

5. Growth Nodes

5.1 Hikurangi

Hikurangi is a historic settlement located just north of Whangarei, originally developed and built around the exploitation of coal and limestone resources beginning in the late nineteenth century. The overall settlement pattern of Hikurangi is based upon residential areas that were developed for different purposes over time. View Road and Boundary Road both faced the various mining pits, King Street was the commercial and community heart, and Valley Road connected to the farming community around Marua and through to the coast.

Before European settlement, the Hikurangi swamp basin was highly productive in terms of inland fisheries and food production, and thus important to Maori. Waro was also important to Maori for another reason. “Waro” is the Maori word for coal, and reflects pre-colonial use of coal for heating. Hikurangi is now located on the margins of the low lying Hikurangi Swamp Basin, which once drained, became a highly productive farming area subject to occasional flooding events.

In 2006, the population within the Hikurangi node was 1,557, with projected population increasing to 3,271 by 2041, and around 5,000 in 2061. The Hikurangi nodal land area (597ha), is comprised of 76ha of Living Environments, and 28ha of Business Environment land, which is relatively high for a small settlement, and is the result of Hikurangi’s historic past.

Hikurangi, given its present infrastructure, location, long history, and relative affordability has an opportunity to develop as an important settlement node in the north of the district. It already holds some status as being the northern service centre, supplying services to the people living and working along the northern coast and inland areas surrounding the Hikurangi Swamp Basin. It has a large area of business land available, relative to Hikurangi’s current population size, and there remain opportunities to extend this should future growth warrant it. Hikurangi contains much built character, and has sufficient local recreational and community assets to develop into a popular settlement.

5.1.1 Environment

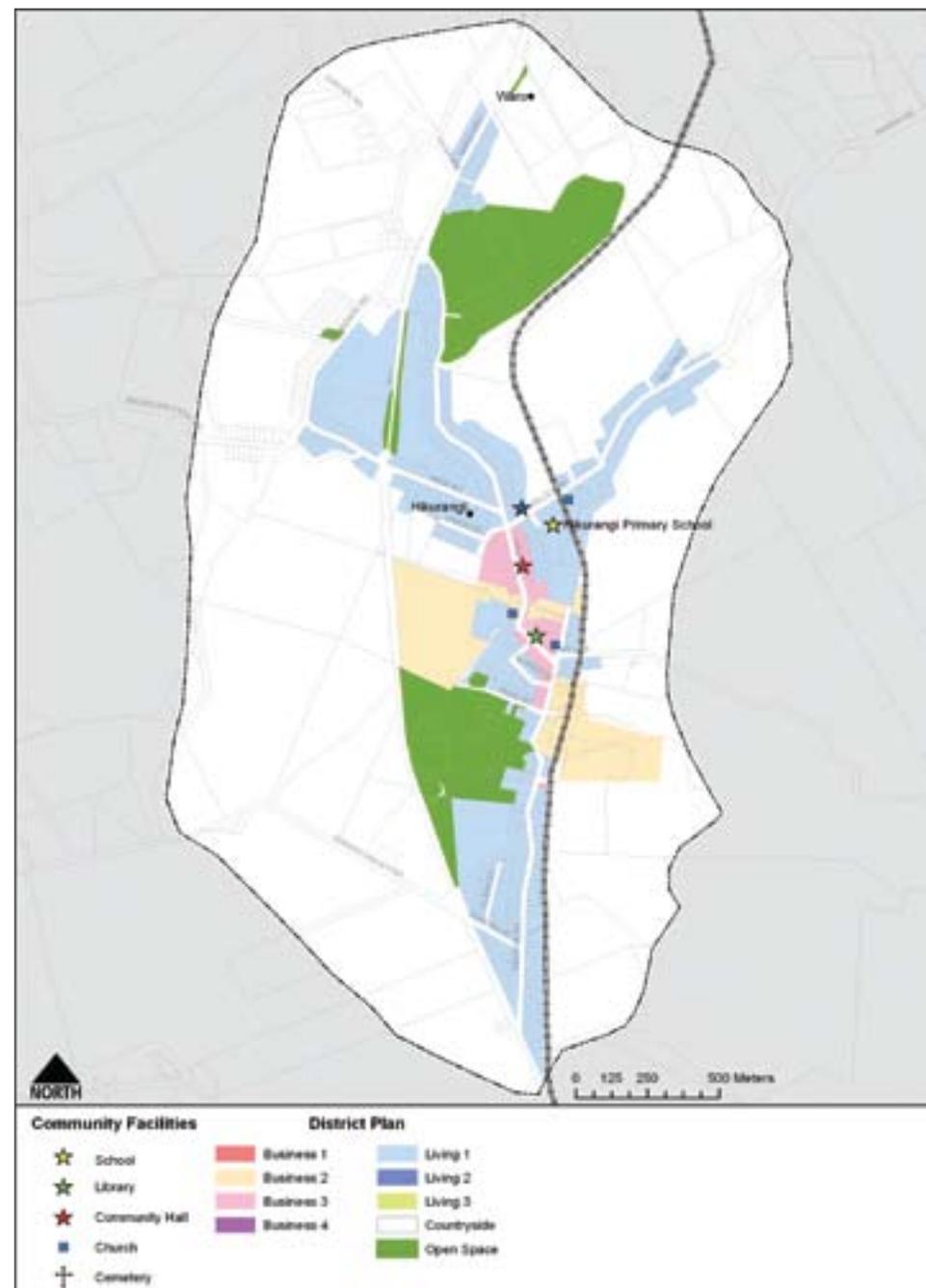
Land Use

In terms of local soil quality and land use, 21% of the area is classified as Class 3 soils. The key land use activities found within the node include dairying (22%), pastoral farming (20%) and some lifestyle (25%) land uses. Another land use of importance is mining which occupies 12% of the land area. As the population grows, the residential and lifestyle areas will increase, mainly at the expense of pastoral land. Importantly, Hikurangi is also located close to the most intact farming area in the district - the Hikurangi Swamp Basin. This area is largely productive dairy farming.

Rural activities and servicing of them, is an important facet of Hikurangi’s present and future community well being. Whilst there has been some lifestyle development in hill side areas in locations like Matarau and Hukerenui, most of the low lying areas still consist of larger farming units. In recent years there has been a small increase in the numbers of lifestyle blocks in the immediate hills above Hikurangi, and towards Gomez Road.

The Wilsonville Quarry, near Hikurangi is operated by Golden Bay Cement and opened in 1974. It supplies crystalline limestone to the Portland cement manufacturing plant, and constitutes 25% of the raw materials for the plant. It is indicated that there is enough raw material at this location to continue quarrying operations for another 40-60 years. Given the anticipated population growth in the Hikurangi node, and continuation and expansion of quarrying activities, reverse sensitivity effects, such as blast vibration, traffic movements and visual amenity are likely over the next 30/50 years. These effects will have to be carefully managed to allow both land uses to continue.

Figure 113: Hikurangi



Water Resources

In terms of local streams, approximately 8.7km of waterways pass through the Hikurangi node, with the Mangawhero Stream being the main waterway. Hikurangi is primarily located within the Lower Purua Catchment area, which is one of the larger catchment areas in Whangarei District, and feeds into the wider Wairua/Wairoa system. The Lower Purua Catchment is dominated by dairying, with some pastoral farming and forestry activities on steeper slopes.

Whilst not as prevalent as elsewhere, there has been growth in lifestyle blocks on hill slopes in this catchment area, including around Marua. There are two major wetland reserves in the area, including the Hikurangi Swamp, and the Otakairangi Swamp. The streams rising in the Whakapara Catchment that feed into the Wairua/Wairoa system also pass through dairying and pastoral farming country.

Natural Hazards

Despite being located on the fringes of the Hikurangi Swamp Basin, only 83ha (14%) of the Hikurangi node is regarded as flood susceptible, and these locations are in very close proximity to the small waterways. Approximately 16% of the total land parcels are in flood susceptible areas, whether fully or partially. This suggests that development in Hikurangi has always been cognisant of the potential for flooding, and managed risk accordingly. Future development will need to take the same care. Many of the streams and waterways that flow through Hikurangi can have an impact on downstream inundation of the Hikurangi Swamp, and development in this node needs to take this into account.

Some of the hills above Hikurangi are classified as having high instability, with about 110ha (19%) falling into this category. Approximately 21% of land parcels within the node are located on land with a high instability risk, mainly on the hill slopes above Hikurangi. Surprisingly, little of the land around Hikurangi is classified as being erosion prone (0.4ha).

Another key hazard, dating back to the origins of Hikurangi, are mining hazard zones located in some parts of the township. These are areas where there is risk of subsidence due to past coal mining activities in the area. This is a hazard type that Hikurangi shares with parts of Kamo. In general terms, most mining hazard areas are located in the north of Hikurangi Township around Boundary Road, the upper part of King Street, and in close proximity to Lake Waro. The highest levels of mining hazard risk are close to Lake Waro, medium levels of mining hazard risk are along the upper parts of King Street and near the Wilsonville Quarry entrance, whilst the lowest areas of mining hazard risk are along the slopes of Mount Hikurangi.

Biodiversity

The Hikurangi node contains little identified significant natural habitat, with only 21ha (3.5%) being noted within the area, spread across the Whangaruru Ecological District or Whangarei Ecological District. Significant habitat in the vicinity of Hikurangi, but outside of the node, includes the privately owned Mount Hikurangi (Q06/139) and Waro Limestone Scenic Reserve (Q06/122). Further afield, but close to potential growth locations, is Gomez Road Bush (Q06/078). The Hikurangi Swamp Remnant (Q06/016) is also an area of ecological significance.

Threatened species recorded within these areas include the Australasian Bittern and the snail species Punctidae 13 and 64. Regionally significant species include two plants - *Myrsine divaricata* (Weeping Māpou) and Pokaka.

These ecological areas are important in that they provide habitat for threatened and regionally significant species. Mount Hikurangi was also the only site in the Whangarei District where the regionally significant plant Pokaka has been recorded. The Hikurangi Swamp Remnant contains

the last remnant of mature Kahikatea Swamp Forest (a nationally uncommon vegetation type) of reasonable size on the Hikurangi Plain. The Waro Limestone Scenic Reserve is home to threatened land snail species and is one of only four limestone areas in the Whangaruru Ecological District. Kiwi presence is indicated in parts of the Hikurangi node and the Apotu Landcare Group operates in the area.

Around 50ha or 8% of the nodal area is formally protected by Department of Conservation reserve, Council reserve, esplanade reserve or private covenanting. This includes 13ha (61%) of PNA areas (areas of ecological significance). Thirty-six percent of the total node area (217ha) is classified as acutely or chronically threatened (<20% indigenous vegetation cover remaining).

A break down of acutely and chronically threatened environments within the PNAs, and the amount and type of formal protection in these is shown in Table 96. This table suggests that there are very few bush fragments evident in the area, and only a small part of these have been formally protected.

Table 96: Significant Natural Areas and Formal Protection of These Within Acutely and Chronically Threatened Environments

Area of PNA within acutely or chronically Threatened Environment (ha)	Area of Formal Protection within area of PNA that is Acutely or Chronically Threatened (ha)						
	Conservation Covenant	QEII	Esplanade	DoC	WDC Park/ Reserve	Total (ha)	Proportion Protected
2.12		0.87				0.87	41%

Source: Whangarei District Council, Department of Conservation, Land Environments New Zealand.

Landscape/Natural Character

A predominant landscape in the Hikurangi node is the Hikurangi Plain. These farmed flats are dominated by a regular paddock and shelterbelt pattern, giving a controlled production atmosphere to the area. Housing is quite visible in these areas, and poorly integrated with the landscape. There are several important remaining wetland areas on the plains. A notable feature in the landscape is Hikurangi Mountain, which is all the more prominent due to the low-lying and flat surrounding land.

Surprisingly little of the Hikurangi node is noted as having high landscape values (Landscape Sensitivity 5, 6, or 7). However, several landforms contribute to the amenity of the location, including Mount Hikurangi, the reserve around Lake Waro, and the relatively undeveloped uplands between Hikurangi and the Glenbervie Forest. The wider area of Hikurangi contains many Outstanding Natural Features and Geological Sites of National or Regional Importance. These include the Hikurangi Dome, Hikurangi Shaft Coal Mine Relicts, Waro Coal Mine Relicts, and the Waro Coal Mine Karst.

Ecosystem Services

The key ecosystem services in the Hikurangi node and surrounding catchments are services that generate much food and fibre. The forested hills above the township also help manage water quality and provide flood attenuation services. But overall, Hikurangi is more a consumer of services that a generator. Pollination of pasture, nutrient cycling and soil formation are also important within the wider area of the node. As Hikurangi grows, maintaining or improving services for natural hazard attenuation, whether flooding or land instability, is going to increase in importance.

Climate Change

The most significant issue in terms of climate change for Hikurangi is increased flood susceptibility and flood risk in the wider area, as well as land instability risk. The high incidence of flooding in the wider area can have an impact on the transport network, and economic impacts on primary production, which would likely have a downstream economic impact on businesses within Hikurangi and the wider Whangarei District. Of additional concern is the potential for increased incidences of drought over time, which would also have an economic impact on the local community and the wider district.

5.1.2 Society

The 2066 median household income in the node was \$39,450, which is around 10% below the district's median income. When using tools such as the Deprivation Index, much of the population is classified as more deprived, with Hikurangi being one of three locations in the district that has a deprivation rate over 80%.

Hikurangi has a relatively young population in the context of the wider district, with a median age of 36 in 2006. Approximately 12% of the population was aged 65 and over in 2006, which is low by district standards. In 2006, 36% of the node was under 20, which is one of the highest proportions in the district. In 2041 the proportion of the population over 65 years is projected to reach 20%, and to reach 23% by 2061. Whilst high, this proportion remains one of the lowest in the district. By 2061, this would mean that 1,160 residents within the node are over the age of 65, up from 170 at present. This equates to an increase of 583%, and may have an influence on housing preferences, public transport options, and services required over the future.

Residential Land Requirements

Estimating future residential land requirements in Hikurangi is complex, with various factors such as increased population and declining household sizes needing to be taken into account. This is further compounded by expected future consolidation of settlement patterns as well as the potential for declining average lot sizes within the urban environment. Any assessment needs to take into account both supply and demand factors.

Demand, in this case, needs to take into account the declining household size (from 2.9 to 2.4) and a probable small increase in consolidation to more urban dwelling. The present split between households in Hikurangi is 60/40, with 325 households within the Living Environments, and 216 households outside them. Over time, a target split of 75/25 by 2061 is preferable. This would result in 1,563 households in Living Environments, and 521 households outside of Living Environments. Notably, there are not enough existing vacant lots to meet projected demand in the near future.

Table 97: Projected Population and Household Residential Demand

	2006	2011 (projected)	2041 (projected)	2061 (projected)	Existing vacant lots	Existing vacant lot shortfall (year)
Population	1,557	1,731	3,271	5,000	-	-
Total households (lots)	541	601	1,309	2,084	52	-
Households (Living 1,2,3)	325	361	916	1,563	22	2011
Households (rural/residential)	216	240	393	521	30	2012

The average lot size in the Living Environments in Hikurangi is 0.1ha, whilst the average rural residential lot outside of the Living Environments is 0.6ha. Based upon existing average residential lot sizes, this would equate to 124ha of new urban land being required, and 242ha of new rural residential land taken up outside of the Living Environments by 2061.

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Table 98: Residential Land Area Required to Meet Projected Demand

	2006 (estimate)	2011 (projected)	2041 (projected)	2061 (projected)
Total urban residential land area(ha)	32.5	36.1	91.6	156.3
New urban residential land area (ha)	-	3.6	59.1	123.8
Total rural/residential land area (ha)	123.1	136.8	224	364.7
New rural/residential land (ha)	-	13.7	100.9	241.6

Supply, in this case, refers to the availability of actual or potential vacant lots to accommodate future population growth and the capacity to undertake subdivision should future growth patterns warrant it.

Table 99: Capacity Under the Whangarei District Plan

	District Plan Living 1,2,3 (maximum)	District Plan Living 1,2,3 (constrained)
Population	2,538	1,557
Maximum households (lots)	1,058	649
Potential for new lot creation (2011)	675	266
Projected year capacity exhausted	2,043	2,024

Present development potential under the Whangarei District Plan is noted in Table 99. Two types of estimates for capacity are given. The first estimate is the theoretical maximum number of lots based upon all available land (by land area) being utilised. Present lots that are too small to subdivide are excluded from this calculation, as are those sites which are designated in the District Plan. The second type takes into account biophysical constraints that may reduce potential capacity. In this calculation the factors of flood susceptibility, significant natural habitat, and high land instability risk were applied, in addition to the exclusion of small lots and designated sites. The final number of households or lots is likely to be between the two estimates, as no constraint is absolute.

At present, there is no Structure Plan for Hikurangi, but one is required to manage future development of the node. The first potential area for future development is within a valley area to the south of Valley Road which is an area that is presently used mainly for pastoral uses. Whilst there is some flood susceptibility in the immediate area of a stream running through it, riparian planting in this area may help to mitigate this constraint. This area would have reasonably good access to Hikurangi School, is close to the local golf course, and may be able to get a good transport connection to Waro Reserve and other potential recreational activities in the area.

