Whakatane Airport Master Plan 2022

DRAFT

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Astral aviation consultants

WHAKATĀNE District Council
Kia Whakatāne au i ahau

1 Executive Summary

Whakatane Airport ("the Airport") was developed in the 1960's on land over which Ngāti Awa, represented locally by Ngāi Taiwhakaea, historically had Tangata Whenua and which has been the subject of variance grievances put before the Crown since the 1860's. The Airport is a valued community asset, which contributes to residents' quality of life and is considered crucial to the economic well-being of Whakatane and the Eastern Bay of Plenty, as it provides an important transportation link to other parts of the country.

Extensive stakeholder consultation was undertaken in preparing this master plan leading to the aspiration for the Airport:

"To be a successful small regional airport that supports the aspirations of Mana Whenua and the wider Eastern Bay of Plenty community and is safe, efficient and "open for business."

Ngāi Taiwhakaea advised us that:

- They are generally supportive of the airport but when they look at it they can't see themselves in it
- The existing terminal building is a major cultural issue as is Mana Whenua's alienation from the airport land
- They feel a lack of recognition and benefit from the airport land

Other stakeholders expressed a range of views, but all were supportive of the Airport and emphasised the potential they believe exists. However it is apparent that having an effective master plan is only part of the task of ensuring the Airport's success. Organisational barriers to development must be removed, an effective business plan put into place and funding issues resolved. These issues are outside the scope of the master plan which is primarily to ensure future physical development of the Airport is consistent with its aspiration, allows growth in air services, is spatially appropriate and provides for new streams of revenue.

The intention of the master plan is to:

- Ensure, to the extent it can, the on-going viability of the Airport for scheduled air transport services.
- Facilitate the upgrade of scheduled aircraft type from the 18 seat Metroliner to the 34 seat Saab 340 and eventually modern turbo-prop aircraft such as the ATR72.
- Encourage the growth of air cargo services in support of local businesses through the use of larger passenger aircraft with more cargo capacity.
- Clearly identify that the existing terminal is not fit for purpose and will be an impediment to growing air services. While the study team appreciates the building's heritage protection, we believe a discussion on its future as the terminal needs to commence urgently and interim or staged replacement options such as a culturally themed extension are considered.

- Facilitate the operation of strong commercial aviation businesses at the airport such as the existing Aerohire and East Bay Aviation, and to encourage strong private operators such as the aeroclub and Kumeu Helicopters wanting to develop private hangars.
- Have future land development on the south side of the runway rather than the north side but retain the existing Designation on the north side to protect airport operations until/unless a more strategic use of the land becomes apparent.
- Provide land for activities that may generate income for the airport such as a solar farm and continuing agricultural use.
- Encourage involvement of the mana whenua, Ngāi Taiwhakaea, in decision making, especially in relation to the future of the terminal building and possible uses of "non-aeronautical" land to the north of the runway to joint benefit.

Pre-Covid passenger numbers into and out of the Airport were approximately 25,000 per year but have been as high as 35-40,000/yr in the last 10 years. While current levels are well below this however there is no apparent reason why past levels cannot be achieved with service improvements such as the introduction of the Saab 340 on Auckland services and the introduction of a Wellington service. Continued Community support will be essential.

Three projections of passenger growth are included in the master plan assuming recovery to 25,000pax/yr. is achieved by the end of FY2025 (Jun 25) and thereafter growing by 2% (low growth projection), 4% (medium growth) or 6% (high growth). Under the medium growth projection, 35,000pax/yr. would be reached within 10yrs.

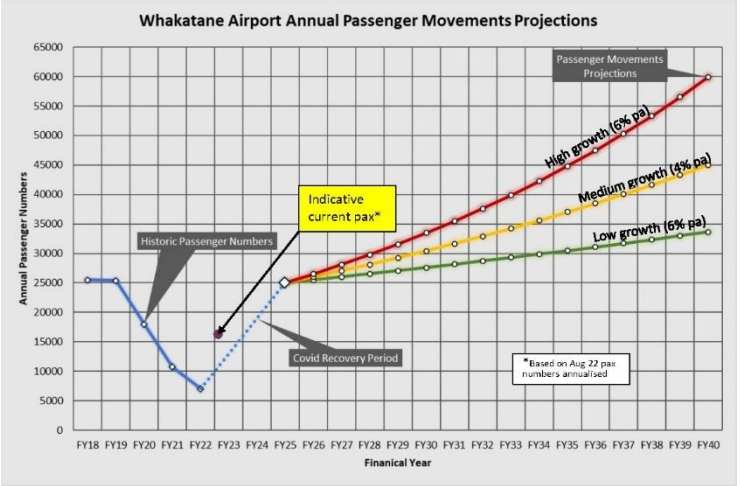

Figure 1-1 shows the proposed airside developments and Figure 1-2 the landside developments

Table 1-1 provides a staged implementation plan and timetable for the major changes proposed in the master plan. The study team is mindful of the costs in infrastructure development and for that reason we encourage the Airport to urgently update its 10-year business plan, in particular to include business models for development of private hangar facilities, a solar farm and start the consultation necessary to encourage new aviation businesses to establish at the Airport.

The master plan also includes a number of additional recommendations. These are listed in Table 1-2 for reference.

Figure 1-1: Proposed airside developments

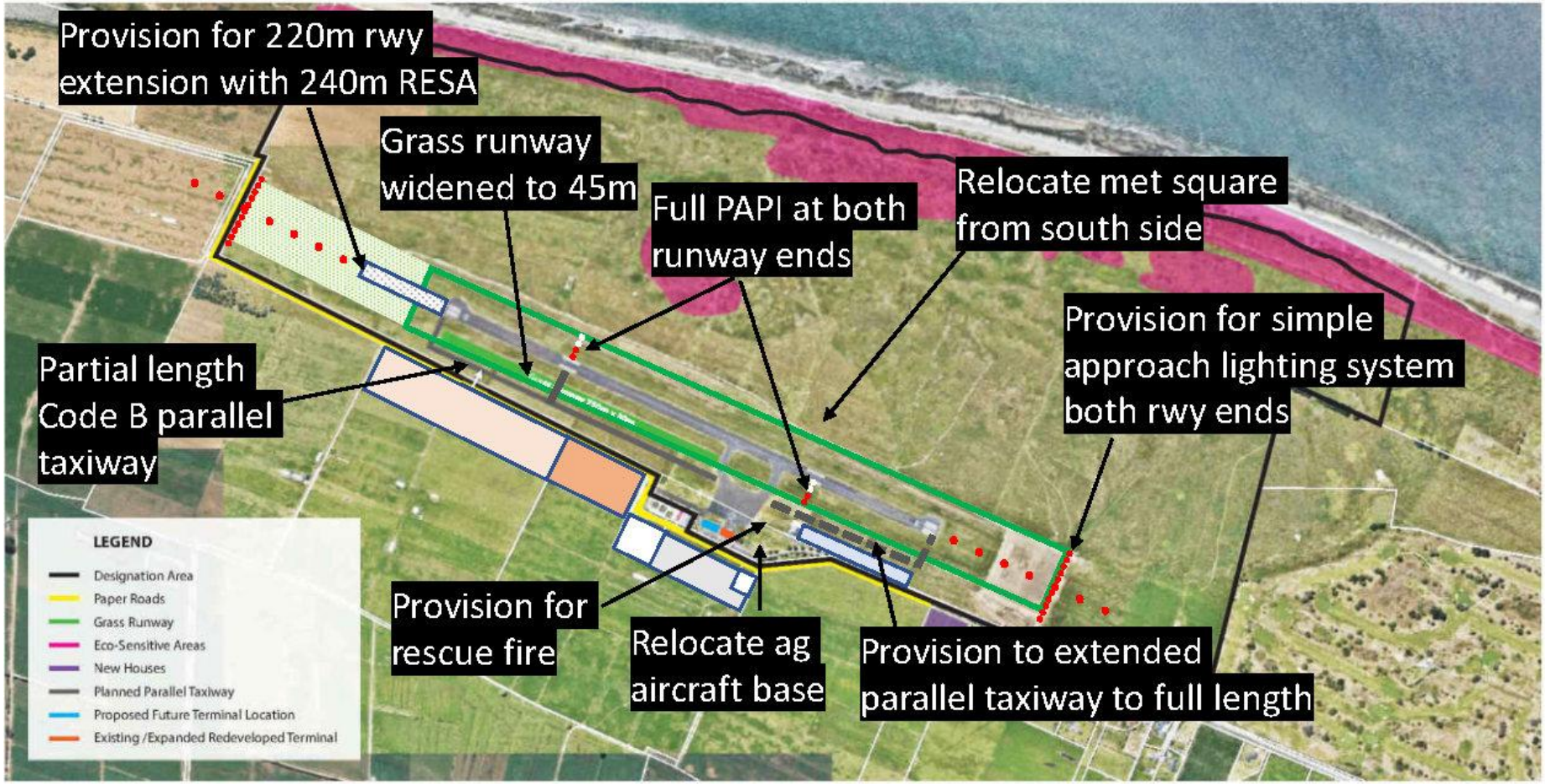

Figure 1-2: Proposed landside developments

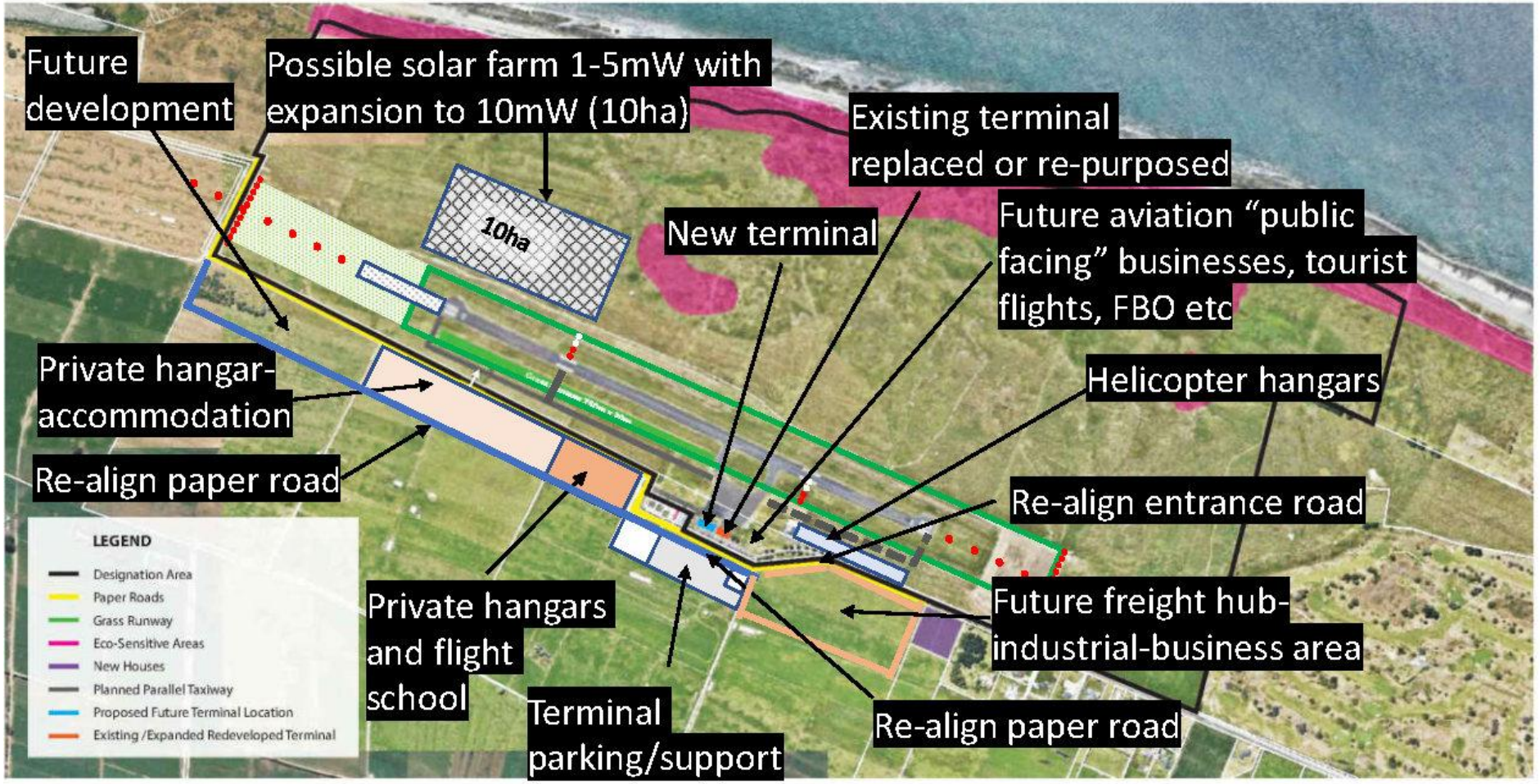

Table 1-1: Implementation Plan and Timeframes					Likelihood / Priority (Timeframe – Years)		
		Description	Ref	Purpose	High [0 – 2]	Med [2 – 5]	Low [5 – 10]
Aeronautical Operational	A	Upgrade of current runway APAPI	7.8	Continuation of runway lighting upgrade project by replacing the current APAPI with full PAPI.	High		
	B	Terminal apron manoeuvring lines	5.3	Remark existing apron lead in and out lines required to provided Saab 340 and ATR wing tip clearances.	High		
	C	Parallel taxiway	7.2.3	Implementation of a Code B taxiway to increase enable higher utilisation of runways and reduce risk of runway incursion. Physical works can be progressively staged starting west of the apron.		Med	
	D	Review of refuelling points	7.3	Review life of in-ground tanks with AirBP and explore replacement options. Relieve refuelling congestion on west side of apron by "dual siding" existing western dispenser or move that refuelling point further west away from the apron.		Med	
	E	Relocate AWS	7.9	Relocate the current AWS facility to north side of runway to free up Airport entrance land for higher value use.		Med	
	F	Runway extension to the west	7.2.1	220m extension to existing runway length to enable maximum operational performance for ATR			Low
Aeronautical Development	G	Development of 2.3ha site	9.3.1	Commence business planning for private fixed-wing hangars and a possible flight training facility	High		
	H	Helicopter hangar developments	9.3.2	Make area east of Kahu hangar available to further helicopter hangar development.	High		
Terminal / Utilities	I	Terminal extension/replacement.	8.0	Commence planning to extend or replace the terminal to provide adequate space to IATA standard service levels for Saab340 or other larger aircraft use.	High		
	J	Freight handling and storage area	8.5.3	In conjunction with (I) above include specific provision for air freight acceptance, storage and pickup, including chilled storage.	High		
	K	Upgrade of terminal/airport utilities	8.12	Establish a high-speed internet connection gateway, seek improved resilience of electrical supply, plan for additional potable water storage and wastewater disposal.		Med	
Planning	L	Review existing air noise management	5.6	Update 2006 airport noise management provisions in the ODP to align with NZS 6805:1992 Airport Noise Management and Land Use Planning Standards to reduce risk of reverse sensitivity.		Med	
	M	Extend existing airport designation	5.7	Extend current airport designation (D44) to include new the 2.3ha site as a minor change.	High		
Landside Development	N	Solar Farm	9.1	Plan for up to 10MW (10ha) solar farm site on the northern side of the airport for the purposes of solar farm development to benefit the Airport. Possibly make further north-side land available to others to lease for solar farm development.		Med	
	O	Expand airport to the south	9.2	Acquire on an opportunity basis further land to the south of the runway and terminal for future aviation, hangar-accommodation, freight hub or business park development.			Low
	P	Non-aviation uses to the north	9.4	Seek opportunities for the Airport to benefit from surplus land in D44 north of the runway that has little or no aviation use.		Med	

Table 1-2: List of additional recommendations

No	MP Ref	Recommendation
1	5.10	Design aircraft is Saab340 with occasional use by ATR72 and C130
2	6.4	Consultation and business planning to support post-Covid recovery
3	7.2.2	Recommendation against developing a crossing runway
4	7.6	Grass runway widened to 45m
5	7.7	No buildings closer than 128m to runway centreline with building height below the 1:7 transitional OLS
6	7.9	Lighting improvements, full PAPI, REIL and 420m long SALS
7	7.10	Discuss with Airways on their requirement for the old HF (Area B in Figure 7-8) with a view to buying
8	8.8	Adopt a water supply conservation policy
9	8.8	Harvest rainwater for non-potable use
10	8.11	Adopt a storm water management plan
11	8.12	Discuss Airport high speed internet connection options with Chorus, Vodafone or Spark
12	9.2.1	Eventual purchase of Airways NDB/DME site (Area A in Figure 7-8)
13	9.4	Retain aircraft operation designation (D44) over non-aeronautical land on north side of runway

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List of acronyms

Acronym	Meaning
ACN	Aircraft classification number
AFIS	Aerodrome flight information service
APAPI	Abbreviated precision approach path indicator
ASDA	Accelerate-stop distance available
ATS	Air traffic service
BOPRC	Bay of Plenty Regional Council
CAA	Civil Aviation Authority of New Zealand
CAR	Civil Aviation Rule
CCO	Council-Controlled Organisation
EBOP	Eastern Bay of Plenty
FW	Fixed wing aircraft
GA	General aviation
HAIL	Hazardous Activities and Industries List
ILS	Instrument landing system
JV	Joint venture
LDA	Landing distance available
LTP	[Whakatane District Council] Long Term Plan
MCTOW	Maximum certificated take-off weight
MDA	Marshall Day Acoustics Consultants

Acronym	Meaning
NAC	National Airways Corporation
NDB	Non-directional (radio) beacon
NES-CS	National Environment Standards for Assessing and Managing Contaminants in Soil to Protect Human Health
NZCPS	New Zealand Coastal Policy Statement
ODP	Whakatane District Council Operative District Plan (2017) as at 17 Dec 2021.
OLS	Obstacle limitation surface
PAPI	Precision approach path indicator
Pax	Passenger
PCN	Pavement classification number
RC	Resource consent
RESA	Runway end safety area
RNRP	(Bay of Plenty) Regional Natural Resources Plan
SALS	Simple approach lighting system
SOI	[Whakatane Airport annual] Statement of Intent
TODA	Take-off distance available
TORA	Take-off run available
UNICOM	Universal (air-ground) communications
WDC	Whakatane District Council

2 Structure of this document

This scope and content of this Master Plan is largely based on the New Zealand Airports Association Airport Master Plan Good Practice Guide.[1]

Section 3 provides an overview of the airport, historical background, facilities and operations and its importance to the community and wider Eastern Bay of Plenty (EBOP) area. Section 4 addresses the requirements of the master plan, how it related to other airport related Whakatane District Council (WDC) documents, financial imperatives, SWOT analysis, aspirations of the airport, mana whenua, kaitiakitanga and sustainability.

Section 5 lays out the Airport's current situation in some detail including environmental issues, Operative District Plan (ODP) protection, aircraft movements and passenger numbers and the "design aircraft" for the facility. Section 6 looks to the Airport's future situation, the demand for air services, tourism, air freight and potential users. Existing aeronautical infrastructure and assessed in Section 7 aside from the terminal which, being a major component of the master plan, is discussed separately in Section 8.

Future commercial developments at the Airport as identified and reviewed in Section 9. The threads are pulled together in Section 10 where the recommended staged development implementation plan is presented.

3 Overview of the Airport

3.1 Historical background

Historically the Tangata Whenua over land on which the Airport is located was held by Ngati Awa. The land was acquired by the Crown in January 1866 as part of the confiscation of a much larger area due to alleged involvement against the Crown by Ngati Awa in the early 1860's. Various grievances were bought to the Crown over the confiscation which culminated in a Deed of Settlement between the Crown and Ngati Awa in 2002. The Deed provides for the Crown to gift the land under the Whakatane Airport to Ngati Awa if it ever ceases to be reserved as an airport.[2]

[1] New Zealand Airports Association, 'Airport Master Planning Good Practice Guide', Feb 2017.
[2] Office of Treat Settlements, 'Deed of Settlement Between the Crown and Ngati Awa', 27 March 2003.

