WHANGAREI DISTRICT COUNCIL

Marsden Point-Ruakaka Structure Plan: 2008

Adopted November 2009

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1.0 INTRODUCTION

1.1 Introduction

The Marsden Point-Ruakaka area has historically been a coastal rural area with two small isolated coastal settlements, Ruakaka and One Tree Point.

With the establishment of the oil refinery in the 1960's, the currently-mothballed power station in the 1980's, and more recently the port, the area's potential as a national and regional strategic development node was foreseen. These key industrial installations today not only form the foundation of the local economy, but importantly serve as a platform for high potential significant urban-industrial future growth and development.

Notwithstanding that these key industrial sites have resulted in a more restricted access to large parts of the coastline, the area's two settlements have continued to grow slowly over time, principally in response to the generally easy access to the coast and harbour and the general small town coastal lifestyle opportunity.

The Council has historically anticipated further development in the area and looked to facilitate this through a generous industrial zoning, the development of the Ruakaka town centre and recreation centre, and residential subdivisions.

The community values the particular 'quality of life' afforded by the study area's rich natural environment and there is a positive sense that growth can occur in the area without necessarily compromising local amenity values, especially if appropriate measures are taken to plan for such growth.

The **Marsden Point-Ruakaka Structure Plan** (SP2000) has served as the policy framework which guides the spatial development of the area since its adoption by Council in November 2000. SP2000 has as one of its primary functions the management (by way of land use planning) of the potential spatial conflict between large-scale industrial development and the coastal residential areas.

Since that year 2000 planning exercise there has been considerable development in the area, including; the expansion of the Port, the construction of the Port Marsden Highway port access route, the initial stages of Marsden Cove marina, and numerous industrial and residential subdivisions. The land purchase and designation processes associated with the new rail line to the port are in final stages.

Some of the more recent land use developments have occurred in areas generally identified in SP 2000 for longer term development. Council has also had various formal and informal requests to change the District Plan to enable further commercial, industrial and residential development outside of those areas identified for urban development in SP 2000.

Given the prospect of further significant urban development in the area, Council, through its regular contact with the community and developers, is aware of the need to generally ensure that infrastructure provision is co-ordinated, that an adequate level of community facilities and business

opportunities is available, and that the general lifestyle amenity value of the area is not eroded as a by-product of industrial development.

The relatively rapid rate of land development initiatives over the last decade has created an apparent sense that the area is on the cusp of a growth surge, and this has also had a downstream impact on Council's and other agencies' strategic plans and programmes to supply services, roading, and other infrastructure for planned developments.

An introductory reference in SP2000 states that "…*it is envisaged that the Structure Plan will be reviewed in its entirety within 10 years*…", and that "…*it will be particularly necessary to update the Plan on a more regular basis with regard to certain key strategic developments (e.g. port, rail, marina), which are not fully detailed at this point in time*…". It therefore appears as if a review of SP2000 is about due.

In the above context, Council has reviewed SP2000 in the light of more recent, proposed, and potential, developments in the study area to determine whether the strategic development path adopted remains appropriate.

It is against this background that SP2000 was reviewed and a new draft structure plan for the area was formulated. Council undertook extensive consultation on this new draft Structure Plan during 2008 and 2009, culminating in a hearing. The **Marsden Point-Ruakaka Structure: 2008** was adopted by Council in November 2009.

1.2 Purpose of the Structure Plan

The Structure Plan is generally aimed at the sustainable management of the natural and physical resources of the area, in accordance with community aspirations, and to the benefit of the local and wider Whangarei District community.

In terms of the above, the more specific purpose is to provide an integrated physical development framework plan so as to minimise ad hoc decision-making and thereby avoid, remedy or mitigate the cumulative adverse environmental effects of growth and development. To achieve this, the Structure Plan needs to broadly:

- Define a vision for the future growth and development of the area,
- Provide an overall spatial framework and indicative plan for the integration of the physical components of future land development (ie. land use activities, engineering infrastructure, and roads).
- Serve as a strategic basis for pro-actively managing the effects of future development, and be a policy instrument against which to assess private plan change requests and for coordinating other policies, projects, budgets, and statutory obligations.

1.3 Legal Status of the Structure Plan

The Structure Plan is a non-statutory "ideas-based" document. As such, the proposals and provisions contained in the Structure Plan are indicative only, and are intended to guide future actions.

As the Structure Plan does not have a statutory status it is unlike Council's statutory documents (such as the Long Term Council Community Plan, Annual Plan, and District Plan). It therefore follows that the proposals and provisions of the Structure Plan are sometimes different to the District Plan.

In order for the Structure Plan's proposals to have a statutory status, they need to be translated into the abovementioned statutory Plans. For this to take place, a prescribed statutory procedure and public participation provisions relating to the various statutory Plans will be followed. This procedure provides opportunity for further public input and further changes to the Structure Plan's provisions if required. Once this has occurred, certain provisions will be made operative and written into the various statutory documents. They then become firm proposals with a statutory obligation for Council to implement.

The Structure Plan is principally a strategic policy document. It examines the strategic options available for future development in the study area. As an analysis of alternative futures, it forms part of Council's broad Section 32 duties under the Resource Management Act 1991.

The formulation of the Structure Plan has also generally considered and observed the overarching policies, objectives, and guidelines of many higher order statutory plans, such as the New Zealand Coastal Policy Statement, the Regional Policy Statement for Northland, Regional Coastal Plan for Northland, etc.

1.4 Study Area

The study area is located approximately 25 km to the south-east of Whangarei, and is currently home to some 3400 people.

Figure 1: Location of the Study area

The study area (**Figure 2**, overleaf) has a 15 km shoreline as its northern and eastern boundary, which extends from the mouth of the Takahiwai Stream, along the southern shore of the Whangarei Harbour, around Marsden Point, and along the Bream Bay coastline to Ruakaka in the south.

The western edge of the study area extends from Ruakaka, along State Highway 1, along the eastern edge of the Takahiwai Hills and Takahiwai Stream, to its mouth on the Harbour.

Other than the lower slopes of the Takahiwai Hills on the western boundary, the study area is thus a flat coastal plain fringed by the estuarine and marine foreshore zones, on which are respectively located the coastal settlements of One Tree Point-Marsden Bay and Ruakaka-Marsden Village.

The extensive Marsden Point Refinery and Port occupy Marsden Point itself and, apart from some industrial activity along the eastern side of Marsden Point Road, the remainder, and majority of, the study area, is typically rural.

1.5 Planning Horizon

The Structure Plan is essentially a strategic settlement planning document, and in the context of the study area's positioning as a future regional urban-industrial development node, needs to consider and accommodate the very long term future of the area (i.e. as much as 30-40 years, and beyond).

However, this long term perspective serves only to provide a much broader context for the area's potential development, and as many long term variables cannot be accurately predicted at this point in time, a certain degree of flexibility needs to be built into the Structure Plan.

In order for the Structure Plan to be effective it needs to guide much shorter term development activities. In this context the planning horizon for the Structure Plan is in the order of ten years, which is considered a reasonable and realistic balance between an appropriate period for strategic physical planning and the predictability of key variables and trends over the foreseeable future.

While it is envisaged that the Structure Plan will be reviewed within about ten years, should specific unforeseen high-impact events occur within this period, it would be prudent to review the Structure Plan, or selective aspects thereof, at that appropriate point in time.

1.6 Project Approach and Methodology

The project approach accepts that the primary development issue with respect to the study area is balancing the maintenance of the area's sensitive natural resource regime and valued coastal landscape with the settlement demands associated with a significant future port and industry, and likely associated urban development.

At the outset therefore, the key planning issue is the area's capacity for, and the scale and form of, built development which is commensurate with enabling community development and sustaining natural resource processes and landscape amenity values.

The project methodology followed is summarized below:

- The primary objective was to review SP2000, and if necessary, formulate a new structure plan for the area.

- In order to achieve this objective, it was necessary to first identify information gaps and update the information base. This was achieved by (i) research of Council's plans and records, extensive consultation with Councillors and staff, stakeholders, landowners and developers (by way of discussions and acquiring information and plans), and (ii) the commissioning of new specialist reports.

- The process of consultation was continuous throughout the project period and generally targeted on information gathering and planning comment. This means that consultation was initially selective, and public consultation was not undertaken until the latter stages of the exercise.

- The next stage of the project process was to consider the development constraints, opportunities, and issues facing the area, and critically assess whether SP2000's development strategy was still appropriate.

- Broad strategic development options were then identified, and assessed against more detailed preliminary land use modelling. This modelling process was continually refined and focussed (with economic, engineering and transportation inputs) to the point were the spatial development strategy and detailed land use planning proposals of the draft Structure Plan were defined.

- Based on, and complementary to, the Structure Plan's land use proposals, the planning exercise concludes with a series of implementation recommendations with respect to planning, engineering and transportation.

- The draft Structure Plan was then notified for comment, and following the receipt of submissions, a hearing was held. Deliberations following the hearing resulted in some additional investigations being undertaken, consultation with selective parties, and some amendments to the draft Structure Plan.

- The final Structure Plan as reflected in this document, was adopted by Council in November 2009.

Consistent with the theme of flexibility in this document, is the deliberate decision that the Structure Plan should not necessarily label the various land use areas under discussion as they are found in the current District Plan zones. Given the long term nature of the Structure Plan, this is aimed at ensuring that future changes to land use patterns and/or zonings are not restricted, and future district planning processes are not compromised.

1.7 Public Participation

Public participation with respect to the Structure Plan has taken place continuously over the approximately two-year long project period. Discussions were held with:

- Public agencies who play a role in the area's development, including; District Councillors and staff, Northland Regional Council (NRC), New Zealand Transport Agency (NZTA), Department of Conservation (DOC), On-Track, etc

- Key industrialists/ industrial landowners, including; NZ Refinery, Northland Port Corporation, Mighty River Power, Rio Tinto, Carter Holt Harvey, Northgate, etc

- A variety of local NGO's /forums, including; members of the Ruakaka Residents and Ratepayers Association, Ruakaka Ratepayers and Business Partnership, Northland Planning Network, etc

- Numerous individual local landowners and/or developers

During preparation of the Structure Plan, information from the numerous plans, correspondences, telephone discussions, and meetings with individuals and potentially affected parties, has been considered and, where appropriate, incorporated into the planning process.

More formal consultation with the local community, Patuharakeke, the general public and other agencies was undertaken through the public notification and hearing processes.

1.8 Supporting Information

The primary method of information gathering for the Structure Plan was by way of discussions and acquiring information and plans from the numerous agencies and landowners consulted during the planning process. As far as possible, these proposals and/or plans have been incorporated into the Structure Plan.

In addition, five specific studies were undertaken in support of the Structure Plan, namely:

- Takahiwai Coastline Study
- Population and Employment Growth Study
- Town Centre Land Demand Analysis
- Infrastructure Investigation
- Integrated Transport Assessment

These specialist reports are important references should be read in conjunction with the Structure Plan, and are therefore appended to this document.

It is noted that the former three of the abovementioned studies essentially provide background information which assists with the formulation of the planning proposals.

By comparison, the latter two of the abovementioned studies not only contain details of the current situation, but in addition model and assess the Structure Plan's proposals, and table recommendations with respect to development in general, and specifically for infrastructure and roading. It is noted that these two studies have not been updated to reflect the Structure Plan, as adopted. Therefore their assessment of proposals is generally correct as applying to the macro-order situation, but is not necessarily accurate at a more detailed level.

In addition, another important detailed planning exercise, a new primary town centre urban design study was undertaken, as a separate exercise, at the same time as the Structure Plan. Whilst not forming part of the Structure Plan per se, the considerable interaction with the urban design study team has allowed for those principles and some of those findings to be fed into the Structure Plan.

1.9 Report Structure

The structure of this document is as follows:

Chapter 1: *Introduction,* including the terms of reference for the Structure Plan

Chapter 2: *Situation Analysis*; being the analysis of various sets of information and a situation assessment of the study area

Chapter 3: *Development Strategy;* outlining broad development objectives, strategic development options and a defined spatial development strategy

Chapter 4: *Planning Proposals;* including land use, engineering services, and roading components

Chapter 5: *Implementation;* implementation considerations

2.0 SITUATION ANALYSIS

2.1 Regional and District Context

The study area has grown modestly over the past decade. Residential uptake has been modest; averaging about 50-60 houses a year, and largely based on recreational and retirement lifestyles. Industrial growth has included CHH's LVL plant, expansion of the port and refinery, and the establishment of a handful of heavy, light and service industries along Marsden Point Road. Retail development has seen the addition of a small supermarket and a handful of small-footprint shops at Ruakaka.

The population and employment growth rate of Northland, the District and the study area, have risen marginally in the recent past, largely due to external socio-economic forces. The key development drivers for the area relate to the growth dynamics and external influences of the expanding metropolitan Auckland region. As described in more detail in the **Annexure 1** report, generative local settlement growth factors include; the phenomena of sea-change, counter-reaction to metropolitan living, the availability of a port and industrial land, improved transport access to Auckland, housing affordability, and employment opportunities. These aspects are summarised below.

Key urban infrastructural and land use components, such as a deep water port and availability of extensive suitable industrial land, are increasingly relatively less available, accessible and affordable in the Auckland metropolitan area. As Auckland's portside functions continue to increasingly be less bulk-product related, the handling of such products has already, and will continue to be, decanted to Tauranga and Northland Port. With a unique deep water port and plentiful available industrial land, the study area is well positioned to accommodate these port functions and the attendant industrial development.

This is further reinforced by the availability of increasingly improved regional transportation infrastructure (i.e. mainly SH1, but also the envisaged rail connection to the Port), the expected significant growth in the Northland forest product, and the closure of Port Whangarei.

Another factor is the coastal recreation and residential demands of a larger Auckland metropolitan population, and the relative attractiveness of the study area's coastline to Auckland's decentralising population and weekenders, and Whangarei commuters. This is reinforced by improved travelling times northward from Auckland. The development of Marsden Cove is testament to this trend.

In summary, external economic vectors, externally-driven population growth, decentralised settlement trends, local industrial and residential land availability, and the area's desirable local location factors, are more likely to be significant growth factors in the future with respect to land uptake and utilisation than local economic or demographic demand, per se. It is these demand and location factors which will enable the area to enter a higher and more continuous growth phase than has previously been the case.

2.2 Marsden Point-Ruakaka Area

2.2.1 Population

The current (2008) population of the study area is about 3400, which with an average household size of about 2.4 persons, equates to some 1416 households.

The distribution of households within the study area approximates:

Ruakaka-Marsden Village	870
One Tree Point–Marsden Bay	470
Surrounding peri-urban and rural area	76

From the above, some 94% of the study area's population is resident in the area's two townships.

The population growth rate over the past decade has averaged around 2% per annum, with a tendency to a slightly higher than average annual rate in the more recent years.

The **Annexure 1** report provides further detail on population and employment growth and dynamics. The following trends are worth noting:

- The recent slight escalation in the population growth rate is likely to persist for the foreseeable future, especially in the light of counter-metropolitan inertia.

- The percentage of the population in the labour force is estimated at 48%.

- There is a notable increase in the population over the summer holiday period, a situation which is likely to continue to prevail in the foreseeable future.

- With an increased future local employment base there will be a change over time to a more balanced urban population profile, (shifting from mostly part-time residency and retirees to more permanent residency and worker families), along with a concomitant change in community functions and activities.

- Because the growth of the area is largely externally driven and somewhat dependent on international and national vagaries, growth rates are not easily predicted. It is therefore considered inappropriate to undertake population growth projections on the basis of past average trends. This issue influences the Structure Plan's approach and strategy for managing growth.

2.2.2 Cultural History

The history and cultural heritage of the study area and its immediate surrounds is described in detail in SP2000, and is accepted as read for purposes of this Structure Plan.

In summary, the area is almost entirely devoid of European built heritage and with approximately 130 identified Maori heritage sites, the area has great historical, cultural, spiritual and waahi tapu value. Patuharakeke remain customary custodians (ahi kaa) of the surrounding land, sea and resources, and the Takahiwai Marae, just outside of the study area to the north-east, is a centre of present day local Maori activity.

Some of the specific values that Patuharakeke consider important, and which have been incorporated into the planning exercise are:

- The mauri and wairua of Whangarei Te Rerenga Paraoa (Whangarei Harbour) and sustenance of spiritual maunga (mountains).
- Taonga tuku iho (ancestral treasures and resources).
- Spiritual and cultural significance of waahi tapu, including archaeological sites and urupa (burial sites).
- Mahinga mataitai (customary food), materials, rongoa (medicine).
- Turangawaewae of marae and participation and continuation of traditional customary practices.
- Papakainga (Maori housing).

Significant future urban-industrial development in the area, and the potential to impact on the rich natural heritage of the area, will continue to shape the socio-economic and cultural dynamics of the local community.

2.2.3 Natural Features

(a) Topography and Landscape (**Plan 1**)

The topography of the area can be summarised as a flat coastal plain, fringed by a coastline and backed by the steep Takahiwai Hills in the north-west.

The incised Ruakaka River winds it way across the south-western sector of the coastal plain.

The 15 km long coastline affords elevated harbour views to the north from the One Tree Point coastal edge, and although the eastern ocean views from the Bream Bay coastline are more extensive, they are less accessible, given the presence of coastal foredunes.

The only other notable landscape features on the plain are two small outcropping knolls (comprised of remnant harder greywacke material), which are located (i) near the intersection of Marsden Point and McCathie Roads (ie Sargent's Hill, on which the water reservoir is located), and (ii) on the eastern side of Port Marsden Highway between McCathie Road and the Ruakaka River (which is for the most already developed to lifestyle blocks).