There is also a small area of land subject to mining subsidence hazard located at the back of the school. There is a mixture of land stability issues found within the area that are mainly low to medium risk, but higher stability risks do occur on the hills. Around this location, it is estimated that between 12ha and 15ha of land is suitable for potential development. However, this would require further analysis in terms of land stability and the timing of further development.

The second area for future residential development would be on the lower slopes of Mount Hikurangi, across State Highway 1. For Hikurangi to reach a population size of 4,000 or 5,000, this area would most likely require development. The total area is approximately 70ha in size, but constraints could reduce this to 50-60ha of land available for development. Most of the area is regarded as having low stability risk. However, a small amount of medium stability risk, and pockets of high risk do occur.

As well as these two areas, there are small pockets of vacant land capable of being subdivided scattered throughout Hikurangi. These possibilities include areas between State Highway 1 and

King Street, just south of View Road, between the railway and View Road just north of the 10ha business zone block. The total area of scattered land is equal to between 10ha and 12ha.

In total, use of these three areas would result in about 72ha of Living 1 Environment land. This would allow for a population of around 3,700 within Living 1 Environments in Hikurangi Township itself. It is expected that another 500 people can be accommodated around Living 3 Environments, and 180 households on small lifestyle blocks. This would lead to a capacity of around 4,500 to 5,000 people.

Education, Health, and Safety

In terms of health and education, Hikurangi contains a medical centre and Hikurangi Primary School (years 1-8). At present, 59% of the population is located within 500m of the school, which is decile one. In 2009, Hikurangi School had a roll of 177.

There is current surplus capacity at the school, but with Hikurangi's projected growth over the next 20 years, this capacity may be filled. Beyond the 20 year timeframe, more schools may be required in the area, including a high school. If further schools are required, suitable areas of land need to be set aside in advance of further development, to ensure the schools are optimally located. Planning should retain ease of access and provision of school facilities, and protect appropriate land available for future schools if necessary.

Currently, 61% of the nodal population is located within 500m of the medical centre, and Hikurangi is approximately 17km from the Whangarei Hospital. If Hikurangi grows to around 5,000 people, extra GPs are likely to be required. A population of 5,000 would require approximately four GPs (a minimum ratio of 1 GP for 1,400 members of the population is recognised in the Health and Disability Services Act 1993). An expansion of the existing medical centre could be considered to cope with increased demand, or another centre could be justified in the long term.

One option, especially relevant for growth nodes, could be an Integrated Family Health Centre. The Government is currently working with District Health Boards to establish Integrated Family Health Centres to provide comprehensive primary care in one location. These centres would provide services from a range of health professionals, including GPs, primary care nurses, visiting specialists, midwives, pharmacists, podiatrists, oral health professionals, etc. The centre would be the main provider of comprehensive primary care in the area. Hikurangi, by virtue of potential growth and being the northern service centre, may require such a facility.

There are no retirement villages or rest home facilities located in the node. The number of people aged 65 and over is expected to increase to over 1,000 residents within the Hikurangi node. Thus, it is likely that rest home/retirement village facilities will be required within the node over the next 30/50 years.

Hikurangi also hosts a small police station and a volunteer fire station. It is likely that the police station would require extra staff if the population approaches 5,000. In addition, the northern coastal villages are expected to grow, further highlighting the need for extra police staff in the area over the next 30/50 years. There may be more demand on the current fire facilities in future, requiring an expansion of facilities over a 50 year time frame.

Sense of Place/Urban Design

Hikurangi Township still contains particular distinctive heritage themes such as its main street character, old mining cottages and the remaining elements of the old dairy factory. The railway line to the west behind the town, and some of the associated structures of earlier industry, provide some of the rail heritage character of the node. The collective value of heritage buildings and sites adds to the emergence and enhancement of a distinctive local character and sense of place.

The Hikurangi Township main street has the prominent historic Hikurangi Hotel (built in 1880) and clusters of shops. The linear form settlement pattern along the main street reflects the shifting focus on different industries during the growth of the township. As a consequence of this linear form, the settlement suffers from a lack of connectivity (pedestrian linkage). This may contribute to the continued lack of success of some of the retail premises in the settlement. At present, there are a number of vacant premises located along the main street in Hikurangi. These could form the core of what would be a more extensive shopping precinct in the future.

As befits such a historic settlement, Hikurangi is full of old villas on large sections, turn of the century buildings, and large recreational facilities, all of which hark back to earlier days of prosperity built around its status as the mining and commercial heart of northern Whangarei District. These differing influences have resulted in what appears to be three main character areas within Hikurangi. The first one is along King/George Streets in association with the commercial areas and early sawmilling activity.

The second is the residential dwellings along View Road, Boundary Road, and Mountain View Roads which developed to service the mining industry. The differing focal point (mining and sawmilling) helped to create a linear urban form. The last is the series of dwellings along Valley Road on the way to Sandy Bay. This is a key issue for the development of Hikurangi into the future, as there is a lack of connectivity between the different parts of the node.

There is much potential to enhance Hikurangi's local character and sense of place in future urban development by incorporating its unique historic/cultural heritage, and by using quality urban design principles to ensure future development is compatible with existing heritage styles. Incorporating existing heritage into future urban development could result in a highly attractive urban centre with a strong sense of local identity.

A large proportion of Hikurangi's housing stock was built before 1960 (45%) and between 1970 and 1979 (19%). Whilst it has the oldest average housing stock of any settlement (59.2 years), this is probably reflective of the major historical influences on the settlement. Very little housing stock has been built since 1990, with only about 11% built between 1990 and the present.

5.1.3 Culture

Tangata Whenua

Hikurangi is located within the rohes of Ngatiwai and Ngapuhi. The hapu groups in the area are Ngati Hau, Ngati Hao, Ngati Hine and Ngati Kahu o Torongare. The Whakapara Marae (Te Ihi o Nehua) is located in the area.

There is no Maori land or sites of significance to Maori identified in the District Plan located within the node. However, further sites of significance to Maori may be identified in future, particularly with the development of Iwi Management Plans. Significant features to Maori include the Hikurangi Swamp, the Waro Limestone Rocks (Nga Toka Pakeho o Waro), Waro Lake, Maunga Hikurangi and Kaurihohore. Currently, there are no archaeological sites of Maori association in Hikurangi. However, further archaeological sites may also be uncovered in the future.

Arts, Culture and Civic Amenities

Local community assets include the Hikurangi Historical Museum located on Alfred Street, and the Hikurangi Community Library and Community Hall, both located along King Street. To meet future population growth, a branch library may be necessary to meet community needs. Around 61% of Hikurangi's population is located within 500m of the main street. Hikurangi contains three public toilets. Notably, there is no bus service in the node or connections to Whangarei. There are three churches located in Hikurangi. The closest beach is at Sandy Bay, a distance of 24km.

Historic/Cultural Heritage

Hikurangi is an iconic heritage area with an early history of European settlers that arrived in the Hikurangi area from 1863. Hikurangi was a coal mining town from 1890 until the last mine closed in 1948. Its earliest industries also included timber mills and digging kauri gum. Historically, the settlement developed towards the south end of the existing township where a saw mill was located to process timber removed from Hikurangi Mountain and the surrounding area. Later, when mining became the dominant activity, the focus of settlement moved to the north end, including around Waro and Wilsonville. Hikurangi had about 60 to 70 mines in its heyday.

Although little of the mining activity is obvious today (many of the mines closed in the 1920s through to the 1940s), many of the dwellings constructed at this stage for the miners and other works remain, some of which are of historical importance. The Hikurangi Dairy Company also played an important part in the history of the town. The company was formed in 1904 and operated until it merged with the Northland Co-operative Dairy Company in 1985. Once the new dairy factory was built at Kauri, the Hikurangi dairy factory was no longer needed and the empty buildings took the heart out of the Hikurangi Township.

Despite the early settlement of Hikurangi, no archaeological sites have been identified in the node. There are no archaeological sites or sites registered with the New Zealand Historic Places Trust located in the area. There are 12 sites containing heritage trees found within the settlement. However, a total of 12 buildings and sites have been registered in the District Plan, including the old BNZ Building, the Hikurangi Courthouse/Lockup, Hikurangi Hotel, Hikurangi Post Office, King Street Bakeries, and seven houses located on George Street, Waro Drive, Valley Road, and King Street.

5.1.4 Economy

Business Profile and Projections

Hikurangi is first and foremost a service centre to the local agricultural industry. There are a variety of shops located in the town, mainly to service the agricultural industry and local community, a public house, and a selection of dairies and takeaway businesses. Outside of Hikurangi there are also a few business located on the way to Kamo, mainly involved in the construction industry. Hikurangi is located approximately 16km from the Whangarei CBD.

In 2006, 609 employees lived in the node, primarily working in the retail trade, manufacturing, and health and community services sectors. These employees generally listed occupations as being legislators, managers, and administrators, professionals and technicians and trades. Projections of employees living within the node are estimated to reach 1,183 by 2041, and 1,808 by 2061.

In terms of employees working within the node, 216 stated that they work within the Hikurangi node. However, there were not enough responses from the local industries to make an assessment of their main occupations. Local employment within Hikurangi is projected to rise to 396 in 2041, and 605 by 2061.

This data differs slightly from responses to the Statistics New Zealand Business Demographic Survey, in which only 170 employees were identified within the area, along with 89 employers. Most of the employers were either sole-operators/self-employed (51) or small businesses (34) with between one and nine employees. Only four employers had more than nine staff. The largest employer is the local school (with between 20-49 employees), with other large businesses including a couple of manufacturers and a health and community services provider. Overall, public services are important larger employers in both education and health and community services.

Business Land Requirements

At present, Hikurangi has a wide range and area of business land available within the node. This includes a 10ha block zoned Business 2 located between King Street and State Highway 1, and a business zoned area located in the south of the settlement, along with some Business 2 zoned land around Factory Lane. In addition, there is an area presently zoned Living 1 (1.3ha) that may be more appropriately zoned Business 2 to fit with the surrounding zoning. This business land would meet Hikurangi's needs over the next 50 years.

Table 100: Business Projections, Hikurangi

	2006	2041	2061
Business floor area (m ²)	20,628	42,013	63,083
Business land area (ha)	28.17	53.11	81.18
Employees (by workplace)	216	396	605

However, it is noted that commercial and industrial development has been occurring in the wider area, and should this be consolidated into Hikurangi, additional land may yet be required.

5.1.5 Infrastructure

Water

The Hikurangi node is currently reticulated, and was connected to the City network in 2006. The network in Hikurangi services most of the settlement. It extends as far eastwards as the end of the residential houses on Valley Road, as far north as Waro Drive, and as far westward as a circuit on Boundary Road. At the southern boundary of Hikurangi it connects to the City water supply. Notably, the residential dwellings along Mountain View Road are not reticulated. The main water source is Whau Valley Dam, which is treated at the Whau Valley Treatment Plant. The water is then transferred through a variety of reservoirs and pipelines before being stored in the Hikurangi Reservoir. The limiting factors on this network are considered to be the Waitara pumps and the Hikurangi link.

Hikurangi has enough capacity to meet the expected population growth until 2026, when additional storage capacity is required at a potential cost of \$1.5 million. Following the completion of this work, it is expected that Hikurangi would then have the water supply capacity to accommodate growth until 2061.

Wastewater

Most of the Hikurangi settlement is reticulated to a local wastewater plant, which has recently been upgraded. Reticulation is sufficient to service the existing demand, but will require renewal/rehabilitation as necessary. The wastewater system reaches to the town entrance on State Highway 1 in the south, extends westwards as far as Boundary Road, northwards to Waro Drive, and eastwards along Valley Road until the end of the residential area. There is also another westward line that connects to the treatment plant on Jordan Valley Road (although the main line lies mainly to the west of the main residential area). Notably, as with water, residential dwellings on Mountain View Road are not connected.

There is present capacity in the system to accommodate the expected levels of growth until 2031. At present levels of growth, this would accommodate a further 400 households before further works are required. To meet population demands beyond 2031, required works include a further upgrading of the present waste water treatment plant as well as an upgrade of the main trunk sewer line. Following the completion of these works, there would be enough capacity in the wastewater system to meet Hikurangi's growth until 2061.

The cost estimate for this node is \$7 million. There may also be remaining treatment plant capacity that reduces this cost. If some lots are larger than 2,000m² and soakage is adequate then individual onsite wastewater treatment and disposal systems may prove acceptable with a subsequent reduction in the cost and need for council asset upgrades. This may occur with some of the expected development outside of the Living Environments.

Stormwater

The stormwater network is sufficient to service a 1 in 5 year rainfall event. Some property flooding occurs in more extreme events. Reticulation will require renewal/rehabilitation as necessary. In alignment with current best practice, future stormwater management is envisaged to be a continuation of current stormwater policies (through the Environmental Engineering Standards). Under these policies a developer is required to undertake onsite attenuation and treatment of stormwater generated by their development. This generally results in little impact to the existing Council stormwater network. Upgrades required are undertaken by the developer with possible Council contribution where an existing asset has limited remaining life. Under this approach, Council does not itself undertake projects involving creation of new stormwater infrastructure. Thus, in terms of growth related expenditure, it is assumed that stormwater needs will be met by the developer as part of the development costs.

There is a Hikurangi Stormwater Catchment Management Plan (2000) available for the area.

Transportation

Hikurangi is currently serviced by a roading network catering for approximately 9,000 vehicles per day. There is a variety of road types and lengths within the node, each suited to a different level of use (as measured by traffic movements). Different road types include 3km of state highway, 1.7km of arterial routes (especially on the way to Sandy Bay and the main road through the town), 0.4km of collector roads, and 8.5km of public road for residential dwellings. There are no known backlog requirements in the node that cannot be met under existing programmes. With the potential increase in population, over 28,000 vehicle movements per day will be generated by 2061.

The only major growth related expenditure is expected to be an upgrade of the roading network along the main commercial area by 2041. This will require an estimated \$1 million of additional Council administered roading expenditure.

Parks and Reserves

As noted earlier, Hikurangi is well served by recreational facilities and reserves, with approximately 28ha of reserves in the node, concentrated around the sports fields and around Lake Waro. Parks range from well known substantial parks to smaller neighbourhood reserves. Parks include: Lake Waro Reserve, Hikurangi Sports Park and some small reserves on King Street. There is also a golf club located in Hikurangi. In addition to the parks, there is one playground, located near the school and hall.

An analysis of 'Neighbourhood', 'Sports' and 'Other' parks found 0.8, 9.3 and 6ha of existing capacity respectively. If necessary, spare capacity at the existing sports area could be converted to a neighbourhood park and playgrounds in order to meet future needs. It is projected that the facilities and upgrades required for Hikurangi to meet population growth by 2061 would include the purchase of an additional 10ha of natural area, and upgrades and development of sports grounds and associated neighbourhood reserves. One hectare of neighbourhood reserve is required as well in order to meet present service levels based on resident numbers. As well as the land, it is expected that other facilities would be construction within present and future reserve

areas. The estimated costs for these activities would be approximately \$2.6 million spread out over the next 50 years.

Hikurangi has enough local recreational and community assets to develop into a popular settlement. For example, Hikurangi has very good access to recreation facilities, including active areas such as sports and equestrian grounds, a small golf course, and a reasonably sizable natural reserve that surrounds Lake Waro, with accompanying walking trails. Lake Waro is regularly the cleanest accessible freshwater bathing spot in Whangarei District, and is popular with local families and training tri-athletes. In the wider Hikurangi area, the flat roads to the west within the Hikurangi Swamp Basin are popular with road cycling groups, and for mountain biking there is access to forest roads and mountain bike trails located within Glenbervie Forest. These various assets point to the potential of developing a recreational hub within the Hikurangi node.

Figure 114: Skateboard Park at Lake Waro



5.1.6 Summary

Whilst Hikurangi has not experienced a high level of recent population growth, it has a wide selection of community assets from which to build upon to promote population growth. These include access to a range of recreational activities, the development of the Kamo Bypass, local historic heritage, and the relatively affordable nature of development at Hikurangi. At present, there is a low number of existing vacant sites, whether urban residential or rural residential. Capacity for subdivision development is available, although the constrained capacity under the District Plan is low due to natural hazard risks including flood susceptibility and mining hazard.

One of the first tasks for managing growth in the area is the preparation of a structure plan. A structure plan would need to address the poor connectivity between residential, commercial, and recreational areas. The avoidance of reverse sensitivity near Wilsons Quarry, is also an important consideration, as is the presence of natural hazards. Other actions may also be required, including the revitalisation of the business area.

5.2 Waipu

Waipu is one of the oldest European settlements in Whangarei District, a fact that is commonly celebrated, and is embedded in the township's identity. It has a well documented history that is reflected in the character, and to a certain extent, marketing of the township. This is evident in the many festivals and events held in Waipu. Fertile productive land and bush clad hills surround the town. Due to its longer history, Waipu has developed a relatively strong centre, and one that is expected to be maintained and enhanced over time. Waipu could also be called the town of streams, located where multiple small catchments converge before flowing into the Waipu River estuary on Bream Bay.

Waipu is located a considerable distance away from Whangarei City, a distance that has probably fostered independent development of the town, and allowed the development of a wide range of services relative to its population. In recent years, Waipu has seen reasonable growth in population, as have the coastal communities further down the coast.

The present population of the node is 1,035. This is projected to reach 3,614 by 2041, and around 5,000 by 2061. The total land area of the node is 1,132ha, of which 69ha is presently Living 1, 2 or 3 Environments. In addition, there is approximately 9ha of business land zoned within the node, including both commercial and industrial land.

