Kamo, Springs Flat, Three Mile Bush and Whau Valley

Structure Plan

Adopted February 2009

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1 Introduction

The Urban Growth Strategy, which was commissioned in 2002, identified a number of urban development issues around Whangarei City that needed addressing by Council and the Community. The resulting recommendations were adopted in 2003 as an official Council working document.

The Urban Growth Strategy divided Whangarei City environments into eleven distinct areas for ease of reference and administration. These areas became known as Structure Plan Study Areas, with each having its own detailed study for planning purposes.

In each of these study areas, a number of public meetings were held with local residents and interest groups to discuss specific planning proposals.

The land use proposals discussed in this report reflect the views of the community and Iwi, which were expressed from consultation meetings held in the Kamo area.

Council commissioned a number of technical studies to determine the physical opportunities and constraints to development. These include, but are not limited to, geotechnical reports, landscape reports, natural hazards assessments, transportation, and heritage assessments. In addition, residents' views and aspirations were collated and analysed against these report by technical experts from relevant Council departments for feasibility and funding perspective and the possible prioritising of potential development activities.

It is important to note that these proposals are long term and their implementation depends on their eventual incorporation into the statutory planning documents, such as the District Plan and the Long Term Council Community Plan. It is also important to note that further feasibility studies maybe required at the time of implementation of some of the proposals as circumstances changes with time.

Land identified for particular use in this Structure Plan is subject to legal processes of negotiated agreements, acquisition or designation. Council will follow due process in making sure that all necessary procedures are followed before any land use change takes place, as proposed in this Structure Plan.

Landowners or developers are free to apply for District Plan Changes using the recommendations identified in this Structure Plan where Council does not have such plans in terms of its policy on public/private plan changes initiatives.

1.1 Purpose of the Structure Plan

Structure planning is an important tool in managing the orderly growth of the community to ensure that adequate public services are provided, important natural and cultural assets are protected, and the area remains competitive for jobs and investment. This Structure Plan is an example of 'integrated management' that brings together all of Council's functions in a plan for the Kamo area.

The general purpose of this Structure Plan is to provide for the sustainable management of the natural and physical resources of the Kamo, Three Mile Bush, Whau Valley and Springs Flat area, in accordance with the aspirations of the local community and to the benefit of the wider Whangarei District.

The goal of all structure plans is to make progress toward sustainable communities with a high quality of life, safety for all residents, efficient use of ratepayers' dollars, and assuring the long term viability of residential and business investment.

All structure plans are guided by three simple principles of land development to achieve these goals:

- Transition provide for a more gradual transition of densities from urban to countryside, and limit impacts on the state highway system and economic viability of agriculture.
- Contiguous allow long term consolidation of the urbanised area by allowing densities to increase onfringes, in the future, as the market demands.
- Infill promote infill development in areas that are now, or are planned to be, serviced.

This approach to designating land for new urban development will help protect the essential economic, environmental, social and scenic values of the District and contribute to long term sustainable growth.

To achieve sustainable and integrated management, the Plan will:

- provide an overall land use plan for growth that is compatible with the infrastructure and environmental capacities of the area to sustain urban and urban fringe development
- show ways in which economic, social and cultural matters are being provided for and managed alongside environmental considerations

- provide a co-ordinated approach to providing roading, sewage, water, parks and other services within the study area.

By specifying those aspects identified above, the Plan will also provide higher levels of predictability to developers, Council, the public and interested parties with regard to the layout, character and costs of development for areas earmarked for growth or redevelopment within the study area.

1.2 Legal Status of the Structure Plan

It is important to keep in mind that the Structure Plan is a non-statutory policy document. This means that the Plan is not required or enforced by legislation, and that the provisions in the Plan do not have statutory or legal status until they are incorporated into Council's statutory documents, such as the Long Term Council Community Plan (LTCCP), District Plan and Asset Management Plans.

However, structure plans are a technique that has gained acceptance in the Environment Court as a way of promoting the integrated management of environmental effects, and providing for the wellbeing, health and safety of current and future residents. While not a legal document, a structure plan may be considered as an 'other matter' when assessing a resource consent application.

The Structure Plan, itself, and the provisions contained in the Plan, are indicative only and are intended to guide future action. The Structure Plan will often seek to manage matters that are wider than those covered in the Resource Management Act, and therefore outside the scope of the District Plan.

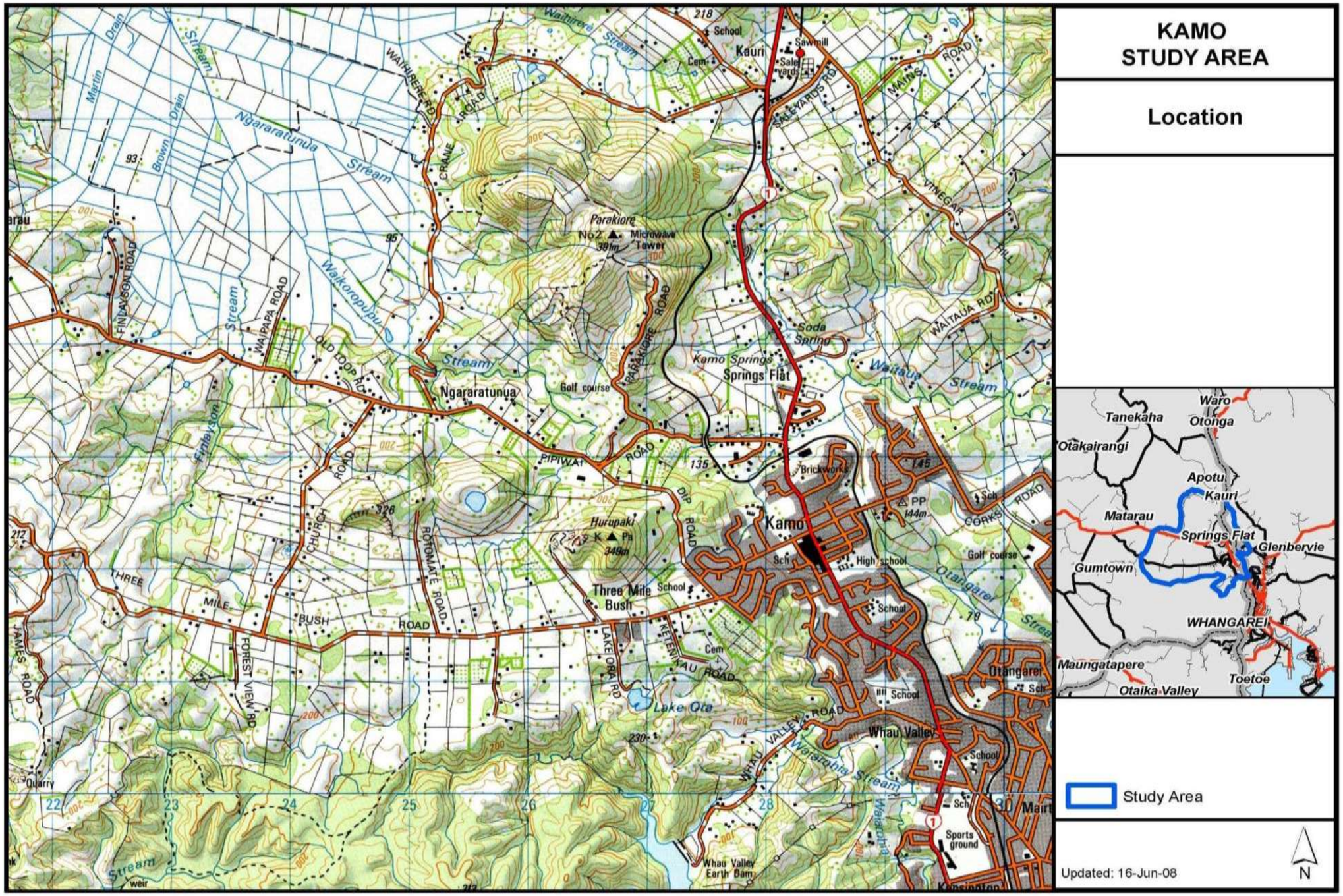
The Structure Plan is an 'ideas' document, while the District Plan is a statutory document – the 'action' plan. For the ideas in the Structure Plan to become actions they have to be transferred from the Structure Plan to the various statutory documents by following a prescribed statutory procedure. This procedure provides opportunity for further public input and further changes to the Structure Plan's provisions, if required. The public will be kept informed on the consultation process for this future stage of the process.

1.3 Study Area

The study area is to the north of Whangarei City and encompasses Whau Valley Shopping Centre and Kamo Village. It borders the Western Hills Forest, to the south, and some of the Hikurangi Swamp to the north-west. There are four volcanic cones in the study area: Hurupaki, Rawhitiroa and Ngararatunua, grouped east to west, and Parakiore to the north.

In 2006, the study area had a population of approximately 10,530 people and contained a range of residential, recreational, commercial, industrial and rural land uses.

Figure 1 Kamo Study Area - Location



1.4 Public Participation

In addition to the wide ranging consultation undertaken for the Urban Growth Strategy (refer *Urban Growth Strategy – Consultation Report)*, the Kamo, Three Mile Bush, Springs Flat and Whau Valley communities were consulted on their visions for the future of their communities for this Structure Plan.

A public workshop was held at the Kamo Bowling Club in February 2004. The 50-plus attendees at the workshop were asked to write and draw their ideas for the study area over the next 20 years and beyond.

Meetings were also held with Kamo Community Incorporated, and their plans for Kamo Village were discussed.

Council's asset managers were involved in determining limiting factors for growth, such as physical constraints like flooding. They also identified projects that were planned for the area, for example, the construction of Stage II of the Kamo Bypass road.

Utility operators (phone, gas and electricity) in the District were consulted with to determine constraints to growth and any expansion or upgrade projects they were planning for the study area.

A summary of consultation for the Structure Plan can be found in the report, 'Kamo, Whau Valley, Springs Flat and Three Mile Bush Structure Plan – Consultation Report'.

The issues and ideas raised were collated and analysed. In conjunction with earlier consultation, this consultation formed the basis of the Structure Plan.

Further public consultation was carried out in 23 April and 3 December 2008, with feedback being received and taken into consideration in the land use proposals. A select group of Councillors and Council Staff known as the Focus Group met on 25 February, 25 March and 22 September 2008 to discuss the proposal before public meetings.

1.5 Tangata Whenua

Tangata Whenua are the traditional guardians of the natural and physical environment. Despite the development of the local governance system and its responsibilities, Maori have continued to play their part in management of resources, in the traditional way, and are active in protecting the natural integrity of the District's resources for future generations.

Council recognises this special relationship of Maori people with their land and includes them as partners in management of those resources. There are many places of spiritual and cultural importance to Tangata Whenua in Whangarei District, including waterways, waahi tapu, pa sites and other taonga.

Tangata Whenua were specifically consulted for their input on the future of Whangarei, as part of the urban growth strategy carried out by Council. Three hui were held in May 2007, at three different venues: Pehiaweri Marae, Tarenga Paraoa Marae and Ngararatunua Marae on the 12th, 19th and 26th of April 2007, respectively. Contributions from the attendees were collated and a feedback meeting was held with kaumatua for a debriefing on the issues raised at the meetings. A record of the issues was sent to Council's Iwi Liaison Committee as part of the agenda.

A summary of issues raised by Tangata Whenua is listed in the Iwi Consultation Report. Proposals for the implementation of some of the issues raised are discussed in the land use proposal section of this Structure Plan.

1.6 LTCCP Outcomes

Ways in which the Structure Plans address LTCCP Community Outcomes:

1.6.1 A Sustainable, Environmentally-Responsible District which values its Natural Uniqueness

Structure Plans guide land use of the District by proposing new zoning in areas best suited to support development. They strive to minimise loss of native biodiversity, productive soils, natural watercourses, scenic coastlines, and the sensitive aesthetic qualities of the District. Agriculture and forestry are considered as environmental as well as economic qualities as they are natural, resource-dependent industries. Structure Plans also promote alternative transportation modes which improve air quality, reduce green house gas emissions, and allow access to natural areas for more people.

1.6.2 A District which is Safe and Crime-Free

Structure Plans indicate areas where new neighbourhoods will grow and those which will receive new investment. This new activity and investment enhances security by encouraging pedestrian traffic in commercial areas, increasing diversity, giving people new pride in their communities, and encouraging families to use community facilities close to home

1.6.3 A Community which is Healthy and Educated

Structure Plans guide planning for new schools and community centres to areas where families are likely to settle. They also provide for recreational reserves, cycleways and footpaths for an active outdoor lifestyle, and reduced auto dependence. Preserving natural areas contributes to air quality improvement, provides respite from urban life, and underlies the District's high quality of life. Structure Plans also identify areas that will be serviced so that waste and storm water will be handled in a safe and sanitary manner.

1.6.4 A Vibrant and Growing Local Economy

Structure Plans identify areas that are suitable for business investment based on highway, water, rail and transit access; concentrations of compatible industries; identifying areas for new housing that is convenient to jobs; and recognizing growth trends in the District's major industries while minimising reverse sensitivity among land uses. By recommending preservation of rural lands, the Plans also recognise the importance of productive horticulture, agriculture and forestry to the District's economy.

1.6.5 District with Community Programmes and Facilities for All

Structure Plans identify areas for new residential development where community facilities can be planned to serve new populations most efficiently. The Structure Plans include population projections to determine whether existing facilities are adequate for their areas.

1.6.6 A Community Which Values Its Culture and Heritage

Structure Plans take into account the sensitive nature of taonga and waahi tapu and seek to minimize impacts on it, while increasing knowledge and appreciation of the District's rich cultural heritage. Focusing new development around the urban area provides additional support for existing museums, the arts and tourist amenities. Preservation of environmental qualities – intact landscape, biodiversity, high-class soils, scenic values and coastlines – is a primary purpose of Structure Plans.

2 Current Profile

2.1 Regional and District Context

The Whangarei District covers the south-eastern part of the Northland region. Whangarei is a growing city of over 48,000 people within a District of approximately 74,000 people. About half of the total Northland population lives in the Whangarei District, and Whangarei City is the largest urban centre in Northland.

Whangarei District is less dominated by urban growth than Auckland and other regions in New Zealand. About 65 per cent of the District's residents live in the urban centre of Whangarei. However, two out of three new residences are being built outside the urban centre.

The economy of the Whangarei District has been steadily growing in recent years. The leading growth industries are agriculture, forestry, wood processing, healthcare, tourism, fishing, property and business services and education.

In October 2003, Whangarei District Council adopted the Whangarei Urban Growth Strategy. This document recognised the need to sustainably manage growth in the District. The following vision for Whangarei was identified:

> *To be an accessible green city, where people can live, work and shop in safe and clean surrounds, where art and culture are celebrated, and leisure opportunities abound.*

The Urban Growth Strategy recognises the influence of national and regional strategies and policies. The Regional Policy Statement for Northland, the Regional Coastal Plan for Northland, the Regional Water and Soil Plan for Northland and the Regional Land Transport Strategy are identified as having particular significant relevance.

The Kamo area was one of eleven identified in the Urban Growth Strategy as requiring structure planning to plan for and manage growth. At the time of this document's writing, the Kamo Structure Plan is being prepared simultaneously with four other urban fringe Structure Plans: Otaika, Maunu, Tikipunga and Onerahi. While each plan is a stand-alone document for its area, all of the plans must be considered within the context of general growth trends for the Whangarei District, as a whole. This means that recommendations for one structure plan area may have been made with consideration of conditions or changes in other structure plan areas. (Six additional Urban Structure Plans will be prepared in the future). District sustainability and integrated management can only be achieved by holding to a larger vision.

2.2 Profile of Study Area

2.2.1 Historical Background

The actual settlement of Whangarei began with the Ngapuhi tribe, who were descended from the voyagers of the Mamari Canoe that arrived at the Hokianga to establish the Tangata Whenua of the north. Identified archaeological sites and sites of significance to Maori illustrate the heritage and cultural values of Kamo and the study area. The Ngararatunua Marae is a centre of present-day local Maori activity.

In February 1858, a block of land called Kamo, consisting of 296 acres, was purchased from Ngapuhi, on behalf of the Crown. The land was agricultural and considered to have the richest of volcanic soils. Of the neighbouring blocks, Kaurihohore was purchased in 1857, Whau Whau in 1858, Ruatangata in 1861 and Te Tupua Apotu and Hikurangi in 1862.

In 1859, two young men, Alexander Lewis Meldrum and William Carruth were granted land in Kamo by the government. When they arrived they found Kamo to be a wooded plain surrounded by bush-covered hills. It is reputed that the two men tossed a coin to decide which side of the valley each would have. Mr Carruth ended up with the western block and Mr Meldrum the eastern section (on which coal was later found).

Around this time, the Three Mile Bush area was owned by the Maori Chief, William Pohe. In the 1880s, gum diggers settled up Three Mile Bush Road. The place became known, locally, as 'Rowdy Town' or 'Gum Town' right into the early 1900s. The Three Mile Bush area was recognised as containing fertile farmland, and this became its predominant land use. It is now characterised by stone walls made from volcanic rocks that were collected and cleared from the land to allow farming, with the earliest walls dating back to 1850. Many of these stone walls were built by the Dalmatians during World War I and the Depression, when work ran out on the gum fields.

The discovery of coal in the Whau Valley Stream by Jonny Rake, saw the beginning of coal mining in the Whangarei District. In 1865, the Whau Valley Coal mine opened, and ended up operating for three years. There were several subsequent attempts to re-open the Whau Valley coal mine, the last being in the 1940s.

Local legend credits the discovery of the Kamo mineral springs to James John Taylor who was digging a hole, one day, to bury a horse. While he may have discovered a spring at that time, the two main soda springs were marked on early survey maps as far back as 1857, and it is likely that the local Ngapuhi people used the waters prior to that.

The springs were opened to the public in 1894, when baths were built. It was claimed that the waters had valuable curative properties. In the early 1900s a hotel was built, and adjacent to that, a sanatorium.

The hotel was later destroyed by fire and the property was turned into a motor camp and hotels. In 1901, the Kamo Town Board district boundaries were extended to include this area, known as Springs Flat.

