildlife viewing (including spotting rare species of plants and birds, such as the Caspian Tern). Recreational fishing is also popular here (brown trout, kahawai, perch, flounder, inanga (whitebait) and eels)[52]. The Wairarapa Lake Shore Scenic Reserve provides opportunities for picnicking and nature viewing. Lake Domain Reserve is popular with walkers, mountain bikers, picnickers, campers and duck-shooters. Matthews and Boggy Pond Wildlife Reserve provides wetland bird-watching opportunities (ducks, swans, white herons, stilts, bitterns, royal spoonbills).

Further information on outdoor recreation values, particularly in lakes and rivers, will be obtained from key informant interviews and available recreational surveys. No new survey work is proposed at this time.

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[43] Greater Wellington Regional Council (2016).
[44] Greater Wellington Regional Council (n.d.).
[45] Greenfield & Martin (2016).
[46] Fish and Game New Zealand (n.d.).
[47] Draper (2004); Fish and Game New Zealand (n.d.).
[48] Unwin (2013).
[49] Greater Wellington Regional Council (2012).
[50] Cited in Chrystall (2007).
[51] Diltz et al. (2016).
[52] http://www.gw.govt.nz/background-2/; Chrystall (2007).

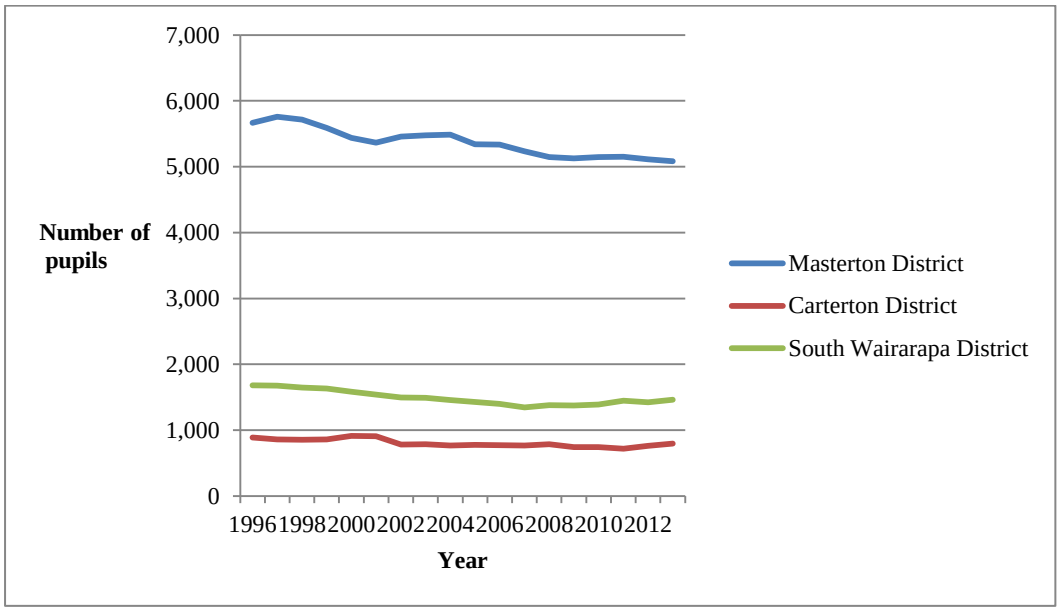
4.5 Community, social services and social capital

There is a wide range of social support services located in Masterton and the surrounding region. The majority of the services based in Masterton provided a service for the Wairarapa region. Some social service providers are located outside Masterton. A principal focus of these services is on mothers and their children, and gaps in the services include support for young fathers, mental health services, parenting programmes for older children and teenagers, access to early childhood education, and affordable housing. Services would benefit from more effective networking and access to greater range of social housing[53].

Sport Wellington Wairarapa provides a central hub at the Wairarapa Sports House in Masterton and supports a wide range of sport activity across the three Districts in schools, clubs and associations. Each district maintains a number of sporting facilities[54].