5.2.1 Environment

Land Use

A large part of the node is comprised of versatile soils, mainly located on gravel beds near the township. Approximately 491ha (43%) is considered Class 1 or Class 2, which is a very high proportion of the node, and compares favourably with locations such as Maungakaramea. In addition to this, there is a further 233ha or 20.6% of the node comprising Class 3 soils. The main land uses in the node are evenly split between dairying (34%), pastoral farming (21%), and lifestyle (30%) with some cropping and limited horticulture. As the population grows, land occupied by residential, commercial and industrial purposes is likely to grow, mainly at the expense of pastoral land.

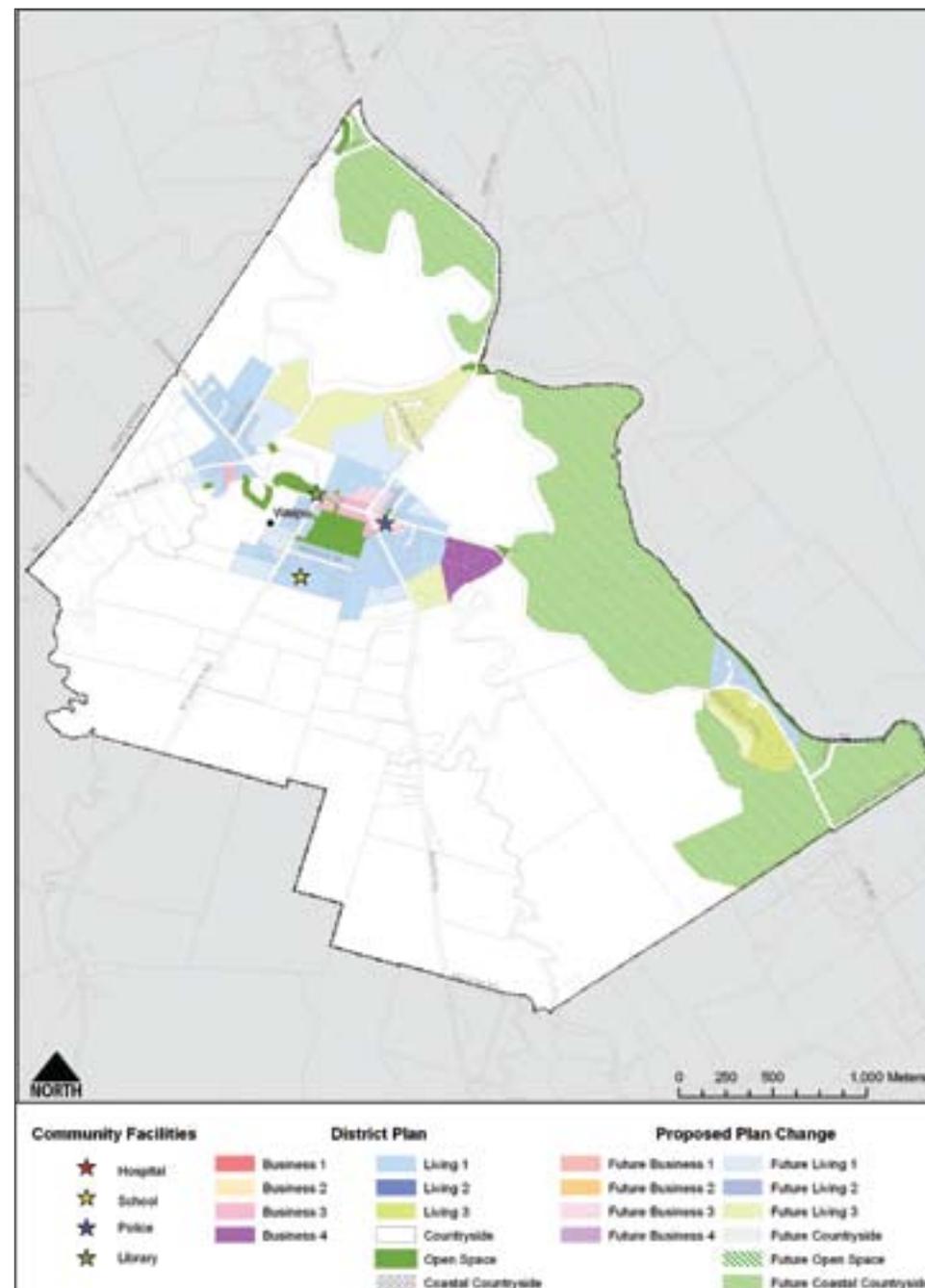
There is some evidence of urban sprawl and scattered rural residential development on productive farm land. Future planning needs to manage the spatial arrangement of land uses to protect the most productive farmland from urban sprawl and rural residential development. Residential development should be consolidated around the existing township and rural residential development located on less productive land, particularly on hill country around the node rather than on flat land.

Water Resources

Multiple streams congregate in the Waipu node, with about 20km of waterways located within the node itself. These waterways include Finlayson Brook, North River, Pohuenui River, Ahuroa River, Waionehu Stream as well as the Waipu River. Whilst a couple of small streams arise in the hills behind Waipu, most streams rise elsewhere in the hinterland of Bream Bay.

These different streams originate within different catchment areas. These include the Lower Waipu, Ahuroa, North, Waihoihoi, and Waionehu Catchment areas. Most streams arise in forested areas, including some conservation reserves and production forestry, flow through a mixture of pastoral and dairy uses, and a small amount of lifestyle use, before entering Waipu node.

Figure 115: Waipu



The Waipu area overlays the Ruakaka aquifer system, which is the largest in the district (just under 9,000ha in extent). This aquifer system stretches from Marsden Point to Waipu, and lies between the coast and State Highway 1. The actual number of bores relative to the size of the area is very low, and the presence of a reticulated water system means that future local dependence on bore water may remain low.

Natural Hazards

Just over 22% of the node is classified as being flood susceptible, with 248ha being categorised as such. Notably, some of this flood susceptible area is close to the present Township. However, the proportion of land parcels either fully or partially located within flood susceptible areas is only 16%. This suggests that historic development has had a tendency to avoid such areas, unlike some settlements elsewhere in the district.

Some small pockets of land are regarded as having high risk of slope instability, about 70ha in total (6%) of the area, mainly on the hill slopes to the south of the township. Approximately 16% of the total number of land parcels is found on land with high instability risk, mostly located on the uplands to capture the views.

A high proportion of the population is aged 65 years or over, and this is expected to increase over time. The projected increase in the population over the age of 65 means that vulnerability to hazards is likely to rise substantially. Care must be taken to ensure that development does not contribute strongly to increasing exposure to natural hazard risks.

Biodiversity

Waipu has only a small proportion of significant natural areas within the node at 35ha (3%) in total. This probably reflects the reasonably rich soils, and longer history of development in the area leading to substantial vegetation clearance. Almost none of this land is presently protected, whether privately or publicly, apart from a very small strip of esplanade reserve. Small areas of ecological significance in the vicinity include Waipu River Estuary and Sandspit (Q08/228), Waionehu Stream Forest Remnants (Q08/232), Argyll Street Forest Remnants (Q08/234), Waihoihoi River Fragments (Q08/231) and State Highway 1 Forest Remnants (Q08/233).

Two regionally significant plants are recorded in the area – *Coprosma rigida* (Stiff Karamu) and *Manatu* (Ribbonwood Tree). Species also recorded include North Island Fantail, New Zealand Kingfisher and Grey Warbler.

These ecological areas are important in that they provide habitat for regionally significant species and also provide links with other habitats (corridors). The river and stream forest remnants are particularly important in that they provide riparian protection and maintain stream health of the Waionehu Stream and Waihoihoi River. The Argyll Street Remnants comprise the largest remaining indigenous forest in the lower Waihoihoi River Catchment. The Waionehu River Forest Remnants also act as an important wildlife corridor between the Brynderwyn Hills and the Waipu River estuary.

Around 14ha or 1% of the nodal area is formally protected by Department of Conservation reserve, Council reserve, esplanade reserve or private covenanting. This includes 1ha (2.9%) of PNA areas (areas of ecological significance). Seventy-eight percent of the total node area (888ha) is classified as acutely or chronically threatened (<20% indigenous vegetation cover remaining). A break down of acutely and chronically threatened environments within the PNAs, and the amount and type of formal protection in these is shown in Table 101.

Figure 116: Waipu Beach

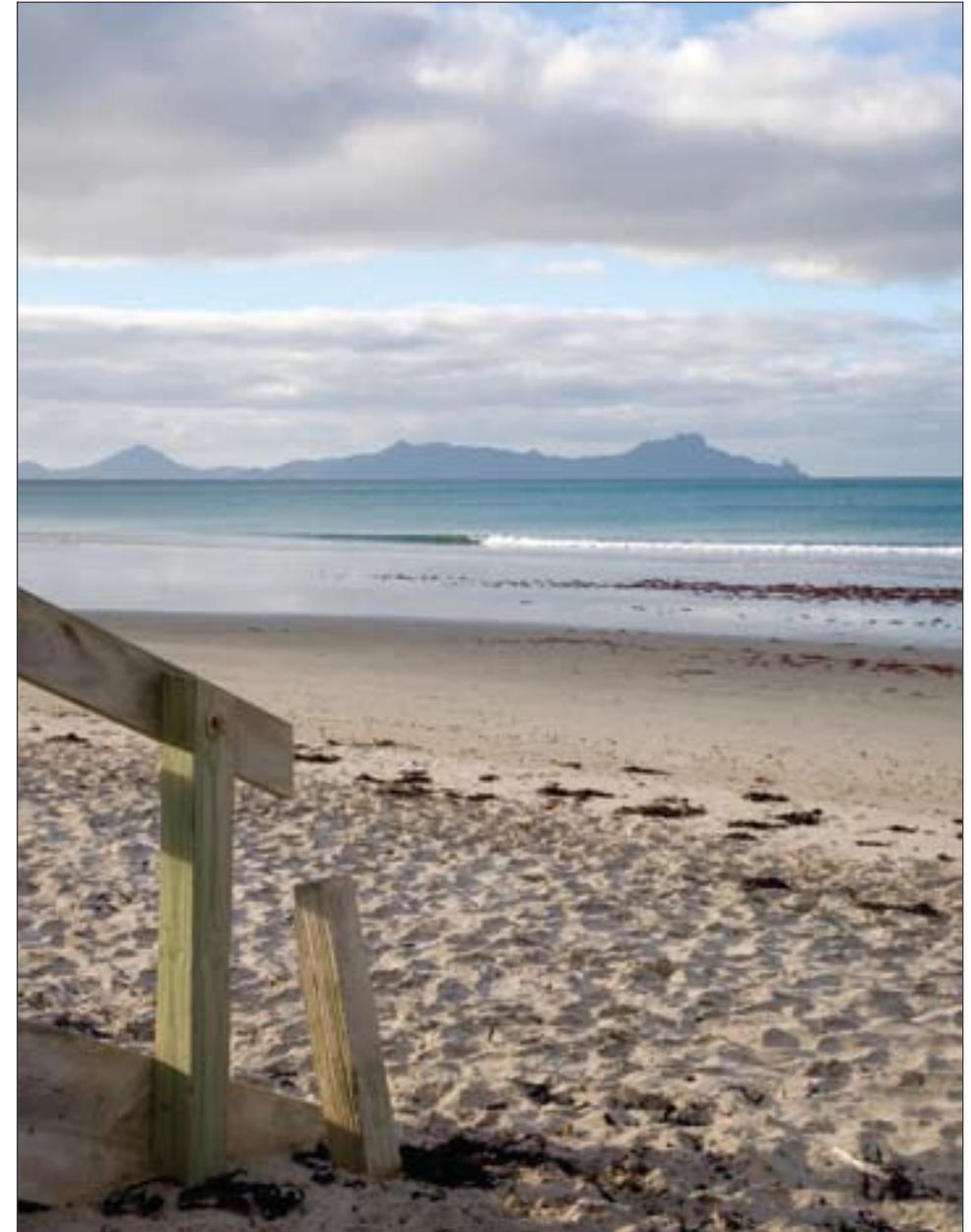


Table 101: Significant Natural Areas and Formal Protection of These Within Acutely and Chronically Threatened Environments

Area of PNA within Acutely or Chronically Threatened Environment (ha)	Area of Formal Protection within area of PNA that is Acutely or Chronically Threatened (ha)						Proportion Protected
	Conservation Covenant	QEII	Esplanade	DoC	WDC Park/ Reserve	Total (ha)	
27.67			0.06			0.06	0.22%

Source: Whangarei District Council, Department of Conservation, Land Environments New Zealand.

Landscape/Natural Character

The Waipu node is largely rural in nature, with landscapes in the area consisting of farmed flats, and rolling to steep pasture with pockets of vegetation. The farmed coastal flats are dominated by a regular paddock and shelterbelt pattern, giving a controlled production character to the area. Housing is quite visible in these areas, and poorly integrated with the landscape.

In areas of rolling to steep pasture, vegetation has often been heavily modified, although this is variable and some pockets of indigenous and other vegetation remain. Built development tends to be scattered, the most intrusive sites being where the siting is sensitive and the scattered distribution of vegetation provides limited opportunity for screening.

Ecosystem Services

The area around Waipu is generally a generator of ecosystem services, especially in terms of food and fibre production. Other services of importance include water quality and quantity, pollination, nutrient cycling, flood attenuation, and soil formation. Recent catchment management planning recommended, as one of its options, further riparian planting to increase natural attenuation of flooding. Much of the lower catchment vegetation on the local streams has been removed. Such planting would increase the provision of this service, but may also generate other ecological services as well, such as improved water quality.

Climate Change

As a fringe coastal settlement, Waipu does have increased exposure to issues such as sea level rise, which it has in common with other coastal settlements. Sea level changes and inundation would be the two key issues within the Waipu node, apart from the more generalised ones applicable to the whole of the district. Many of the local streams that have strong tidal character would be expected to change under projected climate changes, whilst inundation is projected to rise in both frequency and magnitude.

5.2.2 Society

The median household income in the node is \$43,600 which is just under the district average of \$43,900. Of significance is that much (69%) of the population is classified as being more deprived under the Derivation Index, which is surprisingly high, but also reflects the large number of retirees living in the area on a fixed income.

The median age is 50.2 years, which is one of the highest in the district. Approximately 21% of the settlement was under the age of 20 years in 2006. In 2006, around 30% of the population was aged 65 and over, which is the highest in the district by a substantial margin. This is projected to reach 52% by 2041, and perhaps 60% by 2061. This represents a significant challenge in terms of providing local services. By 2061, this would mean that 2,980 residents within the node are over the age of 65 years, up from the present 297. This equates to an increase of 16% per annum. This

projection also suggests that the proportion of working age people in Waipu is already limited, and is expected to decline over time.

Residential Land Requirements

Estimating future residential land requirements in Waipu is complex, with various factors such as increased population and declining household sizes needing to be taken into account for future projections. This is further compounded by expected future consolidation of settlement patterns as well as the potential for declining average lot sizes within the urban environment. Any assessment needs to take into account both supply and demand factors.

Demand, in this case, needs to take into account the declining household size (from 2.41 to 2.4) and a probable small increase in consolidation to more urban dwellings. The present split between households in Waipu is 53/47, with 227 households within the Living Environments, and 203 households outside them. Over time, a target split of 75/25 by 2061 is preferable. Achieving this split would result in approximately 1,583 households in Living Environments, and approximately 520 households outside of them. Both types of households are projected to increase significantly.

Table 102: Projected Population and Household Residential Demand

	2006	2011 (projected)	2041 (projected)	2061 (projected)	Existing vacant lots	Existing vacant lot shortfall (year)
Population	1,035	1,994	3,614	5,000	-	-
Total households (lots)	430	828	1,445	2,083	180	-
Households (Living 1,2,3)	227	439	940	1,563	80	2011
Households (rural/residential)	203	389	505	520	100	2011

The average Living Environment lot size in Waipu is 0.1ha, whilst the average rural residential lot outside of the Living Environments is nearly 2ha. Based upon existing average residential lot sizes, this would equate to 203ha of new urban land being required, and 618ha of rural residential land being taken up outside of the Living Environments by 2061.

Table 103: Residential Land Area Required to Meet Projected Demand

	2006 (estimate)	2011 (projected)	2041 (projected)	2061 (projected)
Total urban residential land area (ha)	29.5	57.1	122.2	203.2
New urban residential land area (ha)	-	27.6	92.7	173.7
Total rural/residential land area (ha)	395.9	758.6	984.8	1,014
New rural/residential land (ha)	-	362.7	588.9	618.1

Supply, in this case, refers to the availability of actual or potential vacant lots to accommodate future population, and the capacity to undertake subdivision should future growth patterns warrant it.

Present development potential under the Whangarei District Plan and the Waipu Plan Change (based upon the Waipu Structure Plan) are noted in Table 104. Two types of estimates for capacity are given for both District Plan and Plan Change. The first estimate is the theoretical maximum number of lots based upon all available land (by land area) being utilised. Present lots that are too small to subdivide are excluded from this calculation, as are those lots which are designated in the District Plan. The second type takes into account biophysical constraints that may reduce potential capacity. In this calculation, the factors of flood susceptibility, significant natural habitat, and high risk of land stability were applied, in addition to the exclusion of small

lots and designated sites. The final number of households or lots is likely to be between the two estimates, as no constraint is absolute.

