

Whenuapai Structure Plan

September 2016



He mihi

Tuia ki te rangi

Tuia ki te whenua

Tuia ki te moana

Tuia te here tangata

E rongō te pō e rongō te ao.

Bind the domain of the upper realm

Bind the domain of the land

Bind the domain of the ocean

**Bind the tapestry of life affirming our connection
to the natural world and to one another**

Ngā mihi

Whenuapai in 2046

Whenuapai is a liveable, compact and accessible place with a mix of high quality residential and employment opportunities. It makes the most of its extensive coastline, is well connected to the wider Auckland Region, and respects the cultural and heritage values integral to its distinctive character.

This vision for Whenuapai is supported by key objectives covering seven themes - sustainable urban development, a quality built urban environment, a well-connected Whenuapai, the national significance of the Whenuapai Airbase, the provision of infrastructure, an enhanced natural environment and protection of heritage, and the provision of quality open spaces.

Structure Plan Area

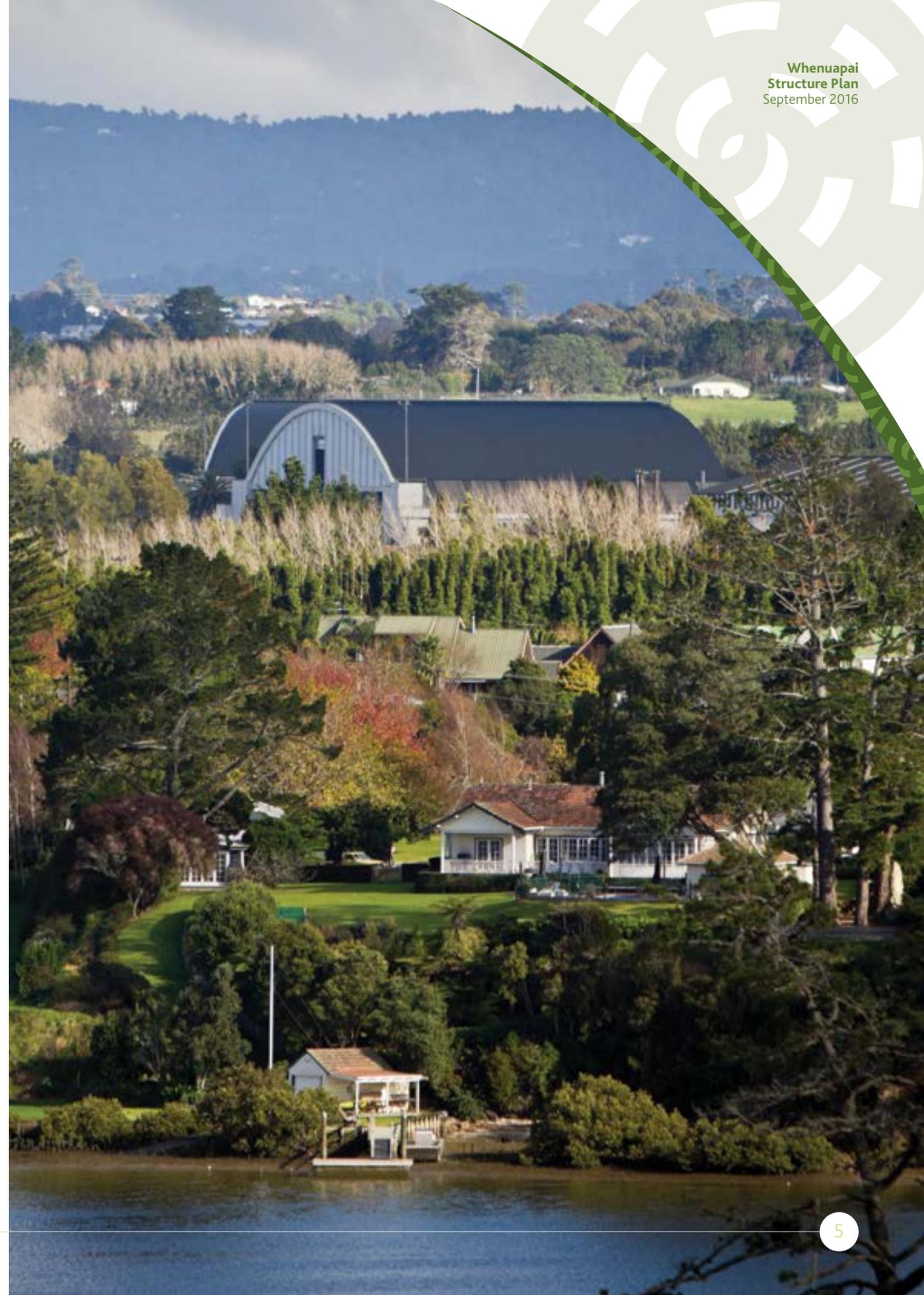
Covering approximately 1500 hectares, Whenuapai is located 23km northwest of Auckland's central business district, at the fork of State Highway 16 (SH16) and State Highway 18 (SH18). SH16 connects Auckland to Whenuapai, Kumeu, Huapai and northwest Auckland. SH18 connects Whenuapai to Albany, the North Shore and State Highway 1.

The coastline of the Upper Waitematā Harbour, an area ranked highly in terms of vulnerability and ecological value, forms Whenuapai's northern boundary. Whenuapai

is largely severed from surrounding areas by SH16 and SH18 and its northern coastline. The closest metropolitan centre is Westgate, located close by on the western side of SH16. The structure plan area does not include Herald Island which is linked to Whenuapai via Kingsway Road.

The Whenuapai Airbase has been established on site since 1937 and is a significant land use of approximately 300 hectares located in the middle of the area. The airbase is not proposed to be developed as part of the Structure Plan and New Zealand Defence Force (NZDF) operations at the airbase will continue for the foreseeable future.

Whenuapai Village and Whenuapai Centre currently exist inside the structure plan area. Whenuapai Village is located north of the airbase and has a focal point of the Whenuapai Village Hall and the Malcolm Hahn Memorial Reserve. Whenuapai Centre is located on Brigham Creek Road and provides the key retail hub for the area and serves the convenience retail needs of the current population.



Key elements of the Structure Plan to be considered (see Section 8 for further details)

Development of the Structure Plan has considered the constraints and opportunities in the area. The following key elements have been explored to ensure sustainable development in the structure plan area. See page 8 for the Structure Plan map.

Land use and activities – the Structure Plan identifies low, medium and high density residential land development areas taking into account the airbase and other constraints, and following the Neighbourhood Design Statement.

Transport – higher residential densities are located in proximity to Rapid Transit Network stations and park and ride facilities. Whenuapai will have a well-connected cycling and pedestrian network.

Infrastructure – significant upgrades to existing water supply and waste water networks are required as well as stormwater management is needed to manage these effects of growth. Development has to take into account the noise contours and flight paths of Whenuapai Airbase as well as the National Grid Corridor.

Natural environment and heritage – retention of permanent and intermittent streams is crucial and will help determine where roads, open space and residential development will be located. Significant Ecological Areas and riparian margins are to be enhanced while existing archaeological and built heritage sites are to be protected.

Open space and recreation – esplanade reserves, a sports field, three suburban parks, a network of 14 neighbourhood parks and a civic space are to be provided in the structure plan area.

The structure plan map on the following page shows the land uses and their relationship to infrastructure and other key elements of the structure plan area.

Implementation and staging (see Section 9 for further details)

It is anticipated the structure plan area will provide somewhere between 8100 to 10,700 dwellings (depending on the density of development), 8600 jobs and over 300 hectares of new business land over the next 10 to 20 years. Development will be built out in stages as the provision of infrastructure allows and taking into account the growth identified in the whole of the northwest.

Stage 1 of the development of the structure plan area is split into six phases. These include areas of residential and business land that can be development ready within the next 2-10 years. Some land is being developed already and it has been identified that up to 1800 dwellings can be built in Stage 1 during the period from 2017-2021.

Stage 2 comprises the remainder of the land that requires further investment in new infrastructure and will be built out from 2021 onwards.



Example of the type of medium density housing we expect in Whenuapai

Structure Plan Map

-  Potential Multi-purpose Community Facility
-  Ferry terminal
-  RTN Station
-  RTN Station - Park and Ride

-  Proposed Civic Space
-  Existing Neighbourhood Park
-  Proposed Neighbourhood Park
-  Proposed Sports Park - location undetermined
-  Proposed Suburb Park

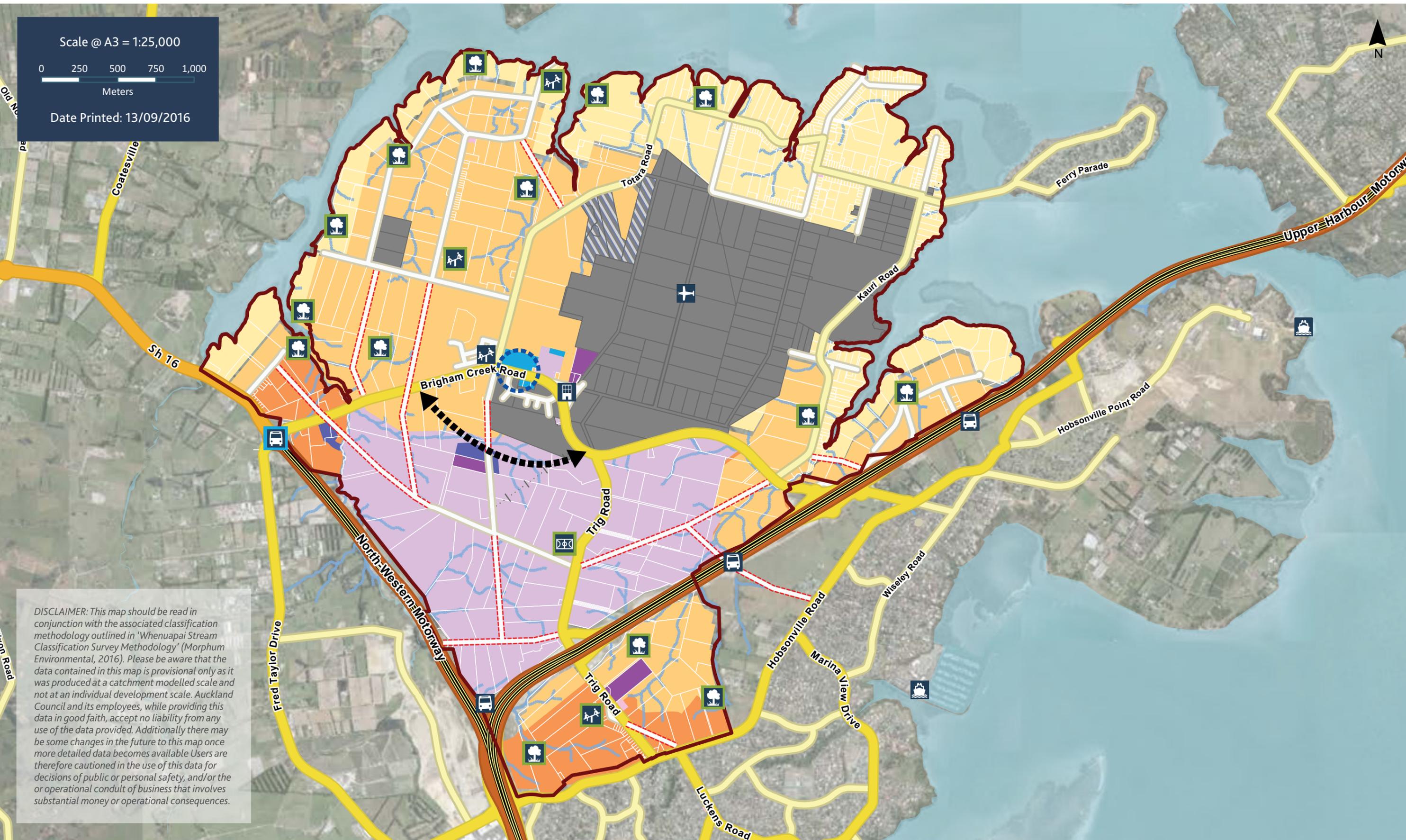
-  Whenuapai Structure Plan Boundary
-  NZDF Property
-  NZDF Designation
-  Rapid Transit Network (RTN)
-  Potential Brigham Creek Bypass
-  Proposed Roads
-  Permanent and Intermittent Streams

-  School
-  Local Centre
-  Neighbourhood Centre
-  Mixed use
-  Business
-  Low Density
-  Medium Density
-  High Density

Scale @ A3 = 1:25,000

0 250 500 750 1,000
Meters

Date Printed: 13/09/2016



DISCLAIMER: This map should be read in conjunction with the associated classification methodology outlined in 'Whenuapai Stream Classification Survey Methodology' (Morphum Environmental, 2016). Please be aware that the data contained in this map is provisional only as it was produced at a catchment modelled scale and not at an individual development scale. Auckland Council and its employees, while providing this data in good faith, accept no liability from any use of the data provided. Additionally there may be some changes in the future to this map once more detailed data becomes available. Users are therefore cautioned in the use of this data for decisions of public or personal safety, and/or the operational conduct of business that involves substantial money or operational consequences.

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1 Introduction

The purpose of this document is to outline the structure plan for Whenuapai. This structure plan follows the requirements of Appendix 1 of the Auckland Unitary Plan Operative in Part. It is the product of analysis of technical reports from numerous Auckland Council departments and infrastructure providers, community feedback received during the engagement process, and feedback from key stakeholders within the structure plan area. Whenuapai is part of the solution to Auckland's growth challenge; this document sets out how the structure plan area is to be developed from now and over the next 10-20 years and how Whenuapai will integrate with wider Auckland.

1.1 Structure plan area

Covering approximately 1500 hectares, Whenuapai is strategically located 23km northwest of Auckland's central business district, at the fork of State Highway 16 (SH16) and State Highway 18 (SH18). SH16 connects Auckland to Whenuapai, Kumeu, Huapai and northwest Auckland. SH18 connects Whenuapai to Albany, the North Shore and State Highway 1. Figure 1 shows the wider context of Whenuapai within the Auckland region. Figure 2 is a detailed aerial photograph showing the extent of the Whenuapai Structure Plan area.

The coastline of the Upper Waitematā Harbour, an area ranked highly in terms of vulnerability and ecological value, forms Whenuapai's northern boundary. Whenuapai is largely severed from surrounding areas by SH16 and SH18 and its northern coastline. Access is limited to three key connections – Brigham Creek Road/SH16 interchange, Brigham Creek Road/SH18 interchange and Trig Road. The closest metropolitan centre is Westgate which is located close by on the western side of SH16. The structure plan area does not include Herald Island which is linked to the Whenuapai area via Kingsway Road.



Figure 1: The Whenuapai Structure Plan area in Auckland context



Figure 2: Extent of the Whenuapai Structure Plan area

The Whenuapai Airbase has been established on site since 1937 and is a significant land use of approximately 300 hectares located in the middle of the Whenuapai Structure Plan area. On the western side of the runways, the airbase includes land used for personnel, servicing aircraft operations, weapons preparation areas and ancillary support to aircraft operations and/or defence use. The airbase is not proposed to be developed as part of the Structure Plan and New Zealand Defence Force operations at the airbase will continue for the foreseeable future.

Whenuapai Village and Whenuapai Centre currently exist inside the structure plan area. Whenuapai Village is located north of the airbase and has a focal point of the Whenuapai Village Hall and the Malcolm Hahn Memorial Reserve. Whenuapai Centre is located on Brigham Creek Road and provides the key retail hub for the area and serves the convenience retail needs of the current population. The centre includes a number of convenience shops and a petrol station. Whenuapai Primary and Timatanga Schools are located near the centre, as is Pinepac Whenuapai ITM.

1.2 The growth challenge

The population of Auckland was 1,493,200 people at the time of the 2013 Census. At 30 June 2015 the population was estimated to be 1,569,900 people¹. By 2043 the population is projected to grow to between 2,028,300 (low) and 2,432,800 (high) people as shown in Figure 3². The challenge for Auckland is how to accommodate this growth with housing and jobs.

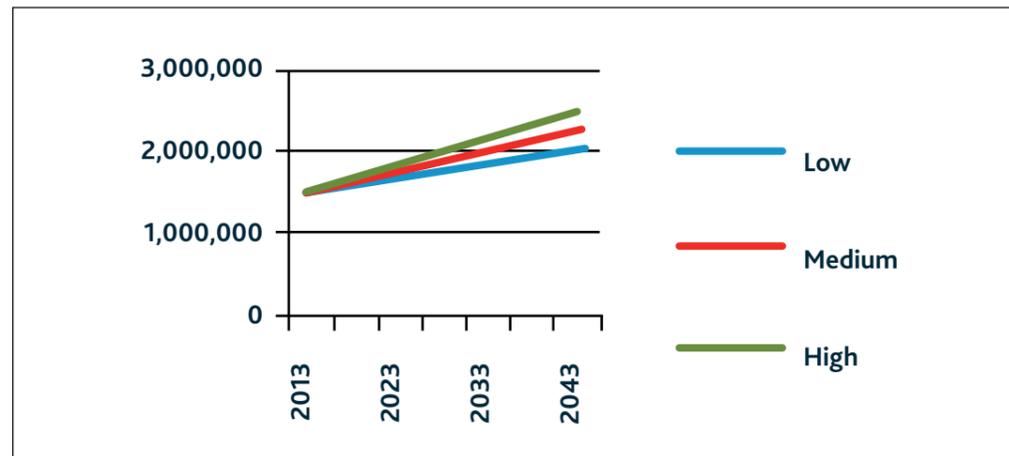


Figure 3: Auckland population projections
Source: Statistics NZ 2015

¹ Statistics NZ, Estimated resident population for regional areas at 30 June
² Statistics NZ, Subnational population projections, 2013(base)-2043

Approximately 400,000 new dwellings and 277,000 additional jobs will be needed to accommodate the growing Auckland population. As part of a quality compact approach to growth, the Auckland Plan anticipates that up to 160,000 dwellings and 1400 hectares of business land will be required outside the existing urban area. In addition, up to 240,000 dwellings are anticipated within the existing urban area.

The council's Future Urban Land Supply Strategy sets out a programme for sequencing future urban land over 30 years across Auckland. It identifies Whenuapai as able to supply 1800 dwellings between 2017 and 2021. In the 30 years to 2041, Whenuapai is anticipated to have between 8100 to 9600 dwellings and approximately 8600 jobs.

The structure plan area is identified within the Rural Urban Boundary and zoned Future Urban in the Auckland Unitary Plan Operative in Part.

1.2.1 Housing demand

Based on historical trends in Auckland, there is likely to be considerable demand for releasing land in Whenuapai for housing due to its proximity to the coast, Westgate Centre and accessibility to the state highway network.

The greatest pressure for housing is likely to be for low to medium density residential development which, by itself, would result in Whenuapai becoming a dormitory, car-based, commuter suburb. However, the opportunity to provide for higher densities around an emerging local centre and planned rapid transit stops will enable Whenuapai to accommodate a significant population.

Whenuapai would benefit from an appropriate mix of residential and employment densities which will, in turn, support more amenity and services in the area as its population grows. Over time, an increasing proportion of residents' daily needs will be able to be met within Whenuapai or nearby in Westgate or Hobsonville.

1.2.2 Business demand

State Highways 16 and 18 provide good accessibility to the area making Whenuapai a prime location to accommodate a significant proportion of future industrial growth in the northwest. Additional retail and other services will also be required in the area to match the residential growth and supplement the offerings at Westgate.

1.3 What is a structure plan?

A structure plan is a high level plan for a large area that shows the arrangement of various land uses (e.g. centres, housing, employment and parks) and infrastructure (e.g. transport and stormwater), and how the area connects to adjacent urban areas and wider infrastructure networks. It identifies public infrastructure such as streets, rail, stormwater, natural features, schools and community facilities. A structure plan guides future development by coordinating and defining the land use patterns and the location, distribution and integration of this infrastructure. A structure plan forms the basis of changes to the Auckland Unitary Plan Operative in Part through the plan change process.

Structure planning of the Whenuapai area has been undertaken as the first stage of the plan change process to rezone land from the Future Urban zone to an urban zone in accordance with the requirements as set out in Appendix 1 of the Auckland Unitary Plan Operative in Part (for more information see Appendix 3).

Appendix 1 of the Auckland Unitary Plan Operative in Part sets out what must be considered when structure planning, the content of the structure plan, and the supporting information that is required. The outcome of the structure planning phase is the production of a structure plan map that can be readily converted into a statutory planning format, producing zones and designations, as well as timing of development.

2 Structure Plan Process

2.1 Background

Planning for the future urban growth of Whenuapai began in the 1990s. Various council planning documents identified the potential of the area for future urban growth and contained background work for the structure planning process. Various key infrastructure projects have also been proposed over the intervening time to support growth, some of which are now operational or in progress, such as the Northwestern Busway to Westgate.

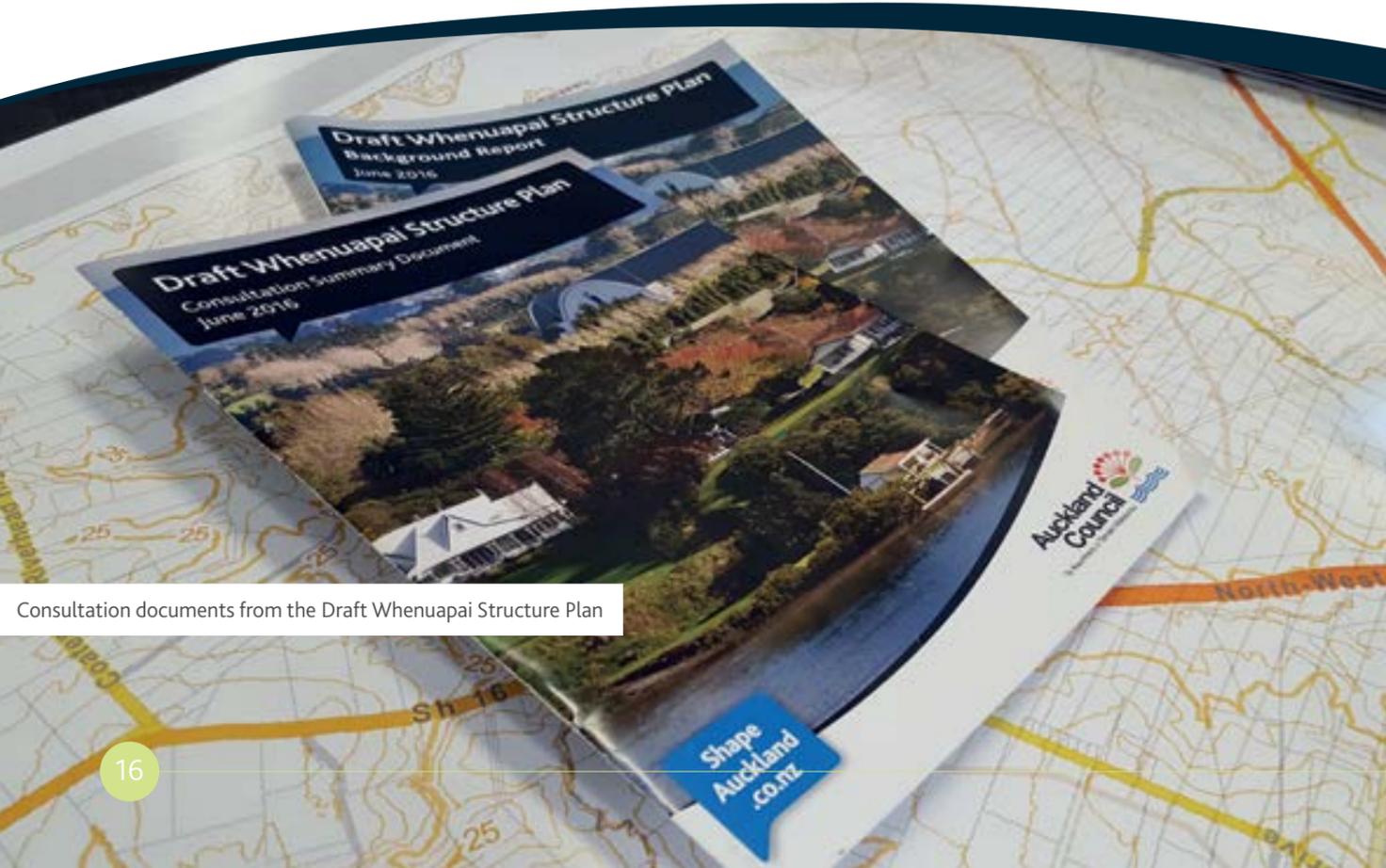
2.1.1 Background planning documents

The Auckland Regional Growth Strategy: 2050 was prepared in 1999 to help plan growth and reduce unmanaged urban development throughout the region. Land immediately to the south of Whenuapai, along Hobsonville Road and to the west at Westgate, was identified for growth.

The Northern and Western Sectors Agreement 2001 outlined how growth would be implemented to accommodate future growth in the west. This strategy focused new development along the Massey – Hobsonville corridor over a 20-year period (2001–2021) and was referred to as the Northern Strategic Growth Area.

Plan changes were approved in 2010 to extend the Metropolitan Urban Limits (MUL) at Hobsonville Point, Hobsonville Road and Westgate to rezone rural land to urban zones for development. These areas are currently under development. Whenuapai and Trig Road were not included in these changes and remained outside the MUL.

Prior to amalgamation Waitākere City Council completed a growth strategy - Best for the West Growth Management Strategy (2010) - which provided for staged new urban development at Redhills, Trig Road and Whenuapai. Waitākere City Council prioritised structure planning of the Whenuapai Industrial Area and Hobsonville Corridor West. Considerable analysis and research was undertaken to support future plan changes. A 2010 report to Waitākere City Council summarises the outcome of that structure planning work and provided a draft concept plan for Whenuapai.