Following the arrival of other settlers in and around the Kamo area, a school was established in 1873 and Kamo's first church (Methodist) was built a few years later, in 1881.

Around this time, the government set about forming a road from Kamo, northwards. While excavations were taking place on Mr Meldrum's property, coal was discovered in April 1875. The Kamo Coal Mine opened and Kamo experienced booming growth with miners arriving, cottages and shops being built and roads constructed.

Mining continued, on and off, until 1955. During the mining years, and shortly afterwards, subsidence occurred numerous times. In 1977 a crown hole appeared, and in 1980 cracks began appearing in many properties. Following extensive testing, Whangarei District Council defined zones in which subsidence risk existed and put in place building restrictions allowing for differing degrees of risk.

The untapped resources of clay and easily accessible coal, in the Kamo area, led to the development of the Kamo Brick & Tile & Pottery Co. Ltd, in 1914. The brickworks went through many owners, name changes, upgrades and expansions. Production stopped in 1987, and in 1988 the land and building were taken over for commercial use.

Following the final closure of the mine in 1955, Kamo continued to progress, this time as a business, farming and residential area. In 1965, Kamo was amalgamated with Whangarei City County.

The Whau Valley Dam was commissioned by Whangarei District Council in 1967. It is an earth structure and supplies approximately 50-60 per cent of the water to the city water supply area, including Whangarei Heads.

Recently, State Highway 1 was re-routed to bypass Kamo Township. Though there were fears about the loss of traffic and business for local retailers, it also provided the opportunity to redesign the Kamo main street and capitalise on the village theme.

Today Kamo is a busy shopping centre and a suburb of Whangarei, yet it retains the essence of a village. Areas surrounding Kamo, such as Three Mile Bush, Whau Valley and Springs Flat are used primarily for farming and horticultural purposes, with many rural residential or 'lifestyle blocks'.

The District Plan has identified a number of historic buildings and trees, in the study area, for special protection from development.

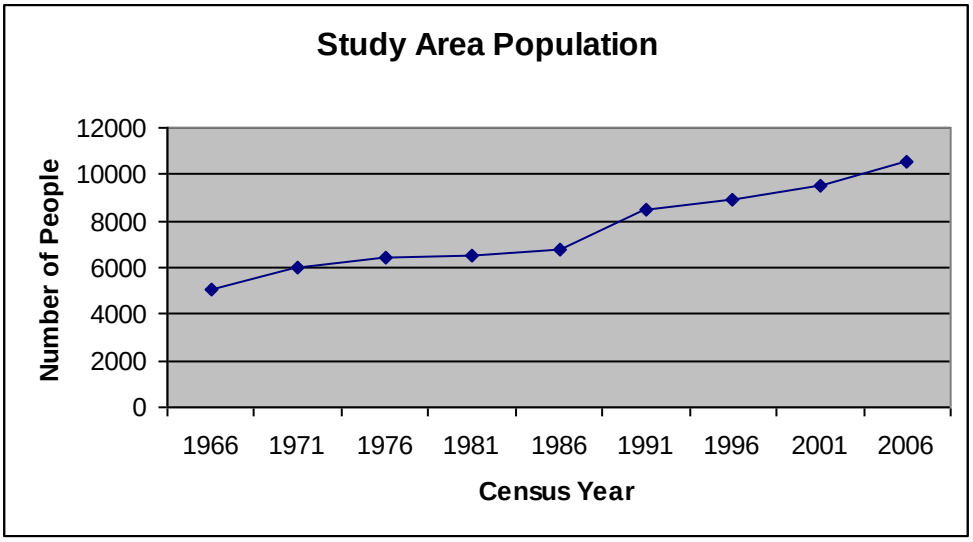
2.2.2 Population

The 2006 population of the wider Kamo area was 10,530 (Figure 2), with approximately 3,854 houses and an average household size of 2.43 persons.

The area has shown a steady rate of growth since 1966 (Figure 2). There was an 11 per cent increase in population between the 2001 and 2006 censuses for the Kamo area, which was a higher rate of growth than that of the entire Whangarei District, whose population increased by between two and three per cent over the same period.

While the majority of the population resides within the residential area around Kamo, a growing number of people are now living a more rural lifestyle in the Three Mile Bush and Springs Flat areas.

Figure 2 Kamo area population



Source: Statistics NZ 2006

2.2.3 Natural Features

a Topography and Landscape

The landscapes of the study area have important amenity values and contain areas of visual and ecological significance.

The study area is bounded, on its northern side, by the Hikurangi Swamp, and to the south by the Pukenui Forest. A number of volcanic cones form prominent features within the study area, these being Parakiore, Hurupaki and Ngararatunua cones. Parakiore dominates the northern portion of the study area, rising to 391 metres above sea level. Its eastern side has been modified by built development, but its northern and western faces appear more intact.

The landscape character of the study area is generally uniform, with the exception of the urban fringe. This uniformity reflects the dominance of the volcanic geology in this area. The topography is undulating, with few streams, and is characterised by scattered groups of trees, larger areas of bush and a concentration of horticultural shelterbelts and orchards at the centre of the study area.

According to Council's Landscape assessment (LA4, 1995), the study area is generally classified as a heritage landscape. However, when considering the study area in more detail (Landscape Assessment, 2004), it is considered that there are four distinct character areas:

- Ketenikau Urban Fringe
- Three Mile Bush Undulating Vegetated / Horticultural / Pastoral Mix
- Springs Flat Pastoral/Urban Fringe
- Whau Valley Vegetated/Pastoral Mix.

The visual quality, capability for visual absorption and opportunities and constraints for these four character areas are shown in the following table.

In summary:

- the topography of the area allows opportunities for residential and commercial/industrial use
- Parts of the area that contain sensitive environments, such as high-value landscapes and natural hazards, have been identified and need to be considered in planning for the area
- the Ketenikau and Springs Flat areas are considered to have the highest capability for visual absorption of development. However, they are currently also considered to have low visual quality
- the Three Mile Bush area is considered to have moderate-to-high capability for visual absorption of development and current visual quality, whereas the Whau Valley area is considered to be moderate in both factors.

b Land Capability

To enable an assessment of the versatility of the land for sustained production, and the total degree of physical limitation, soils are grouped into land use capability classes (LUC). The classes range from classes I to VIII. By way of explanation, this means that limitation is nil or negligible in Class I where soils are very productive, moving through to the extreme limitation in Class VIII, where soils are very unproductive, (Plan 5).

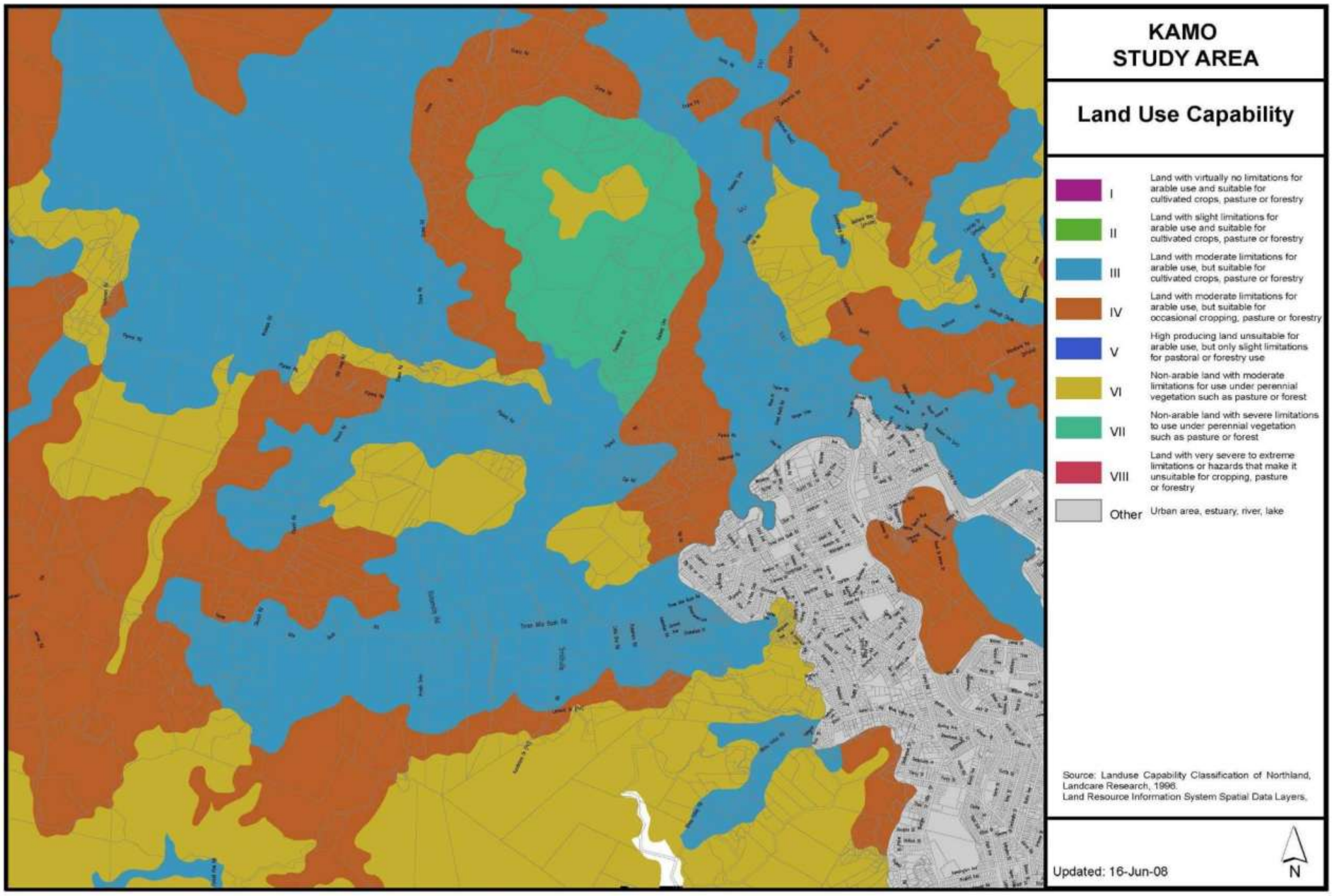
The soils of this study area are relatively productive (LUC 3-4), with the exception of the volcanic cones (LUC 6-7), which are less productive.

Areas such as Springs Flat and Whau Valley (LUC 3) are flat-to undulating and, in some cases, poorly drained and prone to occasional flooding. Soils include yellow brown earths, brown granular loams and clays and gley soils. They are suitable for land uses such as grazing, cropping and production forestry.

Gently rolling-to-strongly rolling areas include land around Three Mile Bush and Pipiwai Road (LUC 4). These areas contain brown and red loams and are suitable for most land uses.

The volcanic cones in the study area are classified as steep, hilly and mountainous terrain (LUC 6, 7). The soils are mainly yellow brown earths and are unsuitable for cropping. Production forestry or grazing may be suitable land uses here.

Figure 3 Land capability Classification



c Geology

The soils are, on the whole, a result of the weathering of the underlying (parent) rock. The parent material of Kamo is in several layers, the most predominant being the Kerikeri Volcanic group. This layer is typified by basalt lavas and scoria cones with some weathered dacite (another form of volcanic rock). Underlying the Kerikeri volcanics, and outcropping around its edges, are pockets of the Te Kuiti Group, which include the Ruatangata sandstone and Kamo Coal Measures. Rocks from the Northern Allochthon are present at the surface in the far east and far west of the study area. Other lithological groups found in the area are the Waipapa Group (shattered greywacke and argillites) and the soft alluvial sediments of the Holocene sediments.

Where the soils are a product of the weathering of the Kerikeri volcanics, there is quite a large variation in their potential to dispose of liquid effluent. Drainage is very good in areas underlain by scoria, but less efficient in areas where there are significant ash layers. In general, where the volcanics have weathered into silt loams, the effluent disposal is moderate-to-good. However, where the volcanics have weathered into clays, the potential for effluent disposal is very poor.

Of the Te Kuiti Group, Ruatangata sandstone, Kamo Coal Measures and Whangarei Limestone can be found in the study area. The Ruatangata sandstone weathers to clays and clay loams that provide a poor and moderate effluent disposal potential, respectively. Ruatangata sandstone is the least stable of the Te Kuiti Group, and although there are areas where the sandstone forms steep bluffs, there are others in which the sandstone has weathered and landslides have occurred.

The products of the Kamo Coal Measures are variable. In the Kamo area, clays are the most common and have a poor effluent disposal potential. The fireclays that underlie the coal seams provide a very significant unit in the coal measures. The fireclays are of sufficient quality for industrial use. However, they are also the cause of much of the mining subsidence in the area, where the pillars left in the mine to support the roof have actually punched through into the weaker underlying fireclay.

There are only two pockets of Whangarei Limestone outcropping in the Kamo area, both of which are very close to the border of the Tikipunga study area. Whangarei limestone weathers to a heavy clay, with any joints that form in the rock also tending to be infilled and coated with clay and silt soils. The infill can result from the weathering of the limestone, itself, or from the collapse of other, overlying sediments into the large fractures in the limestone.

The soils derived from the Northern Allochthon include clays and clay silt. These soils have a tendency to be poorly drained, and are also generally highly plastic and of low material shear strength. This is due to the shear fabric of the parent material being preserved in the soil mass, creating defects.

These soils have a very poor effluent disposal potential, particularly the clays. This is due to the low ability of the soil to take up the liquid that is introduced, and the ground may be further destabilised by the introduction of fluids.

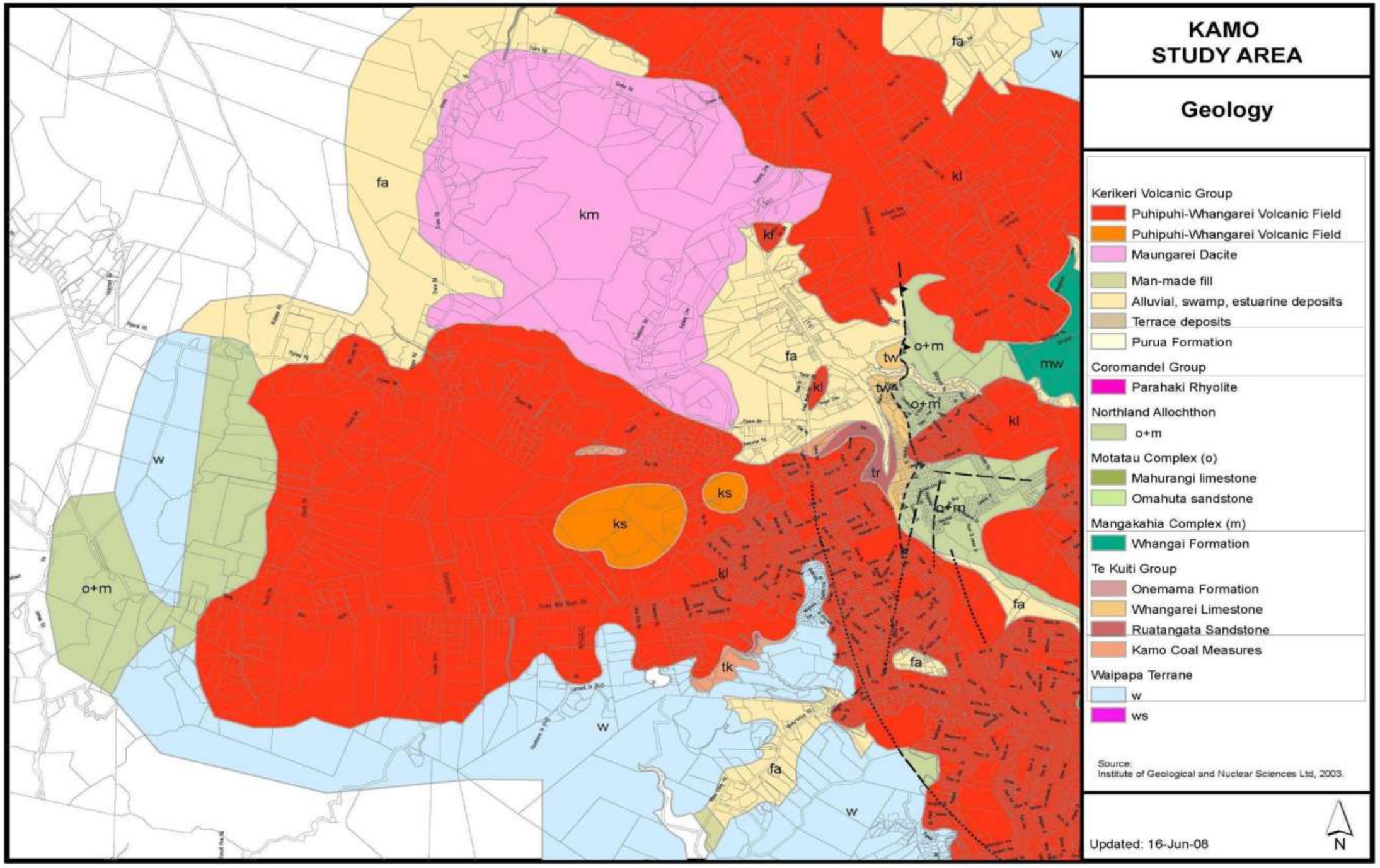
The strong shattered greywacke and argillites of the Waipapa Group outcrop in the south of the study area. The Waipapa Group weathers to a soil mass (or regolith) of very stiff-to-hard gravelly and clayey silts. The residual soil derived from these materials (typically very stiff, silty clays and clayey silts) tend to contain non-swelling clays (i.e. they are not subject to large changes in volume due to changes in moisture content). This, together with a relatively high-strength underlying rock mass, as well as groundwater that is usually deeper than five metres, means that the introduction of effluent should induce less slope instability problems than other lithologies.

The remaining soils in the area are Holocene alluvial sediments which are the result of estuarine and fluvial deposits during the Holocene age, and generally cover low-lying ground. The clays and clays loams that have developed from these, in the study area, have a poor effluent disposal potential.

A number of important geological sites and landforms exist in the study area (Figure 4). Most obvious are the volcanic cones, which include the Hurupaki Scoria Cone, Ngararatunua Volcanic Cone, Rawhitiroa Scoria Cone and Parakiore Dome.