Table 104: Capacity Under the Whangarei District Plan and Applicable Structure Plan

	District Plan Living 1,2,3 (maximum)	District Plan Living 1,2,3 (constrained)	Plan Change (2010) (maximum)	Plan Change (2010) (constrained)
Population	2,011	1,035	3,029	2,566
Maximum households (lots)	838	431	1,262	1,069
Potential for new lot creation (2011)	319	*	744	551
Projected year capacity exhausted	2033	2011	2051	2043

*Some of the population already lives in areas with high land instability risk. Overall, the present number of households exceeds the number of lots available without constraint. This calculation adds the present number of used and existing vacant lots to project the population needs at 2.4 people per household.

Under the District Plan constrained category, there is little capacity to create new lots beyond those lots already in existence, whether developed or vacant. The implementation of the plan change has much more capacity to accommodate future development. This capacity should be sufficient to accommodate projected demand for residential lots for the next 30/40 years.

Education, Health, and Safety

There is one school in the vicinity of Waipu, Waipu Primary School, with a decile rating of seven. The school roll in 2009 was 207 students, and nearly half (45%) of the population is located within 500m of the school. Secondary students must travel to Bream Bay College at Ruakaka, or further still, to Whangarei City.

Draft projections from the Ministry of Education indicate that the existing schools in the Whangarei District have sufficient capacity to cope with predicted increases in population over the next 20 years. Although there is capacity, future planning for population growth will have to take the provision of services, including schools, into account. There is current surplus capacity at the Waipu school, but Waipu is projected to grow substantially over the next 30/50 years, with the population reaching around 5,000 people. Beyond the 20 year timeframe, more schools may be required in the area, including a high school.

Waipu is reasonably well serviced for health care, with one medical centre and one chemist located within the node. Hospital level aged care facilities are also available at Ranburn Rest Home and Hospital. Approximately 57% of the Waipu population is located within 500m of the medical centres and Waipu is located 39km from the Whangarei Hospital. If Waipu grows to around 5,000 people, extra GPs are likely to be required. A population of 5,000 would require approximately four GPs (a minimum ratio of 1 GP for 1,400 people is recognised in the Health and Disability Services Act 1993). An expansion of the existing medical centre could be considered to cope with increased demand, or another centre could be justified in the long term.

Another option for Waipu could be an Integrated Family Health Centre. The Government is currently working with District Health Boards to establish Integrated Family Health Centres to provide comprehensive primary care in one location. These centres would provide services from a range of health professionals, including GPs, primary care nurses, visiting specialists, midwives, pharmacists, podiatrists, oral health professionals, etc. The centre would be the main provider of comprehensive primary care in the area. By offering some of the services currently provided by Whangarei Hospital, these centres could relieve some of the pressure placed on the hospital by a growing population, and provide a healthcare service that is more accessible to the local community (particularly for the elderly).

There are two rest home/retirement village facilities located in the node. The number of people aged 65 and over is expected to increase significantly into the future. The ageing population will place additional demands on health care services, particularly an increased demand for rest home, hospital and dementia beds. Accordingly, Waipu is expected to increase its rest homes and retirement village capacity over the medium to long term.

The main fire station for the district is located in Whangarei City. However, there are also eight unattended stations throughout the district manned by 170 volunteer fire-fighters, including one at Waipu. In addition, there is a small police station located within the node. It is difficult to predict the future infrastructure needs for police, fire and ambulance services, but broadly speaking an increasing population will create demand for more of these services. There is likely to be a need for increased staffing at the local police station, and perhaps a need for increased emergency services. There may be more demand on the current fire fighting facilities in future, requiring an expansion of services over a 50 year time frame.

Sense of Place/Urban Design

Waipu Township has a rich heritage including early Scottish settlement from Nova Scotia. The great migration of Scottish Highlanders who moved from Nova Scotia to New Zealand in the 1850s is evident from the heritage buildings and structures. The settlement is situated at the point where the five streams join to form the Waipu River. Here, the first settlers took up their abode, built their church and school, and so laid the foundation of what became, over time, a small township. The former National Bank, a post and telegraph-telephone office, and a police station and cell block were built around that era, located on Cove Road.

Apart from those buildings mentioned above, many other buildings and objects also tell the stories of earlier settlers and their life in Waipu. They give an insight to the way things were and how things have evolved over the past 150 years. Currently, Waipu Township is experiencing modest growth including increasing numbers of retirees. In spite of that growth, Waipu has maintained its ties to the past, preserving its heritage and its main centre character. One of the significant challenges facing the Waipu community is how to preserve the distinctive Scottish heritage and strong sense of place while growth continues.

Its heritage features, natural features (e.g. white sandy surf beaches, tranquil rural scenery, native bush, waterfalls and caves), and other key attractions (e.g. horse treks, golf, surf casting, fishing, dive charters and boat hire) make Waipu unique. These sites and areas have the potential to be an 'attractor' for visitors and eco-tourists to the district.

A large proportion of Waipu's housing stock was built in two very distinct time periods – before 1960 (24%) and since 2000 (33%). The average age of dwellings in this node is approximately 37 years. Only about 8% of the housing stock was built between 1970-79. It is expected that there will be some refurbishment, and possible replacement of some housing at the end of its economic life over the next 50 years.

5.2.3 Culture

Tangata Whenua

Waipu is located within the rohes of Ngatiwai and Ngati Whatua; the hapu groups in the area are Patuharakeke, Te Koiwi, Te Parawhau and Ngati Tu. There are no marae, or sites of significance to Maori (as identified in the District Plan) located within the node. However, further sites of significance to Maori may be identified in future, particularly with the development of Iwi Management Plans. There is no Maori land located within the node.

Archaeological sites of Maori association in the node include one pa site, 26 midden/ovens and 12 pit/terraces - a total of 39. Further archaeological sites may be uncovered in future.

Arts, Culture and Civic Amenities

Two churches can be found within Waipu, along with one major community hall, and a single retail centre. Waipu also has a community library, art gallery, antique store and the Waipu Museum. In addition to these arts and culture amenities, events like the Waipu Highland Games and Waipu Winter Festival offer lively cultural experiences for the whole community. About 57% of the population is found within 500m of the shopping centre. Waipu is located about 39km from the Whangarei CBD. Ruakaka Village is about 10km from Waipu. Future population growth would require a branch library in Waipu to meet community needs.

Historic/Cultural Heritage

The presence of approximately 20 pa sites around the Waipu area attests to the long occupation of Maori in the area. However, the Waipu area was the site of many different skirmishes and battles between Ngapuhi and iwi to the south, to the extent that it became depopulated by the early nineteenth century. More commonly, Waipu is associated with a strong Scottish heritage dating to the group of Nova Scotian settlers that arrived in 1855. The Nova Scotians found a largely uninhabited land and settled in the area. Many small schools were set up, including one at Waipu Cove in 1862.

The historic heritage of Waipu is recognised as an important part of the community identity. A number of specific heritage features are worthy of protection. These include the old Manse, the Museum and the Glebe. There are also a number of features surrounding the Museum that need protecting, such as the cemetery, heritage monuments, Coronation Hall, Waihoi Park, Johnson Point Reserve and others.

There are 40 archaeological sites and five Historic Places Trust designations in the node, including the police station/cell block, the former National Bank, the Braigh (McKenzie House), Nova Scotian Settlers Memorial and the World War One Memorial. These buildings/objects have also been registered in the District Plan.

5.2.4 Economy

Business Profile and Projections

The Waipu node has a wide selection of goods and services located within its bounds. These include butchers, bakers, real estate agents, a pharmacy, takeaways, general stores, gift shops, cafes, restaurants, and so on. In 2006, 444 employees lived in the node. Their main employment was agriculture, forestry and fishing, manufacturing, and construction. Most identified themselves as professionals, labourers, or managers and administrators. In terms of employees living within the node, the projections range from 444 in 2006, to 1,419 by 2041, and 1,963 by 2061.

Employment options within the node are more limited, with 384 people working in Waipu node in 2006. The main employment sectors were manufacturing, accommodation, cafes and restaurants, healthcare, agriculture, forestry and fishing. The occupations were labourers, community workers, and managers and administrators. Around 56% of the population is presently in some form of employment. The number of employees working within the node is projected to rise to 1,357 by 2041, and reach 1,878 by 2061.

In the Statistics New Zealand Business Survey (2007), Waipu and Waipu Cove/Langs Beach are included with the Waipu census area unit together with the land between the two locations. In this survey, the total number of employees working in this area is 510. Employer numbers were

high, with 278 employers, of which 202 were sole-operator/self-employed. In addition to this, around 62 firms have between one and nine employees. This left around 14 businesses with more than nine employees. Larger employers in the area unit include health and community services, accommodation, cafes and restaurants, manufacturing, and retail trade.

Business Land Requirements

In terms of business area, there is a small amount of business land zoned in Waipu. There was 12,000m² of business floor area in 2006, which is projected to increase to 23,000m² in 2041 and 33,000m² in 2061. However, the amount of business land needed to service this level of growth is expected to increase even faster, reaching a projected need for 34ha of business land in 2041 and 48ha by 2061. This is five times as much as the land presently zoned for business purposes (9ha) and needs to be factored into future planning.

Table 105: Business Projections, Waipu

	2006	2041	2061
Business floor area (m ²)	12,016	22,972	33,267
Business land area (ha)	9.15	34.35	47.53
Employees (by workplace)	384	1,357	1,878

5.2.5 Infrastructure

Water

The Waipu node is currently reticulated. The reticulated system includes the whole of Waipu, and goes as far west as the bypass (along both Shoemaker Road and The Braigh). The main source of water is the Ahuroa River, which is treated at the local water treatment plant. Notably, the Waipu water system is connected to that of Ruakaka and Waipu Cove. Final storage is via the Waipu Reservoir with limiting factors being Waipu reticulation and the Waipu Reservoir.

To meet future population growth, some further water works would be required. These include local reticulation upgrades, the development of extra storage at the Waipu Reservoir, and Cove Road line upgrades. The costs for a new 4,000m³ reservoir, reticulation, pumps and a water treatment plant upgrade are estimated at \$3 million.

Wastewater

Waipu is reticulated through to the Waipu Wastewater Treatment Plant. The reticulated system includes most of Waipu, and goes as far west as the bypass (along both Shoemaker Road and The Braigh), and east of Waipu towards Waipu Cove, where it terminates at the Waipu River. Reticulation is sufficient to service existing demand and will require renewal/rehabilitation as necessary.

To meet the demands from future growth, anticipated works include reticulation upgrades and/or installation of new trunk sewers, and an increase in capacity of the existing wastewater treatment plant or new plant. There may also be remaining treatment plant capacity that reduces this cost. If some lots are larger than 2,000m² and soakage is adequate then individual onsite wastewater treatment and disposal systems may prove acceptable with a subsequent reduction in the cost and need for council asset upgrades. The cost estimate for this node is \$16.4 million.

Stormwater

The stormwater network is generally sufficient to service a 1 in 5 year rainfall event, although some network upgrades have been identified. The recently completed Catchment Management Plan for Waipu and Waipu Cove (2009) indicates significant tracts of land that are susceptible

to flooding, both from extreme storm events and future sea level rise. A number of mitigating options are presented in the report but it largely recommends minimising flood risk to existing development. Future development will probably be limited to areas not deemed flood susceptible in the Catchment Management Plan resulting in lower population loadings or higher population density.

In alignment with current best practice future stormwater management is envisaged to be a continuation of current stormwater policies (through the Environmental Engineering Standards). Under these policies, a developer is required to undertake onsite attenuation and treatment of stormwater generated by their development. This generally results in little impact to the existing Council stormwater network. Upgrades required are undertaken by the developer with possible Council contribution where an existing asset has limited remaining life. Under this approach, Council does not itself undertake projects involving creation of new stormwater infrastructure.

Transportation

Waipu is currently serviced by a network catering for over 6,000 vehicles per day. This is projected to rise to approximately 130,000 vehicles per day in 2061. There are no known backlog requirements in the node that cannot be met under existing programmes. The most important road types in Waipu are the state highway, and the roads connecting Waipu to it, and to Mangawhai. There is 7km of state highway, 6km of arterial road, 6km of collector road, and 18km of public road found within the node.

It is anticipated that some future works are required to meet projected growth. These would include the development of South Road intersection and Cove Road Bridge. Such works will require an estimated \$1.2 million of additional Council administered roading expenditure. The main intersections to/from Waipu on State Highway 1 may also need upgrading to meet future traffic increases caused by development growth in the node over the next 30/50 years. The future of the intersections is presently the subject of ongoing discussion between the New Zealand Transport Agency, the local community, and Council.

Parks and Reserves

Few Council reserves are located within the node, although a large recreation area owned by the Caledonian Society does play a major role as a recreation asset. The limited parks include Waihoihoi Reserve and Riverview Road Esplanade Reserve. There is also a golf club located in the Waipu area adjacent to State Highway 1.

An analysis of 'Neighbourhood', 'Sports' and 'Other' parks found 0.8ha, 0.7ha and 5ha of existing capacity respectively. To meet the demands of 5,000 people, it is anticipated that 35ha of local/destination/natural area reserves and 3ha of sports parks are required to meet present service levels. As well as the land, it is expected that other facilities would be constructed within present and future reserve areas. This would require an estimated \$11 million of additional expenditure, mainly on land procurement.

5.2.6 Summary

Waipu has significant potential to grow into an important population centre. Known for its Scottish heritage reflected in the local 'sense of place', Waipu is surrounded by productive landscapes and an attractive coastal hinterland. In recent years, growth has been reasonably rapid and this is projected to continue. There are low numbers of existing vacant lots compared with projected demand. Capacity for subdivision development under the District Plan was limited, but the recent plan change has expanded subdivision development capacity considerably. The high projected population, especially when compared with the present population, will require further review of

local land requirements as well as the development of local concept plans that enable the present sense of place to be maintained. Another challenge in the future is the availability of business land. Whilst development at Mangawhai and Marsden Point/Ruakaka may mitigate the need for major industrial uses, further commercial land may be required.

Figure 117: Waipu Town Centre



5.3 Parua Bay

Parua Bay is a small coastal township located on the northern side of Whangarei Harbour. In recent years, Parua Bay has begun to emerge as a potentially significant residential hub, with some accompanying prospects for commercial growth. It is recognised that there is much potential to continue developing Parua Bay as an important growth node, including longer term visions of an expanded commercial function and the potential for public transportation options. In essence, Parua Bay would become the hub of the wider area including Whangarei Heads and Pataua.

However, community infrastructure and assets are located in different parts of the node, the result of the overall haphazard nature of development in the area. For example, the Parua Bay Tavern is located around 4km from the small commercial centre within Parua Bay Village, on the site of an old dairy factory. The school, service station and community facilities are located closer to the main residential areas, and connecting them to other community assets remains problematic.

The character of this area has emerged through development located along the coastal margins of the harbour and on steep backshore hills. Another feature of importance in the area includes the Nook, a largely wooded hillside on the eastern headlands of Parua Bay. The present population of Parua Bay node is around 1,068 people. This is projected to reach 2,852 by 2041, and around 5,000 by 2061. At present, 84ha of land is zoned Living Environments, and 2ha is zoned as business land, within a total area of 1,911ha. In terms of constraints, Parua Bay has relatively few constraints, especially when compared to other nodes within the district. The most critical issue for the settlement will continue to be transport linkages.

5.3.1 Environment

Land Use

Little in the way of high class versatile soil is located within the node, with no Class 1, 2 or 3 being found. The main land uses in the area include lifestyle (44%) pastoral farming (29%) and remnant dairying (7%). As the population grows, the land occupied by residential and commercial activities is likely to grow, mainly at the expense of pastoral farming. The area around Parua Bay is characterised by rural residential development along Whangarei Heads Road and other areas surrounding the node.