Consultation documents from the Draft Whenuapai Structure Plan

2.2 The structure plan process

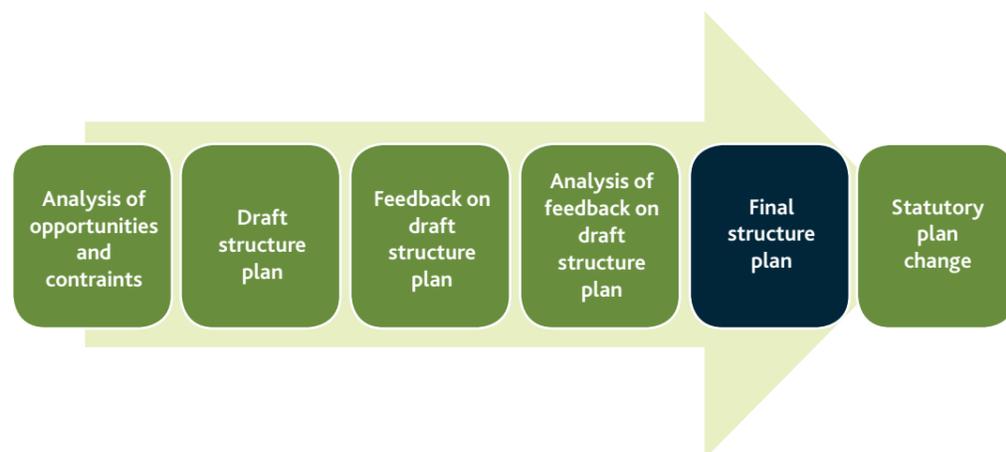


Figure 4: Structure planning process

The structure planning process started in January 2016. A series of technical reports were commissioned by the council to understand the opportunities and constraints for development within Whenuapai. The reports and previous research that had been undertaken in the area over the past decade were analysed. New and updated information gathered as part of phase one includes:

- Biodiversity Assessment
- Business Land Assessment
- Community Facility Provision Report
- Cultural Values Assessment (Te Kawerau ā Maki)
- Integrated Transport Assessment
- Natural Character, Landscape and Visual Assessment
- Neighbourhood Design Statement
- Noise Assessment
- Parks and Open Space Report
- Preliminary Aboricultural Assessment
- Preliminary Coastal Habitat Assessment
- Preliminary Contamination Assessment
- Preliminary Geotechnical and Coastal Erosion Assessment Report
- Preliminary Historic Heritage Assessment
- Preliminary Lighting Assessment
- Stormwater Management Plan
- Wastewater Servicing Strategy.

A summary of the opportunities and constraints identified by these technical reports is provided in Section 7 and full copies of the technical reports are available on the Auckland Council website.

The second phase of the process involved developing a draft structure plan. Key elements were put together to form the draft document based on a synthesis of the technical assessments. Public engagement on the draft plan was held in June-July 2016.

Following this the feedback was analysed and the Structure Plan refined. For more information on the feedback see Section 6 of this report.

The final structure plan represents an integrated land use and infrastructure plan to guide statutory and non-statutory processes in the future. The Structure Plan complements and builds on the nearby developments of Westgate, Hobsonville Corridor and Hobsonville Point, bringing further housing and employment opportunities to Auckland's northwest.

The next step is to prepare a plan change to the Auckland Unitary Plan Operative in Part to change the current Future Urban zone to appropriate urban zones. The plan change will be prepared in accordance with the first schedule of the Resource Management Act 1991 (RMA). During the plan change process finer details will be determined and there will be opportunity for residents and other stakeholders to have their say.



3 Vision and Key Objectives

3.1 Vision for Whenuapai

Whenuapai is a liveable, compact and accessible place with a mix of high quality residential and employment opportunities. It makes the most of its extensive coastline, is well connected to the wider Auckland Region, and respects the cultural and heritage values integral to its distinctive character.

3.2 Key objectives

1. Sustainable urban development in Whenuapai

- Whenuapai is an exemplar for a sustainable green fields development
- high quality development takes place that supports sustainable, low carbon and healthy communities and workplaces
- Whenuapai has a strong community focus with local and neighbourhood centres, community facilities, primary and secondary schools, and public open space
- Whenuapai's development is designed to mitigate the effects of climate change and coastal hazards
- communities, development and infrastructure take an adaptive approach to respond to the effects of climate change and coastal hazards
- economic prosperity is fostered through the provision of future-focused, local business development opportunities to create local jobs
- social infrastructure is provided to support the needs of the community and contribute to liveability.

2. Quality built urban environment

- a range of quality housing choices are provided to meet the needs of a growing and diverse community
- Whenuapai has a quality compact urban form with increased residential densities close to public transport services and amenities
- Whenuapai is a place that respects and celebrates its relationship with mana whenua and its Māori and European heritage and character

- the street network enhances Whenuapai's sense of place by favouring pedestrians, cyclists and public transport modes.

3. A well-connected Whenuapai

- the transport network responds to anticipated growth and maximises connectivity for commuters and freight within Whenuapai and to surrounding areas
- frequent, attractive public transport options are supported by greater density along key routes, and good local and regional connections exist
- dedicated cycle and pedestrian footpaths provide safe, connected and high amenity linkages between areas of activity at a local scale.

4. The national significance of Whenuapai Airbase

- development around the airbase recognises its national significance and strategic importance
- Whenuapai Airbase continues to positively contribute to the character and sense of place in Whenuapai.

5. The provision of infrastructure

- timely public water, waste water and transport network infrastructure meets the growing needs of Whenuapai
- a water-sensitive design approach manages stormwater and utilises the existing stream network.

6. Enhance the natural environment and protect natural heritage

- freshwater quality throughout the catchment is enhanced over time
- scheduled natural heritage is protected
- the overall biodiversity of the area is improved over time
- environmental constraints, such as coastal erosion and contaminated land, are adequately managed
- sedimentation of the Upper Waitematā Harbour is carefully managed through subdivision and development processes.

7. The provision of quality open spaces

- a network of high-quality open spaces and recreation areas meet the needs of the growing Whenuapai community
- there are ample opportunities for cycling, sport, passive recreation and social interaction
- stream networks are utilised as recreational routes and connections between open spaces and the coast where practicable
- public access to, and along, the coast is enhanced where practicable.

4 Local context

4.1 Site description

The Whenuapai Airbase is a significant land use of approximately 300 hectares located in the middle of the structure plan area. The airbase provides a unique sense of place to Whenuapai. The New Zealand Defence Force (NZDF) considers that the airbase will continue to positively contribute to the character and amenity of the area. NZDF has indicated that it wishes to build on its association and connections with Whenuapai and to build and enhance positive relationships with the new and existing community.

Surrounding the airbase is a mixture of rural activities and countryside living including low density housing, green houses, equine uses, orchards and crops.

Whenuapai Village is located north of the airbase and is an established residential neighbourhood of single-detached housing on a range of lot sizes, lots of around 1000m² on Puriri and Waimarie Roads and larger properties adjoining the coastline (generally between 2000m² and 7000m²). A small area of commercial activity exists on the corner of Puriri and Waimarie Roads (940m²) with a takeaway restaurant and a convenience store. The Whenuapai Village Hall is located on Waimarie Road and is a valued community asset. It is the only community facility in the structure plan area.

Whenuapai Centre is an established centre on Brigham Creek Road. It is immediately west of the airbase and Whenuapai Primary School which is located on Airport Road. The current centre provides the key retail hub for the area and includes a number of convenience shops and a petrol station on the southern side. Commercial activities include Pinepac Whenuapai ITM, a major saw milling industry. To the south of the retail centre is the residential neighbourhood of airbase housing. Nearby is the privately owned and operated Timatanga School.

The northern part of Whenuapai is closely associated with the coastal inlets and waterways of the Upper Waitemata Harbour. The Auckland Unitary Plan Operative in Part acknowledges the importance of this sensitive coastal environment by identifying it as a Significant Ecological Area – Marine. Houses here are typically large, orientated towards the water and vegetated by mature trees, as is evident along Bristol and Totara Roads. There are smaller concentrations of higher density housing set among mature vegetation, especially around Waimarie, Puriri and Pohutukawa Roads which are part of Whenuapai Village. There are also numerous horticultural and equine-based activities in this part of the structure plan area contained by mature trees.



Current Whenuapai Centre

Almost all roads in the structure plan area are single-lane and have a predominantly rural character with hedgerows, post and railing fencing and limited lighting. Some roads, including parts of Totara Road, are currently being upgraded to facilitate future development needs.

Public open space comprises of pockets of esplanade reserve around the coastline and neighbourhood parks located in Whenuapai Village and on Ryans Road (off Trig Road). A new neighbourhood park and town square are currently being constructed as part of the Special Housing Area off Totara Road.

Two Special Housing Areas exist on the northern side of Brigham Creek Road, adjoining the centre, and will provide approximately 1000 dwellings together with a playground and an area of commercial land. Development is currently underway within the western part of the Special Housing Area. A third Special Housing Area at 1 Ockleston Landing is located to the southeast, adjacent to State Highway 18. At the time of writing this report, no application to develop that Special Housing Area had been lodged with Auckland Council.

4.2 Whenuapai Airbase

The airbase is used by the New Zealand Defence Force (NZDF) for military aviation and related military activities. The site can accommodate all types of fixed wing military aircraft up to a C17 size. The airbase has two runways which currently service:

- No. 6 Squadron – Naval Support Flight
- No. 5 Squadron (Orion)
- No. 40 Squadron (Hercules and Boeing 757)
- RNZAF Parachute Training Support Unit.

As well as the runways, there are related buildings and facilities on the site including a small cluster of dwellings and ancillary recreational activities. The airbase is the largest air force base in the country, with personnel strength of around 1100.

The NZDF has advised the airbase will continue to operate at a similar scale and intensity to its current operation for the foreseeable future and is not available for non-military uses. Potential impacts on the safe and effective current and future operation of the airbase need to be considered and avoided, remedied or mitigated by any new development. All new development needs to be in accordance with the Auckland Unitary Plan Operative in Part requirements for the airbase, as well as Civil Aviation Authority requirements.

Refer to Section 5.3.1 for commentary on the airbase designation in the Auckland Unitary Plan Operative in Part.

4.3 Westgate Centre

Westgate Centre is the closest major centre to Whenuapai and, as an emerging metropolitan centre, it will be the principal centre for the Whenuapai community. Currently access to Westgate Centre from Whenuapai is via Brigham Creek Road and Fred Taylor Drive, Trig Road and Hobsonville Road, or westbound from SH18. Westgate is approximately 7km from the existing Whenuapai Centre on Brigham Creek Road.

Westgate will, when completed, cover an area of 56 hectares and create 10,000 new jobs and housing for 4000 residents.

The NorthWest Shopping Centre, to the north of Fred Taylor Drive, was opened in late 2015 along with the town square. This mall is supported by approximately eight hectares of commercial land, 12 hectares of large-format retail and home improvement stores around the periphery, and a further eight hectares of employment land. Six hectares of open space and walkways are proposed, along with a new 3500m² library.

4.4 Surrounding land use

With the exception of Westgate Centre, Whenuapai is primarily surrounded by established low-density residential neighbourhoods at Herald Island, West Harbour, Massey and Hobsonville (refer to Figure 5).

Hobsonville Point is currently being redeveloped from a former airfield to a mixed residential and commercial/industrial area. This area also has new primary and secondary schools and extensive areas of open space. A ferry service connects Hobsonville Point to central Auckland.

Special Housing Areas have been established at Scott Point, parts of Hobsonville Point (The Landing and Catalina), Redhills and Westgate, with applications for plan changes to the Auckland Unitary Plan Operative in Part to enable urban development at varying stages. At the time of writing this report only Scott Point and Catalina at Hobsonville Point are operative.

The area known as Redhills has been given a live zoning under the Auckland Unitary Plan Operative in Part. This enables the development of approximately 600 hectares of land for residential development with a Local Centre west of Westgate. The council has, however, rejected the infrastructure staging provisions provided by the Independent Hearings Panel, replacing those provisions with more refined provisions to assist with the timing and sequencing of development in that area.

In close proximity to Whenuapai is a local centre, Hobsonville Village, at the eastern end of Hobsonville Road comprising a supermarket, shops, a gym and offices. This area is accessible from Whenuapai for pedestrians via the Clarks Lane footbridge. An area of business land, Hobsonville Corridor, is now available for development immediately south of Whenuapai between Hobsonville Road and SH18. Hobsonville Primary School is also located within this area.

To the north of Whenuapai are the rural-residential areas of Coatesville and Riverhead. Coatesville is zoned as a Local Centre under the Auckland Unitary Plan Operative in Part and is surrounded by Countryside Living and Rural Production Zones. Riverhead is a Local Centre and is predominantly a low density residential neighbourhood to the east of the Coatesville-Riverhead Highway with an area of Future Urban Zone to the west of the Highway.

To the northwest of Whenuapai are the settlements of Kumeu and Huapai which have been zoned as Town Centres in the Auckland Unitary Plan Operative in Part and are surrounded by large areas of Future Urban Zone. To the east of Whenuapai along State Highway 18 is the residential suburb of Greenhithe and the metropolitan centre of Albany. Albany has large areas of Light Industry zone. For more information on these zones see Chapter D of the Auckland Unitary Plan Operative in Part.



Figure 5: Surrounding area

4.5 Landform and features

Land within Whenuapai is predominantly low-lying and flat to undulating, with the lowest elevated areas to the north and adjacent to the harbour, the land gently rising to the south as it joins Hobsonville Road. At the lowest points, elevation barely gets higher than the Mean High Water Spring but reaches between 18-25 metres above sea level across the majority of the northern part of the structure plan area. Further south the land rises to approximately 70 metres above sea level along the West Harbour residential area and Hobsonville Road.

The majority of the land has been cleared and replaced with exotic pasture, grasses, crops, buildings and roads. Shelterbelts often demarcate field boundaries and comprise predominantly evergreen species, such as pine or macrocarpa. Other exotic tree species that are evident in the structure plan area are poplar, oaks, plane trees, and individual and groups of willows.

Very little native vegetation remains in the structure plan area. However, extensive native plantings have been integrated along State Highway 16 and State Highway 18 to form an important ecological corridor extending southeast to southwest between Hobsonville and Brigham Creek.

Significant tracts of forest vegetation associated with the steep escarpment banks of Riverhead, Lucas Creek and Hellyers Creek form the northern outlook for residents in Whenuapai and Herald Island.

There are numerous creeks and streams along the northern part of the structure plan area, including Brigham Creek that forms the area's northwestern boundary and the Waiarohia Inlet which forms the area's northeastern boundary. These watercourses vary in quality, with the majority being cleared of vegetation or containing predominantly exotic species.

The structure plan area has two primary stream catchments, Totara Stream flowing northwest to Brigham's Creek and Waiarohia Stream flowing northeast to the Waiarohia Inlet. An extensive network of intermittent and permanent streams traverse the area, feeding into the Riverlea Stream, Ratarua Stream and Orchard Stream in the north, and Brigham Creek, Waiarohia Stream and Totara Creek in the south. These streams feed into the Upper Waitemata Harbour via Brigham and Totara Creeks and other tidal inlets.

The coastal area is tidal and fringed by mangroves with the coastal edge comprising steep cliffs to moderate slopes and gentle slopes grading down to the tidal zone. The enclosed coastal landscape is not ranked as outstanding but it does have natural character and recreation value.

The coastal marine area largely consists of mud flats created by slow moving waters and mangrove swamps which feature a variety of invertebrate fauna, bottom-feeding fish and coastal birds. Waiarohia inlet is considered to be a valuable roosting habitat for wading birds, such as the threatened banded dotterel (*Charadrius bicinctus*). Brigham Creek is known to contain the greatest area of mangroves in the Upper Waitemata Harbour and substantial areas of jointed rushes in the salt marshes located in its upper reaches, the latter of which are considered of regional and national significance.



View of Whenuapai

5 Strategic Context

This section sets out the relevant statutory and non-statutory plans and strategies that must be considered in the development of structure plans, in accordance with Appendix 1 of the Auckland Unitary Plan Operative in Part. The key outcomes sought by each document, where relevant to the structure plan, are summarised in this section.

5.1 The Auckland Plan

The Auckland Plan sets the long-term strategic direction for Auckland and integrates social, economic, environmental and cultural objectives.

A key component of the Auckland Plan is the high-level Development Strategy³ for accommodating future growth until 2040, with the aim to provide for up to 70 per cent of growth within existing urban areas (defined by the 2010 Metropolitan Urban Limit) and up to 40 per cent outside of these areas, including in greenfield areas, satellite towns and rural and coastal towns.

The Auckland Plan aims to provide sufficient capacity for up to 160,000 dwellings outside the 2010 Metropolitan Urban Limit, including new greenfield areas. Whenuapai is identified as one of the greenfield areas for investigation along with nearby Redhills. Approximately 95,000 dwellings are identified to be provided for within greenfield areas for investigation, with approximately a quarter of this growth anticipated in the northwest areas of Whenuapai/Redhills and Kumeu/Huapai/Riverhead.

The Development Strategy also identifies approximately 1400 hectares of Group 1 business land⁴ will be required across Auckland in new greenfield areas over the next 30 years. This structure plan provides an opportunity to provide for over 300 hectares of new business land to contribute to this requirement.

³ Section D, Auckland Plan

⁴ Land Extensive Industrial Activities

5.2 National policy statements and national environmental standards

This section outlines the Resource Management Act 1991 documents that are relevant to the Structure Plan. The council gives effect to these documents through provisions in the Auckland Unitary Plan Operative in Part.

The Proposed National Policy Statement on Urban Development Capacity has not been considered in the development of this structure plan as it is still in preparation.

5.2.1 New Zealand Coastal Policy Statement 2010

The New Zealand Coastal Policy Statement sets out the policies for sustainably managing the coastal environment. It is a relevant consideration as Whenuapai is bounded in the north by the coastal waters of the Upper Waitematā Harbour and Brigham's Creek. The New Zealand Coastal Policy Statement sets the direction for balancing the unique challenges associated managing uses within the coastal environment, including effects on natural character and landscapes, the dynamic nature of the coast, competing uses, coastal hazard risks, effects on coastal biodiversity and declining water quality.

The policies recognise and provide for appropriate use and development in the coastal environment while seeking to protect natural values and enhance water quality. Coastal hazard risks are to be identified and appropriately managed. There is also a need to adopt a precautionary approach to the use and management of coastal resources in areas potentially vulnerable to effects from climate change. The New Zealand Coastal Policy Statement promotes public access to areas in and near the coast.

In order to achieve the objectives of the New Zealand Coastal Policy Statement, this structure plan proposes to maintain setbacks from the coast and a water-sensitive design approach to stormwater management will help to address potential coastal hazard risks and water quality issues. Maintaining and enhancing public access to, and along, the coast is also a key part to the Structure Plan.

5.2.2 National Policy Statement for Freshwater Management 2014

The National Policy Statement for Freshwater Management (Freshwater NPS) provides direction for the council on the management of freshwater. The council must give effect to the Freshwater NPS through the provisions of the Auckland Unitary Plan Operative in Part; notably through the Regional Policy Statement and the Auckland-wide provisions⁵.

Identification of ephemeral, intermittent and permanent streams, and freshwater wetlands has been undertaken as part of the structure planning process. The proposed approach to managing freshwater is provided in Section 7.6 of this document.

5.2.3 National Policy Statement on Electricity Transmission 2008

The National Policy Statement on Electricity Transmission is relevant because high-voltage electricity transmission lines, as part of the National Grid Corridor, traverse the northwestern part of the structure plan area. This National Policy Statement recognises the national significance of the electricity transmission network by enabling its operation, maintenance, and upgrade, and establishing new transmission resources to meet future needs.

The council gives effect to the National Policy Statement on Electricity Transmission through the National Grid Corridor overlay provisions in the Auckland Unitary Plan Operative in Part. Land use activities in the vicinity of the National Grid Corridor will need to be considered carefully in the Structure Plan.

5.2.4 National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health 2011

Under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES) any sites where activities on the Hazardous Activities and Industries List have occurred must be identified. This NES provides a nationally consistent set of controls and soil contaminant standards to ensure land affected by contaminants in soil is appropriately identified and assessed before it is subdivided or developed.

A preliminary site investigation of contaminated land has been undertaken as part of the structure plan process and a summary is provided in Section 7.17.

⁵ Including E1 Water quality and integrated management and E2 Water quantity, allocation and use

5.3 Auckland Unitary Plan Operative in Part

The Auckland Unitary Plan Operative in Part provides the regulatory framework for managing Auckland's natural and physical resources while enabling growth and development and protecting matters of national importance. It is the principal statutory planning document for Auckland.

The Auckland Unitary Plan Operative in Part replaces the operative Auckland Council District Plan (Waitākere Section). The operative plan identifies Whenuapai as Countryside Human Environment which enables rural activities and limited subdivision via a four-hectare minimum lot size. Unique features such as the timber mill are identified as a Special Area with their own policy and rule framework.

The Regional Policy Statement within the Auckland Unitary Plan Operative in Part sets out the overall strategic framework and is intended to give effect to the Auckland Plan. It includes objectives, policies and methods to achieve a quality compact urban form through the implementation of a Rural Urban Boundary to define the extent of urban growth to 2040.

In addition to the objectives and policies for urban growth, the Regional Policy Statement also sets the framework for enabling economic growth, protecting historic and natural heritage, addressing issues of significance to mana whenua, sustainably managing our natural resources and coastal environment, and responding to climate change.

The Auckland Unitary Plan Operative in Part establishes a zoning pattern for all land in Auckland with important natural and historic values identified as overlays. The majority of the land within the structure plan area is zoned as Future Urban, a transitional zone which is applied to greenfield land suitable for urbanisation. Land may be used for a range of general rural and other existing activities but cannot be used for urban activities until the site is rezoned for urban purposes through a plan change process. This rezoning occurs following a structure planning process as informed by Appendix 1 of the Auckland Unitary Plan Operative in Part.

The operations portion of Whenuapai Airbase covering the runways and associated buildings is zoned Special Purpose – Airports and Airfields. This zone does not include the areas of New Zealand Defence Force (NZDF) housing. There are small pockets of zoning that is not Future Urban in the area to reflect key existing activities including Residential - Single House at Whenuapai Village, existing NZDF housing south of Brigham Creek Road, and the Business - Neighbourhood Centre, Business - Light Industry and Open Space zones at Whenuapai Centre. The two Special Housing Areas on Brigham Creek and Totara Roads are zoned Residential - Mixed Housing Urban and Business - Local Centre. Whenuapai Primary School is included in the Future Urban zone while the state integrated Timatanga Community School on Mamari Road is zoned Special Purpose – School. Figure 6 shows the existing zones under the Auckland Unitary Plan Operative in Part.

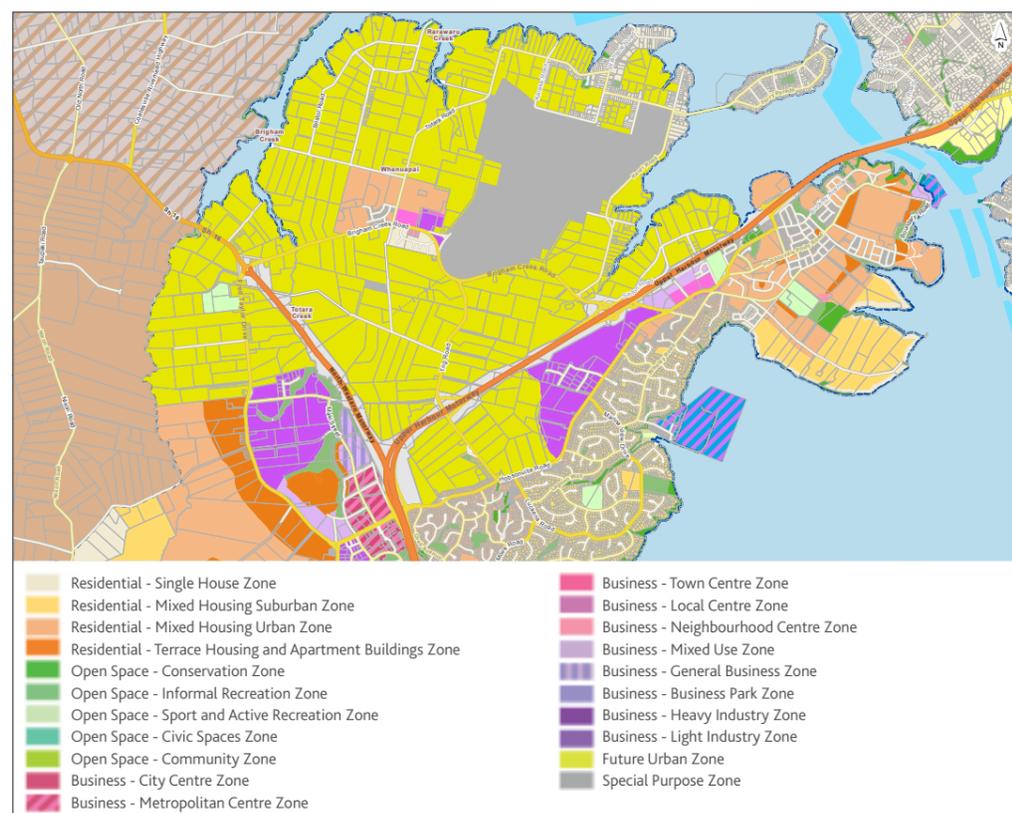


Figure 6: Zoning under the Auckland Unitary Plan Operative in Part

A number of overlays and controls apply to the structure plan area, including:

- Significant Ecological Areas Overlays – Terrestrial and Marine 2
- High-use Aquifer Management Areas Overlay
- Aircraft Noise Overlay, Obstacle Limitation Surface Overlay
- National Grid Corridor Overlay
- Stormwater Management Area Control – Flow 1
- Macroinvertebrate Community Index.

The Significant Ecological Areas Overlay – Marine 2 applies to the Upper Waitematā Harbour. Small portions of land within the structure plan area are covered by the Significant Ecological Areas Overlay – Terrestrial⁶. The High-use Aquifer Management Areas Overlay applies across the structure plan area to ensure aquifers are carefully managed to meet demands while maintaining base flows for surface streams⁷.

The purpose of the Aircraft Noise Overlay is to manage the subdivision of land and sensitive activities around airports and airfields to enable their continued operation⁸. The overlay is in the form of noise contours which limit airbase activities but also indicate where noise sensitive land uses such as residential activity could be adversely affected by airbase activities. The provisions generally seek to avoid activities sensitive to noise within the 65dB Ldn noise contour and to ensure any noise effects on residential and noise-sensitive activities between the 55dB Ldn and 65dB Ldn noise contours are adequately remedied or mitigated. Conditions on aircraft noise are also included in Designation 4310, as outlined in Section 5.3.1.

High-voltage transmission lines traverse the western part of the structure plan area. The National Policy Statement on Electricity Transmission applies as well as the National Grid Corridor Overlay provisions in the Auckland Unitary Plan Operative in Part to enable the efficient development, operation, maintenance and upgrading.