Other important geological sites in the area are the Kamo Hot Springs and the Kamo Coalmine Relics.

Figure 4 Kamo Study Area – Geology



d Hydrology

The Northland Regional Council has identified an aquifer within the study area, which has a high actual or potential demand for water extraction. The term 'aquifer' comes from the Latin words aqua, meaning water, and ferre, meaning to bear, and is used to describe a porous geological formation that yields water.

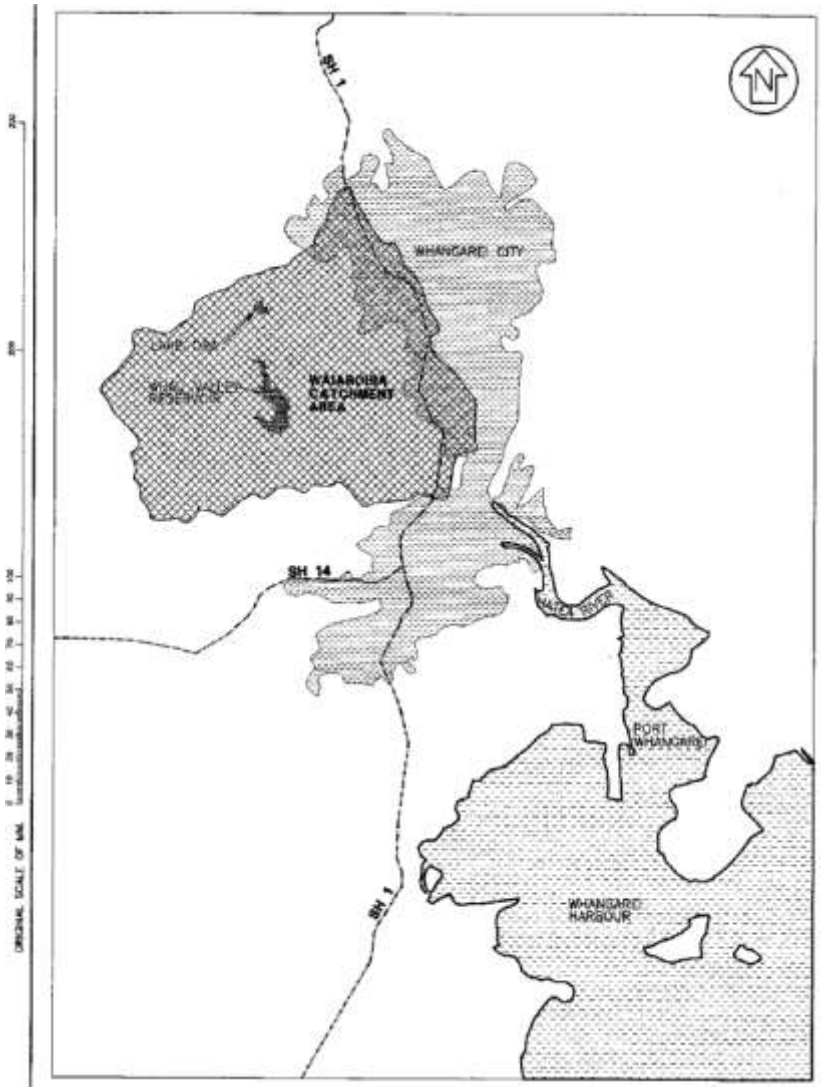
There are important considerations for development on and around this aquifer, particularly as there is potential for the aquifer to be contaminated by effluent disposal and for water extraction to exceed the recharge capacity of the aquifer.

There are two main stream catchments in the study area: the Waiarohia Stream and the Waitaua Stream.

The Waiarohia Stream Catchment (see Figure 5 below) is generally of natural morphology and is heavily vegetated with native bush. The catchment drains in a southerly direction before joining the Raumanga Stream and then discharging into the Hatea River.

The upper reaches of the Waiarohia Stream drain into the Whau Valley water supply reservoir. Lake Ora, located in the north of the catchment, is reported to provide little attenuation of flood flows during extreme storm events. The lake drains to the Waikahikatea Stream, a tributary of the Waiarohia Stream. A series of additional tributary stream channels contribute to the main Waiarohia Stream channel. These are generally located to the west of the stream and are generally of natural morphology and heavily vegetated with native bush. An additional natural stream channel is also to be found west of Fairway Drive.

Figure 5 Waiarohia Stream Catchment Drainage Plan



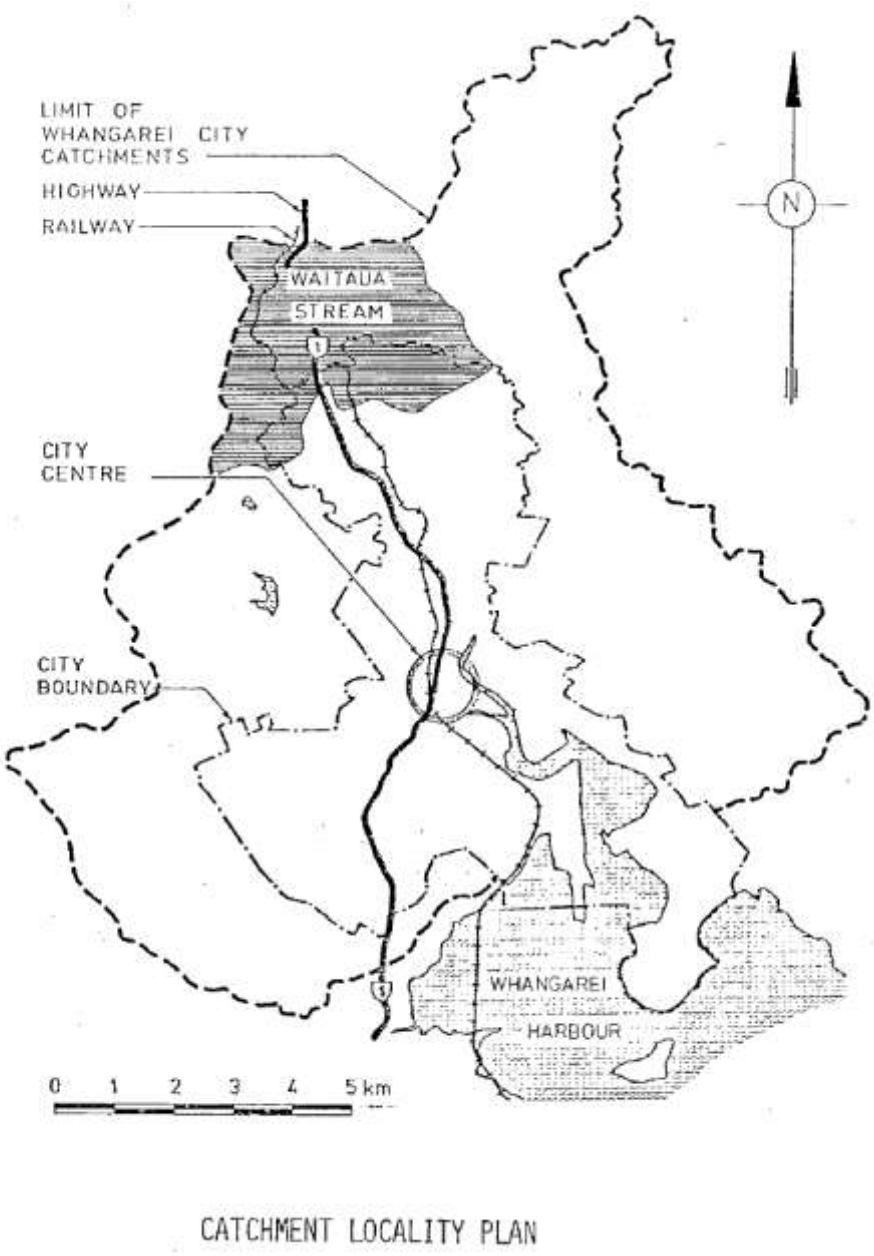
Source: Waiarohia Stream Catchment Drainage Plan, City Design, Dec 1998

In the Waiarohia Stream Catchment, the changes in land use that would promote erosion have already largely occurred. Therefore, additional residential development will only have a minor overall impact on the existing stream channel erosion. However, the retention of existing suitable vegetative cover along natural stream channels would ensure the continued protection of stream banks from erosion.

The planting of suitable protective vegetation cover in areas such as the main Waiarohia Stream, where the natural stream channel is currently lined with pasture, would allow protective vegetation to become established before any erosion problems develop.

The Waitaua Stream Catchment (see Figure 6 below) is predominantly rural. Considerable riparian vegetation remains along many of the catchment streams, particularly in the lower catchment and on the main Waitaua Stream.

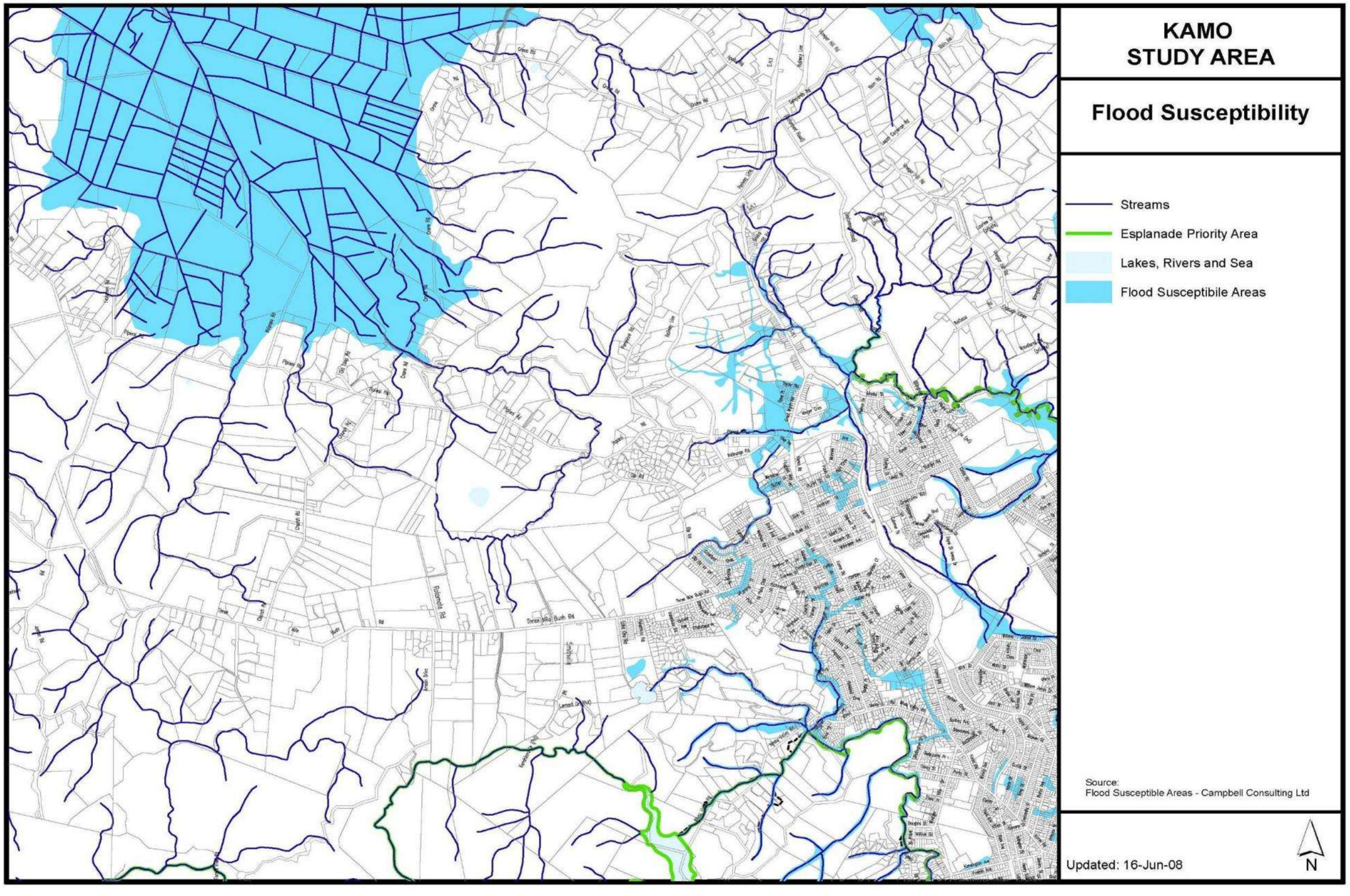
Figure 6 Waitaua Catchment Drainage Plan



Source: Waitaua Catchment Drainage Plan, Tonkin & Taylor Ltd, Sept 1995

Flooding has been reported, in the past, on industrial land adjacent to Waipanga and Pipiwai Roads, further north on residential properties at Taylor Street and Rose Place and in the vicinity of Whitelaw Place. These areas are shown on Council's planning maps as Flood Susceptible Areas, as noted in the following section of this report.

Figure 7 Kamo Study Area – Flood Susceptibility



There is quite a substantial area of undeveloped land zoned for industrial and residential land use within this catchment area, particularly in the Springs Flat area. Vacant industrial sites exist in the Pipiwai-Waipanga Road and Winger Crescent areas. Residential sites exist on potentially flood-prone land in the Rose Place area, and adjacent to both sides of the State Highway 1 on the northern edge of Kamo.

Many of these undeveloped sites are in potentially flood-prone areas and could involve stream channel improvements or filling of possible floodplain areas. In some areas, care will need to be taken to ensure that building floor levels are set above the 50-year return period flood level. While potential for urban development within Springs Flat exists, none of this development will have a significant effect on flood flows.

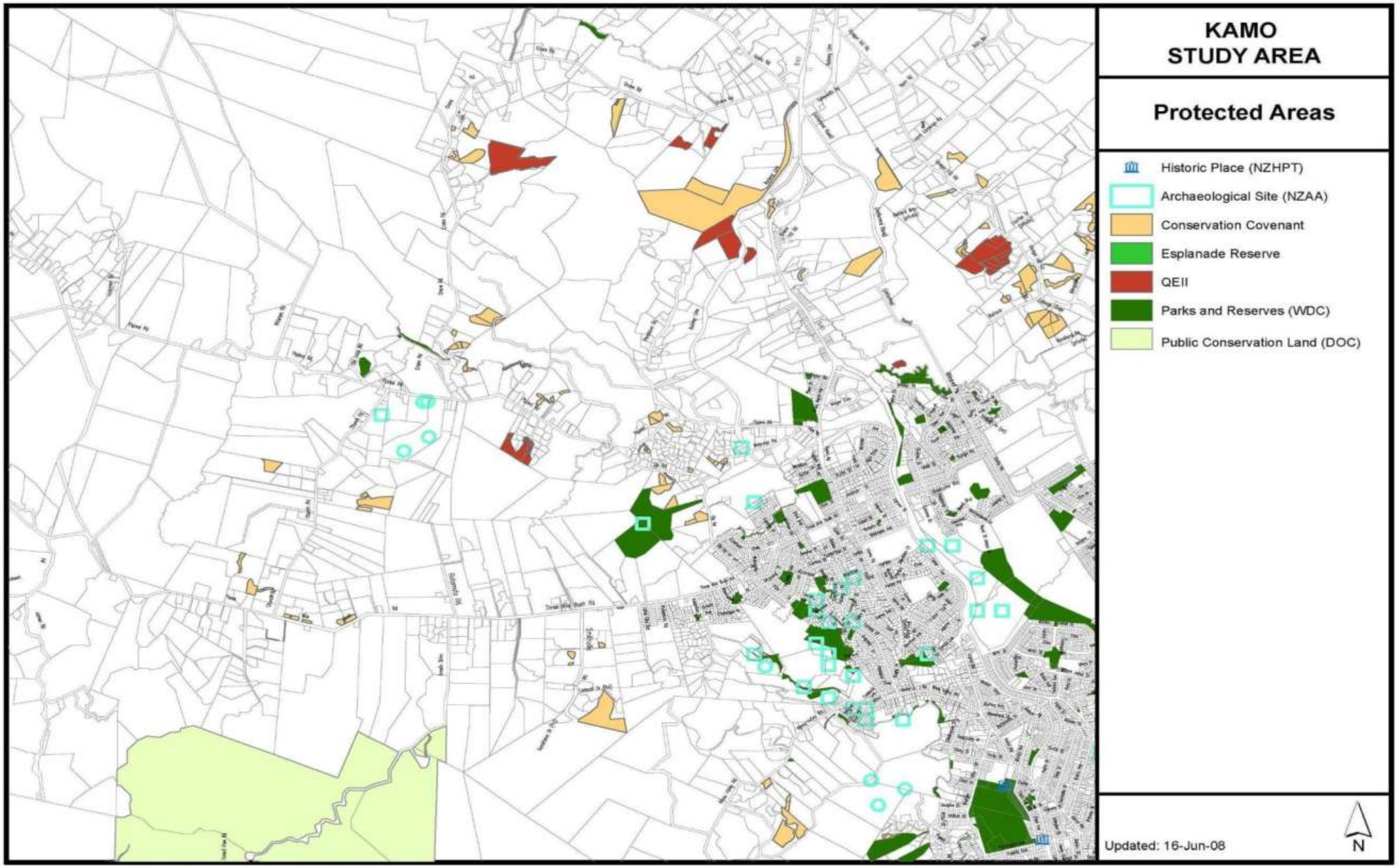
e Vegetation

The study area is characterised as a modified agricultural, residential and commercial landscape and has largely been cleared of native bush.

There are a few larger areas of native forest around the volcanic cones, as well as smaller pockets scattered around the area. The southern boundary of the study area borders the Western Hills Forest, which contains a large area of native forest.

The Parakiore Dome has areas containing exotic forestry plantations on its northern side.

Figure 5 Kamo Study Area – Protected Areas



t Ecology

Ecological areas have been identified as part of the Protected Natural Area Network. While the priority areas for protection are those containing volcanic broadleaf forests, freshwater wetlands, riverine flood forests, estuarine systems and areas of kiwi habitat, other habitats throughout the wider urban area are also recognised in the Natural Area study.

