

# Waikato Progress Indicators – *Tupuranga Waikato*

## Summary



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# 1 Purpose

This document provides a summary of the results of the Waikato Progress Indicators (WPI) – *Tupuranga Waikato*. The WPI is a dashboard of 32 environmental, social and economic indicators that provide an overview of how well our region is doing across a range of societal wellbeings and the extent to which we are making progress.

This report includes an outline of why we are reporting on the WPI and how we selected the indicators. Additional technical information, including an overview of similar initiatives used in New Zealand and overseas, and a detailed description of the method used for the WPI is included in another Waikato Regional Council Report (Killerby and Huser, 2014). The Waikato Progress Indicators (WPI) are also published and regularly updated online ([www.waikatoregion.govt.nz/wpi](http://www.waikatoregion.govt.nz/wpi)).

## 2 Background

This section provides an outline about:

- What is ‘Waikato Progress Indicators’ (WPI)?
- Why are we reporting the indicators?
- What do we want to achieve?
- What has been done?
- How will the WPI be used?

### **What is ‘Waikato Progress Indicators’ (WPI)?**

Waikato Progress Indicators (WPI) is a monitoring framework for assessing progress towards regional wellbeing. The monitoring framework includes a set of 32 indicators that provides a balanced high-level picture about important economic, environmental and social/cultural aspects of the Waikato region. The indicators are listed in Appendix 2. The dashboard of indicators enables an assessment of regional progress and wellbeing over time as well as evaluating trends on more specific issues.

This first WPI report tracks the present condition and trends in the Waikato region from 2001 to 2013/14, with a particular focus on the period since 2006/07. It provides a snapshot of the Waikato region’s overall state of wellbeing, sets a benchmark and compares the Waikato with other regions, with New Zealand overall, and internationally.

### **Why are we reporting the indicators?**

Over recent years there have been increasing concerns, both internationally and in New Zealand, about too much focus on GDP (Gross Domestic Product) as a key measure of societal progress. Since the 1930s, GDP has been the generally accepted measure of success for a country or region’s progress. While GDP is a useful measure of economic activity and growth, it does not measure societal progress and wellbeing. For instance, it does not take into account the distribution of income, social connectedness or the health of the environment and the supply of natural resources and associated ecosystem services that are vital for ongoing economic prosperity.

As environmental and social consequences and constraints to economic growth are starting to become more apparent, and beginning to impact further economic growth (e.g. global financial crisis, climate change, peak oil, inequality and social unrest, water shortages), the need to ‘go beyond GDP’ and also use other indicators has become an imperative. This is reflected in a number of international programmes (e.g. World Bank, Organisation of Economic Co-operation and Development (OECD), United Nations

Environment Programme (UNEP), European Commission (EC)) as well as national initiatives (e.g. Statistics New Zealand, the Treasury).

In March 2011<sup>1</sup>, the Waikato Regional Council adopted a new strategic direction. As part of its implementation the Council identified the need to develop a regional 'Genuine Progress Indicator' (here referred to as the WPI, Waikato Progress Indicators – *Tupuranga Waikato*) to comprehensively assess the state and trends of key economic, environmental and social aspects that together support the 'health' of the Waikato region and its communities.

### **What do we want to achieve?**

Unlike GDP, there is no internationally standardised method to measure progress and wellbeing. Indeed, a plethora of approaches has been developed, from adjusting GDP by taking into account estimates of societal and environmental benefits and costs (e.g. voluntary work, environmental degradation) to using sets (dashboards) of monetary and non-monetary indicators to better assess the various social, economic and environmental dimensions of progress and wellbeing.

Taking into account the most recent international, New Zealand and Waikato work on measuring genuine progress (e.g. WRC environmental indicators, MARCO community outcomes indicators, Statistics NZ indicators), the WPI programme aims to:

- Provide an overall picture of progress in the Waikato region assessed through 32 key measures of economic, environmental and social/cultural aspects.
- Identify changes and trends of overall progress of economic, environmental and social/cultural wellbeing, as well as of individual key indicators in the Waikato region over the last five to ten years.
- Compare and benchmark the overall progress of economic, environmental and social/cultural wellbeing in the Waikato region with selected other regions, New Zealand and internationally.

### **What has been done?**

Building on existing data, information and indicators we undertook the following steps. These are further discussed in the subsequent sections of this report:

1. Develop a suitable framework: we reviewed more than 20 progress and wellbeing initiatives and identified a conceptual generic model of how the economy, society and environment interact.
2. Questions we want the indicators to address: based on the aspirations of the community and stakeholders, we developed a list of leading questions that the progress indicators should help address.  
Choose Topics: we grouped the questions into relevant topics (e.g. health, education, environment) to focus the selection of suitable indicators.  
Select indicators: based on a set of robust criteria, we selected a set of suitable measures or indicators for each topic (e.g. life expectancy for health, water quality for environment).
3. Gather and analyse data: for each indicator we collated the most reliable and up-to-date data to be used, and established a WPI database for ongoing update and analysis.

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<sup>1</sup> Waikato Regional Council has confirmed its mission in its strategic direction for this council term (2013-2016) to work with others to build a Waikato region that has a healthy environment, a strong economy and vibrant communities. The WPI will help to assess the state and trends of key aspects of progress and wellbeing in the Waikato region.

4. Results: Scorecard, report cards, indices and 'circles of wellbeing': we explored various methods of presenting the results. The WPI products include an overall scorecard, a report card for each indicator and 'circles of wellbeing' that graphically illustrate differences in economic, environmental and social progress. The WPI is published and regularly updated online ([www.waikatoregion.govt.nz/wpi](http://www.waikatoregion.govt.nz/wpi)).
5. Benchmarking: we also gathered data for New Zealand and other regions (particularly Auckland, Bay of Plenty and Wellington), where available, to compare with the Waikato indicator data.
6. FAQs: A list of Frequently Asked Questions provides background information on the project (Appendix 1).

### **How will the WPI be used?**

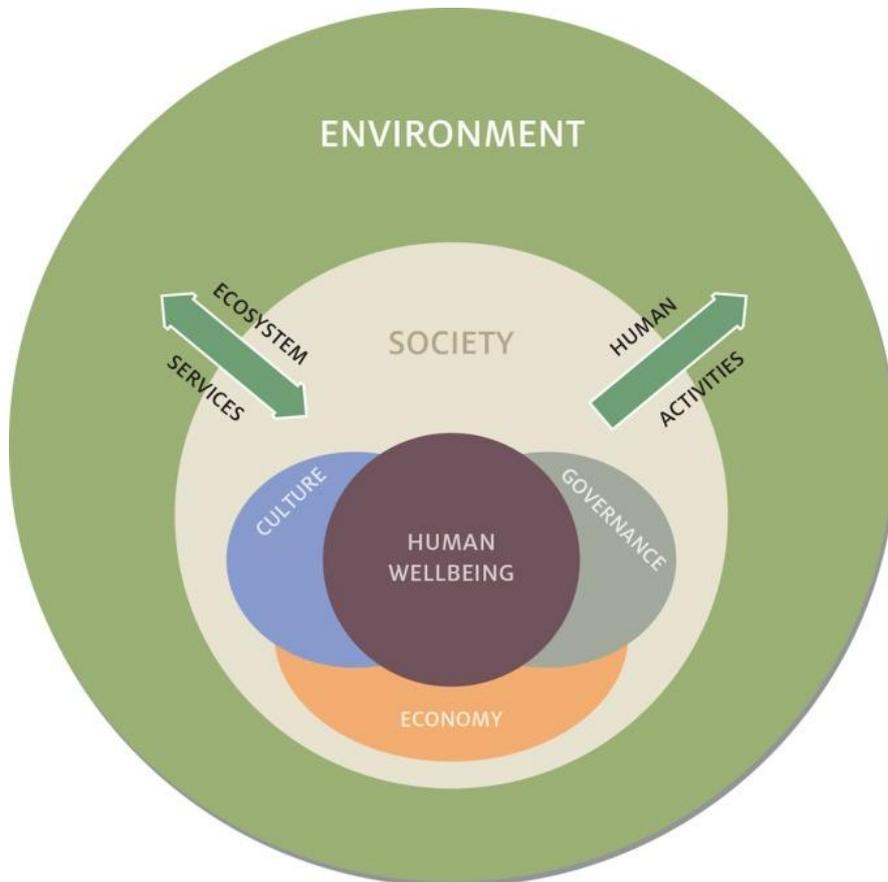
The various WPI products can be used for many purposes, including:

- Providing a comprehensive picture of how the Waikato region is doing.
- Presenting a shared evidence-base to stimulate debate, facilitate common understanding and identify challenges, opportunities and agreed solutions.
- Identifying areas where there is a lack of progress, as well as areas where good progress is made.
- Telling stories about complex and inter-linked issues in an understandable way.
- Encouraging a debate about the region's future and what matters most to people.
- Recognising areas for effective collaboration, shared services and strategic alliances.
- Identifying priorities for action.
- Highlighting trade-offs between economic, environmental and social goals and actions.
- Providing a baseline monitoring framework for Waikato Regional Council's strategic direction and other regional projects (e.g. Waikato Spatial Plan).
- Enabling benchmarking with other regions, New Zealand overall and internationally.

## **3 A framework for selection of indicators**

The starting point for the WPI programme included a review of international good practice for monitoring and reporting on progress (Killerby and Huser, 2014) and WRC selecting an appropriate framework for developing a Waikato region WPI monitoring programme. The WPI conceptual framework is adapted from a 2010 OECD report titled: 'A framework to measure the progress of societies' (Hall, 2010).

This framework considers that societies are based on two linked systems: the Human system (Society) and the Ecosystem (Environment). Human wellbeing is at the centre: an increase in human wellbeing is the final goal of progress and includes both individual (e.g. one's own state of health, living standard, knowledge) and social dimensions (e.g. family and community support and connectedness, shared values). Three societal aspects support human wellbeing: economy, culture and governance. Recognising the limits and constraints of a healthy environment, having a strong economy, a vibrant culture and effective governance are considered supporting pillars to human wellbeing.



Source: Adapted from OECD (2010).

**Figure 1 Proposed WPI conceptual framework**

Ecosystem or environmental wellbeing is inextricably linked to societal wellbeing through:

1. Human activities:
  - management and use of natural resources: extraction and consumption
  - pollution
  - protection and conservation of natural assets and services
2. Ecosystem services:
  - resources and processes provided (natural capital and associated ecosystem services)
  - impact of natural events on society (e.g. storms, flooding, earthquakes)

Finally, the framework includes two key “cross-cutting perspectives”:

- Intra-generational aspects: equity, inequality
- Inter-generational aspects: sustainability, vulnerability, resilience

The wellbeing of a society also depends on the way in which the various factors that shape people’s lives are distributed in society now and for future generations.