Stormwater is managed predominantly through E1 Water quality and integrated management, E8 Stormwater – Discharge and diversion and E10 Stormwater management area – Flow 1 and Flow 2. The Stormwater Management Area Control – Flow 1 include catchments which discharge to sensitive or high value streams that have relatively low levels of existing impervious area and applies to the airbase, the established NZDF housing south of Brigham Creek Road and the two Special Housing Areas on Brigham Creek and Totara Roads.

The Macroinvertebrate Community Index is a policy layer that provides data on the health of streams which will need to be considered when carrying out activities that discharge to freshwater and works around streams.

Appendix 1 of the Auckland Unitary Plan Operative in Part sets out the guidelines for developing structure plans as a precursor to plan changes, documents to be considered, matters the Structure Plan must identify, investigate and address, and specialist documents required to support the Structure Plan. These requirements ensure that all the effects of development are addressed in advance of development occurring. A summary of how Appendix 1 requirements have been addressed in this document is provided in Appendix 3.

⁶ Refer to D9 Significant Ecological Areas Overlay

⁷ Refer to D1 High-use Aquifer Management Areas Overlay

⁸ Refer to D24 Aircraft Noise Overlay

⁹ Refer to D26 National Grid Corridor Overlay

¹⁰ Refer to policies E1.3

5.3.1 Airbase designations

The Whenuapai Airbase is designated under the Auckland Council District Plan (Waitākere Section) and there are also rollover designations in the Auckland Unitary Plan Operative in Part. Designation 4310 covers the operations of the airbase and includes conditions on aircraft noise.

Noise control areas cover the structure plan area in northeast to southwest directions with a 65dBA noise contour around the approach and take-off flight path and a 55dBA noise contour covering a larger area around this.

Designation 4311 contains restrictions for development under the airbase approach and departure paths. These include:

1. The consent of the Minister of Defence shall be obtained in writing prior to any works or lodgement of building consents or resource consents where it is proposed to erect any building, change the use of any land or building or carry out any subdivision of land directly beneath and within the boundaries of the approach surfaces.
2. No part of any building, structure, mast, tree or other object shall penetrate any of the obstacle limitation surfaces, climb surfaces, transitional surfaces, horizontal surfaces or conical surfaces associated with the Whenuapai Airfield without written consent of the Minister of Defence, prior to carrying out any works or lodging a building consent or resource consent.

Land subject to Ministry of Defence Approval is generally within 1000 metres of the main runways and 500 metres from the end of subsidiary runways. The land most affected is located immediately at either end of the main runway.

5.4 Auckland Council Long-term Plan 2015-2025

The council's Long-term Plan 2015-2025 was adopted in June 2015 with three overarching issues identified:

- the desire for an outstanding transport system
- quality affordable housing close to centres
- limiting further rates increases.

The Long-term Plan anticipates large-scale greenfield development in the northwest and identifies the following projects which will have a direct impact on the development of Whenuapai:

- the Northern Interceptor wastewater project
- route protection and enabling works for the Northwestern Busway
- implementation of road network improvements in the Northern Strategic Growth Area (which includes Whenuapai).

Funding for new projects identified through the structure plan process as necessary to support urban growth at Whenuapai will be considered in the next rounds of the Annual Plan (2017-18) and Long-term Plan (2018-2028).

5.5 Local board plans

Whenuapai is located predominantly within the Upper Harbour local board area, with a small portion of land in the Henderson-Massey local board area. The local board plans for both are therefore relevant. There are no area plans for these local board areas.

Specific aspirations of the Upper Harbour Local Board Plan (2014) and initiatives relevant to Whenuapai include:

- quality developments are built using great design, including advocating to ensure open space and public facilities are considered with all developments
- a range of sport and recreation facilities are available with capacity to meet growing demands
- plan for economic development and growth
- access to public open spaces, including the development of a greenways network plan in conjunction with Auckland Transport
- well-connected and easily accessible public transport network
- road network and access improvements, including collaborating with Auckland Transport to upgrade Brigham Creek Road, advocating for cycle ways along Trig Road and Kauri Road and road improvements around Whenuapai School
- advocate for a busway between Westgate and the North Shore via State Highway 18.

The Henderson-Massey Local Board Plan (2014) includes the following aspirations relevant to the structure plan:

- allowing for growth that can help support the Westgate Centre
- increasing local employment and business opportunities
- creating a new community, particularly by increasing housing choice, opportunities for new schools and open space and community facilities.

5.6 Integrated catchment management plan

There is currently no integrated catchment management plan for the proposed land use changes in the structure plan area. Integrated catchment management plans have been provided to support previous plan changes to the Auckland District Plan Waitākere Section 2003 for areas adjoining the structure plan area. While those plans included downstream catchments that encroach into the structure plan area, the area itself was modelled as countryside living which is a rural zone.

A stormwater management plan has therefore been prepared to support urban development as set out in this structure plan. This is further discussed in Section 7.6.

5.7 Future Urban Land Supply Strategy

The overarching purpose of the Future Urban Land Supply Strategy is to identify the sequencing and timing of future urban land for development over a 30-year timeframe (2012-2042) to assist with the provision of an ongoing integrated supply of greenfield land for development and associated infrastructure. It is a live document with a process to review and monitor the strategy to respond to changing population growth demands, market conditions and infrastructure delivery.

Infrastructure funding priorities across the region are informed by the Future Urban Land Supply Strategy which feeds directly into future council long-term plans, annual plans, the Auckland Unitary Plan Operative in Part and other strategic documents. The major infrastructure components in areas of greenfield growth include transport facilities, water, wastewater, stormwater and community facilities (such as libraries and parks).

Whenuapai is identified in the Future Urban Land Supply Strategy as being development ready between 2017 and 2021, recognising the significant work by the former Waitākere City Council and the number of infrastructure projects that are already in place or funded. However, it also indicates that only a limited supply of houses will be available within this early timeframe due to the need to provide infrastructure in stages. Consequently the development of Whenuapai will continue past 2021. The proposed timing for development of nearby greenfield areas such as Kumeu, Huapai and Redhills is 2022-2026 to allow adequate time for infrastructure planning and investment.

5.8 Infrastructure strategies and plans

5.8.1 Transport for Future Urban Growth Project

An effective transport system is imperative to support the future urban growth of Whenuapai. The Transport for Future Urban Growth project is being undertaken jointly by the New Zealand Transport Agency, Auckland Transport and Auckland Council. It will determine the key strategic transport infrastructure required to implement the Future Urban Land Supply Strategy over the next 30 years. Following consultation, a preferred network has been adopted as the starting point for the structure plan transport network. However, the project is still under development with a final report expected in November 2016.

The following transport requirements over the coming 30 years have been identified relevant to Whenuapai:

- upgraded state highway connections, including a direct State Highway 16 (north) to State Highway 18 (east) connection and interchange upgrades at Brigham Creek Road, Northside Drive and Squadron Drive
- improvement of existing networks
- a rapid transit network (RTN), most likely a busway along State Highway 16 and State Highway 18 with three stations in the structure plan area, to be complemented by frequent transit network (FTN) services linking to destinations such as Westgate and local ferry terminals
- an arterial road network (both east-west and north-south links) utilising both existing and new corridors
- provision of walking and cycling infrastructure at a local scale.

Funding for the regional scale projects identified above requires further assessment through the New Zealand Transport Agency's business case process. Only when this business case process has concluded can funding be sought as part of the next National Land Transport Programme. The Transport for Future Urban Growth projects that fall into Auckland Transport's remit (arterial and local roads) are similarly reliant upon the outcome of the business case process given that Auckland Transport's activities are jointly funded from the National Land Transport Programme and the council's Long-term Plan.

5.8.2 Regional Land Transport Plan 2015-2025

The Regional Land Transport Plan sets out the funding programme for Auckland's transport services and activities over a 10-year period. Planned transport activities for the next three years are provided in detail while proposed activities for the following seven years are outlined. The Regional Land Transport Plan is jointly delivered by Auckland Transport, the New Zealand Transport Agency and KiwiRail, and forms part of the National Land Transport Programme.

Growth in the northwest is anticipated and provided for in the Regional Land Transport Plan through the following projects:

- bus priority improvements and transit lanes (2015-2025)
- walking and cycling programme – Auckland Transport (2015-2025)
- walking and cycling programme – Transport Agency (2015-2025)
- safety programmes including safety and minor improvements, safety around schools, crash reduction implementation, regional safety programme and safety speed management (2015-2025)
- State Highway 16/State Highway 18 intersection
- Brigham Creek Road corridor road improvements (2018-2025).
- Funding of additional transport initiatives identified through the Transport for Future Urban Growth project and the subsequent business case programmes to service the new Whenuapai urban area will need to be considered as part of the next Regional Land Transport Plan.

5.8.3 Regional Public Transport Plan 2015

The future public transport network is identified in the Regional Public Transport Plan which identifies services over the next 10 years. To achieve its focus on enhancing network performance and earning higher value from existing investments, the Regional Public Transport Plan proposes a New Network built around a core network of Rapid Transit Network (RTN) services (15-minute frequency with dedicated right of way such as the Northern Busway) and Frequent Transit Network (FTN) services (15 minute frequency with priority measures). These are complemented by a network of connector routes and local, peak-only targeted services. The focus will be on integration and transferring between services to streamline services and increase their efficiency.

Currently, none of the routes servicing the northwest meet the definition of a RTN or FTN. The Regional Public Transport Plan provides for the upgrade of State Highway 16 services between Auckland's Central Business District and Westgate to FTN status by 2018, and services between Westgate and the North Shore and along Hobsonville Road to be upgraded to FTN status by 2022. These routes will be supported by all-day services through West Harbour and north to Kumeu and Huapai.

Routes along State Highway 16 (to Westgate initially and subsequently Kumeu and Huapai) and State Highway 18 will be upgraded to RTN status as dedicated bus rights-of-way are built. The Transport for Future Growth project has made broad recommendations as to what form these RTN corridors will take in future and how they interact with Whenuapai. Consideration of the future public transport network is a key consideration for the structure plan to determine appropriate land uses and housing densities.

5.8.4 Watercare Asset Management Plan 2016-2036

Watercare's Asset Management Plan shows how the Council Controlled Organisation will operate, maintain and renew existing water and wastewater assets, and provide new assets to meet future demand as Auckland grows. The Asset Management Plan covers the period from 1 July 2016 to 30 June 2036.

The location, size and timing of new development directly influence the infrastructure required to service that development. The council has worked closely with Watercare throughout the structure planning process to ensure development in Whenuapai is aligned with the timing of water and wastewater infrastructure provision.

The Asset Management Plan identifies significant work programmes to growing demands. The projects that will directly impact the structure plan area are:

- construction of the North Harbour 2 water main to convey water to Albany and the north
- construction of the first two stages of the Northern Interceptor, connecting Whenuapai and Hobsonville to the Rosedale Wastewater Treatment Plan
- construction of the wastewater transmission assets for the Waitākere North and Kumeu, Huapai and Riverhead wastewater servicing which includes the Whenuapai structure plan area.

Further detail of the water and wastewater strategy for the structure plan area is provided in Section 7.7 of this report.

5.9 Iwi planning documents

Te Kawerau ā Maki and Ngāti Whātua o Kaipara have been involved in the development of the Structure Plan. Accordingly, the relevant iwi management plans are considered to be:

- Kawerau ā Maki Trust: Resource Management Statement (1995)
- Te Wahapū o Kaipara Manaakitanga – South Kaipara Takiwa: Environmental Protection and Management Plan (2009).

The Resource Management Statement by the Kawerau ā Maki Trust provides a framework for the sustainable management of the taonga within the tribal area of Te Kawerau. Te Kawerau ā Maki holds mana whenua within the area of Whenuapai. The plan has a specific focus on the management of water bodies, acknowledging the importance of protecting the mauri of waterways.

In addition, the plan provides direction for the social, economic and cultural wellbeing of Te Kawerau and recognises the role of Te Kawerau in the protection and management of all things related to the environment. This includes the protection of heritage, management of the coastal marine area, the appropriate management of waste disposal, the protection of landscapes, and the appropriate management of native flora and fauna.

Te Wahapū o Kaipara Manaakitanga – South Kaipara Takiwa: Environmental Protection and Management Plan by Ngāti Whatua Ngā Rima o Kaipara Trust is a plan that encompasses the areas from Wellsford in the north to Taupaki in the northwest. The vision noted in the document is “to protect and uphold customary cultural rights and ownership of our protocols, values and beliefs of the five marae of southern Kaipara”. The plan also outlines the key environmental issues of concern for the iwi as well as processes for engagement with the group. Whenuapai is identified as a priority area for protection in the plan. Ngāti Whātua o Kaipara also holds mana whenua within the area of Whenuapai.

Whilst the values identified in the Iwi Management Plans have been considered, ongoing discussions with the iwi aim to identify cultural values specific to the area of Whenuapai in order to understand how the Structure Plan can protect and enhance these values.

Te Kawerau ā Maki has provided a cultural value assessment for the Structure Plan and Ngāti Whātua o Kaipara will provide theirs as part of the plan change process. This is discussed in Section 7.11.

5.10 Treaty settlement legislation

5.10.1 Ngāti Whātua o Kaipara Claims Settlement Act 2013

The Ngāti Whātua o Kaipara Claims Settlement Act 2013 acknowledges the cumulative effects of breaches of the Treaty of Waitangi and its principles on the economic, social, physical, cultural and spiritual wellbeing of Ngāti Whātua o Kaipara. The Act provides Ngāti Whātua o Kaipara with exclusive rights of first refusal over areas of land in the northwest, including land within the structure plan area.

5.10.2 Te Kawerau ā Maki Claims Settlement Act 2015

The Te Kawerau ā Maki Claims Settlement Act 2015 recognises the customary interests Te Kawerau ā Maki have from the Tāmaki Isthmus northwards to Hikurangi (West Auckland), the Upper Waitematā Harbour and North Shore and into the southern Kaipara and Mahurangi. The Act requires the relevant authorities to have regard to the views of Te Kawerau ā Maki in all matters affecting these areas, amongst other things.

5.11 Other Auckland Council plans and strategies

5.11.1 Parks and Open Spaces Strategic Action Plan 2013

The Parks and Open Spaces Strategic Action Plan identifies the focus and priorities for parks and open spaces as well as the actions to implement it. The strategic approach to planning and developing parks and open spaces is summarised by the following four areas of focus:

- improving opportunities for people to learn about the special features of the parks and open space network
- expanding and developing the parks and open space network to accommodate more uses and activities
- visually and physically connecting Auckland’s network of parks, open spaces and streets to create opportunities for people to move around the city and to enhance biodiversity
- recognise the integral role the parks and open space network plays in making Auckland a successful city, in particular maximising synergies between open spaces and creating a green, resilient and prosperous city.

The open space requirements in Whenuapai have been considered in the context of the Parks and Open Spaces Strategic Action Plan and are discussed in Section 7.5.

5.11.2 Auckland Design Manual

The Auckland Design Manual (an online tool) is a non-statutory best practice guide for designing Auckland’s neighbourhoods, buildings and spaces. It is a valuable tool for identifying appropriate typologies that can be utilised within Whenuapai. The Neighbourhood Design Statement, discussed further in Section 7.14, refers to best practice examples provided by the Auckland Design Manual. The plan change process that follows the structure plan will consider more specific provisions required to implement a quality built environment in Whenuapai.

5.11.3 Indigenous Biodiversity Strategy 2012

Key objectives and performance measures on how to achieve the biodiversity goals established in the Auckland Plan are set out in the Indigenous Biodiversity Strategy. This strategy sets out the council's vision for indigenous biodiversity including:

- healthy and diverse ecosystems of plants and animals
- engagement, understanding and guardianship of Auckland's indigenous biodiversity
- ecosystem services provided by indigenous biodiversity
- integrated management producing biodiversity gains.

The overarching objective seeks to "conserve the greatest number and most diverse range of Auckland's indigenous ecosystems and sequences"¹¹. The strategy also provides guidance on the development and implementation of the council's plans and strategies to achieve biodiversity objectives as well as in the provision and maintenance of infrastructure.

The structure plan represents an opportunity to implement projects to improve biodiversity linkages throughout the area. There are also opportunities to extend region-wide initiatives such as the Greenways Project and the North-West Wildlink to Whenuapai.

5.11.4 Code of Practice for Land Development and Subdivision

The Code of Practice for Land Development and Subdivision, or any subsequent updates of that document, will be a relevant consideration at the time of subdivision and development.

5.11.5 Low Carbon Auckland 2014

Low Carbon Auckland sets out a 30-year pathway and a 10-year plan of action to transform to a greener, more prosperous, liveable, low carbon city. A city that is powered by efficient, affordable, clean energy and using resources sustainably.

The plan focuses on five key areas of transformation:

1. the way we travel
2. the way we generate energy
3. our built environment and green infrastructure
4. zero waste
5. forestry, agriculture and natural carbon assets.

¹¹ Objective 1, p.20

6 Responses to the Draft Whenuapai Structure Plan

Discussions and feedback on the structure plan has been an ongoing process in the development of this structure plan. It started against the backdrop of a series of public meetings undertaken by the council in relation to the Rural Urban Boundary investigations, the Future Urban Land Supply Strategy, and more recently (in collaboration with the New Zealand Transport Agency and Auckland Transport) the Transport for Future Urban Growth project (refer to Section 5.8.1). In addition, previous work was undertaken by the former Waitākere City Council through the Northern Strategic Growth Area project that involved extensive engagement with the local and northwest region communities.

The purpose of such engagement is to inform the public and stakeholders about the project and provide opportunities to understand their views. Information on the draft structure plan, including supporting technical documents, was available to the public on the Shape Auckland website from 24 June 2016. The public was provided with opportunities to help shape the Structure Plan through a series of open days and drop-in sessions.

Engagement that has occurred to date includes:

- In March 2016 a request was sent to a number of iwi groups that had a potential interest in the Whenuapai area. Te Kawerau ā Maki and Ngāti Whātua o Kaipara indicated their interest as mana whenua and responded with a desire to kōrero and provide cultural value assessments to inform the Structure Plan.
- Three meetings were held on 16 February, 22 April and 11 July 2016 with landowners and developers to discuss the Special Housing Area and structure plan process.
- An open day on 30 April 2016 for the Transport for Future Urban Growth project at the Whenuapai Village Hall included a display of preliminary information on the Structure Plan. Verbal feedback from the public was recorded.
- A meeting was held 17 May 2016 with the committee of the Whenuapai Ratepayers and Residents Association who provided feedback with ideas for preserving Whenuapai's uniqueness.
- A meeting was held 3 August 2016 with the committee of the Herald Island Ratepayers and Residents Association who provided feedback on how the implementation of the Structure Plan could impact upon their coastal community.

- Several discussions with the New Zealand Defence Force to understand the implications of designations relating to noise contours, the obstacle limitation surfaces and their concerns about potential bird strike.

During the engagement period (24 June to 21 July 2016), the following open days and drop-in sessions were attended by approximately 410 people who wanted to seek further clarification, ask questions or provide feedback on the draft structure plan:

- Whenuapai Primary School
- Whenuapai Village Hall
- Hobsonville Point Landing
- Luckens Reserve sausage sizzle and drop in
- Developer representative meeting at Henderson
- Massey Library drop-in
- Northwest Mall.

One hundred and seventy-one pieces of feedback were received during the feedback period, as well as some late feedback. The feedback has been reviewed by council's technical specialists and the draft structure plan revised, where appropriate, to respond to the matters raised by submitters.

A summary of the feedback received on the Draft Whenuapai Structure Plan is available on the Shape Auckland website.

6.1 Key themes from public engagement

Of the 171 pieces of feedback received, 1033 points of feedback have been identified and responded to by various technical specialists from Auckland Council, Auckland Transport and Watercare.

Key themes that emerged from public consultation include:

- people want to see more schools, both primary and secondary, to provide for a growing community
- residents want to ensure that the village feel that is based around the existing shops is retained, while providing more shops and services for future population growth
- health and management of the waterways in Whenuapai and the upper reaches of the Waitemata Harbour is important

- some residents are opposed to the coastal park proposed on Riverlea Road and a coastal walkway in Whenuapai; a large number of respondents, however, are in strong support of the provisional allocation of parks and open spaces
- people would like to see the footpaths in Whenuapai be upgraded to an urban standard, with the added provision of cycle ways and improved public transport frequency; people are in strong support of the proposed new roading network with greater transportation options
- respondents want to ensure that there will be employment opportunities in the local area close to where people are living; there was strong support of the allocation of business land in the Structure Plan
- respondents would like a new sewerage system in place for the Whenuapai Village area and for new infrastructure to connect into existing developments easily and at a manageable cost
- noise issues caused by the Whenuapai Airbase has been identified as a significant factor for some residents and the New Zealand Defence Force has requested a no complaints covenant on residential development to protect its operations
- respondents would like to see trees, wildlife and the environment protected, and the Structure Plan's commitment to the North-West Wildlink has been applauded.
- further analysis and consideration of all community feedback has been undertaken by technical specialists and, where appropriate, amendments and changes to the final structure plan have been applied.

6.2 You spoke, we listened

Following the technical analysis and consideration of the community feedback, the structure plan map has been revised. Not all matters raised through the consultation process have been agreed with and/or actioned by the council in the final structure plan.

The key features that are retained from the draft structure plan are:

- the use of high, medium and low density residential areas. The plan change that follows the approval of the Structure Plan will define the residential zones that apply, according to zones in the Auckland Unitary Plan Operative in Part, and their exact boundaries
- the indicative location of local and neighbourhood centres
- the general location of the Rapid Transit Network stations and park and ride
- the location of the approved Special Housing Areas
- the location of the potential esplanade network.

The key features that have changed from the draft structure plan are:

- the structure plan boundary has been amended to remove the land formerly known as Monterey Park which is geographically separate to Whenuapai and has been zoned Mixed Housing Urban in the Auckland Unitary Plan Operative in Part; consequently it does not need to be part of the Structure Plan or the future plan change.
- the extent and location of the areas identified as high, medium and low density residential areas
- the extent and location of the business land
- the relocation of some potential parks and inclusion of indicative locations for new parks
- Timatanga School is identified
- the extent of land either designated or owned by the New Zealand Defence Force is identified
- the location of proposed arterial and local roads has been refined.



7 Opportunities and constraints

The Whenuapai Structure Plan has been informed by a series of technical reports. This section provides a summary of the opportunities and constraints present within Whenuapai in relation to each technical discipline. The relevant reports may be revised as part of the process to finalise the Structure Plan. A list of the technical reports is provided in Appendix 2.

7.1 Sustainability

The structure plan represents an opportunity to implement sustainable urban development and to establish Whenuapai as a model for future greenfield development. This aligns with the council's aspiration for a prosperous, resilient, low carbon Auckland as outlined in the Auckland Plan and detailed in Low Carbon Auckland (2014). Expanding the boundaries of sustainable design and development will stimulate innovative thinking and collaborative action that results in vibrant, attractive and sustainable urban communities that will make Whenuapai a world class example of an enticing place to live, work and visit. This has been applied in the council's response to all of the opportunities and constraints discussed in this section. The following initiatives are integral to the Structure Plan.

Transport

A key transport objective is to provide a network that puts pedestrians, cyclists and public transport in the context of vehicular traffic, and delivers a safe and connected network that provides for all transport modes. This will include connectivity to neighbouring areas such as Hobsonville Village, Hobsonville Point, Westgate and Greenhithe, and the development of walking, cycling and bus options to connect Whenuapai residents to the ferry services at Hobsonville Point and Hobsonville Marina (formerly Westpark Marina).

Public transport will be developed as a mode choice at an appropriate stage when the population can support the services, including ensuring access to the Rapid Transit Network to other areas. This will require the provision of residential densities that are concentrated in close proximity along the public transport corridors and around Whenuapai Centre. Please refer to Section 7.3 for further details about the transport network.

Sustainable energy

The council will work with infrastructure providers where possible to deliver resource management systems based on resource efficiency, reuse, renewable energy and district-scale smart grid power networks. The council will also advocate for energy efficiency and energy conservation.

Built environment

The council will continue to advocate for sustainable building design and development, including providing green infrastructure such as rain gardens and green walls where possible. Local urban agriculture such as community gardens will be encouraged, located in community meeting spaces and utilise new technologies where possible.

7.2 Land tenure

Land tenure within the Whenuapai structure plan area reflects the historic pattern of use and development with fragmented land holdings and multiple land ownership, the majority of landowners own a single site. Established residential sites in Whenuapai Village average about 1000m² while large pastoral lots averaging three to six hectares remain outside of the Whenuapai Village area and northwest and west of the Whenuapai Airbase.

While the existing large sites are an opportunity to enable larger development areas to occur, the fragmented ownership pattern presents a challenge for providing an integrated response to the structure plan, particularly in regard to the provision of infrastructure. The council will work closely with landowners, the community and developers to ensure development proposals meet the outcomes of the structure plan, including encouraging landowners to coordinate infrastructure provision (and the funding of that infrastructure) with each other.

There are some areas of land where multiple sites are within single ownership. In addition, the council is aware that some landowners have begun to coordinate with each other and/or land developers to consider development options for multiple sites. This was demonstrated by the number of requests the council received to establish Special Housing Areas in Whenuapai and, while two Special Housing Areas were approved within the Whenuapai structure plan area, the unsuccessful developers have remained engaged in the structure plan process.

New Zealand Defence Force (NZDF) owns approximately 300 hectares of land being the airbase, including land that has been developed in the past for housing (around Ngahue Crescent). NZDF also has land that is currently undeveloped at 131-137 Brigham Creek Road.

7.3 Transport

The existing transport environment in Whenuapai can be summarised as follows:

- the road network is supported by five key roads: Brigham Creek Road, Trig Road, Totara Road, Puriri Road and Kauri Road
- there are limited pedestrian facilities (footpaths and crossings) throughout most of the area
- access to the area is currently via Brigham Creek Road (from both State Highway 16 and State Highway 18) and Trig Road
- a shared walking and cycling path is currently provided over a portion of Brigham Creek Road adjacent to the Whenuapai Airbase
- two bus routes currently service the area (093 and 095).

The Integrated Transport Assessment considers the transport planning and traffic-related matters relating to the Whenuapai structure plan area. A number of land use assumptions were made to enable the assessment to be carried out (Figure 7). It is anticipated that new growth outside of Whenuapai, in Kumeu, Huapai and Redhills will occur concurrently with Whenuapai. The modelling has accounted for an assumed rate of growth in these surrounding areas. Transport modelling considers traffic scenarios in 2021, 2026, 2036 and 2046 to assess the various stages of development within Whenuapai.