Schools are key hubs for communities both rural and urban. The rolls of schools provide, along with demographic data, an indication of the vitality of a community. While the population of the Combined Districts has increased by between 2001 and 2013, this growth is not reflected in the total number of pupils attending school in the Wairarapa. As Figure 9 shows, the number of pupils enrolled at schools in each of the districts has gradually fallen since 1996, and that decline has continued during the early part of this century[55]. Schools in Masterton District had a total roll of 5,084 at 1 July 2013. They comprised seven full primary schools, five contributing schools, one intermediate school, one composite school (year 1 to 15), six secondary schools and one teen parent unit. Carterton District had five full primary schools and a composite school with a total roll of 796, and South Wairarapa District had eight primary schools and one secondary school with a total roll of 1,461[56].

Figure 4: Combined Wairarapa Districts School Rolls at 1 July 1996–2013



[53] Taylor et al. (2014)
[54] http://www.sportwellington.org.nz/wairarapa/
[55] This decline in the school rolls is mainly the consequence of the aging of the population of the Combined Districts.
[56] Roll-by-Age & Ethnicity pivot table from Ministry of Education www.educationcounts.govt.nz/statistics/schooling/july_school_roll_returns/6028 downloaded 23 April 2014.

The full baseline will include further analysis of social services including gaps in services and any particular social needs. Sources will include agency data, and relevant council and other reports and a number of sources were identified during scoping interviews for follow up.

Field research with key-informant interviews will deepen the description of, community organisations and groups particularly with interests in land uses and water resources, and the natural environment and the level of community cohesion.

4.6 Physical infrastructure and drinking water

At this point, in order to avoid any overlap, a description of drinking water supplies and wastewater disposal Is not included in the baseline, dependent on further information from the modelling team. Sources will include councils, public health organisations and relevant reports and maps. It was clear from discussions at a community meeting and RWC scenario workshop that there is a significant infrastructure investment required to improve wasterwater and stormwater disposal.

4.7 Mahinga kai and cultural values

Mahninga kai and cultural values are identified by the RWC as the basis for a number of key values. At this point in the SIA further liaison is required with the cultural assessment work to be undertaken by GRC so that coordination can take place with the SIA.

4.8 Income flows, equity and deprivation

These is an evident pattern between the relatively low social-economic status (level of social deprivation) in the towns and the surrounding areas. This pattern is very clear in the maps provided in Annex 2. Further analysis, including individual and household income, unemployment, people on benefits and specific characteristics of the Maori population, will be included in the extended baseline.

It will also include further discussion of rural urban connections/disconnections evident in natural resource or planning disputes and debates, with links drawn between social cohesion/exclusion and the ways that water is valued and used. Sources will include media reports, public submissions (e.g. on council plans), any available public opinion research or surveys and key informant interviews.

5 Tasks, workplan and budget for baseline and assessment

5.1 Key tasks next phase

The next phase of work is to develop the detailed baseline as indicated in this scoping report.

The main tasks are to add detail around the various parameters of the baseline. This work will include further analysis of the following:

- Further analysis of the population characteristics by settlements and rural areas using census data
- Further analysis of the characteristics of the Maori population
- Further analysis of business activity and employment in key sectors likely to be affected by interventions included in the scenarios under development
- Population of the command area of the Water Wairarapa irrigation project (it is understood that this area will not vary greatly, if at all, for two options under consideration – and it is likely this project will be part of the RWC aspirational scenario
- Households by settlements and rural areas, including household projections to underlie the status quo scenario – projections will be for the period 12013-31, after which period it will be possible to provide some commentary on likely trends
- Tourism numbers and analysis of tourism expenditure from Destination Wairarapa data and official statistics plus further commentary on current and future products and services
- Analysis of farming activity at the last agricultural census (2012) and trends over time, and rural-urban connections and flows
- Further investigation of the data on waste and stormwater, and drinking water, infrastructure and costs per household (links to other modelling studies)
- Further analysis of social services and related data using existing reports, key-informant interviews, Health Board and Ministry of Education data
- Further commentary on recreational activity from key informant interviews and secondary data sources focusing on the Ruamāhanga River and streams and Wairarapa Moana, including swimming, fishing and hunting for water fowl
- Any other baseline (includes trends)analysis relevant to the scenario assessment work.

This next phase of work will result in the full baseline report.

The phase will overlap and be integrated with the subsequent phase assessing social implications of scenarios, and particular components of the gold scenario of proposed interventions in particular. Of particular interest will be potential effects on employment by sector, population changes relating to that employment, services based on population, personal and household income and social equity, including any specific effects identified for the Maori population (excluding cultural effects).