The aim of the Protected Natural Area Programme (PNAP) is to identify, through a process of field survey and evaluation, natural areas of significance throughout New Zealand, so as to retain the greatest possible diversity of landform and vegetation patterns (and thereby, habitats).

To achieve this, representative biological and landscape features that are common or extensive within an Ecological District are considered for protection, as well as those features that are special or unique.

The study area contains many important ecological areas and has Pukenui Forest on its southern boundary. A range of vegetation and habitat types exist throughout the study area, including mamaku fernland, mixed tairaire forests, wetlands, riverine forest and kahikatea-totara forest. Of particular interest is the unusual wetland situated in the volcanic cones on Rotomate Road.

These areas provide habitats for many threatened and common species of bird, fish, plant, invertebrate and reptile, including the North Island kiwi, New Zealand kingfisher, grey warbler, heron, eels and geckos.

This Structure Plan study area is in the Whangarei Ecological District, in which the following PNAP sites are found:

Site No	Site Name
06/152	Kauri School Bush
06/153	Vinegar Hill Bush
06/156	Mt Parakiore
06/159	Finlayson Stream
06/160	Church Road Wetland
06/161	Rotomate Road Volcanic Cones
06/162	Church Road Remnants
06/163	Hurupaki Cone
06/164	Lower Whau Valley Forest
06/165	Lake Ora
07/022	Pukenui Forest

2.2.4 Land Use and Zoning

The land use pattern of the study area is influenced by the topography, soil conditions, climate, proximity to Whangarei City and historical elements.

The zoning of the study area reflects current future land use, as shown on the map below.

Broadly, the land use/zoning pattern is characterised by:

- Residential development along Whau Valley Road, alongside Kamo Road and out to the west, and ribbon development along Great North Road in Springs Flat.
- Rural residential (lifestyle blocks) development on the periphery of the residential areas, including Springs Flat, Crane Road and Pipiwai Road, to the north, Three Mile Bush in the centre and Whau Valley to the south of the study area.
- Countryside development (farming, forestry, horticulture) on the outskirts of residential and rural residential areas.
- Commercial development in ‘Kamo Village’, smaller clusters of neighbourhood shops at Whau Valley traffic lights and individual shops, such as dairies.
- Industrial development at the north end of Kamo and into the Springs Flat area. There is vacant land zoned industrial that is yet to be developed in this area.

a Residential

There are two residential zonings or Environments in the study area:

- Living 1 Environment general urban areas, with a minimum lot size of 500m^2, where connected to reticulated sewerage.
- Living 3 Environment larger lot residential areas where development is restricted due to the physical nature of the land, a lack of infrastructure or because of landscape or other values of the area. Minimum lot sizes, here, are 2000m^2.

Residential development occurs on both sides of Kamo Road and out to the west, and in ribbon development along Great North Road in Springs Flat and Three Mile Bush Road.

Large lot residential (Living 3) is also provided for in the area. Those areas currently zoned Living 3 Environment occur along part of Pipiwai Road, Ketenikau Road (off Three Mile Bush Road) and Whau Valley Road.

It is difficult to define the extent of rural residential development, as there are many sites of a size that may be considered rural residential (i.e. less than 2 hectares), which are currently zoned rural. In particular, there are those areas around Springs Flat, Crane Road and Pipiwai Road to the north, Three Mile Bush in the centre and Whau Valley to the south of the study area.

b Retail/Commercial

There is one zone for retail and commercial operations in the study area:

- Business 3 the shopping centres outside the CBD, as well as commercial areas that are in close proximity to Living Environments. Minimum lot size, here, is 100m^2.

Kamo Village is the main shopping centre for this area, with over 100 shops. Kamo does not currently have a full scale supermarket (there is a Four Square), and this was raised as an issue during consultation.

The recent state highway bypass of Kamo Village has decreased the amount of through traffic. However, it has also provided an opportunity for the area to further develop the village theme.

Given the relative closeness of Whangarei City, it is envisioned that Kamo Village will be a suburban node, with a shopping centre complementary to the city.

The study area also contains minor retail areas at Whau Valley and Station Road, and individual neighbourhood shops.

c Light/Heavy Industry

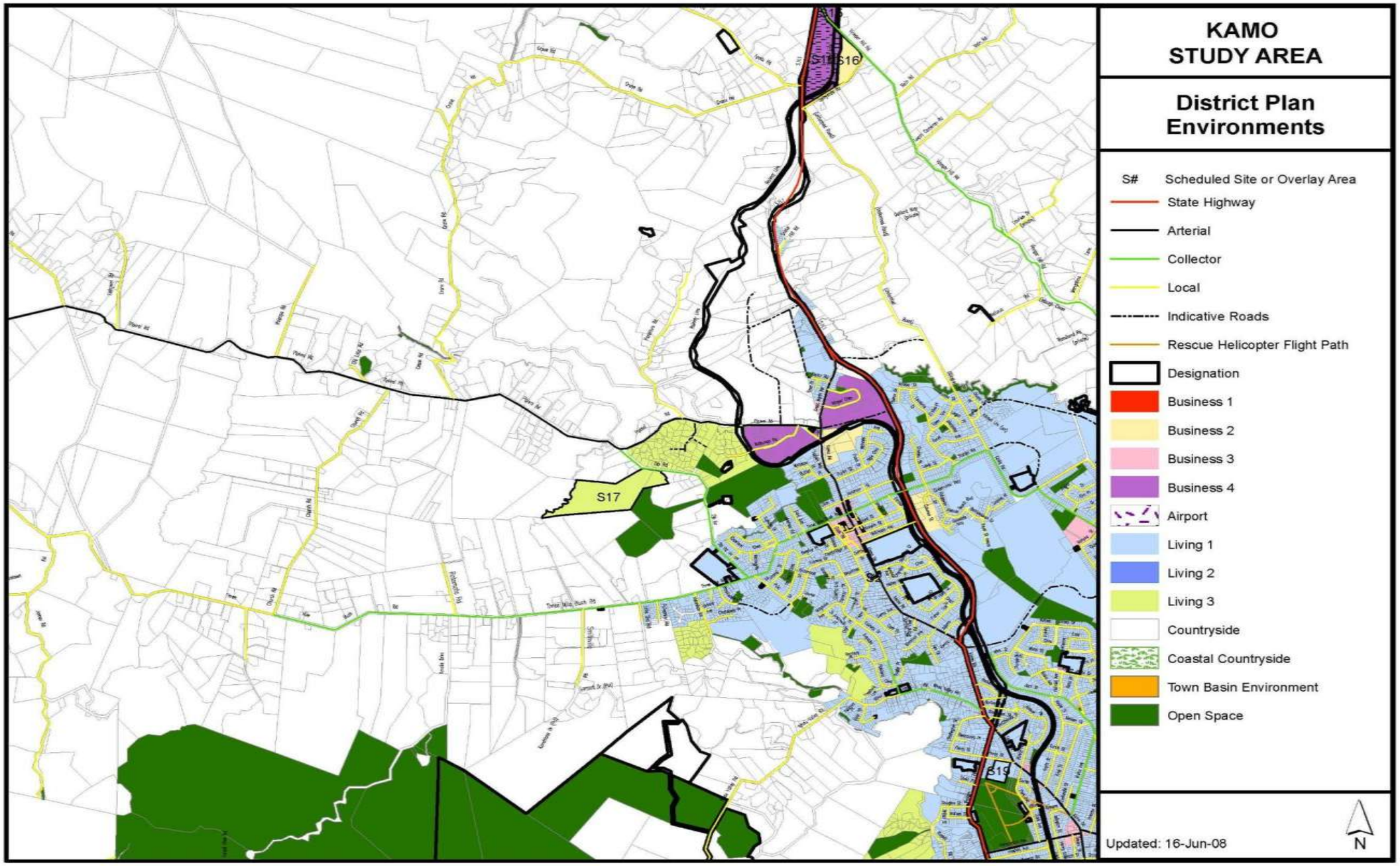
There are two zones applying to industry in the study area:

- Business 2 business areas that fringe the Central Business District and that include light industrial areas with a minimum lot size of 300m^2 and a limit of 300m^2 on any retail or office development.
- Business 4 covering heavy industrial areas with a minimum lot size of 1,000m^2.

There are two areas of light industrial land (Business 2) in the study area. The first is off Station Road, to the east of the Kamo Bypass. Some of this land is included in the Tikipunga, Glenbervie, Vinegar Hill Structure Plan. The second area is to the north of Kamo Village, on the eastern side of Kamo Road and the western side of State Highway 1 (Kamo Bypass).

The main heavier industrial area (Business 4) is situated to the north of Kamo Village and extends up Pipiwai Road and along Springs Flat. There are a number of industries operating in this area. However, there is also vacant land available to be developed.

Figure 9 Current District Plan zoning



d Social, Community and Iwi Facilities

There are six schools in the study area: Hurupaki Primary, Kamo Primary, Kamo Intermediate, Kamo High School, Kamo Christian College and Whangarei Adventist Christian School. There are also a number of pre-schools in the area, as well as two Kohanga Reo.

Apart from sports-related clubs, other community and social groups include the Kamo Club, Kamo Community Incorporated Society and a number of churches. There is also a library in Kamo and emergency services include a fire station and a police station.

The Ngararatunua Marae is a centre for Maori activity and includes a Kohanga Reo.

A medical centre is situated on Three Mile Bush Road, and many medical practitioners are established in the surrounding area, including dental surgeons, chiropractors, physiotherapists and two veterinary centres. A number of rest homes, some including private hospitals, are also to be found in the study area.

In summary, the area has a range of social, community and iwi facilities. Additional facilities of this nature could be accommodated in Kamo Village.

e Open Space and Recreation

There is a single recreation/conservation Environment in the study area:

- Open Space Environment, which covers land owned by Council, the Department of Conservation or other organisations, for recreational and conservation purposes.

The Kamo Sportspark is located off Three Mile Bush Rd, Lillian Street and Butler Street. The Sportspark contains cricket, rugby, soccer, tennis, bowls and summer rugby clubs. However, the shortage of available playing fields in the Kamo area was raised as an issue during consultation, and will be addressed in this Structure Plan.

There are a number of scenic and local-purpose reserves in this area that caters for passive recreation. However, better linkage between reserves was identified as an issue during consultation.

f Agriculture

There is a single rural Environment applying to the study area:

- Countryside Environment, which applies to the rural areas of the study area. Minimum lot size is 20 hectares for Controlled activity and 4 hectares for discretionary activities.

The Countryside Environment covers a large part of the study area and borders residential, commercial and industrial areas. Commercial agriculture occurs on the larger farms in the study area. Smaller farms serve as lifestyle blocks, though these may also operate small-scale farming. Horticultural production is limited.

g Resource Areas

A number of Resource Areas exist here, as classified under the District Plan. These are areas in which the land has special characteristics, such as flood susceptible areas, outstanding landscape areas, esplanade priority areas, mining hazard areas heritage trees and sites of significance to Maori.

The high value of particular local landscapes is reflected in their inclusion as Resource Areas in the Proposed District Plan. These include the following:

- an outstanding natural feature on Hurupaki Scoria Cone
- areas of notable landscape to the north of Whau Valley Rd and bordering the Western Hills forest.

Various flood susceptible areas that have been noted in the study area follow the major drainage paths and streams in the area. There is a large flood susceptible area identified to the north of the study area - the Hikurangi Swamp. The flood susceptible areas are largely unsuitable (without major works) for intensive urban development, in that they would be adversely affected by flooding or would affect flood paths.

Council has completed a review of some of the flood susceptible resource areas in the District Plan, with a number of extensions to the areas being proposed. In this study area, there are proposed extensions to the flood susceptible areas in Springs Flat, Pipiwai Rd, Whau Valley and near to Lake Ora in Three Mile Bush. These proposed new flood susceptible areas will be taken into consideration when considering appropriate future development, through the structure plan process, even though the areas have not yet been formally incorporated into the District Plan.

Esplanade Priority Areas identified in the area occur on the major streams, including the Mangaharuru, Waiarohia and Waitaua Streams. These areas are recognised in the District Plan as being of outstanding recreational and high ecological value and are therefore a priority to be protected by Council.

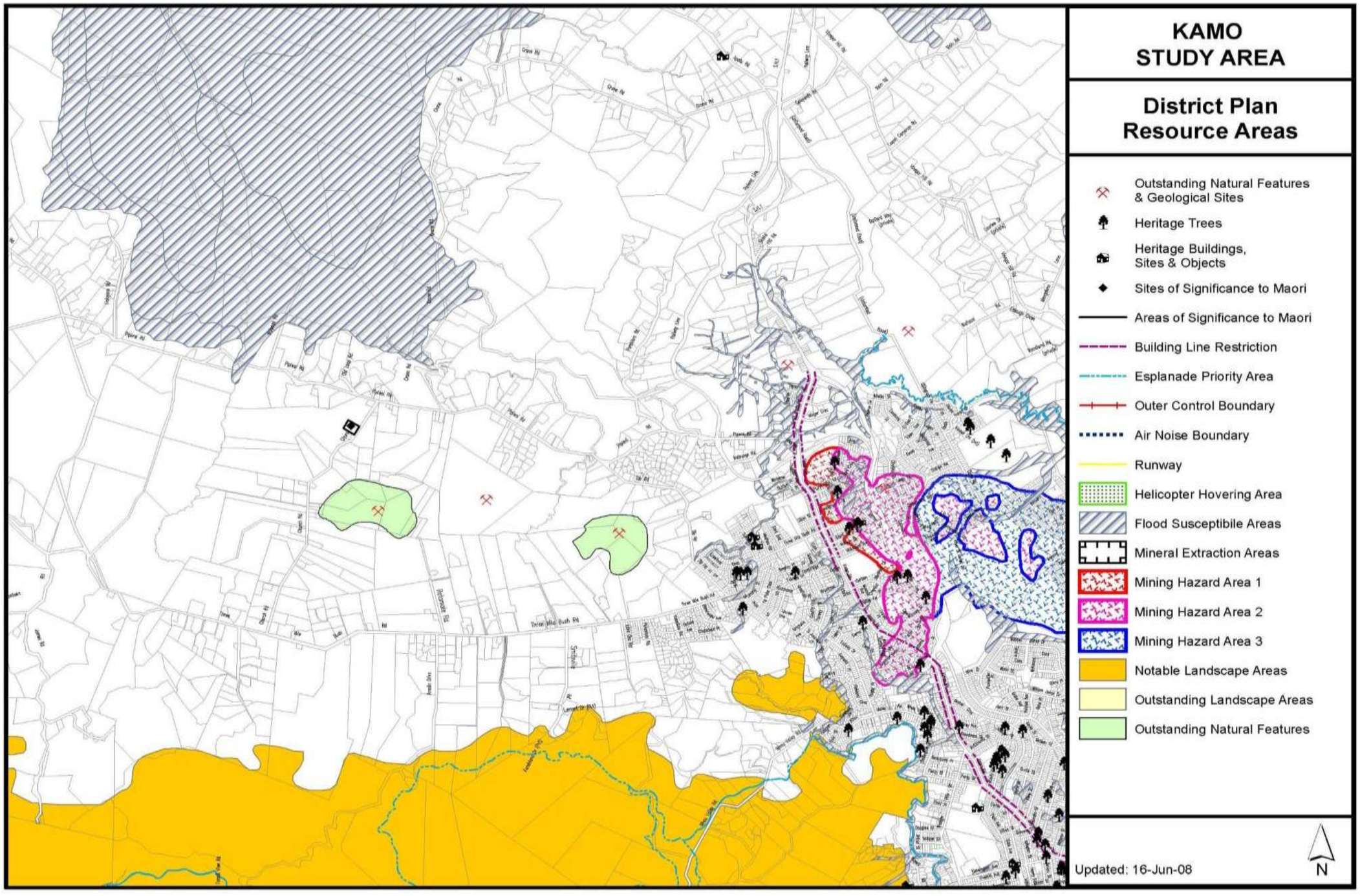
Due to the extensive mining operations carried out in the area from the 1860s to the 1940s, Mining Hazard Areas have been identified and graded for the likelihood of subsidence. The Proposed District Plan contains rules controlling development in these areas:

- Mining Hazard Area 1 is the most likely of the categories to subside, as it indicates the area in which there is a possibility of crown-holing and major subsidence due to less than a 10.t cover (t being seam thickness).
- Mining Hazard Area 2 indicates areas in which there is up to 100 metres of cover, where 'medium' subsidence is possible, where there has been 2-seam pillaring and in which greater than 100 metres of cover exists.
- Mining Hazard Area 3 indicates areas in which there is greater than 100 metres of cover. Although this is a low risk zone, it is possible for buildings to be affected by mining.

Another identified hazard in the area is land instability. However, these areas require revision and an instability study needs to be undertaken.

There are a few Historic Buildings and Trees in the study area, along with Sites of Significance to Maori that have been identified, as mentioned in the section on Historical Background.

Figure 10 Kamo Study Area – District Plan Resource Areas



h Designations

Land required for specific public works, such as schools, police stations and utilities, are identified in the District Plan as designations. All designations in the study area are listed in Appendix 6.3

2.2.5 Engineering Services and Infrastructure

a Water Supply

The Kamo township and immediate areas, including Whau Valley, have reticulated water supply. The Whangarei City water supply area has four river or spring intakes: Hatea River, Poroti, Maunu Springs and Whau Valley Dam. Council's water treatment plant and pumping station are also situated on Whau Valley Road.

Also situated within the study area are water reservoirs off Dip Road, Whau Valley Road and Three Mile Bush Road, as well as a pumping station and catchment off Waipanga Road.

b Sewerage

As for water supply, the Kamo township and immediate surrounds are connected to Council's wastewater system. The wastewater treatment plant is situated at Kioreroa Rd, south of Whangarei City.

c Stormwater

The stormwater lines for the study area are situated in the Kamo township and immediate surrounds, although they do not extend as far as water or sewage lines.

Catchment Management Plans for the study area, and the resulting recommendations for stormwater quality and flood protection measures, have been discussed in the previous section on Hydrology.

d Electricity and Gas

The main grid electricity supply for Northland originates at Henderson (West Auckland), from where it links to Marsden Point by 220kV lines. There are three points of supply in the Whangarei District: at Bream Bay, Kensington and Maungatapere.

