Appendix F:

Draft Hauraki District Growth Strategy 2050
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1. Forward by the Mayor
2. Overview

The Hauraki District contains a diversity of land, communities and economies. Situated in the Waikato Region it is afforded a prime location between the major cities of Auckland, Tauranga and Hamilton. There are three towns in the District; Waihi, Paeroa and Ngatea, two smaller townships; Turua and Kerepehi and a number of smaller settlements in the surrounding areas.

The District is geographically diverse with highly productive dairy farming and horticultural land, the rugged beauty of the Karangahake Gorge, wetlands of international significance and beautiful coastlines and beaches.

After a period of low growth, the number of people living in the District is now growing faster than was anticipated. This growth has primarily been driven by more people moving into the district, which has added demand for more houses. This may be partly due to the flow on effects of the growth pressures facing nearby cities (Auckland, Tauranga and Hamilton). There is an expectation that the local economy will continue to perform well and the local population will keep growing.

The Hauraki Growth Strategy 2050 has been prepared to address the challenges of managing growth in a sustainable manner. It provides a framework for guiding future growth decisions and it defines future areas for development within the District. The Growth Strategy also aims to provide certainty to the community and the market about the development of the District and it allows Council to ensure efficient infrastructure provision.

While the Hauraki District is not subject to the National Policy Statement on Urban Development Capacity 2016, as its urban settlements do not exceed 10,000 people, the national significance of providing sufficient development capacity to meet the needs of people and communities and future generations is recognised in the preparation of this Strategy.

The proposed overall strategic direction for growth in the Hauraki District is to provide for the managed expansion of Waihi, Paeroa and Ngatea, to ensure these are the District’s three main towns, providing commerce, industry, residential, community, cultural and civic activities. The strategy also provides for Turua and Kerepehi as key secondary service townships in the District, with Kerepehi also being an industrial hub. The remaining rural and coastal settlements are to accommodate growth within their existing areas, reflecting constraints to development such as lack of servicing, natural hazards, special natural features worthy of protection, and historically low growth rates.

Implementation of the overall strategic direction for growth will be both through statutory means such as the District Plan and Long Term Plan, and non-statutory methods such as promoting the economic development of the District. The timing of implementation will be continually reviewed to ensure sufficient supply of appropriately zoned land for development. The Growth Strategy will be reviewed at a minimum of 5 yearly, and reviews will be undertaken more frequently if demand exceeds current expectations.
SECTION 1 – DISTRICT PROFILE

3. Demographic Trends

Summary

Population ↗ Older people ↗ Younger people ↘ Ethnic diversity ↗
Dwellings ↗ Household size ↘ Business Units (Commercial and Industrial) ↗

Population

The population of the District at the last census in 2013 was 17,808 people. Based on a “high” growth scenario, the District’s population is projected to increase by 8% over the ten-year period between 2018 and 2028, from 20,650 to 22,300 people. After 2028, the population is projected to continue increasing but at a lesser rate, reaching 23,695 people by 2048.

Of the three towns in the District, Paeroa is forecast to have the most population growth over the next 30 years. However, Waihi is forecast to remain the largest town, with a projected population of 5,840 by 2048.

Table 1: District and Town Population Projections

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2028</th>
<th>2038</th>
<th>2048</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hauraki District</td>
<td>20,650</td>
<td>22,300</td>
<td>23,145</td>
<td>23,695</td>
</tr>
<tr>
<td>Paeroa</td>
<td>4,530</td>
<td>5,010</td>
<td>5,320</td>
<td>5,600</td>
</tr>
<tr>
<td>Ngatea</td>
<td>1,435</td>
<td>1,550</td>
<td>1,635</td>
<td>1,685</td>
</tr>
<tr>
<td>Waihi</td>
<td>5,320</td>
<td>5,660</td>
<td>5,780</td>
<td>5,840</td>
</tr>
</tbody>
</table>

Source: Rationale Ltd 2017, high growth scenario

Ageing Population

Following national trends, the District has an aging population; that means the proportion of people aged over 65 is growing. By 2018 it is estimated that 24% of the population of the Hauraki District will be aged 65+ years; this is projected to increase to 30% by 2028 and 38% by 2048. A combination of factors is driving this; including better health care, longer life expectancies, and declining birth rates.

Household size

Also following national trends, the average household size (number of people living in a house) in the District is expected to decrease from 2.50 persons in 2006 to 2.29 persons in 2018. It is considered that this trend will continue and further decrease to 2.24 persons by 2028, and 2.05 persons per household in 2048. The decrease in household size is related to the ageing population, with more one person households, as well as a smaller average family size.
Dwellings

Population growth and a decrease in household size translates into a projected increase in the number of dwellings in the District, over the next 30 years. Based on a “high” growth scenario, over the ten-year period from 2018-28 it is projected that the number of dwellings in the District will increase by an average of 114 dwellings per annum, reaching 11,457 dwellings by 2028. After 2028, it is projected that the number of dwellings will continue to increase but at a slower rate. This is consistent with the projected population increases.

Table 2: District Dwellings Projections

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2028</th>
<th>2038</th>
<th>2048</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hauraki District</td>
<td>10,320</td>
<td>11,457</td>
<td>12,182</td>
<td>13,024</td>
</tr>
</tbody>
</table>

Source: Rationale Ltd 2017, high growth scenario

Rating Units

Rating unit growth is driven by the economy, population growth and other changes in demographics and lifestyle patterns. The majority of the projected increase in rating units is in the residential and residential lifestyle rating unit categories. This is because the District’s growth in rating units closely follows the growth trend in the number of dwellings in the District.

However, the flow-on effect from the high population and dwellings growth scenario also results in an increase in commercial and industrial rating units from 626 units in 2018 to 962 units in 2048. This is an increase on average of around 11 units per year, or an average growth rate of 1.8% per year.

Table 3: District Rating Units Projections

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2028</th>
<th>2038</th>
<th>2048</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Rating Units</td>
<td>11,452</td>
<td>12,687</td>
<td>13,518</td>
<td>14,492</td>
</tr>
<tr>
<td>Residential</td>
<td>6,559</td>
<td>7,371</td>
<td>7,906</td>
<td>8,541</td>
</tr>
<tr>
<td>Residential Lifestyle</td>
<td>2,348</td>
<td>2,673</td>
<td>2,863</td>
<td>3,070</td>
</tr>
<tr>
<td>Rural Industry</td>
<td>1,196</td>
<td>1,196</td>
<td>1,196</td>
<td>1,196</td>
</tr>
<tr>
<td>Commercial and Industrial</td>
<td>626</td>
<td>724</td>
<td>830</td>
<td>962</td>
</tr>
<tr>
<td>Mineral Related</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>Other</td>
<td>691</td>
<td>691</td>
<td>691</td>
<td>691</td>
</tr>
</tbody>
</table>

Source: Rationale Ltd 2017, high growth scenario

Employment and Industry

Mining makes up almost 23% of the Gross Domestic Product for the District in 2017, followed by agriculture, forestry and fishing at almost 20% of GDP. The industry which employs the largest number of people living in the District in 2017 is dairy cattle farming (936 jobs), followed by health services (447 jobs) and then primary education (236 jobs). The gold ore mining industry is the 5th largest employer in the District with 226 jobs.
The industries which created the most jobs in the District between 2007 and 2017 were the health care and social assistance (436 jobs) and public administration and safety industries (79 jobs). The biggest contributors to economic growth in the District over the same 10-year period, were the mining ($103 million) and health care and social assistance industries ($28 million).