Water Resources

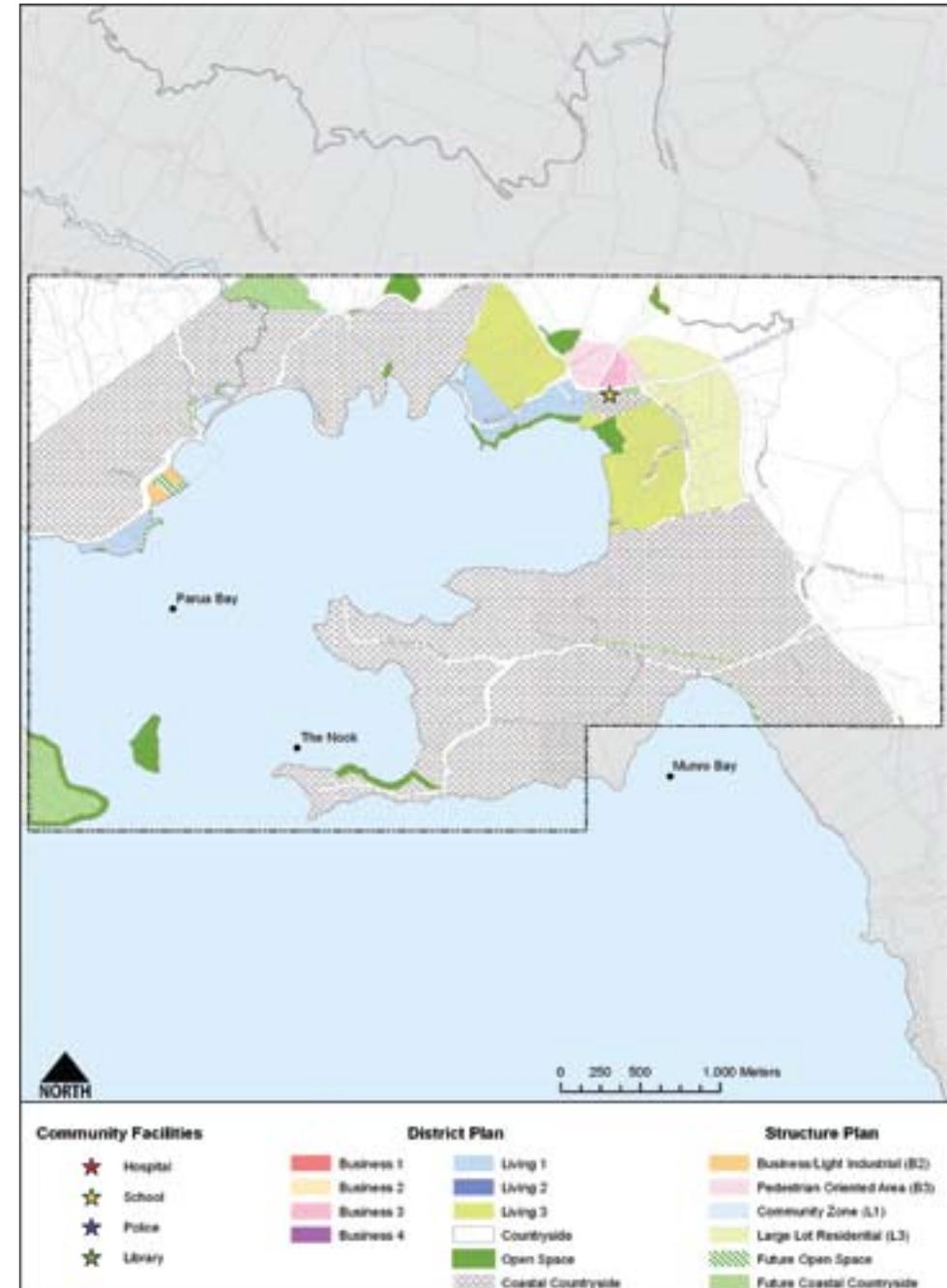
Several small streams and waterways flow through the Parua Bay node, with about 9km of waterways in total. These include Waitangata, Rukuwai, and Kohinui Streams. Like McLeod Bay to the east, Parua Bay is located within the Whangarei/Tutukaka Catchment, which covers much of Whangarei District's coastline north of Whangarei Harbour, between the coast and the steep inland eastern hills.

In the vicinity of Parua Bay itself, the broad land uses in the catchment comprise a mix of pastoral, lifestyle, forestry (both indigenous and exotic), and residential. A very small area is also noted as being dairy farming. A couple of small streams have their source within the node, the largest of which rises behind Parua Bay and then flows north-eastwards into the Pataua River Catchment, but most of the streams are sourced outside of the Parua Bay node.

Natural Hazards

Very little of the node is subject to any natural hazard constraints, with only 17ha of land being flood susceptible, or 1% of the nodal area. However, 8% of the total land parcels are found in flood susceptible areas, either fully or partially. About 46ha of Parua Bay is regarded as having high land instability (about 2.4%), much of this on steeper slopes.

Figure 118: Parua Bay



A desire for views has contributed to 15% of the land parcels being located on land with high instability risk. A further 41ha of land is considered erosion prone.

In terms of vulnerability, an increasingly aged population will increase vulnerability to risk, but given that the population of Parua Bay is not regarded as more deprived under the Deprivation Index, Parua Bay communities would be less vulnerable than other areas.

Biodiversity

About 336ha (11%) of the node area is regarded as significant natural habitat. Areas within the node include Kiteone Road Saltmarsh (Q07168), Tahunatapu Road Coastal Forest (Q07066), Munro Bay Coastal Bush (Q07067), Manganese Point Coastal Forest Remnant (Q07016) Kiriri Point Coastal Forest (Q07169) and Parua Bay Remnants (Q07116). Areas partly within the node include Campbell Road Remnants (Q07008), Whangarei Heads Road Wetland (Q07083), Timperley Road Bush (Q07077), McDonald Coastal Shrubland (Q07068), Manaia Ridge Scenic Reserve and Surrounds (Q07069), Taihu/Kohinui Stream Bush (Q07005) and Rukuwai Remnants (Q07007). Adjacent to the node boundary is the Whangarei Harbour, also an area of ecological significance.

These ecological areas are important in that they provide habitat for threatened and regionally significant species, and also provide links with other habitats. Many of the sites contain coastal forest remnants, including Pohutukawa forest, which is nationally rare. These sites, along with other vegetation bordering the Whangarei Harbour, act as important buffers from land use activities. Several sites also contain known kiwi populations and are part of the Whangarei Kiwi Sanctuary, where numbers are monitored and active pest control is undertaken. The Papakarahi Landcare Group operates in the area.

Around 105ha or 5% of the nodal area is formally protected by Department of Conservation reserve, Council reserve, esplanade reserve or private covenanting. This includes 37ha (11%) of PNA areas (areas of ecological significance). One percent of the total node area (16ha) is classified as acutely or chronically threatened (<20% indigenous vegetation cover remaining). A break down of acutely and chronically threatened environments within the PNAs, and the amount and type of formal protection in these is shown in Table 106.

Table 106: Significant Ecological Areas and Formal Protection of These Within Acutely and Chronically Threatened Environments

Area of PNA within Acutely or Chronically Threatened Environment (ha)	Area of Formal Protection within area of PNA that is Acutely or Chronically Threatened (ha)						Total (ha)	Proportion Protected
	Conservation Covenant	QEII	Esplanade	DoC	WDC Park/ Reserve			
2.8							0%	

Source: Whangarei District Council, Department of Conservation, Land Environments New Zealand.

Landscape/Natural Character

The Parua Bay node is situated adjacent to the Whangarei Harbour and offers views of the harbour seascape and surrounds, including Motukioe Island. Coastal areas in the node are typically characterised by a detachment from the open coastline, and a strong degree of shelter and enclosure. Most of the development that clads the harbour shore has substantially modified the natural landscape, although this can be integrated into the coastal landscape if properly planned. Despite development, a portion of the harbour coastline around Parua Bay has been identified as being an area of natural character.

Rural landscapes in the area are characterised by rolling to steep pasture with pockets of scrub/ bush. Vegetation has often been heavily modified in these areas, although this is variable and some indigenous areas remain. Built development tends to be scattered, the most intrusive sites being where the siting is sensitive and the scattered distribution of vegetation provides limited opportunity for screening by existing trees.

Only 1% of the node is considered to be notable landscape in the District Plan (Landscape Sensitivity 6). In addition, about 24% of the node is regarded as significant (Landscape Sensitivity 5), which is associated with the coastal landscapes of the area. One Outstanding Natural Feature and Geological Site of National Importance is located in the node – Reserve Point Nephelinite Flow and Garnet Andesite.

Ecosystem Services

Whilst the surrounding area generates some ecosystem services, in general, it is expected that the Parua Bay settlement will be a significant consumer of ecosystem services, especially with increased population growth and expanding residential areas. Ecosystem services of importance include freshwater quality, water purification and waste treatment, and pest regulation.

Climate Change

Apart from district wide concerns in regard to climate change, the specific concerns for Parua Bay would be sea level changes affecting inundation risk, changes in beach morphology, and changes in tidal flow across the bay, and on the transport routes to Parua Bay. Impacts of extreme weather on high land instability risk would be the biggest concern, given the high proportion of parcels on this terrain, but overall Parua Bay would be less affected than most other settlement nodes.

5.3.2 Society

The median household income within the node is \$55,700, which is one of the highest in the district, and about 26% higher than the district average of \$43,900. No part of the population is considered deprived under the Deprivation Index, which suggests a low level of inequality in the area.

The present median age within the node is 40.5 years which is above the district average of 38.4 years. Approximately 28% of the node was under the age of 20 years in 2006. Around 12% of the population was aged 65 and over in 2006, roughly the same as the district average. This is expected to reach 21% by 2041, and 24% by 2061. By 2061, this would mean that 1,196 residents would be over the age of 65 years within the node, up from the present 123. This is a significant increase of 872%, one of the highest in the district, but as a proportion of the population, Parua Bay is less aged than other locations.

Residential Land Requirements

Estimating future residential land requirements in Parua Bay is complex, with various factors such as increased population and declining household sizes needing to be taken into account for future projections. This is further compounded by expected future consolidation of settlement patterns as well as the potential for declining average lot sizes within the urban environment. Any assessment needs to take into account both supply and demand factors.

Demand, in this case, needs to take into account the declining household size (from 2.78 to 2.4) and a probable small increase in consolidation to more urban dwellings. The present split between households in Parua Bay is 42/58, with 163 households within the Living Environments, and 221 households outside them. Over time, a target split of 75/25 by 2061 is preferable.

In demand terms, Parua Bay is categorised as a future growth node, with a projected future population of 2,852 in 2041, or 1,141 households. By 2061, the population is projected to reach around 5,000 people, or 2,084 households.

Table 107: Projected Population and Household Residential Demand

	2006	2011 (projected)	2041 (projected)	2061 (projected)	Existing vacant lots	Existing vacant lot shortfall (year)
Population	1,068	1,229	2,852	5,000	-	-
Total households (lots)	384	472	1,141	2,084	235	-
Households (Living 1,2,3)	163	200	742	1,563	80	2016
Households (rural/residential)	221	272	399	521	155	2041

The average Living Environment lot size in Parua Bay is 0.2ha, the second largest average size in the district, whilst the average rural residential lot outside of the Living Environments is 1.7ha. Based upon existing average residential sizes, this would equate to 280ha of new urban land being required, and 510ha of rural residential land being taken up outside of the Living Environments. However, much of the future demand outside of Living Environments can be accommodated by existing vacant lots. Much of this growth is expected to be around Taihoa Road, and towards the Whangarei Heads Road.

Table 108: Residential Land Area Required to Meet Projected Demand

	2006 (estimate)	2011 (projected)	2041 (projected)	2061 (projected)
Total urban residential land area (ha)	32.6	40	148.4	312.6
New urban residential land area (ha)	-	7.4	115.8	280
Total rural/residential land area (ha)	375.2	462.4	678.3	885.7
New rural/residential land (ha)	-	86.7	303.1	510.5

Supply, in this case, refers to the availability of actual or potential vacant lots to accommodate future population, and the capacity to undertake subdivision should future growth warrant it.

Table 109: Capacity Under the Whangarei District Plan and Applicable Structure Plan

	District Plan Living 1,2,3 (maximum)	District Plan Living 1,2,3 (constrained)	Structure Plan Living 1,2,3 (maximum)	Structure Plan Living 1,2,3 (constrained)
Population	2,174	1,298	3,267	1,894
Maximum households (lots)	906	541	1362	789
Potential for new lot creation (2011)	626	260	1081	509
Projected year capacity exhausted	2042	2028	2059	2037

Present development potential under the Whangarei District Plan and the Parua Bay Structure Plan is noted in Table 109. Two types of estimates for capacity are given for both District Plan and Structure Plan. The first estimate is the theoretical maximum number of lots based upon all available land (by land area) being utilised. Present lots that are too small to subdivide are excluded from this calculation, as are those sites which are designated in the District Plan.

The second type takes into account biophysical constraints that may reduce potential capacity. In this calculation the factors of flood susceptibility, significant natural habitat, and high land stability were applied, in addition to the exclusion of small lots and designated sites. The final number of households or lots is likely to be between the two estimates, as no constraint is absolute.

Education, Health, and Safety

Parua Bay has a medical centre in the village. The Parua Bay Primary School is located here also. It is a decile 9 school, which reflects the very low level of deprivation in the area. Thirteen percent of the population is located within 500m of the school, and the number of students on the school roll was 168 in 2009.

Parua Bay is indicated as being an area where significant growth is expected over the next 30/50 years, with population growing to around 5,000 by 2061. Given this projected population, plus that of around 10,000 at Onerahi and a further 5,000 in the Whangarei Heads area, there is a possibility that a new secondary school will be required in Parua Bay or Onerahi by 2061. However, this will need to be assessed in conjunction with the Ministry of Education. If a new school is deemed necessary, advance acquisition of land is critical to ensure it is appropriately located, and accessible.

Approximately 13% of the nodal population is within 500m of the medical centre at Parua Bay, confirming the local population is widely dispersed. The node is approximately 20km from Whangarei Hospital. Parua Bay is signalled as being a growth node, with population reaching around 5,000 people over the next 30/50 years. A population of around 5,000 would require approximately four GPs (a minimum ratio of 1 GP for 1,400 people is recognised in the Health and Disability Services Act 1993), and if the node was servicing surrounding coastal villages, additional GPs would be needed. An expansion of the medical centre will probably be needed at Parua Bay to provide medical care for the north harbour area, Whangarei Heads and Pataua as these areas grow in future.

The Government is currently working with District Health Boards to establish Integrated Family Health Centres to provide comprehensive primary care in one location. These centres would provide services from a range of health professionals, including GPs, primary care nurses, visiting specialists, midwives, pharmacists, podiatrists, oral health professionals, etc. An Integrated Family Health Centre could be a suitable option for the Parua Bay node, and to service the wider area. The centre would be the main provider of comprehensive primary care in the area. By offering some of the services currently provided by Whangarei Hospital, these centres could relieve some of the pressure placed on the hospital by a growing population, and provide a healthcare service that is more accessible to the local community, particularly for the elderly.

There are two retirement villages located in the node. The number of people aged 65 and over is expected to increase significantly over the next 50 years. The ageing population will place additional demands on health care services, particularly an increased demand for rest home, hospital and dementia beds. An ageing population is also more likely to be located within easy access to facilities, i.e. in towns and village centres. Thus it is likely that more rest home/retirement village facilities will be required within the node in future.

There are currently no police or fire services within the node. The establishment of a police station may be needed if the population in the area reaches 5,000, with more people at Whangarei Heads and Pataua over the next 30/50 years. Any increase in the need for fire services will in the first instance probably be met by increasing capacity at the Onerahi and McLeod Bay stations.

Sense of Place/Urban Design

Parua Bay is a large, crater like bay that extends into Whangarei Harbour's northern edge. The distinctive landscape features and valued vegetation on the backshore hills, and the mangrove estuarine environment of the bay, have contributed to the special sense of place of this area. Two prominent headlands – Manganese and Reserve Points – wrap around the entry into the bay, their rolling profile separating most of the bay from the harbour. Manganese Point is open and

gently rolling, and is covered in a mix of open pasture and housing in one of the district's first farm parks. The size, finish (in terms of colour and reflectivity), and positioning of houses in this area have resulted in the development creating considerable visual impact from most vantage points around the harbour. By contrast, Reserve Point is largely covered in a mix of remnant forest and native shrubs, with some pasture towards the north-eastern corner of the bay. Housing here is intermittently visible.

Other development in the area includes a number of small clustered residential living environments around bays and beaches surrounded by largely rural activity. The clustered residential living areas are mainly located along Ritchie Road. Kiteone Road is developing in a similar way with new subdivisions slowly appearing. The services in Parua Bay are located along Whangarei Heads Road, adjacent to Lamb Road. These services include a school, petrol station and medical centre. New development has recently occurred here, with a café, liquor store, real estate office and a Four Square store.

There is much potential to improve the sense of place in Parua Bay Village by applying good urban design principles and urban planning to ensure a compact, well connected village-like settlement with high amenity and functionality. The local community has been involved in initial projects to improve the village centre. Council needs to continue liaison with the community to advance these projects, and produce a feasible concept plan acceptable to the community that will ensure Parua Bay Village reaches its potential as a future growth node for the area.

Much house building in Parua Bay has occurred in recent decades, with both 1990-99 (23%) and 2000+ (23%) being the most rapid. The average age of dwellings in this area is approximately 31 years, which is one of the youngest housing stocks in the district. Notably, only about 10% of the housing stock was built before 1960, which is the one of the lowest proportions in the district. This would suggest that only a minimal amount of refurbishment or replacement will occur in the short to medium term.

5.3.3 Culture

Tangata Whenua

Parua Bay is located within the rohe of Ngapuhi, and the hapu groups in the area are Te Parawhau, Ngati Kahu o Torongare and Ngai Tahuu. There are no marae, or sites of significance to Maori (as identified in the District Plan) located within the node. Although one site, a private burial ground is located on Reserve Point adjacent to the node. Further sites of significance to Maori may be identified in future, particularly with the development of Iwi Management Plans. About 2% of the node is Maori Land.

Archaeological sites of Maori association in the node include one artefact find, nine pa sites, 31 midden/ovens and 12 pit/terraces - a total of 53. Further archaeological sites may also be uncovered in future.

Arts, Culture and Civic Amenities

An 18 hole golf course – the Pines Golf Club – is located within the node. The Parua Bay Tavern is located on the water's edge. There is a small store, takeaway store and café opposite on Te Rongo Road, with an art gallery further up that road. Two kilometres along the main road is the Parua Bay Community Centre, a school, garage, petrol station, hair dresser, sports ground, small shopping complex and community hall. There are no churches in Parua Bay, although services are held at the community hall. There is one public toilet in the area. About 13% of the population is located within 500m of the shopping centre where the service station is located. Parua Bay is located 18km from the CBD, and is 19km from Ocean Beach.