Planning for an airport on the site was initiated by the Whakatāne County and Borough Councils in 1944 but it was not until 1960 that it was officially opened on land vested in trust to the Council by the Crown for such time as it is used for aerodrome and ancillary aviation purposes.[3]

A sealed runway was completed in 1962 to provide for the larger DC3 aircraft operated by National Airways Corporation (NAC). The Whakatāne Airport building, designed by architect Roger Walker, was completed in 1974 and has since received the enduring architecture award from the NZ Institute of Architects. The building is scheduled as a built heritage feature in the Operative District Plan (ODP) and a Category 1 listed building on the New Zealand Heritage List- Rarangi Korero. [4]

3.2 2008 Master Plan

In 2008 the WDC produced a strategic master plan for Whakatane Airport. This plan considered various options aimed at maximising the growth potential of the airport. The master plan detailed an ambitious proposal to extend the existing runway to allow for all domestic aircraft operations and to enable Code 4C jet aircraft (Boeing 737-800) to operate international flights to the east coast of Australia.

The proposal also involved the construction of a new airport terminal and business park on the northern side of the runway and hangar complexes for light aircraft and helicopters.

The plan was an aspirational document for the purpose of identifying the maximum potential of the site, acknowledging that any further development of the existing facilities would be many years away and subject to market demand and a strong business case in addition to meeting regulatory requirements, such as resource consents.

The WDC now considers the 2008 master plan to be unrealistic and unable to be funded given that, with the exception of Dunedin, Invercargill and Queenstown, domestic and international jet services no longer operate any regional airports in New Zealand.

3.3 Facilities and operations

The airport, located near the coast 5km west of Whakatane township, is the primary airport serving Whakatane town and district and the wider EBOP area. It is a valued community asset which contributes to residents' quality of life, is considered crucial to the economic well-being of the area and is an essential part of the regional transport infrastructure.

[3] The Whakatane Airport Master Plan 2008 states at page 63 *"In October 1972 a Gazette Notice vested the land in the Airport Authority in its trust for aerodrome purposes pursuant to the Reserves and Domains Act 1953. In November 1999 the land was leased to the Whakatane District Council for a term of 99 years terminating on 2nd November 2098."* As November 2098 is over 50 years away it has no material effect on this Master Plan consequently whether or not the Airport land has a finite lease term has not been investigated further.

[4] https://www.heritage.org.nz/the-list/details/9740

For Civil Aviation Authority (CAA) regulatory purposes the Airport is operated by the WDC with day-to-day operational functions delegated to JNP Aviation.

The Airport has a single 1280m long sealed main runway and a parallel 750m grass runway. It certificated by the CAA under Civil Aviation Rule (CAR) Part 139 for air transport operations by aircraft with more than 30 passenger seats, is equipped for IFR day/night operations and has no curfew on flight hours. There is no air traffic control service or rescue fire service on the Airport. Infrastructure includes the heritage protected terminal building, various privately owned hangars, a sealed taxiway and apron, runway and taxiway lighting and a non-directional radio navigation beacon (NDB) and distance measuring equipment (DME) owned by Airways Corporation.

Twice-daily scheduled passenger services between Auckland and Whakatane are operated by Air Chatham's 19-seat Fairchild Metroliner aircraft. Aerohire, operating as Whakatane Flying School provides flight training and the Whakatane Aero Club provides recreational flying and flight training for its members. East Bay Aviation offers scenic flights and Kahu NZ provides local commercial helicopter services. In additional, a number of privately owned small aircraft are hangared at the Airport.

Pre-Covid, around 90% of movements were by fixed wing (FW) aircraft of which 84% are below 5,700kg maximum certificated take-off weight (MCTOW).[5] The remaining 10% of movements were by helicopters.

Annual passenger movements are currently around 7000 but have been as high as 25,000 pre-covid and 35,000 in the early 2000's.

Airport land and facilities are leased out where these are either surplus to the Airport's operational requirements or to allow for activities that are compatible with the operation of the airport. This includes land for hangars, parts of the terminal building for commercial operators and areas of airport land for grazing.

3.4 Ownership and management

Whakatāne Airport is a Council-Controlled Organisation (CCO) under the Local Government Act 2002. It was formed as a CCO in 2006 and is a joint venture partnership under the Airport Authorities Act (1966) between the WDC and the Ministry of Transport Te Manatū Waka (MOT), with each party owning a 50 percent share.

[5] Aircraft 5,700kg MCTOW or less are generally regarded as small aircraft. A typical light aircraft (4-seat Cessna 172) has MCTOW of approximately 1200kg. The 19-seat Metroliner has MCTOW of approximately 7,250kg.

The Whakatāne Airport Board (the Board), appointed under the Airport Authorities Act, provides governance oversight of the Whakatāne Airport CCO and of the implementation of the Whakatāne Airport Business Plan. The Board provides advice to the Council which is ultimately responsible for decisions relating to the airport.[6]

Day to day operation and maintenance of the airport including the delivery of projects, services and initiatives is managed by the Council. Operational costs are predominantly funded through fees (80%) and rental income reflecting the private benefit to those residents, businesses and visitors using the Airport. The use of general rates (20%) recognises that there is some level of public benefit to the District as a whole from operating a sub-regional airport.

The Council has an arrangement with the MOT that each party is responsible for half of the operational costs of the Airport. This allows for the continued operation at its current level. Any capital costs required for an improvement of the level of service beyond what is currently being provided needs to be negotiated between the shareholders.

3.5 Community and regional importance

There are three commercial airports in the Bay of Plenty region, located at Tauranga, Rotorua and Whakatane, all either directly or indirectly owned by the respective district/city councils whose regions they are located in. All three have scheduled services to Auckland, with Tauranga and Rotorua also having services to Wellington and Christchurch. Air New Zealand operates services at Tauranga and Rotorua, with Sunair Aviation also operating from Tauranga Airport with flights to Gisborne, Whitianga, Great Barrier Island and Whangarei. Air Chathams provides services to Auckland from Whakatāne.

There are also several smaller aerodromes, including Galatea Aerodrome within the Whakatane District.

Both Tauranga and Rotorua airports are approximately a one-hour drive from Whakatane. Further afield, Gisborne Airport, approximately 2hr45 by road from Whakatane, has Air New Zealand services to Auckland and Wellington.

In a regional context, Whakatane Airport is the closest airport providing scheduled commercial flights for residents in Opotiki and the eastern Bay of Plenty west of Hicks Bay, which are a 2-3 hour drive from other regional airports in Tauranga, Rotorua or Gisborne.[7] This provides a connection for the EBOP with other regional centres throughout the country via Auckland, and a direct air link to Auckland and onwards to international destinations.

[6] WDC, 'Whakatane Airport Business Plan 2013-2023', adopted 6 March 2013, page 7

[7] Via East Cape coastal road, Hicks Bay is approximately mid-way between Whakatane and Gisborne airports

4 Requirements of the Master Plan

4.1 Objectives and outcomes

The objectives of an airport master plan are to: [8]

a) Maintain the ability for aircraft to operate safely and unrestricted
b) Facilitate the ability for the airport to grow and expand in response to demand
c) Promote the role of the airport and its significance as a community asset
d) Provide for the airport to increase revenue, including through non-aviation development
e) Safeguard the airport's long-term plans
f) Ensure compliance with relevant regulations
g) Manage environmental and heritage constraints.

The broad outcomes sought in this master plan process are:

a) To provide a spatial plan to guide the development of the Airport, in particular ensuring land essential for protecting safe operation of the airport is identified.
b) To provide recommendations on key infrastructure at the Airport including; the terminal building, the runway, taxiway and apron, aeronautical lighting and navigation aids, provision of services (potable and wastewater, power and communications).
c) To spatially provide for activities that can generate income for the Airport.
d) To address cultural issues in relation to Airport design and facilities.
e) Bring to the attention of WDC any planning issues, e.g., airport noise control, land zoning and designation, which should be addressed to enable the Master Plan outcomes to be achieved.
f) Identify any potential issues that may affect future airport development, e.g., constraints on services such as power.

4.2 Other airport-related plans

Several existing plans and documents are intended to guide current and future activities at the airport:

[8] NZ Airports (2017)

4.2.1 The Whakatane Airport 2012-2022 business plan

The Airport's 2012-2022 10-year business plan contains a number of well thought through strategic objectives, action plans and prioritised tasks intended to return the airport to a sustainable footing by:

a) Providing a strategic framework for the Airport to ensure the sustainability of this key economic asset.
b) Identifying opportunities for growth and development and any risks to ensure the viability and operational effectiveness of the Airport.
c) Outlining a set of realistic actions that support the continued operation and protect the future capacity of the Airport.

While the Covid-19 pandemic and Dec 2019 Whakaari/White Island eruption disrupted the latter years of the plan, it appears the 10-year plan did not achieve a number of its objectives, perhaps due to a lack of resources to deliver its action plans. However, infrastructure improvements were made in 2018 when the runway lighting infrastructure including the perimeter runway, apron and hold point lights were upgraded, and in 2019 when 240m runway end safety areas (RESA) were developed at each end of the sealed runway.

4.2.2 The annual Statement of Intent

The Airport JV partners are required to prepare an annual Statement of Intent (SOI) for the Airport. The most recent available is for year 2019-20. The JV's primary objectives as listed in the SOI are to:

a) Provide high quality facilities and services commensurate with existing levels of aviation activity and in accordance with all the appropriate Acts, Regulations and Rules pertaining to airport and aviation operations in line with the size of Whakatāne Airport.
b) Operate the Airport in a sound and business-like manner.
c) Ensure that the Airport is administered efficiently, effectively and safely to the benefit of scheduled flight operations, commercial operators and recreational users.
d) Improve the long-term value and financial performance of the Airport.
e) Promote a safe, accessible, affordable and reliable air transport system for the EBOP region.

The SOI briefly describes the Airport's physical assets and sets out a budget for planned works over the 2019-2022 period including $384,000 for runway resealing and $150,000 for building terminal works. The SOI also includes the non-financial target of retaining the Airport's Part 139 certification.

4.2.3 The WDC Long-Term Plan

The WDC 2021-2031 Long Term Plan (LTP) sets out similar objectives for the airport as the SOI with the addition of "environmentally-sustainable" to objective (b) of the SOI. The LTP lists key capital projects during the 2021-2031 period to be; replacing windsock structures, undertaking runway lighting navigation upgrades and ensuring that this key piece of infrastructure is fit for the future. The windsock replacement and lighting upgrades are the only capital projects for the airport listed in the LTP up to 2031.

Key opportunities and challenges identified in the LTP are; supporting recovery of the Airport in light of COVID-19, ensuring compliance with safety improvement requirements and working with Ministry of Transport Te Manatū Waka on sustainable operation of the airport.

4.3 Financial imperatives

Airports are expensive assets to maintain and upgrade. Additionally for small airports revenue streams are very limiting, aircraft landing fees alone fall far short of the annual budgets required to maintain regulatory compliance and perform essential maintenance. The 10-year business plan, SOI and LTP all make the point that the Airport is incurring substantial losses and additional revenue streams are required.

Accordingly, it is imperative that the master plan is both affordable and facilitates the development of alternative revenue streams.

4.4 Preliminary stakeholder consultation

A meeting, hosted by WDC and facilitate by Astral Aviation Consultants, was held at the Airport on 18 May 22 to gauge stakeholder's preliminary views on the Airport and its future development. Approximately 35 stakeholders attended in person and by video link, representing a range of interests including:

- Mana Whenua - Ngāi Taiwhakaea
- Schedule operators - Air Chathams
- Current and potential airport users
- Existing and potential hangar owners and leaseholders
- WDC staff

Attendees were invited to share their views on the current aerodrome facilities and layout, potential future state and development opportunities or inhibitors.

Table 4-1 on the following page summarises views expressed at the meeting.

Table 4-1: Preliminary consultation

Stakeholder	Views expressed
Mana Whenua - Ngāi Taiwhakaea	• When Ngāi Taiwhakaea look at the airport they don't see themselves • What benefit do Ngāi Taiwhakaea gain from the Airport? • Grievance at hapu level remains over land loss in 1860's • Want to have historic and cultural elements of whānau represented in a modern and functional terminal building • Aircraft noise levels over the marae, especially during cultural events, tangi etc. • Lack of local amenities for their youth e.g., dragstrip, hot pools • There is a shortage of nearby accommodation and conference facilities
WDC	• Operational safety and efficiency are paramount • Financial losses must be stemmed • Establishment of non-aeronautical commercial precinct development would underpin the current aeronautical income stream • Difficult for Council to pay for infrastructure that is not utilized by everyone in the community
Scheduled air service provider	• The terminal building is unsuitable, poor passenger flow, cramped, open air baggage retrieval unattractive • See good growth opportunities enabling future upgrades of services and aircraft
Heli operator	• Lots of opportunities but the Airport has to be "open for business" • Demand exists for helicopter hangar space
Flight training	• Good opportunities for flight training; airport, airspace, climate are ideal
Recreational users	• Runway out-of-wind, grass into-wind runway needed • Need to ensure "uncontrolled aerodrome" status remains • See the recently acquired 2.3ha as very beneficial for airport development, in particular for hangars
Potential hangar leaseholders	• Limited hangar space • Lack of land to build hangars on • Demand exists for new hangars
Airport operator	• Terminal building not fit for purpose • Future carpark needs should make allowance electric car recharging points
Other views expressed	• WDC is to slow responding on development opportunities • Environmental impacts such as coastal erosion and increased sea levels are important factors • Large land area north the runway but limited road access and no utilities • Requirement for resilient supply of services (power, waste and potable water) and provision of high-speed internet • There is an opportunity for solar power development on land not required for aeronautical purposes. • WDC is slow to respond to users on required airport improvements • Preference of some travellers to use AirNZ services at Rotorua and Tauranga airports some travellers

4.5 SWOT analysis

The strengths, weaknesses, opportunities and threats listed in Table 4-2 were developed by meeting participants.

Table 4-2: SWOT analysis

Strengths	***Weaknesses***
• Favourable weather	• Insufficient hangars to accommodate demand
• Services the eastern bay	• Runways not parallel with prevailing winds causing crosswind problems
• Low traffic airspace allows for no ATC control	• Terminal not fit for purpose
• Not constrained, with large land availability	• Lack of accommodation options near airport
• Serves as a key lifeline utility asset	• Aircraft noise nuisance at the local marae
• Good geographic location	• No fibre internet connection
• Airport is CAA certified	• Slow decision-making
	• High infrastructure costs
Opportunities	***Threats***
• Large size of airport-owned land simplifies expansion	• Time frames & transparency
• Drag strip	• Coastline legislation
• Utilisation of solar technology as power source	• Coastal development
• Preserving airspace safety	• Increasing operating costs
• Space industry collaboration	• Termination of government joint venture
• Identifying and recognising the cultural significance	• Changing of government policies
• Hosting high-value aviation and non-aviation services	• Lack of external infrastructure development
• Hangar, home, conferencing, and accommodation facilities development	• Increase of traffic congestion
• Creating a cultural experience	• Failure to reach mutual agreement amongst different stakeholders
	• Limited revenue gathering abilities
	• Council planning decisions
	• Lack of support for Air Chathams from people

4.6 Aspirations for the Airport

The following aspirations come to the fore from the consultation and a review of relevant WDC reports:

- Whakatāne Airport is a valued community asset, which contributes to residents' quality of life and is considered crucial to the economic well-being of the District, as it provides an important transportation link to other parts of the country *(Statement of Intent 2019-20)*
- [The need to] promote a safe, accessible, affordable and reliable air transport system for the benefit of the economic and social development of the Eastern Bay of Plenty region *(Ten Year Business Plan 2013-2023)*
- "He manu hau ahau he pi ka rere" – I am a small bird poised for flight *(sentiment expressed by Ngāti Awa Whakatau-a-ki)*

Summarised this becomes a suggested statement of aspiration for the Airport, to be shared by its owners, users, the local and EBOP community and the wider stakeholder group:

> ***"To be a successful small regional airport that supports the aspirations of Mana Whenua and the wider Eastern Bay of Plenty community and is safe, efficient and "open for business."***

4.7 Partnering with Ngāi Taiwhakaea

The study team heard the concerns expressed by Ngāi Taiwhakaea (Table 4-1) and understand the depth of those concerns. However, the master plan alone is not able to provide a remedy. What we have sought to do is to avoid recommending development and activities in relation to the Airport that may further alienate Ngāi Taiwhakaea and to ensure space remains for positive initiatives involving the hapū that can be undertaken through the WDC's strategic priority of strengthening whānau, hapū and iwi partnerships, E whakawhanake ana i ngā rangapū ā-whānau, ā-hapū, ā-iwi anō hoki, by continuing to partner on key projects, programmes and services.[9]

[9] WDC, Long Term Plan 2021-31, pages 18-19

4.8 Embracing Kaitiakitanga and sustainability

The master plan includes consideration of kaitiakitanga and sustainability issues in relation to; land use, protection of endangered species and wetlands, waste-water disposal and aircraft noise planning. Issues such as aircraft flight paths are not determined or controlled by the master plan, they are operational issues for the Airport owner and operator to manage consistent with CAA Rules.

Detailed design of hangars and other buildings on the Airport is also not controlled by the master plan. However the master plan can control where buildings for various activities are located to ensure kaitiakitanga and sustainability are incorporated in decision making.

Financial sustainability is vital to the long-term viability of the Airport. The Master Plan recognises this by providing space for activities that will provide a source of revenue to the Airport and by keeping development plans modest and staged, such that they are affordable.

Consideration has been given to WDC's sustainability principles in preparing the master plan.[10]

4.9 Funding

The specific performance targets for the Airport are set annually through the Airport's SOI and reported on at the end of each financial year the Airport's Annual Report.

A key issue facing the Airport is that it operates with an annual deficit which over the last five years has ranged between $130,000 and $250,000. The volume of flights to and from Whakatāne and income derived from flights does not meet the combined costs of operation and capital. Unless alternative revenue streams for the Airport are developed it is anticipated that this situation will continue even if movements growth is significant. It is recognised, however, that it is important to maintain these services for the economic good of the District.

The COVID-19 pandemic has had a significant economic impact on the operation of the Airport with a substantial reduction in commercial flights and passenger numbers. Supporting the recovery of the airport is a key challenge.

Additional funding is likely to be required to develop new revenue streams.

Funding needs to be specifically addressed by way of an update to the Airports 2013-2023 Business Plan. Many of the initiatives identifies in the plan are still valid but need a means i.e., resources, to achieve them.

[10] WDC, Sustainability Strategy 2010-2013, page 17

5 The current situation

5.1 Regulatory requirements

Airports throughout New Zealand are subject to a number of regulatory rules and standards including; the Civil Aviation Act 1990 and associated CAA Rules (CAR) and Advisory Circulars (AC), the Airport Authorities Act, the Resource Management Act 1991 (RMA), Health and Safety at Work Act 2015 (HSWA), hazardous substances legislation and local authority requirements contained in District and Regional Plans.

A summary of these requirements is included in Appendix A. While all have relevance to the Airport, CAR 139, AC139-6, the ODP and the Bay of Plenty Regional Council (BOPRC) requirements have the most direct effect on the master plan. In particular:

a) CAR139 requires an aerodrome serving an aeroplane having a certified seating capacity of more than 30 passengers that is engaged in regular air transport operations for the carriage of passengers to be certificated, that is, issued by the Director of CAA with an Aerodrome Operator Certificate. A number of "physical characteristics" including minimum runway end safety areas (RESA) and runway strip dimensions, the protection of obstacle limitation surfaces (OLS) around runways, and aerodrome aeronautical lighting and marking are specified in CAR139.
b) AC139-6 prescribes other "physical characteristics" and standards the aerodrome should meet based on the size of aircraft that operate regularly.
c) The ODP which gives effect to the zoning of land use on and around the Airport and controls land use in accordance with rules in the Plan. It also gives effect to the "Aircraft Operations" designation most of the Airport land operates under. It also provides heritage protection to the terminal building.
d) BOPRC Plans relate to environmental standards, endangered species protection waste-water disposal, freshwater standards and earthworks.