Table 4

<table>
<thead>
<tr>
<th>Industries which created most jobs 2007-2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Care and Social Assistance</td>
</tr>
<tr>
<td>Public Administration and Safety</td>
</tr>
<tr>
<td>Accommodation and Food Services</td>
</tr>
<tr>
<td>Mining</td>
</tr>
<tr>
<td>Administrative and Support Services</td>
</tr>
<tr>
<td>All other industries</td>
</tr>
<tr>
<td>Total increase in employment</td>
</tr>
</tbody>
</table>

Table 5

<table>
<thead>
<tr>
<th>Biggest contributors to economic growth 2007-2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining</td>
</tr>
<tr>
<td>Health Care and Social Assistance</td>
</tr>
<tr>
<td>Rental, Hiring and Real Estate Services</td>
</tr>
<tr>
<td>Wholesale Trade</td>
</tr>
<tr>
<td>Public Administration and Safety</td>
</tr>
<tr>
<td>All other industries</td>
</tr>
<tr>
<td>Total increase in GDP ($m)</td>
</tr>
</tbody>
</table>

Source: Infometrics Hauraki District Economic Profile, 2017
4. Existing Development

Currently Waihi, Paeroa and Ngatea are the three main towns in the District, each providing a centre for commerce, industry, residential, cultural and civic activities. Refer to Map 1 below.

Kerepehi and Turua are secondary centres or townships. Turua has a residential area with a small township that primarily services the surrounding rural population. Kerepehi while also comprising a residential area, is a developing industrial hub.

There are six rural and coastal settlements (Waitakaruru, Waikino/ Mackaytown/ Karangahake, Whiritoa, Karaua, Whakatiwai, Waharau North and South), which are primarily residential areas with limited commercial or community services.

There are also other smaller settlements scattered throughout the District. These settlements are often a legacy of the past and have either declined in population or grown very slowly over time and as such have not been considered for accommodating future growth.

Map 1: Current development pattern
5. Capacity for Growth

An analysis of the capacity of currently zoned land to accommodate growth was undertaken for the three main towns in the District at the end of 2017. The following table (Table 6) shows the potential residential, low density residential, commercial and industrial development opportunities for Waihi, Paeroa and Ngatea.

Table 6: Potential development of existing zones

<table>
<thead>
<tr>
<th>Zone</th>
<th>Waihi</th>
<th>Paeroa</th>
<th>Ngatea</th>
<th>Totals (lots)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Greenfield (lots)</td>
<td>Infill (lots)</td>
<td>Greenfield (lots)</td>
<td>Infill (lots)</td>
</tr>
<tr>
<td>Residential</td>
<td>150</td>
<td>546</td>
<td>302</td>
<td>349</td>
</tr>
<tr>
<td>Low Density</td>
<td>50</td>
<td>117</td>
<td>183</td>
<td>45</td>
</tr>
<tr>
<td>Residential</td>
<td>70</td>
<td>-</td>
<td>250</td>
<td>-</td>
</tr>
<tr>
<td>Commercial</td>
<td>67</td>
<td>-</td>
<td>50</td>
<td>-</td>
</tr>
</tbody>
</table>

Residential

Assuming one dwelling per lot, this analysis shows that currently there is capacity for approximately 1,800 new residential dwellings, and 395 new low density residential dwellings in the District. However, much of this capacity is from infill development, particularly in Waihi. The uptake of infill development is uncertain as many people do not take up this opportunity for a number of reasons, such as unfamiliarity with subdivision rules, lack of financial resources, satisfied with the size of their property. So for planning purposes infill development is often not included in capacity calculations.

In this case, using greenfield development only would reduce the capacity of residential development by around half to 866 new residential dwellings and 233 low density residential dwellings, a total of 1,099 dwellings. This represents a shortfall of 38 dwellings from the estimated 1,137 new dwellings required by 2028 (refer section 3 Demographics above). However, this shortfall could be accommodated by development in Turua and Kerepehi which have around 300 potential greenfield residential lots available.

If we look further out to 2038, it is estimated that over 1,800 new dwellings will be required. With a potential development capacity of 1,099 dwellings, there is a shortfall of 763 dwellings, most of which is not able to be accommodated by appropriately zoned land elsewhere in the District.

So, further land is required to be rezoned in the District, within the next 20 years, to meet this shortfall and then more land will be needed over the longer 30 year timeframe as well. More residential land may be required to be rezoned earlier in Waihi, where there are only potentially 150 greenfield lots available for residential development.
**Commercial/Industrial**

Based on current District Plan standards there is capacity for 330 new industrial lots and 123 new commercial lots in the District. Assuming one rating unit per lot, this meets and exceeds the projected 336 new commercial and industrial rating units required by 2048 (refer section 3 Demographics above).

This suggests that further land is not required to be zoned in the next 30 years for commercial or industrial development. However, most of the currently available industrial land is in Paeroa (250 lots), with only 70 lots available in Waihi. So more industrial land may be required to be rezoned in Waihi in the near future.

There is also only capacity for 6 more commercial lots and 10 more industrial lots in Ngatea, suggesting more land may be required to be rezoned to accommodate growth particularly for commercial development requiring larger lots.

6. **Summary of Development Constraints and Opportunities**

The following table (Table 7) shows a summary of the main development constraints and opportunities for the District over the next 30 years.

Refer to the following sections for more detail - infrastructure capacity, including increasing environmental compliance standards (section 7), natural features (section 8), historic and cultural features (section 9), natural hazards, including effects from climate change (section 10), natural hazard risk assessment, including climate change factors (section 11).

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**Table 7: Summary of development constraints and opportunities**

<table>
<thead>
<tr>
<th>Natural hazards</th>
<th>Climate change</th>
<th>Increasing environmental compliance</th>
<th>Lack of infrastructure capacity</th>
<th>Close proximity to three cities</th>
<th>Productive land</th>
<th>Mineral resources</th>
<th>Growing population</th>
<th>Stable local economy</th>
<th>Infrastructure capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

- **Natural features** e.g. coastal, landscapes, wetlands ✓ ✗
- **Cultural sites** e.g. waahi tapu, taonga ✓ ✗
7. Infrastructure

In 2018 Council owns and manages $504 million of infrastructure assets, of these roading assets make up over half of the total value. These assets include:

- 633kms of roads (518km sealed, 115km unsealed), 145 bridges and major culverts and 114kms of footpaths.
- four water treatment plants supplying nine urban and 3 rural reticulated schemes with approximately 550km of pipes servicing 7,080 urban and rural properties.
- seven wastewater treatment plants servicing approximately 6,050 properties via 166km of pipes.
- 90km of urban stormwater pipes and 40km of open drains.
- 650km of rural land drains and 91 km of stopbanks.

Council’s community recreation assets include swimming pools at Paeroa and Ngatea, the Waihi Events Centre, 67 parks and reserves, and associated facilities such as park furniture, playgrounds, and buildings.

Council’s community facility assets include: district and rural community halls, pensioner housing, public toilets, cemeteries and non-recreation reserves.

Water supply, wastewater, stormwater, roading, land drainage, community recreation facilities and other community facilities are outlined in further detail below including the main issues and capacity considerations.

Water Supply

The following key issues for water have been identified:

- Drinking water quality standards.
- All our resource consents will need renewing but we are uncertain about what the future conditions will require.
- Capacity for growth in the water supply network.
- Water network losses.
- Effect of climate change on water supply.
- The risk to water supply infrastructure from natural hazards.
- Asset condition and performance.

There is currently sufficient extra capacity in the water treatment plants to accommodate the growth projections, but any significant increase in demand from for example dairy or industry may require significant expenditure for upgrades.
Wastewater

The following key issues for wastewater have been identified:

- Increased environmental compliance standards will need to be met.
- Projected population growth will exceed the capacity of existing wastewater treatment plants, particularly in Kerepehi, Waihi and Paeroa.
- Need to reassess the capacity of wastewater infrastructure to cope with climate change impacts – more intense and frequent rainfall.
- The impact of sea level rise, rising water tables and coastal erosion on public and private wastewater infrastructure.
- Understanding the District’s leaky network catchments.
- Asset condition and performance.

Over the next 5 years, beginning in 2018, Council will be required to renew all of its discharge consents for the wastewater treatment plants. New environmental standards for discharges will require upgrades to all 7 of the wastewater treatment plants.

Expected growth (residential and commercial / industrial) in the District may also drive the need to upgrade wastewater treatment plants. This is particularly relevant in Paeroa and Kerepehi where development is likely to drive the need to upgrade before the discharge consents require Council to do so.