While this framework is consistent with a Māori world view, Mātauranga Māori and toha (indigenous knowledge and indicators) are not specifically included in this first version of Waikato Progress Indicators – *Tupuranga Waikato*. This knowledge may be included once the findings of current research to track progress towards the Waikato River Strategy and Vision are known (e.g. Cultural Health Index).

# 4 Results

Results from the WPI Monitoring Programme include:

- WPI Indicator Report Cards
- Current state and trends over time
- Waikato region Scorecard
- Comparisons with other regions and New Zealand
- WPI Monitoring Programme Database

The full set of 32 indicators is listed in Appendix 2, and the full regional dataset is included in Appendix 3. Data for each indicator were collated, analysed and presented in a standardised report card. Our approach and method are explained in the full report (Killerby and Huser, 2014). The focus in this summary report is on presenting an overview of the combined results of all indicators covering economic, social and environmental aspects of progress and wellbeing, including trends and changes over time, and benchmarking Waikato region indicator results with other regions and New Zealand.

A brief profile of the Waikato region is included in Appendix 4, providing general contextual information about the region's population, economy and natural resources.

## Indicator Report Cards

Results for each individual indicator are summarised in report cards. Report cards provide an overview for each individual WPI indicator, including a summary of the current state (results) and information about what the particular indicator means, why it is important and how the results were obtained, i.e. the data source. An example of a Report Card is shown in Appendix 5. The complete set of Report Cards is available online at [www.waikatoregion.govt.nz/wpi](http://www.waikatoregion.govt.nz/wpi).

## Current state and trends over time

This first WPI report tracks the current condition and trends predominantly between 2006-08 and 2012-13, providing a snapshot of the Waikato region's overall wellbeing. For a subset of indicators where data were available, changes over a longer time period (2001 to 2012-13) were also assessed.

Figure 2 shows the latest results for the period 2012-2013 compared with baseline 2006-2008 data, where available for each indicator. To help visualise the Waikato region's overall progress and changes over time an overall Scorecard has also been developed (Appendix 6). Latest available information will be included in the next update of the Scorecard.

## ECONOMY

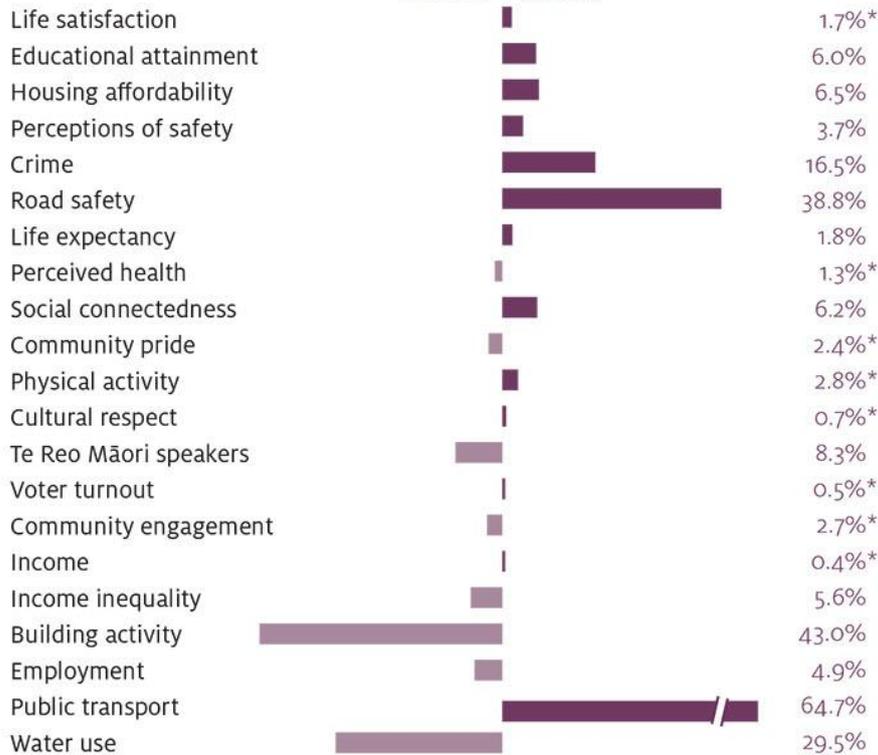
Regional GDP

WORSE | BETTER



15.6%

## SOCIETY



## ENVIRONMENT



\*= change not significant

**Figure 2 Trends of Waikato Progress Indicators between 2006-08 and 2012-2013 (refer to Appendix 3 for the raw data).**

Source: WPI Monitoring Programme database (Waikato Regional Council)

Note: For some WPI measures, only imputed data are available for either the 2006-2008 or 2012-13 period. These are: (1) Perceptions of safety – A question about feeling safe while walking alone was introduced into the General Social Survey from 2010; (2) Life expectancy – Only national latest trend estimates are currently available; (3) Protected land – MfE data for the indicator is currently only available for 2006 and 2009.

Positive measured trends over the period 2006-08 to 2012-13 include:

- Substantial increase in public transport volumes per annum from 7.3 boardings per resident in 2006/07 up to 12.0 in 2012/13.
- Reduction in the social cost of road injury crashes from approximately \$1,700 per capita in 2007 to less than \$1,100 per capita in 2012.
- Reduction in annual total recorded criminal offences per 10,000 population in the Waikato Police District, from 1,074 in 2006/07 down to 897 in 2012/13.
- Moderate overall rise in real GDP per capita between 2007 and 2013.
- Educational attainment levels have been steadily rising over a long period.
- Substantial recent decrease in the number of annual exceedances per year of the regional guideline for particulate matter in air (urban air quality guideline).

Negative trends include:

- Ongoing decline in the percentage of the total population that speaks Te Reo Māori.
- A major slump in annual building activity, from 3,724 in the year to October 2007 down to 2,122 consents in the year to October 2013.
- Increase in water allocation as a percent of total allocable water at the Waikato River mouth during the summer months from 67% in 2007 up to 87% in 2013.
- Increase in the per cent of total productive land in the Waikato region failing two or more soil quality targets, up from 57% in 2007 to 62% in 2012.
- Increasing amount of estuarine area covered with invasive species (saltwater paspalum) on both the East Coast and West Coast.
- A slight overall rise in income inequality between 2001 and 2012.
- The percentage of rural land being subdivided each year in the Waikato region has been increasing steadily since the 1990s, with the greatest amount of subdivision occurring on the land classed as having a high productive capability.

Overall there has been moderate economic growth over the past years, as indicated by GDP per capita estimates, in parallel with limited societal or environmental progress.

## Comparison of Waikato with other regions and NZ

The WPI results also provide a benchmark and comparison of the Waikato region with other regions, with New Zealand and internationally.

Table 1 shows latest available comparisons between selected regions and NZ average. All data below are actual (no missing data has been imputed). The WPI illustrates a mix of both positives and negatives for the Waikato region's economic, environmental and social wellbeing when compared with other regions and/or NZ.

In summary, the Waikato region is similar to the national average on many of the available indicators. However, road safety is worse than the national average. Recycling prevalence remains considerably below the national average, mainly due to the higher level of recycling in Auckland, Wellington and Christchurch. Regional GDP per capita is also slightly lower in the Waikato region than the national average and recent crime rates have been higher. The strongest indicator for the Waikato region relative to the national average is the proportion of Te Reo Māori speakers in the regional population. In addition, housing is more affordable in the Waikato region compared with Auckland.

NOTE: Indicators where the Waikato region does significantly better or worse than NZ average are highlighted in green and red, respectively. See also Figure 3.

Indicator <sup>2</sup>	Waikato	Auckland	Wellington	Bay of Plenty	New Zealand Average
Regional GDP	\$42,968	\$49,217	\$57,941	\$40,236	\$47,532
Life satisfaction	84.5%	87.1%	88.3%	86.4%	86.7%
Educational attainment	75.3%	83.2%	84.0%	75.5%	79.1%
Housing affordability	14.4%	18.4%	14.1%	14.4%	15.4%
Perceptions of safety	64.6%	65.6%	71.3%	64.3%	67.2%
Crime	897.1	1,018.3	793.6	1,004.5	821.2
Road safety	\$1,057	\$409	\$479	\$916	\$741
Life expectancy	79.5	81.3	81.0	79.5	80.1
Perceived health	84.7%	87.4%	88.2%	86.1%	86.7%
Social connectedness	69.0%	70.0%	64.7%	70.1%	68.9%
Community pride	68.4	n/a	n/a	n/a	n/a
Physical activity	91.0%	n/a	n/a	n/a	n/a
Cultural respect	70.5	n/a	n/a	n/a	n/a
Te Reo Māori speakers	5.6%	2.3%	3.5%	8.5%	3.7%
Voter turnout	37%	35%	42%	41%	43%
Community engagement	46.2	n/a	n/a	n/a	n/a
Income	\$788	\$882	\$921	\$774	\$834
Income inequality	0.302	n/a	n/a	n/a	0.299
Building activity	2,122	n/a	n/a	n/a	n/a
Employment	63.4%	62.3%	66.9%	60.4%	63.5%
Public transport	12.0	n/a	n/a	n/a	n/a
Water use	87%	n/a	n/a	n/a	n/a
Environmental attitudes	23	n/a	n/a	n/a	n/a
River water quality	29%	n/a	n/a	n/a	n/a
Soil quality	62%	n/a	n/a	n/a	n/a
Rural subdivision	527	n/a	n/a	n/a	n/a
Air quality	20	1	5	22	n/a
Greenhouse gases	NZ proxy	n/a	n/a	n/a	76,048
Protected land <sup>3</sup>	17.0%	14.1%	18.8%	36.8%	33.4%
Coastal habitats	76.75	n/a	n/a	n/a	n/a
Waste	226,887	n/a	n/a	127,193	2,461,000
Recycling	70.3%	86.1%	79.2%	72.6%	80.1%

**Table 1 Comparison of WPI with selected other regions and New Zealand**

Source: WPI Monitoring Programme database (Waikato Regional Council)

Note: Several indicators do not have comparable regional and/or national results because either: (1) the WPI data are from a Waikato regional-specific survey (e.g. community pride, physical activity, environmental attitudes) or (2) comparable regional data are not collected or comparison is not meaningful (e.g. soil quality, river water quality) or (3) scale-related data rather than dimensionless data are being used for the WPI indicator (e.g. building activity, rural subdivision) or (4) in the case of greenhouse gases, changes in the New Zealand total are used as a proxy for regional changes in the absence of regional data.