It is noted that the gap between the latter landform and the steep slopes of the Takahiwai Hills nearby to the west (on which Council's water treatment plant is located) is very narrow. The Port Marsden Highway passes through this gap, which serves as a physical "gateway" into the northern sector of the study area.

The landscape of the study area has important amenity values and contains numerous areas of visual and ecological significance. The topography gives rise to different local landscapes, some of which are of lesser visual significance and thus have a greater potential for urban development. The landscape analysis below is orientated towards making such distinctions.

The high value of particular local landscape envelopes and elements is reflected in the protection/conservation status under various Acts and/or their inclusion as Resource Areas in the District Plan. These areas include:

- The Whangarei Harbour waters (including mudflats) are a protected Wildlife Refuge (under the Wildlife Act 1953).

- The area's two largest wetlands (Blacksmiths Creek and the Takahiwai Stream mouth) are ecologically important and are identified Outstanding Coastal Wildlife Habitats. These habitats have already suffered a considerable degree of modification as a result of human activity.

- An Outstanding Landscape Area of between 50m and 1 km in width is identified along the Bream Bay coast, inclusive of the northern Ruakaka River mouth area, which is in addition, a Significant Ecological Area.

- The Takahiwai Hills and an area of land adjoining the Ruakaka River are identified as Notable Landscape Areas.

- The elevated parts of the Takahiwai Hills (immediately outside of the study area's western boundary) are identified as a Significant Ecological Area (mostly in Council and Department of Conservation ownership), and the lower slopes (some within the study area) are identified as a Notable Landscape Area.

- The coastline and the Ruakaka River, as far as Hewlett Road, have been identified as Esplanade Priority Areas.

The following coastal hazards are outlined in the Council's geographical database:

- Coastal Hazard Areas are been identified along the entire Bream Bay coast, and from One Tree Point to Blacksmiths Creek.

- Coastal Erosion Hazard areas are identified along the entire Bream Bay coastline frontal dune area, from Marsden Point to Ruakaka and southward beyond.

- Land instability areas are identified along the banks of the Ruakaka River estuary and on the dune zone from Marsden Village southward.

Large areas of the coastal plain are prone to flooding, which is compounded along the coastal margin by marine action during storms.

In addition, the coastal margin in the area of the mouth of the Takahiwai Stream is projected to be subject to the inundation through long-term sea level rise.

The hydrology of the area is described in a following section of this report.

In summary:

- The topography of the area affords opportunities for coastal residential and recreational use, as well as ideal conditions (presence of a deep water port, extensive flat land) for large-scale industrial development.

- The vast majority of the land in the study area does not command sea views, and such views are only attainable from parts the more immediate foreshore edge, parts of the elevated slopes on the area's western boundary, and parts of the two outcropping knolls.

- Sensitive ecological areas, high value landscape areas, and natural hazard areas have been identified and need to be accommodated in the planning for the area.

(b) Geology and Geotechnical Conditions

The area's lithology comprises three main units, namely:

(i) The unconsolidated and unweathered **sands** covering the coastal plain from the Takahiwai Hills to the coastline, forming active dunes along the Bream Bay coastline and more fixed dunes inland of this. These generally comprise wind blown sands and/or clayey ground conditions.

The active dunes and windblown sands that are found along the Bream Bay Coast are highly unsuitable for development, because of their unconsolidated nature, susceptibility to wind erosion, and general shift and erosion characteristics.

The unconsolidated gravels and sands of the sector of the coastal sand country that are found immediately inland of the coast, are the most suitable areas for built development in the study area, (despite their sandy and clayey conditions and susceptibility to sheet slips).

(ii) The areas of unweathered, unconsolidated and soft **alluvium, gravel and minor peat soils**, which correspond with the main surface drainage channels within the coastal floodplain (i.e. the Ruakaka River, Takahiwai Stream, and the inland depressions draining into Blacksmiths Creek and the One Tree Point area).

The alluvial plains and low terraces generally have high water tables and are frequently boggy, and contain sizable isolated soft areas and occurrences of peat, generally randomly distributed (according to ancient drainage paths). Soil liquification upon saturation is the primary cause of characteristic stream bank collapse. These soils are generally not suited to dense built development without being engineered (which is the customary practice).

(iii) The interbedded greywacke **sandstones and mudstones** of the Takahiwai Hills, which are generally hard, well drained, situated on steep slopes and subject to erosion and slips.

The older quaternary terraces with complex soils, located in a small area at the base of the south-eastern edge of the Takahiwai Hills, represent conditions similar to alluvial terraces (notwithstanding their marginally better soil consolidation properties), and are unsuited to dense urban development.

The highly weathered and eroded greywacke derivative soils of the Takahiwai Hills are not generally suitable for dense urban development either, because they are steep and erosion-prone.

In summary, although large pockets of area display suitable characteristics for mass urban development, the unconsolidated sands of the coastal fringe and steep slope areas are not generally suited to dense built development.

Additionally, extensive areas of wetter soils in the more inland sector of the coastal plain are geotechnically not ideal for mass urban development. However, to counter their condition proven soil improvement techniques (which have been successfully utilised in the study area in the past) can be employed.

(c) Hydrology

The hydrology of the area is influenced by the Takahiwai Hills and the flat nature of the coastal plain. The study area has 3 main drainage catchments (**Plan 2**), being:

- **Ruakaka Catchment**; including the southern part of the study area, and northward to a rough east-west aligned primary drainage divide just south of McEwan Road. All surface run-off in this catchment (which comprises the three sub-catchments **R1**, **R2**, and **R3**) drains into the Ruakaka River, which enters the sea through a breach in the dunes at Ruakaka.

- **Whangarei Harbour Catchment**, including the area to the north of the primary drainage divide, with surface run-off draining into the Harbour via four sub-catchments, namely:

    - Catchment **T**; the north-western sector of the study area, which drains to the west and north and into the **T**akahiwai Stream and delta.

    - Catchment **OTP**; the **O**ne **T**ree **P**oint area, with drainage paths flowing directly into the Harbour.

    - Catchment **BC**; the area to the south of One Tree Point, which drains via the Marsden Cove marina and the **B**lacksmiths **C**reek drain and wetland.

    - Catchment **MP**; an area to the immediate south of the Port, which drains via the **M**arsden **P**oint drain into Black Smiths Creek.

- **Bream Bay Catchment**, including the Refinery site (which drains into the harbour and the sea) and the area to the south of the Refinery along the coast, which drains into Bream Bay via the **B**erich drain.

There are integrated Catchment Management Plans (CMP's) for four of the area's catchments (ie **BC**, **MP**, **OTP**, and part of **R**), noting that the calculated stormwater flows for these CMP's have been based on a large proportion of each respective catchment having a continued general rural land use. Further detailed catchment studies and plans are likely to be required as built development extends.

The various Flood Susceptible Areas identified in the District Plan are shown in **Plan 2**, and as mentioned previously, these areas cover a substantial portion of the study area and require remedial soil works to be stabilised sufficiently so as to be suited for intensive urban development.

An assessment has also been undertaken of the effects of coastal inundation through long-term sea-level rise over the next century. The assessment has estimated that sea-level rise will approximate 0.9m above the current MHWS mark at year 2110, and accordingly that the area around the Takahiwai Estuary (**Annexure 2, Plan 1**) will be subjected to coastal inundation.

Apart from the obvious features such as streams and river mouths, there are also a few conservation-worthy remnant natural drainage features, namely; the "old Ruakaka lake", and two remnant dune lakes (to the immediate west of the Racecourse, and at the intersection of McEwan and Marsden Point Roads.

The hydrological impact on local geotechnical conditions pertains to groundwater saturation (triggering instability and slips), stream erosion (with evidence of the failure of many local stream banks), and coastal erosion (both dune erosion on the Bream Bay coast, and cliff erosion on the Harbour through wave action and base undermining).

From the above, and given the flat nature of the coastal and Ruakaka River floodplains, (i) mass built development should not be targeted on the coastal fringe, particularly the area around the Takahiwai Estuary, and generally along the Bream Bay coastline, (ii) particular attention needs to be paid to the potential cumulative impacts of mass impervious surfaces established through future urban and/or industrial development, and (iii) the stormwater component of land use planning must take cognisance of the primary hydrological characteristics of the area.

(d) Vegetation

The study area is characterised as a modified agricultural landscape, and has largely been cleared of natural bush. Remnant areas of natural vegetation are to be found mainly in isolated patches on the eastern slopes of the Takahiwai Hills, on riparian margins, on the coastal fringe, and otherwise only to a very minor extent in localised areas.

Two conservation worthy dune lake ecotones are found at the intersection of McEwan and Marsden Point Road, and to the immediate west of the Racecourse.

As much of the remaining natural vegetation as possible should be retained, not only for human comfort reasons (wind, shade, landscape, etc.), but also to protect water quality, and to maintain the diversity and integrity of broader ecological corridors.

Given that the actual occurrences of natural vegetation in the study area are limited in extent, it is especially important to retain and enhance that which remains. The requirement for enhancement of stream margin and dune stabilisation vegetation is particularly noted.

2.2.4 Land Use

The land use pattern of the study area is strongly influenced by the long coastline and desirability of living at the water's edge, deep water accessibility for the Port, the location of the Refinery and Power Station sites and adjacent coastal conservation area, the topography and availability of large tracts of flat land.

The land use pattern (**Plan 3**) is broadly characterised by:

- Conventional coastal township development in two areas; at Ruakaka-Marsden Village and One Tree Point-Marsden Bay (including the partially developed and mostly vacant Marsden Cove).
- Residential ribbon development along both sides of Marsden Point Road between Ruakaka Village and the Ruakaka town centre.
- The Port and Refinery at Marsden Point and the surrounding zoned industrial land to the south (mostly undeveloped except for small clusters of industries to the north of the Ruakaka town centre, and the lumber plant near the refinery.

- Lifestyle blocks, generally in two areas (ie to the west of Marsden Point Road and around McCathie Road, and around The One Tree Point-McEwan Roads area), and farms of various sizes throughout the remainder of the study area.

Existing land uses (as well as a number of land uses currently under consideration and/or proposed) are depicted in **Plan 3** and described in more detail below:

(a) Residential

There are 1840 developed conventional urban township residential sites, of which about 30% are vacant, as tabled below.

Table 1: Current Medium Intensity Residential Site Distribution

Area	Developed	Vacant	Total
OTP West	219	65	284
OTP	110	191	301
OTP East	141	57	198
Ruakaka East	312	17	329
Ruakaka South	300	128	428
Ruakaka West Bank	256	44	300
Total	1338	502	1840

It is noted that the Ruakaka area has about twice the One Tree Point area's amount of developed sites (ie 868 vs 470), and that the reverse is true with respect to serviced yet vacant sites (ie 189 vs 313).

There are numerous residential townships (totalling about 2388 residential sites) currently under construction and/or at the final stages of consenting and/or under consideration, as tabled below.

Table 2: Currently under construction/under consent/under consideration
Medium Intensity Residential Site Distribution

Area	Land Unit	Site capacity
One Tree Point	St Just	311
	WHF / Kowi Lakes	550
	Marsden Cove	770
Ruakaka	Ruakaka East (various)	680
	Ruakaka West Bank (various)	77
Total		2388

It is noted that the Marsden Cove Marina is being developed according to a Comprehensive Master Plan with a capacity for about 770 canal-side and other residential sites. Stage 1 is already completed and Stage 2 consents are currently being processed. The marina is as yet undeveloped with housing.

There is an additional proposal, still at conceptual stage, to broaden the scope of activities of the existing race course to a multi-purpose equestrian centre, inclusive of a limited residential component.

It is noted that apart from the above, the Ruakaka West area is currently zoned for Future Living 1, with a potential for about 1200 residential sites. There are apparently no significant subdivisions under consideration in this area, and these capacity calculations are thus excluded from the tables above.

Rural residences occupy the rest of the study area, with the majority of these being lifestyle blocks, and the remainder being farming units (mainly cattle).

In summary, there are about 1840 consented residential sites in the area's two townships, of which about 500 (i.e. 27%) are currently vacant. There are also some 2400 sites in residential subdivisions either in the process of being (imminently) consented, or otherwise generally committed, which will more than double the amount of available residential sites in the study area. If the recent-past uptake rate of around 60 houses a year in the area continues, from a demand perspective the need for additional residential land development is not foreseen in the near future.

(b) Retail and Business

There is a relatively limited amount of local retail activity, with a dependency on Whangarei for higher order functions.

General retail activity is concentrated in the multi-tenant Ruakaka town centre, in a series of small format shops and a small supermarket, covering a 3.7 ha area. Some 4.0 zoned vacant retail business land is still available for development at the Ruakaka centre.

For the rest, Ruakaka Village and One Tree Point each contain a single small convenience store. There is a currently-vacant 3.6 ha site zoned for retail business activity at One Tree Point.

A small marina-related centre is planned at Marsden Cove, and facilities could include; boat club, hotel, conference facilities, boat chandlery and petrol station.

Apart from a petrol filling station near the refinery and a group of shops on Port Marsden Highway's southern end, other business activities are limited mainly to accommodation establishments, in the form of hotels, motels, small rest home/retirement/bed and breakfast/homestay establishments and caravan parks.

In summary, additional diverse small footprint retailing and commercial services could comfortably be accommodated in either the Ruakaka town centre or One Tree Point's undeveloped local centre in the near future.

However, key issues with respect to significant future retail growth (accompanied by larger footprint supermarkets and retailing) are (i) the role of these existing centres as community focal points, and (ii) the ability for these centres to absorb significant large footprint retailing as the area grows.

(c) Industry

There are currently five industrial landowners who for many years have owned the larger blocks of land around Marsden Point (ie New Zealand Refining Company, Northland Port Corporation, Mighty River Power Ltd, Carter Holt Harvey Ltd, and Rio Tinto). These company's holdings total some 620 ha, which comprises about 75% of the study area's zoned industrial land.

The oil refinery has been in operation for 40 years. The Company has over recent years expanded by internal compaction and envisages further expansion of the facility over the next 10 years, into the Company's vacant land to the south of the refinery. No major changes to the refinery that would impact significantly on the area in the foreseeable future are envisaged. The Company has however, expressed concern about inappropriate dune access, and sees

protection of the dunes as being important from an environmental perspective, and from a safety and security perspective (given that major fuel pipelines traverse the dunes).

The power stations constructed to the seaward of the Ruakaka town centre are owned by Mighty River Power Ltd, which also owns two other vacant blocks of land to the west of Point Marsden Road, and on either side of McEwan Road.

Marsden 'B' was never commissioned, and Marsden 'A' was only used intermittently, and kept operational as an emergency backup until 1997, when both Marsden 'A' and 'B' were partially demolished. Although Marsden 'A' can no longer produce electricity, it still fulfils an important role in the national grid network by providing voltage support, which boosts the power to reach destinations further north, and smoothes out fluctuations in voltage.

The Marsden site is valued by Mighty River Power for possible future energy development, despite the fact that the exact nature of power generation is as yet undetermined.

Northland Port Corporation has constructed a deep water port at Marsden Point, and it is planned to further enlarge the facility. The Port Corporation has industrial land available adjacent to the new port and sees the availability of key infrastructure (i.e. road, rail, water, sewerage, power) as important issues in attracting business to the area. There are some concept scheme plans for the subdivision of some of the port land, which include a private road and rail corridor along the western edge of Port Marsden Highway.

The CHH LVL plant is situated off Rama Road, on land leased from the Refinery, and CHH have no development plans for the Company's other land block situated near Marsden Cove.

Rio Tinto has expressed that the Company has no plans for its presently vacant and undeveloped property, located to the south of the LVL plant.

Regarding the remainder approximately 200 ha of industrial land in the study area:

- The land development of the approximately 102 ha (net) Northgate and Port Marsden Industrial areas, located between One Tree Point Road and SH15A, is currently well-advanced, and although significant land sales have been settled, there are as yet no buildings on these lots.

- Approximately 100 ha is located in the large area bounded by Kepa Road in the south and the Rio Tinto site in the north, the coastal conservation area to the east, and Port Marsden Highway to the west. This area (which includes the fully developed Kepa Road light industrial estate) contains a few single large properties, and is for the most subdivided to a medium and smaller scale industrial sites. Industries range from service and light manufacturing to medium-heavy (eg sawmill, concrete

batching) activities, and are dispersed as clusters throughout this broad area (although predominantly in the southern sector).

In summary, of the approximately 830 ha of zoned industrial land, almost all of which is zoned for heavy industry, some 80% is currently undeveloped/vacant. A single enterprise, the Refinery, accounts for the majority (ie 66%) of developed industrial land.

(d) Social and Community Facilities

There are three schools in the study area; One Tree Point Primary School, and Marsden Christian School and Bream Bay College at Ruakaka. In addition the Ruakaka Primary School is located across State Highway 1 near Ruakaka.

There are also a number of pre-schools scattered throughout the study area, including a Kohanga Reo at nearby Takahiwai Marae.

While there are no large scale medical facilities in the study area, there are a number of smaller private medical facilities located within the residential fabric.

The Ruakaka Recreation Centre is a single multi-purpose community, sports centre, and library, located in the Ruakaka town centre. The Ruakaka town centre also contains a police station and the Council's service centre.

Apart from sport-related clubs, other social and community facilities in the area include the Bream Bay Club (on Marsden Point Road), the Marsden Point Youth Camp, and various churches in the area's townships.