The master plan takes into account these various requirements in its recommendations.

5.2 Current Airport facilities and activities.

The Airport is certificated as a Code 3C facility able to serve aircraft with more than 30 passenger seats day or night under instrument flight rules (IFR).[11]

[11] The code rating system for runways and aircraft is described in Appendix A. Code 3C aircraft include turbo-props up to ATR72 (68 seats) size but excluded jet passenger aircraft like the Airbus A320m and Boeing 737.

The Airport provides a range of services, both aeronautical and non-aeronautical. Aeronautical services are those that directly assist in the take-off and landing of aircraft. Non-aeronautical services are all other activities. The Airport also provides critical lifeline services for accommodating rescue aircraft in local and regional emergencies, as demonstrated during the 2020 Whakaari White Island eruption.

The primary commercial aircraft operator at the Airport is Air Chathams who currently operate scheduled flights to and from Auckland with three departures a day Monday to Friday and two departures a day during the weekend using Metroliner 19-seat aircraft. The airline also occasionally operates scenic flights in its historic DC3 aircraft.

The day-to-day operational requirements of the Airport are delivered by WDC though a service contract with JNP Aviation. It is important to note that this only delegates certain tasks to JNP, the responsibility for maintaining a safe facility for aircraft operations remains with WDC as the aerodrome operator.

JNP provides a range of services supporting the safe arrival and departure of aircraft and passengers. Primarily these relate to physical assets and services within the terminal, car park and environs of the Airport including maintaining landing and take-off surfaces, taxiways and aprons and aeronautical lighting and marking services in support of scheduled passenger aircraft and general aviation activities.

Aeronautical users and operators providing services or businesses include Aerohire (flight training), the Whakatane Aero Club (general flying /private operators), Superair (agricultural top dressing), Kahu helicopters (helicopter commercial operations), East Bay Aviation (scenic flights), Air BP (aviation fuel), AirFuels.com (aviation fuel), Airways Corporation of NZ (the NDB-DME radio navigational aids). To the west of the terminal, a number of private hangars accommodate general aviation (GA) aircraft.

Non- aeronautical land surplus to the Airport's present operational requirements is leased for grazing. Areas of the terminal building are leased for activities compatible with the operation of the terminal including a rental car office and café. Lease of airport land is also available to commercial operators and aviation businesses.

Approximately 80 car parking spaces, including six set aside for rental vehicles are provided free of charge in an area to the south of the terminal.

The NZ Metservice has a weather station located immediately to the east of the terminal building. A remote wind speed monitoring station used by the Rural Fire Service is located on the north side of the runway away from the operational area.

5.3 Existing airport layout

Main Runway (09-27)

As depicted in **Figure 5-1**, the aerodrome contains a 1280m long by 30.5m wide Code 3C paved runway. Turning bays at each end of the runway provide a width of approximately 45m. The runway is located within a 150m wide by 1400m long runway strip. CAA compliant 240m long x 150m wide long RESA are provided at each end of the runway, including 120m long clearway areas. The existing runway declared distances are depicted in **Figure 5-2.**

Taxiways & Terminal Apron

Leading south from the runway to the terminal apron area are two separate link taxiways, taxiway A 400m - west of threshold runway 27 and taxiway B 750m east of threshold 09. Both are 20m wide and 95m in length and have illuminated holding point signage at the holding points of the taxiways. The terminal apron area is approximately 9000m2 and is capable of accommodating three Saab 340 or two ATR72-600 aircraft parallel parked for "power-in, power-out" operations. Refer to Appendix D for details.

Pavement Surfaces

All paved surfaces consist of asphaltic open course top surface, with a published PCN of 17 (F/A/Y/T).[12] The largest passenger aircraft that may operate at the Airport will be the ATR72 with an ACN of 11.[13] This will be comfortably within the pavement load limitations of the existing pavement surfaces. However the military C130 Hercules is likely to exceed the runway PCN.

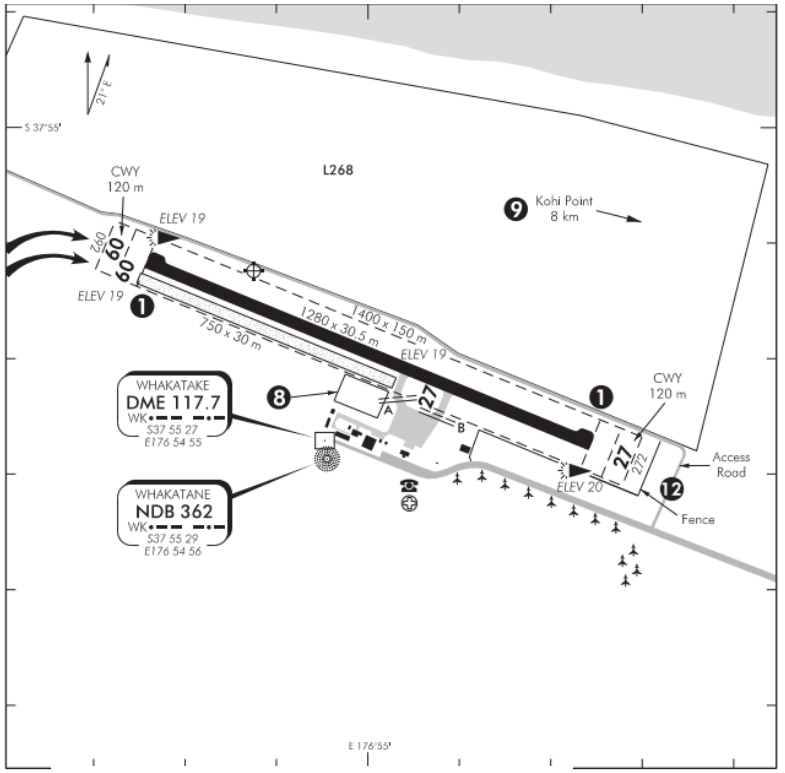


Figure 5-1: AIP aerodrome chart

[12] Pavement classification number (PCN) means a number expressing the bearing strength of a pavement for unrestricted operations.

[13] Aircraft Classification Number (ACN) - means a number expressing the relative effect (typically weight / wheel layout / tire pressure)) of an aircraft on a pavement for a specified standard subgrade category

The runway strength also is adequate for smaller business jets such as the Cessna Citation which at their maximum operating weights typically require a PCN of less than 12, but large models such as the Gulfstream 650 require PCN of up to 30.

Aircraft with ACN values not excessively higher than 17 may use the runway on an infrequent basis. Frequent use of the pavement by aircraft with substantially (more than 10%) higher pavement loading than those published for the Airport is likely to result in pavement surface or subgrade damage. Further advice on the existing runway pavement limitations should be sought from an appropriately qualified pavements engineer.

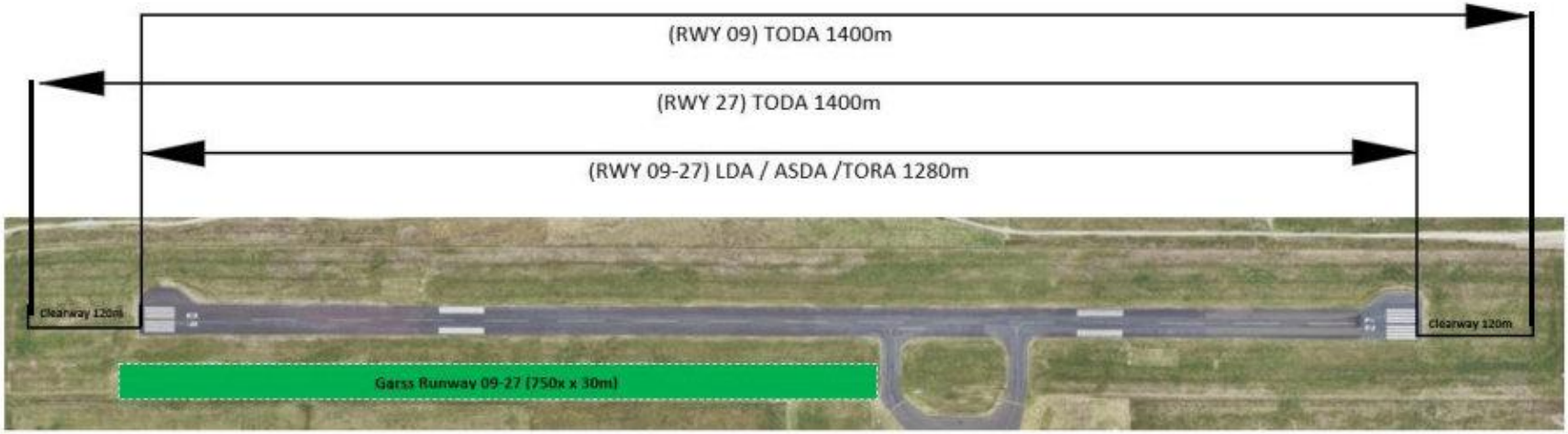


Figure 5-2: Existing runway 09-27 declared distances

Grass Runway (09-27)

The Code 1A 750m long by 30m wide grass runway runs parallel to the sealed runway and is contained within a 770m long strip. It is used by light aircraft and microlights. Due to the proximity of the grass and sealed runways, simultaneous aircraft operations on both are prohibited.[14] The grass runway width is the minimum permitted and it has a fence running down its south side very close to the strip edge, identified as a hazard.

5.4 Environmental and hazard controls

5.4.1 Coastal environment

The Airport lies entirely within the Coastal Environment Line (CEL) and the northern extremity is within the Coastal Protection Zone (CPZ), depicted on WDC planning map 102B.

The CEL defines the area within which BOPRC rules to protect the coastal environment apply. It is our understanding that the various ODB policies and rules in relation to the granting of resource consents in the Coast Rural and Coast Plains zones take into account the CEL.

The ODP at 3.1.14 defines the CPZ:

"The CPZ is a strip of land adjacent to the Coastal Marine Area along the coastline and part of the Whakatāne River, where development or use may have a direct effect on the visual amenity and/or ecology of the coast, harbour and river margins. The Zone may also provide a level of protection against coastal hazard events. This zone will predominantly be an open space zone, not generally intended for development."

There are no proposals in the master plan that intrude into the CPZ so it is not considered further.

5.4.2 Coastal erosion

Section 3.2.3 of the ODP outlines the Coastal Hazard Erosion Policy Area. The Coastal Erosion Risk zones (ERZ) for the Airport are depicted on ODP planning map 102A.

There are no proposals in the master plan that intrude into year 2060 ERZ so coastal erosion risk is not considered further.

5.4.3 Coastal hazard flood policy area

The coastal hazard flood policy area is defined in the ODP section 3.2.4. Planning map 102A shows the location of the extreme inundation risk zone also defined by the 2060 ERZ line and well away from any developments proposed in the master plan.

[14] AIPNZ – Note 5: NZWK AD 2 – 51.1

5.4.4 Hazardous activities

The airport is recorded within the BOPRC as a Hazardous Activities and Industries List (HAIL) site, due to the fuel storage, workshops, washdown areas, or historical fire practice areas associated with the aerodrome. See Figure 5-3.

This covers the entire airport site within designation 44 but notably excludes the existing hangar area. It also excludes the 2.3ha area recently acquired. Undertaking earthworks or disturbance activities in this location will requires consent under the National Environment Standards for Assessing and Managing Contaminants in Soil to Protect Human (NES-CS), and the BOP Regional Natural Resources Plan (RNRP).

The RNRP defines Contaminated Land as – a location at which hazardous substances in soil, groundwater or surface water occur at concentrations above the background levels of those substances in the surrounding environment and where assessment indicates that those substances pose, or are likely to pose, an immediate or long-term hazard to human health or the environment.

To undertake earthworks or disturbance activities in the locations noted on the plan in Figure 3, either the BOPRC or the WDC, in accordance with the NES-CS, will require prior evidence that the level of contamination at the site of works does not exceed background concentrations and does not pose a risk to human health.

Figure 5-3: HAIL area

5.5 Aerodrome protection in the ODP

The airport site is designated under the ODP for the operation of an airport (D44). The requiring authority is the WDC.

A designation is a form of 'area zoning' over a site in a district plan. The designation authorises the requiring authority's work and activity on the site without the need for land use consent from the relevant territorial authority (i.e., s9(3) of the RMA does not apply).

The designation applies to the entire 224ha airport site (Lot 1 DPS 75887 and Lot 1 DPS 75684) excluding the hangars to the west of the terminal which are held on separate titles on land zoned light industrial. There is one specific condition of the designation contained in Appendix 22.2 of the ODP:

Designation D44: Whakatāne District Council: 'Operation of Airport'

This designation is subject to the following conditions:

1. *No works associated or consistent with the designation purpose, including erection of buildings or structures, modification to the land, earthworks, removal or disturbance of indigenous vegetation (except weed control) shall be undertaken on that part of the designated land identified as being within Significant Indigenous Biodiversity Site BS71A unless, pursuant to rule 15.2.4.1, a certificate of compliance has been issued by the Council confirming that the proposed works will not involve the clearance of any significant indigenous vegetation.*

The Airport site north of Aerodrome Rd has an underlying zoning of Rural Coastal, except for the row of hangars to the west of the main terminal which is zoned Light Industrial (see Figure 5-5). The newly acquired 2.3ha site and the sites owned by Airways Corporation, which are south of Aerodrome Rd are zoned rural plains.

The airport site is subject to the following features and overlays identified on the Planning Maps

a) The terminal building is scheduled as a built heritage feature in the ODP (BH 11).
b) An area of land to the east of the terminal is designated for meteorological purposes (D1).
c) Parts of the land to the north of the runway are identified as a significant indigenous biological diversity site (Otamarakau-Matata-Whakatane Dunes) due to the presence of Thornton kanuka.

The duneland area located within the northern part of the airport property includes several areas which have been identified as having significant indigenous biodiversity values and are scheduled as significant sites in both the Bay of Plenty Regional Coastal Environment Plan and the ODP

Figures 5-4 and 5-5 reproduce ODP maps 102A and 102B respectively showing the biodiversity areas (Fig. 5-4) and the aerodrome designation and underlying zoning (Fig. 5-5).