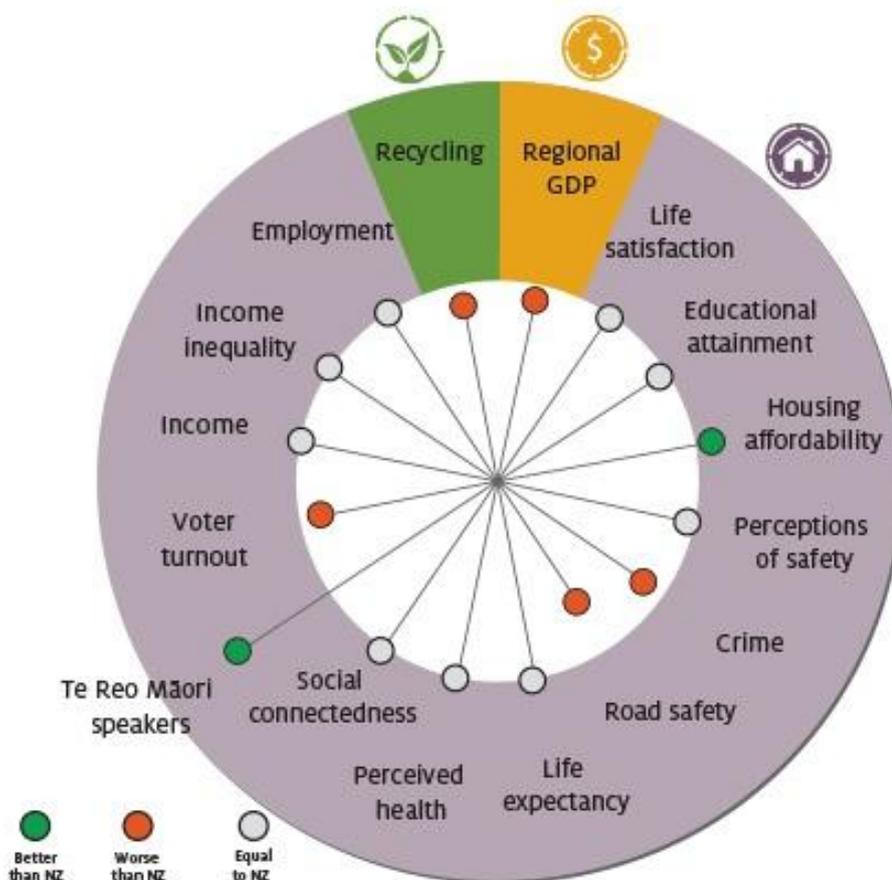
<sup>2</sup> For detailed description of indicators refer to Appendix 2.

<sup>3</sup> Regional differences in landforms and ecosystems do not allow meaningful comparisons.

## Circles of wellbeing

The WPI circles of wellbeing are a new approach to illustrating progress in the Waikato region that captures information about many indicators in a single diagram. One circle compares the state of various WPI indicators for the Waikato region versus New Zealand in recent years and the other shows overall trends in the Waikato region over the period 2006-2008 to 2012-2013.

Comparisons of the Waikato region with New Zealand average figures for specific key indicators are shown in Figure 3 using the most recent data (2012-2013).<sup>4</sup> In this diagram, the circle represents national average wellbeing. Where a spoke extends outside the circle it means regional wellbeing is better than the national average, and where it falls within the circle, wellbeing is worse than the national average.



**Figure 3 Comparison Waikato region with New Zealand (selected indicators only)**

Source: WPI Monitoring Programme database (Waikato Regional Council)

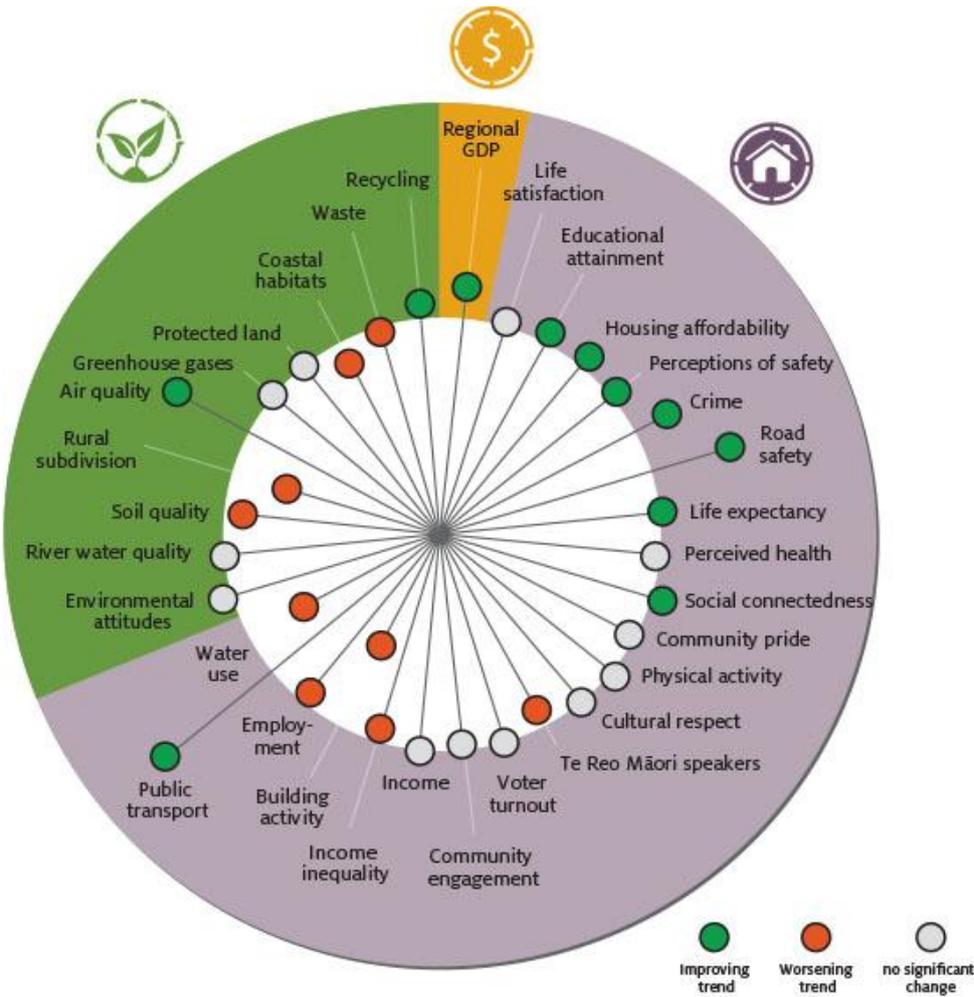
Note: Excludes indicators that do not have comparable regional or national results. Information based on latest measured data (i.e. no imputed or estimated missing values).

The next wellbeing circle (Figure 4) reflects WPI changes between 2006-08 and 2012-13 for all WPI indicators. The central circle represents the WPI score for each indicator in the Waikato region in 2006-08 and the spokes show WPI score progress to 2012-13. Where a spoke extends outside the circle it means regional wellbeing has improved. Where a spoke falls within the circle, regional wellbeing has declined. Missing 2013 data for a number of indicators (less than half of the indicators) have been imputed.

<sup>4</sup> Where 2013 data are available this is reported, otherwise most recently available year.

In summary, the most notable positive trends are in public transport use, which has grown from an average of 7.3 passenger boardings per resident per annum in 2006/07 to 12.0 boardings per resident in 2012/13, and road safety for which the social cost of road crashes declined from around \$1700 per capita in 2007 to less than \$1100 per capita in 2012. Other, smaller positive trends are evident for a range of social, economic and environmental indicators. In relative terms, the largest negative trend over this period has been a downturn in building consents, dropping from around 3,800 in 2007 to 2,100 during 2013. Real regional GDP per capita has experienced moderate growth over the overall period 2007 to 2013.

Regional progress is influenced by national and international factors beyond the region’s control. Note that the 2006-08 baseline occurs at the end of an economic boom and just before the Global Financial Crisis. Hence, the WPI starting point is not an ‘average’ or typical year. However, it is only from 2007 that there is a robust enough regional data set to cover all of the WPI indicators. Over time, as the WPI monitoring programme extends into the future, the diagram below will give an increasingly accurate signal of long term regional progress.



**Figure 4 WPI indicator trends 2006-08 to 2012-13, Waikato region**

Source: WPI Monitoring Programme database (Waikato Regional Council)

## 5 Improvements and next steps

The WPI monitoring framework will be periodically reviewed and improved to include additional information and indicators. It will continue to evolve in form and content with further research, development of new methods of measurement and the availability of improved data sources. Where available, indicator data will be updated and reported annually. Some issues requiring further effort to improve the indicators include:

**Timeliness:** The timely availability of indicators is important as some social and environmental data are several years old. For integrated policy making and public debate, environmental and social indicators need to be available relatively frequently.

**Inclusive growth:** GDP per capita and its growth over time do not tell how economic benefits are shared within a society. To enable a full debate on equity and fairness, it is necessary to know the distribution (in particular between regions/districts and social groups) of income, health, education and environmental quality. Such data are often lacking, especially locally.

**Sustainability:** GDP growth rates do not indicate whether or not economic development is sustainable. Better knowledge about environmental limits and constraints and how these relate to economic growth needs to be developed to better measure and communicate overall sustainability.

**Better accounting practices:** The UN and other international organisations are developing a new integrated accounting system, the System of Environmental-Economic Accounting (SEEA), to widen the scope of national accounting to incorporate environmental and social aspects. New Zealand is engaging in this process, led by Statistics NZ. Potential impacts and opportunities of such changes in accounting practices need to be identified.

**Dependencies between indicators:** Conceptual mapping of the linkages between indicators has commenced. However, quantifying such linkages will be a challenge. Regression and other forms of statistical analysis have technical limitations. Alternative approaches to quantify relationships between indicators tend to be based on relatively subjective weightings identified through panels of experts.

**Additional information:** The WPI set of 32 indicators need to be complemented by secondary indicators and additional information to explore progress in more detail, to tell the full story behind the WPI and to plan effective actions if necessary. This will need to involve other data and knowledge providers to add to the WPI Monitoring Programme Database.

**Composite indicators:** Further efforts are required to advance robust approaches and methods to develop credible composite indicators (combining several indicators into one overall number) that provide meaningful information and are sensitive to change. For example, how scientifically valid is the idea of an overall regional Waikato Progress Index? What are the technical difficulties in constructing such an index (e.g. weighting of individual indicators)? How could such indexes be used, and what value would it add to the dashboard of individual indicators? An experimental Waikato Progress Index has been developed (see Killerby and Huser, 2014) for further review.