Within the study area there is also a substation at Pipiwai Road (refer DNP 5 Designations, Appendix 3).

The natural gas main North Island pipeline from Wellington terminates at Kauri, north of Whangarei. It connects with a network of over 100 kilometres of mains in Whangarei City, Oakleigh and Marsden Point.

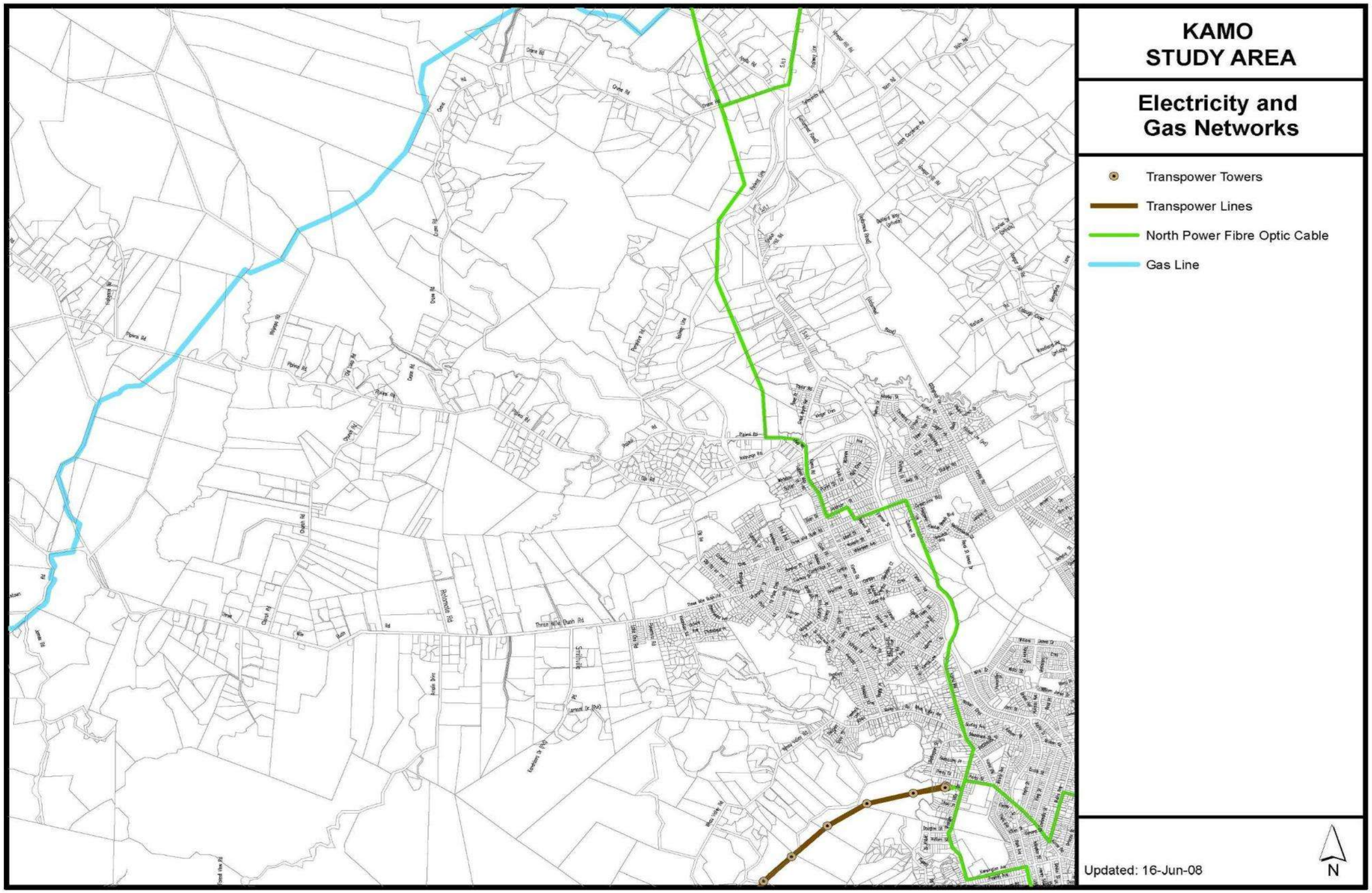
Power supply and gas reticulation traditionally follow development, and this is the case in the study area.

Figure 11 Kamo Study Area – Water Services

Figure 12 Kamo Study Area – Wastewater Services

Figure 13 Kamo Study Area – Stormwater Services

Figure 14 Kamo Study Area – Electricity and Gas Networks



e Telecommunications

Telecommunication services also traditionally follow development and demand, and in this respect the area is well catered for. Within the study area, there is an exchange on Station Road and a radio/telecommunication transmission site on Parakiore Road.

Telecom has advised it is expanding the ADSL (high-speed-internet or 'Jetstream') network in Northland. There is also a trend for increasing access to, and use of, wireless telecommunication services.

f Solid Waste

The majority of the study area has kerbside refuse and recycling collection. Council operates refuse transfer stations located at Hikurangi, Oakura, Tauraroa, Kokopu, Uretiti, Pipiwai, Pakotai and Ruatangata.

Council has established a new Urban Transfer Station at Kioreroa Road to service Whangarei City, with the intention of providing services focused on resource recovery to reduce residual waste to landfill. Currently, the residual waste is being carted to Auckland.

2.2.6 Transportation

a Roading

State Highway 1 runs through the study area. The Kamo Bypass has recently been assigned state highway status, and the old state highway, which runs through Kamo village, has reverted to a local road and is now classified as an arterial road. Pipiwai Road is another arterial route in the study area and local collector roads include Whau Valley Rd, the southern portion of Fairway Drive, Dip Road, Three Mile Bush Road and Station Road.

Capital works and maintenance programmes (including seal extensions, realignments, widening, rehabilitation of pavements and construction of footpaths) are undertaken on an ongoing basis.

The roading network is considered adequate to meet present functional needs, but there has been concern expressed, during consultation, about traffic congestion in residential areas. There is also concern that a lot of traffic is using residential streets as main routes, when those routes have not been designed to cope with this capacity of traffic. Examples of this would be Fairway Drive, Richmond Rd, Te Paka and Te Puia Crescent. Residents also expressed concern that there are a number of cul-de-sac developments with no linkages. This forces all traffic onto roads such as Three Mile Bush Road.

b Public Transport

The Whangarei City Bus route includes regular buses to and from the city, Whangarei Hospital and suburbs including Whau Valley, Kamo East and West.

c Cycleways

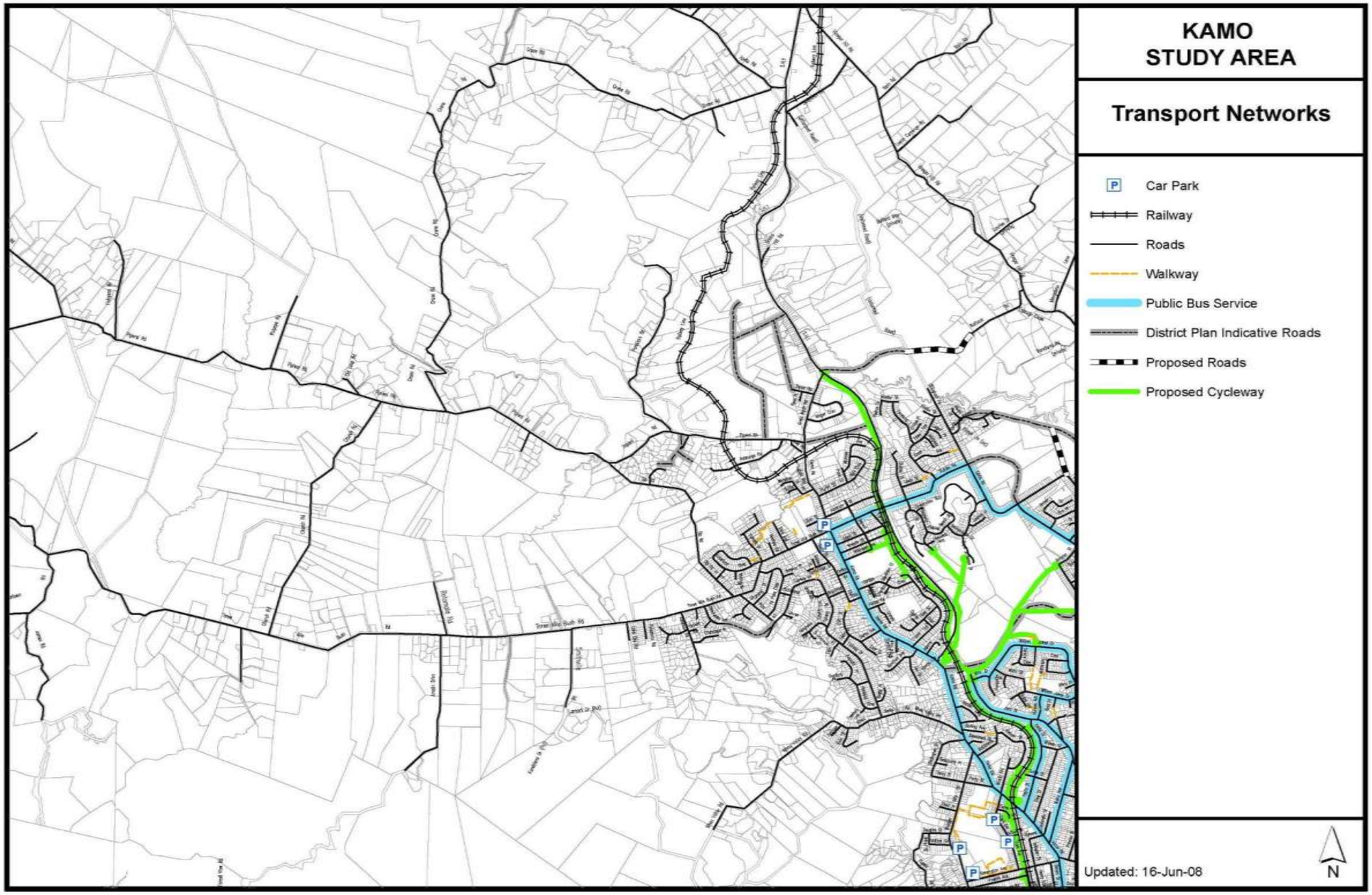
Existing cycle routes in the study area are along Kamo Road between Western Hills Drive and Clark Road.

Council's Proposed Strategy for Bicycle Facilities, 1999, shows proposed cycleways in the study area as follows: north along Kamo Rd, Three Mile Bush Rd, Station Road and alongside the railway line into the city.

d Rail Line

The country's main north/south railway line runs through the study area. The railway network does not operate passenger services; rather it carries freight such as logs, wood chips and milk products.

Figure 15 Kamo Study Area – Transport Networks



2.2.7 Land Availability

Within the study area there is sufficient land to accommodate urban growth for at least 30 years. However, in order to plan for growth, it is important to indicate the patterns of that expected growth.

The development capacity for parts of the study area has been determined using Statistics NZ meshblock boundaries, which do not fully match the study area boundaries. For the full reports refer to: Asset Management Growth Study: Part XVII: Whau Valley Area, Kamo East, Kamo West, Springs Flat, Three Mile Bush.

Overall, there is the potential for over five thousand allotments in the study area, if all land is subdivided to its minimum allowable size in each land use zone. However, location of this land and market trends have shown that it is not always desirable to develop in those areas, hence the need to engage communities in this process.

2.2.8 Summary of Development Issues

The following have been identified as issues for the study area through community consultation and analysis of background information:

There is the potential for further subdivision to lead to contamination of the Three Mile Bush aquifer. Therefore, there is a need for Council to work with the Northland Regional Council to manage potential adverse effects on the aquifer. This may include subdivision design guidelines and site-specific assessments for sewage disposal. Improved accessibility to, and through, the Kamo area is needed. This can be achieved by creating an indicative roading network that provides through routes for traffic as subdivision occurs. It is also important to ensure that not all subdivisions access the roading network via cul-de-sacs or private roads. Given the growth in rural residential-type development, there is the potential for loss of rural character and economic sustainability of farming units. By setting a boundary to rural residential development, rural character and farming units of sufficient economic size can be retained.

As previously-classified rural areas develop through rural residential-type development, the level of services provided needs to be re-evaluated. Recognition of a rural residential zone will help to establish appropriate service levels for the area, for example, the provision of footpaths, safe and efficient speed limits and parks.

The Kamo area has a number of unique and special features. As the area develops, it is important that these features are protected. Such features include geological features like volcanic cones, historical and cultural features such as stone walls, and natural features such as existing native bush.

The re-routing of the state highway onto the Kamo Bypass has led to a desire to maintain a viable commercial centre at Kamo, as well as the desire to create an identity for Kamo Village. Now that the road running through the Kamo shopping centre is under the control of Council, a Mainstreet Programme can be undertaken to achieve a distinct identity that tries to ensure that the centre remains commercially viable.

Parts of the study area adjoin Western Hills/Pukenui Forest and Whau Valley Reservoir, and there is potential for impacts on these important natural environments from adjacent or nearby development. The use of land buffers is an important tool in addressing this.

There is also an opportunity to develop Kamo Village as a distinct commercial hub. Main street development, as well as re-zoning of new commercial and higher density residential areas, will allow for this.

The need for pedestrian and cycle links was also raised as an issue during consultation. Investigations are required with regard to forming a network of walkway and cycleways that link attractions in the study area, and link to other suburbs and Whangarei City.

3 Development Strategy

3.1 Development Goals and Objectives

The recommendations conveyed as part of the Urban Growth Strategy have formed the basis for the urban structure plans. The Urban Growth Strategy identifies 16 Key Issues that require particular attention to achieve the vision for Whangarei. These issues have been translated into specific objectives that will need to be accomplished in order to reach this vision. The objectives are supported by a range of policies and implementation methods that put these policies into action. Appendix 4 contains the entire list of objectives and policies.

Strategic issues for each of the Structure Plan areas were identified in the Urban Growth Strategy. The following list shows the strategic objectives that apply to the Kamo study area in particular, and presents the relevant policies.

The characteristic amenity values and the identity of each locality are maintained and enhanced:

- to ensure that changes to urban form are compatible with the character, amenity and identity of the surrounding environment.

Accessible and convenient suburban centres are provided:

- to ensure suburban centres are accessible and convenient without detracting from the central business district.

Establish, maintain and enhance a safe and efficient road network:

- to reduce conflicts between heavy vehicles and other users of the roading network
- to continue to develop a safe and efficient roading network to meet the demands of urban development
- to minimise the effects of land use and subdivision on the safety and efficiency of the roading network
- to ensure adequate provision of parking in the central business district and in suburban shopping centres.

Public transport, pedestrian walkways and cycleways are provided, maintained and enhanced:

- to ensure that safe and effective cycleways are provided within the city, linking to - and between - suburbs
- to promote, develop and improve pedestrian walkways within urban areas
- to encourage the further development of public transport services.

The provision of infrastructural services to existing and newly-urbanised areas in an efficient and effective manner:

- to maximise development potential through the efficient provision of upgraded or new infrastructural services
- to avoid damaging environmental resources through ineffective, or lack of, infrastructural services
- To provide infrastructure in a way, and as necessary, to ensure the safety and wellbeing of the community.

The risk associated with natural hazards is not increased by urban development:

- to identify areas subject to natural hazards where urban development is likely to occur
- to mitigate, where possible, the effects of urban development on the risk of natural hazards occurring•the loss of pr

The effects of urban-type subdivision on rural character are avoided, remedied or mitigated:

- to recognise the value of productive soils and economic farming units to the District's economy
- to minimise the effects of urban-type subdivision on rural amenity
- to create a new zone for rural residential use.

Avoid conflict between incompatible land use activities as a result of subdivision and urban development:

- ensure that subdivision development is located and designed to reduce the potential for conflicts with the effects of existing activities
- to facilitate the separation of incompatible land uses through the location of District Plan Environments and Resource Areas, and specific requirements of subdivision and land use activities, e.g. separation distances.

The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna.

- to protect significant indigenous vegetation and significant habitats of indigenous fauna from the effects of urbanisation
- to ensure the protection of the life-supporting capacity of ecosystems through avoiding, remedying or mitigating adverse effects.

Sufficient open space is provided to meet community, conservation and recreational needs:

- to provide sufficient open space to meet community, conservation and recreational needs
- to ensure linkages are created between areas of existing open space and any new areas created.

Form a partnership with Tangata Whenua that enables effective participation by Tangata Whenua in planning processes:

- to establish consultation protocols with Tangata Whenua which are agreed to by all parties
- to improve the relationship between Council and Tangata Whenua.

The prevention of the degradation and loss of historic and cultural sites of significance from urban development:

- to prevent urban development occurring in locations, or in a manner, that will have adverse effects on sites of significance to Tangata Whenua. To avoid, remedy or mitigate the adverse effects of urban development on heritage areas significant to Maori and on Sites of Significance to Maori
- to encourage the development of a procedure for the identification and recognition of sites of cultural significance to Tangata Whenua
- to protect historic places, sites (including archaeological sites), buildings and trees from the adverse effects of urban development and subdivision.

Access to recreational, artistic and cultural opportunities is enhanced as a result of urban growth:

- to encourage the provision of education and employment opportunities
- to encourage the provision of recreational, artistic and cultural opportunities.

3.2 Strategic Options

Council has a legal responsibility to manage future growth and development of the District, and it has several tools at its disposal with which to do this. These are:

- develop plans and policies to guide development that maximises quality of life and minimises impact on neighbours and the environment
- enact subdivision regulations that control the specifics of section sizes and layout, guide provision of public infrastructure, and ensure the health and safety of the District's residents and businesses
- do nothing; rather allow each individual a free hand in determining what, where and when development takes place.