The assessment considers the transport network within Whenuapai and in the wider area, and the road network improvements required for the northwest of Auckland as broadly addressed in the Transport for Future Urban Growth project. Connections across State Highway 16 and State Highway 18 will be crucial for the viability of Whenuapai in terms of ensuring integration with the wider area, given Whenuapai is bounded by these two state highways and the Upper Waitemata Harbour.

The assessment undertaken to date finds that the land use activities proposed by the Structure Plan can be accommodated with a satisfactory level of service. This is achievable if the recommended transport network and services are provided in a timely manner to manage travel demands within and to Whenuapai. The post-consultation preferred Transport for Future Urban Growth network has been used as the starting point for the Whenuapai assessment.

A number of planned and funded projects are proposed outside of the structure plan area through other planning programmes that are considered important to support development in Whenuapai. A number of these projects are included in the post-consultation preferred Transport for Future Urban Growth network which provides the most up-to-date transport analysis for the northwest future urban areas as a whole.

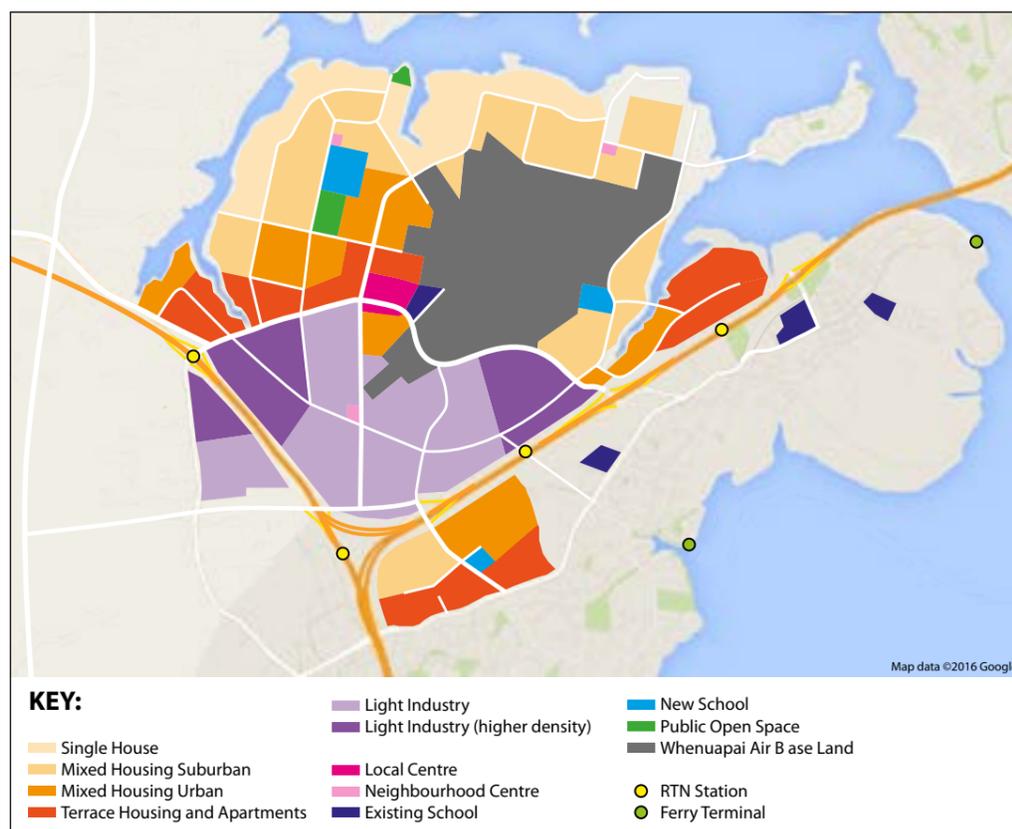


Figure 7: Land use scenario utilised in the Integrated Transport Assessment

By way of summary, these projects include (but are not limited to) the following:

- completion of the Western Ring Route to provide an alternative route to State Highway 1
- extension of the North Western Cycleway to Westgate
- a new interchange at the State Highway 16/Brigham Creek Road roundabout
- a new bus interchange and park and ride facility at Westgate
- bus shoulder lanes on State Highway 16 south of Westgate
- additional lanes along parts of State Highway 18
- Brigham Creek Road improvements including realignment
- Improvements to State Highway 16 between Brigham Creek Road and Waimauku
- State Highway 16 and State Highway 18 busways.

In addition to the projects identified for the wider area, the key transport infrastructure responses required to support the Whenuapai Structure Plan are summarised below. These recommendations used the preferred Transport for Future Urban Growth network as the starting point to which further connections were added and refinements made. A more detailed list of requirements is provided in Appendix 4.

Pedestrian and cycle network

- a network of pedestrian footpaths and cycling infrastructure, including separated cycle lanes on key roads
- buffered cycle lanes and shared paths, as appropriate, particularly on roads that link to Rapid Transit Network stations and within residential catchments that are close to schools.

Public Transport

- Rapid Transit Network services along State Highway 16 from Kumeu to Auckland Central and along State Highway 18 from Westgate to the North Shore
- frequent, connector and local bus services providing linkages from the Whenuapai structure plan area to Rapid Transit Network stations, Westgate, Hobsonville and West Harbour
- more frequent ferry services from Hobsonville Point and Hobsonville Marina
- a park and ride Rapid Transit Network station in the vicinity of the State Highway 16 / Brigham Creek Road interchange
- Rapid Transit Network stations at Westgate, adjacent to State Highway 18 between Trig Road and Brigham Creek Road and adjacent to State Highway 18 close to Hobsonville Village
- connections for all modes of travel at the proposed Rapid Transit Network stations
- bus priority measures along key routes.

Road Network

- upgrading of Brigham Creek Road between State Highway 16 and State Highway 18
- a potential new bypass diverting Brigham Creek Road, west of Trig Road, towards the State Highway 16 / State Highway 18 interchange to address the temporary closure of that stretch of Brigham Creek Road when large planes are landing or taking off from the Whenuapai Airbase
- utilising existing roads and adding new connections/extensions to create a connected and accessible network of north-south and east-west arterials and collector roads
- traffic signals and capacity improvements at key intersections along Brigham Creek Road and in the southern portion of the Whenuapai structure plan area
- diversion of the western end of Sinton Road so that it joins with Kauri Road rather than Brigham Creek Road
- a new bridge over State Highway 18 between Trig Road and Brigham Creek Road adjacent to the new proposed Rapid Transit Network station
- a new bridge over State Highway 16 at Northside Drive.

The road network within and connecting to the Whenuapai structure plan area will need to consider the various movement and place functions of roads, as well as accommodating water supply and waste water, stormwater, landscaping, street furniture and facilities for different transport modes. Road typology classifications are being developed by Auckland Transport; these will address the outcomes sought for the road network by having appropriate road layouts that meet the land use and transport requirements.

Timing for the delivery of the identified transport projects is particularly relevant to the Structure Plan in terms of the staging of development but the transport network is not the only contributor to the staging considerations. The assessment identifies a number of scenarios which indicate that between 2017 and 2021 approximately 1800 dwellings could be provided in Stages 1(a) to 1(e) subject to the identified improvements to the transport network (see Section 9.1).

7.4 Business demand

7.4.1 Industrial

Whenuapai's strategic location adjacent to State Highways 16 and 18 provides good accessibility to the area. This is an important consideration for industrial businesses and makes southern Whenuapai a natural candidate to accommodate a significant proportion of future industrial growth in the northwest.

Business demand is considered in terms of retail and industrial activities. Group 1 business land refers to land extensive activities such as manufacturing, transport and storage, logistics, construction and wholesale trade. These are industrial land uses that are not easily intensified so large tracts of land are required to accommodate them.

The development of Whenuapai creates the opportunity to provide over 300 hectares of business land to meet demand for future industrial activities. It is anticipated that with improvements to infrastructure, such as the completion of the Western Ring Route, upgrades to State Highway 16 and 18, and Westgate becoming fully developed, this area will become more market attractive.

The need to provide greenfield business land, particularly for land extensive industrial activities, has been identified as necessary for at least the last decade. Waitākere City Council identified the importance of providing for employment opportunities within the city to reduce the need to commute to work. The need for business land will become important as residential areas such as Scott Point and Redhills are developed.

Recent modelling and analysis on the regional business land demand, projects demand for light industry land in the urban west and urban north to be between six hectares and nine hectares per annum (net) respectively over the next 30 years, or 243 hectares in the west and 350 hectares in the north (gross)¹². Locations such as Whenuapai are expected to become more attractive as supply in central locations is exhausted.

It is recognised that nearby business areas at Kumeu, Silverdale, Westgate and Hobsonville currently have vacant land available. However, there is very little land available for development in the North Shore.

Providing for a large amount of industrial land in one location to enable surety of supply and efficient operation of the industrial land market is important. Not all of the projected industrial land will be taken up by the market immediately; it is likely to take two to three decades before the supply it offers is exhausted taking into account the location options and business demand elsewhere in Auckland. Identifying business land now that will not be developed for some time ensures future proofing of the economy in the northwest of Auckland and provides a strategically valuable amount of land that will generate an economically efficient and attractive destination for industrial businesses.

7.4.2 Retail and services

Strong residential growth in the structure plan area will support a significant increase in the amount of retail and services spending by residents in the area. Despite the large proportion of this spending naturally leaving Whenuapai for other nearby centres (especially Westgate), increased retail and services floor space will be required in the structure plan area to cater for the demands of the local population.

Given the composition of other similar centres around Auckland and the Auckland Unitary Plan Operative in Part activity rules, the activities that establish in the Whenuapai Centre are likely to include:

- a small (approximately 1500-2500m²) supermarket and some specialty fresh food retailers (butcher, fruit shop, fish shop, etc.)
- a small number of comparison retail stores (notwithstanding that most comparison retail spend would be directed to Westgate) with a convenience retail focus
- cafes, restaurants and takeaway outlets
- service-oriented businesses such as mechanics, hairdressers, real estate, medical practices and drycleaners.

¹² Market Economics, PAUP Business Land: Land Demand by Activity and PAUP Supply (2016), prepared as evidence for the council to the hearings on the Proposed Auckland Unitary Plan Topic 081a

7.5 Open space and recreation

To support future communities within the Whenuapai structure plan area it is important the area has access to a quality open space network for informal recreation, organised sport, civic amenity and conservation purposes.

The existing network of open space in the structure plan area comprises 23 disjointed coastal esplanade reserves and five neighbourhood parks ranging from 0.4 to 0.6 hectares (Figure 8). The neighbourhood parks are primarily concentrated in the northeastern part of Whenuapai in close proximity to the coast within the predominant existing residential area.



Figure 8: Existing open spaces in Whenuapai

With an additional 8100 to 9600 houses anticipated within the structure plan area, approximately 26 hectares of additional open space will be required to meet the recreational needs of the population. This amount of additional open space excludes esplanade reserves (around the coastline) and vegetated ecological protection buffers (around stormwater management areas and on either side of the banks of a permanent/intermittent stream and/or wetland). The amount of open space and its location is indicative only at this stage and subject to the final density and distribution of development as determined through the plan change process. In addition to the existing open spaces, a network of approximately 14 neighbourhood parks of around 0.3 to 0.5 hectares will be required to meet the council's open space provision guidelines. The proposed parks should be accessible by most residents within a 400 metre walk.

Three suburban parks of approximately three hectares each will also be required to meet the council's guidelines, two in the northwestern part of Whenuapai and one in the south of the structure plan area adjacent to, and extending, Trig Reserve.

The neighbourhood and suburban parks should be adjacent to esplanade reserves and protected stream margins where practicable to create an interconnected open space network. Off-road walking and cycling networks should be developed where this will not unduly compromise ecological values.

A local sports park of approximately 10 hectares with multi-use sports fields, and potentially indoor recreation facilities, is identified as being required to accommodate the future active recreational demand arising from the proposed development. This park should ideally be located within the proposed business area in close proximity to a Rapid Transit Network station and with easy access to the state highway network.

A 0.5 hectare neighbourhood park/civic space for meeting, socialising, play and events is currently being developed within the Whenuapai 1 Precinct at the western end of the Whenuapai Centre. This space will act as a gateway to signal the transition from the commercial activities of the centre to the surrounding residential area. A second small gateway, civic open space is proposed at the eastern entrance to the Whenuapai Centre to complement it.

The above proposals for enhancing the open space network in Whenuapai will contribute to delivering the objectives of the council's Parks and Open Spaces Strategic Action Plan, the Sport and Recreation Strategic Action Plan, and the requirements of the Auckland Unitary Plan Operative in Part.

7.6 Stormwater and management of the freshwater environment

The appropriate management of stormwater and freshwater is integral to a liveable city. The issues Auckland faces in stormwater can be grouped into three core categories:

- **safe communities** – flooding, health and safety risks to our communities, including people, property and infrastructure is managed and reduced
- **supporting growth** – growth through water sensitive development and provision of quality stormwater infrastructure is enabled
- **healthy and connected waterways** – stream, groundwater and coastal water values are maintained and enhanced and communities are connected with them.

To address these issues Auckland needs to achieve a Water Sensitive Community. The water sensitive design (WSD) approach aspires to ensure multiple public benefits from stormwater management and to develop a unique sense of place for the community.

The Whenuapai Stormwater Management Plan (WSMP) was prepared to support and promote the sustainable long-term urban development of Whenuapai based on WSD principles. The catchment has a significant number of permanent and intermittent watercourses throughout and also has existing natural wetland features.

The stormwater management methods in the WSMP seek to protect and promote the enhancement of streams and the harbour to mitigate the potential negative effects of development. These methods broadly address two main issues:

- water quality and healthy waterways
- flood risk management and protection of people, property and waterways.

The recommended stormwater management infrastructure approach includes the provision of decentralised at source (or close to source) bio-retention devices (e.g. rain gardens, swales and green roofs) to service the built environment and minimise adverse effects on the receiving environment through WSD processes. Where site specific activities identify the potential for High Contaminant Generating Activities, there will be a requirement for additional targeted treatment to be provided, further protecting the receiving environment.

A rapid flood hazard model has indicated that there is minimal risk associated with flooding in the catchment. Therefore it is not proposed that flood flows will be detained but rather passed forward along the network of protected streams and associated riparian management reserves which will form the trunk stormwater system. Development will be excluded from these floodplains and overland flow paths. The local public conveyance network will be primarily constructed by developers in accordance with the relevant version of council's Code of Practice for Land Development and Subdivision and vested to council.

The stormwater management methods assist in the protection and enhancement of the natural stream environment and include environmental, ecological and amenity aspects to provide greater connection to the community. It also seeks to deliver low risk and better returns on investment for developers and ratepayers.

The Auckland Unitary Plan Operative in Part acknowledges the importance of riparian margins, not only for their role in stormwater management but also in terms of stream health, biodiversity and natural character values. A 10 to 20 metre minimum yard setback from the edge of permanent and intermittent streams is required.

7.7 Water and wastewater servicing

7.7.1 Water supply

The transmission network servicing the Whenuapai area has good capacity to service the forecast growth in the short term but will require upgrading to meet the long term growth forecast. A second North Harbour water main, planned for completion in 2028, will provide the additional capacity necessary to service the ultimate development.

Three transmission bulk supply points (the three bulk water supply water mains), located at the Brigham Creek Road/Hobsonville Road intersection, Trig Road/Hobsonville intersection and the Fred Taylor Drive/Don Buck Road intersection feed the existing local network. These bulk supply points will continue to supply the area in the long term.

New local network infrastructure will be provided by developers as part of their subdivision works to extend the existing local network into currently unserviced areas. The existing local network, comprising fibre cement pipes constructed in the 1960s, is reaching the end of its expected life. Where appropriate, Watercare will take the opportunity to collaborate with developers to renew and replace existing local network infrastructure. A newly-installed 315mm water main to service the Whenuapai 2 Special Housing Area has some latent capacity to easily service area within close proximity.

From a water supply perspective, growth would ideally be staged radially outwards from the existing bulk supply points and heading north towards the outer reaches of the catchment, and be aligned with the wastewater servicing strategy.

7.7.2 Wastewater servicing

The trunk and branch wastewater network servicing the Whenuapai catchment is shown in Figure 9. Three new pump stations at Hobsonville, Whenuapai and Massey North were commissioned between 2011 and 2013 to service growth along the southern part of the catchment adjacent to each side of State Highway 18. NZDF owns and operates its own wastewater network which is pumped directly to Hobsonville; the rest of Whenuapai is currently serviced by private on-site disposal systems.

The public wastewater network currently drains south to the Whenuapai branch sewer which has limited capacity for growth. The capacity will be enhanced when the first stage of the Northern Interceptor, which will divert flow north east to the Rosedale Wastewater Treatment Plant, is completed (2021).

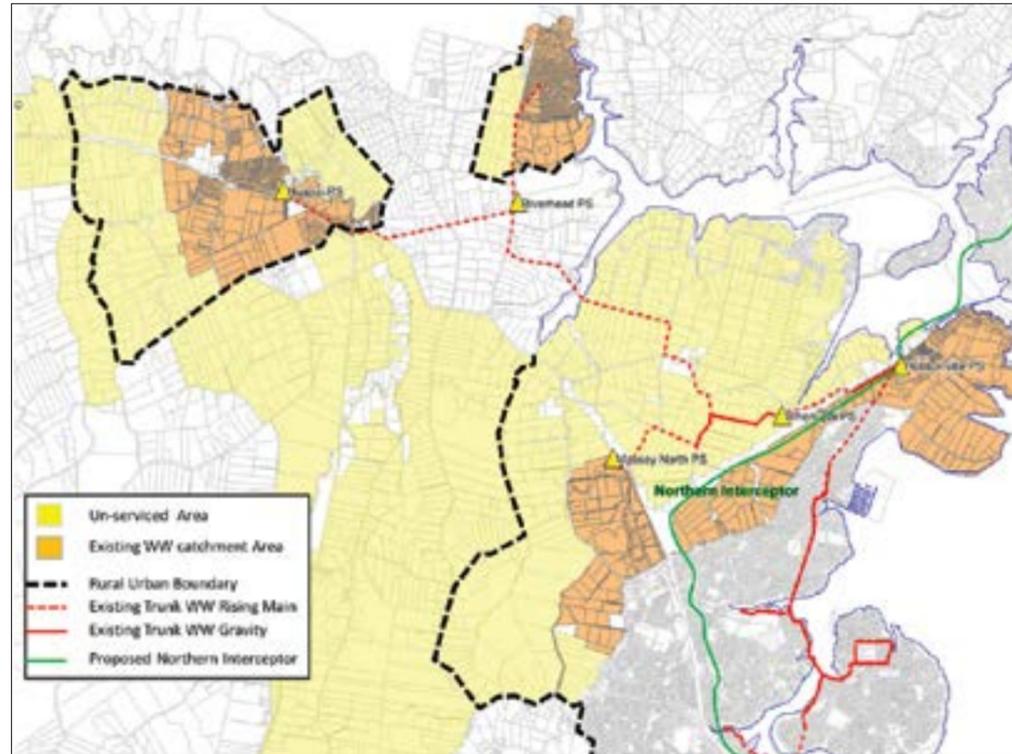


Figure 9: Existing northwest wastewater trunk network

Future stages of the Northern Interceptor, including a large spine gravity main running west to east along State Highway 18 (2025), boost pumping of the pipeline to Rosedale (2027) and duplication of the rising main to Rosedale (2035) will provide the additional trunk capacity necessary to service the ultimate development.

Two large catchments along the northern half of Whenuapai drain to two discrete locations, one along Totara Road and another along Brigham Creek Road. These two localities have been identified as potential future major pump station locations. Parts of the northern area slope towards the coastal edge. The local wastewater network will ideally follow the contours of the land and should flow to the lowest points on the coast and then be pumped back to the branch and trunk network. A series of small developer-provided local pump stations will therefore be required at intervals along the coast.

From a wastewater servicing perspective, growth would ideally be staged around the existing branch sewers, extending northwards once the large spine gravity main of the Northern Interceptor is completed.

7.8 Ecology

A desktop ecological assessment of the structure plan area was undertaken by the council's Environmental Services team. The assessment included a review of previous reports and council biodiversity records, including ecological assessments as part of the Transport for Future Urban Growth project.

Historic rural uses of the structure plan area have resulted in a poorly defined and poorly connected network of natural systems, and removal of native vegetation to enable farming and horticulture. At present, the structure plan area provides little habitat or connective corridors for native terrestrial fauna and forest birds. The coastal areas are significant for shore birds and areas of salt-marsh wetlands.

A coastal habitat assessment of the structure plan area has been undertaken to identify opportunities for ecological enhancement, mainly focusing on coastal vegetation. The assessment found that much of the available habitat areas are dominated by weed species, particularly privet. Despite this, the presence of regenerating native species indicates potential for restoration of coastal areas with benefits for both the ecological and amenity values of the area.



Figure 10: Auckland Unitary Plan Operative in Part Significant Ecological Areas (shown in hatching)

A number of Significant Ecological Areas (SEA) are identified in the Auckland Unitary Plan Operative in Part, including the Upper Waitematā Harbour, Brigham and Totara Creeks, and small areas of land at stream mouths as they enter inlets to the harbour (Figure 10). There are opportunities to leverage off these existing SEAs and other nearby sites, such as Lucas Creek and other large areas of reserve land, through the potential to develop corridors of natural habitat by extending Waitākere's Green Network to connect into the North-West Wildlink between the Waitākere Ranges and the Hauraki Gulf islands. Whenuapai would be an important stepping stone in this corridor. These corridors seek to achieve a network of habitats and ecological conduits for the safe migration of indigenous fauna and flora, enhance stream habitat and freshwater quality, and contribute towards the conservation of threatened species and habitats of interest.

Extensive work has been carried out since 2006 to link up regional biodiversity hotspots across Auckland. This has included a pest control project from Paremoremo to Albany Heights to restore native forest and shrub land and extensive road-side plantings along State Highways 16 and 18 to link natural spaces and restore waterways.

There are opportunities to further enhance the green network within Whenuapai through the plan change process, primarily through riparian and esplanade restoration to create linkages giving effect to the Indigenous Biodiversity Strategy. The extensive network of streams (and small amount of wetlands) could form the basis of restoration efforts to connect habitats and enhance habitats for a range of fauna and flora. The areas of green open space, streams, forests, street trees, residential gardens, stormwater devices (rain gardens) that could potentially support plants and animals would combine and contribute to the green network. Options for future roading corridors identified as part of Transport for Future Urban Growth included the creation of ecological linkages along both state highways, through existing and future drainage ways.

Similarly, there is potential to facilitate ecological restoration alongside future development and with future communities. Stream restoration initiatives will be considered in the context of the broader goals set out by the National Policy Statement for Freshwater Management.

7.9 Natural character, landscape and visual

An assessment of natural character, landscape and visual amenity values of Whenuapai has been carried out which identifies any potential landscape and visual effects that may result from future land use activities.

The landscape assessment identifies that while there are no areas of high natural character or landscape, the structure plan area retains relatively high levels of amenity because of its largely open rural nature, mature trees, and proximity to the Upper Waitematā Harbour. The surrounding landscape is undergoing significant change with new areas of housing, commercial and retail development at Hobsonville, Hobsonville Point and Westgate.

The predominantly rural related character to the structure plan area is further enhanced by the large number of mature trees that form paddock boundaries and line many roads and gardens. Mangroves associated with the coastal waters and inlets also enrich the rural and coastal characteristics.

While there will inevitably be a level of adverse effects on the landscape and visual amenity from changing land uses, it also presents opportunities to enhance some landscape outcomes. The following recommendations are made to mitigate the likely landscape and visual effects:

- maintain and enhance areas of high visual amenity, especially around the northern part of the structure plan area with appropriate built form, open space and plantings
- restore and enhance biodiversity through planting, and weed and pest control
- connect habitats along coastal and stream networks
- improve the quality of stormwater entering the Upper Waitematā Harbour
- create integrated networks of public open space
- introduce appropriate plantings in new development
- provide landscape variety to build on existing characteristics of different parts of the structure plan area.

A preliminary arboriculture assessment has also been undertaken. The survey method included a desk-top review, identification of existing scheduled trees and site visits to areas of interest (public roads and reserves only; the New Zealand Defence Force Airbase was excluded) to identify trees with landscape, botanical or other values. A number of trees and groups of trees have been identified as being worthy of further consideration. However, as the trees were chosen for inclusion based predominantly on their visibility, a more detailed inspection is required to confirm the qualities and characteristics that they and other trees may have.

7.10 Heritage and archaeology

7.10.1 Built heritage

A built heritage assessment identifies 11 scheduled Historic Heritage Places in Whenuapai that are protected under the Auckland Unitary Plan Operative in Part, as listed below:

- Duke House and Servants' Quarters - 2 Squadron Drive, Hobsonville
- Whenuapai Village Hall - 41-43 Waimarie Road, Whenuapai
- Residence - 11 Punga Road, Whenuapai
- Worker's Residence - 5 Clarks Lane, Hobsonville
- Former Church - 7 Clarks Lane, Hobsonville
- Worker's Residence - 9 Clarks Lane, Hobsonville
- Worker's Residence - 4 Clarks Lane, Hobsonville
- Worker's Residence - 6 Clarks Lane, Hobsonville
- Worker's Residence - 10 Clarks Lane, Hobsonville
- Whenuapai RNZAF Base Bristol Block Barracks - Tainui Crescent, Whenuapai Airbase
- Whenuapai RNZAF Base Officers' Mess - Kupe Avenue, Whenuapai Airbase.

The Clarks Lane Worker's Residence sites are all privately owned and are covered by the Historic Heritage Extent of Place overlay in the Auckland Unitary Plan Operative in Part.

In addition, the assessment identifies a further 24 sites that are listed on the council's Cultural Heritage Inventory but are not scheduled. A site visit was conducted to locate the structures but only places visible from public sites were able to be located. Further investigation will be required to determine the potential heritage values of these places. In particular, the assessment identifies that the Royal New Zealand Air Force housing area, south of Brigham Creek Road, as distinctive in the context of Whenuapai and should be further assessed.

7.10.2 Archaeology

A desktop study of archaeological values within Whenuapai confirms that the area is not considered to be of high archaeological significance. Most of the recorded sites relating to Māori and early European occupation are located in coastal areas, with potential for future protection within esplanade reserves.

In view of the limited number and coastal distribution of known archaeological sites, future development is likely to have only a relatively minor adverse effect on archaeological values. However, the assessment did identify an unrecorded archaeological site at 2-4 Spedding Road which consists of infilled World War II gun emplacements. As part of the plan change, further investigation and assessment of the site may be required to ensure the values of this site are adequately protected in the future.