**Policy application:** Communication and understanding of the WPI is a prerequisite for its use and application in policy, planning and decision making. The use of web based tools to visualise, map, explore and discover the WPI data interactively would greatly enhance the understanding and use of progress indicators.

## What is not included in the WPI Phase 1

Excluded from the scope of the WPI project phase 1 are:

1. Community and stakeholder engagement<sup>5</sup>
2. Maturanga Māori frameworks and toha/indicators (e.g. cultural health index)<sup>6</sup>
3. Developing interactive and visual web-based reporting and communication products
4. Ongoing data gathering and maintenance including arrangements with data providers.

## Where to next

It is envisaged the Waikato Progress Indicators will form the basis for monitoring Council's strategic direction and other region-wide initiatives (e.g. Waikato Spatial Plan). The results and products of the WPI programme provide a robust basis for discussing regional challenges and opportunities and to identify priorities for closer collaboration and partnerships.

It is anticipated that this WPI project (Phase 1 - "Development of Waikato Project Indicators") will be followed by a Phase 2<sup>7</sup> that will include:

1. Communication and stakeholder engagement.
2. Data management, including confirming regular timeframes for reporting.
3. Explore availability of city/district level and socio-demographic distributions (e.g. by income, age, ethnicity).
4. Data sharing: explore opportunities to share data and services with other agencies, particularly the Waikato region territorial authorities, district health boards, other regions and Central Government.
5. WPI website: an interactive, user-friendly and easily understandable website to search, discover and download results and stories about the Waikato Progress Indicators.

**Phase 2 of the WPI development project** will also include:

- At a minimum, reporting the results through the WRC Annual Report and a dedicated section of the Waikato Regional Council website.
- Develop a clear plan and budget for development of the WPI monitoring and reporting programme.
- Taking a pragmatic approach to monitoring and reporting of the WPI which is preceded by Waikato Regional Council budget decisions on annual updates of the underlying data.
- Build on existing good practice programmes including the Waikato Regional Council environmental indicators and MARCO community outcomes monitoring and reporting programmes.
- Further refine initial experimental approaches to developing a composite overall Regional Progress Index and sub-indices (e.g. Environment Index, Society Index, Economy Index) that can be compared between regions (and potentially internationally) and tracked over time.

Engaging with strategic regional partners will be a focus of this work, including Iwi/Waikato River Authority, Hamilton City Council, District Councils, Waikato District Health Board, New Zealand Transport Agency, Trust Waikato, Statistics NZ, The Treasury, Ministry for the Environment, Ministry of Social Development, Ministry of Business, Innovation and Employment, business and sector groups, non-government organisations, etc.

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<sup>5</sup> Note that this work builds on Choosing Futures Waikato, a participatory community process undertaken in 2004 jointly with all Waikato region councils and other stakeholders to identify what the community wanted the Waikato region to be like in ten years (Waikato Regional Community Outcomes).

<sup>6</sup> A monitoring framework and indicators to track progress towards the Waikato River Strategy and Vision is currently being undertaken by the Waikato River Authority and Waikato River Iwi.

<sup>7</sup> Phase 2 of the WPI project is scheduled to commence on 2014/2015.

## 6 Conclusions

The Council's mission - *to work with others to build a Waikato region that has a healthy environment, a strong economy and vibrant communities* - requires a monitoring and reporting framework that assesses the economic, environmental and social progress of our region's people and communities. Natural capital and the services that nature provides, such as provision of food and fibre, flood protection, maintaining soil and water quality, climate regulation, providing recreational opportunities, and cultural and amenity values are essential for long term prosperity of our economy and the wellbeing of our people. This is particularly true for the resource-based Waikato economy with its strong reliance on natural resources for agriculture, forestry, aquaculture and tourism.

In line with international trends, the Council recognises the need to shift the region's policy focus from maximising economic outputs (production and consumption measured as GDP) to improving human wellbeing and quality of life in a broad sense. This will require considering environmental protection, social equity and new economic processes (e.g. better product quality and durability, greater resource use efficiency). Waikato Regional Council's challenge is to develop a monitoring framework that presents complex issues clearly and understandably, underpinned by robust data to support policy review and development.

Four key tasks were undertaken for developing the WPI:

1. Developing an integrated monitoring and reporting framework
2. Selecting suitable indicators across economic, social and environmental dimensions
3. Developing a Waikato Scorecard providing an overview of the region's progress
4. Establishing a database that stores the indicator data and enables regular updating.

The WPI is a long term monitoring tool and is still in development. Over time, the data available for monitoring our progress will make it easier to monitor changes to our wellbeing. While the results cannot always show what is driving these changes, it can help identify adverse trends at an early stage and where further analysis is required to help understand the changes and how we address them.

This report highlights the need to complement GDP with environmental and social indicators to enhance public debate and effective policy making. The WPI represents a monitoring framework for assessing progress towards regional wellbeing. The WPI includes 32 indicators covering economic, environmental and social/cultural dimensions of wellbeing.

This first WPI report tracks the current condition (2013) and trends (from 2001), providing a snapshot of the Waikato region's wellbeing. It provides a benchmark and comparison of the Waikato region with other regions, with New Zealand and internationally.

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# Appendix 1 Frequently asked questions

This appendix includes some frequently asked questions (FAQ) and answers about the Waikato Progress Indicators (WPI) including:

- Who developed the WPI?
- What is the purpose of the WPI?
- How can external stakeholders, iwi and the wider community get involved?
- How were the indicators chosen that make up the WPI?
- What topics and themes are included?
- How are the results presented and reported?
- Does the WPI provide local data, e.g. at city/district level?
- How far back do the data go?
- How were the data analysed?
- Can the WPI be summarised into one key measure of progress overall?
- Will the WPI be repeated and if so how often?
- How the WPI link to other Waikato Regional Council reporting needs?
- Is WRC aiming to develop a monetary Genuine Progress Index (GPI)?

## Who developed the WPI?

*The WPI was developed by Waikato Regional Council's Sustainability Programme and the Regional Strategy Programme and assisted by other staff throughout the organisation. External input for the provision of data has been obtained by various organisations including Statistics New Zealand. A draft version has been extensively peer reviewed by external people and organisations.*

## What is the purpose of the WPI?

*The purpose is to monitor and report on the general status and any changes in important economic, environmental and social aspects in the Waikato region. If indicators show undesirable change/trends, more detailed analysis (also using additional underpinning data/information) should be undertaken to assist suitable response (e.g. policy).*

## How can external stakeholders, iwi and the wider community get involved?

*This will occur as part of Phase 2 of the WPI programme, which will include consultation and further refinement. It is envisaged that the WPI will be included in the next Waikato Regional Council Long Term Plan 2015-2025 and go through a statutory consultation processes.*

## How were the indicators chosen that make up the WPI?

*The WPI builds largely on existing data and information, mainly the Monitoring and Reporting Outcomes (MARCO) indicators developed by Waikato region strategic planners noted internationally by the OECD ([http://wikiprogress.org/index.php/MARCO\\_indicators](http://wikiprogress.org/index.php/MARCO_indicators)).*

*The WPI programme's development also included a review of similar New Zealand and overseas projects to come up with current 'good practice'. The framework is flexible so new indicators can be added to the overall framework. It is envisaged that as the WPI monitoring programme continues, it will provide an increasingly accurate signal of long term regional progress over time. Further research by Waikato Regional Council and its partners will also enable an increased focus on Mātauranga Māori and toha (indigenous knowledge and indicators) to be included into this work.*

*For further information about how the WPI indicators were chosen, refer to the separate report 'Development of the Waikato Progress Indicators'.<sup>8</sup>*

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<sup>8</sup> Killerby, P and Huser, B. 2014. Development of the Waikato Progress Indicators (WPI). WRC Technical Report 2014/44 (<http://www.waikatoregion.govt.nz/Services/Publications/>).

## **What topics and themes are included?**

*The WPI measures the Waikato region's progress by identifying current state and improving or worsening trends from 32 indicators across three key themes - economic, social and environmental. Together, these provide a 'dashboard' summarising trends which produce a more complete picture of the overall 'health' of the Waikato region - and the wellbeing and quality of life of its people and communities. The economic indicator (Gross Domestic Product or GDP) has been a key measure of progress in New Zealand and overseas for many years. By also considering social and environmental measures, the WPI includes information about how people are living in the Waikato region, what they think and feel about various aspects affecting their lives here and how they interact with and regard its environment and its features. The social and environmental themes contain topics ranging from housing, health and education to information about the region's air, soil and water quality.*

## **How are the results presented and reported?**

*Data and information are publicly available. Reporting includes various products, both paper and web-based.*

## **Does the WPI provide local data, e.g. at city/district level?**

*The purpose of the WPI is to provide a primarily regional summary of progress and wellbeing. About one-third of the 32 indicators also have local data available (city/district level). Phase 2 of the project will explore how more data can be collected and provided at the local level. Similarly, it is important to assess distributional aspects of some indicators e.g. employment by age, or health by ethnicity. This will also be looked at as part of Phase 2.*

## **How far back do the data go?**

*Good quality historical data records for most indicators are lacking. For an overall assessment of progress, we need to look at the entire set of indicators. Missing data are a considerable issue going back further than about 2000. Good data are available for most indicators from 2007, which has been used as the benchmark for assessing trends (for a reduced set of indicators we have also used 2001 as the starting point).*

## **How were the data analysed?**

*Several considerations about the method of data analysis were used for the WPI (e.g. historical start time of data collection; dealing with missing data and comparison of data with different units; how was data aggregated)?*

*Data and metadata management follows well-established good practice procedures as undertaken for MARCO and Waikato Regional Council indicators. For details refer to report 'Development of the Waikato Progress Indicators'.*

## **Can the WPI be summarised into one key measure of progress overall?**

*The WPI provides progress information for each indicator as a percentage trend. Generally the WRC has used a 'dashboard' approach (several individual indicators), but the feasibility and usefulness of an overall Waikato Progress Index (one number), as well as per 'theme', summarising progress across each set of economic, social and environmental indicators (as three separate sub-indices) has been explored. Although one number combining all indicators may be useful for communication purposes it raises a number of technical questions.*

## **Will the WPI be repeated and if so how often?**

*It is planned to update the WPI annually.*

## **Are other New Zealand regions and agencies considering a similar approach?**

*While most councils are monitoring and reporting on a set of indicators, regional councils generally focus on environmental indicators. The Waikato Regional Council*

*(WRC) is working with Statistics NZ and other councils to ensure better alignment across research and work on indicators for monitoring progress and wellbeing.*