Stormwater

The following key issues for stormwater have been identified:

- Increased environmental compliance standards will likely require the treatment of stormwater.
- The impact of more frequent and intense rainfall events as a result of climate change.
- The Council needs to better understand the condition and performance of its older stormwater assets.

As with wastewater, new environmental standards are likely to mean that Council will have to improve the quality of the stormwater discharges to the rivers. Council has proactively responded to climate change by using the recommended increase in rainfall intensities for determining pipe sizes for stormwater systems.
Roading

The following key issues for land transport have been identified:

- Future level of funding subsidies is uncertain.
- Impacts of aging population and accessibility on levels of service and costs of providing that service.
- Impact of sea level rise and coastal erosion on roading and bridge infrastructure.
- Impacts on roading infrastructure from climate change.
- Our bridges are aging but we don’t know enough about their condition.

Council is trying to determine the potential impacts of climate change on our roads – particularly the peat underlying areas of the Hauraki Plains. Climate change scientists have indicated that we can expect more droughts and bigger rain events more frequently as the climate changes. The droughts can be particularly damaging to roads built on peat soils. Large rain events cause flooding and slips which may lead to increased maintenance costs for the Council.

Land Drainage Schemes

The following key issues for land drainage have been identified:

- Impacts on land and property from sea level rise and coastal erosion.
- Impact of climate change on the land drainage network.
- Impact of natural hazards on the land drainage network.
- Asset condition and performance.
- Peat oxidation causing ground level to lower.

The land drainage network is comprised of pump stations, stopbanks, flood gates and land drains. As a result of the consolidation of the soft underlying soils, routine work is required to raise stopbanks back to design levels. The raising of the stopbanks to accommodate sea level rise predictions will also be undertaken as part of this routine work.

The anticipated increase in the population of the Hauraki District is not expected to impact demand on the land drainage infrastructure. The primary function of the land drainage activity is to provide and protect arable land. This function is not affected by changes in the urban environment. Moreover, changes in imperviousness on farming and rural properties which would typically affect runoff are considered negligible compared to the capacity of the land drainage infrastructure.
Community Recreation and Facilities

Forecast population growth will impact on demand for community assets. Council is proposing more specific measures for levels of service which can then be used as a basis for improving the delivery of existing services and providing new capacity/services as required.

Summary

As well as maintenance and renewals of Council infrastructure, a common issue is how climate change will impact on Council’s infrastructure in the future. The effects of climate change include sea level rise, leading to increased coastal erosion, coastal flooding and rising water tables, and increased frequency and intensity of rainfall from storm events. The natural hazards of the District are examined in more detail in section 9 below, and it is important to remember the risk they pose to council infrastructural assets as well as to private development such as people’s houses.

Council’s Infrastructure Strategy identifies that the risk from the effects of climate change impacting on Council’s stormwater, water supply and wastewater assets is low, as there is time to identify and respond to the risk. The Infrastructure Strategy notes that there is medium risk to Council’s roading and bridge infrastructure from sea level rise and coastal erosion, though some parts of the network, such as Kaiaua have a higher risk.

The Infrastructure Strategy also notes with regard to land drainage, that stopbank failure would be catastrophic on low lying and coastal settlements. The risk is assessed as high but unlikely to occur. Further work is identified to model stopbank failure and understand what mitigation measures may be required.

8. Natural Features

The District contains many unique and special natural features, refer Map 2. These are summarised below:

The District contains two of six internationally significant wetlands in NZ. The first, is the Kopuatai and Torehape Peat Domes, which together comprise an expansive area of wetland. The Kopuatai Peat Dome has been accorded International status as a Conservation Area by the International Union for Conservation of Nature and Natural Resources (IUCN) based on the Ramsar Convention. The wetlands perform an essential catchment management function. In addition, the wetlands have high cultural value to Ngati Hako. It is essential that these wetlands be retained in their natural or regenerating state.

The second wetland, is the Firth of Thames coastline, from Miranda to the Waihou River mouth, which consists of soft mudflats, mangrove forest and some intermingled salt marsh. This coastal wetland is one of New Zealand's most important coastal stretches for wading birds and has also been recognised as of international significance by Ramsar.

The eastern coastline of the district contains outstanding natural features and landscapes, such as the Whiritorea blow hole. The coastline is dominated by a series of bays and several sandy beaches. For some stretches of the coastline the land drops straight into the sea in the form of distinctive white and pink cliffs.
Features of this coastline include important coastal habitats, natural stream tributaries and estuaries, and vegetated pohutukawa cliffs, rarely found on the Coromandel Peninsula.

The rural land resource is one of the most valued of the natural and physical resources in the District. It includes the fertile Hauraki Plains and Waihi basin areas, the western foothills of the Hapuakohe Range, the eastern hills of the Waihi Basin and the foothills of the Coromandel and Kaimai-Mamaku Ranges. Dairy farming is concentrated on the plains area. Horticulture is predominantly located in the Waihi Basin. Extensive grazing and production forestry occurs in the hill country. Important mineral resources are also located within the District.

The Karangahake Gorge contains outstanding natural features and landscapes such as Ohinemuri River, White Rocks, Owharoa Falls and Mt Karangahake. In addition, the Karangahake Gorge includes steep rock cliffs, vegetation, historic examples of the gold mining era and recreation activities. Although the landscape has been significantly modified over the years, the combination of the dramatic physical geography, regenerating indigenous vegetation, cultural heritage of significance to tāngata whenua and historic heritage makes the area outstanding within Hauraki District.

The Coromandel and Kaimai Ranges are another outstanding landscape. The range forms the distinctive backbone to the Coromandel Peninsula and continues south into Hauraki District. The landform varies from rolling hills to steep and deeply incised hill country. With the exception of some of the lower slopes which are used for sheep and cattle grazing, the majority of the land is in native forest with some areas of pine plantation. The ranges have significant deposits of epithermal gold and silver that have been mined since the 1870s. New Zealand’s richest gold and silver mining area is located in Waihi but historically mining has also occurred in the Coromandel ranges from Waihi north and in the Karangahake Gorge.

The District also contains large areas of indigenous vegetation in public ownership mainly to the east of the district (Coromandel Forest Park, Kaimai-Mamaku Forest Park), with smaller areas in the north west (Hunua Ranges, Waharau Regional Park) and west (Kaihere Patetonga Hills, and Hapuakohe Range).

9. Heritage and Cultural Features

The concept of heritage encompasses natural, built and cultural features including historic buildings, archaeological sites, trees, landforms and ancestral lands. Heritage is what is passed from one generation to another, or what provides links with the past as well as providing current and future generations with spiritual and cultural wellbeing and identity. Council’s District Plan protects identified heritage features, items and areas; and areas of significance to Maori within the District.

The relationship of Maori, including their culture and traditions, with their ancestral lands, water, waahi tapu and other taonga has the potential to be destroyed or compromised through inappropriate land use and development. Only a fraction of the original Maori land holdings within the Hauraki District now remain in Maori ownership. Land in current Maori ownership is only part of what are termed ‘ancestral lands’ or ‘ancestral landscapes’. Some
lands that are no longer in Maori ownership hold importance to particular iwi, hapu or whanau as part of their ancestral heritage.

Heritage sites of cultural and historical significance to Maori can also be damaged or altered in ways that demean their mana and wairua. This may occur during subdivision and land development, the removal of natural resources through mining or quarrying, or the discharge of waste into water or onto land of high spiritual significance.

Council recognises that ongoing consultation with tangata whenua is necessary to ensure that waahi tapu and other sites are recognised in a culturally appropriate manner and that acceptable mechanisms are put in place for their protection. Council accepts that in some circumstances there is an inherent conflict between the identification of waahi tapu and their protection, and in some instances, the Maori Community may not wish to have particular sites identified.

Council will endeavour to identify, in consultation with the iwi who have mana whenua, significant Maori traditional sites and provide for protection and preservation of them. Council, in consultation with tangata whenua, will also work to devise acceptable methods to provide the necessary protection and preservation for unidentified Maori traditional sites.