Future development within Whenuapai will need to take into account the locations of recorded archaeological sites and other historic heritage sites identified as having archaeological value.

It is likely that additional unrecorded sites are present because the structure plan area has not been extensively surveyed. These are most likely to be midden sites along the coast and river banks, though sites related to unrecorded European settlement may also be present. These will be managed by the application of the Auckland Unitary Plan Operative in Part.

7.11 Cultural values

Te Kawerau ā Maki has provided a Cultural Values Assessment report and Ngāti Whātua o Kaipara has indicated they wish to provide an assessment as part of the plan change process. The relationship between iwi and the council is enduring and the significance of the environment to iwi has been considered throughout the development of the Structure Plan.

Along with responsibilities to protect the mauri of all things in a way which ensures that the quality of tribal taonga is passed on to future generations, the council understands the importance of involving iwi in the development of the Structure Plan and integration of the protection and enhancement of hau (air), whenua (land), wai (water), biodiversity, and wāhi tapu and taonga throughout Whenuapai.

The Cultural Values Assessment from Te Kawerau ā Maki indicates that the people of Te Kawerau ā Maki are inextricably linked through ancestral rights and ahi kaa to Whenuapai dating as far back as the 14th century. The area is identified as a cultural landscape that has been occupied over many centuries, which is reflected by the numerous place names, landmarks, and recorded archaeological sites that dominate the wider area. The following excerpt from the cultural values report summarises the particular values of Whenuapai:

The area is associated with important tupuna and significant battles, as well as a network of kainga (open settlements), gardens, pā, walking tracks, wāhi tapu, and resource gathering areas. Landscape features such as Ngongetepara (Brigham's Creek) and Manutewhau (Lawson's Creek), were significant transport routes and food gathering areas, while the ridgelines along the coast and peninsula were used as walking tracks and also for gardening using terraces and pits. The land in this area was generally infertile and not used extensively for cultivation. However, the kainga in the area were used in conjunction with fishing and the harvesting of shellfish, seabirds, and tuna (eels). Maraeroa and Taurangatira also gave access to Te Toangaroa (the Kaipara Portage).

Te Kawerau ā Maki and Ngāti Whātua o Kaipara have indicated that they each have a spiritual and cultural connection to the area of Whenuapai and its surrounds. Both iwi are mana whenua of the area and, as such, have kaitiaki and other obligations and responsibilities to the land and its cultural and natural resources.

Te Kawerau Iwi Tribal Authority is positive about the notions of joint management, joint advocacy, and local participation and engagement through the process of developing the Structure Plan.

7.12 Community facilities

The council has an obligation under the Local Government Act 2002 to meet the current and future needs of communities for good quality local infrastructure in a way that is most cost-effective for households and businesses.

The council's Community Facilities Network Plan (the Network Plan) provides direction for how the council will invest in community facilities over the next 20 years. The Network Plan includes provision guidelines that indicate the type of community facility that should serve a particular population by outlining the function of the facility, the type of facility (small or large) and the provision approach, as shown in Table 1. A holistic, community led approach to the planning and provision of community facilities will ensure facilities are suitable for use and that they are integrated, for example a library is connected to a multi-use centre, to ensure there are not multiple facilities across the area.

The existing community facilities network in Whenuapai consists of two community halls, churches, schools and Te Piringatahi Marae just outside of the structure plan area on Luckens Road. A number of other facilities are located in the neighbouring areas of West Harbour and Hobsonville. A new multi-purpose centre at Westgate, including a library and community spaces, is due to be completed in 2017. This facility is less than a 4km drive from Whenuapai and is expected to serve the wider catchment.

Table 1: Provision guidelines for community facilities

Facility	Functions	Rural provision approach
Community centre		
Small facility	Community development activities including small meetings, co-located working spaces, clubs and social gatherings with activated programming and services.	<ul style="list-style-type: none"> Target population threshold 5000 – 10,000. Servicing a walking catchment of up to 15 minutes or 30 minute drive of rural and coastal villages.
Large facility	Community development activities including small and large meetings, social gatherings, recreation local arts and culture, health and wellbeing with activated programming.	<ul style="list-style-type: none"> Target population of 20,000 plus. Serves a catchment of up to 15 minute driving time. Located in town centres and satellite towns. Desirably located within the centre of town.
Venues for hire	Bookable space for the community to book and run their own activities.	<ul style="list-style-type: none"> Access to bookable space within 15 minute walk from local or town centres or 30 minute drive from rural centres.
Libraries	Access to information and technology.	<ul style="list-style-type: none"> Respond to population growth of 10,000 in a rural area and 30,000 in a metropolitan centre. Capacity tests based on 33m²/ 1000 population.
Community centre		
Local facility	Free play, fitness, learning, relaxation, casual-play, community programmes.	<ul style="list-style-type: none"> Pools target population threshold of 35,000 to 50,000. Leisure target population thresholds of 18,000 to 40,000. Network to service local catchments of up to 5 km. Within 30 minute drive-time of a rural satellite town, target population of 9000 people or more, consider partnerships.
Destination facility	Aquatic entertainment, pools sports training, indoor sports leagues, special leisure activities and possible local functions.	<ul style="list-style-type: none"> Limited number of facilities based on evidence of need and assessment of viability to service a catchment of 10km plus.
Regional facility	Aquatic entertainment both indoor and outdoor, pools sports training, indoor sports leagues.	<ul style="list-style-type: none"> One to three facilities to service the region. Assessed on case-by-case basis, based on clear evidence of demand and viable business case. Recognise national facility strategy.
Arts and culture space		
Local facility	Provide space for local community arts activity such as community drama, dance, local art classes and presentations.	<ul style="list-style-type: none"> Provide space, opportunities and programmes through existing and new multi-use community facilities.
Destination facility	Provides specialised space for emergent, semi-professional and professional artists.	<ul style="list-style-type: none"> Assessed on an as-needed basis to meet identified sector and audience demand.



Whenuapai Village Hall

The Community Facilities Network Action Plan (the Action Plan) is a companion document to the Network Plan. It identifies actions to address gaps and issues across the region's community facilities network. The Action Plan identifies three actions that may impact affect the structure plan area.

Immediate actions	<ol style="list-style-type: none"> 1. Upgrading the Hobsonville Community House in the old Forces Headquarters building in Buckley Avenue. The Long-term Plan has capital expenditure for this action in 2015/16 and the upgrading is currently underway. 2. Investigating the need for pool and leisure space in the northwestern area to address potential gaps in provision and projected population growth recognising opportunities for co-location with other community and sport facilities. There is currently no capital expenditure allocated to this action. Investigations will commence in 2016/17.
Future action	<ol style="list-style-type: none"> 3. Investigating the provision of library facilities in the wider Hobsonville Point, Glenfield and Greenhithe areas.

Applying the principles and provision guidelines under the Network Plan to the structure plan area and taking into account the additional 8100 to 9600 dwellings anticipated over the next 30 years, the following provision is likely to be required:

- a large community facility incorporating community, arts and space for hire
- 891m² of library space, potentially as part of the above or within the wider catchment
- pool and leisure space within the northwest corridor (which covers Westgate, Hobsonville and Kumeu).

Ideally the community facility would be located within Whenuapai Centre, close to Brigham Creek Road and near to the airbase and Whenuapai Primary School. This location is central, easily accessible and opportune for developing partnerships with other service providers or existing infrastructure. Investigations on community need and land procurement is to commence once the emerging population reaches 10,000. However investigations on need and general location for a new pool and leisure space across the northwest will commence in 2016/17.

In respect of the provision of schools, existing schools (Whenuapai School, Hobsonville Primary School, Hobsonville Point Primary School, Hobsonville Point Secondary School and other schools in the Massey area) will have capacity to service the first five years of urban development within Whenuapai. New schools will be required, including two additional primary schools and a new secondary school located within the vicinity of Whenuapai. The council will continue discussions with the Ministry of Education on the provision of new schools throughout the plan change process; it is understood that the Ministry has land in Trig Road that may be used for the development of a school.

7.13 Health

The urban environment is a key determinant of health and wellbeing. Decisions made through the structure plan will fundamentally direct and frame the way people live, travel, play and work in this emerging urban area. It is important that health and wellbeing considerations are included at the forefront of the structure planning process, particularly when considering residential intensification.

Discussions were held with policy advisors of the Auckland Regional Public Health Service. Their top considerations in creating healthy places or healthy communities include:

Accessibility - promoting accessibility to services and amenities is critical while ensuring some groups, such as those with disabilities, the elderly, and families with young children, are not disadvantaged. Areas identified as residentially intensive would need to include areas for service access, community activities, sporting and recreational pursuits and pedestrian access. The structure plan provides for such areas.

Connectivity and public transport - residential intensification can flourish through well designed neighbourhoods that have street and other public space connections that ensure future residents are still easily connected to people, facilities and services and are not isolated from each other. The potential for a cycle and pedestrian link along the Whenuapai coastline that connects to a stream esplanade and the street network will provide a basis for healthy community outcomes. Good public transport services and facilities will also be provided in Whenuapai.

Safety - ensuring that residential intensification builds in safe residential design (such as through informal surveillance), well-lit streets and pathways and safe traffic flows will be developed as the urban fabric and population increases in the structure plan area.

Housing - housing quality (such as sound and heating insulation), diversity in size and configuration to meet a range of family types, and privacy are key attributes to the health of this future urban area.

Community facilities - existing community facilities, such as the Whenuapai Village Hall and playground area, the public boat ramp at Waimarie Road and existing open space facility amenities will remain. Improvements to some of these facilities (if required) and the creation of new community facilities will benefit the social health of existing and future residents.

Community cohesion - interagency cooperation should be part of the intensification process to promote community cohesion. As Whenuapai grows, ongoing liaison with the Ministry of Health, Ministry of Education and Ministry of Social Development will assist this process.

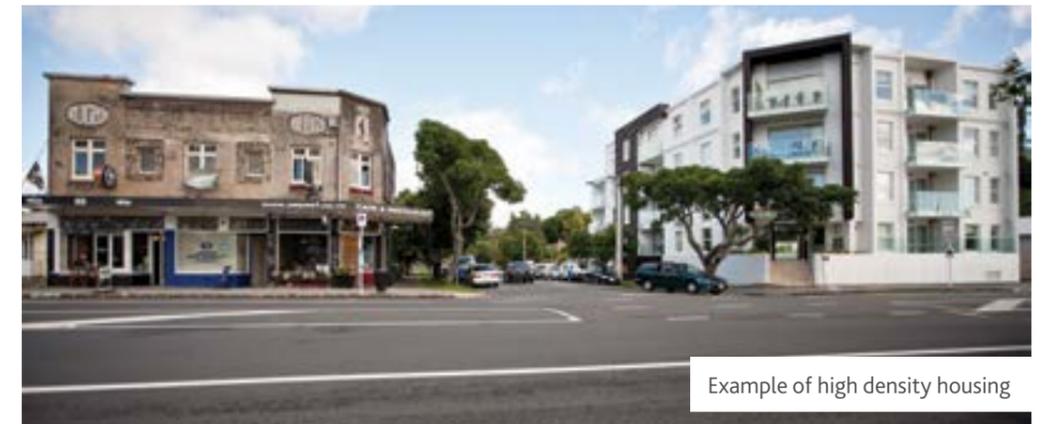
Public and open space - the Parks and Open Space report is a strategic framework that will create the opportunity for attractive open spaces with a variety of uses. These can be enjoyed by all and will benefit the health of the whole community.

Māori heritage and cultural identity - Whanau Ora Health Impact Assessment is another tool used when developing policy that affects Māori. Mana whenua have been involved in the structure plan process advising where urban design could be utilised to better represent the Māori history and identity of the area. Taking this work into a health context can be established through ongoing engagement with mana whenua as the structure plan area develops.

7.14 Neighbourhood Design Statement

The aim of the neighbourhood design statement is to describe how the mix and patterns of distinctive neighbourhoods can be developed as part of the Structure Plan. These neighbourhoods would respond to:

- the heritage of both mana whenua and European settlement and the community recognition of this history
- the character and context of the existing environment for example contours, existing natural features including streams, wetlands, vegetation, habitat, mature trees, views and vistas, proximity to the existing centre, parks, community facilities and school, respecting existing residential neighbourhood character lot and built form
- opportunities and constraints outlined in Section 7 will have to be resolved or prioritised to assist in the avoidance or mitigation of potential adverse effects.



The design rationale and principles that have informed the proposed neighbourhoods is one of creating a new urban environment with a sense of place woven into the existing urban structure, topography, natural features and landscape. These neighbourhoods are able to:

- create a legible urban form with environmental features and strong relationship to major infrastructure including roads and New Zealand Defence Force land
- create multi-modal streets and roads connecting key public and civic places in the community
- create connections to and along the coastline and design for potential coastal erosion and inundation issues
- provide nodes (centres) where movement connections will help grow public transport provision (bus, connections to ferries and rapid transit) for both the residential and business neighbourhoods
- enhance open space urban form legibility for recreation, play and contact with nature for residents
- encourage sustainable land use with blocks, lots and dwellings orientated to maximise solar gain
- provide choice with different land uses, densities, block types and sizes, building sizes and designs, and connections to social infrastructure and public open space
- strengthen the urban resilience and reduce carbon emissions of the community.

The Neighbourhood Design Statement has been considered in the development of the structure plan, particularly in the location of appropriate land uses. The location of appropriate land uses have then been further balanced and refined with the need to achieve other objectives, greater choice and improved flexibility.

The structure plan accommodates growth and also provides an appropriate amount of flexibility that can achieve the best outcomes and allow ongoing urban design innovation.

7.15 Affordability Assessment

An adequate supply of a variety of dwelling types and sizes located near jobs and transport links is an important component of a functioning society and economy, and provides a good quality of life for everyone.

The provision of a wide variety of housing types is expected in the structure plan area to meet the needs of people and communities, including:

- a. households on low to moderate incomes
- b. people with special housing requirements.

There is an immediate need for housing to rent and purchase at a variety of price points to meet the needs of Aucklanders. The following initiatives have been identified as opportunities which could be explored to help deliver more housing choices:

- enable a range of dwelling types
- locate dwellings close to transport hubs and corridors
- encourage good quality dwellings which exceed environmental minimums and provide more comfortable homes for Aucklanders
- apply universal design principles to buildings to make them usable for people of all ages.

This coupled with accessibility for the new local workforce will support Whenuapai to become a more liveable suburb. Living and working locally, with well-connected community facilities and social infrastructure reduces dependence on private vehicle journeys, particularly across the city to work places at peak times. It also helps to prevent the development of a largely absent resident population in Whenuapai during usual business hours.

In the Whenuapai 1 and 2 Special Housing Area Precincts, these developments are required to provide a percentage of affordable housing for all residential developments containing 15 or more dwellings, or the creation of 15 or more vacant sites. This requirement will not apply to the remaining land in the structure plan area that will be given a zone through the plan change process.



Example of medium density housing

7.16 Natural Hazards

7.16.1 Geotechnical and coastal erosion

A preliminary geotechnical and coastal erosion assessment identifies the geotechnical and coastal hazards, and associated constraints to future development within Whenuapai. The main geotechnical hazards identified are:

- slope stability and coastal erosion
- compressibility of soil
- liquefaction during an earthquake.

In addition, the council's Engineering and Technical Services team has also identified acid sulphate soils as a potential geotechnical hazard for the structure plan area. Further work is currently being undertaken by the council in respect of this matter.

The majority of the structure plan area has a low risk of slope instability, with a small area of medium to high risk zones along the upper reaches of creeks flowing into the Upper Waitematā Harbour. Kauri Road is an area with slope instability with cracking and incremental creep has been observed.

Based on a regional assessment of coastal erosion undertaken for investigation of the Rural Urban Boundary, a 100m building restriction line from the toe of cliffs is recommended. For proposed building within the 100m zone, a site-specific coastal erosion study will be required to confirm an appropriate building setback on a case-by-case basis.

Whenuapai has medium to high soil compressibility, with low compressibility only expected on coastal and stream margins. Further work should be undertaken when assessing individual site developments.

There have been limited investigations around the coastal margin of the structure plan area and further assessments may be required to better understand the underlying geology and associated geotechnical risks of the structure plan area.

Soils in the structure plan area are identified as difficult to earthwork, in addition high groundwater levels mean that ground settlement as a result of dewatering due to construction is a potential issue. Where reworking of soils or dewatering occurs, there is a potential for acid sulphate soils to create acidic conditions, particularly near the coast and in soils deposited in swampy environments which tend to coincide with the high development premium land shown in Figure 11.

Overall, land within the structure plan area therefore generally has a medium development premium, with a high development premium along steep slopes. Development premium relates to the costs of developing land subject to geotechnical constraints, where land with a medium development premium is more economical to develop than land with a high development premium.

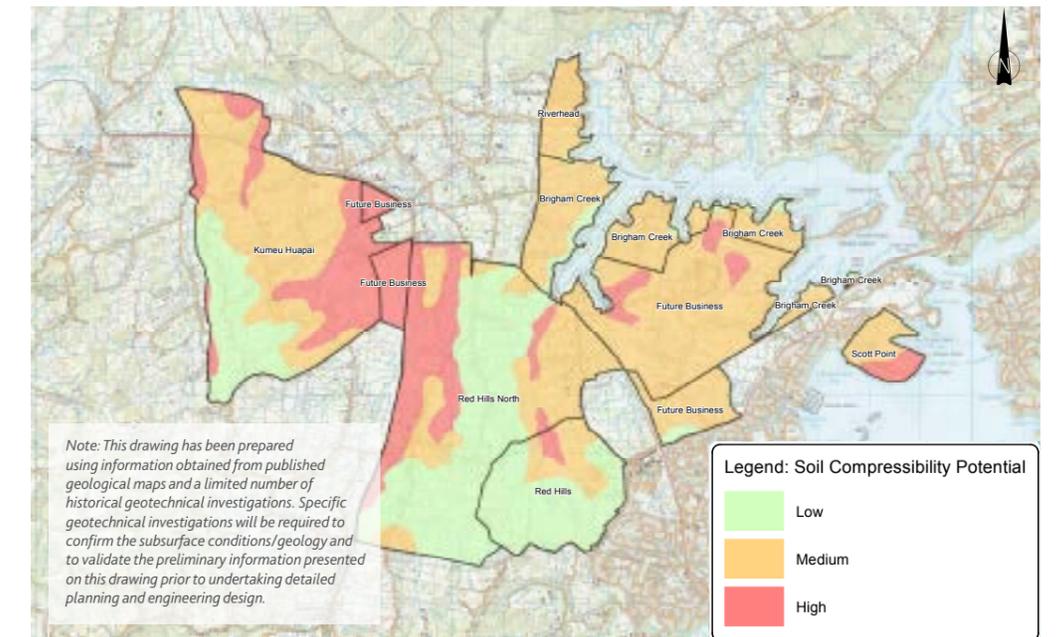


Figure 11: Northwest areas of low, medium and high development premium
Source: Tonkin & Taylor, 2013

7.17 Contamination

The health and wellbeing of any future communities is a key objective of this plan. To ensure that this objective is met, the Whenuapai Structure Plan was prepared with consideration of the contamination risks associated with some historic land uses (aviation and agriculture).

A preliminary desktop contamination assessment has been prepared which collates and reviews existing information about potentially contaminated land in the structure plan area and identifies known or potential areas of contamination.

A previous study for the Northern Strategic Growth Area in 2001 identified the Whenuapai Airbase, uncontrolled landfills, timber treatment and storage as having the most likelihood of contamination with the highest potential magnitude of contamination. The level of contamination associated with rural-residential and horticultural land uses was identified as likely to be low and dispersed and therefore represents minimal constraints to land development.

The timber treatment site is also considered a high risk site and a detailed site investigation would be required if the timber treatment site is to be redeveloped. This would be managed by the Auckland Unitary Plan Operative in Part provisions. The remainder of the structure plan area is currently horticultural and residential with potentially low and dispersed contamination.

There are opportunities to address contaminated sites as part of the plan change process. Guidance from the National Environmental Standard for Soil Contaminants and future clean-up funding from the government's Contaminated Sites Remediation Fund are possible avenues to explore when land uses are being changed. These sites can also be seen as possible locations for creation of wildlife habitat which may direct birds away from the airbase.

7.18 Noise

The noise constraints to future urban development within the structure plan area are informed by a noise assessment. The main sources of noise within the structure plan area are from the airbase and state highways. A review of the Auckland Unitary Plan Operative in Part Aircraft Noise provisions¹³ (refer to section 5.3.1) was undertaken to determine the most appropriate criteria to address noise matters in the structure plan.

In summary the following was recommended:

- development within the 65 dB Ldn Airport Noise Boundary should be restricted to non-sensitive activities such as light industry or commercial
- development should be limited as much as possible between the 55 dB Ldn and 65 dB Ldn Airport Noise Boundaries, particularly sensitive activities such as schools and preschools

- new noise sensitive activities within the Aircraft Transport Noise Overlay are avoided particularly where mechanical ventilation is going to be required to achieve the internal noise criteria of 40dB LAeq(24hr). If land within the Aircraft Noise Overlay is used for noise sensitive activities effective barriers should be installed along the boundary with the State Highway where there is no existing noise barrier/bund or the existing barrier/bund is not effective
- development within the Aircraft Noise Overlay and between the 55 dB Ldn and 65 dB Ldn Airport Noise Boundaries should be restricted to non-sensitive activities
- noise-sensitive activities outside of the High Land Transport Noise Overlay and outside of 55 dB Ldn Airport Noise Boundary are unlikely to require mitigation.

The noise effects of engine testing and helicopter flights have also been identified as a potential issue. Further work will be required in regard to this matter with the opportunity to review the noise assessment in the plan change process.

7.19 Lighting

Development within the structure plan area will need to consider the effects of lighting on the safe and efficient operation of the airbase. A preliminary lighting assessment outlines the lighting requirements under the Auckland Unitary Plan Operative in Part as well as the lighting requirements of the airbase and lighting associated with roads.

Lighting requirements in relation to the airbase are identified as including the following:

- the details of approach lighting on the east-west runway
- the requirement to maintain clear operational view of the approach lights
- simulation of approach lights shall not be permitted in either the orientation of the runways or in the Whenuapai area.

Assessment of the lighting requirements for roads relied on the combination of M30 (Specification and Guidelines for Road Lighting Design) and Auckland Transport Code of Practice Section 19–Street Lighting. Other considerations include the effects of temporary structures, cranes, wind turbines, search lights and lasers. Further investigations may be required.

Overall the general lighting requirements of the Auckland Unitary Plan Operative in Part are considered appropriate for the structure plan area, apart from those additional requirements identified in relation to the airbase.

¹³ The provisions as presented to the Independent Hearings Panel in April 2015; note the Independent Hearings Panel has since released their recommendations and the High Land Transport Noise overlay is recommended to be deleted

8 The Structure Plan

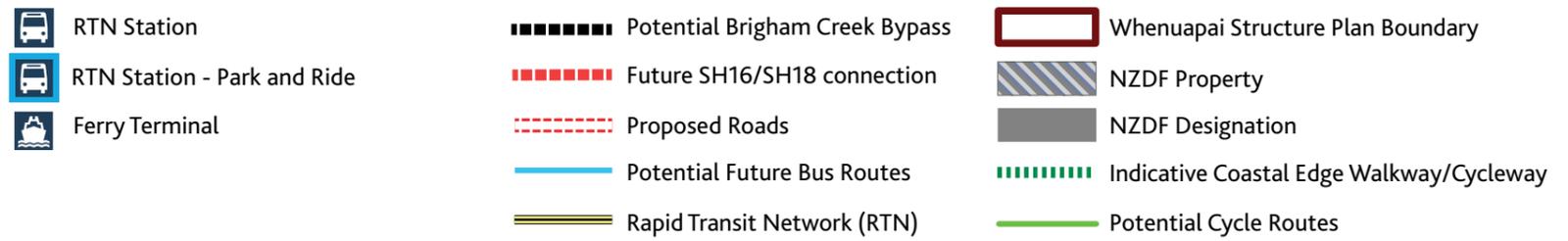
8.1 Development and design principles

The development of the Whenuapai Structure Plan has been informed by a number of development and design principles that are summarised as follows:

1. create a well-designed, sustainable quality compact form with a strong sense of place
2. recognise the presence and importance of Whenuapai Airbase while restricting residential development within areas of high airbase noise
3. recognise the presence and importance of large, long standing industries that are expected to remain in operation for the foreseeable future
4. capitalise on the existing coastline, waterways, landscape, amenity, to create a strong green and coastal public open space
5. expand the existing Whenuapai centres and develop complementary smaller centres
6. improve existing community facilities and new community facilities in centres
7. identify existing land owned by the Ministry of Education and private schools currently in operation while expecting that future schools within the proposed residential areas will be needed in future
8. provide choice of residential densities and future dwelling types throughout the structure plan area
9. concentrate higher density residential areas around centres and where future rapid transit network stops are being proposed
10. enable low density residential on the coastal edge given its isolated location and the complexity of coastal erosion
11. provide the foundation for the future residential block structure and site orientation to maximise solar gain
12. deliver local employment opportunities close to residential neighbourhoods and good transport connections
13. protect waterways and enable the improvement of water quality and restoration of vegetation and habitat
14. promote water sensitive design throughout the structure plan area, from site-specific features to infrastructure in the public realm
15. allow for the efficient provision of infrastructure on a staged basis
16. develop and maintain a well-connected transport network within Whenuapai and to the wider transport network
17. create a safe and well-connected network of open space and reserves
18. enable transport connections along and to the coastline where possible while recognising the sensitivity of the coast to erosion and inundation
19. provide a safe and well-connected network of streets that utilises existing roads where possible and enables multi-modal movement within the structure plan area
20. provide transport infrastructure and connections that enable increased provision of multi-modal transport for both residential and business neighbourhoods
21. Provide for the sustainable management of taonga (e.g. the importance of protecting the mauri of waterways, recognition of mana whenua culture, traditions, tikanga, place names, artefacts, wāhi tapu and historic places and areas) and how these elements can be incorporated into the structure plan and future plan change process as advanced by Te Kawerau ā Maki and Ngāti Whātua o Kaipara.