The assessment phase will incorporate input from the other social projects on connections to water, social equity and behavioural change.

5.2 Milestones

The milestone reports for work from this point, and indicative timeframe, are as follows:

Present scoping report to RWC	25 October 2016
Draft baseline report	16 December 2016
Status quo scenario initial discussion paper	early 2017 To be determined
Aspirational scenario discussion paper	early 2017 to be determined

A full draft SIA report including final baseline, scenario assessments and commentary on the proposed WIP is expected in the second quarter, 2017. This will be finalised following peer review.

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Annex 1 List and rationale for the inclusion or exclusion of meshblocks

The Spatial Framework Catchment Meshblock Definitions are as follows:

MB Code	AU Code	AU Name	TA Code	Rural IN/OUT	Explanation
2254701	578402	Whareama	48	Rural Outside	Small overlap into meshblock
2228502	578402	Whareama	48	Rural	Majority of meshblock area inside catchment
2254601	578402	Whareama	48	Rural	Majority of meshblock area inside catchment
2254602	578402	Whareama	48	Rural	Majority of meshblock area inside catchment
2254900	578402	Whareama	48	Rural Outside	Small overlap into meshblock
2255700	578402	Whareama	48	Rural Outside	Small overlap into meshblock
2255900	578402	Whareama	48	Rural	50/50 divide between east and west of hills but low pop
2256400	578402	Whareama	48	Rural	Majorty is west of the hills - Stronvar vicinity
2256500	578402	Whareama	48	Rural	Majority is west of the hills - Wainuioru vicinity
2263800	579502	Te Wharau	49	Rural	Majority is west of the hills
2263900	579502	Te Wharau	49	Rural	Majority is west of the hills - Gladstone vicinity
2264100	579502	Te Wharau	49	Rural	Majority is west of the hills - Gladstone
2264200	579502	Te Wharau	49	Rural	Majority is west of the hills - Gladstone vicinity
2273201	579802	Tuturumuri	50	Rural Outside	Putangirua Pinnacles - 35 people - coastal
2273202	579802	Tuturumuri	50	Rural Outside	Eastern side of range
2275500	579802	Tuturumuri	50	Rural	Majority is west of the hills
2275600	579802	Tuturumuri	50	Rural	Majority is west of the hills
2277000	579802	Tuturumuri	50	Rural	Majority is west of the hills - Tuturumuri

Annex 2 Further analysis of the population of the main settlements

Masterton

Masterton is the dominant urban area in the catchment, accommodating approximately 50% of population and households (21,040 people in 8,950 households in 2016). Since 2006, there has been growth of approximately 1,060 households in the town, an average increase of 100 per annum.