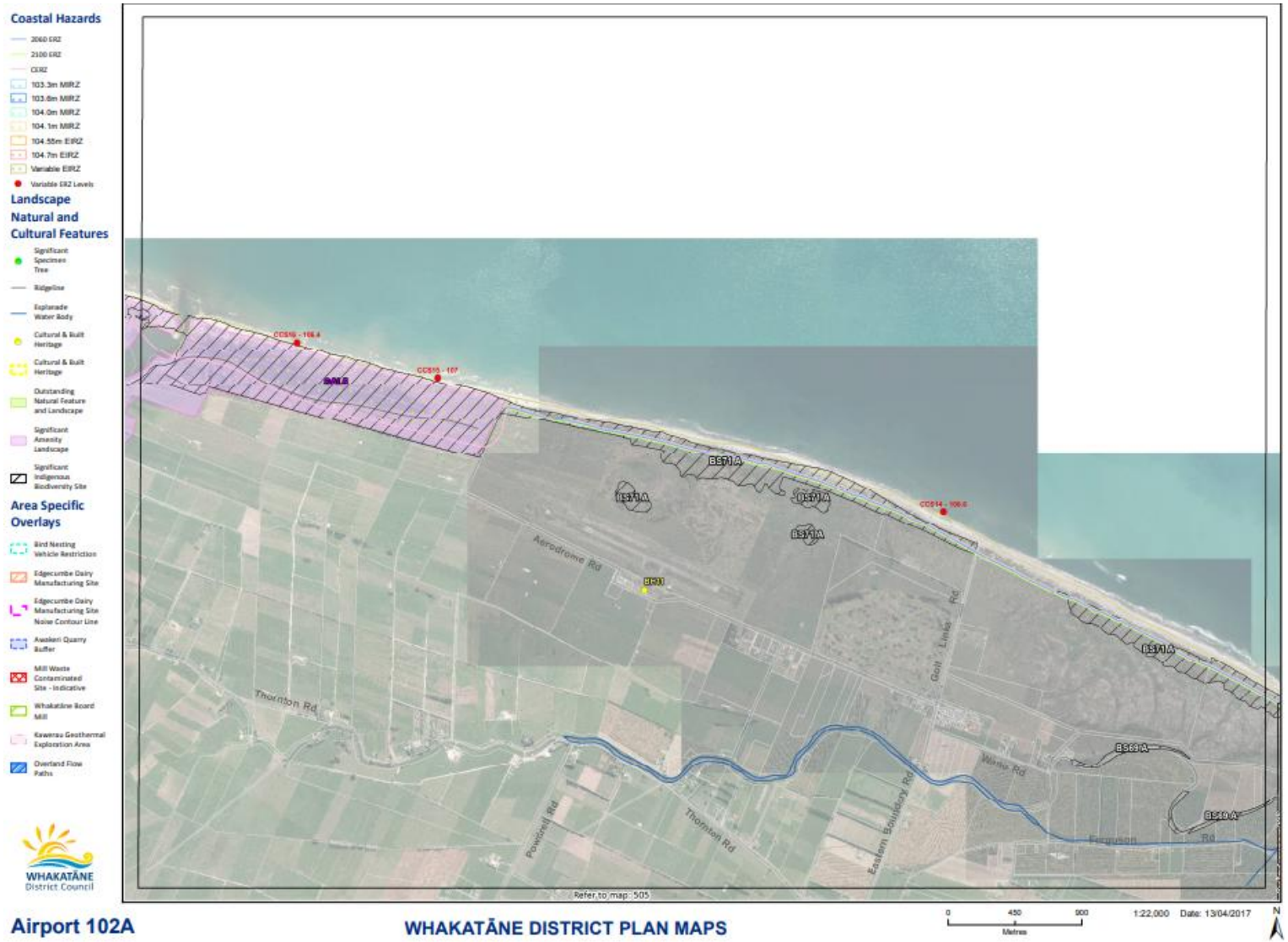


Figure 5-4: Biodiversity areas

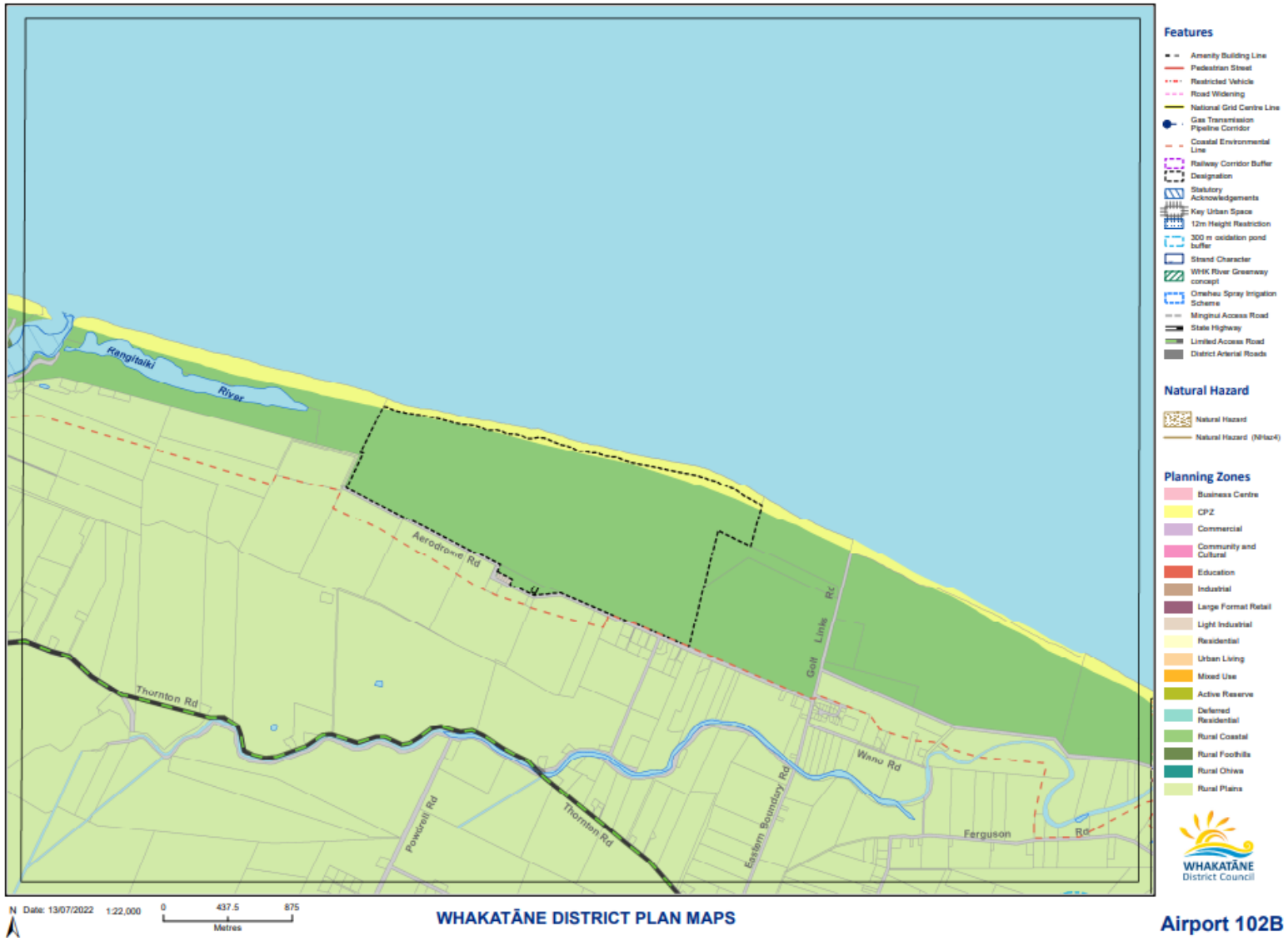


Figure 5-5 Aerodrome Designation Map

5.6 Aircraft noise

Figure 5-6 reproduces the "airport buffer noise contours" around the Airport from ODP section 22.9. Section 11.2.9 of the ODP contains airport noise management rules for the Airport which fall short of the standards contained in NZS6805:1992 *Airport Noise Management and Land Use Planning* because they only prescribe acoustic insulations standards for dwellings within 500m of the Airport boundary. NZS6805 requires an airnoise boundary and outer control boundaries to be established with controls on activities sensitive to aircraft noise within these boundaries. These boundaries, usually based on day-night sound exposure levels of 65Ldn and 55Ldn respectively, are an essential element of effective airport noise control as they prevent reverse sensitivity constraints on the airport.

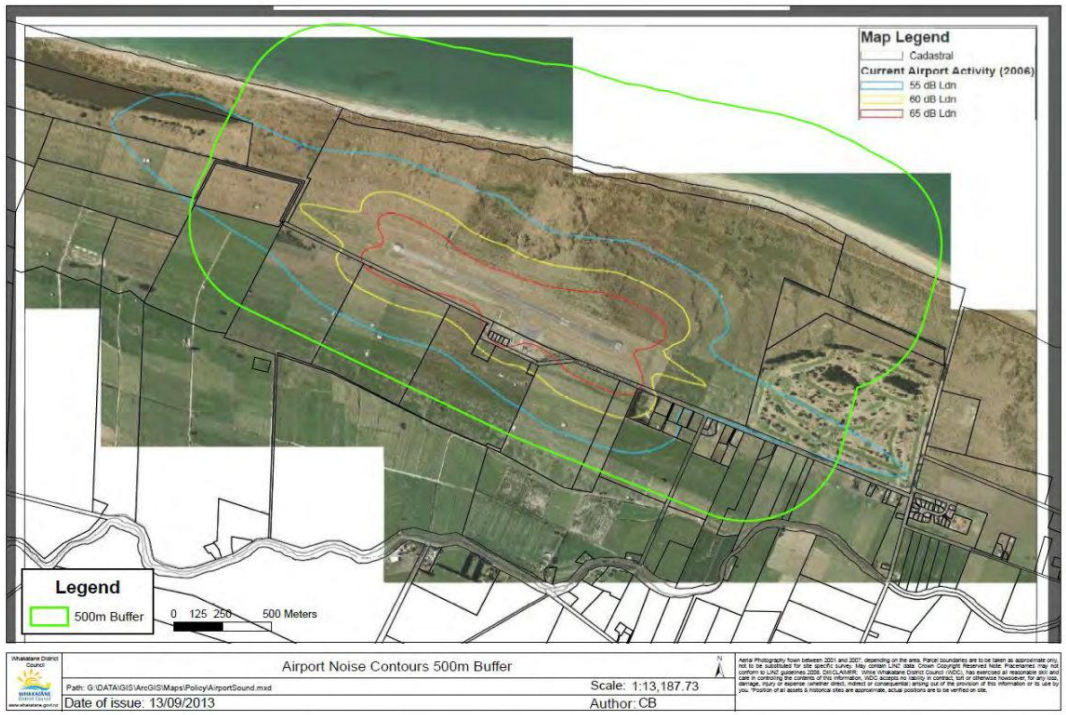


Figure 5-6: ODP aircraft noise contours

We understand that the noise contours in Figure 5-6 are a "back estimate" of 2006 airport noise levels contained in a 2011 report prepared by Marshall Day Acoustics (MDA).[15] Section 7 and Figure 4 of the report contained land use planning recommendations and proposed noise control boundaries for the airport which have not been adopted into the ODP.

The "average busy day" activity level assumed in the noise control boundaries proposed by MDA in 2011 totalled 74.9 daily movements comprising; 7.7 x Beech 1900 (19 seats), 6.6 of the twin engine Beech Baron, 41.1 single engine light aircraft and 19.5 helicopters.

In comparison the current busy day average movement levels, based on the movement numbers in section 5.10 are estimated to total 43.3 daily movements comprising; 4.5 x Metroliners (19 seats), 2.0 of the twin engine Beech King Air or equivalents, 32.3 single engine light aircraft and 4.5 helicopters.[16] These levels are substantially below those estimated by MDA for the ODP noise contours, consequently we are confident the ODP contours provide some margin for movements growth.

However, we consider it essential that the ODP airport noise management rules are reviewed to ensure the Airport is protection against reverse sensitivity issues in relation to aircraft noise in the future.

5.7 Land designation and planning considerations for aerodrome expansion

A 2.3ha block of land west of the existing hangars has already been acquired for the Airport and, as described later in this master plan, additional land holdings may need to be acquired to enable further development opportunities or to meet the operational needs of the Airport. Designation D44 enables uses that are within the "operation of aircraft" scope of the designation to proceed without the need for resource consent, however the exact scope of "operation of aircraft" is not defined in the designation.

Expansion of D44 to include the new 2.3ha area has been recommended internally by WDC for proposed use of the site for aircraft hangars.[17] Consequently consideration should be given to further expansion of designation 44 to include any land acquisition for the Airport provided the proposed use is reasonably related to "operation of aircraft".

Designation D44 allows full use of the existing Airport land for aviation purposes, with limitations around biodiverse areas and possible wetlands mentioned earlier in this report. Issues may arise where the use of the land is not demonstrably in support of aviation activities. Advice would need

[15] Marshall Day Acoustics, Whakatane Airport Noise Boundaries Assessment of Noise Effects, 5 April 2011, Figure 2 page 33.
[16] FW movements sourced from FY21 AIMS data and heli movements from 1 Mar 19 to 29 Feb 20 AIMS data with allowance for busy day activity. Estimates calculated by Astral Ltd.
[17] Memo Astrid Hutchinson WDC to Martin Taylor WDC, 20 Jun 22. This memo discusses the relative merits of re-zoning land by way of a Plan Change or extending the designation. It also includes advice on the steps required for each option.

to be sought from the Regulatory/Consents area of Council on a case-by-case basis, however our view is that activities which contribute to the financial sustainability of the Airport i.e., its ability to continue as an adequately funded certificated airport, could reasonably fit within the designation scope. That said we are aware of some New Zealand Territorial Authority's reluctance to use their designation powers for commercial activities undertaken at their airports, preferring to leave the activity promotor to apply for a resource consent. This may not be viable if the underlying zoning is not sufficiently permissive.

The ODP gives strong support to renewable energy production such as solar or biomass and small rural schemes which may assist where potential uses are discretionary in the underlying zoning. What may be less clear cut is accommodation, unless for example in support of a flying school and non-aviation industrial uses (e.g., a business park or transport hub).

In the case of acquired land requiring an amendment, or alteration in designation, we recommend further guidance is obtained from the consents section of the WDC.

5.8 Aircraft Movement Numbers

Aircraft movements data prior to Mar 2019 are unreliable as there was no means of recording them. From Mar 2019 the AIMS movements tracking system has recorded all radio-equipped aircraft movements, accounting for the great majority of movements, based on pilots' take-off and landing radio calls. Fortunately this has provided a complete year of data prior to the Covid 19 lock down in late March 20. Unsurprisingly movements since Mar 2020 have shown a sharp downturn as shown the table below.

Table 5-1: Aircraft movements Mar 2019 – Feb 2023

Period	Fixed wing movements	Rotorcraft movements
Mar 2019-Feb 2020	7638	1098
FY20 (Jul 19-Jun 20)	8683	646
FY21 (Jul 20- Jun 21)	9694	523
FY22 (Jul 21- Jun 22)	7122	568

Over 90% of movements at the Airport are FW wing aircraft, helicopters make up a very small proportion of movements.

Figure 5-7 shows the breakdown of the FW movements by type of operation. Commercial operators based at the Airport or operating scheduled flights make up about 65% of FW movements, the remainder being local recreational pilots or itinerant operators.[18] The large and increasing proportion of training flights is noteworthy.

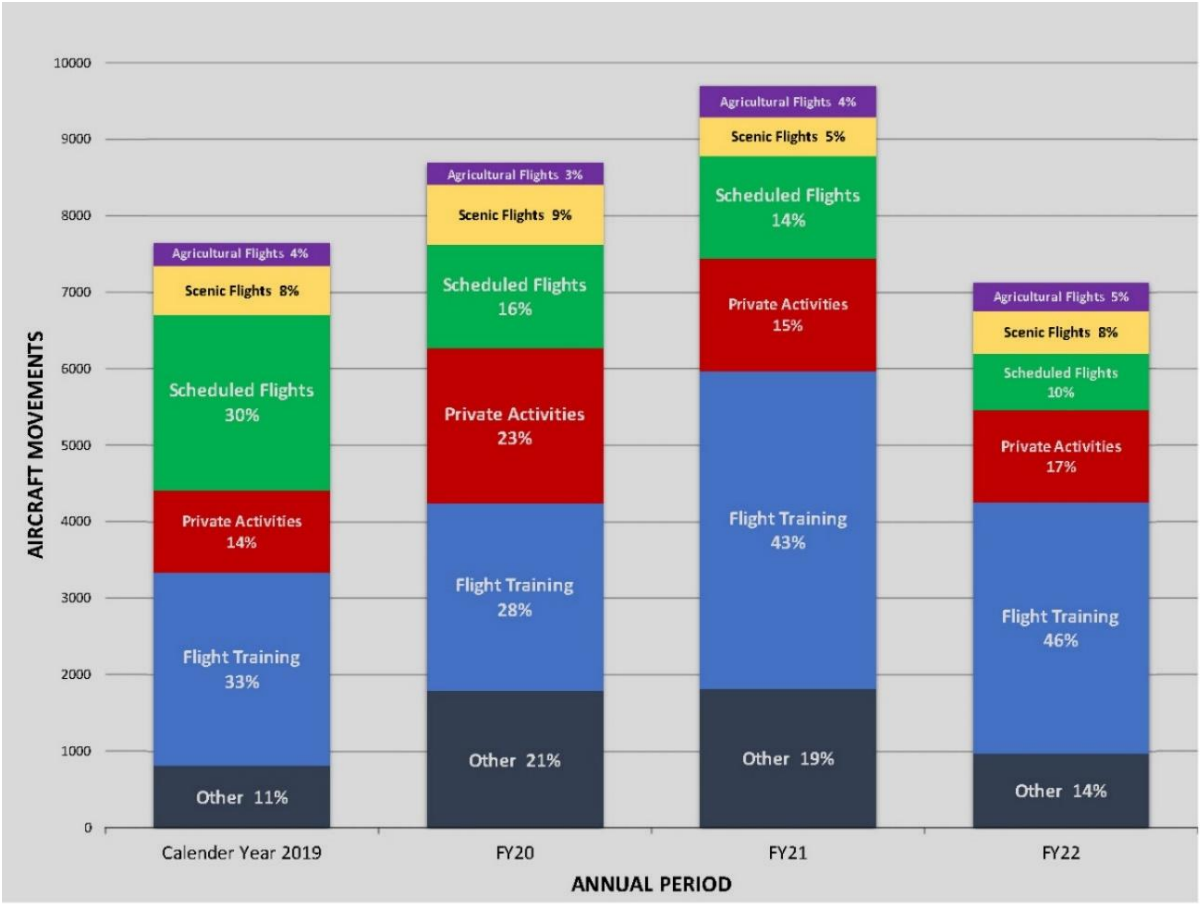


Figure 5-7: Breakdown of fixed wing movements

[18] "Itinerant" meaning an aircraft operator not based at Whakatane Airport

Over 95% of the helicopter movements are itinerant. Based on aircraft registrations, locally based Kahu Helicopters appears to have very few movements at the Airport. However a number of the itinerants are regular users; of the 80 itinerant users recorded, the top 10 in terms of frequency of use accounting for 65% of movements with the most frequent user, a private operator, accounting for 20%.[19]

5.9 Passenger Movement Numbers

Figure 5-8 shows the passenger numbers at the Airport for the last 12 financial years. A steady downward trend of 25% from 2011 to 2015 when AirNZ withdrew scheduled services from Whakatane in 2015 is apparent. The reason for this may have been pricing, which favoured the larger aircraft operating from Rotorua and Tauranga, and/or a lack of commitment on marketing spend in the EBPO by the airline. Improvements to roading reducing travel times to the western BOP airports may also have been a factor.

The switch to Air Chathams in 2015 resulted in a further 34% drop which is unsurprising given the short notice of AirNZ's withdrawal and lack of time for Air Chathams to promote the route. However, passenger numbers recovered quickly to about 25,000/yr, about 17% down on AirNZ's last year of operation.

Since then Covid has drastically reduced passenger numbers but, as discussed in Section 6.4 there are signs of a slow rebuild emerging.

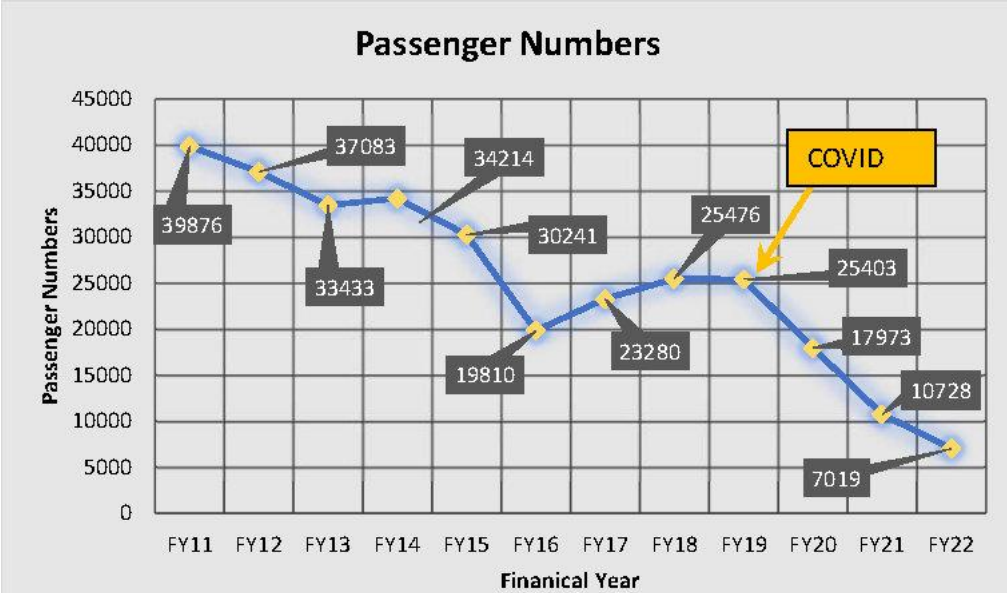


Figure 5-8: Historic passenger numbers

[19] Over the period 1 Feb 19- 30 Jun 22

5.10 Design Aircraft

The design aircraft for an airport is generally taken to be the largest aircraft operating regularly at the airport, or that can be realistically expected to operate given the physical characteristics of the operating areas.[20] Aircraft noise considerations may also exclude some larger aircraft.

The largest aircraft currently operating regularly at the Airport is the 19 seat Metroliner, however the 34 seat Saab340 operates occasionally on weekend peaks. Air Chathams considers the Saab340 would provide a better passenger product on the Auckland route and is likely to introduce this aircraft on a regular basis once passenger numbers increase sufficiently to support it.

Although it is no longer in production there are many Saab340's flying around the world with a good supply of parts and aftermarket support to keep the aircraft operating for many years to come.

Air Chathams also operate the 68 seat ATR72 which is capable of operating at Whakatane with restrictions on take-off weight under some conditions due to runway length. Approximately 70,000 passengers/yr would be required to support a twice daily ATR service to Auckland or other destinations. Clearly this would be many years away. It is more likely if traffic growth grew to these levels that additional Saab340s would be added to give three or four daily services to Auckland prior to any thought of a regular ATR service. Any use of the ATR is more likely to be for ad-hoc charter purposes.

The RNZAF also operates the C130 Hercules occasionally. It will be re-equipping with the heavier C130J model from 2024. The ability of the Airport to accommodate the Code D C130J is very important for civil defence and disaster relief purposes in the EBOP.

On this basis we recommend the design aircraft for the Airport should be the Saab340 but also that consideration be given to ATR72 and C130J operation on an occasional basis. Advice should be sought from a qualified pavements engineer prior to C130J operations occurring.

Table 5-2 below compares the characteristics of the three aircraft types:

[20] Such as the aerodrome design code, runway length, width and strength, taxiway width and strength, apron size and strength and terminal capacity

Table 5-2: Saab340, ATR72 and C130J comparative data

	Saab340B	ATR72-600	C130J
Max take-off weight (MCTOW)	13155kg	23000kg	74389kg
Max landing weight (MLW)	12930kg	22350kg	61200kg
Wing span	21.44m	27.05m	40.41m
Overall length	19.73m	27.2m	34.37m
Tail height	6.97m	7.65m	11.84
Runway loading (ACN)[21]	6	11	27 (at 70300kg)
Take-off runway length[22]	1315m	1304m	953m (at 70300kg)
Landing runway length[23]	923m	1052m	1050m
Aerodrome design code	3B	3C	2D

[21] On a flexible pavement with subgrade rating 'A'
[22] At sea level, 15°C, nil wind, MCTOW
[23] At sea level, 15°C, MLW, wet runway

6 The future situation

6.1 Stakeholder engagement

Section 4.4 describes the preliminary stakeholder engagement session, held on 18 May 22, intended to gauge stakeholder's overall views on the Airport and its future direction and to identify issues the master plan should consider and address as appropriate.