10. Natural Hazards

The Hauraki District is subject to a number of natural hazards, such as river and stream flooding, coastal erosion, coastal flooding, earthquake and tsunami.

**River and stream flooding** is the most common natural threat to the Hauraki District, with most rivers and streams posing a potential hazard to existing development which is situated close to the banks of rivers. The Waihou, Piako and Ohinemuri River systems have been identified as being the highest risk of creating a flood hazard.

The majority of the Hauraki Plains is very low lying and subject to high groundwater tables. Flood protection schemes are in place, however flooding can result from flows that exceed the design standards of the schemes (overtopping) and breakages of the stopbank.

The areas that are most at risk from **coastal erosion and coastal flooding** hazards are:

- Whiritoa on the east coast of the Coromandel Peninsula.
- The Kaiaua-Pukorokoro/Miranda lowlands, located on the western side of the Firth of Thames.
- The northern part of the Hauraki Plain which is bounded by the Firth of Thames.

The Kaiaua-Pukorokoro/Miranda lowlands are particularly vulnerable to serious coastal flooding during extreme storms. Coastal erosion affects the entire length of the coast.

There are also other communities that have not been impacted by coastal flooding in recent history but which could be particularly vulnerable in the event of over-topping or failure of existing stopbanks, especially low lying settlements of the Hauraki Plains (e.g. Waitakaruru, Turua, and Ngatea).

As a result of **climate change**, the Hauraki District is at risk from **increasing sea levels, rising water tables and greater climate variability**, including changing temperature and
rainfall patterns and increasing storm intensities. Climate change presents an immediate threat from higher storm intensities and potential for weather-related natural hazards such as floods, slips and drought.

Over the longer term, climate change and sea level rise are likely to increase risks to coastal properties due to increased coastal flooding and erosion. There may also be implications for primary production industries resulting from changes to the region’s suitability for different types of farming, and water storage. Furthermore, there will be implications for Council’s infrastructure in servicing existing and future communities.

The Kerepehi Fault is an active fault running through the Hauraki Plains between the Firth of Thames and Okoroire. A large magnitude movement of this fault is a significant earthquake hazard to surrounding communities. Liquefaction as a result of an earthquake generated by the Kerepehi Fault is also a potential hazard for areas of the District with silty soils and a high water table, including the Hauraki Plains, Paeroa and Waihi.

The north and east of the Coromandel Peninsula and the Firth of Thames are both at risk from tsunami. The hazard is dependent on whether the tsunami has been generated by a local or distant event, both in terms of warning times and size of tsunami event.

Mayor Island, which is situated 25km offshore from Whiritoa, represents the most significant volcanic hazard to the District. Mayor Island has produced many explosive and effusive eruptions during its history. Ash fall from other sources such as the Taupo and Okataina volcanic zones is also possible.

### 11. Natural Hazard Risk Assessment

As well as identifying the natural hazards present in the District, it is important to establish the relative risk of the natural hazard occurring. Analysis by Waikato Regional Council (WRC) on hazards in the Hauraki District reveals that river flooding hazards, particularly at Ngatea and Paeroa, pose the greatest risk in terms of potential loss of human life, social disruption, economic cost and infrastructure damage. Coastal flooding has the second highest risk, and earthquakes have the third highest risk.¹

Note that this analysis does not include the Kaiaua Coast as this area was not in the Hauraki District at the time, being added as a result of Auckland Council amalgamation in 2010.

The following scenarios have been assessed by WRC:

- River flood: 1% Annual Exceedance Probability (or 1/100 year) flood event
- Coastal flood and erosion: 1% Annual Exceedance Probability (or 1/100 year) storm event
- Severe storm: 1% Annual Exceedance Probability (or 1/100 year) storm event
- Earthquake: magnitude 6.9 event along the Northern Kerepehi fault extension (3% chance of occurring in the next 100 years)
- Tsunami: 1% Annual Exceedance Probability (or 1/100 year) event with wave run up of 2.5m
- Volcanic activity: 1/1000 year event from Mayor Island

¹ An Overview of Natural Hazards in the Hauraki District Including a qualitative risk assessment. WRC, 2007, pg. v, 29
Debris flow: 1/500 year event.

The following table (Table 8) shows the risk level determined by WRC based on likelihood and consequence, note this is a summary of the full table which is reproduced in Attachment 2.

**Table 8: Natural Hazard Risk Assessment**

<table>
<thead>
<tr>
<th>Natural Hazard</th>
<th>WRC Risk Evaluation</th>
<th>Area Affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>River flooding</td>
<td>Extreme</td>
<td>Areas bordering Waihou, Piako Ohinemuri Rivers</td>
</tr>
<tr>
<td>Coastal flooding</td>
<td>High</td>
<td>Coastal areas</td>
</tr>
<tr>
<td>Earthquake from Kerepehi Fault</td>
<td>High</td>
<td>District wide</td>
</tr>
<tr>
<td>Severe storm</td>
<td>High</td>
<td>Western side of Kaimai Coromandel ranges</td>
</tr>
<tr>
<td>Tsunami</td>
<td>High</td>
<td>Coastal areas</td>
</tr>
<tr>
<td>Volcanic</td>
<td>High</td>
<td>District wide, dependant on wind directions</td>
</tr>
<tr>
<td>Debris Flow</td>
<td>Moderate</td>
<td>Unknown, usually on alluvial fans</td>
</tr>
<tr>
<td>Coastal erosion</td>
<td>Low</td>
<td>Coastal areas</td>
</tr>
</tbody>
</table>

The risk assessment concludes that river flooding, coastal flooding and earthquakes are the highest priority natural hazards currently facing the Hauraki District\(^3\). The communities most affected by these hazards are Hauraki Plains (Ngatea, Waitakaruru, Turua), Paeroa and coastal communities, these areas will be examined further in section below.

The Kaiaua Coast, though not part of WRC’s risk assessment, is also considered at risk of river flooding, coastal flooding and coastal erosion. Recent river and coastal flooding events (March 2017, January 2018) have resulted in inundation of homes, businesses and Council infrastructure, highlighting these hazards.

Liquefaction is another risk that has not been adequately assessed to date. Council has undertaken a preliminary desk top assessment\(^4\) which concludes that for Ngatea, Turua and Kerepehi liquefaction damage is possible because these areas contain unconsolidated alluvial sediments, high ground water levels and are in close proximity to the Kerepehi Fault. This means more detailed assessment of the liquefaction risk is required for rezoning and new development in these areas.

Paeroa township also has mainly unconsolidated alluvial sediments which are prone to liquefaction, though some areas have volcanic soils which are less susceptible. So further assessment of liquefaction risk is also required for rezoning and new development. Waihi has mainly volcanic soils which are less susceptible to liquefaction, plus it is further from the Kerepehi Fault and expected to have lower earthquake shaking intensities.

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\(^2\) An Overview of Natural Hazards in the Hauraki District Including a qualitative risk assessment. WRC, 2007, pg. 28
\(^3\) Ibid, pg. 26
\(^4\) Liquefaction Risk Assessment Recommendation Report. HDC, 2018
Areas Most at Risk from Natural Hazards

Hauraki Plains

The Hauraki Plains is at extreme risk of river flooding, it is also subject to a number of high risk hazards; including coastal flooding, severe storms, tsunami and earthquake. Some of the identified hazards, notably river and coastal flooding are considered to have reduced risk because of flood protection schemes. However, it is important to note that protected areas are not “risk free”.

The current flood protection schemes are at risk from

- Earthquakes.
- Tectonic processes slowly lifting or depressing the plains.
- Large tsunami events.
- Sea level rise.
- Climate change increasing the frequency and magnitude of high intensity rainfall events.\(^5\)

The Plains is an extremely low-lying area, with townships such as Ngatea and Turua. The WRC has concluded that:

> As such, there appears to be potential for catastrophic losses with severe stop-bank over-topping or failure. The risk of over-topping of the present stop-banks is presently unknown due to inadequate information on extreme coastal flooding events in the Firth of Thames. Once adequate design information is available to assess residual hazard and vulnerability, appropriate hazard management measures will need to be developed to ensure that the adverse effects of any future flooding are minimised.\(^6\)

These hazards have implications for the future development of the Hauraki Plains and will be explored more in the following section on addressing river and coastal flooding hazard risk.