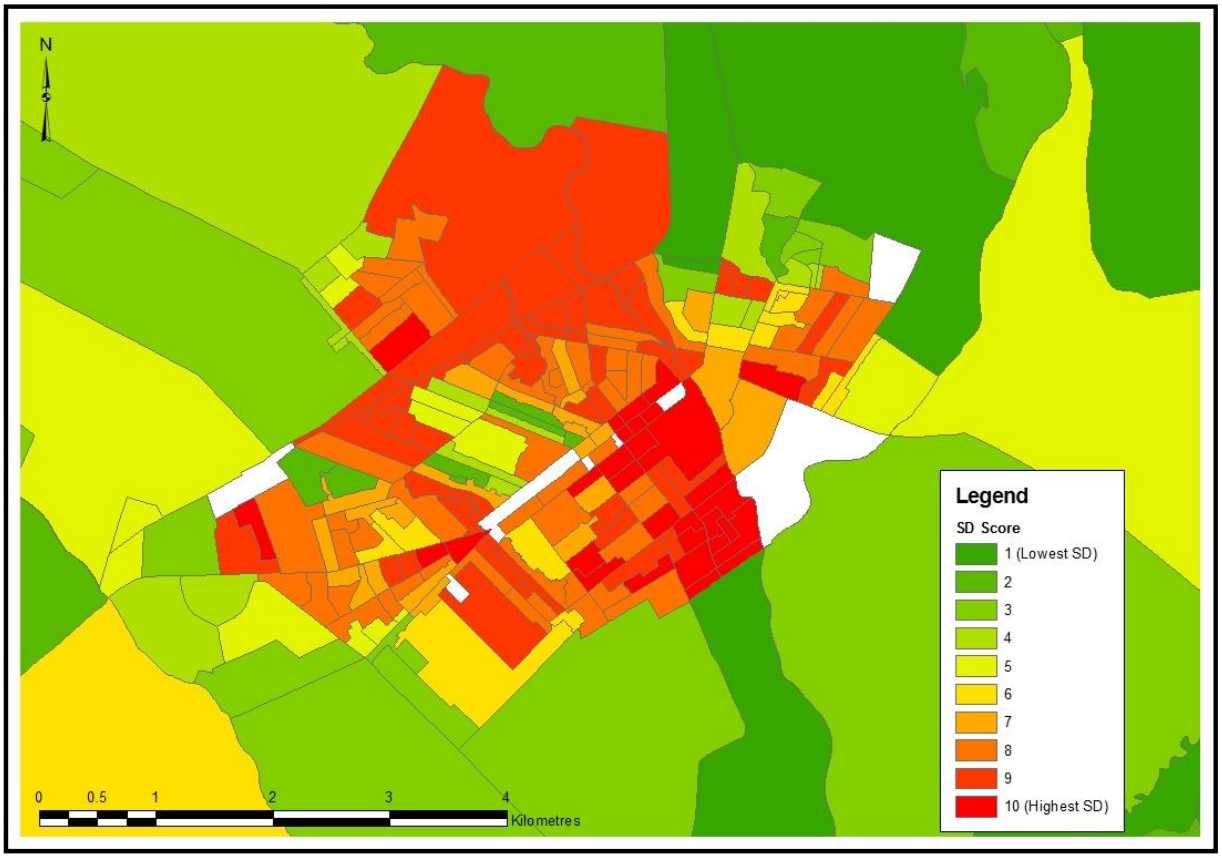
The key demographic patterns for Masterton are:

- Nearly a third (32%) of the population in Masterton is aged between 40 and 64 years. This has increased slightly (+1%) from the previous census. This proportion is similar to the Wellington region (33%) and somewhat lower than the rural average (40%) in the catchment. The proportion of over 65s is higher in Masterton than in the Wellington region (20% compared to 13%), while the proportion of 15–39 year olds in Masterton is much lower than in the Wellington region (27% compared to 34%).
- Masterton's ethnic composition is very similar to the other urban areas in the catchment:
- The largest proportion of the population is European (>85%),
- The number of Māori and Pacific peoples in the area increased slightly between 2001 and 2006, making up around 20 per cent of the population in 2013.[57]
- Less than 5% of the total population fall into the remaining three categories (Asian, Other and MELAA[58]).
- Nearly 90% of residents in Masterton were born in NZ.
- Masterton has the lowest rate of home ownership of the urban areas in the catchment (55%). This is similar to the average Wellington Region rate of home ownership (50%).
- The majority of homes in Masterton are separate houses (84%), but there are around 12% of dwellings which are classified as 'attached housing'[59]. This is the largest proportion of attached housing in the catchment, however it is well below the 23% of dwellings in the Wellington region falling into this category.
- 5% of the Masterton population is reported to have no formal qualification. For nearly half of the residents (47%), a high school certificate[60] is their highest qualification, and around 18% has a tertiary qualification[61]. These proportions are very similar to the other urban areas and the catchment as a whole. However, a much higher average proportion has no qualification than the Wellington region average, 35% compared to 16%, and a much lower proportion has a tertiary qualification than the regional average (18% compared to 37%).

The Masterton urban area has a high level of socio-economic deprivation[62] (Figure 2.1).