Subsequently, in July and August 22, the study team consulted with stakeholders from 16 specific interest groups and service providers on an individual basis to obtain more detailed views and information to shape specific aspects of the master plan. WDC representatives also attended these consultation sessions. A full list of parties consulted in included in Appendix C.

The type of views and information sought relevant to the master plan included:

- The demand for passenger air transport services at the Airport both now and in the future
- The demand for air freight capacity
- The general economic "pulse" of the EBOP
- Specific requirements of sectors important to the EBOP economy, e.g., tourism and aquaculture
- The likely growth in traditional aviation activity at the Airport e.g., flight training and recreational flying
- New sources of revenue for the Airport e.g., solar farming
- The adequacy of existing services at the Airport to accommodate growth in demand e.g., power, water, communications
- The adequacy of existing infrastructure e.g., runways, taxiways
- Information on land use planning and regulatory matters

The following sections describe the environment the Airport operates in and the opportunities the stakeholders consulted see for the Airport to better serve its users and the EBOP region. Further consultation with hapu was not included in this consultation round as we are advised this will be done as a separate process within WDC, as will consultation with Te Manatū Waka - Ministry of Transport- WDC's Airport JV partner in the Airport and the general public.

6.2 General economic outlook for EBOP

Toi EDA, the economic development agency for the Eastern Bay of Plenty, advised us of the work done in 2018 alongside local government and iwi on the 'Eastern Bay of Plenty Development Project' to identify sustainable economic development opportunities for the region. The project report, approved by the Regional Growth Development Group, identified four immediate areas of focus for EBOP being: (i) Aquaculture, (ii) Horticulture, (iii)

Marine and Tourism, (iv) Industrial Kawerau. A prime objective is to shift production to higher value products e.g., fresh seafood and fruit delivered to markets or airfreight export hubs as quickly as possible.

Although the population bases are low (Whakatane 38,200, Opotiki 10,000 and Kawerau 7700) population and jobs are growing steadily and in line with national growth trends. At 14%, the proportion of Māori in the population is higher than most of New Zealand.

Airservices that allow fast and efficient movement of people from the main centres to the EBOP for delivery of central government services and technical expertise supporting production industries and delivery of projects are also very important. An air service to Wellington would be very beneficial in this regard.

6.3 Tourism

Toi EDA advised that tourism is 97% domestic (obviously affected by border closures) and the emphasis has moved away from Whakaari/White Island boat landings to other tourist activities. East Bay Aviation reported tourist scenic flight bookings for summer 2022/23 are picking up and they are investigating tourist links to other EBOP/East Cape locations.

Tourism Whakatane advised of Ngati Awa's strong tourism aspirations. There is a planned development of a cycling trail passing through airport land as part of a larger cycle network, which could use the Airport café as a stopping point. Also single day hiking products are popular. The tourism market is very seasonal, skewed to the summer months so underpinning air services with a business market is essential.

As a destination Whakatane competes with the much larger centres of Rotorua and Tauranga which have better facilities for conferences, events, accommodation and restaurants etc. The development of the proposed Ngati Awa 100 bed motel and conference centre on the Whakatane waterfront will assist in attracting groups to the town.

An air link to Wellington would enable tourism interests to promote the EBOP much more effectively.

6.4 Demand for scheduled passenger services

Demand for scheduled passenger services is difficult to estimate given the volatile situation that the Covid-19 pandemic has brought upon aviation industry. However Air Chathams, the only current provider of scheduled passenger services, is optimistic about future demand. It believes within a several years pre-Covid passenger numbers of around 25,000 passengers/yr could be achieved with a stable market, ultimately building to 35,000 – the historical level at the time AirNZ withdrew.

Furthermore, upgrading from the Metroliner to a Saab 340 for the Auckland service and adding a Wellington passenger service should stimulate further growth.

The projections allow for a Covid recover period of three years from FY22 to FY25 by which time an annual level of 25,000pax would be reached. From that low (2%), medium (4%), and high (6%) growth rate projections are shown in Figure 6-1.

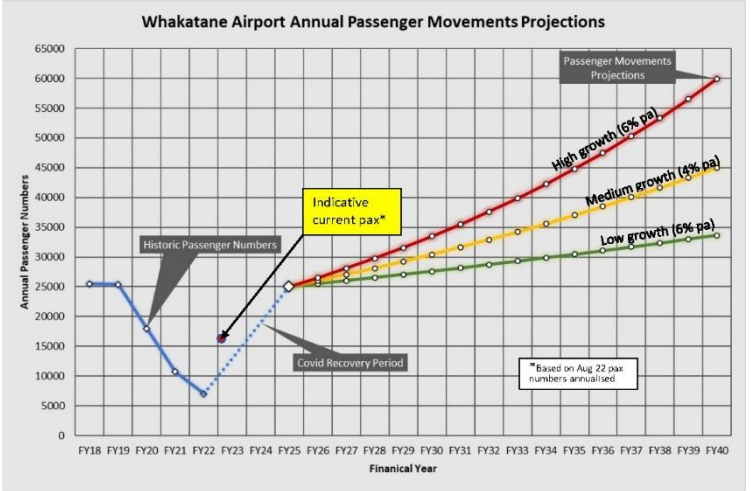


Figure 6-1: Passenger growth projections

These growth rate projections are consistent with those used at other NZ regional airports pre-Covid and are used to determine the "trigger points' for airport development, in particular the terminal building. It is essential that the Covid recovery period from now until the end of FY25 is used to engage with the Mana Whenua and other key stakeholders, prepare the Airport's business plan, plan infrastructure developments, stimulate the market to build back to the 25,000 pre-covid level and importantly build the Airport's image of being "open for business".

6.5 Demand for air freight

Air Chathams, the main provider of air freight transport capacity at the Airport, advises that there is minimal demand at this time. Additionally the Metroliner has very limited freight capacity.

However, consultation with users indicated there is great potential for this to change as local businesses experience difficulty with slow road transport between Whakatane and Auckland. One user, Whakatōhea Mussels, an aquaculture business based in Ōpōtiki, has expressed its strong interest for air freight services to Auckland as its business is looking to increase its supply of fresh product which achieves a premium price but is "must go same day" due to perishability. This highlights a potential strength for the Airport, as its EBOB location for as an air pick-up/drop off point allows for greater time- and cost-efficiency for businesses based in the Eastern Bay of Plenty. This demand could be further stimulated with more frequent scheduled services to Auckland and the upgrade of aircraft to a Saab340, both increasing the capacity and decreasing the unit cost of air freight transport.

6.6 Current airport users

6.6.1 Fixed Wing Users

The Aeroclub, Aerohire and East Bay Aviation were consulted as the main FW users.

Flying activity

The Aeroclub membership has increased over the last four years. They have the view that more would join if they could hangar their aircraft at the Airport. Aerohire is also optimistic about growth of its flight training activities, having added and aircraft every two years recently and seeing scope for up to six more. However they are also looking to expand their ground-based training using space in their existing hangar. It sees a need for more itinerant aircraft parking. East Bay Aviation sees growth in new scenic flight destinations on East Cape and existing Rotorua Lakes flights. It envisages getting a larger aircraft to accommodate growth.

The NZDF advises that Whakatane Airport is mainly of interest to RNZAF aircraft for training purposes as it seeks a variety of different instrument approach types, procedural versus non-procedural airspace and diverse terrain. The Texans are irregular visitors for training purposes and NZDF expects this pattern of usage to continue. The Airport is not used intensively due to the length of the runway which is suitable in the dry conditions but a little too short in wet conditions for the Texan.

NZDF King Air aircraft also use the airport for training and government/VIP travel purposes.

The C130H also uses the Airport for training activities, mainly at night for night vision goggles operations.[24] NZDF is aware that the impact of the aircraft on the runway surface, currently done under a PCN / ACN waiver, needs to be monitored. Notwithstanding that the new C130J aircraft are heavier than the C130H, NZDF will continue to want to use the Airport.

Hangars

Opinion on the need for more FW hangar space was mixed. The Aeroclub sees a demand for 12 or more hangars from current and potential members. A new Flight Training organisation setting up would potentially want to hangar 4-6 aircraft with scope to increase this. Both White Island Aviation and Aerohire have stated that their currently hangar capacity is sufficient for the foreseeable future. Consequently, it appears demand for FW hangar space it is not underpinned by an existing resident commercial operator and would need to be tested. This should be part of the Airport's business plan. The business plan should also investigate potential demand for business jet hangarage, although this would normally be part of a fixed base operator's (FBO – such as Aerohire or possibly JNP) range of services.

Kahu NZ and Kumeu Helicopters were consulted as the main helicopter users. Both agreed with future helicopter hangars being built to the east of the existing (ex-Kahu) helicopter hangar to maintain separation between fixed wing and helicopter operations. Kumeu Helicopters expressed strong interest in building a hangar of similar size to the existing. Kahu indicated it was more likely to build elsewhere (off-airport) on a freehold site.

Runway alignment

As noted earlier, the Aeroclub expressed its support for a new grass runway better aligned to the prevailing north-west winds, believing that the current runway which is subject to crosswinds may inhibit future growth for the Aeroclub and recreational pilots of small aircraft. No other FW users consulted see the need for a more into-wind crossing runway on the basis of cost, airspace complication and the need to train pilots early on how to manage crosswind operations. The cost to develop a new grass runway would be considerable with no commercial return, the general view, which the study team supports, being that any available funds would be best spent elsewhere.[25] Refer to Section 7.2.2 for further analysis.

Terminal building

The FW consensus is that the existing building is not fit for purpose. East Bay Aviation, who currently operate an office in the terminal building, finds it totally impractical and prefers a new building with more capacity. Air Chathams has similar view. This is discussed in more detail in Section 8.

6.6.2 Helicopter Users

Kahu Helicopters, previously providers of helicopter flight training at the Airport, indicated that this market has reduced considerably in recent years due to lack of demand and inability for pilots to obtain student loans for training. It indicated that the area of the airport north of the runway, previously used for helicopter low flying training, is not essential for that purpose now as other sites are available. On the basis of Kahu's

[24] 4 Texan, 20 King Air, 14 C130H and 16 Seasprite helicopter movements were recorded on AIMS is the 1 Mar 19 to 29 Feb 20 year

[25] We estimate the cost would be of the order of $500k for a 700m long grass strip and establishment of taxiway network.

comments we consider it unlikely another helicopter flight training organisation will seek to set up at the Airport in the medium term. However in the long term it is possible given projections of world-wide demand for helicopter pilots.[26]

Kumeu Helicopters is an itinerant but very frequent user of the Airport for private purposes. We understand it may upgrade to a larger helicopter in the future. It supports retention of the low flying area and suggests a dedicated fuelling location for helicopters in the vicinity of their hangars to avoid conflict with FW aircraft at the existing fuel dispensers. Kumeu also suggested north-south departure lanes for helicopters and an associated final approach and take-off area (FATO) "aiming point" for helicopter use.

The RNZAF/NZDF were consulted primarily in regard to retention of the NDB, which as previously noted they required for instrument approaches. The NH90 helicopter used by the RNZAF and the Blackhawk used by Kahu are large machines with considerable potential to upset light aircraft with their rotor wash making separation of helicopter from FW even more important.

6.7 Potential airport users

6.7.1 Aviation

Eagle Flight Training, a flight school based in Gisborne, expressed strong interest in expanding its operations to the Airport. Currently it accounts for about 3% of helicopter movements. It considers greater use of the Airport would be ideal for phases of its flight training better done away from Gisborne. Eagle regards the Airport one of the best locations for flight training in New Zealand due to its strategic location, its uncontrolled airspace and frequent crosswinds on the runway.

6.7.2 Non-aviation

Discussions were held with electricity network owners and operators and an on-airport solar developer with to establish the feasibility of a solar farm development on surplus airport land.

Eastland Group, who specialises in electricity infrastructure, are proposing a solar farm project at Gisborne Airport. It cautioned that, while a solar farm at the Airport has good potential, the project may encounter a lot of minor problems, which when added together, might render the project financially and/or operational unviable. This requires a solar farm project to be very well thought through and planned.

Horizon Networks indicated there was no impediment to an airport solar farm being connected to their network via the 11kV line currently terminating at the Airport, enabling surplus solar power to be sold back to the grid.

[26] According to the 2021 Pilot Outlook Report published by the Boeing Company in the US, by 2038 nearly four times as many helicopter pilots will be needed worldwide than are working right now.

Trust Horizons, who funds energy-related community projects, indicate that provided an airport's solar farm project meets its Trusts Horizons' financial, social, and environmental criteria that it is very possible for funding to be arranged.

On this basis the study team considers a solar farm has good potential as an alternative revenue stream for the Airport, as well as a potential operating cost saving for users of on-Airport electricity (including the Airport itself). This is discussed further in Section 9.1.

6.8 Civil defence

The Airport is a member of the regional lifeline utility network and maintains a close relationship with the WDC emergency response coordination and planning team. The Airport is able to facilitate key aircraft response transportation roles in the event of civil defence or natural disaster emergency and if required can be used as a coordination base for maritime search and rescue.

The importance of the role that airports play in both regional and national emergencies were no better highlighted than in the 2019 Whakaari / White Island eruption where the Airport was used as a key strategic transportation hub for emergency aircraft management and air ambulance transportation of injured persons.

Being geographically the last major airport leading into the EBOP area, the Airport would play a key role as an alternative for the delivery of goods, services and people, should road transport not be possible. The Airport is regularly used by designated air ambulance aircraft for patient transfers and medical evacuation of patients from the EBOP to hospitals nationwide. The sealed runway length of 1280m, is sufficiently long enough to enable emergency support aircraft up to and including the size of the RNZAF C130 Hercules.

Given the Airport's geographical location, ability to be operationally self-sufficient in an emergency and ready access to aircraft transportation needs, there is potential for the establishment of appropriate emergency response agencies (i.e., LANDSAR - Land Search & Rescue) on-airport. These facilities could be located in the proposed helicopter area or, if apron access was required, to the east of the terminal building.

7 Existing aeronautical infrastructure and its development

7.1 Design aircraft operation

The Airport generally meets the minimum physical characteristics requirements specified in CAR139 and AC139-6 for regular operation of the Design Aircraft, both the Code 3B Saab340 in the short term and/or the Code 3C ATR72 in the longer term.

However, during consultation feedback was received on the limitation of existing airport infrastructure and what improvements would be beneficial to enable the Airport to both develop to support the future situation and to become more sustainable. Additionally, the study team has recommendations on facilities improvements.

7.2 Runways

7.2.1 Sealed runway and strip

Sealed runway 09 -27 is 1,280m long x 30.5m wide, contained within a grass runway strip 1400m long x 150m wide. It has 120m clearways at each end, more than the normal 60m, which assist by increasing the take-off distance available to 1400m. The take-off paths are clear to 1:50 upslope which also assists. The runway is classified as a Reference Code 3C.

However under some weather conditions the Saab340 and ATR72-600 may be limited by the runway length. Extension of the sealed runway up to 1500m length, plus 240m RESA at each end, could be accommodated within the airport boundary by extending to the west by 220m. This is allowed for in the master plan but its construction should not proceed until an operating airline requests it and can reasonably commit to continuing services long-term.

The runway width is adequate for Code 3C aircraft on air transport operations under CAR121 Appendix C.1.2.

The runway strip width of 150m is the minimum permitted under CAR139 Appendix C.2.2 for instrument non-precision operations. An increase in runway strip width to 280m would only be necessary if precision approaches were required allowing operations in conditions of cloud base below 250ft above the airport and forward visibility less than 1500m. The costs of the additional runway lighting and associated electrical system redundancy required for precision approach operations can usually only be justified at airports with a large number of international operations such as Christchurch and Auckland. No aircraft operator spoken to suggested a need for precision operations.

Unless Aerodrome Road was re-aligned 100m to the south, widening the strip to 280m would prevent any hangar development on the south-east side of the runway as the strip 140m half-width extends almost to Aerodrome Rd. The existing helicopter hangar would need to be relocated. Clearly this expense could not be justified. On this basis we conclude that protecting the existing 150m wide strip is sufficient.

7.2.2 Grass runway

One operator advised that they will not use the grass runway due to the proximity of the fence on its southern side, considering this to be a substantial hazard, especially to inexperienced pilots.

Although the fence is "legal" in terms of its clearance from the edge of the grass runway, the runway strip being only 30m wide allows pilots little margin for error. [27] On its north side the grass runway is 25m separated from the edge of the sealed runway. This could be reduced to 10m, allowing an increase in the grass runway strip width to 45m.

The Aero Club requested that a new 700m long grass runway, better aligned with the prevailing north-west wind, be developed.

AC139-6 at 3.1.1 states:

"The number and orientation of runways at an aerodrome should be such that the usability factor of an aerodrome is not less than 95% for the aeroplanes that the aerodrome is intended to serve."

Usability factor is the percent of occasions the runway can be expected to be usable considering aircraft or pilot cross-wind limits. The AC recommends using 13kts as the maximum acceptable cross-wind component for calculating the usability factor for aircraft requiring between 1200m and 1500m of runway length for take-off, and 10kts for those requiring less than 1200m.

The study team obtained and analysed historic 7am to 7pm wind data at the Airport from NIWA and from that calculated the runway usability factors for the Airport based on maximum cross wind limits shown in Table 7-1 below:[28]

Table 7-1: Runway usability factors[29]

Aircraft or pilot cross wind limit			
6kts	**8kts**	**10kts**	**13kts**
57%	75%	86%	95%

[27] Based on the Ac139-7 requirement for a day VFR runway strip to be at least 2.5 x the wingspan of the largest using aircraft.
[28] Hourly wind speed and direction data 7am to 7pm from January 1993 to May 31, 2022
[29] For example, if an aircraft or its pilot's cross wind limit is 10kts, then runway 09-27 should be usable on 86% of occasions.

As the Saab340/ATR72 design aircraft require more than 1200m runway length, the usability of the existing alignment meets the 95% recommended in the AC. For aircraft requiring less than 1200m, which includes all light aircraft, the usability factor under the AC's 10kts crosswind criteria is 86%. While a crossing runway for light aircraft on an alignment of, for example, 18-36 would improve this, there would be substantial construction and on-going maintenance cost with no commercial benefit to the Airport as commercial flights are not restricted by cross-winds under the 95% criteria.

The study team is also of the view that introducing a crossing runway and its associated circuit would be detrimental to flight safety by increasing the risk of mid-air collisions and runway incursions as the airport is uncontrolled i.e., there is no air traffic service control or monitor aircraft separation on the ground or in the air. [30] Most operators expressing a strong wish that it remains uncontrolled.

Consequently we do not recommend the development of a crossing runway for light aircraft.

7.2.3 Parallel taxiway

Because the sealed and grass runways centrelines are only 55m apart, simultaneous "parallel operations" are not permitted. The runways centrelines would need to be 210m apart for simultaneous take-offs and landings under visual flight conditions.[31] For an aircraft to be able to taxi on the grass runway while another is taking off or landing on the sealed runway would require a centreline separation of at least 82m.

The inability to have an aircraft being able to taxi on one runway while another takes-off or lands on the other reduces runway utilisation and increases the risk of runway incursions. FW operators and the Airport operator agreed that a parallel grass taxiway, running at least west from the apron to the sealed runway's west end would improve the efficiency of operations by minimising the need for one aircraft to wait to taxi while another on the other runway completes its take-off or landing.

The study team agrees with this and recommends the development of a grass taxiway to the south of the grass runway at centreline separation of 87m from the sealed runway centreline. This gives the taxiway adequate separation from the grass runway with its current south side location and allows its eventual use by Code B aircraft with up to 24m wingspan.