The nearby Takahiwai Marae provides a focal point for local iwi, and the complex includes a kohanga reo, an urupa (which is almost at capacity), and other facilities.

The need for a new public cemetery in the study area has been on the local community's agenda for some time.

Available emergency services take the form of an industrial fire-fighting unit at the refinery (which is available in severe public fire emergencies), a fire station at Ruakaka and a surf lifesaving unit at Ruakaka Beach.

In summary, the area has a range of social, community and iwi facilities commensurate with the current needs of the local population, with the exception of a public cemetery.

(e) Open Space and Recreation

Active and passive recreation is well catered for in the area, including:

(i) Sport and active recreation, with the following facilities:

- Sports fields and tennis courts in the Ruakaka Centre.
- The Bowling Club at One Tree Point.
- Marsden Point Boat Club and Community Centre, also at One Tree Point.
- Public boat ramps and beach access.
- The Takahiwai Rugby League Club.
- The Council-owned sports ground at the intersection of McEwan and One Tree Point Roads.
- Horse training and racing at the Racecourse.

It is envisaged that with population growth, additional sports fields will be required in the longer term. These fields should be planned in the context of overall residential and open space proposals emanating from the Structure Plan.

(ii) Passive recreation is well catered for in the area, with the provision of numerous esplanades and adjacent reserves, walkways connecting these reserves, together with the general access afforded to the coast. Many of these reserves are, however, undeveloped.

(iii) A key issue is the general open spaces serving as buffer zones around large and heavy industrial developments, and utility sites also require attention.

The current planning focus in the area has been on the coast and coastal access rather than on providing urban-type neighbourhood parks. As a result the area has a number of undeveloped reserves. It is important that the Structure Plan consider this issue and provide broad direction to a future Reserves Management Strategy, under which details (i.e. playground facilities, beach replenishment, sports fields, boat ramps, car parks, pedestrian coastal access, walkways), and fiscal contributions could be formulated.

Key issues with respect to the open space system are:

(i) Establishing buffers between incompatible land uses.
(ii) The need for protection of sensitive natural areas (e.g. beach accesses, portions of the Ruakaka River banks, etc).
(iii) The appropriate identification and development of active and passive recreation, conservation and utility reserves within the context of an overall Reserves Management Strategy.

(f) Conservation

The area has a range of coastal environments comprising ocean and harbour beaches, a tidal river and estuarine environments.

The Whangarei Harbour (including the foreshore and seabed up to the Mean High Water Spring) is a declared Wildlife Refuge, in recognition of the area's internationally significant ecosystems.

The sea cliffs along One Tree Point are also identified as having national and international significance. A number of archaeological sites have also been identified between Pyle Road West and Marsden Bay.

The area is an important habitat for many migratory bird species. Marsden Spit is a designated Wildlife Management Reserve administered by the Department of Conservation.

The Bream Bay coastline, from Marsden Point to Ruakaka, is Crown reserve administered by the Department of Conservation.

The Blacksmiths Creek wetland, sections of the Ruakaka River banks, and the Takahiwai Stream mouth, are conservation-worthy areas, but are not yet afforded conservation status. Blacksmiths Creek is also a significant place of tapu.

There are locations in the study area, which contain pingao and harakeke (used for weaving). These are important customary plants, and should be identified and accorded specific protection where possible.

There are also two nationally significant small remnant dune lakes; one (currently unprotected) at the intersection of McEwan and Marsden Point Roads, and the other (falling within a local reserve) adjacent to the Racecourse.

In summary, the study area's location and topography makes it not only desirable for residential and recreational purposes, but also for industrial development. However, the sensitivity of the coastline and river environments means that particular attention should be paid to ensure the protection of natural features, ecological corridors and wildlife habitats.

(g) Agriculture

Commercial agricultural activity is limited to the larger farms in the study area. Most smaller farms serve as lifestyle blocks (albeit with small-scale farming). Intensive agriculture (e.g. horticulture, etc) is very limited and occurs on an occasional and isolated basis in the area.

Gradual and piecemeal rural subdivision into lifestyle blocks around existing townships has implications for future urban and industrial growth. This aspect is considered further in this report.

2.2.5 Zoning

The current District Plan zoning of land in the study area is depicted in **Plan 4** and described below.

(a) Residential

There are four residential zones, or Environments, namely:

- Living 1 Environment; being conventional urban township subdivision, with a minimum lot size of 500 m², and reticulated with water and sewerage.

  There are two such zoned areas, located (i) along the edge of the Harbour (from One Tree Point to Marsden Cove), and (ii) around the Ruakaka River (from Ruakaka to the river mouth).

  The total Living 1 zoned capacity is about 1840 residential sites, of which 75% are already built and occupied.

- Future Living 1, with two areas, (i) located to the south of One Tree Point and (ii) to the west of Ruakaka, respectively. There is a potential for about 4,684 residential sites, roughly equally distributed between the two areas. The entire One Tree Point Future Living 1 zone is committed to residential subdivision (currently in progress), whilst the Ruakaka West area is as yet not subdivided (in terms of its eventual full potential lot yield).

- Future Marine Village 1, applying to the Marsden Cove marina development, and subject to an overall Comprehensive Plan. About 20% of this total scheme (ie Stage 1, along the Harbour frontage) is currently developed (with consents for additional stages well advanced).

- Countryside Environment; applying to general rural areas, which make up the majority of the study area. Currently minimum lot sizes under this zone are 20 ha, with the rules allowing subdivision to lot sizes of ≥3 ha. It is noted that the "20 ha minimum Rule" was only made operative in 2006, and many of the lifestyle blocks in the study area were subdivided under the previous provisions (which allowed for lot sizes as small as 1 ha).

- Coastal Countryside Environment; effectively similar to Countryside subdivision, but with coastal landscape protection as an objective (20 ha minimum lot size, but 5 ha lots also possible as a discretionary activity). There are two such zones, located (i) on the Harbour's edge (from the Takahiwai Stream mouth to One Tree Point in the west), and (ii) in the vicinity of the Ruakaka Racecourse). The vast majority of this zone remains as large properties, not subdivided to their full potential lot yields.

(b) Business

There are four business zones, being:

- Business 2 Environment; essentially for light and service industry, with a minimum lot size of 300m², located in three blocks; (i) between the Power Station and Marsden Point Road (including Kepa Road), (ii) on the Mighty River Power site between Marsden Point Road and Port Marsden Highway, and (iii) between the Port and Marsden Cove. The Kepa Road area is almost fully developed, whilst the other two areas remain as vacant large single properties.

- Business 3 Environment; covering suburban and township shopping centres, and encompassing commercial and retail activity with a minimum lot size of $100m^2$. This zones applies to (i) the Ruakaka Town Centre (with 3.7 ha out of a zoned 7.7 ha currently developed), and (ii) to a 3.6 ha vacant area at One Tree Point.

- Business 4 Environment; applying to general heavy industry, and located in two contiguous areas, namely; (i) between the Power Station and the Refinery and the coastal conservation edge, to the east of Marsden Point-Port Marsden Highway (with about 25ha developed out of a total zoned capacity of 213 ha), and (ii) to the west of Port Marsden Highway and Port land, with a total zoned capacity of 93 ha, currently all vacant.

- Future Business 4 Environment; applying to the single 102 ha (Port Marsden and Northgate Industrial) area located between One Tree Point and McEwan Roads and the Port Marsden Highway, and which is in the final stages of land development.

There are two other special "industrial" zones, with scheduled activity overlays relating to their unique activities, being:

- Business 4 (Refinery), being the approximately 119 ha oil refinery site, which is about 90% developed, and

- Marsden Point Port, including the Port and port area, totalling 132 ha, of which about 15 ha is developed (mainly the port itself).

(c) Open Space

There is a single Open Space zone, which applies to all active recreation areas, esplanade reserves, passive recreation areas, and conservation areas. This Open Space Environment zoning covers land owned by the Council, the Department of Conservation, and/or other agencies for recreational and/or conservation purposes.

(d) Designations and Scheduled Activities

Under the District Plan, a number of individual sites have been identified (i.e. in the form of designations) for specific uses such as schools, police stations, and/or for certain site-specific functions (eg, transportation, utilities, landscaping strip, building setback), or have a scheduled activity overlay. All designations and scheduled activities applicable in the study area are shown on **Plan 4** and are listed below.

Table 3: District Plan Designations and Scheduled Activities

Designation	**Description**	**Location**
DE 28	Bream Bay College and House	Marsden Point Road, Ruakaka
DE 42	One Tree Point Primary School	One Tree Point Road, One Tree Point
DE 51	Ruakaka Primary School	State Highway 1, Ruakaka
DW 3	Proposed extension to Ruakaka One Tree Point Wastewater Treatment Plant	Ruakaka
DW 4	Ruakaka One Tree Point Wastewater Treatment Plant	Ruakaka
DW 15	Stormwater Drainage	Peter Snell Road, Ruakaka
DW 19	Stormwater Drainage – Bercich Drain	Marsden Point
DW 69	Reservoir	Marsden Point Road
DW 79	Treatment Plant and Reservoir	One Tree Point Road
DW 113	Proposed Public Reserve	One Tree Point
DW 114	Proposed Public Reserve	One Tree Point
DW 115	Proposed Public Reserve	One Tree Point
DW 116	Proposed Public Reserve	Ruakaka
DNP 10	Ruakaka Substation	Camelia Ave, Ruakaka
DNP 11	Bream Bay Substation	Marsden Point
DTP 2	Marsden Outdoor Switchyard	Ruakaka
DTP 3	Bream Bay Substation	Rama Road, Marsden Point
DT 7	Telephone Exchange	Marsden Point Road, Ruakaka
DPOL 4	Ruakaka Police Station	Peter Snell Drive, Ruakaka
DTNZ 5	State Highway 15A (with conditions)	Various
DREF 1	The operation, maintenance and repair, upgrade and renewal of the existing petroleum transmission pipeline and ancillary facilities as required for the transportation of refined fuel products	Various
DVG 1	The operation, maintenance, repair, upgrade and renewal of the existing gas transmission pipeline and ancillary facilities as required for the transportation of gas	Various
Scheduled Activity	**Description**	**Location**
S7	10m landscape strip	Section 26 SO 322547
S8	15m stormwater ponds, 60m building restriction setback	Sect 32,38 & Pt Sect 39 Blk VII Ruakaka Survey District
S9	Campground	One Tree Point

The following is evident with respect to the District Plan zone provisions:

- Apart from the Refinery, the Port itself, and the Power Station site (which together measure some 300 ha), there is about 528 ha of zoned industrial land, of which 80% is zoned (Business 4) for heavy industry. This appears to be an imbalanced provision of industrial zonings.

- The Business 2 and 3 Environments need rationalising, particularly in the area immediately north of the Ruakaka centre.

- The Business 4 Environment zone provisions are essentially aimed at the requirements of heavy and/or space-extensive industry. Whilst they are appropriate and have long been in place for the land along either side of the port transportation corridor (where SH15A and the proposed rail line are adjacent to each other), the zoning of the Port Marsden-Northgate industrial area as Business 4, in that specific locality, is questionable (in that heavy industry can now be locate in the western sector of the study area, close to the Takahiwai Hills and along One Tree Point Road, which is the primary access road to the One Tree Point residential area).

- Both the Countryside and Coastal Countryside Environments allow for relatively small scale rural land subdivision, which in turn has a direct effect on land availability for future urban growth in these areas.

- The provisions of the District Plan may be inappropriate to enable the spatial arrangement of residential and industrial development that is envisaged in the Structure Plan, and these provisions may need to change. Equally, it may be necessary to investigate the introduction of a new zone(s) in the study area. These would need to be done by way of a plan change(s) and could have wider implications for the District as a whole.

2.2.6 Engineering Services Infrastructure

The following descriptions of components of engineering services are referenced to details contained in the **Annexure 3** report and **Plan 5** overleaf:

(a) Water Supply

The area's bulk water supply is from the Bream Bay Water Supply Scheme (BBWSS), which supplies the wider area through to Waipu and Langs Beach, and is independent of the District's other supply networks.

Wilsons Dam is the main supply dam, and with a capacity of 2.1 million m^3 of water, has a full capacity daily abstraction of 21,000 m^3 (equating broadly to the needs of around 26,000 households). The Dam is designed to cope with a 1 in 50 year return period drought and a 50 year planning period.

The area's two other historical water sources, the Takahiwai Dam and Pohuenui Stream, are not currently used and their decommissioning is being investigated. The Dam could, however, be suitable for emergency situations and/or as a raw water storage/supply.

Water is treated at the Ruakaka Water Treatment Plant (WTP), which was recently upgraded and can accommodate long term future demand.

Treated water is reticulated to all township areas and reservoirs are located at Sargents Hill and at the Ruakaka WTP. The reticulation system is reasonably good, and is regularly improved as part of Council's ongoing maintenance programme.

There are approximately 2400 metered connections in the BBWSS, with a total daily consumption of about 8,000m^3. The Refinery consumes some 74% of daily metered consumption, and the Port and LVL plant another 4%.

The **Annexure 3** report outlines that although water supplies are secure and should not be a constraint to future growth, in the modelled high demand scenario, demand will exceed the capacity of Wilsons Dam within the 50 year horizon.

(b) Wastewater

The area's Wastewater Treatment Plant (WWTP) is situated just north of the power station, and utilises two facultative lagoons followed by wetlands to stabilise the wastewater. At present effluent from the wetlands is discharged to ground via infiltration basins.

The plant currently has (an expired) resource consent for treating 685 m^3/day. A consent for temporary upgrade option for 1800m^3/day (equating to about approximately 3000 households) has been granted and upgrading of the WWTP will commence shortly. The WDC and a landowner's group (BBLOA) are currently working through programming and construction of the initial upgrade.

Council has approved a Phase 1 Plant upgrade for 3000m^3/day which is expected to be triggered when 80% of the temporary upgrade capacity is utilized.

A study is currently underway to investigate long term options for treatment and disposal of some 24,000m^3/day (also including Waipu in future) of wastewater. Four possible disposal options have been identified (including terrestrial discharge and ocean outfall) and are being reviewed for acceptability and feasibility, with a view to obtaining a Resource Consent for a discharge based on a predicted significant future capacity. In this regard community consultation has commenced.

Wastewater from the Refinery is treated, including discharge to a wetland, on-site.

The wastewater network extends to all townships in the study area, as shown on **Plan 5**, and detailed in **Appendix 3**.

In summary, despite the fact that availability of wastewater is limiting the immediate development of "almost-consented" subdivisions, the necessary upgrade to the WWTP is in hand and imminent. Given that even further expansion of the WWTP's capacity is already being planned, the issue of wastewater disposal should soon not be a factor limiting future development.

However, the key wastewater strategic issue for the area, which remains to be resolved, is the nature of the long term system, and essentially whether terrestrial or an ocean disposal will prevail.

Planning for wastewater (and stormwater) disposal should also be cognisant of, and incorporate, Maori cultural values regarding the disposal of waste products in relation to natural resources.

(c) Stormwater

The existing stormwater catchments and drainage are previously described (ie under Hydrology) and shown in **Plan 2**.

There are Catchment Management Plans (CMP's) in place for the One Tree Point, (part of) Ruakaka, Blacksmiths Creek and Berich Catchments. The **Annexure 3** report notes that some of these CMP's are based on a future scenario of a large proportion of a catchment being rural, and for a fuller urban development scenario, the CMP's would need to be revised.

The existing residential and industrial areas are primarily serviced by a piped network, stormwater ponds and open channels, as shown in detail in the **Annexure 3** report.

Within some residential areas (eg La Pointe, Ruakaka East) stormwater ponds form a continuous open space, whereas in other townships these ponds generally occur as spatially isolated local ponds within the township layout matrix. These different configurations give rise to different urban utility/open space network potentials.

There are also series of larger stormwater ponds in place (or proposed), where development has occurred (or is under construction). These ponds (**Plan 2**) are aligned with existing natural drainage paths and/or major drains, and are located; on the northern-western boundary of the Port land and to the south of the remnant "Ruakaka Lake".

From empirical investigation (including the abovementioned ponds), and from the modelling contained in the **Annexure 3** report, as a broad specification, fully developed urban areas have an overall approximately 65% impervious surface, and about 10% of the gross land area is allocated to stormwater ponds.

The majority and remainder of the study area is served by agricultural drains, generally running either north or south. Surface water ponding is common on flat topography during extreme rain events, and the identified Flood Susceptible Areas primarily result from under-capacity agricultural drains overflowing to the surrounding flat land during heavy rain.

In summary, as development progresses it is important to consider and accommodate the cumulative stormwater impacts of future extended built areas. The major drains and natural drainage paths afford the optimum opportunities for macro-order stormwater networks, and existing (and proposed) larger ponds already generally respond to these locations. The Structure Plan needs to consider land requirements for stormwater management purposes.

(d) Coastal Engineering

The study area's coastline has a variety of environments including white sand ocean beaches along the dune coastline from Marsden Point to Ruakaka, sea cliffs along the One Tree Point coastline, harbour beaches, estuaries, and mangrove areas.

Most of the coastline is accessible, and development has taken place along much of the immediate foreshore area at One Tree Point-Marsden Bay and generally behind the foredunes on the Bream Bay Coast. Maintaining the stability and natural balance of the foreshore areas is ecologically important. The effects of sea level rise and coastal erosion should be monitored constantly.