*Greater Wellington Regional Council has developed a comprehensive Genuine Progress Index similar to the WPI, but with a focus on a monetary GPI framework (aiming to develop dollar values for all indicators). Only a few cost estimates have been completed so far. Auckland Council has also developed a comprehensive scorecard including social, economic and environmental aspects that track and report on specific targets set by the council.*

*At the national level, [Statistics New Zealand's Framework for Measuring Sustainable Development](#) has been developed for the period 1970 to 2008. It defines the concept of sustainable development and provides a basis for selecting indicators to measure progress towards sustainable development. Sixteen key indicators have recently been updated and released as the [New Zealand Progress Indicators – Tupuranga Aotearoa](#).*

*Treasury has published a paper [Working Towards Higher Living Standards for New Zealanders \(May, 2011\)](#). In performing its role as the government's advisor on economic, fiscal and regulatory issues, Treasury has focused on how improved economic performance can enhance living standards. Treasury has undertaken research and analysis to improve its understanding of living standards. This work is to enhance policy advice and a response to recommendations for greater clarity surrounding Treasury's vision (Law and Economic Consultancy Group/LECG, 2009). The result of this work is the development of a 'Living Standards Framework' which is intended to help Treasury consistently provide Ministers with robust, theoretically-grounded and evidenced-based advice to improve the lives of all New Zealanders.*

*At the non-governmental level, the New Zealand Centre for Ecological Economics (NZCEE) has released a national level GPI for NZ.<sup>9</sup> The WPI project maintains close ties with all of the above initiatives at the national, regional or local level.*

### **How does the WPI link to other Waikato Regional Council reporting needs?**

*The indicators (all or selected individual indicators) may also be used for other purposes, e.g. Long Term Plan (LTP) and the Annual Report, State of the Environment (SoE). Reporting on policy effectiveness (under the Resource Management Act - RMA) will require a more specific framework and information. The aim is to develop a toolbox of measures/indicators that, combined, provides a regional overview.*

### **Is WRC aiming to develop a monetary Genuine Progress Index (GPI)?**

*No. A monetary GPI could be created by, for example, adjusting Gross Domestic Product (GDP) figures using monetary valuation methods to account for negative and positive contributions such as volunteer work, depletion of natural resources, and cost of some health expenditure (e.g. smoking). However, the Waikato Regional Council is not aiming to develop a monetary GPI account. Monetary estimation of all components or indicators within a GPI framework is unproven, lacking data or knowledge and is costly. Rather than attempting a full monetary GPI (costing all indicators), specific indicators (or components thereof) can be selected and prioritised for valuation studies or benefit transfer. This method would use valuation data from other agencies/countries to derive monetary estimates for specific indicators or aspects.*

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<sup>9</sup> Ecosystem Services in New Zealand, Landcare Research, John Dymond (ed) 2014.

## Appendix 2 The Waikato Progress Indicators

Leading question	Topic	Indicator	Definition
<b>Economy</b>			
How prosperous is our region? How are we planning for a prosperous future?	Economic growth	Regional GDP	Real (inflation adjusted) regional Gross Domestic Product (GDP) per capita
<b>Society</b>			
Are we generally happy with our life? How satisfied are we with our work life balance?	Life satisfaction	Life satisfaction	Self-rated overall life satisfaction
What are the educational opportunities How qualified and skilled is our workforce? Are education opportunities accessible and adequate	Education	Educational attainment	Percentage of residents aged 15 years or over with at least a high school qualification
Are we satisfied with our housing? How accessible, adequate and affordable is our housing?	Housing	Housing affordability	Ratio of housing costs to household income
Do we feel safe?	Community safety	Perceptions of safety	Percentage of people who feel safe or very safe walking alone in their neighbourhood at night
How safe are we?	Community safety	Crime	Annual total recorded offences per 10,000 population (fiscal year)
How safe are we?	Community safety	Road safety	Estimated annual social costs of road injury crashes per capita
How healthy are we?	Health	Life expectancy	Life expectancy at birth (from Life Tables estimated using Census data)
How do we feel about our health and wellbeing?	Health	Perceived health	Self-rated general health status
How well connected are we with our family, neighbourhood and community?	Social connectedness	Social connectedness	Self-reported absence of loneliness (percentage of respondents who were lonely 'none of the time' in the last four weeks)
Are we proud about where we live and our community?	Social connectedness	Community pride	People's reported sense of pride in the way their city/town looks and feels
How much do we participate in sports, leisure and arts?	Leisure and recreation	Physical activity	Percentage of people who say they exercise for 30 minutes or more at least once per week

Leading question	Topic	Indicator	Definition
Do we know and respect Māori customs?	Cultural identity	Cultural respect	Level of agreement by survey respondents that 'Your neighbourhood are knowledgeable and show respect for the many and diverse cultures of the people who live here'
Do we recognise and protect our cultural heritage and distinctive identity? How comfortable do we feel about expressing our cultural practices?	Cultural identity	Te Reo Māori speakers	Percentage of Te Reo Māori speakers in the total population
Are we involved in our community? How much do we participate in decision making?	Civic engagement	Voter turnout	Percentage of all enrolled electors (residents and ratepayers) who cast a vote in their local body elections
Are we satisfied with our opportunity to participate in (council) decision making?	Civic engagement	Community engagement	People's level of agreement that they have enough say in what their council does
How wealthy are we?	Wealth and income	Income	Real median weekly earnings for those in paid employment
Wealth and income	Wealth and income	Income inequality	Gini coefficient – a measure of the concentration of income within the region
How prosperous is our region? How are we planning for a prosperous future?	Wealth and income	Building activity	Number of new residential building consents issued per annum (with a value of \$5000 or higher)
How many people have a job? How many are unemployed - and how long	Employment	Employment	Employment rate - the proportion of total working age population who are employed
Does our infrastructure cope with current and increasing demand? What services are available?	Infrastructure	Public transport	Public transport volumes per capita - average number of passenger transport boardings per resident per annum
How do we use our natural resources? How much water do we use? How much have we got?	Resource use	Water use	Water allocation as a percent of total allocable water - Waikato River mouth during summer months
<b>Environment</b>			
How much do we value or environment? Can we sustain a healthy environment <u>and</u> grow our economy? What do we value most? What are the threats to our environment?	Environmental values	Environmental attitudes	Average regional NEP (New Environmental Paradigm) Scale score
How good is our water quality?	Land and water	River water quality	River water quality for ecological health - percentage of unsatisfactory river water samples for ecological water quality in Waikato rivers and streams (all sites average)

Leading question	Topic	Indicator	Definition
How healthy are our soils? How resilient are we to food production?	Land and water	Soil quality	Percentage of total productive land failing two or more soil quality targets
How much land is sub-divided/paved every year? How much of this is fertile soil?	Land and water	Rural subdivision	Hectares of rural land subdivided in the Waikato region between Censuses
How clean is our air?	Air and climate	Air quality	Urban air quality - number of exceedances per year of the regional guideline for particulate matter (all sites total)
Is the climate changing?	Air and climate	Greenhouse gases	National annual total greenhouse gas emissions
How much of our environment is protected? What is the health and condition of our ecosystems?	Biodiversity	Protected land	Legally protected conservation land
How healthy is our coastal and marine environment? How safe are our beaches for swimming?	Coastal and marine	Coastal habitats	Hectares of estuarine area covered with invasive species (saltwater paspalum)
How much pollution and waste do we produce? What sort of waste do we produce? How much per GDP/product?	Waste	Waste	Estimated tonnage of waste to landfill per annum in the Waikato region
How much of our waste do we recycle?	Waste	Recycling	Self-reported prevalence of household recycling

## Appendix 3 WPI trends (time series data 2001 to 2013)

Key:

**Grey cell** indicates imputed or extrapolated data (refer to imputation notes in the WPI time series worksheet of the WPI spreadsheet)

**White cell** indicates actual measured data

**Dark grey cell** is where a recent data proxy has been used as the basis for imputation (rather than a straight line) (refer to imputation notes in the WPI time series worksheet)

Note that the trend direction for some of these indicators has a negative interpretation (e.g. recorded crime) which requires these data to be inverted as part of the WPI calculation (i.e. additive inversion of annual percent change from base 100 points).

Indicator	2001	2002	2003	2004	2005	2006	2007 BASE YEAR	2008	2009	2010	2011	2012	2013	Trend
Regional GDP	\$34,646	\$36,834	\$39,172	\$36,629	\$39,064	\$37,498	\$37,166	\$39,271	\$40,544	\$39,487	\$41,604	\$43,640	\$42,968	Better
Life satisfaction	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	84.4%	85.7%	85.1%	84.5%	84.5%	Not significant
Educational attainment	68.3%	68.8%	69.4%	69.9%	70.5%	71.0%	71.6%	72.2%	72.9%	73.5%	74.1%	74.7%	75.3%	Better
Housing affordability	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%	14.2%	15.4%	13.7%	15.0%	16.0%	14.4%	Better
Perceptions of safety	62.3%	62.3%	62.3%	62.3%	62.3%	62.3%	62.3%	62.3%	62.3%	62.3%	63.5%	64.6%	64.6%	Better
Crime	1088.2	1091.7	1036.8	991.9	910.8	1053.5	1074.2	1008.5	1003.6	1074.6	1041.8	1027.4	897.1	Better
Road safety	\$1312	\$1312	\$1312	\$1312	\$1587	\$1392	\$1727	\$1491	\$1318	\$1171	\$1145	\$1057	\$1,057	Better
Life expectancy	78.5	78.7	78.9	79.1	79.3	79.5	79.7	79.9	80.1	80.3	80.5	80.7	80.9	Better
Perceived health	85.8%	85.8%	85.8%	85.8%	85.8%	85.8%	85.8%	85.8%	85.4%	84.9%	84.8%	84.7%	84.7%	Not significant
Social connectedness	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%	66.5%	68.0%	68.5%	69.0%	69.0%	Better
Community pride	70.1	70.1	70.1	70.1	70.1	70.1	70.1	69.4	68.8	68.1	68.2	68.3	68.4	Not significant
Physical activity	88.5%	88.5%	88.5%	88.5%	88.5%	88.5%	88.5%	88.1%	87.6%	87.2%	88.5%	89.7%	91.0%	Not significant
Cultural respect	70.0	70.0	70.0	70.0	70.0	70.0	70.0	69.9	69.9	69.8	70.0	70.3	70.5	Not significant
Te Reo Māori speakers	6.6%	6.5%	6.4%	6.3%	6.2%	6.1%	6.1%	6.0%	5.9%	5.8%	5.8%	5.7%	5.6%	Worse
Voter turnout	49%	48%	46%	45%	42%	40%	37%	39%	40%	42%	40%	39%	37%	Not significant
Community engagement	47.5	47.5	47.5	47.5	47.5	47.5	47.5	48.5	49.6	50.6	49.1	47.7	46.2	Not significant
Income	\$812	\$812	\$812	\$812	\$812	\$775	\$785	\$776	\$783	\$788	\$762	\$788	\$788	Not significant
Income inequality	0.295	0.294	0.294	0.293	0.291	0.288	0.286	0.276	0.266	0.256	0.319	0.302	0.302	Worse
Building activity	2,063	2,339	3,069	3,557	3,161	3,381	3,724	2,573	1,727	1,986	1,684	1,780	2,122	Worse
Employment	67.7%	67.7%	67.7%	67.7%	67.7%	67.7%	66.7%	66.7%	65.0%	65.0%	64.8%	63.2%	63.4%	Worse