At 87m separation the parallel taxiway could be extended east to the 27 sealed runway end with 13m wingtip clearance for a Code B aircraft past the north side of the existing helicopter (ex-Kahu) hangar apron which is 112m from the runway centreline. The wingtip clearance would reduce to 4m where the apron finger extends a further 9m towards the runway. [32] The minimum clearance is 8m, consequently no aprons or fingers closer than 112m to the runway centreline should be permitted in front of hangars in this area.

[30] Runway incursions by aircraft entering a runway or runway strip while another aircraft is using it are one of the highest risks in airport operations world-wide.
[31] AC139-6 para 3.1.10
[32] 104m – 87.5m taxiway centreline separation – 25/2m Code B span = 4m

The taxiway development would be staged, the initial development being a grass taxiway at 82m separation west from the apron to the runway 09 end. This is necessary to service the 2.3ha area hangar development and to allow aircraft to be clear of the grass runway while taxiing for take-off or after landing, freeing up capacity on the grass.

7.3 Fuel

The three existing fuel dispensers on the Airport can be used by any authorised operator with the respective fuel company fuel card. The current fuel dispensing locations are in and around the terminal apron area as depicted in Figure 7-2. There are no designated aircraft refuelling operators on-site. Aircraft operators do their own refuelling. Total airport storage on site is 50,000 litres of AvGas 100 and 90,000 litres of Jet A1. This is adequate on-site storage for future aviation growth needs.

Air BP inground tanks deliver either Jet A1 or Avgas 100 to above-ground dispensing units depicted in Figure 7-1. Tanks are regularly inspected and checked for structural integrity by Air BP. As the inground tanks are approximately 48 years old it is likely they will need upgrading / replacing within the next 5- 10 years. Replacement options for above and below-ground new tanks should be discussed with the fuel company supplier. New storage tanks ideally should be located within a secure environment, at code-compliant distances from building structures.

Figure 7-1: Existing fuelling locations

While it is preferable for storage tanks to have refilling capability landside as opposed to the need for mobile tankers to go airside, this is not considered practical due to the cost of running fuel pipes underground to dispensing locations. The advantage of modern above-ground bunded tanks is that they can be moved to other locations should that be necessary.

Air Fuels maintain an above-ground 40,000 Jet A1 fuel tank Installed in 2014. This tank is available for general use however it primarily serves the needs of the Superair top dressing aircraft based at the airport.

Figure 7-1 incorporates an option to establish a second aircraft refuelling position at the existing western pump location. This would enable aircraft to refuel clear of the apron, avoiding conflict with commercial aircraft manoeuvring via the designated apron taxiway lines. Also, GA aircraft refuelling near large commercial aircraft have the potential to conflict with aircraft turn-around operations on the apron.

However we recommend in the longer term relocating the existing GA refuelling locations on the apron further away from the apron, accessed via the parallel taxiway, as indicated in Figure 7-2. This would facilitate future expansion of the apron. In either direction.

Figure 7-2: Indicative future refuelling locations

7.4 Apron expansion

As described in Section 5.3 and Appendix D, the existing apron can accommodate two Saab340 or ATR72-600 aircraft. However it is constrained, especially on clearance to the GA (Avgas) fuel location on its western side. Relocating this further west would free up space on the apron and in turn allow it to be extended west as may be required in the future.

A similar relocation of the above ground JetA1 facility further east would allow apron expansion for any new aviation business such as an FBO on the south-east side of the apron. This would be ideal for business jet parking.

Appendix D includes concept plans for apron expansion.

7.5 Electric Aircraft Charging Requirements

Current developments in electric aircraft and the recent certification of electric flight training aircraft make "electric aviation" a potential opportunity for Airport development.

This master plan has considered electric aircraft, which could start commercially operating in New Zealand as early as 2026.[33] A significant opportunity and market also exist in electrically powered flight training aircraft.[34] These aircraft are particularly suited to initial flight training "circuits" (teaching trainee pilots take-offs and landings) as they are expected to have lower operating costs and to be quieter than conventional training aircraft.

Designated electric charging areas and sufficient power supply will be necessary to support electric aircraft. Electric infrastructure design for future apron layouts should consider the requirements of aircraft charging stations as they become known. It is anticipated that charging of general aviation aircraft would be undertaken within or near hangars, in much the same manner as is undertaken at homes with electrically powered vehicles.

Figure 7-3: Electric aircraft recharging

[33] www.soundsair.com/2021/08/Sounds-Air-to-fly-electric-passenger-aircraft-by-2026/
[34] www.electricair.nz/aircraft

7.6 General aviation areas

GA aircraft on the aerodrome are either housed within the nine existing hangars or parked outdoors within the aerodrome movement areas. The recently purchased 2.3ha area immediately west of the GA hangars has been set aside for future GA business and hangar development. Areas to the east and south of the main runway are best set aside for future helicopter growth.

Other existing operating areas in support of GA activities remain relatively unchanged in the master plan. As previously mentioned, provision is made for a full-length Code A or B parallel taxiway system able to be accessible for both seal and grass runways operations, and it is recommended that the grass runway is widened to 45m

A light aircraft parking area west of the apron fuel pumps in front of the existing hangar buildings has been identified, positioned to avoid impacting the normal GA manoeuvring area needs.

7.7 Obstacle limitation surfaces

OLS are geometric surfaces, arising from each end and the edges of a runway strip, intended to protect aircraft flight paths in the vicinity of a runway from obstacles that would be a hazard to take-offs, landings, and circling. A more complete overview of aerodrome OLS requirements is contained within CAA Advisory Circular 139-6.[35] Methodology for the control of OLS surfaces is contained in Advisory Circular 139-10.[36]

The Airport's main runway has its OLS protected in section 13.3.7 of the ODP. The technical description for the OLS geometry is contained within section 13.7.7 of the ODP and provides for Code 3 and 4 instrument departure and approach OLS requirements. Chapter 13 of the ODP contains OLS maps reproduced as Figures 7-4 and 7-5 below.[37]

OLS height restrictions associated with the runway side transitional surface (1:7) should be monitored and care taken when planning runway-facing building developments not to encroach into this protection area. We recommend that no buildings should be closer than 128m to the runway centreline, with a height limit of 7.5m at 128m, increasing at 1.0m for every 7.0m more than 128m from centreline. This is the same as the setback of the existing helicopter hangar.

[35] CAA Advisory Circular 139.6: Section 4.
[36] CAA Advisory Circular 139.10: Control of Obstacles
[37] ODP Map 13-82 is mislabelled Galatea Airport, it is actually Whakatane Airport.

The OLS as protected in the ODP is sufficient for the existing runway. Should the runway be extended to the west it would be necessary to adjust the OLS to extend a corresponding distance west. There does not seem to be any impediment to this as the enlarged area is either largely undeveloped coastal rural zoned or over the sea.

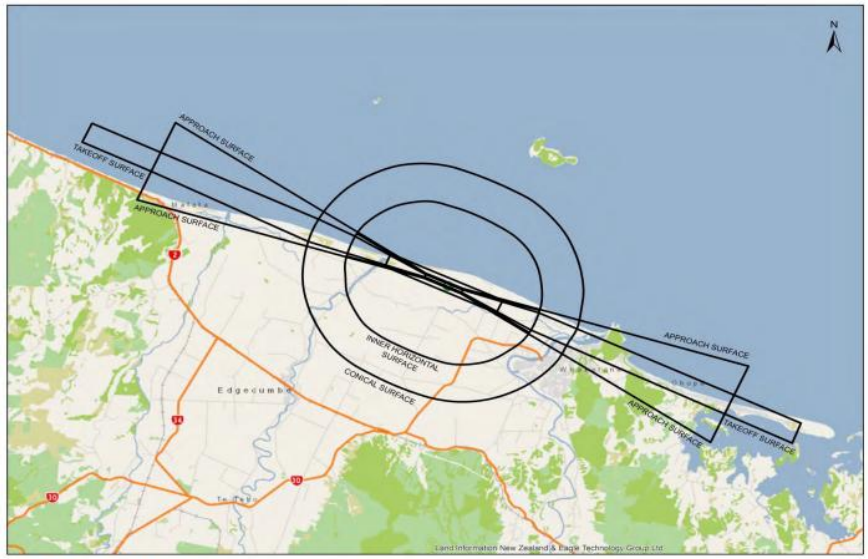


Figure 13.27 Whakatāne Airport Approach Path

Figure 7-4: Whakatane airport OLS

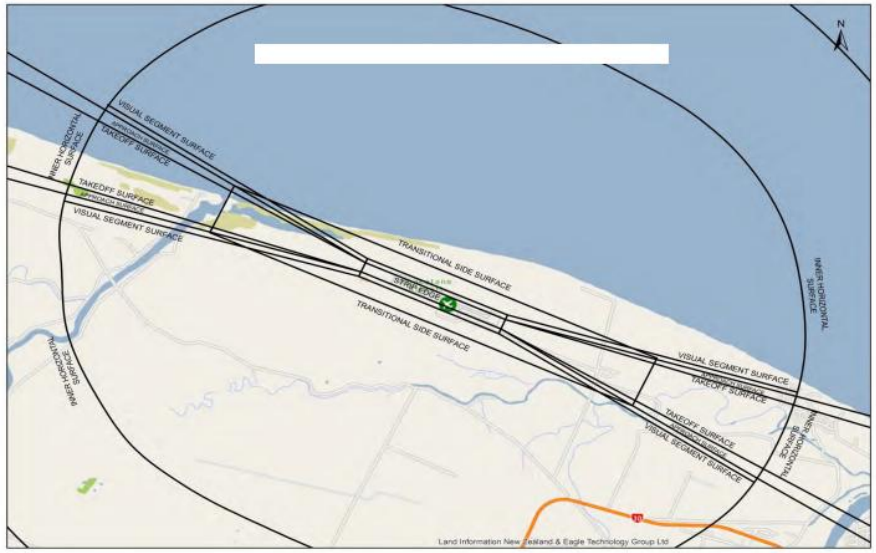


Figure 13.28 Galatea Airport Approach Path

Figure 7-5: Whakatane airport OLS

7.8 Airport rescue fire service and emergency services

RFS category determination requirements are set out in CAR139.59.[38] Under the Rule the Airport is not currently required to provide rescue fire as the scheduled passenger aircraft using it are under 30 passenger seat capacity. The use of the Saab 340 aircraft with a seating capacity of 34 seats will require RFS if it accounts for 700 or more movements in the busiest consecutive three months of the year. A 3-times daily return Saab 340 service would be under this limit but 4-times daily would exceed it.

[38] CAR Part 139.59 - Rescue Fire Fighting- category determination

The minimum RFS category for the Saab 340 would be Cat 4 and for the ATR72 Cat 5 but reducible to Cat 3 and Cat 4 respectively, based on the use of turbo-prop aircraft only.[39]

We have reserved in the master plan a location for a Cat 4 to 5 RFS station with the capacity for one fire appliance, a utility vehicle, watch-house, staff room, shower/toilet/storeroom and workshop. At regional airports the rescue fire station often doubles as both the fire station and the airport operations centre. To meet the required CAR139 RFS response capabilities the location proposed for RFS is as shown in Figure 1-1.[40]

7.9 Aerodrome ground lighting and aids.

All aerodrome ground lighting is owned by the Airport. This includes illuminated taxiway holding point signage, illuminated windsocks, apron edge, taxiway, runway lighting and APAPI visual approach glideslope guidance. The Airport has recently upgraded the runway lighting system and has installed energy and maintenance-efficient LED lights. Aerodrome lights are turned on either manually or by Airport a pilot activated lighting (PAL) system.

Emergency backup power to the aerodrome lighting is supplied by an emergency diesel generator housed landside within a purpose-built building located to the west of the main terminal, shown in Figure 7-6. The generator has sufficient capacity to power additional aerodrome lighting extensions if required. The aerodrome lighting control system, storeroom, and switchboard are located landside, within secure concrete buildings, located west of the terminal carpark, shown in Figure 7-7.

A replacement of the current APAPI system to a full PAPI is planned within the next 2-3 years, full PAPI providing superior guidance for safer operations in night or poor visibility conditions for larger aircraft. Other ground lighting and aids improvements the study team recommends be provided for are runway end identified lights (REIL) and a low intensity simple (420m long) approach lighting system (SALS). There is sufficient area at the ends of both runways for these aids which would improve the safety and reliability of operations in poor weather conditions including possibly lowering the instrument approach minima.

Figure 7-6: Emergency Generator Building

Figure 7-7: Aerodrome lighting control housing

[39] CAR Part 139.59 (c)(2)
[40] CAR part 139.67 – Rescue and firefighting – response capability

Installing SALS would also ensure compliance with CAR139 E.3.6 which requires instrument non precision runways to have SALS, unless the runway only used in conditions of good visibility or if 'sufficient guidance is provided by other visual aids'. The latter is, in our view, somewhat subjective.

If the runway was extended 220m west, the two most westerly located approach lights would be on private land. An easement to provide access to and protection of the lights would be required but this would be minimal, an area approximately 70m long, over the Airport west boundary on runway centreline, by 5m wide.

7.10 Navigational aids and meteorological facilities.

Airways confirm that the NDB contained within Area A (Figure 7-9) has recently been upgraded. Airways are progressively removing NDB in New Zealand, however we are advised by the RNZAF that their NH90 operations require the use of NDB. Although we are advised that the NH90 may be upgraded in the coming years to remove this requirement, there is no certainty on this. Consequentially the master plan assumes the NDB will remain as is indefinitely.

Prior to any construction in the vicinity of this area, it would be appropriate to consult with Airways to ensure the operational integrity of the NDB/DME signal is not compromised by any new structures, including the operational need for continued access to the NDB/DME site from the Airport.

Area B (Figure 7-8) was initially set aside for the installation of a high-frequency radio aerial. It is unknown whether this site has housed any aerials in the past or if existing Airways navigational equipment infrastructure remains. Given its strategic location near both the terminal carpark /road, coupled with its apparent disuse for many years, we would recommend discussion with Airways as to it intended long-term use and the options for potential airport development.

Area C (Figures 7-8 and 7-9) shows location of the aerodrome automatic weather station (AWS) operated by Metservice. This site is identified within Section 22.1 of the ODP as designation Number 1(D1).[41] Given its size (420m2) and strategic location to the east of the terminal, the airport company and Metservice have discussed relocating the AWS to a site on the north side of the runway site to free up space in a prime area. Metservice has indicated its agreement if the cost of the move is funded. This would be in the best interest of Airport development so the master plan provides for an equivalent area on the north side and has identified the existing area for "public facing" development, for example as a base for a tourist aviation operation.

[41] The ODP does not state who the requiring authority is for this designation or list any conditions relating to it.

Area A;
Owner: Airways NZ (Crown)
Legal Title: SA46A/275 Area: 8700m2.
NDB & DME Navigational Aids

Area B:
Owner: Airways NZ (Crown)
Legal Title: SA46A/274; Area: 2476m2
Nil use: (Future-proofed for VH Frequency Radio Aerial)

Area C:
Owner: Airport
Designation 1 (DP-22.1 Designations) Area: 430m2
Used by Metservice
Automatic Weather Station containing various metrological Instruments

Figure 7-8 – Airways and Metservice Designated Areas

Figure 7-9 – Metservice AWS
(Automatic Weather station **Area C**)

7.11 Air traffic service

The Airport currently operates as an unattended aerodrome with pilots required to make radio position and intentions broadcasts, separate themselves from other aircraft and operate in accordance with non-controlled aerodrome procedures.

Any requirement for an air traffic service (ATS), which could be full air traffic control (ATC), aerodrome flight information service (AFIS) or ground radio communications service (UNICOM), would only be a consideration if an aeronautical (airspace risk) study determined it was required. A trigger for this would be either aircraft movements reaching levels specified in CAR139, or a significant change in aircraft operations such as the use of larger air transport aircraft, a substantial increase in air transport movements or (for example) as the result of the establishment of a large flight training school.

The aeronautical study would determine the risk factors relating to the Airport (e.g., runway layout), the level of movements of all aircraft and related risk factors such as prevailing weather and local terrain that ATC could mitigate. It would be the Airport's responsibility to commission this study.

A lower-cost alternative to ATS is UNICOM, a manned air/ground radio facility, which facilitates the provision of information on the location of other aircraft and weather conditions to pilots. UNICOM could be beneficial if a large percentage of the aircraft movements are flight training.

An ATC and to a lesser extent AFIS and UNICOM require a tower from which to operate. This needs to be located with a clear view of the ground operating areas and the traffic circuit. A suitable location for UNICOM or AFIS could be the top of the existing terminal building. An ATC service provided by Airways Corporation is likely to require a dedicated tower in a location that has unobstructed views of the runway thresholds (including future runway extensions), aircraft departure and approach paths and circuit area, and taxiway and manoeuvring areas of the aerodrome including the apron area. A purpose built tower would need to be sited well back from the runway to remain below the runway's 1:7 transitional OLS.

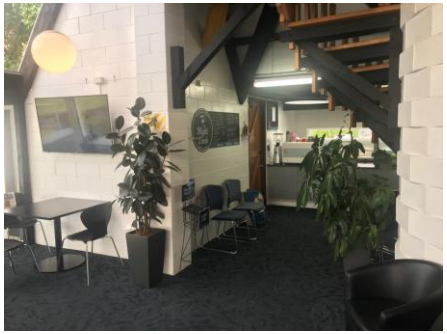
8 Terminal, security and non-aeronautical infrastructure

8.1 Existing terminal design

Initial planning for a replacement to the original terminal building built in 1962 was first considered in 1970. Funding at the time for the new terminal was provided by the government (50% and 25% each by the then Whakatane County and Borough Councils). Typically, during this period government buildings were either designed and built by the MOW or by an architect approved by the NZ Government Architect. In total four architects were invited to provide design proposals with the winning design awarded to Wellington architect Roger Walker. The airport committee had a desire to produce a building that would be modern, attractive, possess character and that would appeal to the public in a manner that would be 'befitting of the sunshine town of the North Island.[42]

The terminal design is unique, compromising three levels. Terminal construction and form include the use of concrete block walls, pipe-shaped windows and skylights, exposed timber, and a mixture of differing roof shapes, with the exterior painted in bright colours. The design also includes a tall circular block tower in the main portion of the building which houses a narrow spiral staircase accessing levels two and three. The 249m2 ground floor area includes two small check-in counters with a single small baggage conveyor to the baggage make-up area plus two offices for airline traffic operations and staff amenities, a small café and seating area, and toilets. [43] Arriving passengers collect their baggage from the landside area adjacent to the terminal entrance.

The spiral staircase which dominates the ground floor leads to an observation deck on level two and on level three an administration area used by the Airport's ground handler.



[42] New Zealand Heritage List/Rarangi Korero- Report for a Historic Place Whakatane Airport Terminal, WHAKATANE (List No. 9740, Category 1)
[43] Opus Airport Master Plan 2008

Because the arrival-departure access points oppose one another, during times of simultaneous aircraft arrival and passengers checking in, both the inbound and outbound passengers share the same space. There is a small open-air area between the front of the terminal and the terminal apron security fence for public viewing. A separate terminal building immediately to the east of the terminal is currently used for both East Bay Aviation charter flights and storage of apron ground servicing equipment. Subsequent changes to the original design have been relatively minor, being the installation of a disabled toilet, placement of a roof over the mid-upper mezzanine floor, closing in of a baggage handling area, removal and replacement of a new design entry roof and the installation of automatic doors.[44] The ground floor layout is shown in Figure 8-1.

Available Lounge Areas (Approx.)

- Area A = 17.3m2
- Area B = 45 m2
- Area C = 18.7m2
  Total = 81 m2

Available Check-in (Approx.)