[57] Since it is possible for people to identify with more than one ethnic group, the proportions do not necessarily sum to 100%.
[58] Middle Eastern, Latin American and African
[59] Two or More Flats/Units/Townhouses/ Apartments/Houses Joined Together
[60] NZQA Level 1-4, including a High School qualification obtained overseas.
[61] NZQA Level 5 and above
[62] The Socioeconomic Deprivation index was developed by the Department of Public Health at the University of Otago in Wellington, and updated after the 2013 census. The index combines census data relating to income, home ownership, employment, qualifications, family structure, housing, access to transport and communications to provide a score for each meshblock in NZ. The scores were converted to a 1 – 10 scale. A score of 1 represents the least deprived 10% of areas in New Zealand and a score of 10 represents the most

Figure 0.1: Masterton Socio-economic Deprivation Index, 2013



Carterton

Carterton has the second highest concentration of residents in the urban areas, and has experienced the largest population growth (20%) over the last 10 years. Population increased from around 4,200 in 2006 to just over 5,000 residents in 2016. Household numbers have increased by 500 households, approximately 50 per annum, over the same period.

The key demographic patterns for Carterton are:

- Carterton has a very similar distribution of population across the four age groups[63] to the rest of the urban areas and the catchment as a whole. Around a third (34%) of the residents are aged between 40 and 64 years, around 20% are children under 14 years old, and the remaining 46% is split between the 15–39 year old group and the over 65s (23% each). The average proportion of 15–39 year olds living in Carterton is lower than the regional average, while the proportion of over 65s living in this area is higher than the Wellington region average.
- The dominant ethnic group is European (89%), with 18% of the population also identifying themselves as Maori, and 7% as Pacific, Asian, Middle Eastern, Latin American, African and 'other' peoples.

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deprived 10% of areas in New Zealand. The maps colour-code the meshblocks on a spectrum from bright red indicating the highest level of socioeconomic deprivation to bright green being the lowest level of deprivation, reflecting these scores.

[63] 0-14 years; 15-39 years; 40-64 years; 65 years and over.

- The proportion of residents that were born outside of NZ has increased somewhat over time, from 10% in 2001 to 14% in 2013. A very similar pattern to the rest of the urban areas.
- Approximately 61% of households in Carterton owned their usual residence. This is slightly above the average for the Wellington region (50%).
- A high share of dwellings (87%) in Carterton, are separate houses and 8% are some form of 'attached housing'.
- 37% of the population living in Carterton has no formal qualification, while for nearly half (48%) of residents a high school certificate is their highest qualification and a further 15% has obtained a tertiary qualification. This is similar to the rest of the catchment, but the share of the population with no qualification is more than double the Wellington regional average (37% compared to 16%), and the proportion of residents with a tertiary qualification is less than half of the region's average (15% compared to 37%).

There are high levels of socio-economic deprivation in the urban area (Figure 2.2), however the level of deprivation seems to be lower than that of Masterton and Featherston.

Figure 2.2: Carterton Socio-economic Deprivation Index, 2013

Greytown

Greytown has also experienced some population growth (10%) since 2006, increasing from 2,110 residents in 870 households (2006) to 2,330 in 1,010 households (2016). A total increase of some 140 households.