Paeroa

Paeroa is at extreme risk of river flooding and also experiences flooding from runoff from the Kaimai and Coromandel ranges, though it is not expected to experience coastal flooding. As with the Hauraki Plains, the river flooding risk is considered to be mitigated by flood protection schemes, though these schemes are at risk from the factors identified above.

Flooding hazards have implications for the future development of Paeroa, the flooding from runoff is currently managed by land-use planning restrictions e.g. zoning of ponding areas in the Paeroa Main Drain. How the flooding hazard will be affected by climate change and how it can be managed into the future will be explored more in the following section on addressing river and coastal flooding hazard risk.

\(^5\) An Overview of Natural Hazards in the Hauraki District Including a qualitative risk assessment. WRC, 2007, pg. 15

\(^6\) Coastal Flooding Risk Mitigation Plan 1999. WRC, pg. 10
Coastal Areas

Coastal areas in the Hauraki District include the Firth of Thames (Kaiaua Coast, Miranda, Waitakaruru, northern Hauraki Plains) and the east coast (Whiritoa). The extent of coastal areas is subject to some uncertainty with mapping by the WRC (Coastal Environment) in the Regional Policy Statement differing to that in the Hauraki District Plan maps (Coastal Zone).

For the purpose of assessing coastal hazards, “coastal areas” are considered to be those areas presently and potentially affected by coastal hazards, including coastal hazards arising from climate change. This includes estuaries, tidally affected groundwater, wetlands, creeks, lowland rivers/streams and adjacent land margins.

In the Hauraki District the following areas are therefore considered to be coastal:

- The full length of Council’s Firth of Thames and Pacific Coast lines,
- In relation to the Firth, for the Kaiaua Coast this includes the whole of the low land area (Coastal Zone, of the Franklin Section of the District Plan),
- In relation to the Hauraki Plains this includes the area seaward of the coastal stopbanks, and the tidal parts of the Waihou and Piako Rivers and Maukoro Canal,
- In relation to the Pacific (east) Coast this includes the immediate coastal cliffs, and the environs of Whiritoa – streams and estuaries, and dunes, as well as the low land at Mataora Bay, and
- the Hauraki Plains (ground water).

The coastal areas on the Firth of Thames are considered to be at high risk of coastal flooding. This risk is mitigated in some areas such as Waitakaruru and the northern Hauraki Plains, due to coastal stop banks. Other coastal areas such as the Kaiaua Coast have no such protection. Coastal flooding is not seen as being a significant issue for Whiritoa7.

Coastal erosion risk is considered to be low for most of the coastal areas of the District. However, the Kaiaua Coast is experiencing coastal erosion which is threatening Council infrastructure such as roads.

Addressing River and Coastal Flooding Hazard Risks

Further work is required to better understand the risk posed by climate change, sea level and water table rise and the effects on river flooding, coastal flooding and coastal erosion in the District, and the implications for property owners. It is also acknowledged that there will always be uncertainty around climate change and its effects but that this should not delay making decisions.

Furthermore, in regard to coastal hazards, the New Zealand Coastal Policy Statement (NZCPS) already directs that a precautionary approach should be adopted and reliance on coastal protection works avoided. Rather, emphasis is placed on the protection of natural protective features of the coast, such as beaches, dunes and wetlands.

The NZCPS also requires that areas that may be subject to inundation due to sea level rise, storm surge and wave height, over at least 100 years, be identified. Thus influencing the location and design of new subdivision to avoid the need for hazard protection works.

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7 An Overview of Natural Hazards in the Hauraki District Including a qualitative risk assessment. WRC, 2007, pg. 18
A key requirement in the management of natural hazards is engagement with communities, to convey information about climate change scenarios, their impacts on natural hazards and any associated risks to the community. New Government guidance on coastal hazards and climate change was released at the end of 2017, setting out how an adaptive planning process can be used to manage uncertainty and risk and identify a way forward.

Adaptation options for the coast can be described as follows:

- **Accommodate**: adjusting existing assets by using measures that anticipate hazard risk, such as raising floor levels, providing alternative inundation pathways, requiring relocatable houses.
- **Protect**: use natural buffers like dunes or hard structures like seawalls.
- **Retreat**: move people and assets away from the coast in a managed way over time, or as a consequence of erosion and inundation damage after climate-related events.
- **Avoid**: use land-use planning measures that stop putting people and assets in hazard areas.8

In practice, a combination or sequence of these types of measures will be needed as coastal communities are increasingly affected by sea level rise. The same adaptive planning process can be used for communities facing river flooding hazards in the District.

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8 Coastal Hazards and Climate Change: Guidance for Local Government. MfE, Dec 2017, pg. 25
SECTION 2 – GROWTH STRATEGY

12. Key Principles for Growth

The following six principles will guide the sustainable development of the Hauraki District into the future. They are based on community outcomes identified through the Long Term Plan process, as well as earlier community consultation undertaken as part of the District Plan review. The principles also embrace best practice regionally (having particular regard to the Waikato Regional Policy Statement\(^9\) and the Waikato Plan), nationally and internationally.

1. Promote the development of towns and townships that enable people, communities and future generations to provide for their social, economic, cultural and environmental wellbeing.

2. Ensure sufficient land is available for the development of housing and business activities to provide people with access to a range of lifestyle choices and job opportunities.

3. Contain development within defined urban areas to avoid rural residential sprawl onto productive farmland, and ribbon development along coast and transport corridors.

4. Plan for and integrate infrastructure provision with land zoning and development to ensure infrastructural services and facilities meet future demand.

5. Avoid new development, and mitigate risks to existing communities, in hazard prone areas.

6. Protect special natural and cultural features such as:
   - Indigenous wetlands;
   - Indigenous vegetation and biodiversity;
   - Outstanding landscapes;
   - Heritage sites and areas;
   - Productive soils;
   - Sites of significance to Maori;
   - Coastal environments.

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\(^9\) RPS Objective 3.1 - 3.3, 3.6 - 10, 3.12, Policy 4.1-4.4, 6.1 - 6.6, 6.8 – 6.9, 6A
13. Strategic Direction for Growth

The following strategic direction for growth has been determined as the best option for the sustainable development of the district, refer Map 3. This determination has taken into account existing settlement patterns, population projections and infrastructure capacity, considered the physical features and constraints of the District and applied the key principles for growth.

*Provide for future growth in Waihi, Paeroa and Ngatea to ensure these are the District’s three main towns, providing centres of commerce, industry, residential, community, cultural and civic activities.*

*Provide for Kerepehi and Turua, as the District’s two secondary townships servicing widespread rural populations and providing an industrial hub.*

*Ensure growth in coastal and rural settlements is accommodated within the limits of the existing settlements, to recognise constraints to development; such as lack of servicing, natural hazard risk, and protection of special natural features.*

*Provide for infill residential development within the main urban areas to ensure a range of lifestyle options to accommodate changing demographics and market demand.*

The purpose of consolidating growth around existing towns and townships, is to take advantage of existing assets, including council infrastructure, schools, medical facilities, and other services that may make future development more affordable and more sustainable over the longer term.

The purpose of limiting growth to existing areas in the coastal and rural settlements, reflects a preference for avoiding development in areas that have high levels of constraints associated with them, such as hazard risks and future risks from climate change. There is also a priority to avoid scattered rural residential development on productive farm land and ribbon development along the coast and transport corridors.

The purpose of providing infill development within existing main urban areas is to take advantage of existing services and to limit urban sprawl. Infill development is already possible through obtaining subdivision and land use consents under the current District Plan.