1. **Area D = 17.3m2**

Arriving / Departing Passenger egress route

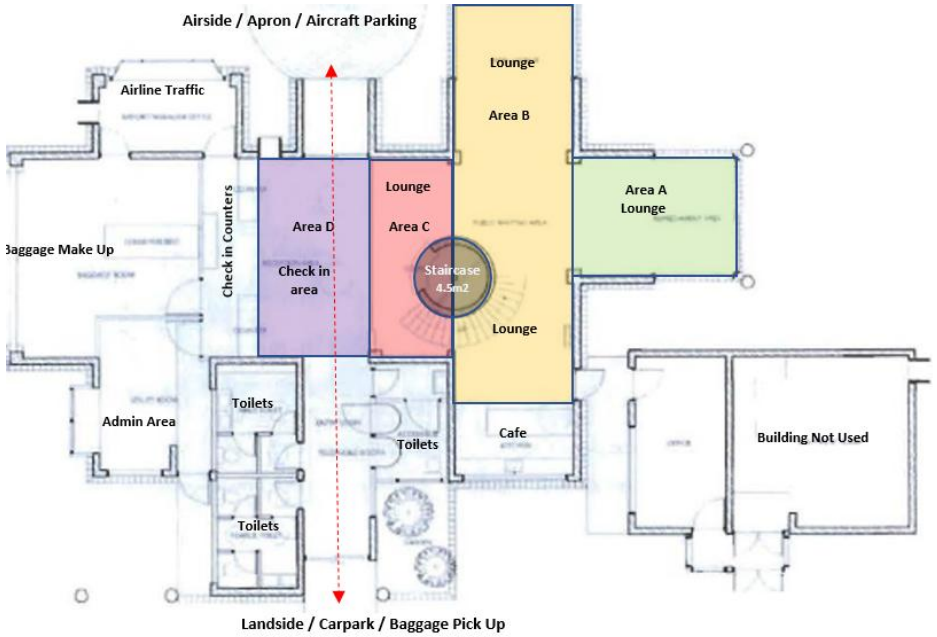


Figure 8-1: Existing terminal ground floor layout

[44] Page 17 - New Zealand Heritage List/Rarangi Korero- Report for a Historic Place Whakatane Airport Terminal, WHAKATANE (List No. 9740, Category 1)

8.2 Heritage status

The 2008 Opus Master Plan noted that the size of the current terminal (ground floor) would need to increase by an estimated 650m2 (260%) to accommodate a future capacity requirement of two 50-seat aircraft operating simultaneously through the terminal. The preference at that time was redevelopment of the existing terminal complex to provide the required space, however a new build terminal was not rules out if passenger demand required it.

Consequent to the 2008 master plan, in 2011 a number of architects and architectural historians came to the defence of the building and in 2013 the building received an NZ Institute of Architects Bay of Plenty Enduring Architecture Award.

A New Zealand Heritage List/Rarangi Korero- Report for a Historic Place Whakatane Airport Terminal, WHAKATANE (List No. 9740, Category 1) report was undertaken by Elizabeth Cox and Alexandra Foster on behalf of Heritage New Zealand Pouhere Taonga. The report recommended that the Whakatane Airport Terminal buildings and land under the buildings should be protected. This was accepted and the terminal building is scheduled as a built heritage feature (BH11) within the ODP.

Chapter 16 of the ODP contains objectives, policies and rules for Heritage Built, Archaeological, Cultural, and Significant Specimen trees with a key objective of ensuring the maintenance and protection of a range of the district's heritage buildings and structures. Airport terminal protection is noted in several sections of Chapter 16.[45] The ODP places restricted discretionary controls on additions and alterations to the terminal with the degree of works undertaken to be considered in accordance with the Conservation Plan – Whakatane Airport Terminal Building dated Sept 2016.

Given the heritage status of the terminal and district planning requirements, any alterations or addition will require WDC approval and are therefore likely to include only minimal changes to layout and form of the existing terminal structure. In later discussion of expansion options, we have assumed an annex could be built connecting to the existing building within the heritage and ODP constraints. However more major work involving the terminal building or its total removal will require the heritage status and ODP protection to be lifted.

[45] WDC Operative District Plan - Chapter 16 – Heritage – Sections 16.2.1(Item 12 & 13) Sections 16.3.2, 16.4.3 & App 16.7.1

8.3 Terminal sizing calculations

Appendix B contains calculations of terminal sizing for various aircraft movement scenarios, following International Air Transport Association (IATA) guideline. Figure 8-2 summarises the findings in terms of the areas currently available and required for check-in and lounge for various aircraft sizes and simultaneous movements.

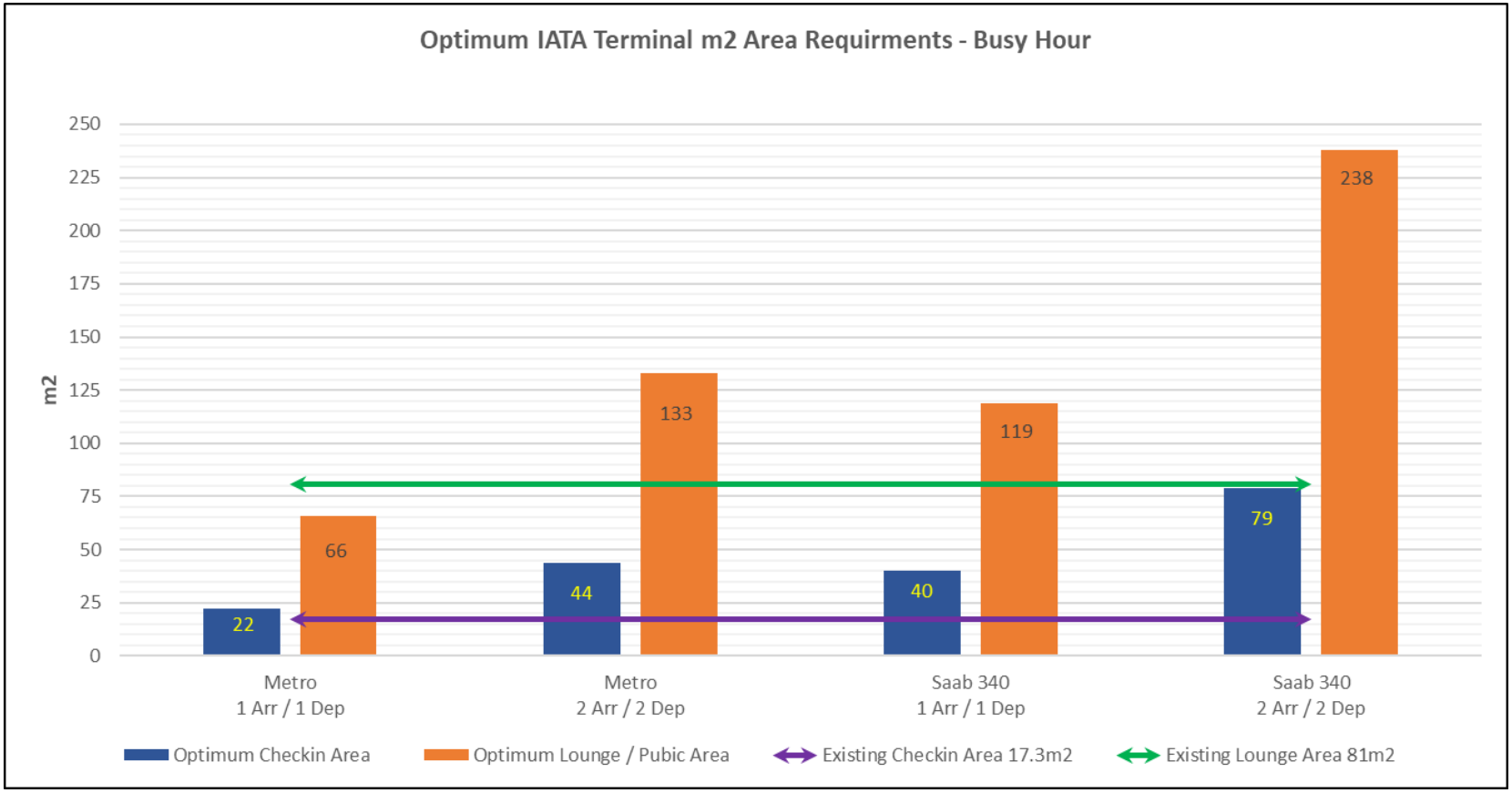


Figure 8-2: Terminal areas available and required

a) The current terminal lounge is suitable for one theoretical busy hour 19-seat passenger aircraft arrival and departure based on 75% load factor however the current check-in area is approximately 28% smaller than the optimum size for current busy hour volumes.

b) There is currently insufficient area within the existing terminal to check-in for electronic kiosks unless substituted by the loss of an existing check-in desk.

c) The current lounge area is insufficient in size by approximately 50-60% to be able to accommodate a single arrival and departure of the design aircraft (Saab 340) at a load factor of 75%.

d) The current check-in area would need to be increased by over 350% of its current size and lounge 192% to accommodate two arriving and departing Saab 340 aircraft at a 75% load factor operating within a busy hour period (passenger numbers equates to one Q300 at 100% load factor or ATR at 75% load factor)

e) Should domestic screening be introduced in the future for turbo-prop air transport operations, there is no space in the terminal for the screening area and support facilities.

8.4 Issues with the existing terminal

Various stakeholders expressed dissatisfaction with the terminal citing the following issues:

a) The terminal design, structure, and form require considerable maintenance (leaking windows, roof shapes etc.)

b) The outside baggage collection area is unattractive for passengers in inclement weather

c) The compressed terminal entrance with both arriving and departing passengers' use.

d) The inefficient internal design and use of space, dominated by the spiral stairway.

e) Limited check-in area with space for only one airline operator.

f) There is an absence of local identity and recognition of the Manu Whenua within the design elements.

g) Public access to the upper viewing and lounge areas is significantly compromised by the narrow wooden spiral staircase which has several health and safety considerations due to its step design. Access for the physically impaired to this area, is in all practicalities, not possible. There is no provision for a lift. In the event of an emergency evacuation, persons on the upper levels of the terminal would need to be able-bodied to get to safety using the narrow spiral stairs.

h) The exposed upper internal viewing area is suspended over the lower lounge area creating risks from falling objects.

i) Except for the terminal entrance canopy, there is little outside weather protection.

j) There are no shower or bathroom facilities, and the toilets are problematic.

k) There is no dedicated first aid room.

l) Due to the colocation of the check-in area with arriving passengers, apron access security and separation from the public versus the traveling passengers during the arriving and departing is problematic with the none traveling public intermingling with boarding and arriving passengers.

m) The terminal is governed by strict alteration and design guidelines outlaid with the ODP heritage status requirements.

The study team considers on operational, spatial and cultural grounds, the existing terminal is a major impediment to airport and air services development, and we recommend WDC considers its eventual replacement with a more modern, culturally relevant and fit for purpose building. In saying this we appreciate the issues involved relating to existing protections and cost.

In particular we consider the building to be unsuitable for Saab340 operations which are key to the development of air services at the Airport. We consider a firm plan to replace the terminal would be a "circuit breaker" to revitalizing the airport and air services for the benefit of the EBOP.

8.5 Future terminal design and location

8.5.1 Floor area

Based on a design aircraft type being a Saab 340, with a maximum seating capacity of 34 seats, it is recommended that the future terminal design should be capable of accommodating two arriving and departing Saab 340 within the busiest hour period. This capability will also accommodate the alternative options of a single Q300 at 100% capacity and an ATR at 75% capacity.

Using the spatial areas identified in Appendix B, it is recommended that a terminal with a total area size of 650m2 - 750m2 should be provided. This area allocation includes the provision for a weatherproof external baggage claim area. Importantly for growth and expansion needs, the terminal should be sited, designed, and constructed in a manner that makes any future terminal expansion needs spatially cost-effective and operationally viable.

By comparison, the recently upgraded terminal at Timaru Airport capable of handling a single Q300 was increased in size from 450m2 to 600m2.[46]

8.5.2 Generic terminal design

The following illustrates a generic terminal design layout, reflective of the need for a small regional airport. This could be adapted for staged development.

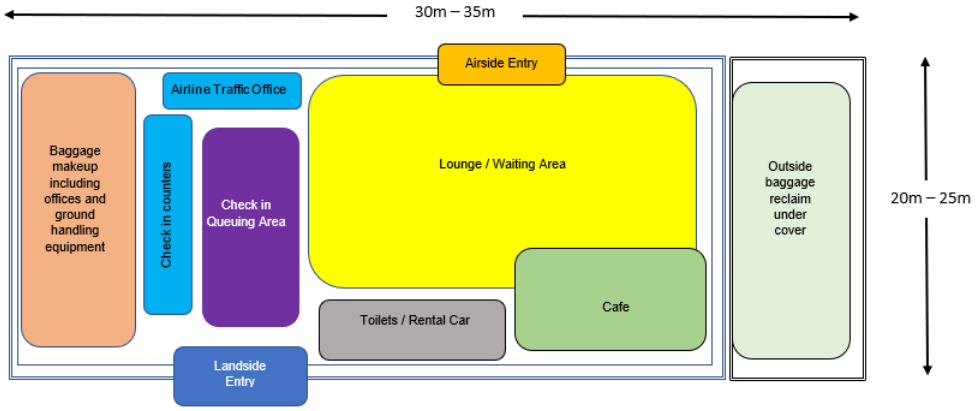


Figure 8-3: Generic terminal design (not to scale)

[46] https://www.stuff.co.nz/timaru-herald/news/88496508/contracts-awarded-in-13-million-timaru-airport-upgrade and https://dla.co.nz/project/timaru-airport-terminal/

8.5.3 Air freight handling.

For volumes of less than 500kgs per flight airfreight handling, may be undertaken within the existing terminal baggage make up area. Upon confirmation of weight, the freight would be transferred by ground handling staff, from the make-up area, onto the aircraft via the existing terminal landside / airside access point.

For regular volumes over 500kg additional temporary or permanent freight storage and handling facilities, other than those able to be managed within the existing terminal area may be required.

If the freight being transported consists of perishable goods, a lockable and secure refrigerated shipping container, would suffice as an interim freight holding facility.

8.5.4 Potential redeveloped / new terminal locations

For operational efficiency, a new terminal should be located adjacent to the apron for ease of airside access. The current terminal is ideally positioned for apron access and has existing utility infrastructural assets. The use of these existing infrastructural assets typically results in the reduction in duplication of capital costs. We have identified several terminal location and scenario options.

a) Removal of the existing terminal and replacing it with an entirely new fit-for-purpose terminal that is larger, capable of future expansion, better and more functional internal layout than the existing terminal design, which incorporates local identity and recognition of mana whenua within the design elements.[47]

b) Extend the existing terminal to relieve the immediate space pressure and provide for Saab340 operations. This could be by way of a modern, functional and culturally appropriate arrivals hall, possibly incorporating a new café, which would be connected to the existing terminal.

c) Build a new terminal adjacent but separate from the existing terminal which could be retained it for alternative purposes such as offices or flight training facilities. Any requirements under the Historic Places protection and/or the WDC ODP protection which may require the building to be kept open to the public would need to be checked.

[47] The design of underground stations on the new Auckland City Rail project is a great example of how this can be achieved, see https://www.cityraillink.co.nz/crl-stations-midtown , scrolling down to "Our design approach"

Option B; Incorporate additional areas within the existing terminal area

Option C: New build terminal fit for purpose terminal

Option C is positioned to the West of the existing terminal as this provides a more centric location to the apron area by comparison to an easterly location option. Additional challenges to the east also present themselves in the form of existing infrastructure that would need to be relocated (i.e., septic wastewater tank). A westerly location of the existing terminal will impact on approximately 20 existing car parks. If required, the terminal can also be further expanded to the west.

8.5.5 Terminal expansion options

a) There are significant construction issues and difficulties with retrofitting or expanding the existing terminal due to its unique design elements and use of spatial small pods or rooms. If retained, the option of repurposing the existing terminal for use as offices or meeting rooms should be considered.

b) To be located west of the existing terminal, a new future-proofed, fit-for-purpose terminal, befitting the natural history and identity of the region, is recommended in order to facilitate future passenger growth.

8.6 Terminal / aerodrome security

8.6.1 Regulatory requirements

Specific CAA security requirements for certificated aerodrome operators and airport personnel are outlined in various aviation documents. These include the CAR Part 19 (Transitional Rules) and Part 139 (Aerodromes – Certification Operation and Use). The National Aviation Security Programme provides a comprehensive reference document on rules, regulations, and policies on security measures for the protection of aviation.

A certificated aerodrome is designated by the CAA as either non-security designated or security designated.[48] As its scheduled flights are by aircraft with less than 90 passenger seats, Whakatane Airport is non-security designated. In accordance with the applicable Part 139 security requirements, it is required to; have in place safeguards to prevent inadvertent unauthorised access to the operational area of the aerodrome (i.e. fencing), maintain an emergency security lighting system, actively manage an airport security awareness group, provide a security training program for its operators and tenants and have in place a contingency plan that can be used for the security inspection of passengers and baggage if so required by the Minister of Transport or Director of Civil Aviation. [49]

8.6.2 Security - future state

Aviation security requirements at airports worldwide have significantly increased since the events of the New York terrorist attacks in 2001. Domestic screening of passengers and cabin luggage has been in place at New Zealand airports served by aircraft with 90 or more seats since 2001. This was extended in 2015 to include the security x-ray of hold stow baggage screening for domestic aircraft with 90 seats or more. In recent years, the MOT has considered lowering the current 90-seat threshold for domestic screening to include 50 and 68-seat turboprop aircraft to better align with international standards. It is possible future domestic screening could apply to aircraft as low as 30 seats which would include the Saab 340.

More stringent domestic screening requirements could be triggered at any time by a significant national or international aviation security event.

The current terminal is insufficiently sized to accommodate domestic screening needs, specifically the requirement to segregate screened and non-screened passengers. Consequently, it strongly is recommended that any future terminal extensions allow for flexible terminal areas that could be used or re-purposed for domestic passenger screening needs.

8.6.3 Security Fencing

With the exception of a section of 1.8 m high wire netting fencing between the weather station east of the terminal and the Kahu Hangar, the airport operational area is bounded by a continuous 1.2m high fence. Mandated CAA security notice signage is fixed to all fencing and access gate entry points. Vehicle access onto the terminal apron is via a locked gate to the west of the terminal.

[48] CAA Security Designated Airport – an international or domestic airport with scheduled passenger aircraft with a seating capacity of 90 seats or more.
[49] CAR Part 139.205

Access to and from the terminal apron for passengers and authorised airport personnel is via an automatically controlled gate (see Figure 8-4) managed and operated by airport or airline staff. CCTV provides coverage over a large area of the aerodrome operational areas, car park, and terminal area. The cameras are monitored 24/7.

Although not a requirement, some NZ non-security designated airports have installed 2.44m high CAA-compliant security fencing in areas of an airport frequented by the public (see Figure 8-5), typically these are in proximity to hangars, car parks, terminals, and commercial buildings because of its improved deterrent capacity.

To align with this best practice, consideration should be given to upgrading the Airport's existing 1.2m high fencing to 2.44m high security fencing in area frequented by the public and tenants. Care should be taken to ensure that any increases in the height of existing fences, do not impact the existing runway protection side transitional surfaces.

Adequate provision needs to be made for security fencing and access control in any new hangar or building developments on the Airport.

Figure 8-4: Current Passenger Access Gate from Terminal /Apron

Figure 8-5: Example - CAA Compliant 2.44m Boundary Line Security Fence

8.7 Carpark and roading

8.7.1 Existing Car park

The terminal main carpark has capacity for approximately 65 dedicated public and rental car parking spaces with additional parking for 20 vehicles immediately to the west of the terminal. Currently parking is free of charge. Security is provided in the area via floodlighting and CCTV coverage.

A study of similar airport terminal car parks identified approximate public parking capacity at Timaru Airport (100), Bay of Islands (135), and Hokitika (92)

8.7.2 Carpark expansion options

The number of spaces available is sufficient for currently scheduled flights. A further 12-14 spaces could be developed in the curved part of the existing parking area (see Figure 8-7). Implementation of angle parking within the central section if the existing car park may create an additional 25-30 spaces.