Indicator	2001	2002	2003	2004	2005	2006	2007 BASE YEAR	2008	2009	2010	2011	2012	2013	Trend
Public transport	4.2	4.3	4.5	4.9	5.1	5.5	7.3	9.1	11.2	11.0	11.0	12.3	12.0	Better
Water use	67%	67%	67%	67%	67%	67%	67%	65%	64%	69%	72%	76%	87%	Worse
Environmental attitudes	23	22	22	21	21	22	22	22	22	22	23	23	23	Not significant
River water quality	29.0%	29.0%	29.0%	29.0%	29.0%	29.0%	29.0%	29.0%	29.0%	29.0%	29.0%	29.0%	29.0%	Not significant
Soil quality	57%	57%	57%	61%	58%	59%	57%	56%	55%	54%	58%	62%	62%	Worse
Rural subdivision	436	432	427	423	418	414	430	446	462	479	495	511	527	Worse
Air quality	17	17	27	50	38	47	20	28	39	21	20	17	12	Better
Greenhouse gases	73,619	74,331	76,808	76,207	78,287	78,186	76,222	75,764	73,101	73,941	74,393	76,048	76,048	Not significant
Protected land	16.9%	16.9%	16.9%	16.9%	16.9%	16.9%	16.9%	17.0%	17.0%	17.0%	17.0%	17.0%	17.1%	Not significant
Coastal habitats	62.18	63.80	65.42	67.04	68.66	70.27	71.89	73.51	75.13	76.75	78.37	79.99	81.61	Worse
Waste	222,000	222,000	222,000	222,000	222,000	222,000	222,815	223,629	224,444	225,258	226,073	226,887	227,702	Worse
Recycling	66.2%	66.2%	66.2%	66.2%	66.2%	66.2%	66.2%	66.2%	68.9%	71.5%	70.9%	70.3%	70.3%	Better

## Appendix 4 The Waikato Region

The Waikato region is the fourth largest region in New Zealand, covering most of the central North Island. It covers 25,000 square kilometres (2.5 million hectares) stretching from the Coromandel Peninsula and Port Waikato in the north, to the slopes of Mount Ruapehu in the south. The region is made up of distinct landforms found in four areas: the Taupō volcanic zone, Waikato lowlands and Hauraki plains, western and central hill country and the eastern ranges. The Waikato region contains seven local authority districts, one city (Hamilton) and parts of three other districts. The Waikato is a region of many small towns, pockets of lifestyle blocks, extensive coastlines, rich agricultural landscapes, forest-clad mountain ranges, cold deserts and geothermal features.

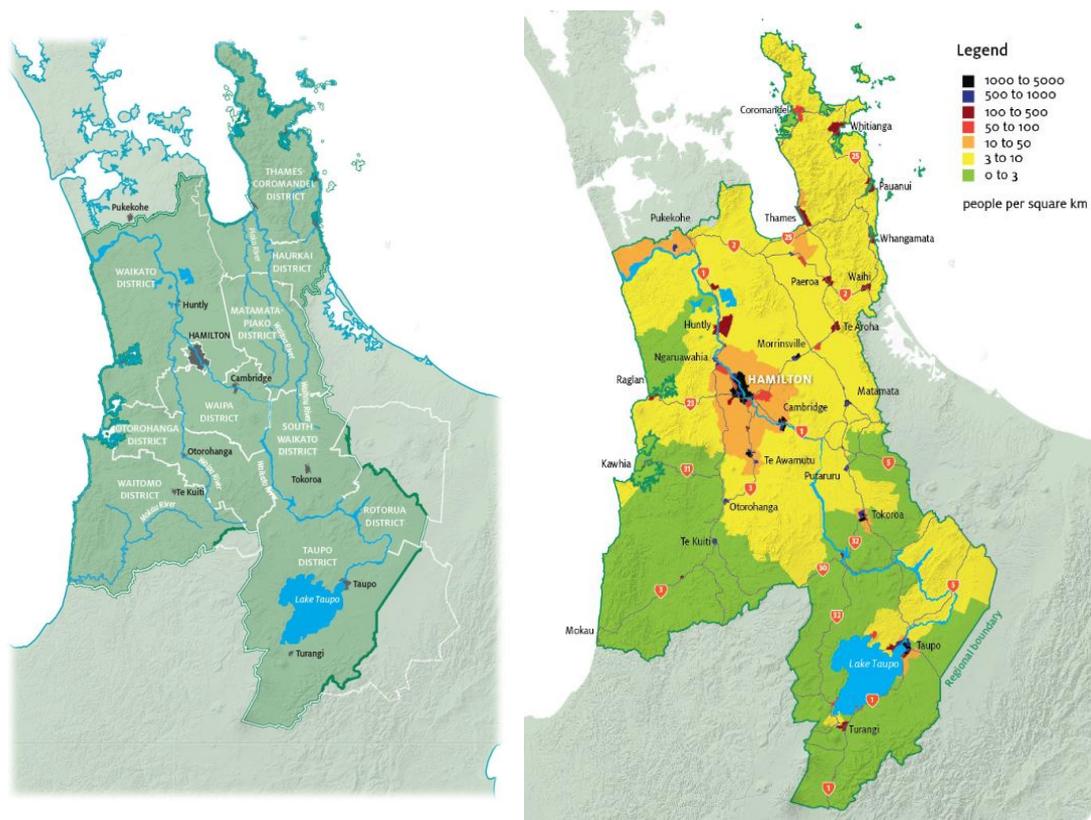


Figure 5 The Waikato region, its districts, towns and population densities (source: Statistics NZ, 2013)<sup>10</sup>.

### Our people

The following information is based on the NZ Census 2013.<sup>11</sup> The Waikato region is the fourth largest region by population in New Zealand with just over 400,000 people, about 9.5 per cent of New Zealand's total population. Almost three quarters of the population live in urban areas, the largest of which is the city of Hamilton. Regional population growth from 2006 to 2013 was 6 per cent, slightly lower than the national average of 8 per cent. The population is expected to grow by 19 per cent over the next 20 years.

The region's general population is ageing with over half of the population (51 per cent) in the 35-55 age group, and another 15 percent aged over 65 years. However, this is not as high as in other regions. The 65 plus population is set to increase significantly over the next 20-30 years.

<sup>10</sup> [www.stats.govt.nz/Census/2013-census/data-tables/regional-summary-tables-part-1.aspx](http://www.stats.govt.nz/Census/2013-census/data-tables/regional-summary-tables-part-1.aspx)

<sup>11</sup> <http://www.stats.govt.nz/Census/2013-census.aspx>

	Census usually resident population count			Increase or decrease 2006–2013			Projection (medium) <sup>12)</sup>	
	2001	2006	2013	Number	Percent	Average annual change (percent) <sup>1)</sup>	2030	2053
Waikato	356,346	380,823	403,638	22,815	6.0	0.8	479,502	502,941
Thames-Coromandel	25,176	25,938	26,178	240	0.9	0.1	28,494	24,107
Hauraki	17,475	17,856	17,811	-45	-0.3	0.0	19,482	17,177
Waikato	51,843	57,585	63,378	5,793	10.1	1.4	80,278	91,867
Matamata-Piako	29,469	30,483	31,536	1,053	3.5	0.5	34,104	33,212
Hamilton	116,604	129,588	141,615	12,027	9.3	1.3	184,651	216,937
Waipa	38,958	42,501	46,668	4,167	9.8	1.3	54,267	53,856
Otorohanga	9,279	9,078	9,141	63	0.7	0.1	9,293	7,710
South Waikato	23,472	22,644	22,071	-573	-2.5	-0.4	19,765	13,967
Waitomo	9,456	9,438	8,907	-531	-5.6	-0.8	8,549	6,788
Taupo	31,521	32,418	32,907	489	1.5	0.2	36,838	34,087
Rotorua <sup>2)</sup>	64,473	65,898	65,280	-618	-0.9	-0.1	3,781	3,232

**Table 2 Waikato region and territorial authority populations (2013 Census)**

Source: Statistics New Zealand

Notes: (1) Average annual percent change calculated as a constant rate of annual population change over the period. Percentages have been rounded to one decimal place. (2) Waikato region includes only part of Rotorua, Taupo and Waitomo districts. The figures above have not been adjusted to represent only Waikato region.