Council has chosen to develop plans such as this one, in combination with subdivision regulations, in the recognition that the private market serves the District in providing living and job opportunities to its citizens. Such policy documents as this Structure Plan, along with other policy plans, facilitate:

- co-ordination of development, over time, to sustain the District's unique identity, economy and neighbourhoods
- the planning of efficient investment of the public's resources for new infrastructure
- a degree of predictability for residents and developers as they make location and investment decisions, and
- the participation of citizens in their government's decision-making.

This plan has been prepared to create a better living environment for you the residents of Whangarei District. The following sections of this reports contains detailed explanation of proposed changes for this study area and the rationale behind each proposals.

3.3 Spatial Development Strategy

The overall proposed spatial strategy is based on the following broad directions:

- providing a progression of living environments, beginning with high-density urban areas on the commercial fringe, then leading to medium density urban areas and then to rural residential zoning on the fringes of the urban area, and retain rural zoning beyond the rural residential zone
- recognising that there need to be restrictions on urban and rural residential development in sensitive ecological, geological and landscape areas
- recognising that there need to be restrictions on urban, rural residential and commercial development in areas subject to natural and man-made hazards such as mining hazard zones, instability areas, flood prone areas and contaminated sites
- developing the Kamo Shopping Centre as a suburban node, by allowing for more intensive residential development, linkages to the CBD via an efficient roading network and an effective public transport system
- providing for a network of pedestrian and cycle links throughout the study area, and to surrounding suburbs and the city
- providing for reserves to meet different recreation needs, such as neighbourhood parks, sport grounds and esplanade reserves, and ensuring linkages are created between these areas.

4 Land Use Proposals.

The structure plan proposals discussed in the following sections of this report reflect the views of the community and Iwi, as gained from consultation meetings held in the study area. Residents' views were collated and analysed by technical experts from relevant departments of Council for feasibility and funding perspective and the possible prioritising of potential development activities.

All the land use proposals are referenced on the Land Use Proposal map (Figure 18). The following sections will be a brief summary of proposals as most of the issues have been discussed elsewhere in this report.

4.1 Proposed Roading Network.

Council considers that an efficient roading network is vital to facilitate the economic and social development of a community. Population growth brings about more economic activities, with the need to link communities with their work and play places by an efficient road network becoming imperative. The Kamo area has a mixture of land use activities ranging through residential, business, agricultural and quarrying activities. Most of these activities are historical and are scattered throughout the study area.

Kamo Road has been downgraded to a local arterial road by the creation of the Kamo Bypass, some time ago. Stage II of the bypass is yet to be completed. Council has also identified the route for Spedding Road to follow and connect with the Stage II of the bypass.. This route is identified as an indicative road in the Operative District Plan.

The roading network in Kamo is considered to be adequate for current needs and those of the foreseeable future. Therefore, no new roads are proposed for this area other than the existing indicative roads, as identified in the Operative District Plan. These will connect to the proposed roads in the Tikipunga/Vinegar Hill Structure Plan. These indicative roads are at Springs Flat and are intended to service the proposed new industrial areas, as proposed in this Structure Plan.

As development takes place in the area, it is proposed that Kamo Road be redesigned to calm traffic as commercial activities increase at Kamo shopping centre. It is also proposed to widen Clark's Road as a shopping centre bypass for vehicles, leading west to Three Mile Bush Road so as to accommodate extra traffic movements likely to be generated by the proposed new residential and business development along the road.

A number of stub roads feed into Three Mile Road, Dip Road and Pipiwai Road at short intervals. The number, location and design of some of these road intersections raise some issues with visibility, and therefore the need for their upgrade.

The rapid development of rural residential activities (lifestyle blocks) on Three Mile Bush Road has put pressure on this road which has a narrow carriageway.

The favourable landscape view in this area has generated high demand and has helped to create what is now the fastest growing area in Whangarei. This unprecedented growth has not been matched with infrastructure provision and has resulted in bottlenecks. It is important, therefore, that the roading network in this area, along with other services, be improved to facilitate future development and improve safe and fast traffic flow.

In consideration of the potential future business and residential development in the Kamo area, the following roading network and upgrades are proposed:

- widen Clarks Road and divert through traffic off the shopping centre
- upgrade stub road intersections with Three Mile Bush Road, and improve visibility at these intersections
- improve visibility at several intersections on Pipiwai Road
- redesign Kamo Road at the shopping centre
- create a service road on Kamo Springs, off Pipiwai Road
- create a major controlled intersection at Great North Road and State Highway 1 to link the east of Kamo.

The proposed road network and upgrades are intended to improve traffic flow on local roads and also create another road, to the west, in addition to Station Road.

4.2 Extension of Commercial Zoning (Business 3) at Kamo Shopping Centre

Kamo village has a relatively large commercial area where almost all land is fully developed and utilised. There are about one hundred retail outlets and light industrial sites at Kamo, although there are no large retail shops in the area.

It is proposed to extend the commercial area at Kamo by incorporating land immediately to the west and eastern sides of Kamo Road, north of the village centre. The total area of the land to be zoned is five hectares. Some of this land, although still zoned for residential activities, is already used for commercial activities, e.g., the fire station, Northlaw and the Kamo Club on Lilian Street and Meldrum Street, respectively. This proposal will provide for a sizable block of land that can allow for the establishment of large retail outlets within walking distance of a high-density residential area. This is considered to be appropriate, as it will ease pressure on roads leading to the town centre when residents do their shopping locally.

It is also proposed to encourage traditional light industrial activities with poor visual amenities to relocate to a newly-proposed light industrial zone (Business 2) on Springs Flat off Pipiwai Road. This will free up more land for retail and other service activities at the shopping centre, and also give Council an opportunity to impose design controls on new business to improve on visual amenities, consistent with suburban shopping areas.

The proposed development meets the criteria for contiguous development, as it seeks to create a typical precinct of commercial activities as a continuation of the existing development within residential areas. It also provides for the redevelopment of the shopping centre to improve on traffic parking, visual amenities and landscaping.

4.3 Creation of Light Industrial (Business 2) Zoning at Springs Flat off Pipiwai Road

This area is located north of Kamo on what is known as Springs Flat. The land is accessed off Pipiwai Road and Great North Road. The land measures 22 hectares. The land is currently zoned Countryside and the railway line runs to the east, forming a natural boundary before land rises steeply up the hill. Most of this land is currently used for grazing, with one agricultural equipment sales business, two childcare facilities and a show home business. These are located on Pipiwai Road.

The local landform is a flat terrain with an underlying material of alluvial swamp deposits with shallow shingle profile. Because of its flatness, the land is not subject to earth movement, although it is susceptible to flooding.

It is proposed to rezone some of this land to light industrial activities (Business 2) to provide for the growing community in this area. This will include land currently zoned Countryside and a small Business 3 area. This proposal will complement Kamo Shopping Centre, as well as the heavy industrial zone located within the vicinity of this area. The proposed land use will be light industries and retail services. Light industrial activities will be encouraged to relocate from Kamo shopping centre and establish here. This will take heavy trucks away from the main village centre.

This proposal meets the criteria for a contiguous and transitional development, as this land is in proximity with other industrial land on Pipiwai Road and Great North Road. It is also located near major thoroughfares and the railway line and is close to the fast-growing residential development on Pipiwai Road, as well as Crane Road.

4.4 Creation of High Density Residential (Living 2) at Kamo

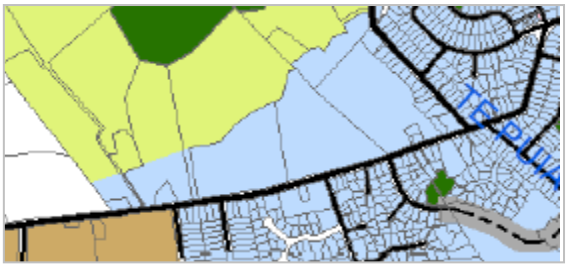
It is proposed to create a high density residential development around the expanded Kamo shopping centre. This is infill development that is intended to make use of the existing infrastructure and provide for high density residential redevelopment within walking distance of services.

This zoning will allow for up to two additional sections on an original quarter acre section. The existing infrastructure (sewerage, water and roading) is able to accommodate this further development, with no additional cost.

This is considered to be appropriate, as it provides for compact accommodation close to services, thereby reducing dependency on vehicles.

4.5 Extension of Living 1 on Three Mile Bush Road

This area refers to land bounded by Three Mile Bush Road, the Hurupaki scoria volcanic cone and Hurupaki School. It measures 17 hectares in area. This land is currently zoned Countryside and is used for grazing.

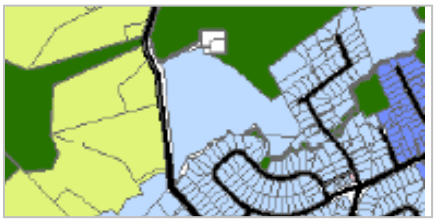


The land form of this strip of land is rolling terrain with underlying material of Whangarei volcanic soils. The risk of landslides is low in this area. Soils have a deep profile with good drainage.

Although the land has good physical characteristics for agricultural production, its size and location does not allow for a viable farming enterprise. It is a strip of land between a road, on one side and the proposed Living 3. Open space (cone) is further up the hill. The proposed residential development is the natural expansion of the built-up area of the city, as it is contiguous with existing development on the southern side of the road. The area has a good road frontage, with access. Although the main sewer and water lines run along Three Mile Bush Road, their capacity is limited to the point that a major upgrade will be required for this development to occur, together with other proposals on Lake Ora Road and Dip Road.

4.6 Extension of Living 1 on Dip Road

This land is located on Dip Road, to the east. It is a small, bare piece of land with rolling terrain, and is situated on a hill side with an underlying material of volcanic origins. The risk of erosion and landslip is low. It is currently zoned Countryside and measures seven hectares.



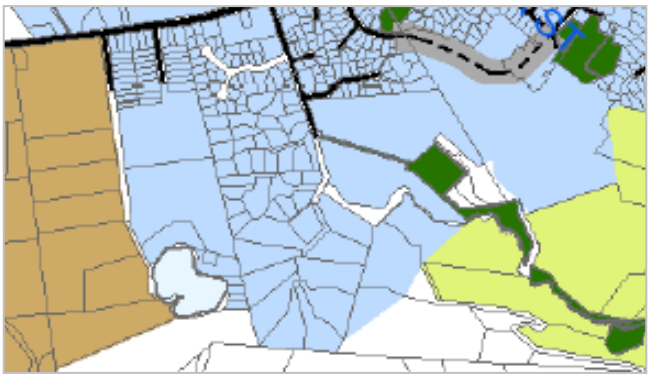
This proposal meets the criteria for contiguous and infill development. It is located next to a well-established residential zone, open space and lifestyle development, on the other side. It is currently an unproductive isolated pocket of land in the middle of a residential development.

This area is easily accessed from Dip Road, and a water reservoir is located at the top of the hill. Sewer lines can be extended to this area with minimum effort.

4.7 Extension of Living 1 on Lake Ora Road

This land is located on the eastern side of Lake Ora Road behind the existing Maori settlement, and includes some land currently zoned Living 3 and Countryside. It measures 32 hectares in area.

The terrain is relatively flat with deep volcanic soils. Some parts of this land are extensively developed with lifestyle development. It is proposed to allow for higher-density residential development in this area. This proposal meets the criteria for contiguous development, as it seeks to provide further housing development in proximity to similar development. The area is already serviced with water, sewerage and a good network of local roads. An upgrade of these services would be required in order to accommodate additional development.

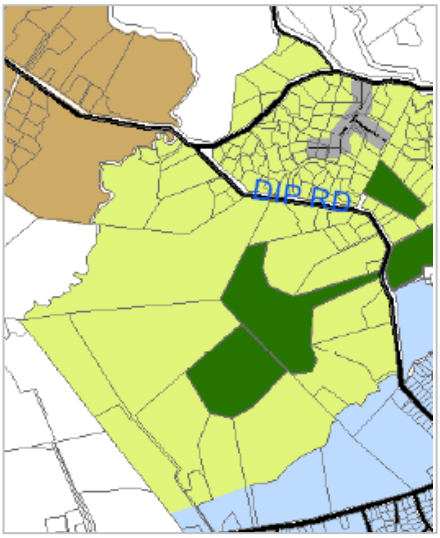


4.8 Extension of Living 3 at Whau Valley and Pipiwai Road Hurupaki cone

These are small pockets of land in Whau Valley and Pipiwai Road adjacent to the existing Living 3 development. In Whau Valley, it is proposed to extend Living 3 on the ridge to include 22 hectares of adjacent land, thus consolidating development. The current zoning of this land is Countryside and it is situated between the main residential development (Living 1) and Living 3.

On Pipiwai Road, it is proposed to incorporate a piece of land between the golf course, Pipiwai Road and Parakiore Road. This is a small piece of land (12 hectares) that can integrate with the main lifestyle development across Pipiwai Road.

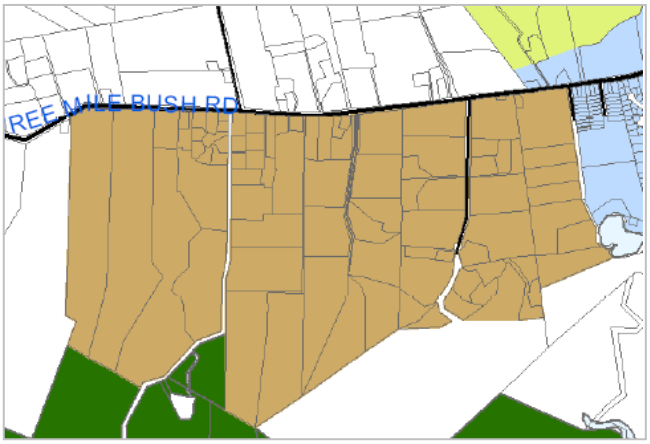
On Hurupaki cone, it is proposed to ring fence the protected heritage cone by creating a low density residential development around it as a transition from high density development in Kamo. The total area is 68 hectares. This proposed rezoning will prevent further development around this area and also allow the larger lots to act as a buffer zone to the protected cone. This is considered appropriate, as it is an extension of a well-developed Living 3 area on Dip Road and Pipiwai Road.



These proposals meet the criteria for contiguous development, as they seek to incorporate neighbouring land into the main land use pattern of the area. The soils on all three pieces of land are derived from volcanic activity and are of deep and free-draining profiles capable of sustaining on-site effluent disposal systems.

4.9 Creation of Rural Residential on Three Mile Bush Road

The land is located on the southern side of Three Mile bush Road, from Lake Ora Road to near Palm Grove. Pukenui Forest ridge forms the natural southern boundary. The total area is 251 hectares. This land is endowed with rich volcanic soils with a rolling terrain. Land stability is good, as is soil drainage.



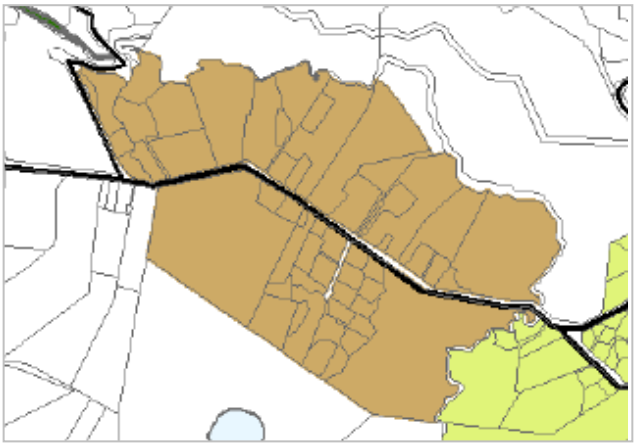
A significant number of lifestyle blocks exist on the town side, with more horticultural and agricultural activities progressing towards the west.

In recognition of the community desire to establish lifestyle blocks in Kamo area, it is proposed to establish a distinctive community of lifestyle development in this area, which has been identified as having a land form capable of absorbing more development with minimum impact, if design controls are imposed, on new development.

With the improvement of Three Mile Bush Road, additional traffic could be accommodated. The soils are capable of sustaining efficient effluent disposal systems with minimal impacts on the environment.

4.10 Creation of Rural Residential on Pipiwai Road

This is a small piece of land, located on both sides of Pipiwai Road from its intersection with Dip Road. The total area is 89 hectares. The terrain is relatively flat with a few waterways draining north west towards Hikurangi Swamp. It has volcanic soils with deep, free-draining profiles.

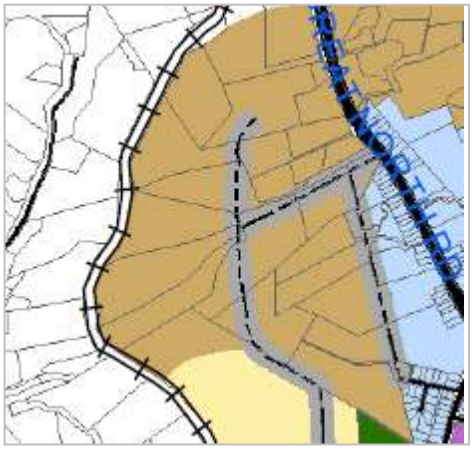


Most of this land is already intensely developed with small blocks of land, and it is proposed to create a distinct community of lifestyle development, here, by allowing further infill development of this nature. The proposed further development would not put pressure on the roading network, and no further infrastructure is required for this development to occur.

This development is consistent with criteria for transitional development, as it seeks to create a transitional land use zone from urban area to rural.