Protection works have already been constructed over a considerable length of the Harbour coastline, where development (e.g. housing, roads, etc.) is in close proximity. Some 60% of the sea cliffs from One Tree Point to Pyle Road West and 45% of the sea cliffs from One Tree Point to Marsden Bay have been modified by protection works, and some 96% of the foreshore along Marsden Bay to Blacksmiths Creek has protection works. The protection works include sloping concrete rubble, rock revetments, vertical block walls, and timber walls.

The coastline from Pyle Road West to Blacksmiths Creek has been identified as having areas of both national and international geological significance, as well as significant archaeological sites. At the same time, it is in further need of engineered coastal erosion solutions.

Much of the foreshore from Marsden Point to Ruakaka is Crown reserve administered by the Department of Conservation, thereby broadly serving to protect this highly valued landscape area. The main impacts on the dune area between Marsden Point and Ruakaka are erosion from human activity and wind. The main means of erosion mitigation is vegetation stabilisation.

In summary:

- Coastal Hazard Zones have been identified, and Council has a remedial coastal engineering programme in place (largely covering the Harbour foreshore zone). Constant monitoring of coastal erosion due to coastal processes and potential sea level rise is necessary which might necessitate the revision of the coastal hazard lines.

- The long-term effects of the receding shoreline in the vicinity of the Takahiwai Estuary is best managed by the avoidance of mass built development in this area.

- It remains to adequately address dune destabilisation through a vegetation planting programme and institute appropriately controlled accesses through the dunes.

(e) Electricity

The area is supplied with power from the national grid, with main transmission lines passing through the study area (**Plan 5**, for voltage boosting at the Marsden Power Station. There is sufficient bulk capacity in the system to accommodate future growth. Local reticulation (including a few substations) is spread throughout the area, and will be extended according to demand. The future upgrading of the network will be accommodated within the existing power line alignments, and there are therefore no bulk land allocation requirements.

It is noted, however, that the location of main overhead electricity lines and pylons, which generally need to be avoided in planning for the built urban environment, will influence land use proposals in their immediate vicinity.

Power supplies traditionally follow development, and this situation will prevail in the study area. The New Zealand Refining Company has the potential for a cogeneration plant (generating steam for refinery use and electricity for refinery use/export to the national network).

Mighty River Power is also holding in abeyance its options with regard to the future development of the Marsden A and Marden B Power Station sites. Although the existing power stations are partially demolished, Mighty River Power has indicated that future power generation from this site is a strong possibility.

(f) Gas and Oil

The Refinery connects to the regional gas pipeline, which traverses the study area from the Refinery through to west of Ruakaka. Local reticulation is available and there is sufficient capacity in the system to cater for future demand.

The Refinery Auckland Pipeline (RAP) extends south from the Refinery and supplies products to the Auckland region. A disused fuel oil pipeline runs along the coastal edge from the refinery to the power station.

(g) Telecommunications

Telecommunication services traditionally follow development and demand, and in this respect the area is well catered for. There is no urgent need to allocate significant additional land for automatic exchanges in the Structure Plan.

(h) Solid Waste

Solid waste disposal will continue to take place at the existing transfer station facility at Uretiti. There appear to be no constraints now or in the immediate future in regard to solid waste disposal.

2.2.7 Transportation

Roading and transportation matters are detailed in the **Annexure 4** report, and are summarised below.

(a) Roading

The study area is bounded by State Highway 1 (SH1) in the south west, and is accessed from SH1 via two arterial roads, Marsden Point Road and Port Marsden Highway (State Highway 15A).

The existing road network is shown in **Plan 5** and is made up of the following main routes:

- Marsden Point Road, connecting State Highway 1 (SH1) in the south, through Ruakaka and merging with Port Marsden Highway northward of the McEwan Road intersection.
- Port Marsden Highway (SH15A), connecting SH1 in the south to Marsden Point. The limited-access highway includes 2.8 km of a reconstruction of One Tree Point Road from SH1 to McCathie Road, and a new 3.5 km deviation from McCathie Road to Marsden Point Road, and reconstruction of the northernmost 3.5 km section of Marsden Point Road to Northport.
- One Tree Point Road, a loop route leading off SH15A and extending from the intersection with SH15A, northwards through the One Tree Point residential area, and to Marsden Cove, and then via Pyle Road West to intersect with SH15A at Marsden Point.
- Four east-west collector roads link Marsden Point Road with One Tree Point Road, namely; McEwan, McCathie, Salle, and Pyle Roads, with the latter not well-formed all the way to SH15A in the east.

- The Ruakaka east and south areas are each served by a single access point off Marsden Point Road, with the local road network of these areas respectively acting as a cul-de-sac.

There are also numerous minor roads and residential streets in the study area, several of which are unsealed.

Regarding road traffic, Northland relies heavily on road haulage to transport freight throughout the region, and to and from Auckland. Key industries associated with heavy traffic volumes include forestry, stock, dairy, horticulture, solid waste, heavy industry, tourism, school buses and passenger transport. Northland Regional Council's (NRC) recently updated Heavy Traffic Volumes Report provides an overview of the region's trends, in particular Marsden Point's rising trends.

The report identifies that the current heavy vehicle percentage of SH1 is between 10% and 11%, with SH15A having a heavy vehicle percentage of 25% (approximately 400 heavy vehicles per day out of 1,600 all-vehicles per day). Reasons for this include:

- Closing Port Whangarei in 2004 shifted significant volumes of freight (primarily timber related) onto the State Highway road network to access Marsden Port (opened in 2003). A consequence of the relocation to Marsden Port is a 50% reduction in rail freight to Port Whangarei.
- The new port created demand for a new state highway connecting SH1 with Marsden Port. The construction of SH15A was completed in 2004 and it was designated as a state highway in 2005.
- Industrial development at Marsden Point is expanding. This includes heavier industry such as sawmilling, and fertiliser and cement works.

It is noted that the report suggests that rail should be considered for the long term future for the region, by introducing a rail link from the Main Trunk Line to Marsden Point, connecting Auckland to Marsden Port.

The current road network is considered generally adequate to meet present functional needs, although expanded activity at (and nearby) the port has already resulted in upgrading of certain road sectors. Stage 1 of the SH1-SH15A intersection upgrade has recently been completed, and preliminary investigations for the upgrading of the SH15A-McCathie-One Tree Point Road intersection and the widening of SH15A to four lanes are also under consideration.

In tandem with the rail corridor designation process, consideration was also given to (i) a bridge over the rail on One Tree Point Road, and (ii) the suitability of the Pyle Road East Road alignment and intersection with SH15A.

It is clear that SH15A has become a physical barrier isolating the area's two main residential areas. This could be countered to a certain degree by instituting an appropriate overall road hierarchy, along with grade-separated intersections at the intersections of SH15A and local roads.

Increasing traffic volumes and residential development, together with a generally reduced school bus service, has resulted in an increasing demand for footpaths in the area, and requests for cycle ways along main roads.

(b) Rail

The NRC's 2006 regional capability review of infrastructure in Northland identified gaps and constraints to regional growth and prioritised the need for further infrastructure development. One of the top priorities is the establishment of a rail link to Marsden Point (Oakleigh to Marsden Point Rail Link Project), aimed at moving more heavy freight by rail.

The proposed Oakleigh to Marsden Point rail link (**Plan 5**) leaves the existing North Auckland Line (NAL) at Oakleigh approximately 25 km south of Whangarei City, and travels eastwards for approximately 16 km to link with the port at Marsden Point.

There is capacity within the NAL to accommodate increased freight movement, which in many cases provides a more fuel efficient and environmentally sustainable alternative to road-based freight transport.

However, even though with the construction of the Oakleigh – Marsden Point rail link there would be a basic functional rail connection to Auckland, in order to suit a fuller range of freight requirements the line to Auckland would also need to be upgraded (essentially the enlarging of six tunnels in order to accommodate "High Cube" containers, which are increasingly being used).

A fully functional freight line between the Port and Auckland is considered vital to significant future industrial growth in the area. The Regional and Whangarei District Council's 2003 feasibility study found that in addition to attracting other big businesses to the Marsden Point area, the link would offer a host of benefits, including helping to ease forestry-related traffic volume and congestion problems on the region's roads, and the creation of more than 200 fulltime jobs during the construction period, and the injection of millions of dollars into the local economy.

The first stage of this project, the land acquisition and designation process for the 16 km long rail corridor, is in its final stages. Designating the route will preserve the opportunity for the rail link to be built by central government and/or other funder(s) at some future date. OnTrack has indicated no current commitment to establishing a rail link to the area.

It is noted that the planning of the Port land includes a dedicated internal road and rail transport corridor. A large rail yard is included at the southern end of this corridor (**Plan 5**).

(c) Ferry Services

Interest has been expressed in a vehicular ferry service between Marsden Point and Whangarei Heads, to service not only local demand but to provide a tourist route link to Whangarei Heads as part of a coastal road network. This will require further feasibility investigation and consultation, noting that Council has reserved an option for the ferry terminal on the southern side of the harbour, adjacent to the port.

(d) Coastal Access

Water-based activity forms an integral component of recreational and commercial life in the study area, both for residents and visitors, and access to the coast is a highly valued part of the local lifestyle.

(i) Pedestrian Access:

The area is served by numerous dedicated pedestrian coastal access points, which have the capacity to be developed to meet growth in use over the near future. While a number of these access points are well structured and maintained, better management is needed in some areas. General public concern has been expressed that pedestrian access points, to varying degrees; do not have safe convenient parking areas, are not easy and safe access for all persons, and lack adequate rubbish disposal facilities and toilets.

Uncontrolled pedestrian traffic over the dunes is causing severe damage in certain places, especially at road-ends, designated beach access ways, and where housing is located close to the beach. Pedestrian access through dunes needs to be better controlled in order to protect dune stabilisation efforts.

Pressure from further subdivision underway at Ruakaka East, and at existing Ruakaka South will impact on pedestrian access to the coast, and the coastal foreshore ecology. There is a need to establish an overall 'master plan' for managing access to the coast.

(ii) Boat Access

The area is at present served by a concrete ramp at One Tree Point and a larger ramp and slip facility at Marsden Cove, and three smaller, restricted beach ramps.

The One Tree Point ramp is situated on an exposed headland, which makes launching difficult at times, particularly for the larger craft, and increasingly the Marsden Cove ramp is used for access to the Harbour. In both instances, traffic movements and parking associated with the ramps are congested.

Small boat access is also available in many secondary locations, with the beach ramps and secondary launching locations coping with present loadings (given their limited scope to serve the needs of boat users).

(iii) Vehicular Access

Vehicle access to beach areas is a somewhat controversial issue, and indiscriminate beach access and usage is an environmental problem. It is necessary to identify and formalise beach access points for vehicles, and to identify sensitive areas on the coast that should be completely closed off to vehicle use (sand dunes, wildlife areas).

2.2.8 Current Structure Plan (2000) Spatial Strategy

The current spatial development strategy for the area (**Figure 3**) is contained in SP2000, and is the framework for SP2000's proposals. The key features of this current spatial development strategy are:

- The Port, Refinery and (future) Power Station as key national/regional strategic facilities and foundations for further industrial growth.
- Improved access to the Port by way of a new arterial road between SH1 and the Port, and a new rail link from the Port to the main trunk line at Oakleigh.
- Expansion of the Port, including land reclamation.
- Heavy Industrial expansion from the Port along the joint rail-road axis to McEwan Road and extending to the Power Station along the coast.
- Expansion of industry generally south-westward towards SH1 and into a (then new) industrial area south of McEwan Road, between the rail line and SH15A.
- Two separate residential areas, One Tree Point and Ruakaka, each with an introverted focus on a local centre, and each with an adjacent future residential extension (to the south of One Tree Point, and to the west of Ruakaka, respectively).
- The Marsden Cove marina development, as a part of the larger One Tree Point area.
- Strong and distinct urban edges around planned residential extensions and with extensive rural spaces acting as Residential-Industrial interface buffers.
- Limited additional denser residential township development in the sensitive Bream Bay coastal edge, especially at Ruakaka East and South.
- A Coastal and Landscape conservation study area perimeter.

2.2.9 Land Capacities

Zoned Capacity:

There is an apparent high degree of imbalance between the land use activity capacities under the current zoning pattern, especially in relation to Residential vs Business zones, as modelled in the table below:

Table 4: Current Zoned Residential Population Capacity

Type	**Residential Sites**	**Population Capacity**
Developed (built)	1 338	3 345
Developed (vacant)	502	1 255
Committed subdivisions	2 388	5 970
Zoned (future)	2 296	5 740
Total	**6 524**	**16 310**

With a projected labour force participation rate of 48%, based on the above, the potential labour force would approximate 7830.

However, as outlined below, this potential labour force would be in the order of 60% of the total employment which could be generated from zoned industrial and business land.

Table 5: Current Zoned Employment Capacity

Type	**Ha**	**Low Scenario**		**High Scenario**	
		Rate / ha	Employment	Rate / ha	Employment
Retail/Business	8	50	400	100	800
Light Industry	102	30	3 060	40	4 080
Medium Industry	115	20	2 300	20	2 300
Heavy Industry	623	10	6 230	10	6 230
Total			**11 990**		**13 410**

The implications of this capacity imbalance are that either a significant amount of additional residential land will need be planned at a future date, and/or that large scale commuting from outside the area would occur. This is a key strategic issue which need to be addressed in the Structure Plan.

Land availability:

Other than currently zoned industrial land and committed residential townships, the following five large areas for additional future development are identified, and are depicted in **Figure 4**:

1. **670 ha** bounded by; planned One Tree Point residential extensions to the north, the Takahiwai Stream to the west, the proposed rail line to the south, and Business 4 zoned land to the east.

2. **140 ha** bounded by; SH15A and the Mighty River Power land to the north, an outcropping landform to the west, the Ruakaka River to the south, and Marsden Point Road to the east.

3. **120 ha** on the western boundary of the study area, between One Tree Point Road and the proposed rail line. Apart from a narrow flat section along One Tree Point Road, the majority of this land block is steep and unsuited to dense urban development.

4. **90 ha** located in the south-western extremity of the study area, to the west of SH15A.

5. **170 ha** of currently zoned Future Living 1 land, located between SH15A and Marsden Point Road, to the south of the Ruakaka River.

To envision the settlement scale of the potential full development of the study area, various land use models were tested, and preliminary estimates concluded that under a full land development scenario (inclusive of all zoned land and the potentially developable land areas outlined above), a town with a population of in the order of about 35,000 to 40,000 could eventuate.

Within the study area there is thus sufficient land to accommodate urban and industrial growth for well beyond 30 years (at current, and even high, growth rates).

Accepting that demand for industrial and residential land will be continuous in the long term (albeit at variable rates of demand within smaller time periods), it is necessary to provide for incremental growth over a long period, and in this regard to:

- Allocate land for future residential development on a consolidated basis, around the existing residential townships, with more peripheral land set aside for longer term future urban development.

- Ensure that very long term industrial expansion is possible around the port, SH15A and future rail infrastructure, and that the functionality, further development, and performance of these key transport facilities is not compromised.

- Establish appropriate interfaces between incompatible land uses (ie principally heavy industry and residential) in the form of buffer areas.

These are key strategic issues which need to be addressed in the Structure Plan.

2.3 Summary Development Issues

The key development issues facing the area are summarised and grouped for convenience below, noting that they are not tabled according to any particular priority.

Externally driven growth and development impetus

- The local residential and industrial growth rate has historically been relatively low-moderate, and largely driven by the external economic conditions and land demand factors of the national, Auckland metropolitan and Northland regions. This situation is likely to prevail in the short-medium term future, at least.
- Port-related and industrial development in the area is largely dependant on regional transportation infrastructure, which provides access to both the Northland hinterland and the Auckland regional production areas and markets. Although continual upgrading of regional and local road networks improves the area's accessibility and its attractiveness to industry, the construction of the rail link to the port, and the ability to thereby more efficiently link to these external areas and markets, is a vital factor in achieving a significant increased scale of local industrial development.
- With regard to the recent spurt in land development in the area, a distinction should be made between apparent and actual demand (ie. between demand-based actual take-up of land, and land banking and/or advanced land development in expectation of a future land demand).
- The relative attractiveness of the area as a regional industrial location and also as a commuter location relative to Whangarei will increase in the future, especially and increasingly as a critical mass of local development establishes.

Land Use patterning and planning

- There is a marked imbalance in provision of zoned land, with relatively excessive industrial land provision in relation to residential land provision.
- There appears to be an imbalance in the type of industrial land provided, with (excluding the port itself, Power Station and Refinery) more than three times more land allocated for heavy industry than for light/service industry.
- Industrial and residential land uses are spread across the study area, for the most in relatively isolated, low density and uni-functional activity concentrations. This results in a generally poor overall urban form regarding aspects such as connectivity, activity mix, and range of activities.
- There is a limited range of residential opportunities/options, with the nature of current residential development (ie. almost exclusively single-residential medium intensity housing) largely based on the historical target market and demand for second homes and retirement living.

- Residential areas which comprise relatively bland traditional suburban environments, having a low level of urban activity mix, and in terms of design, have a low capability to absorb other residentially-based urban land use activities (eg schools) and be more diverse in the future.
- There are some noticeable inappropriate interfaces between incompatible land uses (eg. Port and residential). Without adequate buffer areas, reverse sensitivity could restrict land use development in the future.
- The open space system of local reserves and walkways is not well developed and does not function optimally as an integrated network, especially in relation to the major riparian, estuarine and coastal open spaces.