Transport Networks

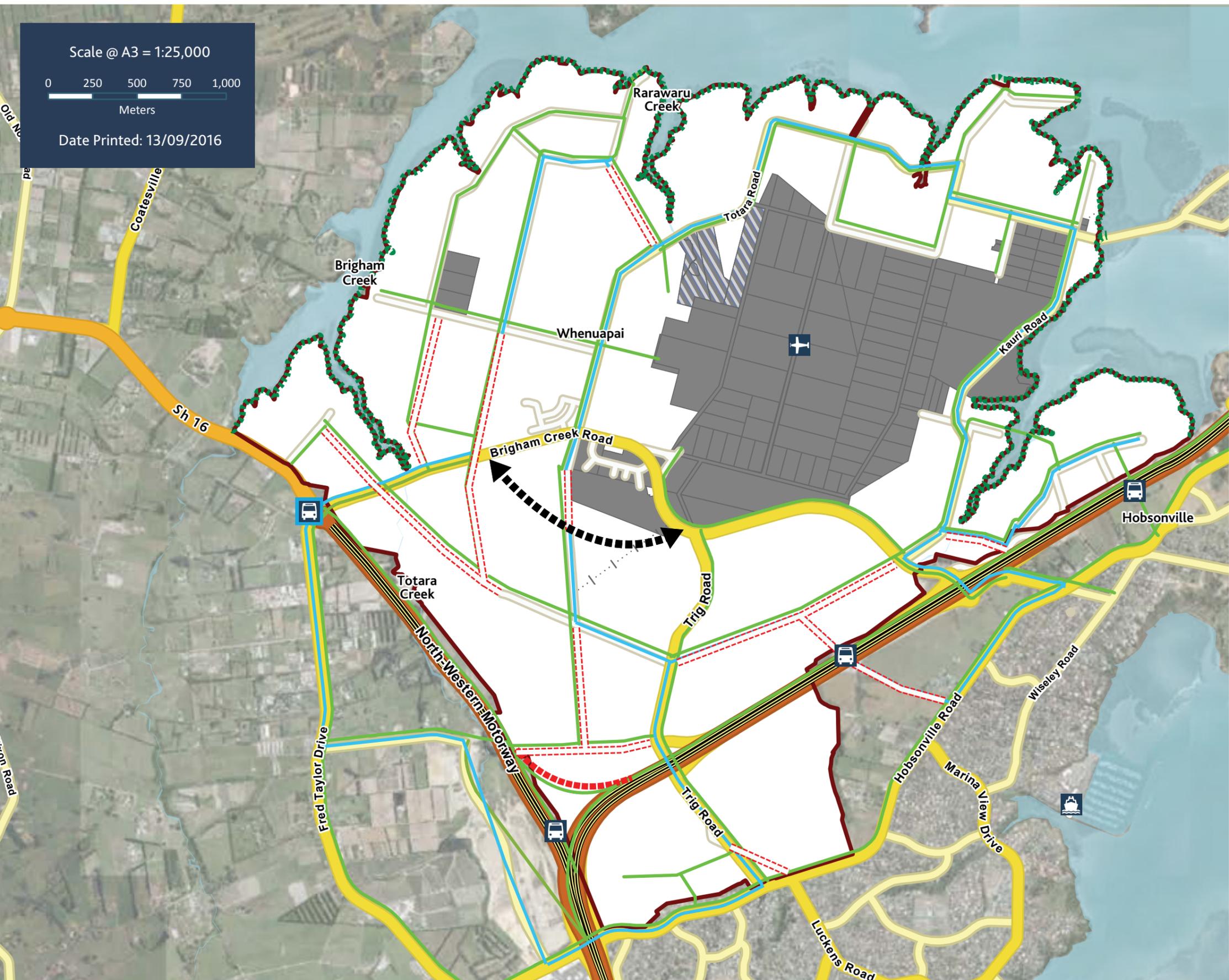
Figure 12: Transport Networks map



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Meters

Date Printed: 13/09/2016



8.2 Structure Plan elements

8.2.1 Transport

Development of the structure plan has considered the movement network features, opportunities and constraints discussed in Section 7 of the report and identified in Figure 12. Network features and opportunities include:

- a cycling network along local roads, around the coastal edge and connecting to the wider northwest area
- existing and future bus routes
- identification of four Rapid Transport Network stations (one of which includes a park and ride facility)
- proposed roads, including a Brigham Creek Road Bypass and the future State Highway 16/State Highway 18 connection.

The future transport network is integral to the achievement of a quality compact urban form. It is important to understand the number of significant transport upgrades and investment required by the New Zealand Transport Agency, Auckland Council, Auckland Transport and developers to support residential and business land uses. These transport upgrades and their appropriate staging are listed in Appendix 4. In particular the appropriate locations for intensive residential development should be integrated with the provision of high quality public transport; higher densities are therefore located in proximity to Rapid Transit Network stations and the park and ride facility.

A well-connected cycling and pedestrian network enables the future community to access employment, schools, shops, parks and recreation areas, and reduces reliance on private cars within the structure plan and wider area. This assists in facilitating sustainable growth within the northwest region.

Infrastructure

Figure 13: Infrastructure map

-  Whenuapai Structure Plan Boundary
-  NZDF Property
-  NZDF Designation
-  National Grid Corridor

-  Permanent and intermittent streams
-  Northern interceptor stage 1 and 2
-  Obstacle Limitation Surfaces
-  Wastewater Pipe (Transmission) - In Service
-  Proposed branch sewers
-  NZDF Noise contours

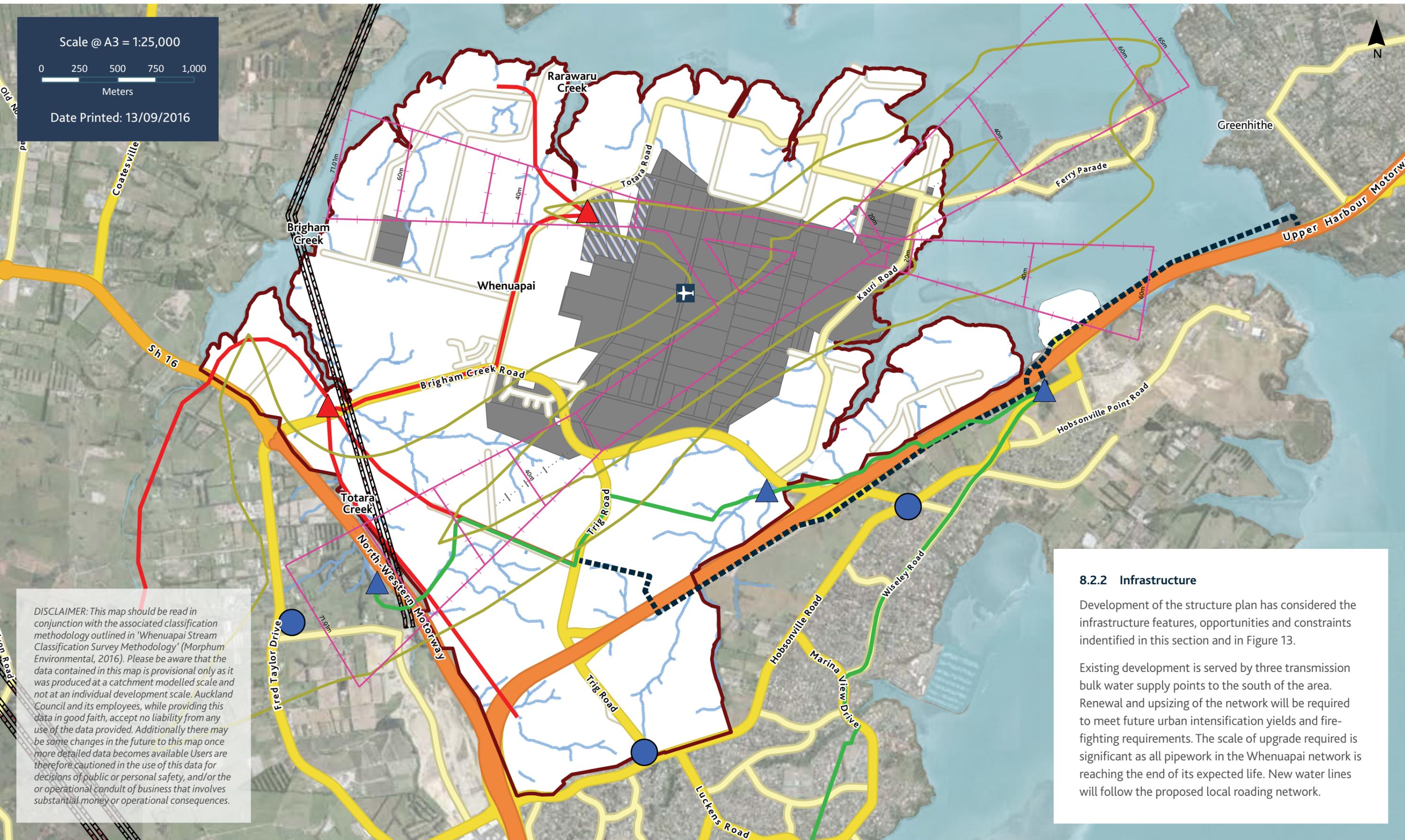
-  Proposed Pump Station
-  Existing wastewater pump station
-  Bulk Water Supply Points

Scale @ A3 = 1:25,000



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Meters

Date Printed: 13/09/2016



DISCLAIMER: This map should be read in conjunction with the associated classification methodology outlined in 'Whenuapai Stream Classification Survey Methodology' (Morphum Environmental, 2016). Please be aware that the data contained in this map is provisional only as it was produced at a catchment modelled scale and not at an individual development scale. Auckland Council and its employees, while providing this data in good faith, accept no liability from any use of the data provided. Additionally there may be some changes in the future to this map once more detailed data becomes available. Users are therefore cautioned in the use of this data for decisions of public or personal safety, and/or the or operational conduct of business that involves substantial money or operational consequences.

8.2.2 Infrastructure

Development of the structure plan has considered the infrastructure features, opportunities and constraints identified in this section and in Figure 13.

Existing development is served by three transmission bulk water supply points to the south of the area. Renewal and upsizing of the network will be required to meet future urban intensification yields and fire-fighting requirements. The scale of upgrade required is significant as all pipework in the Whenuapai network is reaching the end of its expected life. New water lines will follow the proposed local roading network.

There are three pump stations in proximity to Whenuapai at Hobsonville, Whenuapai and Massey North. Two large catchments along the northern half of the structure plan area drain to two discrete locations, one along Totara Road and another along Brigham Creek Road. These two locations have been identified as potential future major pump stations. The capacity will be enhanced when the first stage of the Northern Interceptor, which will divert flow north east to the Rosedale Wastewater Treatment Plant, is completed in 2021. Future stages of the Northern Interceptor, including a large spine gravity main running west to east along State Highway 18 (to be completed in 2025), boost pumping of the pipeline to Rosedale (to be completed in 2027) and duplication of the rising main to Rosedale (to be completed in 2035) will provide the additional trunk capacity necessary to service the ultimate development.

A water sensitive design approach will be adopted for the management of stormwater, utilising the existing stream network (both permanent and intermittent streams).

Noise contours and height limitations (known as obstacle limitation surfaces) associated with the Whenuapai Airbase designation apply to the structure plan area, as well as the National Grid Corridor (incorporating electricity lines). The noise contours and height limitations associated with the airbase and the National Grid Corridor are particularly relevant to the consideration of appropriate land uses. For example, residential activities are sensitive to high aircraft noise and electrical transmission line activity and are not appropriate for them to be located in close proximity to these activities.

8.2.3 Natural Environment and Heritage

Development of the structure plan has considered the existing natural environment and heritage features and the opportunities and constraints identified in Figure 14 which are summarised as follows:

- high levels of amenity exist because of proximity to the Upper Waitematā Harbour, the largely open rural nature, mature trees, and the areas of mangroves associated with the coastal waters and inlets
- significant marine and terrestrial ecological areas within the Upper Waitematā Harbour, Brigham Creek and Totara Creek
- intermittent and permanent streams should be retained with riparian planting to enhance freshwater quality
- protection is proposed of scheduled natural and built heritage including notable trees, Significant Ecological Areas, recorded archaeological sites, and buildings at Clarks Landing, Whenuapai Village and the Whenuapai Airbase
- recognition is given to the North-West Wildlink for creating biodiversity linkages
- development should take into account the need to manage environmental constraints such as coastal erosion, sedimentation and contaminated land.

The structure plan provides opportunities to identify options to restore and enhance the natural environment within the structure plan area to achieve environmental goals as part of urban development. In addition, urban development also provides opportunities to apply sustainability initiatives that will assist with the implementation of the council's Auckland Growing Greener principles related to urban transformation, zero waste, restoring nature and healthy waterways.

In particular, the retention of the permanent and intermittent streams creates a key structural element that largely determines where roads, open space and intensive residential development are located. Areas for ecological enhancement have been identified primarily in relation to riparian margins, state highways, existing Significant Ecological Areas, and Brigham Creek in relation to the North-West Wildlink. The protection of scheduled trees and the potential inclusion of additional trees or groups of trees that have stand out landscape, botanical or other values will also provide for the opportunity to retain a high level of amenity. However, further consideration will need to be given to the issue of avoiding potential bird strike affecting the airbase.

A number of archaeological and built heritage sites are identified within the structure plan area and further consideration will need to be given to protection and enhancement through the identification of suitable land uses and activities. For example, most archaeological sites are located around the coast and these can be protected through the provision of an esplanade reserve where the opportunity arises along with building line restrictions.

Natural Environment and Heritage

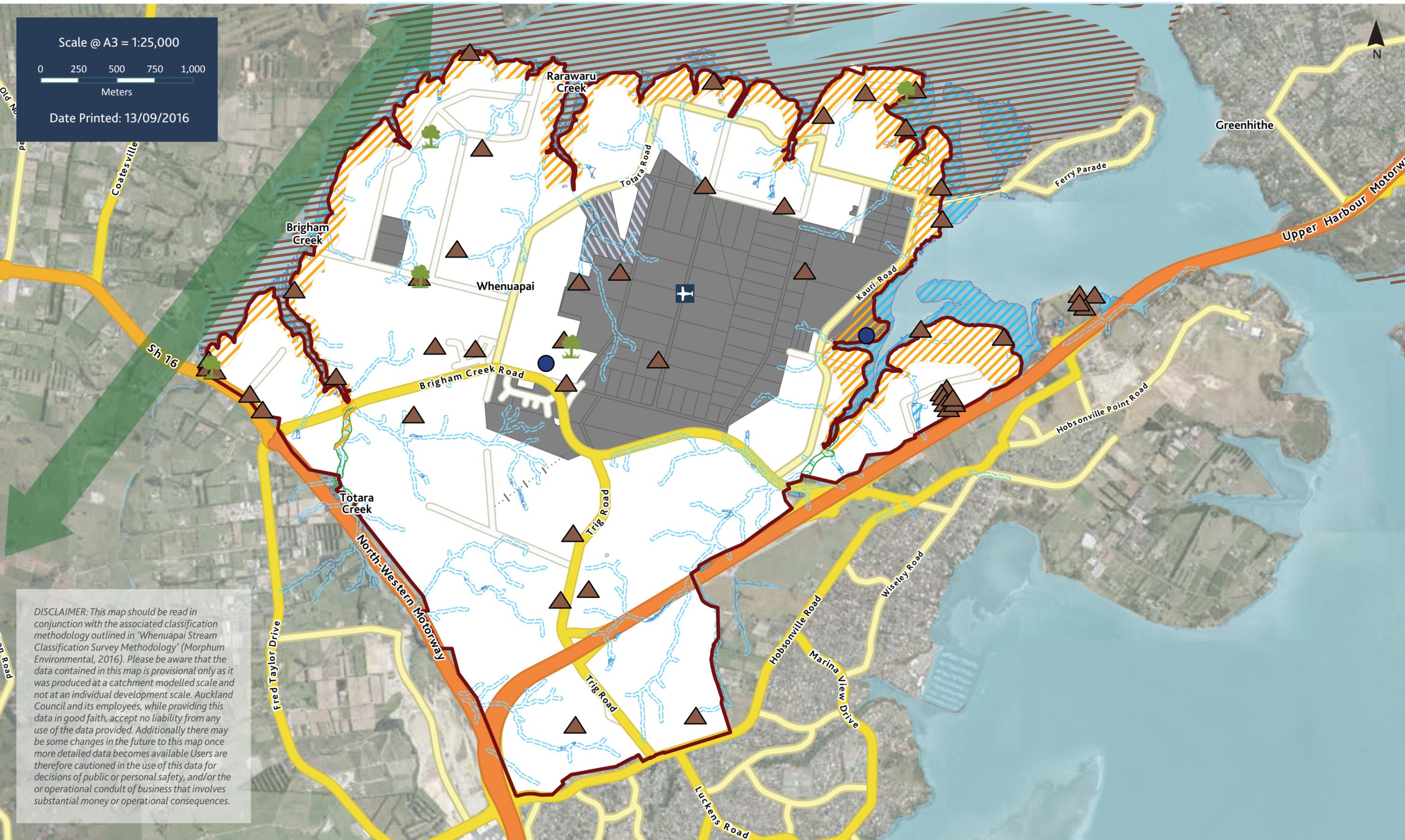
Figure 14: Natural Environment and Heritage map

-  Notable Trees
-  Contaminated Sites
-  Cultural Heritage Index sites
-  Wetlands
-  Significant Ecological Areas - Terrestrial
-  Significant Ecological Areas - Marine
-  Whenuapai Structure Plan Boundary
-  NZDF Property
-  NZDF Designation
-  Indicative Riparian Margins around Intermittent/Permanent Streams
-  Coastal Constraints
-  North-West Wildlink

Scale @ A3 = 1:25,000

0 250 500 750 1,000
Meters

Date Printed: 13/09/2016



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Open Space and Recreation

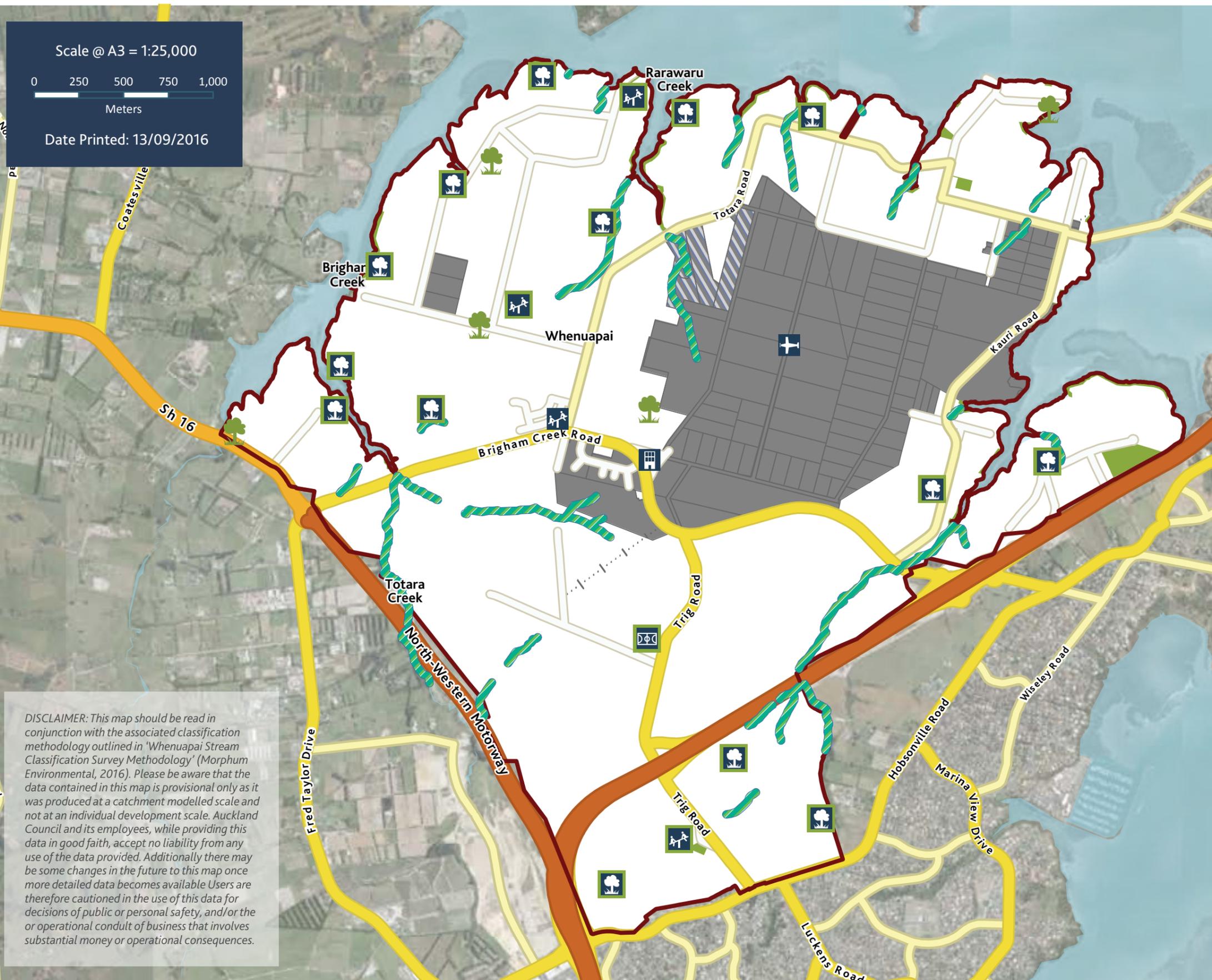
Figure 15: Open Space and Recreation map

 Notable Trees
 Proposed Civic Space

 Existing Neighbourhood Park
 Proposed Neighbourhood Park
 Proposed Sports Park - location undetermined
 Proposed Suburb Park

 Whenuapai Structure Plan Boundary
 NZDF Property
 NZDF Designation
 Indicative Esplanade
 Existing Public Open Space

Scale @ A3 = 1:25,000
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 Meters
 Date Printed: 13/09/2016



8.2.4 Open Space and Recreation

The council's Open Space Provision Policy provides direction for how it will invest in open space and recreation. Applying the principles and provisions under the policy, the following open space and recreation facilities (indicated in Figure 15) are likely to be required:

- the creation of esplanade reserves of at least 20 metres in width where the opportunity arises for subdivisions along the coast and waterways
- the use of esplanade reserves and streamside conservation networks for the formation of recreational routes and connections between open spaces where practicable, without unduly compromising ecological values
- the provision of a range of open space and recreation areas including:
 - a suburb/sports field, of approximately 10 hectares in size, to accommodate sports fields and active recreation facilities, ideally located in the business area near future Rapid Transit Network
 - three suburban parks of 3 to 5 hectares in size
 - a network of approximately 14 neighbourhood parks (0.3 to 0.5 hectares in size) for passive recreation at appropriate locations within residential zones accessible by most residents within a 400 metre walk
 - a civic space at the eastern entrance of the Whenuapai Centre to complement the neighbourhood park/civic space currently being developed within the Whenuapai 1 Precinct.

DISCLAIMER: This map should be read in conjunction with the associated classification methodology outlined in 'Whenuapai Stream Classification Survey Methodology' (Morphum Environmental, 2016). Please be aware that the data contained in this map is provisional only as it was produced at a catchment modelled scale and not at an individual development scale. Auckland Council and its employees, while providing this data in good faith, accept no liability from any use of the data provided. Additionally there may be some changes in the future to this map once more detailed data becomes available. Users are therefore cautioned in the use of this data for decisions of public or personal safety, and/or the or operational conduct of business that involves substantial money or operational consequences.

Identification of the locations for open space are indicative on the structure plan map, recognising that this needs to be determined as part of future development proposals.

The importance of a good quality open space network is critical to the health and wellbeing of the future population at Whenuapai. Indicative locations for open space networks focused within residential neighbourhoods in proximity to the stream network, ensures that developers are aware of the need to provide for suitable open space across the wider area. The potential sports fields/facility should be located within the business area because of the light spill arising from flood lighting of fields and the facility should be easily accessible.

Enhancement of permanent and intermittent streams through riparian planting will provide ecological linkages, as well as opportunities for green corridors to link public open spaces and provide an extensive cycling and walking network.

Opportunities for greater public access to the coast and non-motorised watercraft launching facilities will be investigated as part of the plan change process.

8.3 The Structure Plan

The opportunities and constraints identified in Section 7 have informed the key elements as well as the development and design principles in Section 8.1. The final structure plan map in Figure 16 is a synthesis of all the key elements and represents the most appropriate mix of land uses and activities.

Residential

The residential densities envisaged by the structure plan are primarily low, medium and high. The Neighbourhood Design Statement provides analysis of potential yields across the neighbourhoods of the structure plan area. The applicable Auckland Unitary Plan Operative in Part zones will be detailed in the plan change.

The structure plan proposes low density residential activities under the northern approach to the airbase where height is limited and also in proximity to the coastline, recognising that further investigation is required to determine suitable building setbacks due to coastal hazards. The structure plan has not adopted the recommendation of the Neighbourhood Design Statement to include a buffer of industrial/horticultural land between residential activities and the airbase as a way to address potential reverse sensitivity effects. Instead, the structure plan seeks to balance the operations of the airbase with the local community's desire to retain a residential character within the established Whenuapai Village and the need to locate business activities in locations with good access to the state highways.

The predominant level of residential density anticipated throughout the structure plan area is medium density. It has generally been applied to areas away from the coast and outside of Whenuapai Village. While the New Zealand Defence Force (NZDF) has signalled a preference for low density residential activities adjoining the airbase to limit reverse sensitivity effects, the structure plan identifies land owned by NZDF adjoining the airbase as medium density residential. This reflects existing development and the potential to implement no complaints covenants on titles.

High density residential is proposed in to the south of State Highway 18 along Trig and Hobsonville Roads and around the proposed Rapid Transit Network station at the State Highway 16 / Brigham Creek Road interchange.

Business

As outlined in Section 7.4, suitable business land is required in the northwest of Auckland. A large proportion of the structure plan area is identified as business land to take advantage of the proximity to the state highway network as well as taking into account the noise constraints associated with airbase operations. Proposed future transport improvements of the state highway network and rapid transit network stations further enhance the position of this business land.

Potential issues associated with the interface between residential and business uses will be addressed through the plan change process. There are standards within the provisions of the business zones in Auckland Unitary Plan Operative in Part that address the treatment of the residential-business interface¹⁴.

The structure plan also proposes to extend the local centre on Brigham Creek Road to the southern side (currently a neighbourhood centre), as well as introducing three additional neighbourhood centres throughout the area, to complement the existing centre in Whenuapai Village, which will provide for the convenience needs of residents and workers.

There are two Mixed Use areas identified on the structure plan map. The first is north of Timatanga School, which responds to their feedback seeking residential zoning around the school. The Mixed Use zone provides for residential activity as well as predominantly smaller scale commercial activity that does not cumulatively affect the function, role and amenity of centres. The second is an area south of Brigham Creek Road near its western intersection with State Highway 16, to foster a sense of gateway to Whenuapai.