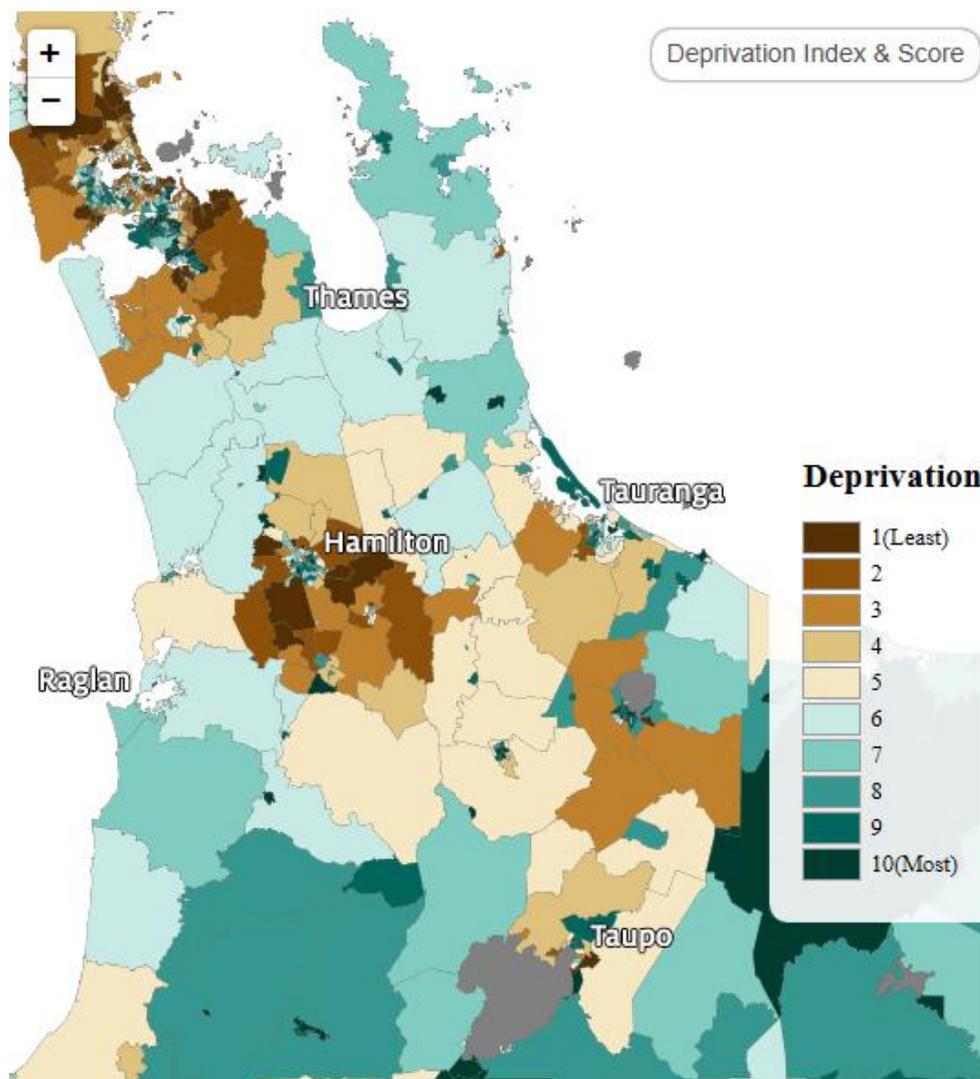
The Waikato region has a larger proportion of Māori residents, 21 per cent, than the national average of 14 per cent. Eight rohe or tribal areas lie within the region – Ngāti Tūwharetoa, Ngāti Tahu, Ngāti Raukawa, Te Arawa, Ngāti Maniapoto, Waikato-Tainui, Hauraki and Ngāti Te Ata. The region's Māori population is youthful with about two-thirds 67 being less than 35 years old.

### Our culture

The Waikato is strong in Māori history and is the home of the Māori King movement (Kingitanga) based at Turangawaewae Marae in Ngaruawahia. Since the early 1990's, the settlement of significant Treaty of Waitangi claims has changed the cultural and environmental landscape within the Waikato region. For example, the Waikato Raupatu Claims Settlement Act 1995 saw Crown land returned to Waikato-Tainui, a formal apology from the Crown and a financial compensation of \$170 million. This settlement has enabled Waikato-Tainui to grow a significant economic base for the tribe.<sup>13</sup>

<sup>12</sup> Cameron, M. And Cochrane, B. 2014. Population, Family and Household, and Labour Force Projections for the Waikato Region, 2013-2063. Report prepared for Waikato Regional Council, WRC (<http://waikatoregion.govt.nz/tr201447>).

<sup>13</sup> Tainui Group Holdings Annual Reports - <http://www.tgh.co.nz/default.asp?sid=11&cid=13&aid> accessed 24 September 2013.



**Figure 6 Deprivation scores in the Waikato region**

Scale is from light red (least deprived) to dark red (most deprived).<sup>14</sup>

Co-management ushered in a new way of working in the realm of environmental management. Within the Waikato region, there have been several co-management arrangements between the Crown and Māori, which has seen iwi taking a greater role in environmental management and decision making. This process has provided for a range of opportunities, particularly for local government, to increase their understanding of Te Ao Māori and incorporate Māori tikanga and knowledge into council plans and business practices.

### **Our environment**

The Waikato region has a diverse landscape including wetlands, mountain ranges, rivers, geothermal resources and coastal shorelines. Our region contains:

- the Waikato River (at 425 km , the longest river in New Zealand)
- Lake Taupō (at 623 sq km, the largest lake in Australasia)
- internationally significant wetlands
- more than 1000 kilometres of coastline
- geothermal systems (80 per cent of New Zealand's geothermal resources)
- extensive native and exotic forests
- Hauraki Gulf Marine Park
- Tongariro National Park.

<sup>14</sup> Atkinson, J., Salmon, C. and Crampton, P.. 2014. NZDep2013 Index of Deprivation. <https://s3.amazonaws.com/s3.documentcloud.org/documents/1158587/research-report.pdf>

The Waikato region has several noteworthy inland waterways, more than 100 lakes, including Lake Taupō, and more than 20 rivers, including the Waikato, Waipa, Piako, Waihou and Mokau and about 1420 streams. There are more than 600 different soil types in the Waikato region with many being highly productive and a fundamental resource for the economy. The Waikato region is the most important mineral producing area in New Zealand. Coal, aggregate, irons and limestone are extracted, along with gold and silver.

### **Land use change**

The five most significant current and future land use changes in the region are:

- Forestry to dairy / pasture
- Current dairy to intensified dairy (larger farms/increased production per hectare)
- Any land to renewable energy (biomass)
- Pasture to forestry (this is likely to be cyclical)
- Any land to urban, rural residential or infrastructure.

### **Our energy**

The Waikato region is nationally significant for energy generation and for the range of energy-related resources. Twelve hydro, three thermal (fired by coal or gas) and five geothermal power stations operate in the Waikato region. Several smaller generators and co-generation plants also operate in the region. The region has almost 40% of installed generation capacity, generating up to 50% of New Zealand's electricity. In addition to generating a large amount of New Zealand's energy, the Waikato is an important corridor for many transmission lines/pipes, especially servicing the growing population of Auckland.

### **Our climate**

The Waikato region's weather is variable: floods, high winds and droughts are relatively common. During summer, warm, dry weather predominates with temperatures ranging from 21°C to 26°C, rarely exceeding 30°C. Annual sunshine hours average 2,000 to 2,100. Average annual rainfall is around 1,100 mm. Winters are cool with typical air temperatures ranging from 10°C to 14°C. In winter, frosts can occur in clear and calm conditions. The effects of a moderate rate of climate change will see the Waikato region become warmer and wetter. Climate scientists estimate that the Waikato region's temperature will be up to 3°C warmer over the next 70 to 100 years. Parts of the Waikato region will be up to 20 per cent wetter with more varied rainfall patterns and flooding up to four times as frequent by 2070.

### **Our economy<sup>15</sup>**

The Waikato region contributes approximately \$16.2 billion or about 8.5 per cent to the national gross domestic product (GDP). The Waikato region is New Zealand's foremost dairy-farming region. Other prevalent industries include coal mining, hydroelectricity generation, timber milling and pulp and paper manufacturing. The region has strong inter-regional exports, electricity generation, road and rail transport, as well as educational, research and business development institutions.

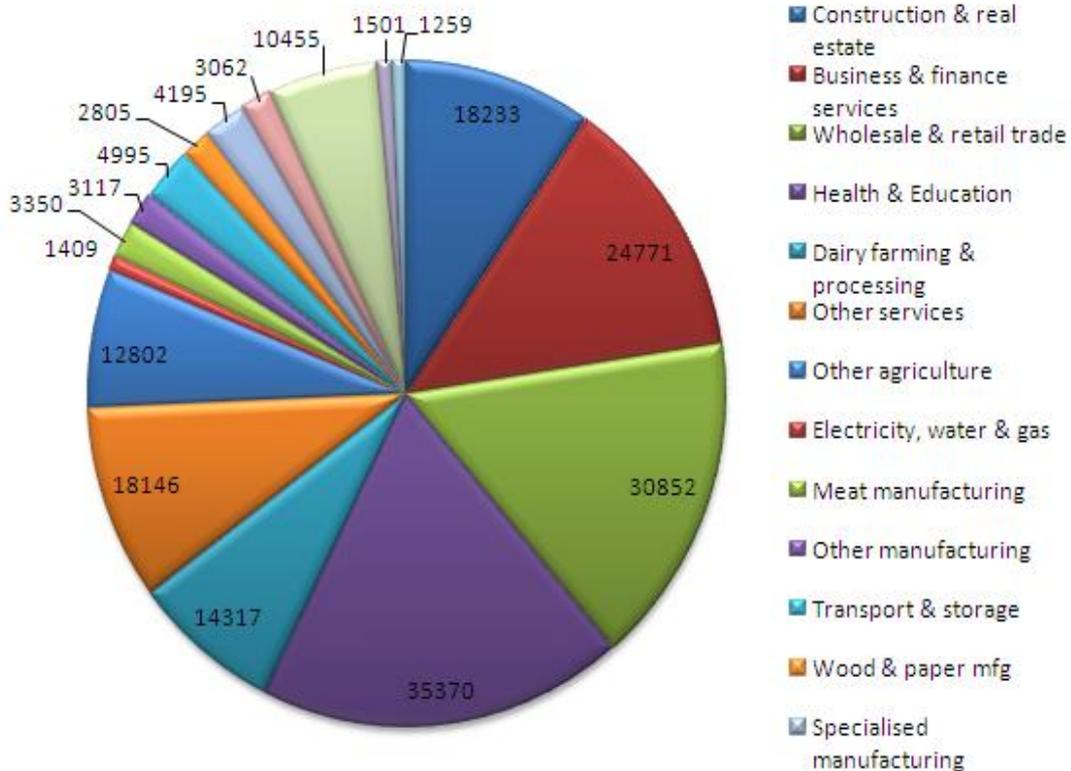
The Waikato region's indicators of economic prosperity show mixed performance and the region's economic story has been described as one of yet-to-be-realised potential. Māori economic participation and investment offers significant potential for the Waikato region. The region contributes consistently to the national economy and its performance has remained similar to the rest of New Zealand. However, the region has performed below national levels in some measures and performance varies significantly between different parts of the region.<sup>16</sup>

<sup>15</sup> Waikato Spatial Plan – A Summary (Draft report, February 2014)

<sup>16</sup> Waikato region economic profile:

[www.waikatoregion.govt.nz/Services/Publications/Technical-Reports/TR-201237/](http://www.waikatoregion.govt.nz/Services/Publications/Technical-Reports/TR-201237/)

Hamilton city makes the most significant contribution to the region’s gross domestic product (GDP), estimated at 45 per cent. Its estimated GDP per person in 2012 was the highest in the region and higher than the national per person average. It is the region’s “central business district” with concentrations of employment, research, tertiary education and manufacturing. Hamilton’s industries are closely linked to the primary production of the surrounding region.