Historic/Cultural Heritage

There is an early pa site on the eastern side of the entrance to Parua Bay called Raro-ngaua, which was the site of a significant battle in the 1820s. Parua Bay, despite modern appearances, has had a long history of European settlement. In 1838, land was purchased by early settlers near Manganese Point, to the west of the main modern settlement, and a ship building yard was set up. However, few European settlers were in the area up to 1856. In 1858, the New Zealand Government purchased about 4,000ha of land for Europeans to settle on, and slowly a small settlement took shape. The settlement did not grow particularly fast for much of its history, although this has changed in recent years, due to the high amenity values of the area, and an increased emphasis on lifestyle living.

Like many coastal sites throughout the district, Parua Bay has many different archaeological sites (53) within its confines. In addition there is a single heritage tree recorded for the node. No places are noted within the District Plan, or on the Historic Places Trust Register.

5.3.4 Economy

Business Profile and Projections

Businesses in Parua Bay generally service the local population, and summertime visitors. Services include a tavern, cafes, small general store, service stations, and a variety of other small services such as mechanics and electricians.

In 2006, 531 people in Parua Bay were employed, the majority of these outside the node. Most of these work in retail trade, healthcare and construction. Their occupations were managers, professionals, and technicians. Close to 50% of the population is presently in some form of employment. In terms of employees living within the node, the projections increase from 531 in 2006, to an estimated 1,321 by 2041, and 2,316 by 2061.

Work within the node is more limited, with 273 people working in the area. Most of these are self-employed/sole-operators. Many of them are, once again, employed as managers and administrators, professionals, and community and health workers. Their numbers are projected to rise to 563 by 2041, and 987 by 2061.

In terms of the Statistics New Zealand Business Survey (2007), approximately 210 people were employed within the node, which differs slightly to the numbers above. Around 218 businesses are located here, with 182 of them being sole-operator/self-employed, and 30 employed 1-9 staff. Six local businesses employed more than nine staff, whether part or full time. In terms of larger employers, health and community services, and agriculture forestry and fishing are the biggest employment businesses.

Business Land Requirements

In terms of business area, there is only a small amount of business land presently zoned in Parua Bay. The business floor projections increase from 134m² in 2006 to 244m² in 2041, and 345m² in 2061. This is significantly lower that one would expect in an area identified as a growth node, so it is projected that additional business land will be required. Around 6.5ha is expected to be required by 2041 and 11.5ha by 2061.

Table 110: Business Projections, Parua Bay

	2006	2041	2061
Business floor area (m ²)	134	244	345
Business land area (ha)	2.31	6.53	11.45
Employees (by workplace)	204	563	987

Given the status as a future growth node, it is expected that an expansion of the present commercial area is required. In addition, thought needs to be given to developing light industrial options in the node. Other future growth nodes do contain some capacity for light industry, and a population of 5,000 people would suggest that the same is required here. It is noted that there are already a few light industrial/contracting services scattered throughout Parua Bay, and their numbers are likely to grow.

5.3.5 Infrastructure

Water

The Parua Bay node is currently reticulated, and connected to the City water supply. Within the node, the reticulated system services an area around Muritai Road and Kiteone Road, before continuing on to the Whangarei Heads. The pipeline follows Whangarei Heads Road between the Parua Bay Tavern and the main residential area (and also connects Ritchie Road). Limiting factors for this system include the Whangarei Heads main, the Parua Bay Reservoir and local reticulation.

In order to meet future growth needs, it is anticipated that expanded water storage at Parua Bay Reservoir, and a pumps upgrade is required, at an estimated cost of \$1.50 million.

Wastewater

Parts of Parua Bay are reticulated as part of the Whangarei Heads Sewerage Scheme. Within the node, the reticulated system services an area around Muritai Road and Kiteone Road, before continuing on to the Whangarei Heads. The pipeline follows the coastal edge between the Parua Bay Tavern and the main residential area (using Ritchie Road). The system is connected to the main Whangarei Wastewater Treatment Plant.

To accommodate anticipated growth some wastewater works are required. These works would include, over time, reticulation upgrades and/or installation of new trunk sewers, and some increase in capacity of the existing wastewater treatment plant or a new plant. If some lots are larger than 2,000m² and soakage is adequate then individual onsite wastewater treatment and disposal systems may prove acceptable with a subsequent reduction in the cost and need for council asset upgrades. The cost of these additional works is estimated at \$6.5 million, but would not be required for at least 20 years.

Stormwater

The stormwater network is generally sufficient to service a 1 in 5 year rainfall event. Some property flooding occurs in more extreme events. Reticulation will require renewal/rehabilitation as necessary. In alignment with current best practice, future stormwater management is envisaged to be a continuation of current stormwater policies, (through the Environmental Engineering Standards). Under these policies a developer is required to undertake onsite attenuation and treatment of stormwater generated by their development. This generally results in little impact to the existing Council stormwater network. Upgrades required are undertaken by the developer with possible Council contribution where an existing asset has limited remaining life. Under this approach, Council does not itself undertake projects involving creation of new stormwater infrastructure.

The Parua Bay and Upper Pataua Stormwater Catchment Management Plan was prepared in 2009.

Transportation

Parua Bay is currently serviced by a roading network catering for just over 4,000 vehicles per day. The road types and lengths within the node include 3km of arterial, 6.7km of collector, and 13.1km of public road. Due to expected population growth, over 19,000 vehicles per day will be generated for this node. There are no known backlog requirements in the node that cannot be met under existing programmes.

Most future population requirements can be incorporated within the existing work programmes. However, the anticipated levels of growth at Pataua and Whangarei Heads means that the Whangarei Heads Road and the Pataua South Road intersection would need to be upgraded. This will require an estimated \$0.50 million of additional Whangarei District Council administered roading expenditure. The Whangarei Heads Road itself will probably also need upgrading to accommodate increased traffic volumes caused by growth in the wider area over the next 30/50 years.

Parks and Reserves

Parks and reserves within the node are limited, with small reserves at Ritchie Road, Nook Bay Reserve, and Nook Landing Reserve. There is a golf club located along the road to Parua Bay from Whangarei City.

An analysis of 'Neighbourhood', 'Sports' and 'Other' parks found 4.93 ha, -1.17ha and 6.12ha of existing capacity respectively. Sports fields are required in this node to meet existing demand. In order to meet future population growth, it is anticipated that 7.5ha of sport fields and 24.26ha of local/destination/natural area reserves are required to meet present service levels. In addition, it is expected that another boat launching area will be required. As well as the land, it is expected that other facilities would be constructed within present and future reserve areas. Over the next 50 years, these costs are estimated at \$11.4 million.

5.3.6 Summary

Located on Whangarei Harbour, Parua Bay has the potential to develop into a significant settlement node over the next 30 to 50 years. There are medium numbers of existing vacant urban residential lots, but a high number of vacant rural residential lots are available. Maximum capacity for subdivision development under both District Plan and Structure Plan is high, but constraints have some impact on the urban residential potential.

Key challenges and actions to meet this potential include the development of a strong 'sense of place' within the node. Future development will likely necessitate a central gathering point or community hub as well as ensuring connections between existing community assets are enhanced. Another key action is the identification of business land opportunities in the area, especially as Parua Bay becomes a hub for the wider area.

6. Rural Villages

6.1 Maungatapere

Maungatapere is a small settlement inland from Whangarei City, developed around a dairy factory that used to process milk from the Mangakahia valley. Whilst the dairy factory is no longer in operation, it continues to stand unused, and is the most prominent feature of the settlement. Despite the closure, several other small businesses operate around the village centre. Local facilities within Maungatapere are both limited and scattered rather than being centralised. For example, the community hall and main bowling club are located some distance from the centre, close to Pukeatua Road.

Maungatapere is an important 'crossroads' location as it is the gateway to both the Mangakahia Valley on the way to Kaikohe, and the rural farming areas of the hinterland on State Highway 14 to Dargaville and the Kauri Coast. The present population across the node is 645. This is projected to increase to 1,044 by 2041, and 1,239 by 2061. This is a significant rise in population, with close to double the present population being projected.

The total land area of the node is 346ha, of which around 14ha is presently zoned Living Environments. There is also a significant amount of business land (5ha) but much of this is occupied by the disused dairy factory. With future population and household projections, it is expected that there will be pressure to increase residential land availability, as well as business land.

Maungatapere has the potential to develop into an attractive rural village. Its natural setting has much potential to build upon. The village is surrounded by highly productive farmland featuring many stone walls, with the volcanic cones of Maungatapere, Maunu, and Whatitiri providing a dramatic backdrop. The village at present, has a run-down/derelict look about it, but with careful planning incorporating good urban design, the aesthetics could be much improved to provide a rural village of considerable amenity. To ensure this, a structure plan is required for the node in the near future.

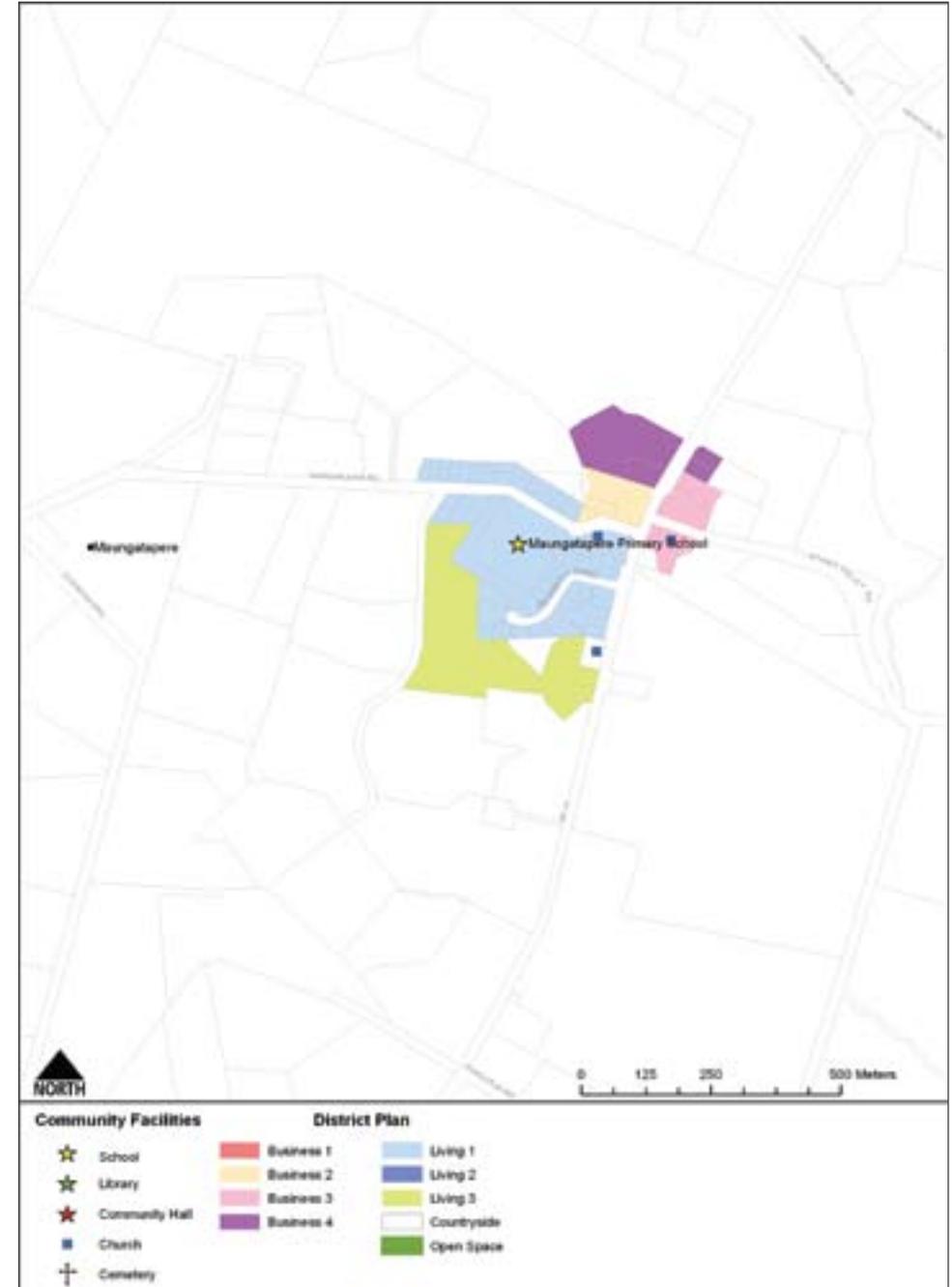
6.1.1 Environment

Land Use

Just under one fifth of the node is categorised as being Class 1 and Class 2 versatile soils (18% or 153ha), with an additional half of the node classified as being Class 3 soils (430ha). This is a significant amount of versatile soils but these have been facing increased pressure from lifestyle development in recent years. The main land uses in the area are lifestyle (41%), dairying (23%) and horticulture (14%). There is also some pastoral (10%). As the population grows, the land occupied by residential and lifestyle activities will grow, probably at the expense of pastoral land, but potentially also on highly productive land.

Given the very limited distribution of Class 1 and 2 soils, the loss of these soils for productive use does not accord with the concept of sustainable management, particularly the requirement to meet the reasonably foreseeable needs of future generations. If this highly versatile and productive land resource is not protected from residential and rural residential development this valuable resource will be lost within a relatively short space of time.

Figure 119: Maungatapere



Water Resources

Two small streams, the Otaika Stream and Whakapai Stream (which flows into the Otaika Stream), have their source within the Maungatapere area. About 5.7km of waterway is found within the node. The Maungatapere node is evenly spread between the catchment areas of Otaika and Waipao. Land use within the Otaika Catchment area is mainly lifestyle or pastoral, some forestry, and a small amount of both horticulture and dairying. The Waipao Catchment has a wide range of land uses, including horticulture, lifestyle, pastoral, and a small amount of dairying.

Maungatapere is located on an aquifer shared with Maunu to the east, called the Maunu Aquifer. This is a substantial aquifer system of 6,275ha, and is of importance to the various horticultural products grown within the wider area. There are reasonably high numbers of bores within the area. Overall, this aquifer is highly dependent on good quality recharge following rainfall. However, additional recharge of the aquifer from sources within Pukenui Forest probably also play a role. The aquifer is classified as being 'at risk' by the Northland Regional Council due to high actual or potential demand.

Natural Hazards

Few natural hazard constraints exist within the nodal boundaries. Only 13ha (2% of the land area) is classified as flood susceptible, largely areas in immediate proximity to local streams. However, about 10% of the total number of land parcels are located fully, or partially, on flood susceptible land. In most cases, the amount of land is very limited.

There are no available recent studies on land instability in the area. The underlying geology of Maungatapere is recent basalt flows. Other locations in the district with a similar underlying geology tend to have little land subject to high instability risk.

Biodiversity

Very little significant natural habitat remains in the Maungatapere node, with only about 52ha of natural habitat remaining, or 6% of the node. Significant habitat in the vicinity of Maungatapere includes the Maungatapere Remnants (Q07/063), Newton Road Remnants (Q07/054), and Jackson Road Bush (Q07/025). Jackson Road Bush is probably the most important of these sites. Other important sites within the wider area include Maungatapere Mountain itself. Adjacent to the node boundary are Kokopu Block Road Bush and Maunu Mountain (a geo-preservation site of regional importance), and nearby is the Mannington Road Wetland, also an area of ecological significance.

These ecological areas are important in that they provide habitat for threatened and regionally significant species. The Maungatapere and Newton Road Remnants, Maunu Mountain and Kokopu Block Road sites all contain examples of volcanic broadleaf forests – a nationally rare vegetation type. Mannington Road Wetland also includes swamp forest and wetland, and the Jackson Road Remnants include riverine forest, uncommon vegetation types in this Ecological District. There is a Native Wood Pigeon breeding site in the forest remnant at the end of Jackson Road, and kiwi presence is also noted in the nodal area.

Around 5ha or 1% of the nodal area is formally protected by Department of Conservation reserve, Council reserve, esplanade reserve or private covenanting. This includes 4ha (7%) of PNA areas (areas of ecological significance). Ninety-eight percent of the total node area (339ha) is classified as acutely or chronically threatened (<20% indigenous vegetation cover remaining). A break down of acutely and chronically threatened environments within the PNAs, and the amount and type of formal protection in these is shown in Table 111. There are limited bush fragments remaining within acutely and chronically threatened environments, but some are protected by a QEII covenant.

190: Whangarei District Growth Strategy

Table 111: Significant Natural Areas and Formal Protection of These Within Acutely and Chronically Threatened Environments

Area of PNA within Acutely or Chronically Threatened Environment (ha)	Area of Formal Protection within area of PNA that is Acutely or Chronically Threatened (ha)						
	Conservation Covenant	QEII	Esplanade	DoC	WDC Park/Reserve	Total (ha)	Proportion Protected
13.37		3.59				3.59	27%

Source: Whangarei District Council, Department of Conservation, Land Environments New Zealand.

Landscape/Natural Character

The Maungatapere node is identified as a cultural heritage landscape, and widely regarded as being a very attractive scenic area. Accordingly, the entire node area has been classified as significant (Landscape Sensitivity 5), as identified in an initial landscape study of the district.