4.11 Creation of Rural Residential at Springs Flat

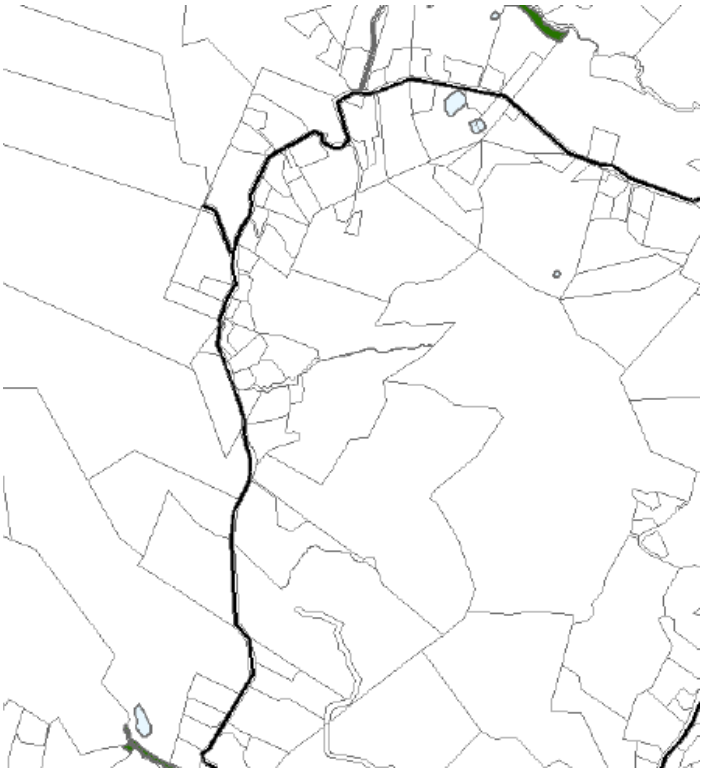
This piece of land is located on flat land north of the proposed Business 2 area. It is proposed to rezone this 72 hectares of land from the current Countryside zoning to Rural Residential to allow for the establishment of lifestyle development in this area. This is considered appropriate, as the location and size of this land cannot support viable agricultural activities. It is close to the existing residential area, the existing business area on State Highway 1, and the proposed business area at Pipiwai Road.



Although the area is susceptible to flooding, this can be mitigated by imposing controls on floor heights of new buildings, in accordance with the calculated and acceptable flood return period.

4.12 Parakiore Hill, Crane Road, Church Road, Ngararatunua Cone and North of Three Mile Bush Road

This land includes the volcanic cones between Three Mile Bush Road, Church Road, Pipiwai Road and Crane Road. This land is graced with iconic volcanic cones which are identified in the District Plan as heritage items that require protection.



It is proposed to retain this land in the current zone of Countryside and maintain the current agricultural use. This is considered to be appropriate, in order to protect these unique features and maintain the expansive uninterrupted landscapes that attract people to this area.

4.13 Whau Valley

Whau Valley is located west of Kensington in a short valley, with Whau Valley dam at the top. The land has gently undulating slopes and the underlying material is unstable alluvial deposits. The soil profile is poorly developed and there is evidence of past and ongoing land movement and erosion.

Further up towards the dam, there is a pocket of indigenous vegetation identified as having significant landscape and vegetation. Due to the existence of a dam upstream, and a generally low lying valley, this area has a high risk of flooding in the event of a dam breach. In the past two years, the dam came close to breaching due to unusually high rainfall intensity in March 2007.

It is proposed to retain the Countryside zoning to prevent any further housing development in this valley. This is due to the potentially high risk of flooding and landslip. Further development in this area will exacerbate the already delicate situation. Maintaining the current situation will maintain the same level of risk that exists today.

The location of this rural landscape just outside the built up area makes it a unique area. The area has notable landscape which can be put under pressure with further development. It is important that Council protect the rural character and recreational value of this area by limiting development.

4.14 Open Space at Springs Flat

It is proposed to rezone a small piece of land at the corner of Pipiwai Road and Great North Road to Open Space zone for active recreation. This is to cater for the needs of a growing community in this area. The land is in Council ownership.

4.15 Overall Development Assessment

The proposals discussed above are considered to be more than adequate to provide for the needs of the community and at the same time maintain some productive land. The proposals will accommodate development well beyond the foreseeable future.

Other development proposals that complement those outlined above, such as provision of parks, community and cultural facilities, and others, are identified and described in Chapter 5 of this Structure Plan.

The District's Population Growth Model shows that there will be a steady population increase over the next 35 years in this area. Projected growth under high, medium and low growth scenarios is shown on the table below.

Figure 16 Projected Population Growth in the Kamo Area

Projected Population	2006	2011	2016	2021	2026	2031	2036	2041
High	10,530	12,229	12,819	13,285	14,206	15,036	15,769	16,400
Medium		11,715	12,145	12,497	13,047	13,552	14,007	14,412
Low		11,202	11,470	11,709	11,888	12,068	12,246	12,425

Source: Whangarei District Council Growth Model, June 2008.

The additional land for` development on the proposals outlined above has been calculated to accommodate the high growth scenario. The table below shows sizes of land provided in the land use proposals, along with the possible number of allotments that can be created from them.

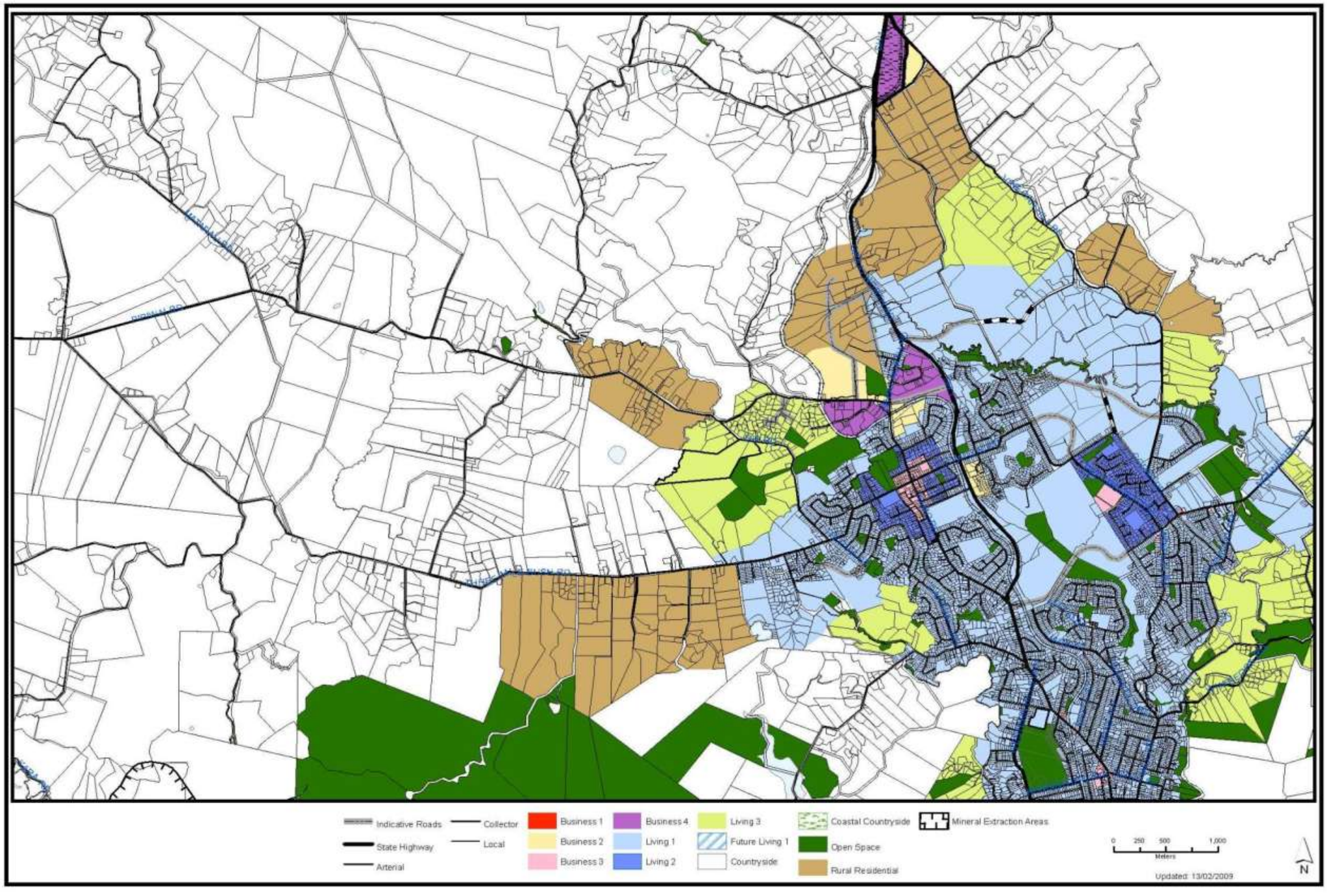
Figure 17 Potential Capacity of the Proposed Land Use in the Kamo Area

	Potential Lots	Potential Population
Current (undeveloped land)	4,984	11,223
Additional Land Proposed for Development		
Proposed Living 1	7,116	19,193
Proposed Living 2	701	1,891
Proposed Living 3	726	1,958
Proposed Rural Residential	498	1,343
Countryside	1,290	3,479
Total	**10,331**	**27,865**
As a % of 2041 population projection		**170%**

Source: Whangarei Growth Model, June 2008.

The above table shows that the land use provisions can create a maximum total number of 10,331 individual allotments. This means that the land can support a similar number of households. Using an average household size of 2.43 people, the maximum capacity of the provisions is 27,865 people, when all land is subdivided to its minimum allowable sizes for each land use zone and taken up. When compared with the projected population growth, it is clear that these provisions will have capacity to accommodate much more development than the natural population growth, in the long term. However, the calculated number of lots does not reflect the actual numbers, or the eventual lot sizes, when land is fully developed. Apart from the District Plan rules, other factors such as economic cycles and other social preferences can influence the actual lot sizes and the pattern of development.

Figure 18 Kamo Study Area – Proposed Land Use



5 Implementation

5.1 Implementation Issues

Implementation of the proposals in this Structure Plan will take place over a long period of time through project development involving all stakeholders. Council has a lead role in co-ordinating, and sometimes providing infrastructure ahead of development, recovering costs, with time, through development and financial contributions. Some proposals need to be incorporated into the District Plan by way of plan change, and then be implemented as part of the wider issues of the District Plan.

The following section outlines action responsibilities and priority guidelines for the proposals. In regard to timing and costing of projects, it is considered that more conclusive time frames, and the costs of individual projects, can only be determined after further investigation.

It is important to note that project development is a shared responsibility between Council and the private sector. Council will take a leading role in policy issues, with the private sector developing land in a manner that reflects the desired outcomes for this Structure Plan.

5.2 Project Identification and Prioritisation

The following projects have been identified from the previous sections on Development Issues and Spatial Strategy. The priority of the implementation measures will be determined through the ongoing community consultation process.

Economic Development

Method – Specific Implementation Measures	Priority	Responsibility
Ensure the continuing economic viability of Kamo Shopping Centre Undertake the Mainstreet Programme for Kamo (also refer Transport and Community Sections, below) Continue to liaise with Kamo Community Incorporated with regard to business promotion	High	Parks, Roading, Community Departments
Re-zone commercial land, as needed, around current commercial areas	High	Policy Department

Infrastructure - Transportation

Method – Specific Implementation Measures	Priority	Responsibility
Undertake the Mainstreet Programme for Kamo Consider parking, traffic calming measures, intersections and pedestrian crossings (also refer to Community section, below)	High	Roading Department
Complete Kamo Bypass, Stage II Designate and construct the new road	Medium	Roading Department
Complete Brentwood Ave – Te Puia Street, Brentwood Ave – Fairway Drive links Ensure link roads are constructed as development occurs in this area	low	Roading, Resource Consent Department
Implement School Zones: Kamo Primary Kamo Intermediate Kamo High School Hurupaki Primary	Medium	Roading Department
Upgrade rural roads where subdivision to small lots has occurred, changing the nature of the area Investigate widening roads, adding centre lines and footpaths, improving intersections, reviewing speed limits and removing ditches	Ongoing	Roading Department
Increase and upgrade cycleways Investigate routes in and around the study area, in particular, a cycleway loop around Three Mile Bush Road, Church Rd, Pipiwai Road and Dip Road Complete the Cycle Strategy	Medium	Parks, Roading Department

Method – Specific Implementation Measures	Priority	Responsibility
Increase and upgrade footpaths Investigate and place on the Footpath Needs Programme	Ongoing	Roading Department
Ensure a safe and efficient roading network Continue to plan for, and undertake, network upgrades, as required	Ongoing	Roading Department

Wastewater

Method – Specific Implementation Measures	Priority	Responsibility
Extend wastewater reticulation to Lake Ora and Pukemiro areas Undertake project if/when a government subsidy is granted	High	
Ensure economic and environmentally sustainable wastewater disposal Ensure future development is connected to a sewerage system, or suitably designed on-site system Monitor existing on-site systems	Ongoing	Waste and Drainage Department

Storm Water

Method – Specific Implementation Measures	Priority	Responsibility
Manage stormwater disposal around Kamo urban area and Springs Flat Investigate stormwater system where problems are identified	Ongoing	Waste & Drainage Department
Ensure economic and environmentally sustainable stormwater disposal Undertake works identified in Stormwater Catchment Management Plans	Ongoing	Waste & Drainage Department

Water Supply

Method – Specific Implementation Measures	Priority	Responsibility
Ensure the adequate supply and quality of reticulated water Ensure continued compliance with relevant standards Continue to plan for adequate water supply capacity as the population increases	Ongoing	Water Department

Open Space and Recreation

Method – Specific Implementation Measures	Priority	Responsibility
Develop the Whau Valley Reservoir area for recreation Complete the Management Plan, considering recreation opportunities whilst balancing potential catchment management issues affecting drinking water supply	Medium	Water, Parks Department
Retain and improve the Western Hills/Pukenui Forest Complete the Management Plan, considering access points, buffers and linkages to Three Mile Bush Undertake bush restoration in Pukenui and Western Hills Forests within the next 10 years	Ongoing	Parks Department
Develop the Tuatara Drive neighbourhood reserve	Ongoing	Parks Department
Maintain and improve the Kamo Recreation Reserve Create a 'recreation hub' Improve the drainage on playing fields Consider other facilities, such as a petanque court	Ongoing	Parks Department
Provide more sports grounds Investigate possible sites for further sports grounds Purchase and develop these sites	High	Parks Department
Develop walkways, reserves and linkages Investigate possible walkways and place on the programme Expand the reserve network as the population increases	Ongoing	Parks Department

Method – Specific Implementation Measures	Priority	Responsibility
Investigate creating further reserve areas on volcanic cones in the area (also refer Special Features section, below) Investigate linkages between reserve areas Create the Kamo Heritage Trail, from Kamo Village to Hurupaki Mountain, within five years		
Manage and improve esplanade areas Improve stream bank stability through additional tree planting along banks of Waiarohia Stream, within next five years Create linkages, to and from, Waiarohia and Raumanga Streams	Ongoing	Parks Department
Manage weeds along Council roads and in Council reserves Review and revise weed management programmes in Council's roading and parks' budgets	Ongoing	Parks, Roading Department

Rural Residential Development

Method – Specific Implementation Measures	Priority	Responsibility
Develop Rural Residential Environment (Zone) Prepare a District Plan Change to include policies, objectives and rules for new Environments in District Plan Notify a District Plan Change for public submission, undertake hearings and resolve any appeals	High	Policy & Monitoring Department
Rezone areas to Rural Residential Environment Confirm boundaries of Rural Residential Environment Prepare a District Plan Change to provide for Rural Residential Environment Notify a Plan Change for public submission, undertake hearings and resolve any appeals	High	Policy & Monitoring Department

Residential Development

Method – Specific Implementation Measures	Priority	Responsibility
Rezone areas as Living 1 Environment Confirm boundaries of new Living 1 Environment Prepare District Plan Change to provide for new areas of Living 1 Environment Notify the Plan Change for public submission, undertake hearings and resolve any appeals	High	Policy & Monitoring Department
Rezone areas as Living 2 Environment Confirm boundaries of new Living 2 Environment Prepare a District Plan Change to provide for new areas of Living 2 Environment Notify the Plan Change for public submission, undertake hearings and resolve any appeals	High	Policy & Monitoring Department

Special Features

Method – Specific Implementation Measures	Priority	Responsibility
Protect existing bush areas Complete the Tree Strategy and implement Prepare a District Plan Change to include policies, objectives and rules for tree protection in the District Plan Notify a District Plan Change for public submission, undertake hearings and resolve any appeals Encourage bush covenants by publicising the availability of rates relief for covenanted areas	Ongoing	Policy, Parks, Rates Department

Method – Specific Implementation Measures	Priority	Responsibility
Protect stone walls Review current protection of stone walls in the District Plan, and if necessary, prepare a Plan Change and undertake the process Consider non-regulatory methods to achieve protection of stone walls Map historic stone walls	High	Parks, Policy & Monitoring Department
Protect the Three Mile Bush aquifer Liaise with Northland Regional Council on any potential development issues affecting the aquifer	High	Parks, Policy & Department
Protect the volcanic cones of Hurupaki, Parakiore, Ngararatunua, Rawhitiroa Review current protection of these areas in the District Plan, and if necessary, prepare a Plan Change to include areas for protection and/or a rule change governing their protection, and undertake process Also consider non-regulatory methods to achieve protection of the volcanic cones Investigate creating additional reserve areas on one or more of these cones	High	Parks, Policy & Monitoring Department
Protect historic and cultural sites Review current protection in the District Plan, and if necessary prepare a Plan Change and undertake process Consider non-regulatory methods to achieve protection of historic and cultural sites Upgrade information on archaeological sites and map accurately Create Kamo Heritage Trail from Kamo village to Hurupaki Mountain, within five years	High	Parks, Policy Departments
Protect volcanic/productive soils Review current protection in the District Plan, if necessary prepare Plan Change and undertake process Consider non-regulatory methods to achieve protection of volcanic/productive soils Upgrade information on volcanic/productive soils, and map accurately	High	Parks, Policy Departments
Investigate the protection of other features in the area, including: Te Puia Cairn Lake Ora Soda Springs Jounneaux Rocks	Medium	Parks, Policy Departments

Community

Method – Specific Implementation Measures	Priority	Responsibility
Undertake Mainstreet Programme for Kamo Consider developing 'village' identity, and the provision of a village green, seats, paving, street trees and amenity planting, and a new toilet	Ongoing	Parks, Roading, Departments
Provide facilities for older persons Complete an 'Older Persons Strategy' and implement Identify facilities/opportunities specific to the study area, and develop	Ongoing	Community Department
Ensure adequate access to halls for community use Undertake review of hall facilities, and determine usage	Ongoing	Community Department