- Marsden Cove has the potential to be a multi-faceted resort, coastal residential, and recreation zone, and when fully developed, sufficiently large to have an identity as tourist destination and node.

- The potential for relatively small scale rural subdivision to occur on a blanket basis across the study area's rural zone is not generally conducive to selective spatial structuring, especially of the urban-rural interface.

- The considerable investment to date in key industrial facilities and the port, the potential for local power generation, and the availability of a vast amount of flat land already zoned for industry, has established a foundation for the future development of an urban-industrial development node of regional and national significance.

- The study area will thus not only grow, but is also likely to functionally change from its historical role as 'bachland' with isolated industries (i.e. the Port and refinery), to a functionally much broader-based urban area, with significant business, residential, community and civic activities.

- The Port Marsden Highway and proposed rail line will create a physical barrier which will serve to split the study area into two distinct compartments. Effectively linking these two areas will require careful consideration of "cross-barrier" linkages and adjacent land use interfaces.

- Given that the growth of the port and attendant industry needs to be enabled over the very long term it is important that land, roads, rail and other infrastructure geared to support such development is not compromised by residential and community reverse sensitivity, thereby restricting either industrial or other urban activity growth in the long term.

- Given the rich natural character of the coastline and the study area's potential for mass urban development, there is a potential for large scale impact on the natural realm. It is important that such impacts be avoided by appropriate land use interface planning between the urban area and adjacent protection/conservation areas.

- In order to protect higher value landscape features and ecologically sensitive areas from being gradually eroded by incremental mass urban development, it is appropriate and necessary to plan for the ultimate spatial extent of urban development, and define and establish strong and permanent urban edges.

- The dune zone around Ruakaka is ecologically dynamic and the landscape is highly rated, and the coastal edge is particularly highly susceptible to the potential negative visual and ecological impacts of adjacent urban development. Although this local area remains generally highly desirable as a coastal residential location, it is important to limit concentrated urban development in this general vicinity.

- There is a need for an overall vision and physical plan for the area, to avoid piecemeal development, because such development does not easilly allow for the cumulative effects of long term development to be understood. In the absence of such a long term plan, not only will ecological and landscape imperatives be gradually eroded, but facilities, servicing and roading provision planning, will also be made more difficult.

Infrastructure

- Improved accessibility to the area through the construction of the Port Marsden Highway has already had an impact on the Port and local industrial growth. The further upgrading of SH1 and the construction of a rail link to Auckland and Whangerei will increase the desirability and functionality of the area.

- The area's primary road (SH15A) and rail infrastructure (line and marshalling yards) corridor needs to be protected from side friction and reverse sensitivity, in order to maintain and protect its functionality for Port and industrial usage over the long term.

- Access to the port via SH15A will significantly reduce industrial traffic through Marsden Point Road and Ruakaka, thereby facilitating the use of this section of road as a more local urban road.

- There is an imbalanced provision of infrastructure (eg roads, wastewater) in relation to land release and land use development.

- The limited capacity of the area's wastewater treatment system is currently restricting land development, although upgrading plans are underway to provide additional capacity for short-medium term requirements. However, the longer term wastewater disposal strategy is not yet fully defined, and needs to be put in place to avoid ad hoc disposal solutions being made in association with the incremental upgrading of the system.

- The availability of a bulk water supply to the area is not considered a constraint to growth. However, with an estimated less than 10% of water supplies being required for potable water, the current and future supply of treated water for industrial purposes is not necessarily the most efficient practice.

- Integrated stormwater planning is limited to certain areas only, and because the modelling in the existing Catchment Management Plans is based on only a proportion of a particular catchment being under urban land use, these plans would not necessarily be relevant if rural areas were consumed by urban extension in the future. There is a need to review these Plans and to consider the cumulative effects of future mass urban development in their respective catchments.

Land capability and availability

- There is extensive land available for further urban growth, and even under the most optimistic development scenario, the full capacity for urban growth will not be reached in the next 30 years. Efficiencies attributable to selective programming of spatial growth and the staged release of land are therefore important.

- Most of the estuarine and coastal frontage land is already developed and/or committed to development, and very little coastal-frontage land remains for further residential usage. Therefore future residential land will for the most be located in the inland sectors of the study area.

- The significant extent of peat throughout the central and western sectors of the study area determines that land engineering will be required to enable mass urban development.

- The majority of the vacant and unzoned land available for future urban residential development is in the northern sector of the study area.

- The existing Ruakaka centre has capacity for expansion to cater for the needs of the local Ruakaka residential community.

- Reasonably easy options exist for developing a centre in the One Tree Point vicinity, to serve the expanded future residential community of this area.

- Pressure should be taken off the sensitive coastal dune and foreshore along Bream Bay by restricting further township development towards the sea and southward of the study area, especially given that other, less-sensitive residential land options are available.

- The Whangarei Harbour and Bream Bay coastline are particularly ecologically sensitive, and development impacts (with respect to stormwater runoff, pollution and visual blight) are key considerations for both terrestrial and foreshore developments.

Policy Issues

- The co-ordination of planning processes is not optimised. This stems from both (i) the given institutionalised compartmentalisation of various components of development (eg the mandatory jurisdictions of NZTA, the Regional and District Councils, Department of Education, etc), and (ii) from intra-Council departmental co-ordination (eg land use consenting viz a viz infrastructure asset management plans, Long Term Council Community Plan, financial contributions regime, etc).

3.0 DEVELOPMENT STRATEGY

3.1 Broad Development Goals and Objectives

The broad development goals and objectives for the study area can be summarised in a few short statements:

(a) To provide adequately, appropriately and timeously, for the economic, employment, residential, service and other functional needs of existing and future populations.

(b) To recognise the future demand for growth, and to plan for this growth within the limits of natural resource sustainability and the retention of primary environmental amenity values.

(c) This above requires key natural environmental factors and landscape elements to generally be protected from the potential degradation impacts of mass urban development. To achieve this it is generally necessary to plan urban development outside of highly valued landscape compartments and less resilient ecological zones, and to locate and develop the urban areas in a form that optimises the potential for mitigating the cumulative natural environmental impacts of such built development.

(d) In providing for urban growth and expansion, to formulate a spatial development plan which is comprehensive in its scope and which integrates the mutual development of land use, access and engineering services, to optimise the performance and functioning of the built environment.

(e) To plan for an urban form according to best-practice sustainable urban settlement principles, and which optimises opportunities for socio-economic advancement and community formation.

(f) To enhance the operation, safety and coherence of road and rail transport, and provide for a multi-modal transportation network.

(g) To formulate a structure plan that will establish a sufficient level of spatial development guidance and that will simultaneously be flexible, adaptable to a range of likely future demands and have the capacity for staged development.

3.2 Planning Approach

A few key approaches to the structure planning exercise are defined at the outset, because the approach adopted fundamentally influences the type of structure plan which results. The general approach is outlined below.

(i) Growth rates and timeframes:

Traditional planning methodologies often proceed on the basis of a combination of historical growth rate analysis and likely future growth rate predictions. These analyses are then translated into estimates of likely land use demand, which in turn forms a basis for land use and infrastructure planning.

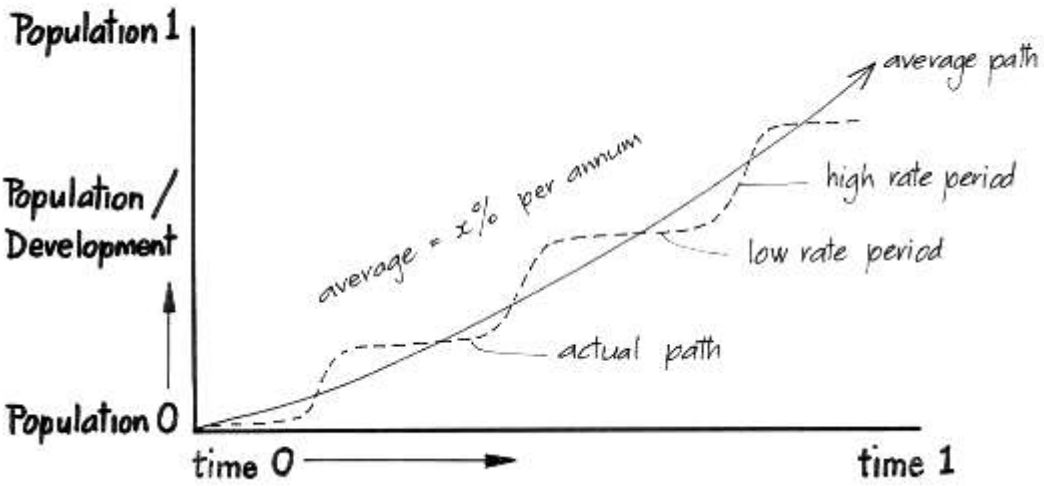
However, growth and development of the area is for the most driven and etermined by external economic vectors and land demand variables, and growth rates and associated time-related land use allocations which will eventuate cannot therefore be easily predicted. It is therefore not appropriate to proceed with this general planning approach for the study area with any degree of predictive certainty/accuracy.

(ii) Differential Growth Cycles:

Furthermore, growth rates over a long term past or a longer term future (which is the generally the situation with respect to the study area) tend to represent coarse averaging situations, and are not sufficiently responsive to shorter term growth and demand cycles.

By way of example, the land use and infrastructure requirements stemming from a particular primary growth impetus (eg the establishment of the Refinery, Port, new rail line, etc) has, and will, result in an ensuing period of relatively high growth, with interstitial periods having a less than average growth rate.

The above is conceptualised in the diagram below.



The planning response to the above is often characterised by either an exaggerated over-supply or under-supply situation, each with its attendant inefficiencies.

(iii) Extent of land use planning:

Based on the fact that growth and development in the study area is subject to longer term timing unknowns, the land use planning approach adopted is to structure plan for a full-capacity land development scenario in the first instance, and to program the release of land and/or infrastructure and/or facilities by way of secondary order mechanisms (eg; statutory zone changes, strategic asset management plans, etc).

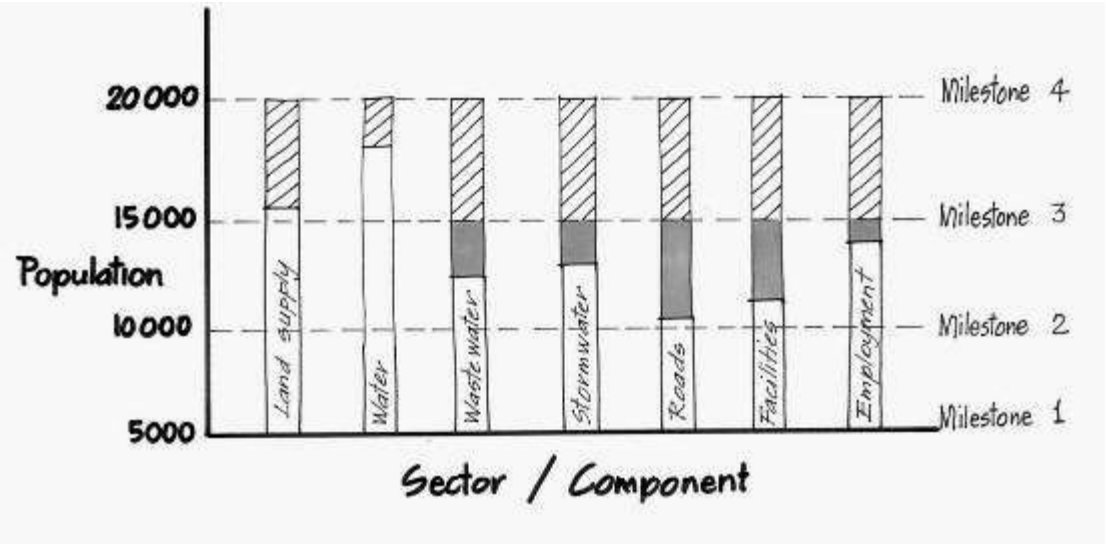
This approach allows for the key physical structuring elements of the area to be defined as an overall framework at the outset, and for various component delivery programs to respond to this established framework as and when required.

The approach is based on targeting a reasonable balance of the various sectors/components of physical development (eg. land release, infrastructure, facilities, etc) at any particular point in time, and not according to a pre-determined timeframe.

The approach also requires the support of a suite of defined milestones and criteria, according to which the provision of the individual physical components can proceed.

These milestones and criteria can be determined within a strategic program formulated for each component of development, and would typically include; a population quantum (eg 5,000 persons) as a milestone, a trigger point (eg 70% capacity reached) to progress to the next stage, and a host of component-specific criteria (eg provision standards such as 1 college per 10,000 population).

The above approach is conceptualised in the diagram below.



Some of the fundamental benefits of this strategic approach are that it allows for (i) localised flexibility within the context of a relatively fixed macro-order physical structural framework, (ii) early and timely identification of component backlogs and requirements, and (iii) better programmed budgeting.

3.3 Strategic Spatial Development Directions

The primary strategic spatial development options and directions with respect to the structure plan and study area are summarised below.

(i) Type of settlement

Given the significant imbalance between employment capacity and potential residential labour-force inherent in the current zonings provision, a key direction to be determined at the outset is whether or not to redress this imbalance. The two fundamental strategic options available are summarised below:

"*Dominantly industrial area"*:

This option would see the reservation of land for even more industrial development in the study area in the future, and consequentially the introduction in the future of additional zoned industrial land over and above that currently zoned.

This would serve to exacerbate the current planned imbalance between employment capacity and potential local labour force, and (in response to the industrial employment opportunities created) would result in either (i) large scale commuting from established and planned residential areas outside the study area (eg Whangarei, Waipu) to the study area, and/or (ii) the establishment of new large scale residential areas in closer proximity to the study area (eg immediately outside of the study area, to the west of SH1) than more remote currently available/planned residential areas.

It is contended that this direction would not result in a sustainable settlement pattern, essentially because (i) of the relatively prohibitive energy costs associated with perpetual commuting, (ii) a land use dissipation effect and the inability to offer a full and diverse range of land use activities both within the study area and within the dormitory residential areas, thereby resulting in generally less diverse and more sterile industrial and residential urban environments, and (iii) the relative infrastructural and other inefficiencies associated with establishing new urban residential dormitory areas, especially immediately outside of the study area.

"***Comprehensive and functionally-balanced urban area***":

This option would see the limiting of industrial land provision to largely that already zoned and the introduction of (for the most) residential and also other non-industrial urban land uses (ie business, community, civic, recreation, institutional, etc) into the remaining developable land of the study area.

The option would see employment capacity and potential local labour force reasonably balanced, with relatively limited commuting from outside areas. The result would be an urban area with a full and diverse mix of urban land uses and a high level of urban environmental quality and sustainability.

The "balanced urban area" is deemed to be the better of the above two strategic settlement development options, importantly because it affords the best opportunity for the establishment of a high quality urban environment (which is a key pre-requisite to the competitiveness and attractiveness of the area and hence its future growth positioning).

The latter "balanced urban area" option is preferred and is therefore adopted as a basis for structure planning. The fundamental implication of this direction is the creation over time of a new town in the study area, with a population of about 40,000 persons, with attendant employment opportunities and other requisite urban functions and activities.

On the above basis, the structure plan therefore needs to consider and include a full range of services and facilities (eg schools, recreation areas, shopping areas, community facilities, etc) commensurate with a town of this size.

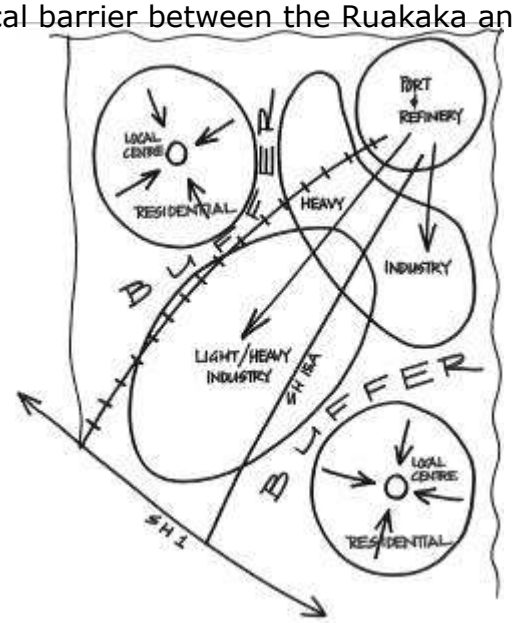
(ii) Centre(s)

As a background and in order to envision the scale of central functions that would be associated with a town of 40,000 persons, it is noted that these would include small and large footprint retailing, commercial and business services (eg. banks, offices), medical centre, hotel(s), government centre, sports and recreation complex, tertiary institution(s), emergency services, transport terminus, as well as public spaces (ie squares, parks, etc), and complementary service industrial and residential areas.

Given the generally fixed location of the Port, Refinery, zoned heavy industrial land, SH15A and the proposed new rail line, which in combination form a central industrial axis and physical barrier bisecting the study area, there are two fundamental spatial development options possible. These are summarised below:

"Two centres":

As conceptualised in the diagram below, this spatial option would see the industrial axis extending generally from the Port, south-westward towards SH1, and reinforcing the primary transportation corridor as a sizable physical barrier between the Ruakaka and One Tree Point areas.



These two areas would then develop as separate residential areas, each with its own identity and relatively isolated from each other, and each being buffered from the central industrial axis by significant open spaces.

Of necessity, each area would respectively include a more locally-focussed medium-sized centre which would contain the central services, facilities, and other land use activities for their respective surrounding urban residential areas.