The heritage landscape of the node is comprised of strong cultural and historical associations, both European and Maori. Maungatapere Mountain acts as a landmark in an otherwise flat/rolling landscape, and is also the only Outstanding Natural Feature and Geological Site in the area, although Whatitiri Volcanic Shield further to the south west of Maungatapere Township is also an Outstanding Natural Feature and Geological Site. Extensive dry stone walling imparts a European heritage which is further reinforced by scattered thorn hedgerows, copses, and historic homesteads.

Ecosystem Services

Maungatapere provides a wide selection of ecosystem services. Key ecosystem services include food and fibre, freshwater quality and quantity (both surface and groundwater), nutrient cycling and soil formation. Additional ecosystem services of some importance include pollination, pest regulation, and water purification and waste treatment to enable ongoing delivery of food and fibre. As the population in the node grows, it should be encouraged onto locations with lower productive potential and away from significant natural habitat which generate higher quality ecosystem services.

Climate Change

There are few specific risks resulting from climate change facing Maungatapere. However, being an area focussed on productive land use may mean increased constraints and opportunities arising over the next 50 years in terms of food and fibre production. A possible constraint is water availability, whilst opportunities may occur in terms of alternative crop types becoming feasible. Of greater concern in the wider area is the possible impact of more regular droughts on the dairy country to the west of Maungatapere, necessitating the development of water storage options in the future.

6.1.2 Society

The median household income within the node is \$52,000, which is around 20% higher than the district average of \$43,900. However, about one third of the Maungatapere population is classified as more deprived under the Deprivation Index, which suggests that there are some levels of inequality across the node.

The median age in the node was 41 years in 2006. In 2006, approximately 27% of the population was under the age of 20 years, and this percentage is expected to decline over time. Approximately 14% of the population was aged 65 and over in 2006. This is expected to reach 26% by 2041,

and 30% by 2061, which is still under the district average. By 2061, this would mean that 371 residents would be over the age of 65 within the node, up from the present 93. This is equivalent to a rise of around 299%, and will require more services orientated towards an older population.

Residential Land Requirements

Estimating future residential land requirements in Maungatapere is complex, with various factors such as increased population and declining household sizes needing to be taken into account. This is further compounded by expected future consolidation of settlement patterns, as well as the potential for declining average lot sizes within the urban environment. Any assessment needs to take into account both supply and demand factors.

Demand, in this case, needs to take into account the declining household size (from 2.9 to 2.4) and a probable small increase in consolidation to more urban dwellings. The present split between households in Maungatapere is 07/93, with 15 households within the Living Environments, and 206 households outside them. Over time, a target split of 25/75 by 2061 is preferable. A more balanced split (i.e. 50/50) is more desirable, but given existing vacant lots is likely unachievable over this time frame.

Maungatapere is categorised as a rural village, with a projected future population of 1,044 in 2041, or 418 households. In 2061, the population is projected to reach 1,239 people, or 516 households. This would result in an eightfold increase in lots in the Living Environments, and almost a doubling of lots in the rural residential areas.

Table 112: Projected Population and Household Residential Demand

	2006	2011 (projected)	2041 (projected)	2061 (projected)	Existing vacant lots	Existing vacant lot shortfall (year)
Population	645	752	1,044	1,239	-	-
Total households (lots)	221	258	418	516	111	-
Households (Living 1,2,3)	15	18	63	129	3	2011
Households (rural/residential)	206	240	355	387	108	2026

The average Living Environment lots size in Maungatapere is 0.1ha, whilst the average rural residential lot outside of the Living Environments is 3ha. Based upon existing average residential lot sizes, this would equate to 11ha of new urban land being required, and 310ha of rural residential land being taken up outside of the Living Environments.

Table 113: Residential Land Area Required to Meet Projected Demand

	2006 (estimate)	2011 (projected)	2041 (projected)	2061 (projected)
Total urban residential land area (ha)	1.5	1.8	6.3	12.9
New urban residential land area (ha)	-	0.3	4.8	11.4
Total rural/residential land area (ha)	618	720	852	928.8
New rural/residential land (ha)	-	102.0	234.0	310.8

Supply, in this case, refers to the availability of actual or potential vacant lots to accommodate future population growth, and the capacity to undertake subdivision should future growth patterns warrant it.

Present development potential under the Whangarei District Plan is noted in Table 114. Two types of estimates for capacity are given. The first estimate is the theoretical maximum number of lots based upon all available land (by land area) being utilised. Present lots that are too small to subdivide are excluded from this calculation, as are those sites which are designated in the

District Plan. The second type takes into account biophysical constraints that may reduce potential capacity. In this calculation, the factors of flood susceptibility, significant natural habitat, and high land stability were applied, in addition to the exclusion of small lots and designated sites. The final number of households or lots is likely to be between the two estimates, as no constraint is absolute.

Figure 120: Rural Property in Maungatapere



Table 114: Capacity Under the Whangarei District Plan

	District Plan Living 1,2,3 (maximum)	District Plan Living 1,2,3 (constrained)
Population	217	134
Maximum households (lots)	90	56
Potential for new lot creation (2011)	69	35
Projected year capacity exhausted	2047	2031

As can be seen, the main constraint is a lack of available land for the development of Living Environment lots, and continued pressure to develop lifestyle blocks outside of the Living Environments. Population growth would need to be accommodated upon green field land, but options may be limited. For example, it could be difficult to retrofit the present Living 3 land which surrounds Maungatapere School. Both areas on the northern side back onto horticultural land and contain some commercial activities. The most appropriate location for future living Environments would be the southwest location, in part due to the lack of high class versatile soils, but also as a means of connecting the bowling club and community hall with the rest of the village. In terms of implementation, a structure plan is required for Maungatapere in the very near future.

Education, Health, and Safety

One school, Maungatapere School, is located within the node. The roll was 215 in 2009. The school is decile 9 and caters for year 1-8 students. Only about 30% of the population is located within 500m of the school, which reflects the spread out, rural nature of the local population. An increase in population may mean that the school would need to be expanded.

There are no medical facilities located in the node, and Maungatapere is located about 15km from the Whangarei Hospital. The population is expected to almost reach the size recognised as requiring a GP (a minimum ratio of 1:1,400 is recognised by the Health and Disability Services Act 1993) in the next 50 years. With the ongoing development of the village, and its crossroads location, Maungatapere may be able to attract a small medical centre over the next 30/50 years.

There is one retirement village located in the area. The number of people aged 65 and over is expected to increase over time and there may be need for more aged facilities in the future. There are no police or fire facilities located within the node, the closest being in Whangarei City. It is unlikely that either service will require facilities in Maungatapere over the next 50 years.

Sense of Place/Urban Design

The existing sense of place is provided by the highly productive landscape around Maungatapere, with its volcanic cones, intensive orchards and stonewall enclosures. The area has a predominantly rural pastoral character. The Maungatapere node has a defined centre, situated around the former dairy factory and surrounding services such as churches, schools, service station, and takeaway bar. Improving the 'community hub' for Maungatapere would be one way to ensure the commercial and industrial area of the village stays relatively compact. However, the village straddles State Highway 14, exposing people patronising businesses on both sides of the highway to the hazard of through traffic.

6.1.3 Culture

Tangata Whenua

Maungatapere is located within the rohe of Ngapuhi, and the hapu groups in the area are: Te Parawhau and Te Uriroro. There are no marae located in the node area. About 1% (8ha) of the node is Maori land.

One site of significance to Maori – an urupa – is located at Maungatapere and identified in the District Plan. However, further sites of significance to Maori may be identified in future, particularly with the development of Iwi Management Plans. There is only one unclassified archaeological site of Maori association in the node. Further archaeological sites may also be uncovered in future.

Arts, Culture and Civic Amenities

In terms of community facilities, there is one hall, a bowling green, and three churches located in the vicinity of the settlement. The old dairy factory at Maungatapere contains a substantial collection of antiques, such as motorbikes and engines. The service station, takeaway bar, and café are the main shops located within the node. Maungatapere is located a long way from any surf beach, with Ocean Beach being 51km, Pataua North being 48km, and Ruakaka Beach being 43km from Maungatapere.

Historic/Cultural Heritage

No historic buildings are listed on the Historic Places Trust Register or District Plan, and only six known archaeological sites are found within the node. Maungatapere does have the most extensive series of stone walls in the district, some of which are in extremely good condition. There are approximately 55km of stone walls in the area, which accounts for 36% of the stone walls located in the district. There are scattered pockets of walls around Maungatapere, with the main ones being south around Pukeatua Road, west around Tatton Road and west of Poroti. Most of the walls are away from State Highway 14 along local roads, therefore many are not easily viewed from the highway.

6.1.4 Economy

Business Profile and Projections

There are a few small service businesses within the node, including a service station and associated garage and a takeaway bar. In addition, small contractors working in a variety of industry sectors are located in the node. Maungatapere is 17km from the Whangarei CBD.

In 2006, 294 employees lived in the node. These people mainly worked in agriculture, construction and health and community services. The bulk of their listed occupations were as managers, professionals and technicians. Around 52% of the population is presently in some form of employment. In terms of employees living within the node, their number is projected to rise to 467 by 2041, and 551 by 2061.

In 2006, approximately 126 people worked in the node, once again mainly in agriculture, construction, education, and health and community services. Retail trade, health and community services and education were the biggest employers. The number of employees working within the node is projected to rise to 238 by 2041 and 280 by 2061.

The Statistics New Zealand Business Survey (2007) includes a wider area than just Maungatapere. In this survey 270 employees were noted in the area, with 294 businesses located here. Of these businesses, 241 are self-employer/sole-operators, and fewer than 50 businesses employ between 1-9 staff members. Only four businesses employed more than nine staff.

Business Land Requirements

In terms of business area, there is a sizable area of business land zoned in Maungatapere. Business land is located on both sides of State Highway 14, with commercial land on the eastern side and industrial land on the western side. Land is zoned for both light and heavy industry.

Table 115: Business Projections, Maungatapere

	2006	2041	2061
Business floor area (m ²)	11,364	15,420	18,793
Business land area (ha)	5.07	8.74	10.32
Employees (by workplace)	126	238	280

Much industrial land, however, is occupied by the former dairy factory and the Anawhata Museum Trust, and may not be readily available for other business purposes in the near future. There are locations that may be suitable for business land expansion if considered necessary, but care must be taken to buffer residential areas from possible impact.

6.1.5 Infrastructure

Water

Maungatapere is currently reticulated, with the main source of water being Poroti. The water pipe network extends over the whole settlement. In the west, the pipelines extend to Poroti. In the south, the pipeline extends to Pukeatua Road, where it services a small group of residential houses. To the east, the water pipes follow Otaika Valley Road until they connect to the rest of the water network and services in the Maunu area. To the north, the water system only extends as far north as 1,123 State Highway 14. The limiting factor in Maungatapere is local reticulation from the main water pipelines. At present, there is no further water infrastructure required to meet the demands of anticipated growth.

Wastewater

Council does not currently have any wastewater network at Maungatapere. In order to meet future population growth, it is estimated that wastewater infrastructure will need to be provided. This includes the installation of new trunk sewers, reticulation upgrades and new wastewater treatment plant capacity. The estimated cost of providing reticulation and treatment is \$28 million, based on current development contribution estimates. Alternately, if zoning is such that minimum lot sizes are restricted to 2,000m² then the current practice of individual onsite wastewater treatment and disposal systems may prove acceptable. Otherwise, future options need to be examined to accommodate projected population growth.

Stormwater

Council has some stormwater assets but no network. In alignment with current best practice, future stormwater management is envisaged to be a continuation of current stormwater policies (through the Environmental Engineering Standards). Under these policies a developer is required to undertake onsite attenuation and treatment of stormwater generated by their development. This generally results in little impact to the existing Council stormwater network. Upgrades required are undertaken by the developer with possible Council contribution where an existing asset has limited remaining life. Under this approach, Council does not itself undertake projects involving creation of new stormwater infrastructure.

Transportation

Maungatapere is currently serviced by a roading network catering for close to 8,000 vehicles per day. The number is substantial due to the state highway passing through the town, and because Mangakahia Valley Road also passes through the settlement. There are no known backlog requirements in the node that cannot be met under existing programmes. There is a significant length of different types of road in the location. Estimated road lengths within the node include 7km of state highway, 1.3km of arterial road, 7km of collector road, and 7km of public road. Anticipated levels of growth are not expected to require additional work programmes in the local roading network.

Parks and Reserves

Parks and reserves around Maungatapere are extremely limited, with most Council reserve land being used for the community hall and bowling club, or for the water pipelines. An analysis of 'Neighbourhood', 'Sports' and 'Other' parks found 0.4, 1.3 and -0.3ha of existing capacity respectively.

In order to meet future growth needs and meet present levels of service, Maungatapere would require the purchase of 2ha of local parks, 2.2ha of sports fields, 1.4ha of destination reserve, and 6ha of natural areas. Some of the sports field requirements may be met by the Mangakahia Sports Fields. As well as the land, it is expected that other facilities would be constructed within present and future reserve areas. The estimated cost of meeting these demands are approximately \$5.3 million.

6.1.6 Summary

Maungatapere is a rural village that has seen high growth recently. With local business, churches, schools and good transport connections, Maungatapere appears to have considerable potential for growth. Maungatapere has a substantial number of existing vacant rural residential lots, but the availability of urban residential lots is limited. Capacity to develop further urban residential lots under the District Plan is low. Necessary future actions include the preparation of a structure plan that also encompasses a vision for Maungatapere.

Resolving business land needs, including identifying business land capacity, is important. The planning of a village centre will be necessary as part of the structure plan process. In addition, there appears to be a limited number of parks and reserves in the area, and this can be addressed through a reserves strategy, or during the structure plan process. The presence of high class versatile soils in the node and surrounding area is an important factor in locating future residential and rural residential development.

Figure 121: Maungatapere Village



6.2 Maungakaramea

Maungakaramea is a small rural settlement located south-west of Whangarei, with a distinct and noticeable historic/rural identity. About 15 minutes drive from Whangarei, it is a community built around primary production and the successes of local sporting teams over its long history. Maungakaramea celebrated 150 years of settlement in 2009, which is a significant period for settlements within Whangarei District.

Maungakaramea is one of the earliest European settlements in the district, and dates back to Government land purchases in 1855, and the arrival of early European colonists in 1859. The first official post office dates to 1866, and the Maungakaramea School opened in 1880. The recreation reserve dates to 1911, a feature that is still highly significant in the life of the community today.

The total land area of the node is 264ha, of which Living Environments comprise around 14ha. The population of the settlement area was 756 in 2006, but is growing quickly. The population is projected to increase to 1,124 by 2041, and to 1,334 by 2061.

Maungakaramea has considerable potential to develop into the quintessential rural village. The base elements are present with existing residential development around a village green and community hall, a local school, a volunteer rural fire service, service station and sports centre with squash courts, rugby, hockey, cricket, tennis, bowling, and croquet clubs. There are some attractive historic buildings in the node, including a former hotel, a number of churches and many historic stone walls. Its rural setting is attractive, with the village surrounded by productive farmland, including horticultural land uses, with Mount Maungakaramea and the Tangihua Range providing a dramatic scenic backdrop.

To ensure that future development is managed to maximise the potential of these attributes, a structure plan is required to determine the need and location for increased zoning of residential and business/commercial land within the node.

6.2.1 Environment

Land Use

Over half of the Maungakaramea node is comprised of high quality versatile soils, with about 52% (447ha) either Class 1 or Class 2, which is the highest proportion of any settlement in the district. A further 166ha (19%) is classified as Class 3. The main land uses in the area are lifestyle (37%), pastoral (29%) and horticulture (11%). The horticultural areas are mainly on the slopes of Maungakaramea, although lifestyle blocks contain some horticultural uses. There is also some dairying (7%) in the low lying land.

As the population grows, the land occupied by residential and lifestyle purposes will grow at the expense of pastoral or horticultural land uses, depending on the location of residential development. This is not considered a sustainable use of this limited and valuable land resource. It is necessary to protect the high quality soils from residential and rural residential development. Sporadic residential development and lifestyle uses need to be limited by strong planning provisions in this node.

Water Resources

One very small waterway rises within the Maungakaramea node, but the surrounding hills, including the Tangihuas, are the source for several other streams. Important systems locally include the Tauraroa River, Waioatama River, Waionepu River, and Waihoa River flowing from the Tangihua Range. Only a very small length of waterway (1.8km) actually flows close to the village.

Figure 122: Maungakaramea



Maungakarama Village is located within two catchment areas, these being the Northern Wairoa Catchment area, which flows west from the village; and the Tauraroa Catchment area, which initially flows eastwards from the village, then starts to flow west. Both catchment areas have land uses that are evenly spread between pastoral farming and dairy farming, with pockets of other land uses. The segment of the Northern Wairoa Catchment has more lifestyle and horticultural land uses than the Tauraroa Catchment area, which includes the Waiotira area and has more dairying. The horticultural segments of the Northern Wairoa Catchment are to the south and west of Whatitiri, and on/near the northern and western slopes of Maungakarama itself.

Maungakarama is also situated upon an important local aquifer, the Maungakarama Aquifer, which extends over 1,043ha. There are a large number of bores within the Maungakarama node, proportionally high compared with the population, all of which are dependent upon ongoing recharge of the aquifer as there is no water reticulation in the area. The aquifer is designated 'at risk' by the Northland Regional Council because of actual and potential demand.