Further infill opportunities can be investigated such as lowering minimum lot sizes in areas in close proximity to urban services and open space, this could allow larger sections to accommodate two houses. Provision could also be made for allowing minor household units or “granny flats” as well as a main house on each site, where neighbourhood amenity can be retained. Furthermore, opportunities for changing consenting requirements for retirement villages, aged care facilities and other comprehensive development to be more reflective of the positive benefits of these developments, could be considered.

In the next section we look at Waihi, Paeroa, Ngatea, Turua and Kerepehi in more detail, including issues relating to their growth and how the Growth Strategy addresses these issues.
Waihi

Waihi is located on the eastern side of the Hauraki District and is at the base of the Coromandel Peninsula. As well as a thriving present-day community, Waihi has a rich mining history and was once one of the most prominent gold and silver mines in the world. Today mining remains a key industry for Waihi, with other industries including agriculture and horticulture, including many dairy and livestock farms along with a number of kiwifruit orchards.

The key issues for the future development of Waihi have been identified as follows:

- Defining and managing urban boundaries in the developing north-east and south-west edges of the town and ensuring adequate connections between existing development and new urban areas.
- Providing for future industrial development and providing additional residential capacity while maintaining residential amenity.
- Providing for tourism, and the gateway aspect of Waihi to the Bay of Plenty and vice versa.
- Managing the significant socio-economic effects of the eventual closure of the mine at Waihi.

These issues are addressed in the Growth Strategy by: promoting the existing Structure Plan Area of 17.3 hectares in Waihi East for residential development, proposing infill residential development in suitable existing residential areas of Waihi and identifying future growth areas for residential (Waitete Road, Bradford Street, Wharry Road, A&P Showgrounds) and industrial development (Baxter Road, Ford Road), refer map below.

As mentioned earlier in the Growth Strategy, the purpose of providing infill development within existing main urban areas is to take advantage of existing services and to limit urban sprawl, while retaining residential amenity.

The location of future growth areas defines the urban boundaries of Waihi by utilising the natural features of the Ohinemuri River, the Waitete Stream and the hills to the north and west. The future residential growth areas are located to the north east, north west and south west of Waihi. The areas provide a logical extension to the urban streetscape of Waihi. They adjoin existing residential areas and are relatively hazard free. Further hazard assessment will be undertaken during the District Plan change process and will determine any development constraints and propose methods to manage these.

Council’s District Plan places controls on new development that aims to enhance the historic mining character of Waihi and encourage visual and physical linkages to local features such as the Pumphouse, Waitete Stream, Ohinemuri River and hills of the Coromandel range. District Plan changes to provide future areas for growth will also address concerns relating to providing connections, such as vehicular, pedestrian and open space, between existing and new urban areas, through the use of structure plans with associated requirements.

The future industrial growth area is located to the south of Waihi and is separated from residential development to avoid effects on amenity. The growth area builds on existing industrial development and provides a choice of locations on both sides of the State
Highway. It is also a logical infrastructure extension. It is likely one location would be developed at a time as required by demand for industrial land.

The eventual closure of the mine in Waihi will have significant effects on people, the community and businesses in Waihi and the wider area. It is difficult to plan for this event as the timing of closure is uncertain, as are the development of other mining opportunities in the area.

Council initiatives such as the Economic Development Strategy address issues such as the development of tourism business opportunities which may go some way toward mitigating the effects of mining cessation.

Overall these measures aim to provide for the future growth of Waihi ensuring it continues to be one of the District’s main community and business centres; specialising in mining and tourism and servicing the surrounding rural area.
Paeroa

Paeroa is located in the centre of the Hauraki District. The town was established in the 1870s and was originally a thriving port. Paeroa is now an attractive rural service centre, which is extremely busy given its central location at the junction of two State Highways.

The key issues for the future development of Paeroa have been identified as follows:

- Potential conflict between an attractive and busy town centre and the safe and efficient management of state highway traffic.
- Ensuring that residential amenity and character is maintained with further development.
- The location of industrial uses and the interface between industrial and commercial activities along the main street (northern end), and the manner in which connections can be made between the two activities across the redundant rail line.
- Managing existing flooding hazard and the potential of climate change to increase this hazard.

These issues are addressed in the Growth Strategy by: promoting the residential and industrial Structure Plan Areas (residential 27.9 hectares, industrial 14.1 hectares), proposing infill residential development in suitable existing residential areas of Paeroa and identifying future growth areas for residential (SH26 west, race course), low density residential (SH26 east) and industrial development (SH2 east). Refer to map below.

As mentioned earlier in the Growth Strategy, the purpose of providing infill development within existing main urban areas is to take advantage of existing services and to limit urban sprawl, while retaining residential amenity.

The location of future growth areas defines the urban boundaries of Paeroa by utilising the natural features of the Ohinemuri River, the hills to the east and lower lying land to the north-west and south. The good quality soils to the north also act as a limiting factor to urban expansion in this direction.

The future residential growth area has been located away from flooding hazard areas, on predominantly flat land adjacent to existing residentially zoned land, forming a logical expansion of Paeroa to the north east. Further assessment of the area will be undertaken during the District Plan change process and will determine any development constraints and propose methods to manage these.

The future low density residential area is located on the edge of Paeroa and provides an alternative living choice. An indicative 500 metre buffer area has been provided to prevent new dwellings from locating too close to the existing gun club in Morrison Road.

The future industrial growth area adjoins existing industrial land to the north of Paeroa and is separated from residential areas to prevent adverse effects on amenity for residents.

Council’s District Plan also addresses amenity and character concerns through controls on new development. It restricts development of flood ponding areas thus avoiding the risk of damage to property. District Plan changes to provide new areas of growth will also address concerns relating to providing connections between existing and new areas of development, through the use of structure plans with associated requirements.
Council has been working with the community to upgrade Paeroa's main street. The area in front of the Paeroa Post Office won the Civic Heart Revitalisation Award in 2010, from the NZ Institute of Landscape Architects. More recent work has included the new library and shared space completed in 2017. A roundabout at the southern end of town is being trialled over the 2016/2017 summer and discussions with NZTA regarding the State Highway are ongoing.

Overall these measures provide future growth for Paeroa, to ensure it remains one of the District's main centres. Maximising Paeroa's central location within the District by providing administration and civic activities, substantial industrial, recreational and residential activities and recognising its importance to tangata whenua.
Ngatea

Located in the northwest of the District, Ngatea is the largest settlement on the Hauraki Plains and is a service centre for the surrounding farming area. Located on State Highway 2, it is also a busy town providing services for passing motorists. Ngatea was established in the 1900s as a result of a unique series of canals and stop banks which drained the land and produced rich farmlands for dairy production. Today Ngatea has a strong community with many groups and facilities catering for sporting, cultural and service based activities.

The following key issues for the future development of Ngatea have been identified:

- Defining and managing urban boundaries in the developing southern and north western edges of town.
- Providing for future light industrial/commercial expansion and development, and the implications for nearby residential neighbourhoods.
- Improving the amenity and quality of the township along State Highway 2 without compromising the safety and efficiency of the state highway.
- Managing river and coastal flooding hazards and the potential of climate change to increase these and other hazards.

These issues are addressed in the Growth Strategy by: promoting the development of the residential Structure Plan Areas (North and South – total 41.3 hectares), and identifying a future growth area for light industrial/commercial development to the west adjoining existing industrial development, refer to map below.

The future light industrial/commercial growth area has been located away from the main residential areas, and will be restricted to light industrial uses which have less impact on residential amenity. The growth area will also provide opportunities for large commercial retailers, such as a supermarket, to locate within Ngatea.

Council’s District Plan addresses amenity and connection concerns through controls on new development. The residential Structure Plan areas and the light industrial future growth area provide a long term urban boundary for Ngatea and will contain urban sprawl. The Piako River forms a natural eastern boundary for the town. Further residential growth areas have not been provided, recognising the structure plan areas that are already zoned for residential use and are currently undeveloped, the constraints that natural hazards provide to residential land use, and the need to protect productive land for farming.