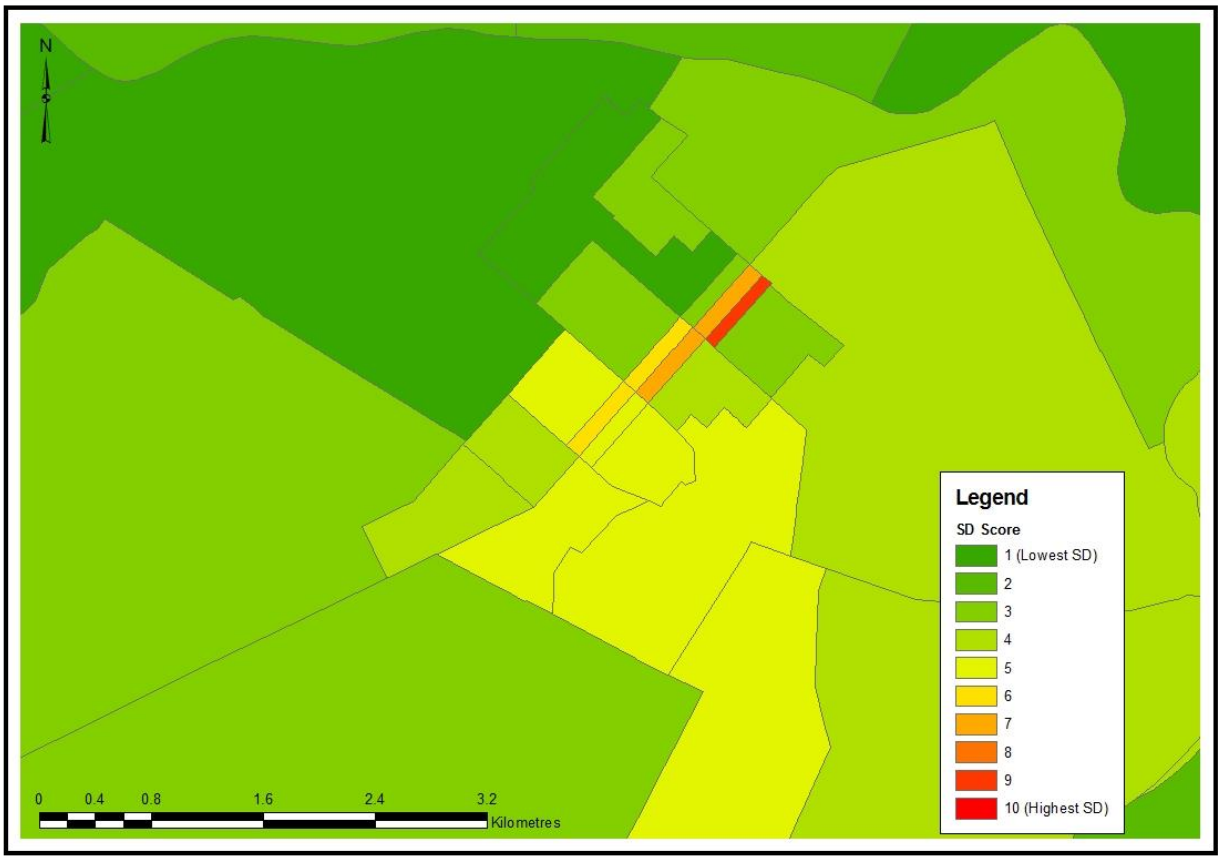
The key demographic patterns for Greytown are:

- Greytown has a very similar distribution of population across the four age groups[64] to the rest of the urban areas and the catchment as a whole. Just more than a third of the residents are aged between 40 and 64 years (35%), around 19% are children under 14 years old and a similar proportion (20%) fall into the 15–39 year old group. 28% of the people living in Greytown is over 65 years old – nearly double the average for the Wellington region.
- Approximately 92% of the population identified as European, with a further 10% Māori and 7% Pacific, Asian, Middle Eastern, Latin American, African and 'other' peoples. Greytown has the highest proportion of European population when compared with other urban areas in the catchment.
- Around 85% of the population in Greytown were born in NZ, a higher than average proportion than in the Wellington region, but consistent with the rest of the catchment.
- Greytown has the largest percentage of tenure holders owning their usual residence (67%) – nearly 20% above the average for the Wellington region.
- The vast majority (90%) of dwellings in Greytown, are separate houses, with 6% classified as 'attached housing'.
- For half of the residents a high school certificate is their highest qualification, while 28% of the population have no formal qualification and 24% have a tertiary qualification. This is consistent with the pattern across the rest of the urban areas and the catchment as a whole. Like the other urban areas, the average proportion of residents that have no formal qualification (28%) is much higher than the Wellington regional average (16%), and the proportion of residents that have a tertiary qualification is much lower than the Wellington regional average (24% compared with 37%).

Greytown has the lowest level of socioeconomic deprivation when compared to the other urban areas in the catchment, with only one of the meshblocks in the top 10% of deprived areas in NZ (score of 10) (Figure 2.3).

[64] 0-14 years; 15-39 years; 40-64 years; 65 years and over.

Figure 0.3: Greytown Socio-economic Deprivation, 2013



Featherston

Featherston currently has 2,340 residents making up 1,070 households. The town has seen population decline from 2,390 people in 2006, while the number of households have increased by 90 households from 980 in 2006.