Appendices

Appendix 1 Resource Notation

Heritage Trees

No	Common Name	Botanical Name	Stem Score	Site Address	Legal Description	Map No
200	Taraire	Beilschmiedia tarairi	102	89 Crawford Cres	Lot 1 DP 65923	35
201	Taraire	Beilschmiedia tarairi	102	89A Crawford Cres	Lot 2 DP 65925	35
202	Taraire (2)	Beilschmiedia tarairi	102	47 Bush Road	Lot 78 DP 51732	35
203	Puriri	Vitex lucens	123	14 Barclay Place	Lot 14 DP 62193	33
205	Puriri	Vitex lucens	126	34 Puriri Street	Lot 1 DP 131477	33
206	Illawarra Flame Tree	Brachychiton acerifolium	105	17 Puriri Street	Pt Lot 9 Deeds W72	33
207	English Oak (8)	Quercus robur	126	20 Grant Street	Pt Section 126, Town of Kamo	33
208	Southern Magnolia	Magnolia grandiflora	114	421 Kamo Road	Lot 1 DP 57301	35
209	Hawaiian Kowhai	Sophora chrysophylla	108	117 Whau Valley Road	Lot 4 DP 39110	35
210	Taraire	Beilschmiedia tarairi	120	58 Fisher Terrace	Lot 66 DP 58330	35
211	Puriri	Vitex lucens	108	77 Fisher Terrace	Lot 80 DP 58330	35
212	Puriri	Vitex lucens	114	57B Fisher Terrace	Lot 2 DP 160104	35
214	Sentry Palm	Howea forsteriana	108	351 Kamo Road	Lot 5 DP 32993	35
217	Maidenhair Tree	Ginkgo bilboa	126	20 Whau Valley Road	Lot 1 DP 28355	35
219	Jacaranda	Jacaranda mimosaefolia	105	23 Whau Valley Road	Lot 1 DP 23601	35
220	Illawara Flame Tree	Brachychiton acerifolium	102	59 Whau Valley Road	Lot 2 DP 77269	35
224	Pohutukawa, Titoki	Metrosideros excelsa; Alectryon excedsus	114 102	162 Kamo Road	Lot 1 DP 58120	35
418	Totara (stand)	Podocarpus totara	108	16 Bedlington Street	Lot 1 DP 46028	35
429	Pohutukawa	Metrosideros excelsa	126	6 Boswell Street	Lot 2 DP 21592	33
436	Totara (3)	Podocarpus totara	108	9 Te Puia Street & 22 Te Puia Street	Lot 8 DP 52362 Lot 3 DP 137372	35
500	Norfolk Island Pine	Araucaria hetrophylla	132	421Kamo Road	Lot 1 DP 57301	35
501	Liquid Amber	Liquidamber styraciflua	138	23 Whau Valley Road	Lot 1 DP 23601	35
502	Tulip Tree	Liriodendron tulipifera	132	27 Whau Valley Road	Lot 6 DP 42701	35

Heritage Buildings

No	Building Site or Object	Address	Map No	Legal Description
Group II				
141	Moehau (house)	7 Tuatara Drive Kamo	35	Lot 5 Pt 4 DP 44343
150	Old School House	23 Station Road Kamo	33	Lot 136 DP 58962 Kamo Twnsp
156	Stone Bridge	Tuatara Drive Kamo	35	Lots 59, 60 DP 44008

Sites of Significance To Maori

No	Site	Legal Description
57	Maori Reserve (Burial Ground)	All 2A1C Blk VII Purua SD (2A1C) 0.2023 ha Gaz 1975 p2940

Esplanade Priority Areas

Name of Water Body	Values	Map Ref
Mangahahuru	Outstanding Recreational	33
Waitaua	High Ecological	33

Name of Water Body	Values	Map Ref
Waiarohia	Outstanding Recreational High Ecological	37

Building Line Restrictions

Road name	Location		Building Line Restriction (metres)		Environment
	Start	Finish	Direction		
Kamo Rd	Whau Valley Rd	600m N Burling Ave	1.6 W		Living 1
Kamo Rd	Griffin St	Wilkinson Ave	5.5 W		Living 1 & Business 3
Kamo Rd	Wilkinson Ave	Wakelin St	5.5 W	1.5 E	Business 3
Kamo Rd	Wakelin St	100m S Station Road	1.5 W	1.5 E	Business 3
Kamo Rd	100m S Station Road	Meldrum St	1.5 W	1.5 E	Business 3
Kamo Rd	Meldrum St	SH 1N, Springs Flat	11 from centre		Living 1, Business 4 & 3 & Countryside

Appendix 2 Important Geological Sites and Landforms within Study Area

Source Inventory and Maps of Important Geological Sites and Landforms in the Northland Region Edited by Jill A. Kenny and Bruce W. Hayward - First Edition 1996

Importance

a	International	site of international scientific importance
b	National	site of national scientific, educational or aesthetic importance
c	Regional	site of regional scientific, educational or aesthetic importance

Vulnerability

1	Highly vulnerable to complete destruction or major modification by humans
2	Moderately vulnerable to modification by humans
3	Unlikely to be damaged by humans
4	Could be improved by human activity
5	Site already destroyed (not necessarily by human activity)

Hurupaki Scoria Cone

Description	A steep-sided, partly bush-covered cone, 1-2km in diameter, breached to SE, that stands 350m above sea level and is extensively quarried on the western side. This is the eastern-most cone of a group of three centres: (east to west) Hurupaki, Rawhitiroa, Ngararatunua.
Locality	This centre lies between Three Mile Bush Road and Dip Road, approximately 1.5km west of Kamo township.
Vulnerability	= 1
Importance	= C

Kamo Hot Springs

Description	Warm springs with a flow rate dependent on rainfall.
Locality	1.5 km north of Kamo Post Office.
Vulnerability	2
Importance	= C

Kamo No 3 Coalmine Relics

Description	The Kamo No.3 Mine flooded and was closed in 1995. Concrete portals and foundations remain on the site.
Locality	Eastern outskirts of Kamo.
Vulnerability	= 2
Importance	= C

Ngararatunua Volcanic Cone*

Description	The centre is a horseshoe-shaped scoria cone, breached to the south with small flows to the south and north-east. It is a composite cone, with an early cone to the north and a second higher cone to the south that buried most of the first cone before being breached. It is farmed on the west side, with the east being bush-covered. The height of the cone is 325m above sea level and it rises 125m above the lava field. The composite cone is approximately 1.2km in diameter. It is the western-most cone of a group of three centres (east to west): Hurupaki, Rawhitiroa and Ngararatunua.
Locality	This centre lies between Three Mile Bush Road, Church Road and Rotomate Road, approximately 3.5km west of Kamo.
Vulnerability	= 1
Importance	= C

Parakiore Dome

Description 200m high, lightly eroded volcanic dome with two peaks, recently dated as < 2 m.a.

Locality 1km west of SH1, 4km NW of Kamo.

Vulnerability = 3

Importance = C

Rawhitiroa Scoria Cone

Description A low, multi-vented cone with a crater lake that forms a small grass-covered knoll less than 150m high, on which a few houses stand. It is approximately 400m east of the Hurupaki scoria cone.

Locality This centre lies between Three Mile Bush Road, Dip Road and Rotomate Road, approximately 3km from the Kamo township.

Vulnerability = 1

Importance = C

Appendix 3 – Designations

Requiring Authority	Abbreviation used
Minister of Education	DE
Northpower Limited	DNP
Telecom New Zealand Limited	DT
Transit New Zealand	DTNZ
Tranz Rail	DTR
Whangarei District Council	DW

ID	Site Name/Location of Site	Designation Purpose	Legal Description/Area	Underlying Environment	Map	Subject to Conditions
DE 4	Hurupaki Primary School, 20 Dip Road, Whangarei	Hurupaki Primary School	Lot 2 DP 311429, Lot 8, Lot 9 DP 57681 (6.2ha)	Living 1	35	1, 2, 5
DE 5	Kamo High School and House, Wilkinson Avenue, Whangarei	Kamo High School and House	Lot 1 DP 47827 (9.64 ha)	Living 1	35	1, 2, 6
DE 6	Kamo Intermediate School, Hailes Road, Whangarei	Kamo Intermediate School	Lot 78 DP 50876, Pt Sec 2 SO 39241 (5.1562 ha)	Living 1	35	1, 2, 6
DE 8	Kamo Primary School, 6A Three Mile Bush Road, State Highway Road, Whangarei	Kamo Primary School	Lot 1 DP 30792, Pt Lot 1 DP 42131 (2.2399 ha)	Living 1	33	1, 2
DE 27	Whau Valley Primary School, 136 Kamo Road, Whangarei	Whau Valley Primary School	Lot 17 DP 19749, Pt Lot 2 DEEDS P64 and Lot 2 DP 61116 (2.4952 ha)	Living 1	35, 36	1, 2
DNP 5	Pipiwai Road Substation SH 1/ Pipiwai Road Springs Flat	Electricity purposes (Substation)	Lot 2 DP 162895 (0.1196 ha)	Business 4	33	
DT 5	Parakiore Radio Station, Parakiore Rd Whangarei	Land uses for tele-communications and radio communication purposes including telephone exchange	Mt Maungarei Block SO Plan 44 384 Blk VIII Purua SD CT 75B/728	Countryside	12	1, 2
DT 14	Kamo Exchange, Station Rd, Kamo	Land uses for tele-communications and radio communication purposes including telephone exchange	Sec 2 SO Plan 64122 Pt Allot 79 Town of Kamo Blk VII Purua SD CT 70A/938	Business 3	33 (Insert)	1, 3
DTNZ 1	State Highway 1, N Whangarei District-Kaipara District Boundary at the Brynderwyns to Whangarei District Far North Boundary at Hukerenui	State Highway 1N	Various	Various	Various	
DTNZ 1.5	State Highway 1 Snake Hill Springs Flat	State Highway 1	Various	Countryside	7E 12E	
DTNZ 3	State Highway 1, N Kamo By-pass	Kamo By-pass	Various	Various	Various	
DTNZ 3.1	State Highway 1, N Kamo By-Pass (changes to DTNZ 3)	State Highway 1 (Kamo By-Pass)	Various	Various	33, 35	

ID	Site Name/Location of Site	Designation Purpose	Legal Description/Area	Underlying Environment	Map	Subject to Conditions
	RQ 98/602, RQ 99/359, RQ 99/500					
DTR 1	Main railway line within Whangarei District	Railway Purposes	Various	Various	Various	
DW 26	Proposed Service Lane, Three Mile Bush Road to Kamo library	Proposed Service Lane 7.3m wide	Lot 24,25 DP 20635 Lot 4 DP 20496 Lot 23 20635	Business 3	33 (Insert)	
DW 27	Proposed Service Lane, Grant Street	Proposed Service Lane 6.3m wide	Pt 14 SO 1543 DP 134790 Pt 15 SO 1543 4 DP 48790	Business 3	33 (Insert)	
DW 28	Proposed Service Lane - Kamo Road	Proposed Service Lane 7.3m wide	Lot 3 DP 58329 Lot 1 DP 68035	Business 3	33 (Insert)	
DW 29	Proposed Service Lane, Grant St, Wakelin St	Proposed service lane 6.3m wide	DP 1 68973 Pt 19 SO 1543	Business 3	33 (Insert)	
DW 32	Road Reserve, Te Puia St	Road Reserve	6 DP 52362	Living 1	35	
DW 33	Road Reserve, Tuatara Place	Road Reserve	Pt 15 DP 44008	Living 1	35	
DW 34	Road Reserve, Huia St	Road Reserve	27 54038	Living 1	35	
DW 51	Water Supply Whau Valley Rd – Fairway Drive	Treatment Plant, Pump Station and Reservoirs	Lots 7, 8 DP 56364 Lot 183 DP 56365 Pt Allot 159, Pt Allot 2 Whangarei Parish	Living 1	35	
DW 52	Water Supply, Whau Valley Rd – Maunu Rd	Dam and Catchment	Pt Sec 8 Pukenui Parish, Sec 38 Kaitara Psh, Blks VII, XI, XII Purua SD, Lot 2 DP 63280 Allots 52-54, NW 55, SE 55, 58, 75, 76, Pt 56 74 Pukenui Parish	Country-side	12, 35, 37, 42, 41	
DW 55	Water Supply, Dip Road	Reservoirs	Secs 17, 21, 22, 25 Blk VII Purua SD	Country-side	33	
DW 56	Water Supply, Waipanga Road	Pump Station and catchment	Lot DP 33293 Blk VIII Purua SD	Living 3	33	
DW 62	Three Mile Bush Road	Water Supply Reservoirs	Pt Lot 6 DP 124015 Blks VIII, X Purua SD		12	

Appendix 4 Objectives and policies

Section		Objectives Policies	Relevant to Kamo Area
1.1.1		The characteristic amenity values, and the identity of each locality, are maintained and enhanced.	
	1.2.1	***To ensure that changes to urban form are compatible with the character, amenity and identity of the surrounding environment.***	✓
2.1.1		The consolidation and development of the city centre.	n/a
	2.2.1	To avoid sporadic commercial development.	
	2.2.2	To encourage the consolidation and development of the central business district.	
3.1.1		The importance of long term planning (including appropriate zoning) for industrial activities is recognised by Council.	n/a
3.1.2		The potential adverse effects of industrial activities are mitigated by their appropriate placement and management.	n/a
	3.2.1	To include policies and objectives in the District Plan relating to the importance of industrial development to the economic and social wellbeing of the District.	
	3.2.2	To have regard to the needs of industrial development when formulating other Council documents.	
	3.2.3	To avoid, remedy or mitigate the potential adverse effects of industrial development by their appropriate placement within the District.	
4.1.1		***Accessible and convenient suburban centres are provided.***	✓
	4.2.1	To provide suburban centres that are accessible and convenient, without detracting from the central business district.	
5.1.1		***Establish, maintain and enhance a safe and efficient road network.***	✓
	5.2.1	To reduce conflicts between heavy vehicles and other users of the roading network.	
	5.2.2	To continue to develop a safe and fficient roading network to meet the demands of urban development.	
	5.2.3	To minimise the effects of land use and subdivision on the safety and efficiency of the roading network.	
	5.2.4	To ensure adequate provision of parking in the central business district, and in suburban shopping centres.	
6.1.1		***Public transport, pedestrian walkways, and cycleways are provided, maintained and enhanced.***	✓
	6.2.1	To ensure that safe and effective cycleways are provided within the city, linking to, and between, suburbs.	
	6.2.2	To promote, develop and improve pedestrian walkways within urban areas.	
	6.2.3	To encourage the further development of public transport services.	
7.1.1		***The provision of infrastructural services to existing and newly-urbanised areas in an efficient and effective manner.***	✓
	7.2.1	To maximise development potential through the efficient provision of upgraded, or new, infrastructural services.	
	7.2.2	To avoid damaging environmental resources through ineffective, or lack of, infrastructural services.	
	7.2.3	To provide infrastructure in a way, and as necessary, to ensure the safety and wellbeing of the community.	
8.1.1		***The risk associated with natural hazards is not increased by urban development.***	✓
	8.2.1	To identify areas subject to natural hazards in which urban development is likely to occur.	
	8.2.2	To mitigate, where possible, the effects of urban development on the risk of natural hazards occurring.	
9.1.1		***The loss of productive soils and economic farming units is minimised.***	✓
9.1.2		***The effects of urban-type subdivision on rural character are avoided, remedied or mitigated.***	✓
	9.2.1	To recognise the value of productive soils and economic farming units to the District's economy.	
	9.2.2	To minimise the effects of urban-type subdivision on rural amenity.	
	9.2.3	To create a new zone for rural residential use.	
10.1.1		***Avoid conflict between incompatible land use activities as a result of subdivision and urban development.***	✓
	10.2.1	Ensure that subdivision development is located and designed to reduce the potential for conflicts with the effects of existing activities.	
	10.2.2	To facilitate the separation of incompatible land uses through the location of District Plan	

Section		Objectives Policies	Relevant to Kamo Area
		Evironments and Resource Areas, and specific requirements of subdivision and land use activities, such as separation distances.	
11.1.1		***The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna.***	✓
11.1.2		***The protection of the life-supporting capacity of ecosystems through the avoidance, remediation or mitigation of adverse effects.***	✓
	11.2.1	To protect significant indigenous vegetation, and significant habitats of indigenous fauna, from the effects of urbanisation.	
	11.2.2	To ensure the protection of the life-supporting capacity of ecosystems through avoiding, remedying or mitigating adverse effects.	
12.1.1		***Sufficient open space is provided to meet community, conservation and recreational needs.***	✓
	12.2.1	To provide sufficient open space to meet community, conservation and recreational needs.	
	12.2.2	To ensure linkages are created between areas of existing open space, and any new areas that are created.	
13.1.1		***Form a partnership with Tangata Whenua that enables effective participation by Tangata Whenua in planning processes.***	✓
	13.2.1	To establish consultation protocols with Tangata Whenua that are agreed to by all parties.	
	13.2.2	To improve the relationship between Council and Tangata Whenua.	
14.1.1		***The prevention of the degradation, and loss of, historic and cultural sites of significance from urban development.***	✓
	14.2.1	To prevent urban development occurring in locations, or in a manner, that will cause adverse effects on sites of significance to Tangata Whenua. Avoid, remedy or mitigate the adverse effects of urban development on heritage areas significant to Maori and on sites of significance to Maori.	
	14.2.2	To encourage the development of a procedure for the identification and recognition of sites of cultural significance to Tangata Whenua.	
	14.2.3	To protect historic places, sites (including archaeological sites), buildings and trees from the adverse effects of urban development and subdivision.	
15.1.1		Access to education and employment opportunities is enhanced as a result of urban growth.	n/a
15.1.2		***Access to recreational, artistic and cultural opportunities is enhanced as a result of urban growth.***	✓
	15.2.1	To encourage the provision of education and employment opportunities.	
	15.2.2	To encourage the provision of recreational, artistic and cultural opportunities.	
16.1.1		To create a better image of Whangarei.	n/a
	16.2.1	To improve the image of Whangarei, as seen by residents and people outside the District.	
	16.2.2	To encourage and co-ordinate community organisations in the promotion of Whangarei.	