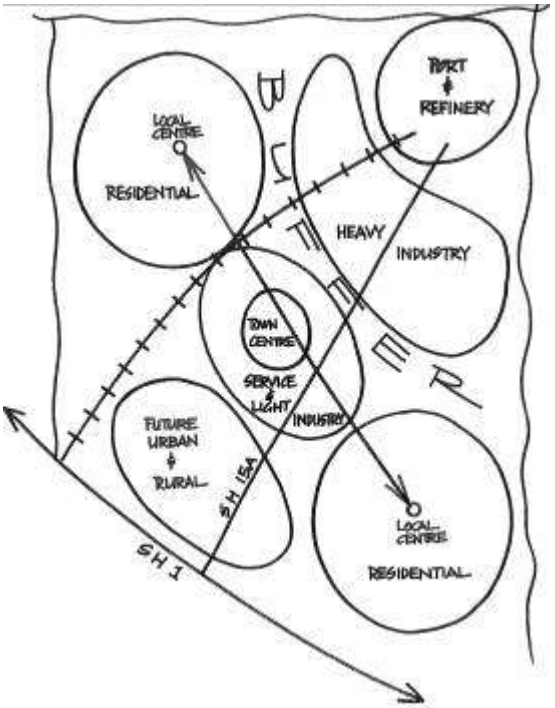
It is noted that this spatial development option formed the basis of SP2000's planning.

Whilst the individual centres and their lesser-order central functions would be relatively highly accessible to their respective surrounding populations, the main disbenefits of this option are (i) a dissipation of the reinforcement effect of agglomerated central functions, (ii) a certain degree of competiveness between the two centres with respect to attracting highest-order functions within the study area, (iii) singular highest order central functions would be distanced from one or the other residential populations.

The general result this spatial development option would be the creation of two smaller towns, located on either side of the central industrial axis.

"Single primary centre"

As conceptualised in the diagram below, this option would see the development of a new single large town centre, surrounded by service and light industrial areas, central to the study area's residential areas, and with a smaller local neighbourhood centre developing within each of the One Tree Point and Ruakaka residential areas.



This option would tend to create a higher degree of physical and functional linkage across the primary transportation corridor, and through the creation of a single dominant centre for the entire study area, more effectively link the One Tree Point and Ruakaka areas.

Associated with this option would be the institution of a buffer zone between the heavy industrial areas located in the north eastern sector of the study area (i.e. in the vicinity of the Port) and future residential areas. This buffer area could comprise both open space buffers and light/service industrial areas (which are more compatible with residential functions).

Whilst the light/service industrial area to the immediate north of the existing Ruakaka centre to a certain extent already fulfils a buffering function between the heavy industrial area and Ruakaka residential area, it would be necessary to "downscale" the heavy industrial zoning of the Northgate/Port Marsden industrial areas from (currently zoned) heavy industry to light and service industry, to effect a higher degree of land use compatibility with the adjacent planned single town centre and residential areas.

This option affords the opportunity for inclusion of singular highest-order facilities in the core of the primary centre, and has the important additional benefit of a central transportation terminus supported by a railway station.

The single primary centre option is considered to be the better option in terms of the study area's long term development scenario, and is therefore adopted for structure planning purposes.

On this basis:

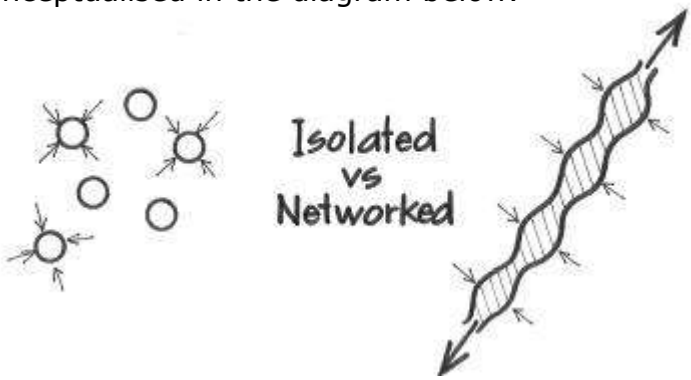
- A single and highest order mixed-use Primary Centre core requires in the order of 35ha - 40 ha (gross) of land (as outlined in the **Appendix 4** report), should ideally be located on key transport (ie road and rail) routes and have a multi-modal transportation terminus, should be reasonably central to the study area, have significant additional adjacent land for large institutional usage and higher intensity residential usage, and be adjacent or nearby to service industries.

- Complementary smaller neighbourhood centres should also be encouraged in both the One Tree Point and Ruakaka areas, which will cater for more local community requirements. These local centres, each covering some 5-10 ha in area, would typically include a medium-sized supermarket and 20-40 small footprint shops and service outlets, community facilities and services, public open spaces and parks, a college, and should generally be devoid of large footprint retailing. In this regard the existing Ruakaka centre is well placed to fulfil a local centre role, and has the added advantage of having the capacity to expand. A local centre could also relatively easily be established in the existing One Tree Point residential area, with the principal option being to extend the currently zoned (yet vacant) local commercial area.

(iii) Stormwater network

Stormwater planning for the area is based on an overall and general standard that approximately 10% of the urban land surface area needs to be allocated for stormwater treatment purposes.

The two principle options with respect to the overall planning of the area's stormwater network are to (i) institute stormwater management devices/ponds on a piecemeal site-by-site basis, which generally results in a series of unconnected and isolated surface ponds, or (ii) to located ponds so that they are inter-connected and form part of a broader network. These options are conceptualised in the diagram below.



The overall stormwater management network concept is based on a preference for the latter network option, principally because this form then also (i) affords additional possibilities for a broader water management strategy and (ii) better serves the requirements of a broader of open space network, as outlined further below.

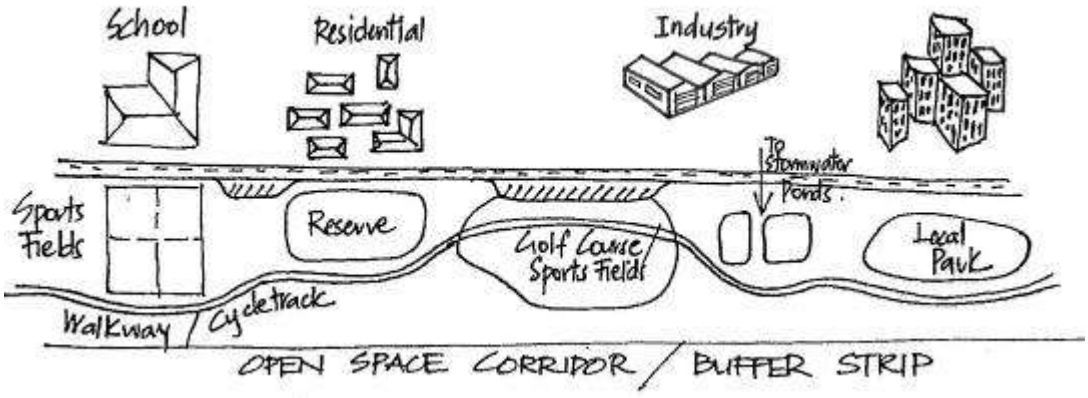
The overall stormwater network, conceptualised in **Figure 5**, uses the existing primary stormwater conveyance paths (ie rivers, streams and key drains) as a basis for the macro-order network and channels secondary stormwater flows into these primary paths. While the network will primarily account for the conveyance of floods, stormwater retention and water quality treatment, it also affords the option to also be used as part of an integrated water management regime (ie including the potential harvesting, polishing and recycling of terrestrially-disposed wastewater). In this context the stormwater network could also include wetlands and other "green engineering" management mechanisms.

(iv) Open space network

Once again, the conceptual "network" principles applicable to stormwater planning (above) also apply to the open space network.

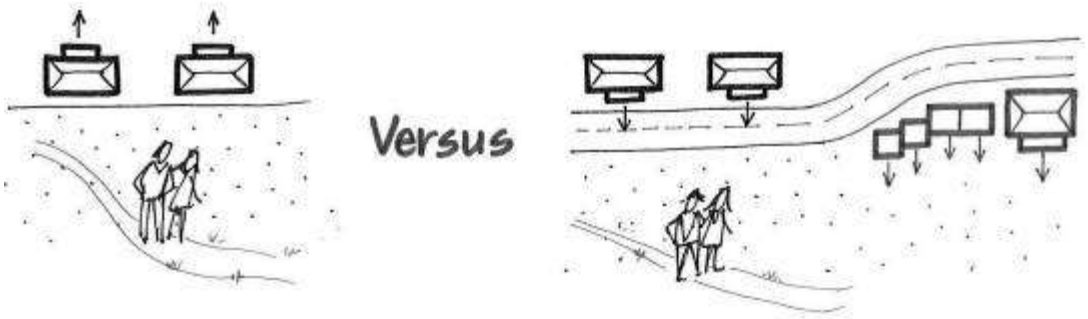
The proposed macro-order open space network (**Figure 6**) includes the area's large linear natural features, namely, the coastal conservation areas and estuarine fringes, the Ruakaka River and Takahiwai Stream, and is generally also aligned with the key stormwater network corridors. Lesser order urban open spaces need to be planned to also connect to the larger network, thereby affording the opportunity for optimum and effective use of the overall open space network, and especially to provide linkages to the coastal fringe (which is after all, the primary natural attribute of the study area).

Furthermore, the open space network system can be reinforced and enlarged by locating a multitude of urban land uses and functions, each of which has an open space component, close to, or within, the broader network. As conceptualised in the diagram below, these uses could include (public and/or private) parks, reserves, conservation areas, school and club sportfields, golf courses, stormwater ponds, etc.



Added benefits of establishing an open space network on this basis include; (i) the opportunity to establish a continuous pedestrian and cycle network catering for non-motorised access to various land use components, (ii) the opportunities to establish linked urban ecological and habitat corridors throughout the urban area, (ii) the establishment of buffer areas between incompatible land uses, and (iii) cost-saving of public funds, in that Council would not have to directly acquire all of the allocated open spaces as public reserves.

An important aspect to optimising the functioning, use and performance of the urban open space network is the nature of built environment frontage to these open spaces. Current best urban design practice is based on open spaces having road frontages and/or adjacent buildings facing these open spaces/ reserves, because empirical evidence demonstrates that high levels of informal surveillance of open spaces dramatically improves their safety and usage characteristics. As conceptualised in the diagram below, "back-door" frontage on to open spaces is generally inappropriate and active frontages to open spaces needs to be encouraged as much as possible.



(v) Transportation network

The transportation network includes a variety of movement modes, namely; sea, rail, road, cycle and pedestrian.

The location of the Port and alignment of the rail corridor is fixed at this point in time and is accepted for Structure Plan purposes. The planned rail marshalling yards and sidings in the vicinity of the Port land are included in the overall rail corridor.

The proposed road network is primarily based on utilising the current road network and hierarchy, inclusive of SH15A (as the area's limited access highway linking SH1 and the Port), One Tree Point Road and Marsden Point Road as key arterial roads and the east/west trending McEwan, MacCathie and Salle Roads as the main collector roads, and other local roads and streets.

Given that SH15A is a physical barrier separating the study area into two sectors, there is a need to create road linkages across this highway. This could be achieved by three identified grade-separated interchanges as shown in **Figure 7**, with the possibility of a fourth interchange in the vicinity of the Port land/private rail marshalling yards.

Additional road bridges are also necessary to cross the railway line to provide safe access to the northern sector of the study area. A few such grade-separated crossing points are identified, namely; on One Tree Point Road, (identified in the rail designation process) and one or two bridges linking the areas of the Primary Centre which respectively lie to the north and south of the rail corridor.

The lower order road network also needs to be enhanced to establish a greater degree of connectivity within local areas, especially in relation to the heavy industrial areas to the east of Marsden Pont Road, throughout the One Tree Point area, between the Northgate/Port Marsden area and the One Tree Point area, and within the Ruakaka West future residential area.

There is an opportunity to create a commuter railway station in the study area, with the only realistic and best apparent general location being on that sector of the line which lies between One Tree Point Road and SH15A. This railway station also represents the optimum location for a transportation terminus, which would also be the focus of a public bus system for the area.

Pedestrian and cycle movements throughout the area are made more difficult by the location of SH1, and the fact that the area's key arterial roads do not easily and safely lend themselves to accommodating these movement modes. It is therefore important that an integrated pedestrian and cycleway system be developed outside of these key roads, and the proposed open space network is ideal in this regard.

3.4 Proposed Spatial Development Strategy

From the preceding analysis, the key directions guiding the overall proposed spatial development strategy for the area are summarised as:

- Embarking on an overarching development strategy which allows for development in the long term and which also recognises the unknown nature of future growth and development inertia.

- Ensuring the availability of land for port and industrial expansion for the very long term future.

- Recognising that a balanced urban area activity profile is the most sustainable settlement form, and from this, introducing a significant and broader-ranging residential component into almost all of the area's remaining available and developable land.

- At full development, a town with a population of about 40,000 persons, along with sufficient local employment opportunities and a full and diverse range of urban services and facilities, will eventuate.

- Establishing centres as focal points of community services, facilities and activities, with the introduction into the area of a new Primary Centre, the core of which should be capable of accommodating the highest-order urban functions, and the reinforcement of existing Ruakaka and One Tree Point centres as complementary local centres.

- Protection of the area's sensitive ecological zones and valued landscapes by restricting mass and dense development in and nearby these areas through appropriate land use planning.

- The introduction of a multi-faceted open space network covering the full extent of the future urban area.

- Addressing potential land use interface conflicts by introducing large scale open space and land use buffers between incompatible land use areas.

- The introduction of an appropriate rail and road network to serve land use development, and the broadening of the transportation modal base through the introduction of rail, bus, and (possibly) ferry services, and planning for non-motorised movement throughout the future town.

- Encouraging a forward looking urban water management strategy by enabling the more efficient use/re-use of these resources in the land use planning.

- Optimising infrastructure development by ongoing consolidation of urban areas and limiting sprawl.

The proposed Spatial Development Strategy is depicted in **Figure 8** and has the following key components:

(i) The development of space-extensive and/or heavy industries adjacent to the Port and Refinery, focussing on the 3km long transportation axis afforded by the coincidence of the rail line and the Port Marsden Highway in this locality.

(ii) Complementary to the above, the development of (i) a dedicated private port-industrial transportation corridor with rail yard, located on Port's land adjacent to the rail line (and which could extend southward into the MRP land to the north of Marsden Point and McEwan Roads intersection), and (ii) a series of local roads providing for heavy-haulage and other access within these industrial areas and to the Port.

(iii) Retaining the area currently zoned for service and light industry in the Kepa and Simes Roads vicinity to the north of Ruakaka, and augmenting this with a small amount of additional land for similar purposes nearby.

(iv) Changing the current heavy industrial zoning of the Northgate/Port Marsden industrial area to a more light and service industrial area, perhaps with a more compatible and mixed land use pattern in relation to the Primary Centre core's retail, commercial, institutional and residential functions.

(v) Introducing a new light/service industrial area between the Port Marsden Highway and McCathie Road.

(vi) Progressing with the committed Marsden Cove/Kowi Lakes/WHF/St Just residential developments near One Tree Point, and allowing for the further southward expansion of this general residential area.

(vii) Progressing with committed residential developments in the Ruakaka area, and apart from a small new residential infill development in the Racecourse, restricting all further residential development to the east of Marsden Point Road in Ruakaka.

(viii) The introduction of two small additional High Intensity residential areas around the existing Ruakaka centre, and to the west of Marsden Point Road.

(ix) The introduction of additional residential extensions to the west of Ruakaka (being; to the south of McCathie Road and around Salle Road), and to the west of SH15A in the south-western extremity of the study area.

(x) Two areas for low intensity residential use located on the steep land in the vicinity of the SH15A-One Tree Point Road intersection.

(xi) The introduction of a new mixed-use Primary Centre adjacent to the rail line and generally between One Tree Point and SH15A, inclusive of a central railway station, transport terminus, town square and park, and supported by adjacent institutional nodes, high intensity residential areas, and a mixed/light/service industrial area.

(xii) Reinforcing the existing Ruakaka centre as the local centre for the general Ruakaka residential area, and establishing the planned One Tree Point and Marsden Cove centres as local centres serving the One Tree Point general residential area.

(xiii) The creation of an extensive multi-functional open space network, which includes the area's key natural features, includes stormwater and (potential) wastewater utility functions, enables the development of urban ecological corridors, serves as land use interface buffers, and provides for cycle and pedestrian networks, and to which the secondary urban open space network is linked.

(xiv) Enabling the development of a multi-functional Equestrian Centre at the Racecourse.

(xv) Setting aside a Future Urban area, generally located in the south-western sector of the study area and along SH15A and the southernmost part of One Tree Point Road, which covers the general entranceway to the study area from SH1, and which is reserved for currently undetermined and longer term urban usage.

(xvi) Retention of a wide band of existing rural land along SH1.

(xvii) Complementary to the overall spatial strategy is the planned transportation network which provides for dedicated rail and road access to the Port and industrial areas, arterial and collector road linkages across the study area, and for a local road and street network within localised areas.

4.0 PLANNING PROPOSALS

4.1 Introduction

The Structure Plan's proposals outlined in this chapter are a more detailed expression of the Spatial Development Strategy, and include proposals relating to land use, engineering services infrastructure, and transportation networks.

The land use proposals are depicted in **Plan 6**, and the quantification of these proposals is expressed in land use capacity tables in each of the following sections. These tables are referenced to **Plan 7** (Land Unit Area Index).