Council has provided a streetscape project in the Long Term Plan 2018-2028 as well as a new library/community facility for Ngatea. These projects in tandem with the measures identified above, will guide and enhance the future development of Ngatea, ensuring it remains a thriving local community and service town.
**Kerepehi**

Kerepehi is a small township located between the Piako River and State Highway 2, on the Hauraki Plains. It has some community facilities including a school, Marae, and domain, as well as commercial and light servicing activities. Dairy farming is historically the most important industry in the area. Recently, industrial development has taken place on Hauraki Park; an industrial subdivision and food technology hub developed by the Council.

The key issues for the development of Kerepehi are as follows:

- Improving the amenity and quality of the town’s interface at State Highway 2 from its current industrial character without compromising the safety and efficiency of the state highway.
- Addressing the implications for residential amenity as a result of the growth of industrial uses, and the identity of the town as an industrial precinct.
- Managing the flood risk in low lying areas and the potential of climate change to increase this and other hazards.

These issues are addressed in the Growth Strategy by: promoting the development of the residential (North, South – total 9.2 ha) and industrial (North, South – total 23 ha) Structure Plan Areas, and identifying future growth areas for industrial development to the south and residential development to the north.

The industrial growth area has been located to the south of the existing settlement adjoining existing industrial zoned land, whereas the future residential growth area has been located to the north of Kerepehi. This is to ensure separation of incompatible land uses and to protect residential amenity. Future residential land has been provided to balance the provision of industrial land and to allow for live/work/play opportunities in Kerepehi. The future residential area has also been located away from the areas of lower lying higher flood risk land making use of higher land.

These measures aim to ensure a liveable and attractive residential environment for the community of Kerepehi while supporting the needs of existing and emerging industrial activities, and recognising the role that the Kerepehi Marae plays for tangata whenua.

**Turua**

Turua is a small community located beside the Waihou River on the Hauraki Plains. It has community facilities, including a school, and a small commercial, service and industrial centre. Turua is located close to Thames and has potential to grow to accommodate spill-over residential development from Thames.

The key issues for Turua have been identified as follows:

- Managing river and coastal flooding hazards and the potential of climate change to increase these and other hazards.
- The speed of traffic and vehicle priority along the main street - Hauraki Road.
These issues are addressed in the Growth Strategy by promoting the development of the residential Structure Plan Areas (A, B, C – total 20.5 ha). These areas seek to consolidate residential land use on the western side of Hauraki Road, allowing for limited expansion due to the low lying nature of surrounding land and the quality of the soils for productive purposes.

Commercial and industrial land use is provided for on the eastern side of Hauraki road. No areas for future growth are provided, though the District plan does show an outlying urban boundary within which further development is possible in the very long term.

These measures aim to recognise and provide for the development of the township of Turua, while managing flood hazards and the mixture of commercial, service and industrial activities in parts of the township.

14. Future Capacity Analysis

An analysis of likely maximum development within the identified growth areas of the main centres has been undertaken. The following table (Table 9) is a summary of development capacity of existing zoned greenfield land and new growth areas. This analysis is important to ensure that enough capacity is being provided to meet the expected growth of the District, over the next 30 years.

Table 9: Development Capacity

<table>
<thead>
<tr>
<th>Area</th>
<th>Existing potential greenfield (lots)</th>
<th>New growth area (lots)</th>
<th>TOTAL (lots)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waihi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td>150</td>
<td>1,307</td>
<td>1,457</td>
</tr>
<tr>
<td>Low density Residential</td>
<td>50</td>
<td>-</td>
<td>50</td>
</tr>
<tr>
<td>Industrial</td>
<td>70</td>
<td>410</td>
<td>480</td>
</tr>
<tr>
<td>Commercial</td>
<td>67</td>
<td>0</td>
<td>67</td>
</tr>
<tr>
<td>Paeroa</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td>302</td>
<td>1,144</td>
<td>1,446</td>
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<tr>
<td>Low density residential</td>
<td>183</td>
<td>304</td>
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<tr>
<td>Industrial</td>
<td>250</td>
<td>150</td>
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<td>Commercial</td>
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<td>0</td>
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<td>Ngatea</td>
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<td></td>
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<tr>
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<td>414</td>
<td>0</td>
<td>414</td>
</tr>
<tr>
<td>Industrial</td>
<td>10</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Light Industrial/ Commercial</td>
<td>6</td>
<td>75</td>
<td>81</td>
</tr>
</tbody>
</table>
Residential

Assuming one dwelling per lot and including the development of existing zoned greenfield land and likely maximum development of proposed growth areas; Waihi will have capacity for 1,457 new residential dwellings and 50 new low density residential dwellings. Paeroa 1,446 new residential dwellings and 487 new low density residential dwellings, and Ngatea 414 new residential dwellings.

In total, this provides capacity for over 3,000 new residential dwellings in the District, over the next 30 years. This capacity therefore meets and exceeds the projected number of new dwellings for the District of 2,700 over the next 30 years, using the high growth scenario.

Further capacity is also available from infill development, though this has not been included in this analysis as uptake is uncertain.

Commercial/Industrial

Assuming one rating unit per lot and including the development of existing zoned land and likely maximum development of proposed growth areas; Waihi will have capacity for 547 new commercial/industrial units, Paeroa for 450 new commercial/industrial units, and Ngatea for 91 new commercial/industrial units.

In total, this provides capacity for over 1,000 new commercial/industrial units in the District, over the next 30 years. This capacity therefore meets and exceeds the projected number of new commercial/industrial business units for the District of 330 over the next 30 years, using the high scenario.

Timing

An analysis of the growth areas has been undertaken to allocate priority and timing for scheduling changes to the District Plan. This analysis has shown development in Waihi to be the highest priority and plan changes to rezone more residential and industrial land within the growth areas should be undertaken in the short term (next 1 - 5 years).

The following areas are considered to necessitate plan changes over the medium term (5 - 15 years):

- Paeroa - industrial, residential, low density residential.
- Ngatea - light industrial/commercial.

The industrial and residential areas at Kerepehi are considered more likely to be developed in the longer term (15 - 30 years).

This timing is subject to change as demand for land for development may fluctuate due to population and economic factors.
### SECTION 3 - IMPLEMENTATION

#### 15. Implementation Actions and Timeframes

The following table (Table 10) sets out the actions to implement the Growth Strategy and the likely timeframes for implementation. It also shows the areas of Council that will be responsible for implementation.

**Table 10: Implementation Actions and Timeframes** (Short term = 1-5 years, Medium term = 5-15 years, Long term = 15-30 years)