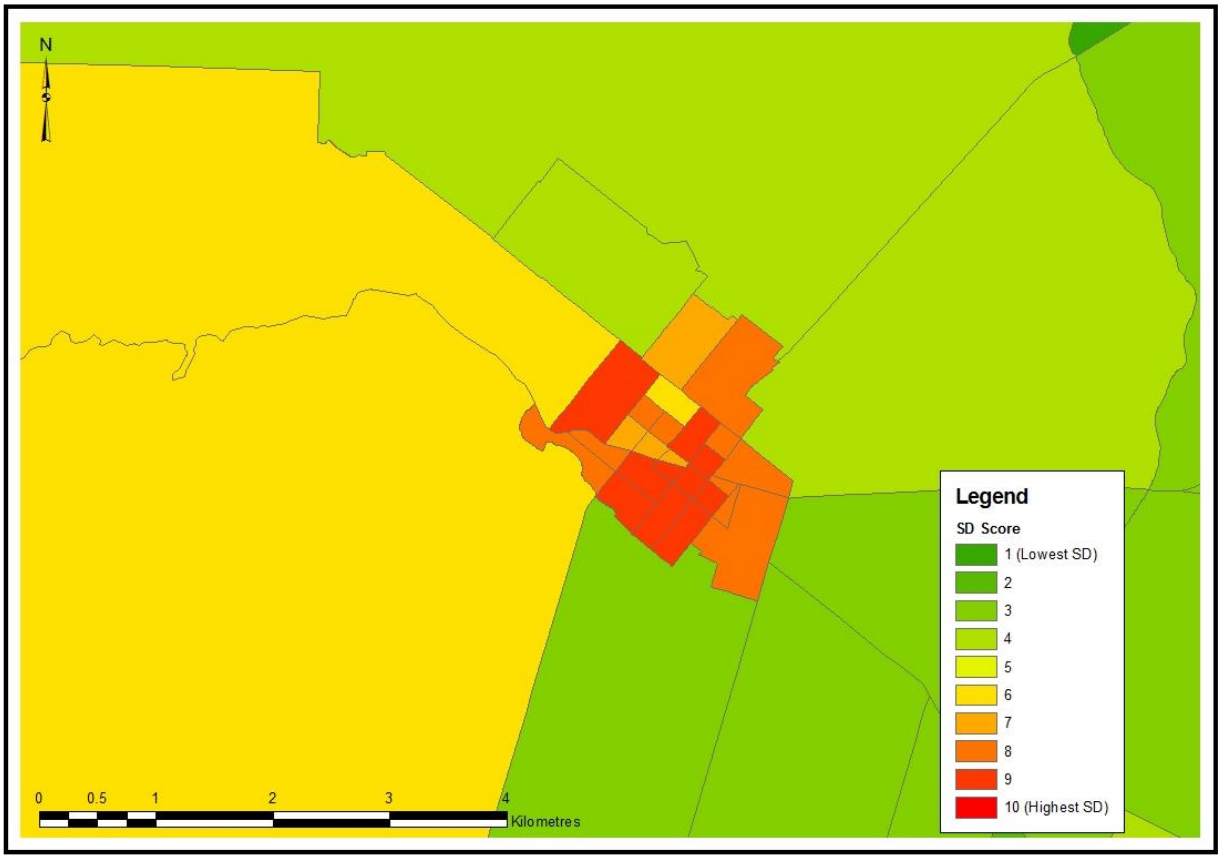
The key demographic patterns for Featherston are:

- When compared to the other urban areas, the distribution of population across the age groups is very similar. 36% of the population is aged between 40 and 64 years, 18% of residents are younger than 14 years and older than 65 years, respectively. 26% of the population fall in the age bracket 15 – 39 years old. Like the other urban areas, Featherston has a larger proportion of over 65s (18% compared to 13%), and a smaller proportion of 15–39 year olds (26% compared to 34%) than the Wellington regional average.
- Approximately 88% of the population identified themselves as European, with a further 18% Māori and 9% Pacific, Asian, Middle Eastern, Latin American, African and 'other' peoples.
- Like the rest of the urban areas and the catchment as a whole, more than 80% of residents are NZ born.
- Approximately 60% of households owned their usual residence.

- The vast majority (91%) of dwellings in Featherston, are separate houses, with 6% classified as 'attached housing', and 1% as 'other'.
- Featherston seems to have an overall lower level of qualification than the Wellington Region as a whole –
    - 37% of the population having no formal qualification (compared to 16% for Wellington),
    - 44% have only a high school certificate (compared to 47% for Wellington), and
    - 18% of residents have a tertiary qualification (compared to 37% for Wellington)

Featherston appears to have a high level of socio-economic deprivation (Figure 2.4), which is not surprising given the low level of formal qualifications held by the residents.