**Figure 7 Employment by sector (including owner-operators) in the Waikato region**

The Waikato region has a significant proportion of New Zealand’s export industries. Further value could be added through manufacturing and provision of services. The Waikato region’s economy is closely tied to its environment. Important issues include water quantity and quality and soil resources. Industrial growth must consider environmental impacts and constraints. Growth in existing primary industries needs to come from increasing the value of processed products (manufacturing) and services rather than just increased quantities of raw product.

### Natural Capital and Ecosystem Services

The Waikato economy heavily relies on natural resources such as water, land, soil, forests, coastal and marine. These provide the natural capital and ecosystem services that create produce for export, attract tourists to our unique landscapes and environment and contribute to our quality of life and wellbeing (e.g. recreation, cultural experiences). Not all goods and services provided by nature have a price in our market economy, even though they are highly valued. In an attempt to estimate the value of this ‘hidden economy’ in the Waikato these non-market goods and services were approximated to be in the same order of magnitude as the regional GDP.<sup>17</sup>

<sup>17</sup> [www.waikatoregion.govt.nz/Community/About-the-Waikato-region/Our-economy/The-hidden-economy/](http://www.waikatoregion.govt.nz/Community/About-the-Waikato-region/Our-economy/The-hidden-economy/)

## Our infrastructure

The Waikato region, owing to its central location in the North Island, contains many nationally and inter-regionally strategic road and rail corridors. State Highway 1 and

State Highway 29 are classified as nationally strategic roads while the North Island Main Trunk and East Coast Main Trunk are classified as nationally strategic rail lines. Hamilton Airport is identified as having regional strategic importance, as is the inland port at Crawford Street in Hamilton. The region is a nationally significant juncture for freight and transport and has close connections to large and growing populations in Auckland and Tauranga.

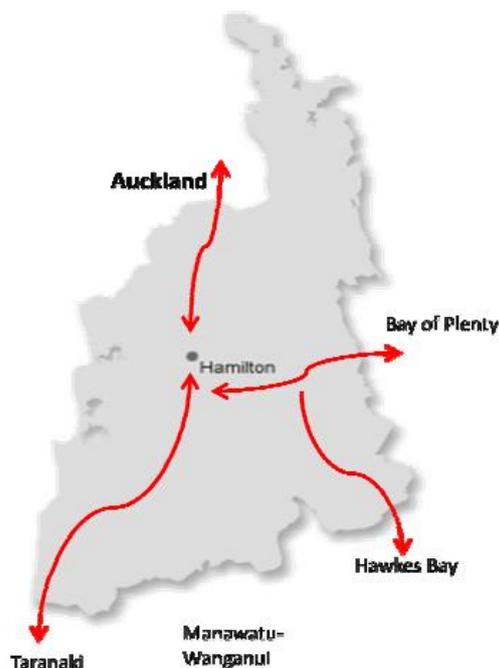


Figure 8 Important infrastructure corridors in the Waikato region

## Drivers for Change<sup>18</sup>

Some factors that will play an important role in determining the future of the Waikato region include:

- natural resource constraints;
- economic trends (global, national and regional/local);
- pace of technology change;
- changing community values and perceptions;
- demographic changes (urbanisation, ageing);
- iwi Māori influence;
- increasing regional risks (climate change, natural hazards); and
- local government reform.

While the Waikato faces its own regional challenges, there is a need to be aware of global trends and drivers of change and to plan for these changes. The following are some significant global drivers of change or trends that may impact the Waikato:

- continuing globalisation;
- climate change;
- rapidly evolving technology; and
- global insecurity.

<sup>18</sup> The information in this section is based on Waikato Spatial Plan – A Summary (Draft report, February 2014 and Waikato Regional Council internal doc #2852114, and adapted from other sources, including: *Mega Trends – Global and National Trends Affecting Regional Prospects*, Infometrics, 2011; *Wellington Region Councils Governance Review*, 2010, Price Waterhouse Coopers; *Waikato Regional Land Transport Strategy 2011-2041*.

# Appendix 5 Example of an Indicator Report Card

## WAIKATO PROGRESS INDICATORS - *Tupuranga Waikato* EDUCATIONAL ATTAINMENT



IMPROVING TREND

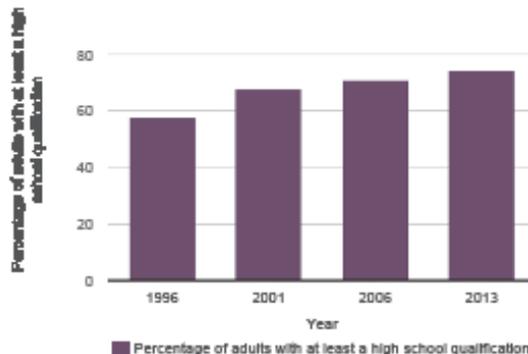
EDUCATIONAL ATTAINMENT LEVELS FOR PEOPLE IN THE WAIKATO REGION HAVE BEEN STEADILY RISING.



This indicator is the percentage of people living in the Waikato region aged 15 years or over who have an educational qualification at or above high school level, according to the New Zealand Census.

### WHY IS THIS INDICATOR IMPORTANT?

Changes in educational attainment reflect changing levels of educational access and participation. Qualifications signal a person's level of job readiness and contribute to their lifetime employment, income and wellbeing. An educated population adds to community vibrancy and creativity, helping us to remain competitive economically. A person's education is a key human component driving long run economic growth, regionally, nationally and globally.



### WHAT IS THIS INDICATOR TELLING US?

- Over the period 1996 to 2013, there was a strong upward trend in the percentage of adults in the Waikato region with academic qualifications. However, the Waikato region still has a slightly below average level of educational attainment compared to New Zealand overall.
- There is considerable variation throughout the Waikato region for this indicator, with more people having higher qualifications in Hamilton city compared to surrounding rural and provincial areas.

	1996	2001	2006	2013
Percentage of adults with at least a high school qualification	58%	68%	71%	75%

### DATA SOURCE AND SUPPORTING INFORMATION

Ordinarily, for most Census items, data would be extracted from the Statistic NZ (SNZ) website using the NZ.Stat Table Builder function. However, in order to arrive at a reliable historical time series for 1996 to 2006, during which time the New Zealand qualifications framework was altered, a specific data request was made to SNZ for this indicator's historical figures. These have been quality assured and have had a concordance analysis done by SNZ to match approximate highest qualification levels over time.

Census 2013 regional figures (and 2006 for further quality assurance) are as reported by SNZ through the 2013 Census regional summary tables – part 1. Census 2013 territorial authority level (TA) results are from regional summary tables for TAs.

This indicator is the percentage with at least a high school qualification. This is calculated as 100% minus the percentage with no qualification (i.e. the indicator numerator is all persons with the equivalent of a Level 1 Certificate and above, regardless of changes to the qualification framework).

Update details: Most recent figures are from the 2013 Census results released 3 December 2013. The next Census is planned for 2018.

Customised data request requirements: Nil

### DATA AVAILABILITY – OTHER THAN WAIKATO REGION:

Territorial Authority (TA) disaggregation: Yes

Other regions: Yes

New Zealand: Yes

Other countries/ Organisation for Economic Co-operation and Development (OECD): Comparable survey data on learning trends in young people (e.g. Programme for International Student Assessment (PISA) test averages) are available between countries but have not been sourced. Data on the academic attainment level of the adult population are less comparable between countries.

FIND OUT MORE ABOUT THE WAIKATO REGIONAL COUNCIL'S WAIKATO PROGRESS INDICATORS ONLINE AT [WWW.WAIKATOREGION.GOV.TZ/WPI](http://WWW.WAIKATOREGION.GOV.TZ/WPI)

# Appendix 6 WPI Scorecard

## WAIKATO PROGRESS INDICATORS - *Tupuranga Waikato*

# SCORECARD



**Waikato**  
REGIONAL COUNCIL  
*Te Kaitiaki o Te Waikato*

The Waikato Progress Indicators (WPI) Monitoring Programme enables us to put measures around societal and environmental progress in the Waikato Region as well as growth in the regional economy. This scorecard has been developed to help measure the Waikato Region's overall progress. Latest data is compared with baseline results for each indicator (2006 - 2008). Results are shown as improving trends, worsening trends or no significant change.

ECONOMY		Regional GDP		<div style="display: flex; justify-content: space-around; align-items: center;"> <span>↑ IMPROVING TREND</span> <span>↓ WORSENING TREND</span> <span>~ NO SIGNIFICANT CHANGE</span> </div>		
		Real Gross Domestic Product (GDP) per capita.		↑		
<div style="display: flex; align-items: center;">  <div style="margin-left: 10px;"> <h3>SOCIETY</h3> </div> </div>		Life expectancy		↑		
		Life expectancy at birth.				
Life satisfaction		Perceived health		~		
Self-rated overall life satisfaction.		Self-rated general health status.				
Educational attainment		Social connectedness		↑		
Residents aged 15 years or over with at least a high school qualification.		Self-reported absence of loneliness.				
Housing affordability		Community pride		~		
Ratio of housing costs to household income.		People's sense of pride in the way their city/town looks and feels.				
Perceptions of safety		Physical activity		~		
People who feel safe or very safe walking alone in their neighbourhood.		People who say they exercise for 30 minutes or more at least once per week.				
Crime		Cultural respect		~		
Recorded offences.		Respect for the diverse cultures of people who live here.				
Road safety		Te Reo Māori speakers		↓		
Social costs of road injury crashes per capita.		Percentage of Te Reo Māori speakers in the total population.				
Voter turnout				~		
				Enrolled residents and ratepayers who cast a vote in their local body elections.		
Community engagement				~		
				People who agree that they have enough say in what their council does.		
Income				~		
				Median weekly earnings for those in paid employment.		
Income inequality				↓		
				Distribution of income.		
Building activity				↓		
				New residential building consents issued.		
Employment				↓		
				Proportion of total working-age population who are employed.		
Public transport				↑		
				Public transport boardings per resident per annum.		
Water use				↓		
				Water allocation as a percentage of total allocatable water (Waikato River).		
Coastal habitats				↓		
				Estuarine area covered with invasive species (saltwater paspalum).		
Waste				↓		
				Tonnage of waste to landfill per capita.		
Recycling				↑		
				Self-reported prevalence of household recycling.		
Rural subdivision		Rural subdivision		↓		
		Area of rural land subdivided.				
Air quality		Air quality		↑		
		Exceedances of the regional guideline for particulate matter.				
Greenhouse gases		Greenhouse gases		~		
		National total greenhouse gas emissions.				
Protected land		Protected land		~		
		Legally protected conservation land.				
Environmental attitudes				~		
Average regional NEP (New Environmental Paradigm) score.						
River water quality				~		
Percentage of water samples taken from rivers and streams deemed unsatisfactory for ecological health.						
Soil quality				↓		
Productive land that fails two or more soil quality targets.						