<table>
<thead>
<tr>
<th>ACTION</th>
<th>HOW</th>
<th>WHEN</th>
<th>WHO @ COUNCIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Promote the development of identified existing greenfield residential structure plan areas at Waihi, Paeroa, Ngatea, Turua, Kerepehi, and Waikino.</td>
<td>• By providing information to developers, current and future residents. • Through the Economic Development Strategy – to highlight available land for development. • Through economic instruments such as the strategic use of central government infrastructure funds or infrastructure funding agreements between public and private sector. • Collaboration with the private development sector. • Integrate and co-ordinate consenting processes to facilitate development.</td>
<td>Ongoing</td>
<td>Community Services and Development</td>
</tr>
<tr>
<td>2. Promote the development of identified existing greenfield industrial structure plan areas at Paeroa and Kerepehi.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Provide for development in identified growth areas.</td>
<td>• By undertaking District Plan changes to rezone land as follows: o Waihi - Residential and Industrial Growth Areas. o Paeroa - Residential, Low Density Residential, and Industrial Growth Areas. o Ngatea – Light Industrial/Commercial Growth Area. o Kerepehi – Residential and Industrial Growth Areas.</td>
<td>Short term</td>
<td>Planning &amp; Environmental Services</td>
</tr>
<tr>
<td>4. Consider providing further infill residential</td>
<td>• By undertaking District Plan Changes such as to reduce</td>
<td>Short term</td>
<td>Planning &amp;</td>
</tr>
<tr>
<td>ACTION</td>
<td>HOW</td>
<td>WHEN</td>
<td>WHO @ COUNCIL</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>and retirement/comprehensive development opportunities in Waihi, Paeroa and Ngatea.</td>
<td>minimum lot sizes where suitable, allow minor residential units where suitable, lessen restrictions on retirement villages and comprehensive development (Ngatea), and introduce design guidelines (District wide).</td>
<td></td>
<td>Environmental Services</td>
</tr>
</tbody>
</table>
| 5. Provide for infrastructure upgrades to ensure sufficient service provision for future demand. | • By undertaking investigations and including projects in the 30-year Infrastructure Strategy.  
• By including projects in the Long Term Plan. | • Ongoing  
• As required | Engineering Services |
| 6. Ensure that infrastructure costs that are attributable to growth are paid for by those generating the demand e.g. developers | • By preparing a Development Contributions Policy | • Short term | Engineering Services, Planning & Environmental Services |
| 7. Investigate hazard risk, including the impacts of sea level rise, rising water tables and coastal erosion for coastal settlements. | • Undertake a cross-Council climate change and natural hazards adaptation programme.  
• Update Natural Hazards Policy. | • Short term  
• Short term | All departments |
| 8. Mitigate effects of natural hazards on existing at risk communities, in particular the Kaiaua Coast. | • Continue to work with WRC to actively manage the Kaiaua/Miranda Catchment and address flooding issues.  
• Undertake any identified physical works in the Kaiaua/Miranda Catchment.  
• Prepare a community plan for Kaiaua Coast to guide future development of the area in light of the unique environment and risk of natural hazards.  
• Prepare a comprehensive erosion management plan for the protection of the Kaiaua coastal roading corridor from the sea  
• Undertake District Plan changes to implement requirements for risk based assessments for development in identified hazard prone areas. | • Short term  
• Short – Medium term  
• Short term  
• Short term | Planning & Environmental Services, Engineering Services |
<table>
<thead>
<tr>
<th>ACTION</th>
<th>HOW</th>
<th>WHEN</th>
<th>WHO @ COUNCIL</th>
</tr>
</thead>
</table>
| 9. Ensure new development does not adversely affect: | • Prepare an Environmental Strategy.  
• Implement Environmental Strategy, including undertaking District Plan changes where necessary to improve protection of special features. | • Medium term  
• Ongoing | Planning & Environmental Services |
| • Indigenous wetlands;  
• Indigenous vegetation and biodiversity;  
• Outstanding landscapes;  
• Heritage sites and areas;  
• Productive soils;  
• Sites of significance to Maori;  
• Coastal environments  
• Urban residential amenity. | | |
| 10. Develop community plans to build on the comparative advantages of local areas, strengthen local economies, local place uniqueness and branding. | • Prepare community plans for Paeroa, Waihi and Ngatea | • Medium term | Planning & Environmental Services |
| 11. Plan for changing community needs including the requirements of an ageing population | • Implement Council’s Social Strategy Towards 2048 | • Short - Long term | Community Services and Development |
| 12. Ensure the Hauraki Growth Strategy is regularly reviewed and can be updated as required to respond to changes in demand. | • Undertake a 5 yearly review of the Growth Strategy.  
• Undertake a review of the Growth Strategy if demand exceeds that planned for in the Strategy. | • Medium term  
• As required | Planning & Environmental Services |
ATTACHMENTS

A. Bibliography

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Waikato Regional Policy Statement 2016. WRC

### B. Extract from WRC Risk Assessment

**Table 4: "Refined" Hauraki hazards risk evaluation**

<table>
<thead>
<tr>
<th>Hazard scenario</th>
<th>Likelihood</th>
<th>Consequence</th>
<th>Risk level</th>
<th>H</th>
<th>S</th>
<th>E</th>
<th>I</th>
<th>G</th>
<th>Average</th>
<th>M (HM)</th>
<th>U (HM)</th>
<th>G (HM)</th>
<th>Total</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>River flood</td>
<td>A</td>
<td>5</td>
<td>Extreme</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>4.6</td>
<td>4</td>
<td>4</td>
<td></td>
<td>17.6</td>
<td>1</td>
</tr>
<tr>
<td>Coastal flood</td>
<td>B</td>
<td>2</td>
<td>High</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3.6</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>13.6</td>
<td>2</td>
</tr>
<tr>
<td>Earthquake</td>
<td>E</td>
<td>4</td>
<td>High</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>4.4</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>12.4</td>
<td>3</td>
</tr>
<tr>
<td>Severe storm</td>
<td>B</td>
<td>3</td>
<td>High</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>2.2</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>12.2</td>
<td>4=</td>
</tr>
<tr>
<td>Tsunami</td>
<td>F</td>
<td>5</td>
<td>High</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>4.2</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>12.2</td>
<td>4=</td>
</tr>
<tr>
<td>Debris flow</td>
<td>E</td>
<td>3</td>
<td>Moderate</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3.2</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>12.2</td>
<td>4=</td>
</tr>
<tr>
<td>Volcanic</td>
<td>E</td>
<td>4</td>
<td>High</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>2.4</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>10.4</td>
<td>5</td>
</tr>
<tr>
<td>Coastal erosion</td>
<td>C</td>
<td>1</td>
<td>Low</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1.6</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>9.6</td>
<td>6</td>
</tr>
</tbody>
</table>

**Key:**
- S = Seriousness rating
- (H): Human costs
- (S): Social impact
- (E): Economic cost
- (I): Infrastructure costs
- (G): Geographic impact
- M = Manageability rating
- U = Urgency rating
- G = Growth rating
### Appendix 6  Key to Table 4

**Risk analysis evaluation key**

**Measure of likelihood**

<table>
<thead>
<tr>
<th>Level</th>
<th>Descriptor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Almost certain</td>
<td>Expected to occur in most circumstances</td>
</tr>
<tr>
<td>B</td>
<td>Likely</td>
<td>Will probably occur in most circumstances</td>
</tr>
<tr>
<td>C</td>
<td>Possible</td>
<td>Might occur at some time</td>
</tr>
<tr>
<td>D</td>
<td>Unlikely</td>
<td>Could occur at some time</td>
</tr>
<tr>
<td>E</td>
<td>Rare</td>
<td>May only occur in exceptional circumstances</td>
</tr>
</tbody>
</table>

**Measure of consequence of impact**

<table>
<thead>
<tr>
<th>Level</th>
<th>Descriptor</th>
<th>Detail description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Insignificant</td>
<td>No injuries, little or no damage, low financial loss</td>
</tr>
<tr>
<td>2</td>
<td>Minor</td>
<td>First aid treatment, minor building damage, medium financial loss</td>
</tr>
<tr>
<td>3</td>
<td>Moderate</td>
<td>Medical treatment required, moderate building and infrastructure damage, high financial loss</td>
</tr>
<tr>
<td>4</td>
<td>Major</td>
<td>Extensive injuries, high level of building and infrastructure damage, major financial loss</td>
</tr>
<tr>
<td>5</td>
<td>Catastrophic</td>
<td>Deaths, most buildings extensively damaged and major infrastructure failure, huge financial loss</td>
</tr>
</tbody>
</table>

**Risk analysis matrix – level of risk**

<table>
<thead>
<tr>
<th>Likelihood</th>
<th>1 Insignificant</th>
<th>2 Minor</th>
<th>3 Moderate</th>
<th>4 Major</th>
<th>5 Catastrophic</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Almost certain</td>
<td>High</td>
<td>High</td>
<td>Extreme</td>
<td>Extreme</td>
<td>Extreme</td>
</tr>
<tr>
<td>B Likely</td>
<td>Moderate</td>
<td>High</td>
<td>High</td>
<td>Extreme</td>
<td>Extreme</td>
</tr>
<tr>
<td>C Possible</td>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
<td>Extreme</td>
<td>Extreme</td>
</tr>
<tr>
<td>D Unlikely</td>
<td>Low</td>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
<td>Extreme</td>
</tr>
<tr>
<td>E Rare</td>
<td>Low</td>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
<td>High</td>
</tr>
</tbody>
</table>

*Source: An Overview of Natural Hazards in the Hauraki District, pg. 28, 44 Doc#1060692, WRC*