Structure Plan

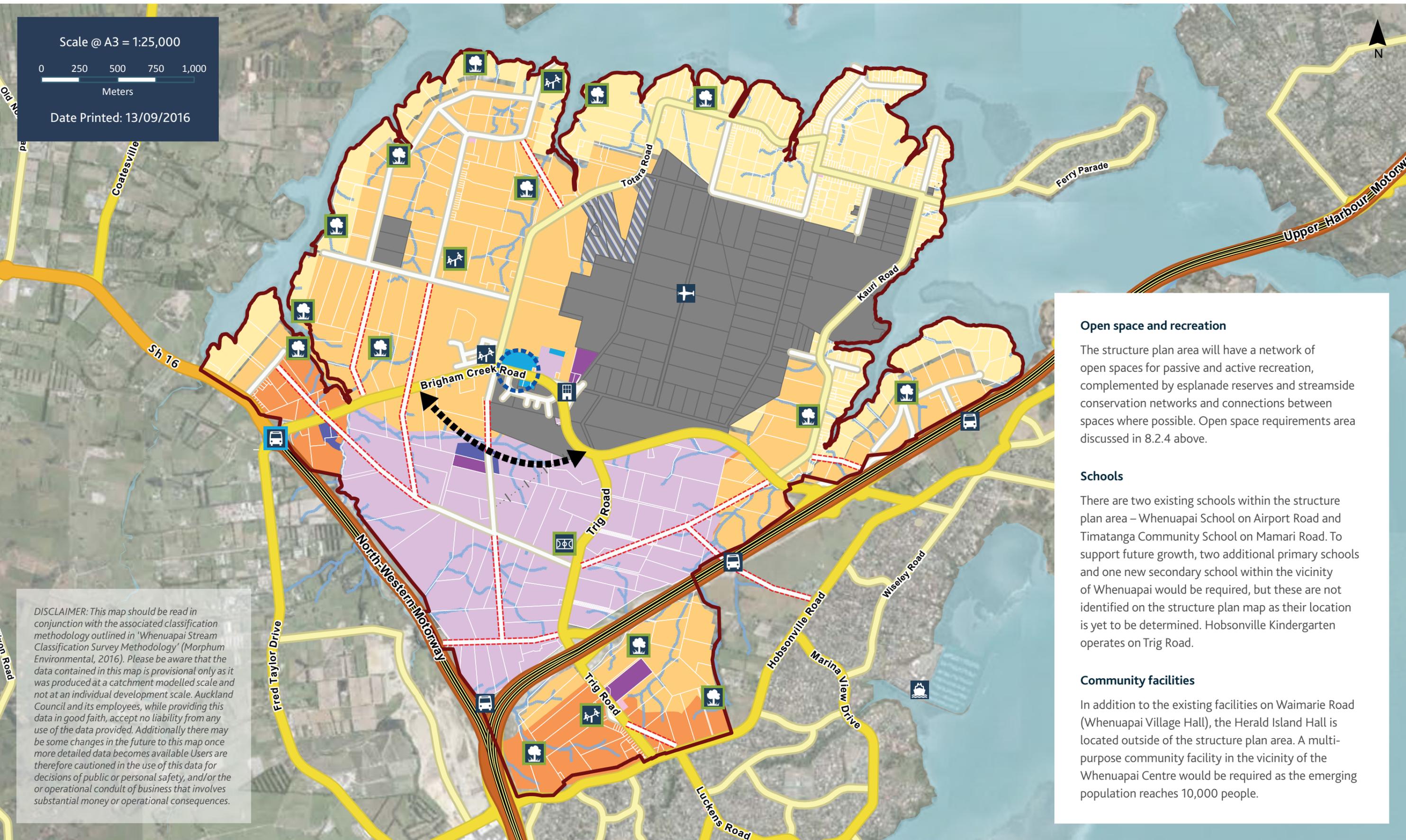
Figure 16: The Structure Plan map

- | | | | | | | | |
|--|--|--|--|--|------------------------------------|--|----------------------|
| | Potential Multi-purpose Community Facility | | Proposed Civic Space | | Whenuapai Structure Plan Boundary | | School |
| | Ferry terminal | | Existing Neighbourhood Park | | NZDF Property | | Local Centre |
| | RTN Station | | Proposed Neighbourhood Park | | NZDF Designation | | Neighbourhood Centre |
| | RTN Station - Park and Ride | | Proposed Sports Park - location undetermined | | Rapid Transit Network (RTN) | | Mixed use |
| | | | Proposed Suburb Park | | Potential Brigham Creek Bypass | | Business |
| | | | | | Proposed Roads | | Low Density |
| | | | | | Permanent and Intermittent Streams | | Medium Density |
| | | | | | | | High Density |

Scale @ A3 = 1:25,000

0 250 500 750 1,000
Meters

Date Printed: 13/09/2016



DISCLAIMER: This map should be read in conjunction with the associated classification methodology outlined in 'Whenuapai Stream Classification Survey Methodology' (Morphum Environmental, 2016). Please be aware that the data contained in this map is provisional only as it was produced at a catchment modelled scale and not at an individual development scale. Auckland Council and its employees, while providing this data in good faith, accept no liability from any use of the data provided. Additionally there may be some changes in the future to this map once more detailed data becomes available. Users are therefore cautioned in the use of this data for decisions of public or personal safety, and/or the or operational conduct of business that involves substantial money or operational consequences.

Open space and recreation

The structure plan area will have a network of open spaces for passive and active recreation, complemented by esplanade reserves and streamside conservation networks and connections between spaces where possible. Open space requirements area discussed in 8.2.4 above.

Schools

There are two existing schools within the structure plan area – Whenuapai School on Airport Road and Timatanga Community School on Mamari Road. To support future growth, two additional primary schools and one new secondary school within the vicinity of Whenuapai would be required, but these are not identified on the structure plan map as their location is yet to be determined. Hobsonville Kindergarten operates on Trig Road.

Community facilities

In addition to the existing facilities on Waimarie Road (Whenuapai Village Hall), the Herald Island Hall is located outside of the structure plan area. A multi-purpose community facility in the vicinity of the Whenuapai Centre would be required as the emerging population reaches 10,000 people.

9 Implementation

The The Whenuapai Structure Plan will be implemented over the next 10-20 years, starting in 2017 with a plan change.

The Future Urban Land Supply Strategy November 2015 (discussed in Section 5) proposes that growth start in the period 2017–2021. Construction will extend beyond 2021 because of the differing development aspirations and timelines that landowners and developers have, and the staging and sequencing requirements that are based on infrastructure funding provision in the structure plan area and its surrounds. Within the structure plan area two Special Housing Areas have been approved as part of Stage 1(a) and construction has started.

The structure plan is expected to be implemented initially by a plan change to the Auckland Unitary Plan Operative in Part. This plan change will re-zone the land currently zoned as Future Urban, so that the zoning aligns with the land use indications in the structure plan. Any overlays in the Auckland Unitary Plan Operative in Part will also form part of the plan change if they are relevant. The plan change may also include precincts if there are particular activities or resource management issues that are not able to be managed by the zones. Once the plan change is operative, subdivision and development is likely to start.

Requiring authorities may also issue notices of requirement to designate pieces of land to ensure that the correct pieces of land for their infrastructure requirements are secured, and in some circumstances routes may be protected. Requiring authorities may compulsorily acquire pieces of land, or purchase land that is available on the open market, if it meets a particular strategic need.

The council will need to consider the inclusion of budget provisions for land purchases and works in its Annual Plan processes. It will also identify larger projects that need to be included in the 2018-28 Long-term Plan. These additions to the Long-term Plan will largely be determined in the 2017 calendar year.

The council will provide guidance material for landowners and developers to help them understand the various processes that they are involved in. It will also engage with landowners and developers to help to ensure that development aligns to the structure plan and contributes to the sense of place that the council is seeking to create.

9.1 Staging

Staging has been based upon consideration of the growth expected in the whole of the northwest that is Kumeu, Huapai, Redhills, Riverhead, Coatesville, Hobsonville Point, Scott's Point and Whenuapai. Consequently the growth in Whenuapai requires infrastructure provision both within and outside of its structure plan boundaries.

The staging has also been based on when infrastructure can be provided as not all land can be serviced at the same time in Whenuapai. There are known current infrastructure deficits that need to be addressed before some areas of land can be developed for urban purposes. The known transport projects are listed in Appendix 4. This should be read in conjunction with the staging map on page 94. Infrastructure provision needs to be carefully staged to ensure that it is provided on a timely basis and is able to be utilised once it is available.

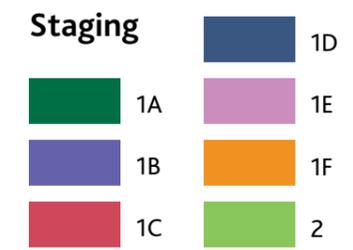
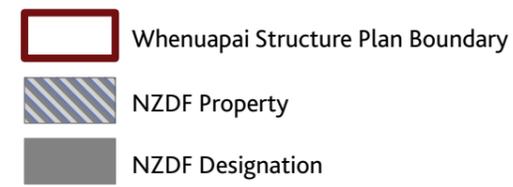
The council also considered feedback from several landowners and developers about staging during the feedback phase of the development of the structure plan. Most of that feedback requested that their land should be in Stage One of the structure plan staging plan. However, other feedback received indicated that not all landowners aspire to have their land developed for urban purposes.

The council has also reviewed the location of land that has previously been unsuccessful as an application for Special Housing Area status. In the limited time available, it has also met with some (but not all) individual landowners and/or land developers that have approached council to share their development concepts. Where the development concepts provided as part of feedback were self-explanatory, the council did not meet with those landowners.

The council has revised the staging plan to address the competing and complementary matters that need to be considered in the staging of urban development. It will include staging thresholds and triggers in the forthcoming plan change that will assist with the timing and sequencing of infrastructure that supports land development, providing for efficient and effective infrastructure provision. This includes consideration of infrastructure requirements that lie both inside and outside the Whenuapai structure plan area, as waste water and transport infrastructure provision are particularly but not solely reliant on infrastructure elsewhere.

Staging

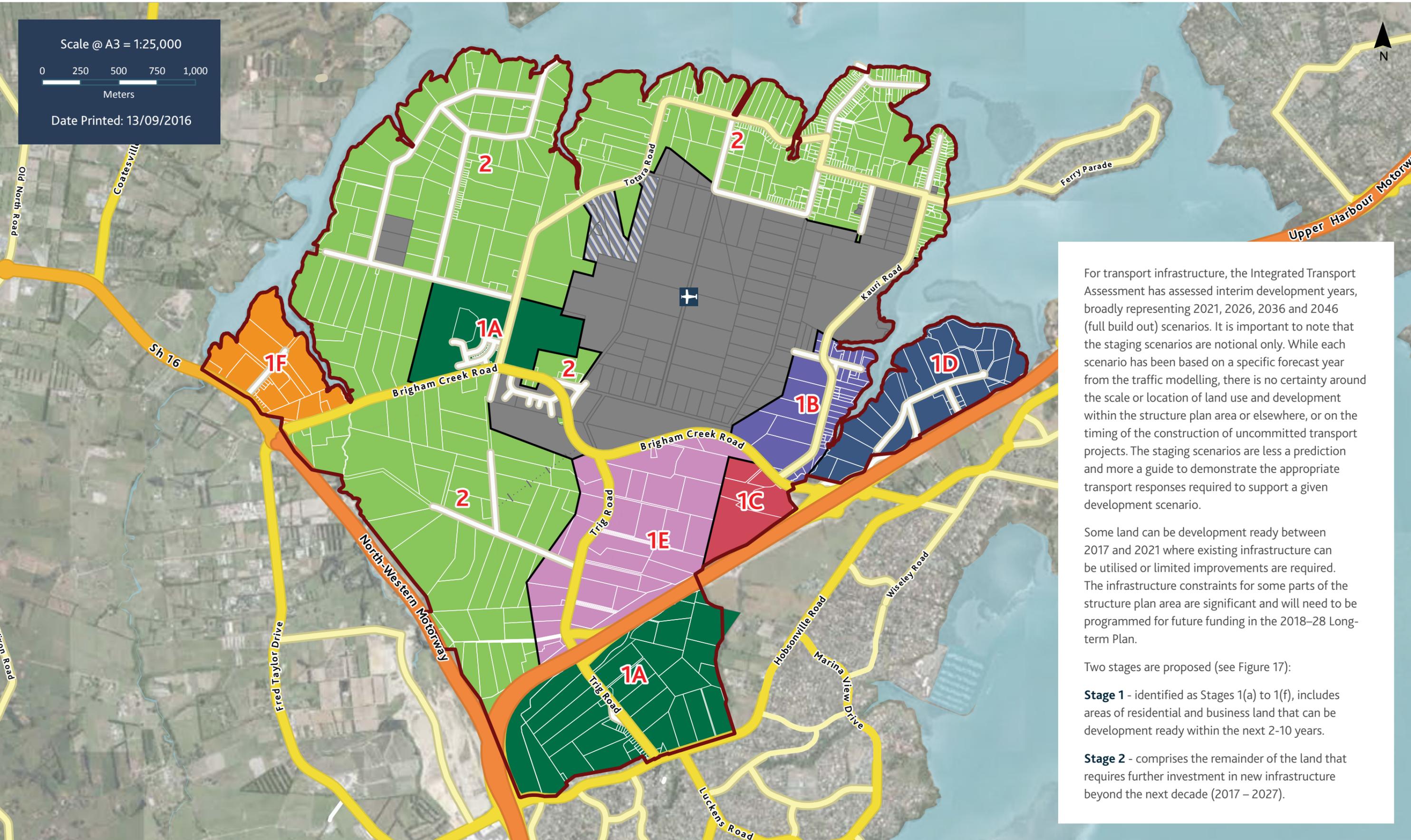
Figure 17: Staging map



Scale @ A3 = 1:25,000

0 250 500 750 1,000
Meters

Date Printed: 13/09/2016



For transport infrastructure, the Integrated Transport Assessment has assessed interim development years, broadly representing 2021, 2026, 2036 and 2046 (full build out) scenarios. It is important to note that the staging scenarios are notional only. While each scenario has been based on a specific forecast year from the traffic modelling, there is no certainty around the scale or location of land use and development within the structure plan area or elsewhere, or on the timing of the construction of uncommitted transport projects. The staging scenarios are less a prediction and more a guide to demonstrate the appropriate transport responses required to support a given development scenario.

Some land can be development ready between 2017 and 2021 where existing infrastructure can be utilised or limited improvements are required. The infrastructure constraints for some parts of the structure plan area are significant and will need to be programmed for future funding in the 2018–28 Long-term Plan.

Two stages are proposed (see Figure 17):

Stage 1 - identified as Stages 1(a) to 1(f), includes areas of residential and business land that can be development ready within the next 2-10 years.

Stage 2 - comprises the remainder of the land that requires further investment in new infrastructure beyond the next decade (2017 – 2027).

It is anticipated that within these stages more fine-grained staging of development will occur reflecting when additional infrastructure capacity is available.

The stages identified for the structure plan indicate the council's current understanding in relation to areas that are more readily serviced with bulk infrastructure. In particular, the completion of the Northern Interceptor (Stage 1 to be completed in 2021 and Stage 2 by 2028) is critical to releasing additional capacity within the wastewater network and there are significant improvements required to the regional roading network that are currently not planned or funded.

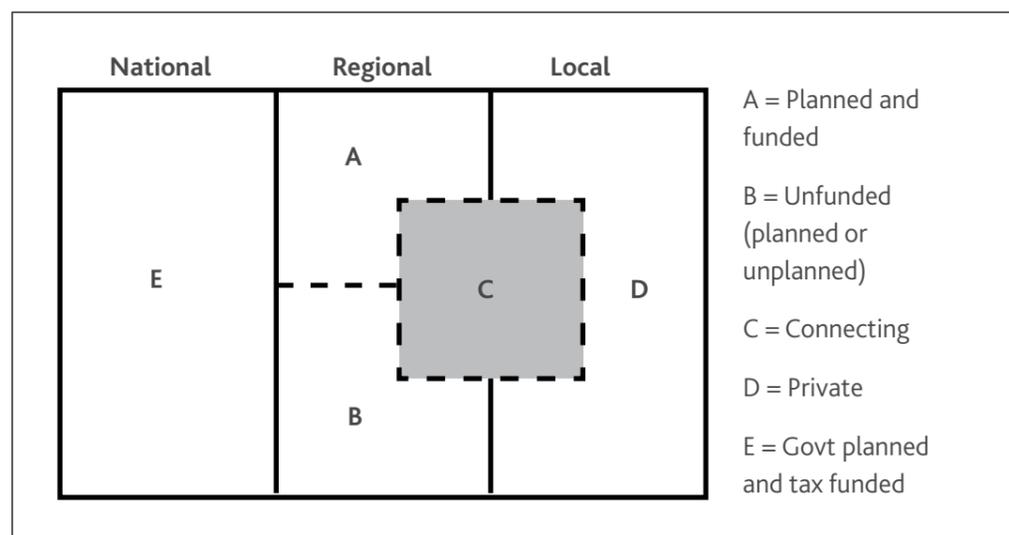


Figure 18: Funding for infrastructure

9.2 Funding

9.2.1 Funding mechanisms

The proposed public open space and infrastructure works, e.g. roads, depicts what Auckland Council considers to be an appropriate resource management outcome for the delivery of the Whenuapai Structure Plan as a whole. The primary responsibility for funding these outcomes lies with developers and not the council. The council is open to considering, on a case-by-case basis, whether some of the outcomes may be funded by the council using development contributions and other funding mechanisms. The council encourages developers to engage with its Development Programme Office so that these issues can be considered as early as is possible in the development project cycle.

The council funds and delivers public infrastructure projects through the collection of Development Contributions and Rates. There is a clear difference between the infrastructure provided and the ability to fund this. The council can, at times, work with developers to agree specific development funding agreements. The decision making for regional prioritisation of public projects is made by the asset owners. The prioritisation, delivery, timing and funding of public infrastructure projects are then set in the Long-term Plan. The Long-term Plan is reviewed every three years, with the next review scheduled for 2018. Work on this is expected to commence in 2017.

Figure 18 illustrates how infrastructure is funded. The council funds only A and may fund projects from B during the Long-term Plan processes. Generally, developers need to fund infrastructure in two cases – where it is local infrastructure, C or D, or where it is regional infrastructure out of sequence, A or B. Where infrastructure is out of sequence, developers will be expected to meet the cost of the infrastructure and ensure that the installed infrastructure is future proofed, i.e. the installed infrastructure does not need to be replaced when other in or out of sequence development occurs.

9.2.2 Infrastructure Funding Agreements

Infrastructure funding agreements assist to align and coordinate a developer's delivery requirements with Auckland's infrastructure providers. The council will work with developers, landowners and Council Controlled Organisations to enable development of public works (by all of these participants in the development process), that are fully integrated with all other infrastructure required to service the proposed development. This entails enabling private development by agreeing and facilitating timing, funding and delivery of all required public works.

Types of infrastructure agreements:

- when the council requires a developer to deliver a planned and funded public project acting as a delivery agent for the council
- when a council stakeholder (Development Programme Office, Parks, Community Facilities, Healthy Waters, Auckland Transport) has identified a local public project that is to be delivered and paid for by a developer, e.g. unplanned, unfunded works.
- growth projects required as a result of a development
- contribution arrangements for local public works, including defining who delivers the works.

The council can also facilitate commercial agreements between multiple landowners. These agreements include, but are not limited to, multiple party commercial agreements for cost sharing of public works.

10 Monitoring and Review

A monitoring and review framework to assess and evaluate the Whenuapai Structure Plan will be developed. This framework will set out the components required for an integrated monitoring strategy which can evaluate implementation and adequately fulfil reporting requirements under relevant legislation. It will also provide a reliable source of data to evaluate the delivering of objects both spatially and temporally, as well as information which can be drawn upon to review the plan's approach and progress. Ultimately this monitoring and review will inform future policy development and implementation.

10.1 How will it be implemented in the Whenuapai Structure Plan context?

The framework will be led by a small technical team to establish a baseline that will facilitate and guide discussions. The nature of engagement with internal and external stakeholders will be fluid to reflect the varying interests in how and what is to be evaluated; an oversight and guiding hand by a team responsible for implementation will be necessary to ensure delivery is practical, appropriate and achievable.

The monitoring and review framework for the structure plan will be based on the six step approach that has been used in the Long Bay Structure Plan Monitoring Framework¹⁵.

10.2 How do we measure if this work has been successful?

Success will require the formulation of a suite of indicators with clear links to the environmental outcomes that are aspired to by the structure plan, e.g. measuring the amount of riparian planting is fruitless if the objective is to improve or maintain freshwater quality and biodiversity; the former does not necessarily lead to the latter.

Data collection and the evaluation of outcomes will need to be collated and reported on in a timely manner. They should be capable of influencing the development approach across the site if environmental outcomes are not being met.

The success of a monitoring programme relies not only on getting results but the process of getting useful results. This requires time and resources to achieve due to the long term inertia of early planning decisions and economic realities. However, a balance must be struck because with the absence of good monitoring information, there is an increase in the risk of failing to manage significant issues and effects, recognise opportunities for improvement, and assess the effectiveness of policy instruments, strategies and plans. The need to balance this risk carefully against the benefits of monitoring and associated costs will be a paramount factor when developing a monitoring framework to guide the prioritisation of issues and monitoring activities.



¹⁵ Long Bay Structure Plan Monitoring Framework, Summary Report, July 2011, Landcare Research

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Appendix 1

Glossary and abbreviations of terms

Airbase	Whenuapai Airbase.
ART model	Auckland Regional Transport (ART) model is a four stage transport demand model that determines trip generation, trip distribution, mode choice and traffic routing based on land use information provided by the Auckland Strategic Planning (ASP) land use model. The ART model assigns traffic volumes to a modelled roading network and provides demand flows that can be used in more detailed traffic models.
Cultural Values Assessment	A document which provides background information on the interests, issues and values which mana whenua associate with an area or resource to help inform the preparation of a plan.
Freshwater NPS	National Policy Statement for Freshwater Management 2014.
Frequent transit network (FTN)	A network of major bus and ferry corridors connecting the city centre, metropolitan centres, and other major centres, providing at least a 15 minute service all day (initially 7am to 7pm), with significant priority measures.
Future Urban zone	A zone used to identify rural land for urban development in the future. This zone will remain in place until a plan change re-zones the land to the appropriate urban zone (e.g. residential or business). Rural activities are able to continue on this land until the urban zone becomes effective.
Greenfield land	Rural or open land that is being developed for urban purposes for the first time.
Group 1 business land	Land extensive activities such as manufacturing, transport and storage, logistics, construction and wholesale trade.
Integrated Transport Assessment (ITA)	Assesses the transport effects of a development proposal including traffic related matters.
Kaitiaki	Guardian.
Long-term Plan	A 10-year plan prepared under the Local Government Act 2002 containing programmes for the council's priorities, activities and operating and capital expenditure.
Mana whenua	Māori with ancestral rights to resources in Auckland and responsibilities as kaitiaki over their tribal lands, waterways and other taonga. Mana whenua are represented by iwi authorities.
Mauri	Life force.
Metropolitan Urban Limit	A boundary which delineates the outside edge of metropolitan Auckland as at 2010.
NES	National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health 2011
New Network	A new Auckland-wide public transport network that will include frequent, connector, local and peak services. The New Network will be fully-implemented by 2018.

Noise contours / Airport Noise Boundary	The 55 dB L _{dn} and 65 dB L _{dn} lines on relating to the Whenuapai Airbase designation 4310 in the Auckland Unitary Plan Operative in Part for Whenuapai Airbase.
North-West Wildlife Link	A project begun in 2006 to create a green corridor that links habitats and communities from the Waitākere Ranges in the west to the Hauraki Gulf Islands in the east. This is a collaborative project between Forest and Bird and Auckland Council with support from Department of Conservation.
Northern Strategic Growth Area (NorSGA)	An area identified in the Auckland Regional Growth Strategy 1999 as the location for expansion in the northwest. The area includes Massey North, Hobsonville Corridor, Hobsonville Point, Scott Point, Whenuapai, and Redhills.
NZDF	New Zealand Defence Force.
Obstacle limitation surfaces	Defined surfaces in the airspace above and adjacent to the aerodrome necessary to enable an aircraft to maintain a satisfactory level of safety while manoeuvring at a low altitude in the vicinity of the aerodrome.
Auckland Unitary Plan Operative in Part	The council's regulatory land use planning document prepared under the Resource Management Act 1991. It provides guidance and rules on how land can be developed.
RMA	Resource Management Act 1991.
Rapid transit network (RTN)	Rail and busway corridors providing dedicated right-of-way connections between the city centre and other selected centres, providing frequent and reliable services (at least 15-minute service all day, initially from 7am to 7pm).
Rural Urban Boundary	The boundary which defines the maximum extent of urban development to 2040 in the form of a permanent rural urban interface.
SEA	Significant Ecological Area.
SH16, SH18	State Highway 16, State Highway 18.
Shape Auckland	The council's online platform for public engagement on council projects, plans and strategies.
Special Housing Area	A tool provided for within the council's agreement with the government, the Auckland Housing Accord under the Housing Accords and Special Housing Areas Act 2013 to boost Auckland's housing supply.
Structure plan area	The Whenuapai structure plan area shown in Figure 2 of this document.
Taonga	A treasured item (tangible or intangible).
Tipuna / tupuna	Ancestor; grandparent.
WSD	Water Sensitive Urban Design is an approach which integrates the urban water cycle, including stormwater, groundwater and wastewater management and water supply, into urban design to minimise environmental degradation and improve aesthetic and recreational appeal.
WSMP	Whenuapai Stormwater Management Plan.
Western Ring Route	A 48-kilometre motorway connecting Manukau, Auckland, Waitākere and the North Shore. It will be an alternative to State Highway 1 and the Auckland Harbour Bridge, bypassing the city to the west.
Whenuapai Centre	The area on Brigham Creek Road between Airport Road and Totara Road.
Whenuapai Village	The area around the Waimarie Road and Puriri Road intersection.