Natural Hazards

Some of the node is regarded as flood susceptible, with 122ha (14% of the nodal area) around O'Carroll Road and the low lying areas on either side of Snooks Road and Maungakarama Road. Much of this is in use as dairy farming. Approximately 17% of the total land parcels are situated upon flood susceptible land.

There are no available recent studies on land instability in the area. The underlying geology of Maungakarama is recent basalt flows. Other locations in the district with a similar underlying geology tend to have little land subject to high instability risk.

Biodiversity

Only a small portion of the node is regarded as significant natural habitat, about 43ha or 5% of the node. The significant patches of habitat in the vicinity include Tangihua Road Bush (Q07/057). Of importance, close to the village, is a small one hectare block of bush that could be useful for amenity values and is a pleasant walking area. Tangihua Forest (Q07/111) forms the backdrop to the south, and Maungakarama Mountain (Q07/059), Tauraroa Road Remnants (Q07/057), and Bint Road Bush (Q07/037) are also located in the vicinity.

These ecological areas are important in that they provide habitat for threatened and regionally significant species. Some sites also contain uncommon (riverine forest, swamp forest) and nationally rare (volcanic broadleaf forest) vegetation types. Maungakarama Mountain is a geo-preservation site of regional importance, and contains an area of wetland, a rare habitat within this Ecological District. The Maungakarama Landcare Group operates in this area.

Table 116: Significant Natural Areas and Formal Protection of These Within Acutely and Chronically Threatened Environments

Area of PNA within Acutely or Chronically Threatened Environment (ha)	Area of Formal Protection within area of PNA that is Acutely or Chronically Threatened (ha)						
	Conservation Covenant	QEII	Esplanade	DoC	WDC Park/ Reserve	Total (ha)	Proportion Protected
9.46	5.06				0.07	5.13	54%

Source: Whangarei District Council, Department of Conservation, Land Environments New Zealand.

Around 21ha or 8% of the nodal area is formally protected by Department of Conservation reserve, Council reserve, esplanade reserve or private covenanting. This includes 10ha (23%) of PNA areas (areas of ecological significance). Eighty-nine percent of the total node area (234ha)

is classified as acutely or chronically threatened (<20% indigenous vegetation cover remaining). A break down of acutely and chronically threatened environments within the PNAs, and the amount and type of formal protection in these is shown in Table 116.

Landscape/Natural Character

Maungakarama is notable for its attractive productive landscape, with about half the node being classified as significant (Landscape Sensitivity 5) as identified in an initial landscape study of the district. The Tangihua Ranges provide a backdrop to the settlement. Strong cultural elements, both Maori and European, define certain parts of the landscape. Maungakarama Mountain acts as a landmark in an otherwise flat/rolling landscape. Extensive dry stone walling imparts a European heritage which is further reinforced by scattered thorn hedgerows, copses, and historic homesteads. There are no notable or outstanding landscapes noted in the area, although Maungakarama Mountain is regarded as an Outstanding Natural Feature and Geological Site of Regional Importance.

Ecosystem Services

Given the high importance of primary production, it is not surprising that Maungakarama is reliant on high quality ecosystem services for continued well being. Key ecosystem services include food and fibre provision, nutrient cycling and soil formation. There is also provision of other important services including freshwater quality and quantity, water purification and waste treatment (both surface and groundwater), pollination, and pest regulation.

Climate Change

Little significant specific impact from climate change is expected for Maungakarama, although there may be increased inundation in the low-lying areas. However, the dependence on primary production may create opportunities and constraints within the wider area, especially with changeable climatic conditions. There may also be effects on the recharge of Maungakarama Aquifer if rainfall patterns change.

6.2.2 Society

The median household income in Maungakarama is \$53,850, which is one of the highest in the district. No parts of Maungakarama population are considered as being deprived under the Deprivation Index. The median age within the settlement is 40.3 years. In 2006, approximately 29% of the population was under the age of 20 years. In 2006, 13% of the population was aged 65 and over, just below the district average. This is expected to reach 24% by 2041, and 27% by 2061. By 2061, this would mean that 363 residents within the node are over the age of 65, up from the present 99. This is equivalent to an increase of 267%, which, whilst substantial, is not as high as other parts of the district.

Residential Land Requirements

Estimating future residential land requirements in Maungakarama is a complex process, with various factors such as increased population and declining household sizes needing to be taken into account for future projections. This is further compounded by expected future consolidation of settlement patterns as well as the potential for declining average lot sizes within the urban environment. Any assessment needs to take into account both supply and demand factors.

Demand, in this case, needs to take into account the declining household size (from 2.6 to 2.4) and a probable small increase in consolidation to more urban dwellings. The present split between households in Maungakarama is 12/88, with 39 households within the Living Environments, and 255 households outside them. A target split of 40/60 by 2061 is preferable.

In demand terms, Maungakaramea is categorised as a rural village, with a projected future population of 1,124 in 2041, or 449 households. In 2061, the population is projected to reach 1,334 people, or 555 households.

Table 117: Projected Population and Household Residential Demand

	2006	2011 (projected)	2041 (projected)	2061 (projected)	Existing vacant lots	Existing vacant lot shortfall (year)
Population	756	840	1,124	1,334	-	-
Total households (lots)	294	323	449	557	72	-
Households (Living 1,2,3)	35	39	112	223	4	2011
Households (rural/residential)	259	284	337	334	68	2041

The average Living Environment lot size in Maungakaramea is 0.14ha, whilst the average rural residential lot size outside of the Living Environments is 2.4ha. Based upon existing average residential lot sizes, this would equate to 26ha of new urban land being required, and 180ha of rural residential land taken up outside of the Living Environments. However, the number of existing vacant rural residential lots is substantial, and may meet projected demand for approximately 30 years.

Table 118: Residential Land Area Required to Meet Projected Demand

	2006 (estimate)	2011 (projected)	2041 (projected)	2061 (projected)
Total urban residential land area (ha)	4.9	5.5	15.7	31.2
New urban residential land area (ha)	-	0.6	10.8	26.3
Total rural/residential land area (ha)	621.6	681.6	808.0	801.6
New rural/residential land (ha)	-	60.0	186.4	180.0

Supply, in this case, refers to the availability of actual or potential vacant lots to accommodate future population growth, and the capacity to undertake subdivision should future growth patterns warrant it.

Present development potential under the Whangarei District Plan is noted in Table 119. Two types of estimates for capacity are given. The first estimate is the theoretical maximum number of lots based upon all available land (by land area) being utilised. Present lots that are too small to subdivide are excluded from this calculation, as are those sites which are designated in the District Plan. The second type takes into account biophysical constraints that may reduce potential capacity. In this calculation the factors of flood susceptibility, significant natural habitat, and high land stability were applied, in addition to the exclusion of small lots and designated sites. The final number of households or lots is likely to be between the two estimates, as no constraint is absolute.

Table 119: Capacity Under the Whangarei District Plan

	District Plan Living 1,2,3 (maximum)	District Plan Living 1,2,3 (constrained)
Population	351	187
Maximum households (lots)	146	78
Potential for new lot creation (2011)	103	35
Projected year capacity exhausted	2044	2024

Overall, development opportunity, in terms of extending Living 1, 2 and 3 Environments is problematic. The expansion of Living Environments will require some use of high quality versatile soil, irrespective of which location is preferred. In some respects, the best location for expansion

is in an area to the north-east of the village, an area of approximately 19ha. Such an area could accommodate approximately 150 households, and is located reasonably close to the village centre. When this is added to vacant lifestyle blocks, it would accommodate much of the expected growth in the medium term. At present, there is no structure plan for Maungakaramea, and one is required in the near future.

Education, Health, and Safety

In terms of education, Maungakaramea Primary School is located within the node, whilst Tauraroa Area School is located just outside the node. The school deciles are 9 and 7 respectively. Across both schools, the school roll is substantial, with 558 students in 2009. Much of the settlement's population (75%) is located within 500m of the primary school.

The population in Maungakaramea is expected to nearly double over the next 50 years. In the first instance, capacity at the primary school will act to accommodate increased demand for education services. Attendance at Tauraroa Area School is mainly comprised of students outside the Maungakaramea node. Thus, although the school is currently running at over-capacity, this is mainly due to reputation. A further secondary school within the node is unlikely over the next 50 years.

The Whangarei Hospital is located around 20km from the settlement. As Maungakaramea grows, it may be able to attract a GP at some stage. However, this will depend on a range of factors such as proximity to other medical services, proportion of elderly people, remoteness, etc. The population in Maungakaramea is expected to grow to around the size recognised as requiring a GP (a minimum ratio of 1:1,400 is recognised by the Health and Disability Services Act 1993) over the next 50 years. Two or more villages in the area may support a small medical centre at some stage. There is one retirement village located in the node. The number of people aged 65 and over is expected to increase significantly, and an expansion in services or other retirement villages is likely.

There is a volunteer rural fire service at Maungakaramea. Any increase in the need for fire services in the area over the next 30/50 years, will likely result in an expansion of the existing service. There are no police facilities located in the node, the closest being in Whangarei and Ruakaka. As Marsden Point/Ruakaka grows over the next 50 years, increased capacity in this area will give further options and support to the community south of Whangarei City.

Sense of Place/Urban Design

Maungakaramea has a relatively compact character, dating back over 150 years. As such, the settlement retains a historic core. A primary characteristic of the area is the strong cultural heritage. A range of elements contribute to the sense of history conveyed by the landscape. Extensive dry stone walls are an element throughout this area, imparting a European heritage theme which is further reinforced by scattered examples of thorn hedgerows and copses of mature exotic trees such as oak and macrocarpa.

There are several prominent hills in the area, including a volcanic cone. Most of them are free of built development and several are predominantly clad with indigenous vegetation. However, there are houses built on Mount Maungakaramea. In recent years Maungakaramea has seen much lifestyle block development in the wider area, which has had the impact of fragmenting productive land and increasing built elements in the landscape.

A large proportion of Maungakaramea's housing stock was built recently, particularly during 1990-99 (21%) with another major increase recently (32%). The average age of dwellings in this area is approximately 33 years. Notably, only about 15% of the housing stock was built between

1960 and 1979. Overall, it is unlikely that large scale replacement or major refurbishment will be required during the next 50 years.

There is a need to carefully manage development of Maungakaramaea Village if its potential as an attractive rural village is to be maximised. Good urban design is required. Such urban design can build upon historic features and buildings presently existing, along with the present layout of the village including its central village green, community hall and local school. A strong historic, rural sense of place is achievable.

Figure 123: All Saints Anglican Church, Maungakaramaea



6.2.3 Culture

Tangata Whenua

Maungakaramaea is located within the rohe of Ngapuhi, and the hapu groups in the area are: Te Parawhau and Te Uriroro. There are no marae, no sites of significance to Maori (as identified in the District Plan), and no Maori land located in the node area. However, further sites of significance to Maori may be identified in future, particularly with the development of Iwi Management Plans. Currently, there are no archaeological sites of Maori association in the node. However, there are several pits and terraces located on Maungakaramaea Mountain. Further archaeological sites may also be uncovered in future.

Arts, Culture and Civic Amenities

Maungakaramaea contains one community hall. There is no local shopping centre, with the local service station being the main community shop with a wide selection of goods. The local sports club is a major component of the village life and activities. Maungakaramaea is a considerable distance from surf beaches, being 56km from Ocean Beach, 51km from Pataua North, and 32km from Ruakaka Beach. There are also a total of three small churches, all reflective of Maungakaramaea's long history.

Historic/Cultural Heritage

Despite the early settlement, only four archaeological sites are recorded within the node, and no buildings of significance are registered with New Zealand Historic Places Trust. The physical presence of the stone walls in Maungakaramaea, and the high quality of them, are important features of the heritage of Maungakaramaea. Maungakaramaea has approximately 24km of stone wall, which accounts for 15% of the stone walls located in the Whangarei District. The two main areas of walls in Maungakaramaea are south along Tauraroa Road and west around Crawford and Bint Roads. The Stone walls are predominately located on the road frontage. Due to the walls being easily viewed from main arterial roads, they play a significant role in the character and amenity value of the area.

6.2.4 Economy

Business Profile and Projections

Maungakaramaea is located around 20km from the Whangarei CBD, and local enterprise is developed around agriculture, forestry and fishing. Apart from the local service station, there are also a couple of bed and breakfast businesses within the area.

Approximately 400 employees live in the node, mainly working in agriculture, education and the retail trade. The vocations are generally legislators, managers and administrators, professionals, and technicians. In terms of employees living within the node, the projections suggest an increase to 518 by 2041, and 614 by 2061. Approximately 53% of the population is presently in some form of employment, which is reasonably high compared to other parts of the district.

Work within the node is more limited, and generally revolves around agriculture and education. The biggest local employers are the schools, with around 150 employees. Local employment is projected to rise to 249 by 2041, and reach 295 by 2061. A small amount of rezoned business land may encourage local employment.

Maungakaramaea is included within the Wharekohe-Oakleigh census area unit in the Statistics New Zealand Business Survey (2007). This unit extends over a much wider area than just Maungakaramaea. As far as the wider area is concerned, approximately 270 people are employed, mainly in agriculture. There are 592 employers recorded for the unit, of which 472 are sole-operators/self-employed, and 109 are small businesses. These are mainly involved in agricultural enterprises. Only 11 businesses employ more than nine people. These employers include a large number of sizable agriculture operations, retail trade, and local schools.

Business Land Requirements

In terms of business area, there is no business land zoned in Maungakaramaea. It may be necessary to zone some business land in the future. However, it may be difficult to do this within the village itself, and may be more appropriate on the outskirts of the village or near the entrance to the node. A future structure plan for the node needs to examine the need for, and location of, business land.

6.2.5 Infrastructure

Water

The Maungakareme node is currently reticulated, but the system is reasonably limited. It extends up Maddendale Place, Stonehaven Drive, and along Maungakareme Road as far as the entrance to Old Road. The reticulation network also extends along Tauraroa Road as far as 50 Tauraroa Road.

Limiting factors for the node are reticulation and storage requirements. In terms of future water infrastructure requirements, it is unlikely that the projected rates of growth would warrant further water treatment over the lifetime of this strategy. However, should the growth rates increase faster than projected, then there would be a need for a water treatment plant. A 500m³ reservoir and water treatment plant upgrade could be required at an estimated cost of \$1 million.

Wastewater

Maungakareme does not currently have any wastewater network. To meet anticipated population growth, some wastewater infrastructure would be required, although this is not likely to happen until the latter part of the anticipated growth levels. These include the installation of new trunk sewers, some reticulation upgrades and probably some new wastewater treatment plant capacity. The estimated cost of providing reticulation and treatment is \$17 million, based on current development contribution estimates. Alternately, if zoning is such that minimum lot sizes are restricted to 2,000m² then the current practice of individual onsite wastewater treatment and disposal systems may prove acceptable. Such an approach would lead to a substantially larger urban area than the footprint indicated in the residential land requirements section, and is not desirable over the longer term.

Stormwater

Council has some stormwater assets but no network in the node. In alignment with current best practice, future stormwater management is envisaged to be a continuation of current stormwater policies (through the Environmental Engineering Standards). Under these policies, a developer is required to undertake onsite attenuation and treatment of stormwater generated by their development. This generally results in little impact to the existing Council stormwater network. Upgrades required are undertaken by the developer with possible Council contribution where an existing asset has limited remaining life. Under this approach, Council does not itself undertake projects involving creation of new stormwater infrastructure.

Transportation

Maungakareme is currently serviced by a roading network catering for close to 4,000 vehicles per day. This is a relatively high number for a small settlement, and partially reflects the existence of a major school within the area and commuting workers. There are no known backlog requirements in the node that cannot be met under existing programmes. There is a considerable amount of road length within the node, with 25km of collector roads, and 15km of public road found in the area. Most future work requirements for roading are covered in existing programmes with no additional budget required.

Parks and Reserves

At present, recreational parks in the area are limited to the Maungakareme Sports Park, which is an important local facility. The park is approximately 3ha in area, and contains the local recreational centre. An analysis of 'Neighbourhood', 'Sports' and 'Other' parks found 0ha, 3.9ha and 2.3ha of existing capacity respectively. Future development around existing open space is encouraged (i.e.

in proximity to existing sports fields.) Satellite development may require additional neighbourhood reserves.

To meet future demands, it is expected that 7ha of local parks, 1ha of destination reserve, and 4ha of natural areas would be required over the lifetime of this Strategy. As well as the land, it is expected that other facilities would be constructed within present and future reserve areas. This high level of need reflects the substantial population living within the wider area including Tauraroa and other smaller settlements. Costs are estimated at around \$3 million.

6.2.6 Summary

Maungakareme has experienced high levels of recent growth. The attractive qualities of the area mean that demand will likely remain high for residential and rural residential development in the area. Maungakareme has a high number of existing vacant rural residential lots, but very few urban residential lots. Capacity to subdivide further urban residential sites is low under the District Plan zoning. Expansion of the residential population will likely have an impact on productive land. This means that careful planning to increase residential opportunities, whilst maintaining the bulk of the productive potential, is important.

The first key action for Maungakareme is the development of a structure plan for the node. The planning of a village centre will be necessary as part of the structure plan process. This initiative may be connected to a rural development strategy. In addition, there appear to be limited parks and reserves in the area, apart from the sports club grounds. Identifying suitable locations for future reserves may be important to the development of the village. Likewise, the identification of suitable business/commercial land is also important, especially as Maungakareme serves a wider population than the node itself.

Figure 124: Maungakareme