The land use proposals are supported by **Plan 8** (Proposed Open Space Network), and **Plan 9** (Proposed Transportation Network) with the spatial extent of these proposals being self-explanatory on these plans.

It is noted that the land use capacity tables also include an estimated population for each residential Land Unit, based on an average household size of 2.5 persons.

Furthermore, having previously outlined the rationale and broad nature of proposals, such descriptions are not repeated, and the information that follows is aimed only at describing the proposals in more detail.

4.2 Proposed Land Use

4.2.1 Residential

The various types of residential land uses proposed are:

(a) **Medium Intensity Residential**; being conventional urban township subdivision, with minimum lot sizes of 500m², an estimated gross density of about 14 sites per hectare (and equating to the District Plan's Living 1 Environment).

Proposed new residential areas are in addition to:

- all existing residential areas, which have a total site capacity for 1,840 sites,
- Marsden Cove and residential areas currently being consented, which have a total site capacity for 2,388 sites, and
- the undeveloped zoned Ruakaka West 1 area, which has a capacity for 1,211 sites.

These new residential extensions are located in:

(i) The area to the south of One Tree Point and bounded by the Takahiwai Stream in the west and the large linear north-south trending open space buffer in the east and the proposed Primary Centre in the south. These Land Units are labelled **OTP1**, **OTP 2**

and **OTP 3** in **Table 6** and **Plan 7**, and have a combined capacity for approximately 4,662 residential sites.

(ii) An area to the south of McCathie Road labelled **McCathie South** in **Table 6** and **Plan 7**, and which has a capacity for approximately 182 residential sites.

(iii) The area at the south western extremity of the study area near the intersection of SH1 and SH15A. This land unit is labelled **Ruakaka West 2** in **Table 6** and **Plan 7**, and has the capacity for 392 residential sites.

Table 6: Proposed Medium Intensity Residential Land Use Capacities

Type	Land Unit	Number of sites		Total capacity	
		Developed	Vacant	Sites	Population
Existing Areas	OTP West	219	65	284	710
	OTP	110	191	301	752
	OTP East	141	57	198	495
	Ruakaka East	312	17	329	823
	Ruakaka South	300	128	428	1070
	Ruakaka West Bank	256	44	300	750
Total		1338	502	1840	4600
Undeveloped Zoned and/or Proposed	Land Unit	Land Unit Size (ha)		Total capacity	
				Sites	Population
	St Just			311	777
	WHF/Kowi Lakes			550	1375
	Marsden Cove			770	1925
	Ruakaka East			680	1700
	Ruakaka West Bank			77	193
	OTP 1	164		2296	5740
	OTP 2	99		1386	3465
	OTP 3	70		980	2450
	McCathie South	13		182	455
	Ruakaka West 1	86.5		1211	3027
	Ruakaka West 2	28		392	980
Total				8835	22087

From the above table, there is a total capacity in the study area's existing, planned and proposed Medium Intensity residential areas for some 8,835 residential sites.

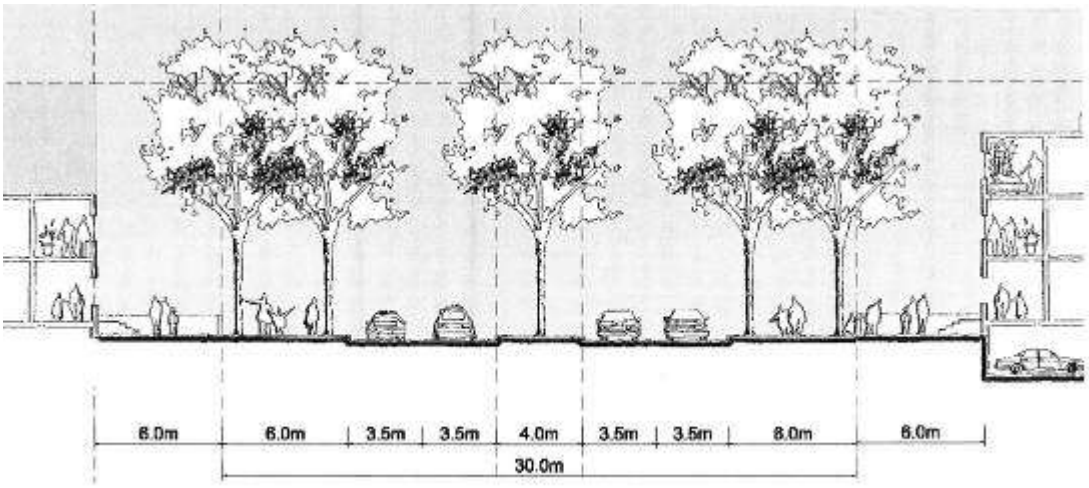
It is noted that, apart from the Ruakaka area, the structure planning for these residential areas is undertaken on the basis of defining "super-blocks", which will be further subdivided at the time of resource consenting to include streets and smaller residential blocks. The purpose of defining these super-blocks is to set in place the larger order road and open space network as a structural framework and to allow for subsequent design flexibility within each superblock.

Key features of these proposed residential areas, especially the composite One Tree Point and Ruakaka West areas, where the land is flat and legibility of urban form and drainage are important factors, are the nature of certain local roads, specifically:

- **Residential boulevards**: Pyle Road East is planned as the main north-south trending boulevard connecting the One Tree Point local centre to the core of the Primary Centre in the vicinity of the rail corridor, and similar boulevards are also planned in some local parallel roads (namely; part of One Tree Point Road and other north-south roads leading south off McEwan Road).

  Salle Road is also planned as a similar boulevard, trending east-west through the Ruakaka West 1 Land Unit (as indicated in **Plan 6**).

  These 30m wide boulevards, conceptually depicted in the diagram below, are planned as collector roads to provide for inter-neighborhood connectivity, and will also function as a public realm with a high level of residential interface frontage. These boulevards are ideal locations for being fronted by higher density residential development within the Medium Intensity residential fabric.



- **Residential greenspace streets**: These 40m wide local greenspace streets are planned throughout the composite One Tree Point residential areas (where they trend east-west) and also in the Ruakaka West 1 area (where they trend both north-south and east-west), as shown in **Plan 6**.

  The general characteristic of these greenspace streets, as depicted in the **Figures 9** and **10** overleaf (which demonstrate typical options) is that they will also function as public and/or community spaces with a

high level of residential interface frontage, and will include street(s), stormwater management devices (eg ponds), local parks, cycle ways and pedestrian paths. These greenspaces streets are also ideal locations for being fronted by higher density residential development within the Medium Intensity residential fabric.

(b) **High Intensity Residential**; being a form of residential activity not currently available in the study area, and modelled on an estimated density of 28 residential units per gross hectare.

These new high intensity residential areas are located:

(i) within the core of the Primary Centre, where some 500 high-intensity units can be accommodated in the form of above-ground-floor apartments, labelled **Primary Centre Core** in **Table 7**.

(ii) around the core of the proposed Primary Centre. These Land Units are labelled **Primary Centre** and **Centre North** in **Table 7** and **Plan 7**, and have a combined capacity for approximately 1,862 residential units.

(iii) two small areas adjacent to the existing Ruakaka centre, together labelled **Ruakaka** in **Table 7** and **Plan 7**, which have a combined capacity for approximately 216 residential units.

(iv) a small area to the south of McCathie Road, labelled **McCathie South** in **Table 7** and **Plan 7**, and which has a capacity for approximately 50 residential units.

Table 7: Proposed High Intensity Residential Land Use Capacities

Land Unit	Land Unit Size (ha)	Total capacity	
		Sites	Population
Primary Centre Core		500	1250
Primary Centre	60.0	1680	4200
Centre North	6.5	182	455
Ruakaka	7.7	216	540
McCathie South	1.8	50	125
Total		2628	6570

From the above table, there is a total capacity in the study area's proposed High Intensity Residential areas for some 2,628 residential units.

(c) **Rural-Residential**; comprising areas of small-scale rural lifestyle blocks, with minimum site sizes in the order of 0.5ha, proposed in two areas in the south western sector of the study area where steeper land limits denser residential development, namely:

(i) The largely already-developed outcrop on the eastern side of SH15A and south of McCathie Road, labelled **Rural Res 1** in **Table 8** and **Plan 7**, which has an estimated capacity for 84 sites.

(ii) The area of the steeper lower eastern slopes of the Takahiwai Hills located to the west of One Tree Point Road and bounded by the proposed rail line in the west. This area is labelled **Rural Res 2** in **Table 8** and **Plan 7**, with an estimated capacity for 184 sites.

Table 8: Proposed Rural – Residential Land Use Capacities

Land Unit	Area (ha)	Total Capacity	
		Sites	Population
Rural Res 1	42	84	210
Rural Res 2	92	184	460
Total	134	268	670

(d) **Rural**; being traditional general rural living, located in the areas along SH1. These areas have a combined estimated capacity for 230 households (equating to some 575 persons).

From the tables above the **total estimated population carrying capacity** of the various existing, planned, and proposed residential environments in the study area, when fully developed, is some **34,502 persons,** equating to some **13,801 households**.

4.2.2 Retail and General Business

It is proposed to concentrate retail and general business predominantly in the core of the proposed Primary Centre, and also to a much lesser extent in the proposed Ruakaka and One Tree Point local centres, as described below.

(a) Primary Centre core:

The new core of the Primary Centre is planned to include a host of activities found in a typical town of about 40,000 people, (e.g. comparative to the size of the current Hibiscus Coast). These activities would include general retailing, supermarkets, commercial services, restaurants, offices, visitor accommodation, entertainment and leisure complex, education and other community and civic facilities, formal open spaces and parks, railway station and transport terminus, etc. The core of the Primary Centre will also have a captive residential component of some 500 above-ground-floor apartments.

The land demand analysis for the core of the Primary Centre is detailed in **Annexure 5** and in summary shows a demand for some 33 ha of gross land area (i.e. excluding key roads and open spaces), within which about 60,000m^2 net floor area is required for Retail uses and 82,200m^2 net floor area is required for non-retail uses. It is noted that these requirements are over and above that required in the study area's other planned local centres.

The core of the Primary Centre will have the following key component areas:

- A central area focussed on a public square, railway station and transport terminus and surrounded by a retail precinct.
- Large format retailing.

- Areas of mixed use (e.g. non-retail commercial, offices, civic/community, recreation/culture, residential, etc) surrounding the central area.
- A hotel complex.
- A large central park, highly landscaped and generally for passive recreation usage, and inclusive of stormwater management devices, which could also be used for occasional events.

Two large institutional sites, (identified for a college and possible tertiary institution) are to be located within the Primary Centre, and ideally near the core . It is noted that these site areas are not included in the Primary Centre core's land demand calculations contained in **Annexure 5**.

It is further noted that the core of the Primary Centre is supported and reinforced by surrounding High Intensity Residential (described in Section 4.2) and a light and service industrial area (which will comprise parts of the existing Northgate and Port Marsden industrial estates).

The Primary Centre core is planned as a generally compact urban environment, with a medium-rise built form. Ground floor activities would primarily relate to retailing, commercial and community/civic functions, with upper levels comprise other commercial and office functions, and a small residential component.

It is noted that the detailed design and documentation of the primary Centre core will be the subject of a separate plan change exercise for the broader Primary Centre.

(b) **Local Centres**

Two local centres (being the existing centre at Ruakaka, and the existing/proposed centre at One Tree Point) are also proposed. The scale of these centres is planned so that they serve as local community focal points and contain smaller footprint retail, commercial and other more locally orientated community services and facilities.

Typically these centres would include a supermarket (of ≤ 3,000m2 in size), a host of small footprint (≤ 300m2) shops, and no large footprint retail stores.

Table 9 summarises the capacities of the proposed retail and business land use areas, and is referenced to **Plan 7**. The table also provides an estimate of the employment capacity of each retail/commercial/community areas. These estimates are based on (i) a employment ratio of 50 persons per hectare for the local centres, and (ii) an employment ratio of about 124 persons per ha (as per the **Annexure 5** report) for the core of the Primary Centre.

Table 9: Proposed Retail / General Business / Community Land Use Capacities

Type	Land Unit	Size (ha)		Employment Capacity
		Developed	Vacant	
Existing	OTP	nil	1.2	60
	Ruakaka	3.7	4.0	385
Proposed	OTP	nil	1.2	60
	Primary Centre core	nil	35.5	4,390
Total		3.7	41.9	4,895

From the above table, a total of about 45.6 hectares of land is planned for retail/business/community activities, which has a total estimated employment capacity of about 4,895 full time jobs. This equates to an average employment ratio for these areas of about 107 persons per ha.

4.2.3 Industry

Only two extensions to the currently zoned industrial areas are proposed, namely; (i) Land Unit I5, a new 14 ha service and light industrial area on the western side of Marsden Point Road, just north of the Ruakaka local centre, and (ii) the McCathie North light industrial area, a 33 ha area bounded by SH15A in the west and McCathie Road in the south.

However, it is also proposed to change the land use activity types of the current Northgate/Point Marsden industrial area, to encourage the development of more service and light industrial activities, as opposed to the heavy industrial activities (enabled under the area's current Business 4 zoning), because these heavy industrial activities are not compatible with the adjacent functions of the proposed Primary Centre core. This could be achieved by a variety of means, recognising that a site-specific plan change to the District Plan for the Primary Centre will provide such details.

A summary of the proposed industrial land use areas is tabled below, along with estimated employment capacities. For these purposes it has been necessary to distinguish between the type and nature of likely industries (ie heavy vs medium) within the current Business 4 zone, and estimate accordingly.

Table 10: Light and Service Industry (@ 30 persons employed / ha)

Type	Land Unit	Size (ha)		Employment Capacity
		Developed	Vacant	
Existing	Primary Centre	nil	102	3060
Proposed	I 5	nil	14	420
	McCathie North	nil	33	990
Total		nil	149	4470

Table 11: Medium Industry (@ 20 persons employed / ha)

Type	Land Unit	Size (ha)		Employment Capacity
		Developed	Vacant	
Existing Areas	I 3	nil	48	960
	I 4	nil	16	320
	I 6	20	Nil	400
Total		20	78	1680

Table 12: Heavy Industry (@ 10 persons employed / ha)

Type	Land Unit	Size (ha)		Employment Capacity
		Developed	Vacant	
Existing Areas	I 1	25	212.5	2375
	I 2	nil	93	930
	Refinery	107	12	1190
	Northland Port	15	117	1320
	Power Station	nil	47	470
Total		147	481.5	6285

A total of about 862 hectares of land is planned for all industrial land uses, with only 47 ha of this total not currently zoned (in that these are new proposals of the Structure Plan).

In summary, from the above, the potential total employment capacity of the Structure Plan's industrial land use proposals is in the order of 12,435 full time jobs.

4.2.4 Social, Community and Civic Services and Facilities

It is proposed to accommodate future social, community and civic services and facilities in the core of the Primary Centre and local centres, as previously described, as and when needs arise, and on the basis of site-specific evaluation and design.

A town of the scale envisaged, ie 40,000 persons, will require considerable additional education facilities. It is estimated that an additional 7 primary schools, 3 colleges, and a tertiary institution, would eventually be required in the town.

As part of the Primary Centre planning a college site and a tertiary institutional site should been identified, on the basis that these facilities would benefit, and would benefit from, the environmental mix and performance of the Primary Centre. It is noted that there is currently no commitment to facilities in these locations.

Education facilities should generally be located adjacent to the main open space and access network and take advantage of, and contribute to, the creation of the open space network (as outlined in Section 3.3).

A public cemetery/urupa is planned to the west of the Primary Centre. The cemetery meets most of the local iwi's and community's requirements (i.e. located on elevated land, north-facing, facing Mount Mania, located on the fringe of the urban area). However, further site investigations and consultation are necessary to confirm this proposal, before consent processes can be initiated.

The proposed Equestrian Centre at the Racecourse is targeted to be a multi-purpose regional facility offering a range of horse training, racing and other services, inclusive of residential accommodation for equestrian-related events.

4.2.5 Open Space

The proposed macro open space network has previously been described, and is self-explanatory on **Plan 8**.

The overall open space system comprises existing coastal conservation areas and reserves, as well as planned future private and public open spaces (which are required as stormwater utility reserves, esplanades, local parks, sportsfields, conservation areas, cycle ways and walkways). The network also generally provides for open space buffer zones and natural habitat corridors throughout the area and within the urban fabric.

It is accepted that the location of new neighbourhood parks and utility reserves will be defined during the formulation of more detailed scheme plans for residential and other areas.

Of importance to the general performance and quality of the town is achieving connections through to the coastal fringe, especially the Bream Bay coastline. This is made somewhat more difficult by the presence of industry, the Refinery and the power station site along this entire coastline. Such accesses are therefore selective and planned at various points (as shown in **Plans 6** and **8**) and are inclusive of open space corridors.

Some of these corridors (eg at Ruakaka) are relatively wide, whilst others which are located adjacent to east-west trending roads through the industrial area, are relatively narrow (ie in the order of 10m wide).

4.2.6 Future Urban

Two areas for longer term future urban development are proposed, namely; (i) along either side of Port Marsden Highway near its intersection with SH1, and (ii) the strip of flat land along the western edge of One Tree Point Road, between the proposed rail line and McCathie Road).