Appendix 2

List of supporting technical reports

Report Title	Author	Date
Biodiversity Assessment (memo)	Rue Statham, Auckland Council	June 2016
Business Land Assessment	Derek Foy, Market Economics Limited	May 2016
Community Facility Provision Report	Maclean Grindell, Auckland Council	August 2016
Cultural Values Assessment for Whenuapai Structure Plan	Scott Lomas, Te Kawerau Iwi Tribal Authority	June 2016
Integrated Transport Assessment Report	Rachel Gasson, Qing Li, Michael Jongeneel & Angie Crafer, Flow Transportation Specialists Ltd	July 2016
Landscape and Visual Supplement	Boffa Miskell	June 2016
Natural Character, Landscape and Visual Assessment	Tom Lines, Boffa Miskell	June 2016
Neighbourhood Design Statement	Yvonne Weeber, Auckland Council	June 2016
Noise Assessment	Claire Drewery, AECOM	June 2016
North-West Transformation Area (NWT) Wastewater Servicing Strategy	Jay Burgess, MWH	November 2015
Parks and Open Space Report	Ezra Barwell, Auckland Council	August 2016
Preliminary Arboricultural Assessment	Jack Warden, GreensceneNZ Limited	July 2016
Preliminary Coastal Habitat Assessment	Angela Chaffe, AECOM	June 2016
Preliminary Contamination Assessment	Naomi Macorison, AECOM	June 2016
Preliminary Geotechnical and Coastal Erosion Assessment Report	Rhys Graafhui, AECOM	June 2016
Preliminary Historic Heritage Assessment	Simon Bickler, Sarah Macready, Rod Clough & Jane Matthews, Clough & Associates Ltd and Matthews & Matthews Architects Ltd	June 2016
Preliminary Lighting Assessment	Virgil Karan, AECOM	June 2016
Whenuapai Link: Heritage GIS Layers	Simon Bickler, Clough & Associates Ltd	May 2016
Whenuapai Stormwater Management Plan	Daniel Curtis and Angela Chaffe, AECOM	August 2016

Appendix 3

Auckland Unitary Plan Operative in Part requirements

Auckland Unitary Plan Operative in Part Appendix 1 Structure Plan Guidelines	Structure Plan Section Reference
1.3 External documents to be taken into account When preparing structure plans, the external documents in the following list are to be considered where appropriate.	
(1) Auckland Plan including the directions of the Auckland Plan to be considered as an integrated whole, Auckland's High-Level Development Strategy (refer to section D of the Auckland Plan), and any sub-regional analyses prepared by the Auckland Council.	5.1
(2) National policy statements and national environmental standards including but not limited to the New Zealand Coastal Policy Statement, the National Policy Statement for Freshwater Management and the National Environmental Standards for Electricity Transmission Activities.	5.2
(3) This Plan, in particular the regional policy statement.	5.3
(4) Auckland Council's 10-year budget (the Long-term Plan) and implementation programmes.	5.4
(5) Local board plans and area plans.	5.5
(6) Existing integrated catchment management plans and associated network discharge consents.	5.6
(7) Strategies, plans, codes of practice or programmes of economic, environmental, social and cultural infrastructure providers, with particular regard to the Regional Land Transport Plan, Auckland Transport's Integrated Transport Programme and Watercare's Asset Management Plan.	5.8
(8) Iwi planning documents.	5.9
(9) Treaty settlement legislation.	5.10
(10) Auckland Council's Parks and Open Space Strategy Action Plan.	5.11.1
(11) Auckland Council's Auckland Design Manual.	5.11.2
(12) Auckland Council's Code of Practice for Land Development and Subdivision.	5.11.4

Auckland Unitary Plan Operative in Part Appendix 1 Structure Plan Guidelines		Structure Plan Section Reference
1.4	Matters to identify, investigate and address A structure plan is to identify, investigate and address the matters set out below.	
1.4.1.	Urban growth	
(1)	The future supply and projected demand for residential and business land in the structure plan areas to achieve an appropriate capacity to meet the sub-regional growth projections in the Auckland Plan adopted under the Local Government (Auckland Council) Act 2009.	1.2, 5.7, 7.4
(2)	The phases and timing for the staged release of greenfield land or the staged conversion of land within the existing urban area to a more intensive activity for urban development or for comprehensive redevelopment, in coordination with infrastructure.	9.1
(3)	The location, type and form of the urban edge, its appropriateness to the structure plan area and the surrounding area and how transitions between the area to be urbanised and other areas with different activities, building types and densities or levels of intensity are to be managed.	8.3 (structure plan map)
(4)	Linkages and integration with existing urban-zoned and/or rural-zoned land adjoining the structure plan area through careful edge or boundary treatment.	7.3 (ITA) 8.2.1 (Transport element) 8.3 (structure plan map)
(5)	Opportunities to improve access to landlocked parcels, including Māori land.	7.3
1.4.2.	Natural resources	
(1)	The protection, maintenance and enhancement of natural resources, particularly those that have been scheduled in the Unitary Plan in relation to mana whenua, natural resources, and the coastal environment.	7.8, 7.9, 7.10, 7.11, 8.2.4
(2)	Demonstrate how proposed subdivision, use, and development will protect, maintain and enhance the values of the resources identified in 1.4.2(1) above.	8.2.4, 8.2.5, 8.3
(3)	The integration of green networks (such as freshwater and coastal water systems, and ecological corridors) with open space and pedestrian and cycle networks, showing how they reflect the underlying natural character values and provide opportunities for environmental restoration and biodiversity.	8.2.3, 8.2.4, 8.2.5
(4)	Measures to manage natural hazards and contamination.	7.16, 7.17
(5)	The location of mineral resources and how access to regionally significant extractable deposits is to be managed.	N/A

Auckland Unitary Plan Operative in Part Appendix 1 Structure Plan Guidelines		Structure Plan Section Reference
1.4.3.	Natural and built heritage	
(1)	The existence of natural and physical resources that have been scheduled in the Unitary Plan in relation to natural heritage, mana whenua, natural resources, coastal environment, historic heritage and special character.	7.8, 7.9, 7.10, 7.11, 8.2.4
1.4.4.	Use and activity	
(1)	Contribution to a compact urban form and the efficient use of land in conjunction with existing urban areas to give effect to the regional policy statement.	8.2.2, 8.3
(2)	The adoption of standard Unitary Plan methods and provisions where possible to ensure a consistent approach across the region by all of the following:	N/A – to come in the plan change process
(a)	seeking to avoid the introduction of additional zones;	
(b)	recognising the values of natural heritage, mana whenua, natural resources, coastal, historic heritage and special character through identification of sites or places to be scheduled and the use of existing overlays in the Plan; and	
(c)	recognising specific place-based provisions through the use of precincts.	
(3)	Establishment of new centres and the expansion of existing centres in ways that complement the hierarchy and network of existing centres. Centres should be located and designed to maximise access by walking, cycling and public transport.	8.1, 8.3
(4)	A mix of residential intensities sufficient to support the vitality of centres and communities and to provide housing and transport choice.	8.1, 8.3
(5)	A mix and distribution of land uses within the structure plan area to provide opportunities for business activities and employment, community facilities and open space close to where people live.	8.1, 8.3
(6)	The location and protection of infrastructure and management of reverse sensitivity effects on infrastructure from subdivision, use and development.	7.3, 7.7, 8.1, 8.2, 8.3
(7)	The location and protection of use and development and management of reverse sensitivity effects on use and development.	8.1, 8.2, 8.3

Auckland Unitary Plan Operative in Part Appendix 1 Structure Plan Guidelines		Structure Plan Section Reference
1.4.5.	Urban development	
(1)	A desirable urban form at the neighbourhood scale including all of the following:	
(a)	a layout providing pedestrian connectivity with a network of streets and block sizes which allow for a choice of routes, particularly near centres and public transport facilities;	7.14
(b)	provision of a diversity of site sizes within blocks to enhance housing choice, accommodate local small-scale community facilities and where appropriate enable a range of business activity and mixed use;	7.14, 8.3
(c)	provision of open spaces which are highly visible from streets and of a scale and quality to meet identified community needs;	7.5, 8.2, 8.3
(d)	appropriate transitions within and at the edge of the structure plan area between different land use activities, intensities and densities; and	7.5, 8.2, 8.3
(e)	the application of an integrated storm water management approach within developments to reduce impacts on the environment while enhancing urban amenity.	7.6, 8.1, 8.2
1.4.6.	Transport networks	
(1)	Integration of land use and development with the local and strategic transport networks.	
(2)	Layout of the transport network and facilities in a manner that is safe, attractive, efficient, and resilient to hazards, well connected to local facilities and integrated with land uses, the surrounding area and the wider transport network.	7.3, 8.1, 8.2, 8.3
(3)	Support for transport and accessibility that is multi-modal and interconnected with an appropriate number and location of access points.	7.3, 8.1, 8.2, 8.3
(4)	Transport effects on land uses and the management of these effects.	7.3, 8.1, 8.2, 8.3
1.4.7.	Infrastructure	
(1)	The location and protection of existing and planned infrastructure, including network infrastructure corridors.	7.6, 7.7, 8.1, 8.2
(2)	The location, scale and capacity of existing and new infrastructure to serve the structure plan area.	7.6, 7.7, 8.1, 8.2
(3)	The location, scale and function of stormwater management facilities based on the principles of an integrated stormwater management approach, including the retention of natural water systems and the primary use of onsite flow and quality controls (and related impervious area limits) to manage stormwater runoff from proposed sites and roads.	7.6, 8.1, 8.2
(4)	The location, scale, function and provision of community facilities, including educational, health, welfare and cultural facilities and open space to cater for the needs of communities in the structure plan area and neighbouring areas.	7.5, 7.11, 7.12, 7.13, 8.1, 8.3

Auckland Unitary Plan Operative in Part Appendix 1 Structure Plan Guidelines		Structure Plan Section Reference
1.4.8.	Feedback from stakeholders	
(1)	Feedback from landowners, infrastructure providers, council controlled organisations and communities gained through consultation during the structure planning process.	6
1.5.	Specialist documents to support the structure plan and plan changes process The scale and detail of the investigation and reporting required needs to be at a level appropriate to the scale of the area subject to the structure planning process and the complexity of the issues identified by the process. Reports may be required on the matters listed below to support the structure planning and plan change process.	
(1)	Land use:	
(a)	evaluation of the identified role of and principal objectives for the structure plan area in terms of land uses and amenity values;	3.2, 8.1 and the Neighbourhood Design Statement (Auckland Council, 2016)
(b)	assessment against any relevant sub-regional spatial plan; and	5.1
(c)	analysis of anticipated land use supply and demand informing the spatial allocation of areas for different activities, intensities and densities.	1.2, 5.7, 7.4
(2)	Infrastructure:	
(a)	integrated catchment management plan - stormwater management plan, including network plans, updates to catchment or zone management plans and variations to existing or new network discharge consents, where relevant;	7.6 and Stormwater Management Plan (AECOM, 2016)
(b)	integrated transport assessment;	7.3 and Integrated Transport Assessment (Flow, 2016)
(c)	water and wastewater servicing plan; and	7.7 and North-West Transformation Area Wastewater Servicing Strategy (MWH, 2015)
(d)	other infrastructure plans.	5.8
(3)	Impact on natural and cultural values:	
(a)	landscape assessment;	7.9 and Natural Character, Landscape and Visual Assessment (Boffa Miskell, 2016)
(b)	assessment of effects on the cultural well-being of people and communities who have relationships with the area, including where appropriate mapping of local history and whakapapa;	5.9, 7.11 and Cultural Values Assessment for Whenuapai Structure Plan (Te Kawerau Iwi Tribal Authority, 2016)
(c)	archaeological, historic heritage and special character assessment;	7.10 and Preliminary Historic Heritage Assessment (Clough and Associates Ltd and Matthews and Matthews Architects Ltd, 2016)
(d)	natural heritage assessment; and	7.9 and Preliminary Arboricultural Assessment (GreensceneNZ Ltd, 2016)

Auckland Unitary Plan Operative in Part Appendix 1 Structure Plan Guidelines		Structure Plan Section Reference
(e)	freshwater and ecological assessment.	7.6, 7.8, Biodiversity Assessment (Auckland Council, 2016) and Whenuapai Stormwater Management Plan (AECOM, 2016)
(4)	Environmental risk:	
(a)	geotechnical assessment;	7.16 and Preliminary Geotechnical and Coastal Erosion Assessment Report (AECOM, 2016)
(b)	land contamination and remediation assessment; and	7.17 and Preliminary Contamination Assessment (AECOM, 2016)
(c)	health impact assessment.	7.13
(5)	Implementation:	
(a)	staging plan;	9.1
(b)	funding plan;	9.2
(c)	affordability assessment;	7.15
(d)	neighbourhood design statement; and	7.14 and Neighbourhood Design Statement (Auckland Council, 2016)
(e)	other documents depending on the characteristics of the land and water resources of the area.	Noise Assessment (AECOM, 2016) and Preliminary Coastal Habitat Assessment (AECOM, 2016)

Appendix 4

Transport requirements

Notes:

- The transport staging scenarios below are notional only. While each scenario has been based on a specific forecast year from the ART model, there is not necessarily certainty on the scale or location of land use development within Whenuapai or elsewhere, or on the timings of uncommitted transport projects. The staging scenarios are less a prediction and more a guide to demonstrate the appropriate transport responses required to support a given development scenario.
- In the following table:
 - > A 'regional' requirement generally denotes an item proposed through planning programmes other than the Whenuapai Structure Plan (WSP), but is required to support the WSP as well as other development areas.
 - > A 'Structure Plan Area' requirement denotes an item generally internal to Whenuapai or directly bounding it, and required primarily to support the WSP area.
 - > The relevant programmes and documents use the following abbreviations:
 - Northern Strategic Growth Area = NORSGA
 - Transport for Future Urban Growth = TFUG
 - Western Ring Route = WRR
 - Whenuapai Structure Plan = WSP
 - Integrated Transport Assessment = ITA.
 - > The left hand column identifies two matters – the ITA Scenarios and the Staging numbering. Please refer to the Staging Map (Figure 17) to identify where each stage is located. Therefore in each row, the first number in the left hand column is the Scenario number, the second number in the same column is the Staging number.

ITA Scenario Council Staging	Regional or SPA requirement?	Associated Transport Infrastructure Items	Relevant Programme (if applicable)	Status
1a	Regional	FTN on Hobsonville Road which may require widening of Hobsonville Road to provide bus priority.	NORSGA	Upgrade is funded and planned for implementation 2020-22. Bus service to be upgraded to FTN standard by 2025.
		FTN from Brigham Creek Road to Kumeu.	TFUG	Identified in 'preferred' TFUG network. Implementation dates subject to business case outcome, future NZTA and Council funding allocations.
		Bus shoulder running Auckland CBD to Westgate.	WRR	Funded and underway.
		SH16 widening between Hobsonville Road and Lincoln Road.	WRR	Funded and underway.
		Realignment and urbanisation of Trig Road south of SH18 to connect to Luckens Road and traffic signals at the Trig Road / Hobsonville Road / Luckens Road intersection.	NORSGA / TFUG	Identified in 'preferred' TFUG network. Implementation dates subject to business case outcome, future NZTA and Council funding allocations.
		Widening of SH16 between Brigham Creek Road and Coatesville-Riverhead Highway to provide two lanes in each direction.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		SH16 / Brigham Creek Road roundabout capacity improvements comprising a signalised roundabout or three lanes on the SH16 northbound approach and three lanes around the western side of the roundabout.	None – identified in the WSP ITA.	Not in current plans or funding programmes. Potential crossover with TFUG Brigham Creek Road upgrade.
		New roundabout at SH16 / Coatesville-Riverhead Highway intersection.	TFUG	Identified in 'preferred' TFUG network. Implementation dates subject to business case outcome, future NZTA and Council funding allocations.
		Traffic signals on Hobsonville Road at Brigham Creek Road, Sinton Road and Clark Road.	NORSGA	Upgrade is funded and planned for implementation 2020-22.

ITA Scenario Council Staging	Regional or SPA requirement?	Associated Transport Infrastructure Items	Relevant Programme (if applicable)	Status
1a	Structure Plan Area	A comprehensive network of pedestrian footpaths and appropriate cyclist infrastructure commensurate with development but in line with ultimate provisions.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		Bus connector network within Whenuapai connecting to Westgate FTN/RTN and FTN along Hobsonville Road.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		Brigham Creek Road urbanisation with 50km/h speed restriction between SH16 and SH18 interchanges.	TFUG	Identified in 'preferred' TFUG network. Implementation dates subject to business case outcome, future NZTA and Council funding allocations.
		Widening of Brigham Creek Road to four lanes between Totara and Tamatea Roads, and between Kauri Road and the SH18 / Brigham Creek Road interchange.	TFUG / Identified in the WSP ITA.	Four-laning of entire Brigham Creek Road identified in 'preferred' TFUG network. WSP ITA finding is that only localised widening is required. Implementation dates subject to business case outcome, future NZTA and Council funding allocations.
		Extension of Riverlea Road to meet Brigham Creek Road.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		Traffic Signals at Brigham Creek Road / Riverlea Road, Brigham Creek Road / Totara Road / Mamari Road; and Brigham Creek Road / Tamatea Avenue intersections.	None – identified in the WSP ITA.	Not in current plans or funding programmes. Potential crossover with TFUG Brigham Creek Road upgrade.
		New local road east of Trig Road between Trig Road and Hobsonville Road.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		New local road east of Trig Road south of SH16.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		Traffic signals at Trig Road / local road between SH18 and Hobsonville Road intersection.	None – identified in the WSP ITA.	Not in current plans or funding programmes.

ITA Scenario Council Staging	Regional or SPA requirement?	Associated Transport Infrastructure Items	Relevant Programme (if applicable)	Status
1b	Regional	As per 1a.		
1b	Structure Plan Area	As per 1a, plus:		
		Traffic signals at Kauri Road / Brigham Creek Road intersection.	None – identified in the WSP ITA.	Not in current plans or funding programmes. Potential crossover with TFUG Brigham Creek Road upgrade.
1c	Regional	As per 1a and 1b.		
1c	Structure Plan Area	As per 1a and 1b, plus:		
		Addition of fourth leg to Kauri Road / Brigham Creek Road intersection and inclusion of two right turn lanes from Brigham Creek Road to Kauri Road.	None – identified in the WSP ITA.	Not in current plans or funding programmes. Potential crossover with TFUG Brigham Creek Road upgrade.
1d	Regional	As per 1a-1c, plus:		
		RTN/FTN along SH18 with station in Sinton Road area.	TFUG	Identified in 'preferred' TFUG network. Implementation dates subject to business case outcome, future NZTA and Council funding allocations.
1d	Structure Plan Area	As per 1a-1c, plus:		
		Removal of existing Sinton Road connection to the Brigham Creek Road / SH18 northbound ramps intersection with a new local connection between Sinton Road and Kauri Road.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		Kauri Road widening may be required between Brigham Creek Road and Sinton Road.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
1e	Regional	As per 1a-1d, plus:		
		RTN/FTN along SH16 with station at Brigham Creek Road interchange.	TFUG	Identified in 'preferred' TFUG network. Implementation dates subject to business case outcome, future NZTA and Council funding allocations.

ITA Scenario Council Staging	Regional or SPA requirement?	Associated Transport Infrastructure Items	Relevant Programme (if applicable)	Status
		Capacity improvements at SH16 / Brigham Creek Road roundabout comprising signalling the roundabout and increasing the number of lanes on the SH16 approaches and around the roundabout.	None – identified in the WSP ITA.	Not in current plans or funding programmes. Potential crossover with TFUG Brigham Creek Road upgrade.
1f	Structure Plan Area	As per 1a-1d, plus:		
		Signals at the intersection of Brigham Creek Road and the local road serving the Kennedys Road development.	None – identified in the WSP ITA.	Not in current plans or funding programmes. Potential crossover with TFUG Brigham Creek Road upgrade.
		Widening of Brigham Creek Road between SH16 and Riverlea Road.	TFUG / identified in WSP ITA.	Four-laning of entire Brigham Creek Road identified in 'preferred' TFUG network. WSP ITA finding is that only localised widening is required. Implementation dates subject to business case outcome, future NZTA and Council funding allocations.
2	Regional	Capacity improvements at the SH16 / Brigham Creek Road roundabout comprising signalling and increasing the number of lanes on all approaches and around the roundabout.	None – identified in the WSP ITA.	Not in current plans or funding programmes. Potential crossover with TFUG Brigham Creek Road upgrade.
		Hobsonville Road widening between Trig Road and Marina View Road.	NORSGA	Upgrade is funded and planned for implementation 2020-22.
		Traffic signals on Hobsonville Road at Marina View Road, Westpark Drive and Suncrest Drive.	NORSGA	Upgrade is funded and planned for implementation 2020-22.

ITA Scenario Council Staging	Regional or SPA requirement?	Associated Transport Infrastructure Items	Relevant Programme (if applicable)	Status
Partly 1e and Partly 2	Structure Plan Area	FTN bus routes to service Whenuapai Structure Plan area.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		Additional fourth leg at signalised intersection at Brigham Creek Road / Spedding Road Extension / Kennedys Road link intersection.	None – identified in the WSP ITA.	Not in current plans or funding programmes. Potential crossover with TFUG Brigham Creek Road upgrade.
		Extend / widen Mamari Road to provide access to industrial area.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		Construct new road opposite Riverlea Road south of Brigham Creek Road into industrial area.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		Upgrade existing sections of Spedding Road and Mamari Road and their intersections to be suitable for industrial traffic including footpaths and cyclist facilities.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		Construct Spedding Road Extension south from Brigham Creek Road, east of SH16 into industrial area.	None – identified in the WSP ITA.	Not in current plans or funding programmes. Potential crossover with TFUG Brigham Creek Road upgrade.
		Construct new road into industrial area from Brigham Creek Road east of Trig Road.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		Urbanisation of Trig Road between Brigham Creek Road and SH18 Interchange.	TFUG	Identified in 'preferred' TFUG network. Implementation dates subject to business case outcome, future NZTA and Council funding allocations.
		Widen Fred Taylor Drive between SH16 / Brigham Creek Road and Northside Drive.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		Traffic signals at the Brigham Creek Road / Trig Road intersection.	None – identified in the WSP ITA.	Not in current plans or funding programmes. Potential crossover with TFUG Brigham Creek Road upgrade.

ITA Scenario Council Staging	Regional or SPA requirement?	Associated Transport Infrastructure Items	Relevant Programme (if applicable)	Status
3	Regional	As per Stages 1a-e and 2, plus:		
		RTN from Westgate to the North Shore (as per Scenario 1d) with an additional station along SH18 at a new bridge over SH18 between Trig Road and Brigham Creek Road interchange.	TFUG	Identified in 'preferred' TFUG network. Implementation dates subject to business case outcome, future NZTA and Council funding allocations.
		New arterial road alternative to SH16 between Brigham Creek Road and Kumeu (initially two lanes).	TFUG	Identified in 'preferred' TFUG network. Implementation dates subject to business case outcome, future NZTA and Council funding allocations.
		Interchange at realigned SH16 / Brigham Creek Road with signalised intersections.	TFUG	Identified in 'preferred' TFUG network. Implementation dates subject to business case outcome, future NZTA and Council funding allocations.
		Investigation of realignment of 'old' SH16 to provide appropriate separation from new SH16 / Brigham Creek Road interchange, and future Kennedys Road link intersection with Brigham Creek Road. Traffic signals would be required on Brigham Creek Road if intersection is feasible.	TFUG	Identified in 'preferred' TFUG network. Implementation dates subject to business case outcome, future NZTA and Council funding allocations.
		Traffic signals at SH18/Trig Road interchange.	TFUG	Identified in 'preferred' TFUG network. Implementation dates subject to business case outcome, future NZTA and Council funding allocations.
		Northside Drive connection to Trig Road interchange and SH16 / Northside Drive south-facing ramps with four lanes between Northside Drive and Mamari Road.	TFUG	Identified in 'preferred' TFUG network. Implementation dates subject to business case outcome, future NZTA and Council funding allocations.

ITA Scenario Council Staging	Regional or SPA requirement?	Associated Transport Infrastructure Items	Relevant Programme (if applicable)	Status
		SH16 / SH18 motorway connections.	TFUG	Identified in 'preferred' TFUG network. Implementation dates subject to business case outcome, future NZTA and Council funding allocations.
		Additional lane SH18 eastbound between Trig Road and Brigham Creek Road.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		Additional lane SH18 westbound between Tauhinu Road and Squadron Drive.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		Traffic signals at the SH18 / Brigham Creek Road interchange.	TFUG	Identified in 'preferred' TFUG network. Implementation dates subject to business case outcome, future NZTA and Council funding allocations.
2	Structure Plan Area	As above, plus:		
		Additional lanes at the Brigham Creek Road / Totara Road / Mamari Road intersection.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		Upgrades to existing roads within industrial areas and provision of new roads as necessary to avoid driveways onto Brigham Creek Road, Mamari Road and Northside Drive.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		Local road connection between Riverlea Road and Totara Road near Rarawara Creek.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		Capacity improvements at the Brigham Creek Road / Totara Road / Mamari Road intersection.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		Mamari Road extension to Northside Drive plus traffic signals at the Mamari Road / Northside Drive intersection and the Mamari Road / Spedding Road intersection.	None – identified in the WSP ITA.	Not in current plans or funding programmes.

ITA Scenario Council Staging	Regional or SPA requirement?	Associated Transport Infrastructure Items	Relevant Programme (if applicable)	Status
		Spedding Road connection between Brigham Creek Road and Trig Road.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		Signals at Totara Road / Dale Road intersection.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		Traffic signals at Spedding Road / Trig Road / Spedding Road extension intersection.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		A new bridge between Marina View Drive and Spedding Road extension, with signals on Spedding Road extension.	TFUG	Identified in 'preferred' TFUG network. Implementation dates subject to business case outcome, future NZTA and Council funding allocations.
		Extension of Bristol Road to meet Brigham Creek Road and traffic signals at the intersection of these roads.	None – identified in the WSP ITA.	Not in current plans or funding programmes. Potential crossover with TFUG Brigham Creek Road upgrade.
4	Regional	As above, plus:		
		SH18 Squadron Drive interchange west facing ramps.	TFUG	Identified in 'preferred' TFUG network. Implementation dates subject to business case outcome, future NZTA and Council funding allocations.
		SH18 eastbound widening between Brigham Creek Road and Squadron Drive.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		SH18 westbound widening between Squadron Drive and Trig Road.	None – identified in the WSP ITA.	Not in current plans or funding programmes.
		Four laning of the new arterial to Kumeu (alternative to SH16).	TFUG	Identified in 'preferred' TFUG network. Implementation dates subject to business case outcome, future NZTA and Council funding allocations.
1b	Structure Plan Area	As per above.		

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