Figure 2.4: Featherston Socioeconomic Deprivation, 2013



Martinborough

Martinborough represents the smallest of the urban settlements in the catchment with less than 4 per cent of the total population living here. Between 2006 and 2016 the population of Martinborough has increased from 1,360 to 1,560, and the number of households grew from 580 to 690, and increase of approximately 11 households per year.

The key demographic patterns for Martinborough are:

- More than a third of Martinborough's population is aged between 40 and 64 years (35%), which is similar to the rest of the urban area (33%), the catchment as a whole (35%), and also the Wellington region (33%). 19% of residents are children under the age of 14 years, which is also not unlike the rest of the catchment (19%) or the region as a whole (20%). The age groups 15–39 years and over 65s show similar patterns to the other urban areas and the catchment as a whole, i.e. a higher proportion of over 65s living in Martinborough than the regional average (20% compared to 13%) and a lower proportion of 15–39 year olds in Martinborough than in the Wellington region (22% compared with 34%).
- There were significant share of European people (86%), with a further 17% Māori and 9% Pacific, Asian, Middle Eastern, Latin American, African and 'other' peoples.
- Martinborough has the lowest proportion of residents born in NZ of the five urban areas (83%).
- Approximately 63% of households owned their usual residence.
- The vast majority (91%) of dwellings in Martinborough, are separate houses. Only 3% of dwellings are classified as 'attached housing' – the smallest proportion in each of the urban areas.
- Martinborough has the highest proportion of residents holding a tertiary qualification (26%) and one of the lowest proportions of residents having no formal qualification (29%) when compared to the other urban areas in the catchment. The proportion of residents with no qualification is still much higher than the average for the Wellington region (16%), and the share of the population that has a tertiary qualification is still well below the Wellington regional average (37%).

There are a few meshblocks in Martinborough coloured orange or red, indicating high levels of socioeconomic deprivation, and a large portion of the area coloured yellow (score=6) (Figure 2.5).

Figure 2.5: Martinborough Socioeconomic Deprivation, 2013

Rural Areas

Note, for the full baseline there will be further analysis of population and household numbers, once a projection issue is resolved.

The key demographic patterns for the rural areas are:

In the rural areas within the catchment, the proportion of the population in the age group 40–64 years, is consistently higher than the Wellington regional average (40%, 42% and 37% compared to 33% for the region). The average proportion of rural residents aged between 15 and 39 years, is much lower than the average in the region (22% compared to 34%). The average proportion of over 65s in the rural areas, is similar to the Wellington region at around 13%, but lower than in the urban areas of the catchment[65]. The share of children[66] residing in the rural areas are very similar to the urban average, as well as the average for the Wellington region, i.e. around 19%. The share of over 65s have increased by 5% between 2001 and 2013, while the proportion of children have decreased (-3%), which is similar to the trend across the catchment, the region and NZ as a whole, pointing to an ageing population.

[65] Average - 21% for the urban areas.
[66] 0-14 years.

A very high proportion of the rural areas identified their ethnicity as European (94%), with a further 10% Maori and 4% Pacific, Asian, Middle Eastern, Latin American, African and 'other' peoples.

The proportion of rural residents that were born outside of NZ (15%), has been increasing over time (+4%), but is still much lower than the Wellington regional average (25%).

Approximately 64% of households in the rural areas of the catchment, own their usual residence. This proportion is slightly above the regional average (50%) and somewhat above the average for the urban areas in the catchment (58%).

As can be expected, in the rural areas privately occupied dwellings are mainly separate houses (92%), while only 2% are 'attached housing' and 2% classified as 'other'. The average proportion of dwellings that are separate houses, is higher than in the Wellington region, while the proportion of attached housing (2%) is well below the regional average (23%).

Although the proportion of the population that has no formal qualification is lower in the rural areas of the catchment, than in the urban areas (24% compared to 35%), it is still quite a bit higher than the average for the Wellington region which is 16%. 26% of rural residents have indicated a tertiary qualification as their highest qualification, with just more than half (51%) of the rural population reported to have a high school qualification as their highest qualification. This is marginally higher than the average for the urban areas (47%) and the Wellington region (47%).