These areas are identified for future urban use for a variety of reasons, including; (i) the nature of, and position of, access points off SH15A (a limited access highway) cannot be determined for the former area until NZTA has undertaken further investigations, and (ii) the specific land use of these important "gateways" to the study areas cannot, and should not, be determined at this early (ie relative to their potential development timing) stage, and (iii) considerable further stormwater modelling and planning for surrounding catchment areas needs to be first undertaken for the former area (because the area is a significant flood area and stormwater path), and (iv) the nature of the buffer area between these and adjacent land use areas cannot be determined until their particular land use is defined, and (v) potential SH1 and One Tree Point road widening(s) are likely, and would be compromised by the pre-emptive land use allocation/zoning for these areas, and (vi) similar to the rural area's along SH1, the land use of the former area needs to be considered in terms of a potential link to development across SH1

in the very long term, and (vii) the areas would only be required for development in the very long term, and the specific land use development choices for these areas would benefit from the progress of time (and knowledge gained from the remainder of the study area's fuller development).

The extent of these areas is shown in the table below.

Table 13: Proposed Future Urban

Land Unit	Land Unit Size (ha)
Future Urban 1	28
Future Urban 2	32
Future Urban 3	19
Total	**79**

4.2.7 Heritage

It is recommended that an archaeological investigation be undertaken for all areas identified and proposed for urban use prior to their development, in order to establish potentially valuable and conservation-worthy heritage sites and detailed procedures for their preservation.

It is also recommended that a cultural heritage conservation strategy be formulated in conjunction with the community. This will require close consultation with tangata whenua, in particular the Patuharakeke Te Iwi Trust. There are numerous pa, historical, archaeological and waahi tapu sites that still need to be identified and protected.

4.2.8 Rural

A key element of the Structure Plan is the retention of the rural land strip along SH1 for traditional farming practices. This area is retained as rural to (i) limit further subdivision, and (ii) to avoid additional piecemeal and/or indiscriminate access off SH1, and (iii) to retain very long term future development options along this highway edge.

An estimated population of 575 persons is allocated to this rural area.

4.3 Population and Employment

Having outlined the population and employment capacities associated with the various proposed land uses in the preceding Section 4.2, it is at this point appropriate to reflect on whether one of the key primary strategic directions outlined in Section 3.3, namely targeting a "balanced urban area", has in fact been achieved in land use planning proposals of the Structure Plan.

The relevant information from section 4.2 is summarised below, and demonstrates that the abovementioned strategic planning objective has, as far as can be modelled in the Structure Plan, been met.

Total planned Residential population **34,502**

Labour Force (@ 48% of population) **16,561**

Table 14: Summary Employment Capacity

Type	**Ha**	**Low Scenario**		**High Scenario**	
		Rate/ ha	Employment	Rate/ ha	Employment
Retail/Commercial/ Community/Civic	45.6	50	2280	100	4560
Light Industry	149	30	4470	40	5960
Medium Industry	84	20	1680	20	1680
Heavy Industry	628.6	10	6286	10	6286
Total			**14716**		**18486**

It is noted that the proposed Future Urban areas, totalling 79 ha, are excluded from the above calculations. It is noted that these areas could include either or both residential and/or employment zones.

4.4 Engineering Services and Infrastructure

One of the primary functions of the Structure Plan is to provide a spatial framework which will guide the development and phasing of engineering services and related projects. These projects range in nature and scale, with some being new projects, and others involving the upgrading of existing facilities and networks.

It is specifically noted that all identified future development areas are dependant on the availability of water supplies, wastewater disposal, and the assessment of stormwater impacts and flood hazard protection. There is thus a need to continue with a variety of infrastructure initiatives.

Three particular requirements identified during the structure planning process as requiring further investigation are (i) the need to formulate an overall sustainable water management strategy for the area, and (ii) within this context, to formulate a long term wastewater disposal strategy, and (iii) within this context to review existing stormwater CMPs and formulate additional CMPs, based on the Structure Plan proposals. These needs are further outlined in the **Annexure 3** report.

It is through these strategies and other component asset management plans and further detailed plans that issues such as local catchment management and stormwater design principles will be dealt with, recognising that in some instances considerable further investigations will be required before projects can be included in the relevant management strategies.

As electricity, gas, and telecommunications networks and services, generally respond to development, it is recommended that the various responsible agencies continue with their forward planning and if necessary, review and modify such plans in response to the information and proposals of the Structure Plan.

4.5 Transportation

The proposed transportation network plan is shown in **Plan 9**.

Road and rail planning need not constrain residential or industrial development in the area in the short to medium term. However, it is important that further progress be made on the Structure Plan's proposals and associated key projects as soon as possible, including:

- Finalising the designation of the new rail corridor to the Port, inclusive of aspects such as the possible upgrading of SH15A intersections and a bridge at the One Tree Point road-rail crossing, as well as other local design criteria such as tree screening and noise reduction.

- It should also be noted that there may be a need for unobstructed access for large transporter vehicles carrying oversize loads to and from the Port. This needs to be considered when designing the crossings of secondary arterial roads with the major road/rail corridor.

- A strategic study for SH15A, especially in relation to interchanges, with a view to achieving downstream activities, such as identifying interchange footprints along SH15A (to avoid future built development from compromising design options).

- Detailed investigations, feasibility and alignment design to confirm all proposed arterial, collector and local roads. It is noted that the **Annexure 4** report identifies the future road hierarchy, and from modelling, identifies the intersection requirements for key future road intersections. These in turn require consideration and translation into new road upgrade and/or development projects.

- Local roads and streets proposed within existing residential and industrial areas, and other key roads in proposed future land use areas. Whilst many of these proposals are new, others relate to the upgrading (eg widening) of existing roads. Whilst some of these roads improvements would require retro-fitting (and could therefore be complicated) others could be achieved during the consenting process for new subdivisions.

- Ferry services, terminal(s) and linkages to the northern side of the Harbour.

5.0 IMPLEMENTATION AND PROJECT IDENTIFICATION

5.1 Development Staging

As the development of the Structure Plan area will take place over a very long term future, it is important that development is staged, in order that efficient use of development resources is optimised. The primary mechanisms available to Council for achieving staging are (i) the release of zoned land under the District Plan, and (ii) infrastructure and public facility funding.

Given that the full extent of planned industrial land is already zoned, and some residential areas are already committed (either by zoning or by consent) an ideal programmed release of land on a staged basis is already somewhat compromised. In this regard Council is already in a reactive situation regarding wastewater infrastructure, and other agencies (e.g. NZTA, Department of Education) could be in a similar situation. However, as short term demands are met and programming of the Structure Plan's proposals is undertaken by Council and other agencies, this purely reactive mode of response to development initiatives should abate.

With regard to development phasing, the following outlines the suggested sequential release of land, and is referenced to Land Unit descriptions in **Plan 7**.

a) In the first instance, Council has a priority responsibility to support the infrastructural servicing of already-zoned industrial land and committed residential extensions. Fiscal contributions principles and mechanisms for developers to fund this servicing are generally in place, and will need to be determined on a case by case basis, as and when required.

b) Further residential development should generally be undertaken on the basis of consolidating the urban structure, as this would tend to be the most efficient use of infrastructure resources. Generally, this would see residential extensions extend from the existing One Tree Point area southward, and westward from the Ruakaka area, as priority. On this basis the next priority would be to release:

- Some of the Primary Centre land, specifically some or all of its core area. This could be accompanied by the release of the eastern parts of Land Unit OTP 2 (Medium Intensity residential) and any High Intensity residential areas between McEwan Road and the rail corridor, and
- The Ruakaka High Intensity residential land, and
- Land Unit I5 (i.e. the new Ruakaka Light Industrial area)

c) Once the above residential extensions are near capacity the next priority would be to release:

- The remaining residential extensions located to the east of One Tree Point Road and to the north of the Primary Centre (i.e. the western part of Land Unit OTP 2, and the north western part of the Primary Centre's possible High Intensity Residential land in this vicinity, and

- The McCathie South Residential area, and the eastern part of the Ruakaka West 1 (Medium Intensity) residential area (already zoned), in the Ruakaka sector, and

- The Rural Residential 2 Land Unit.

d) Following the above areas reaching near capacity the longer term would see the release of all residential land to the north of the railway corridor (i.e. Land Units OTP1 and OTP3 and the Primary Centre land to west of One Tree Point Road), and the McCathie North Industrial area.

e) The final stage of land release, likely in the very long term, would include the western part of the Ruakaka West Land Unit, the Ruakaka West 2 Land Unit, and the Future Urban areas (noting that by that time the land use would have been determined for the areas currently identified as Future Urban).

5.2 Implementation Issues

The implementation of the Structure Plan's proposals will be undertaken over an extended period of time, through programmed project developments by the District and Regional Councils, numerous external agencies (such as Government departments, NZTA, OnTrack, etc), NGO's and the private sector, sometimes on a joint basis.

In order to ensure the successful achievement of the Structure Plan's proposals it is important for Council to play a co-ordinating role. The primary initial requirement is for Council to formulate broad programs for development components (as outlined in Section 3.2 of the Structure Plan), and to liaise with relevant external agencies on these programs. The subsequent tasks for Council and other agencies is to then progress with more detailed strategic plans and investigations so that these broad programs can be translated into specific projects, to be implemented over time.

Support for, and/or the implementation of, key projects by Council and other agencies, is important, as it creates the pre-conditions which will enable the private sector to respond to development opportunities. In this context, it is necessary for Council to provide a funding commitment over a reasonable future period, in order to not only meet internal strategic budgeting requirements and statutory obligations, but to also establish that there will be funding support (generally comprised of fiscal contributions payable by past, present, and future development) for key infrastructural projects on a continuous basis over the longer term.

With this understanding, a range of preliminary projects, based on the Structure Plan's proposals, has been identified below, along with action responsibilities and priority guidelines.

Project costs are not outlined in this document, but formulating a financial schedule should be undertaken in time. In many instances further investigations will have to be undertaken, in order to more accurately define both the detailed nature of an individual project and its associated costs.

It is to be noted that Council will not necessarily be responsible for implementing all of the projects outlined, because some of these projects will be led, funded and implemented by other agencies and/or private sector developers

Council should in time initiate the downstream process of undertaking further investigations, formulating programs, project costings and statutory requirements (e.g. changes to the Strategic Plan, Long Term Council Community Plan, Financial Plan, District Plan, Annual Plan, Asset Management Plans, etc).

In summary, the implementation process with regard to the Structure Plan will involve:

- Determining administrative arrangements to coordinate the process
- Prioritizing projects identified in the table below (and other projects as deemed necessary)
- Delegating the projects identified to the various divisions of Council and/or other agencies
- Determining a review structure for the implementation process and for the provisions in the Structure Plan itself.

5.3 Preliminary Project Identification

A preliminary identification of projects, and their relative priorities are listed in the table below. A much more rigorous analysis of the necessary implementation actions will be required.

Table 15: Preliminary Project Identification

PROJECT	ACTION	PRIO-RITY	RESPON-SIBILITY
Policy Planning			
Component Development Programs	Formulate component development program guidelines (milestones, standards and specifications)	High	Policy & Monitoring Division

District Plan			
Additional zoned land Revise Environment Rules New Environment Types	Resolve through receipt of plan change requests Issue plan changes Issue plan changes	Ongoing	Policy & Monitoring Division
Future Development Planning Issues	Deal with through resource consents and plan changes as needs arise.	Ongoing	Policy & Monitoring and Resource Consents Divisions

Transportation			
Port Marsden Highway	Undertake a strategic study to determine interchanges and interchange footprints.	High	NZTA
Local Roads	Determine intersection and alignment details for local roads and bridges.	High	Roading Division
Rail Link	Designate rail corridor and associated road bridges.	High	OnTrack/ NRC
Footpaths Cycleways	Investigate needs and place on footpath programme. Investigate needs and options.	Medium Medium	Roading Division Parks, Roading Divisions
Vehicular Ferry	Complete feasibility report.	Low	Private Sector

Wastewater			
Upgrade Treatment Plant	Undertake treatment plant Stage 1 upgrade and obtain NRC consents.	High	Waste & Drainage Division,
Future System	Undertake investigation of overall wastewater scheme and method of disposal	High	Waste & Drainage Division
Wastewater connections	Investigate revised connection costs and financial contributions.	Medium	Waste & Drainage Division

Future Development	Ensure through consent processes that future development is connected to a sewerage system, or alternative on-site systems.	Ongoing	Waste & Drainage, Resource Consents Divisions
On Site Disposal	Monitor performance of existing systems.	Ongoing	Waste & Drainage Division

Stormwater			
Planning	Review existing Catchment Management Plans and formulate additional CMP's.	High	Waste & Drainage Division
Improvement	Develop works programme based on outcomes of Stormwater Catchment Management Plans.	Medium	
	Obtain resource consents from the Northland Regional Council for works	Ongoing	

Water Supply			
Water Supply	Investigate and formulate alternative integrated water supply strategy	Medium	Water Services Division
	Finalise design, and construct planned works to provide adequate water supply	Ongoing	
Water Quality	Ensure continued compliance with relevant standards and quality management procedures. Further network analysis needs to be undertaken to model pipelines and future flows.	Ongoing	Water Services Division

Open Space network			
Planning	Formulate overall open space strategy, plan and guidelines	High	Parks Division

Coastal Access			
Planning	Establish a coastal access master plan and identify access points and protocols.	High	Parks Division
Improvement	Develop a works program for improving access points.	Medium	
Boat Ramps	Investigate establishing a new boat ramp in the Ruakaka area.	Low	

Vehicular Access	Identify beach accesses and beach exclusion zones for vehicles and formalise.	Medium	

Coastal Management			
Coastal Hazard Management Plan	Seek resource consents, and undertake protection works, including: beach replenishment, rock revetment, and the building of a wildlife refuge at Blacksmiths Creek according to the Coastal Hazard Management Plan.	Ongoing	Parks Division
Dune Protection	Promote and facilitate the formation of coast care community groups to assist in restoration of sand dune areas and promote coast care issues.	Ongoing	Parks Division

Reserves and Amenities			
Planning	Complete Coastal Reserves Management Strategy.	High	Parks Division
Village Green	Develop management plan for a Ruakaka Village Green.	Medium	Parks Division
Public Cemetery	Finalise consultation and (possible) technical investigation of potential public cemetery in the study area.	High	Parks Division
Public Reserves Contributions	Future subdivision reserves contributions to be taken as cash and funds directed to development of strategic reserves and amenities (i.e. playground facilities, beach replenishment, sports fields, boat ramps, car parks, pedestrian coastal access etc).	Ongoing	Parks & Policy & Monitoring Divisions
Equestrian Centre	Liaise with the Racing Club to develop a Masterplan for the site.	Medium	Policy and Monitoring

Heritage and Conservation			
Planning	Formulate a Cultural Heritage Conservation Strategy	Medium	Policy & Monitoring Division
Natural Heritage	Liaise with appropriate authorities over the conservation of natural heritage.	Ongoing	Parks & Policy & Monitoring Divisions

Tangata Whenua			
Consultation Iwi/Hapu Management Plans	Undertake ongoing consultation with iwi and local hapu during the implementation process. Assist, where possible, local iwi and/or hapu to produce a resource management plan for their area.	Ongoing Ongoing	Policy & Monitoring Division

Preface

The Infrastructure Report presented in this Annexure is based on a June 2008 version of the draft Structure Plan.

Whilst the analysis of the current infrastructure situation remains accurate, the assessment of the Structure Plan's proposals has not been updated to coincide with the Structure Plan document as adopted in November 2009.

The majority of this Infrastructure Report's recommendations remains unchanged and will still apply to the adopted Structure Plan.

The only significant proposed land use changes since the June 2008 draft relate to:

1. The McCathie North land unit, which has been changed from Residential to Industrial usage. This change will not affect the broader infrastructure planning of the study area.

2. The areas labeled; Town Centre, Town Centre West and Town Centre North (High Intensity Residential areas), and the Northgate and Port Marsden (Industrial areas), are now all grouped within the defined Primary Centre. Given that the quantum of land use for these individual areas has not changed since the 2008 draft document, the macro-order infrastructure modeling remains generally the same. However, it is recognized that some infrastructure networks in the immediate vicinity of the Primary Centre could change in the longer term, and that it is not possible to model these changes until further detailing of the Primary Centre's layout and land use pattern is determined.

Preface

The Integrated Transportation Assessment presented in this Annexure is based on a June 2008 version of the draft Structure Plan.

Whilst the analysis of the current transportation situation remains accurate, the transportation assessment of the Structure Plan's proposals has not been updated to coincide with the Structure Plan document as adopted in November 2009.

The majority of this Transportation Assessment's recommendations remains unchanged and will still apply to the adopted Structure Plan.

The only significant proposed land use changes since the June 2008 draft relate to:

1. The McCathie North land unit, which has been changed from Residential to Industrial usage. This change will affect the traffic modeling in the vicinity of McCathie Road, and consequentially could affect the intersection modeling of the SH15A-McCathie Road intersection and the McCathie Road-Marsden Point Road intersection. However these consequential transportation-related changes are expected to be nominal in the context of the overall transportation planning for the study area.

2. The areas labeled; Town Centre, Town Centre West and Town Centre North (High Intensity Residential areas), and the Northgate and Port Marsden (Industrial areas), are now all grouped within the defined Primary Centre. Given that the quantum of land use for these individual areas has not changed since the 2008 draft document, the macro-order traffic modeling remains generally the same. However, it is recognized that some detailed road and specific intersection modeling in the immediate vicinity of the Primary Centre will change from that expressed in the ITA, and that it is not possible to model these changes until further detailing of the Primary Centre's layout and land use pattern is determined.

Council has acknowledged that the Integrated Transportation Assessment will be updated in due course.