Further parking capacity could be provided via acquisition of private land immediately to the south of the existing car park (see Figures 8-6 and 8-7) potentially providing an additional 100 spaces, resulting a total car parking capacity of approximately 250 spaces (150% increase over existing capacity).

Figure 8-6: Terminal Carparking Extension Capability Options

Figure 8-7: Terminal Carparking Extension Capability Options

We recommended that the Airport plans to purchase this additional area of land, either for future car parking or for support of the terminal businesses such as rental car parking, valet services, motor home rentals etc.

8.7.3 Roading and access

Access to the airport terminal is via Aerodrome Road, a council-owned no-exit road, classified as a District Local Road. Aerodrome Road connects with Golf Links Road which in turn intersects with Thornton Road around 4km from the airport. Thornton Road links with both SH2 and SH30 which connect to Rotorua and Tauranga within a one-hour drive.

The road is 5.3m wide, with a sufficient area available on either side of the sealed portion to allow for widening or the installation of a foot or cycle path. In addition to providing access to the airport, the road also provides access to several private properties located on the south side of Aerodrome Road.

There are currently no public transport services to the airport. A small number of operators provide private transport services (taxi, shuttle) to the airport.

Future increases in traffic numbers, particularly heavy vehicle traffic, will require ongoing road condition monitoring for potential degradation and wear and tear to the chip seal road surface.

8.8 Utilities

8.8.1 Potable water

Potable water supplying the aerodrome, tenants and the northern grazing block is provided from the WDC Braemar supply line. The line terminates at a single 25,000 litre airport potable water reservoir tank and pump located to the east of the airport terminal. The council supply line additionally supplies potable water to the private land holdings on the south side of Aerodrome Rd. Two branch lines separately service both the northern airport grazing land (via water line to the east of runway 27) and the Kahu Helicopters hangar. Figure 8-8 shows the system layout.

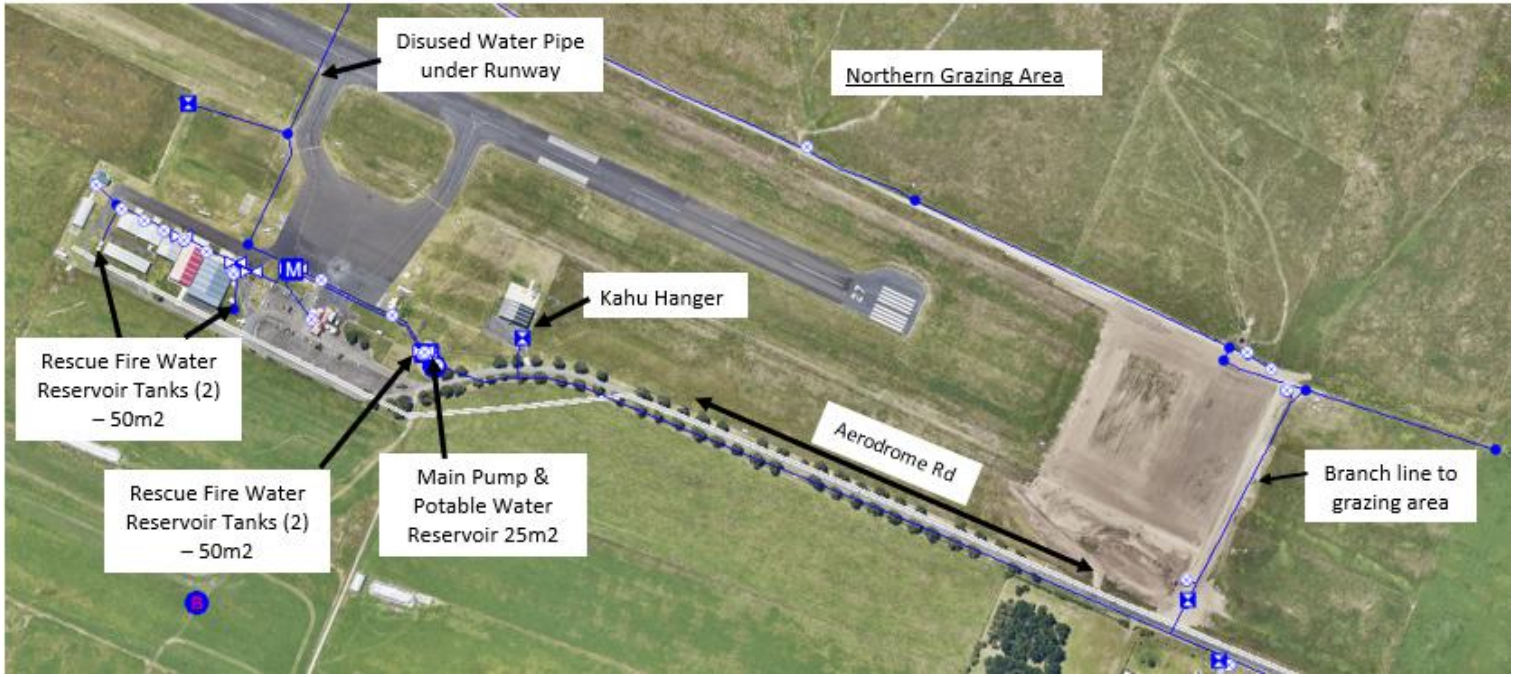


Figure 8-9: Airport Potable & Rescue Fire Water Reticulation Scheme

Potable water in the airport holding tank reservoir is reticulated by a pressure pump to the airport terminal and hangar buildings. The pump is connected to the airport emergency electrical generator supply to ensure its ongoing operation in the event of mains power supply failure. To mitigate cross-contamination (into the council supply lines), the branch supplies directly to the Kahu Hangar and northern grazing area, are fitted with backflow protection devices.

The inlet supply to the airport reservoir is protected from cross-contamination into the council supply via an air gap at the inlet point of entry. A pre-existing onsite water bore near the airport reservoir tank has been disconnected and is not in use. Water is metered and security of supply is managed by WDC staff. The system currently sits outside the proposed central government Three Waters reform programme.

The system meets the existing potable water supply-demand requirements of the airport. If required, additional storage capacity can be expanded by the incremental addition of $25m^3$ reservoir tanks to meet peak flow demand.

In the interests of water conservation, it is recommended that the Airport adopts a water supply conservation policy, applicable to onsite operators and tenants. This can include the requirement for tenants to have in place, appropriate water-saving plumbing devices (i.e., spring action taps, water sensors, etc). Due to the airport's proximity to the sea, it is likely rainwater catchment from roof structures will render potable water high in salt content. It is however recommended rainwater harvesting be considered from the likes of hangar roofs, stored in tanks on-site, and used for non-potable water applications such as firefighting supply, washing down of buildings, use on gardens etc.

8.9 Fire fighting water supply

The airport maintains three sets of above-ground, static water storage reservoirs for use in firefighting suppression. Each reservoir comprises two 25m^3 tanks providing a combined volume of 50m^3 at each location as depicted in Figure 8-9. Reservoirs are located east of the terminal and east and west of the general aviation hangars. To maintain consistency of storage capability, additional airport building developments, should include increased capacity provisions for additional rescue fire water storage.

8.10 Wastewater

All wastewater disposal at the airport is either via septic tanks and soakage fields or inground holding tanks that are periodically pumped out once full. The current septic tank serving the terminal is located east of the terminal. Due to age and capacity limitations the system is likely to be inadequate for increased passenger numbers using the terminal, requiring it to be upgraded. Any changes or additions will require consultation with the BoPRC on site effluent treatment requirements if, as expected the discharge quantities will be in excess of 2m^3 per day. [50]

8.11 Stormwater

All stormwater discharge from airport buildings and hard stand areas is via localised ground soakage disposal. There are no open water courses on-site. Local ground conditions predominately comprise natural sand material, providing excellent water soakage quantities. The control of stormwater runoff areas likely to contain contaminants such as hydrocarbons should be monitored. The requirements for stormwater discharge are outlined within Chapter 6 of the BoPRC's – Regional Natural Resources Plan (RNRP). [51]

We recommend that a stormwater management plan is developed to aid in the control and monitoring of stormwater runoff in high-risk stormwater catchment areas e.g., the use of appropriate hydrocarbon interceptor tanks on the apron.

[50] Bay Of Plenty Regional Council - On-site Effluent Treatment - Regional Plan
[51] Specifically refer to sections DW R8 and DW R21-23 inclusive

8.12 Power and Communications

Electricity is reticulated to the airport via the Horizon Energy Networks system. The main 11kV feeder line is pole mounted and traverses over farmland south of the airport, terminating at a 400V transformer located to the south of the terminal car park. Power is then reticulated underground to the terminal and hangar buildings. Reportedly, due to being at the 'end of the line', power fluctuations or loss of power can occasionally occur. We understand from Horizon Networks that developments to improve supply resilience are under consideration.

The current supply has additional capacity of approximately 0.78mW for future airport power demands. We believe this would be adequate for a substantial number of private hangars, however specialist electrical engineering advice should be sought if a business with high power demands wishes to establish at the Airport. Horizon Networks advise that capacity can be increased to approximately 1.67mW by upgrading the conductor from 'Link 652' to the airport. We understand this is the over farmland portion of the line which may be a kilometre or more in length.

All aerodrome navigational aids and the terminal power supply are backed up by an emergency generator.

There is no high-speed fibre Internet connection to the airport precinct, with airport users and operators reliant upon wireless internet connections. As provision of fast and reliable internet connections will be essential to attracting businesses to the airport it is recommended that advice is sought from Chorus, Vodafone, Spark or other communications network supplier of high-speed internet options for the Airport.

9 Commercial developments

9.1 Solar farm

Airports are often ideal locations for solar farms due to spare land being available and its compatibility with aviation uses being low structures. Large-scale overseas examples include Melbourne, Darwin (Figure 9-20, and Cochin International Airport in India and in New Zealand solar farms are planned or already under construction at Gisborne, Hawkes Bay and Christchurch Airports. Preliminary discussions with Horizon Networks and Eastland Infrastructure (Gisborne) indicate a 5MW installation may be viable but would require a conductor upgrade from 'Link 652' to the airport to export more than 1.48mW to the local grid.[52]

We are also advised that corrosion is likely to be a problem in the coastal environment but can be minimised at the design stage. Salt spray accumulation may require frequent washing to maintain efficiency.

A 5MW installation would require approximately 5ha of land which is readily available on the north side of the runway, see Figure 9-1 which shows 10ha, enough for 10MW capacity.

A solar farm would be an ideal fit for the Airport as:

- The EBOP has high sunshine hours
- There is ample spare land with limited aeronautical use
- Energy generated from the solar panels can:
  - Offset power usage costs for the Airport
  - Potentially power electric light aircraft[53]
  - Be sold back into the local grid for the use of the local network and supplied to other local homes and businesses
- It can assist with WDC's sustainability targets
- The land beneath the solar panels may still be suitable for some forms of agriculture, for example grazing by sheep
- Located north of the runway, the panels would face to the north, away from the aerodrome runway and operational areas minimising any potential glint and glare issues

[52] We are advised that a solar farm exceeding 10mW capacity would require the owner/operator to be a 'market participant' increasing the regulatory cost.

[53] We believe electrically powered aircraft using batteries are likely to be limited to small aircraft such as single engine training aircraft due to battery limitations.

Figure 9-1: Indicative space required 10ha (10MW) solar farm

Figure 9-2: Darwin Airport – 4MW Solar Farm

In view of the potential benefits, we recommend further investigation into the feasibility of a small-scale solar farm at the airport.

9.2 Land development opportunities

Income diversification in an unpredictable economic aviation environment is increasingly becoming a focus for airport companies who have traditionally relied heavily on aeronautical based income. To provide for diversification the master plan has identified several neighbouring land areas not currently owned by the Airport for future development and economic opportunity. These are shown in Figure 9-3 and are described below.

9.2.1 Terminal parking and support services

Parts of this land are used by Airways for the location of the NDB/DME (see section 8.7.2). An additional area originally set aside for the provision of a high frequency radio aerial, owned by Airways is currently not used. We recommend the future purchase of this land as opportunity allows to support the establishment of terminal or aviation aligned businesses such as car rentals, a conference centre, airport accommodation, terminal overflow car parking, and freight hubbing. Strategically located near the terminal and hangars, this area could be further expanded when Airways eventually decommission the NDB /DME equipment.

9.2.2 Private hangar-homes

The Airport has taken a proactive approach in already purchasing 2.3ha immediately west of the existing hangar area. The master plan has identified an adjoining land area of approximately 5.5ha to the west on the Airports southern boundary. This area could be used for hangar- homes or further aeronautical business intensification. Located adjacent to the existing grass runway with access to the proposed parallel taxiway, this would be attractive to private aircraft owners. Such developments are becoming increasingly common in New Zealand, for example Whitianga and Te Kowhai aerodromes, and are commonplace throughout the USA at small regional airports. The Airport would need to consider the most appropriate business model for this type of development and its long-term benefit to the Airport.

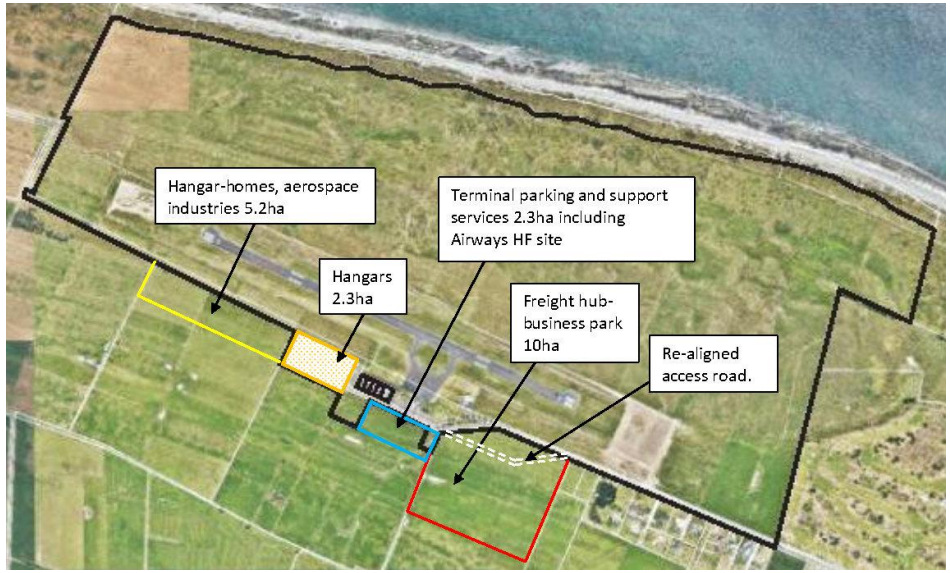


Figure 9-3: Land development opportunities

9.2.3 Freight hub / industrial business area

An area of approximately 6ha on the south side of Aerodrome Rd at the Airport entrance has been identified as a potential freight hub or industrial business hub area. With road frontage, easy access to utility services and close proximity to the aerodrome operational area, this zone could serve a variety of general or airport related businesses. Air freight presents as a strategic business opportunity for the Airport however conventional freight distribution established in this area also presents opportunities in logistics support for aquacultural and industrial businesses in the EBOP.

9.2.4 Aerospace industry hub

The Airport has advantages in excellent weather, airspace which is reasonably uncongested, an attractive geographical location near growing population bases and established operational infrastructure. New Zealand is becoming a centre for advanced aerospace development which may offer opportunities for high-value aerospace engineering, research development centres or similar to establish at the Airport. Depending on the nature of their activities, these facilities could be located east of the existing helicopter hangar or in or west of the recently acquired 2.3ha block.

9.3 Hangar developments

9.3.1 Fixed Wing Hangar Development

GA hangars are already a feature at the Airport. In the master plan consultation process it was suggested there would be strong interest from a number of private aircraft owners to hangar their aircraft at the Airport if suitable hangars were made available. The recently purchased 2.3ha has been conceptually developed to include for a mix of hangar designs and build sizes such as shown in Figure 9-4. Depending on final design, up to 30 hangars could potentially be built within the area providing an ongoing incremental hangar supply over a long period. Further opportunities for this area could include a flight school or aviation support business such as aviation engineering and repair. The proposed Code B parallel taxiway would be necessary to give access from these hangars to the runways.

Figure 9-4: Indicative FW hangar layout

9.3.2 Helicopter hangars

During consultation one helicopter operator also indicated interest in establishing a purpose-built hangar for his own helicopter and suggested further demand may eventuate from other helicopter owners attracted to the region. Due to the dissimilar flight handling characteristics of fixed and rotary wing aircraft, it is good aviation safety practice to separate helicopter and fixed wing ground movement areas.

The master plan achieves this separation by placing new helicopter facilities to the east of the existing ex Kahu hangar as depicted in Figure 9-5. To preserve setbacks from the runway and taxiway, no hangars or aprons should be closer to the runway than the existing Kahu hangar.[54] This will mean the most easterly of these sites will be constrained in depth, likely only allowing a 10-12m deep hangars. A re-alignment of the Aerodrome Rd south into the possible freight hub area shown in Figure 9-3 would maximise these sites.

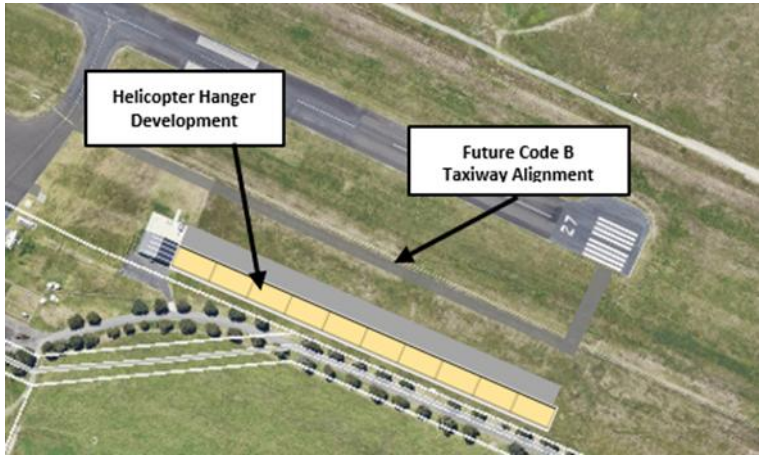


Figure 9-5: Indicative helicopter hangar layout

[54] This is discussed in detail in Section 7.2.3

9.4 Non-aeronautical land

The master plan's focus is on developing existing Airport land on the south side of the runway and acquiring further land in that location, adjacent to blocks already held, on an opportunity basis. Aside from 5-10ha for a solar farm and a small area for the relocated met station, the master plan has no on-ground development proposals for land north of the runway outside of the runway strip and its side clearance, extending a nominal distance of 150m north of the runway centreline.

This amounts to approximately 60% of the total Airport land holding, as shown by the red dashed east-west line in Figure 9-6.

Parts of the area are significant indigenous bio- diversity sites (refer Figure 5-4) and some may, subject to investigation, being classed as protected wetlands by the BOPRC. Additionally the airspace over the land is covered by a CAA low flying area designation and has previously been used for low level helicopter training and arrivals and departures.

Figure 9-6: Non-aeronautical land

While we were advised by the organisation responsible for the low flying area designation that the area is no longer in use and it has no plans to resume helicopter training there, it is possible another helicopter operator may wish to use it in the future.[55] Previous noise modelling has included helicopter arrivals and departures from/to the north directly over this area. With the expansion of the helicopter area, it is highly likely helicopter movements over this land will increase. It would be practical to nominate a corridor within the area for arrival/departure movements, but low flying training would extend over the whole area.

Developing this land, which is rough, would be expensive and "disconnected" from the rest of the airport. Our recommendation is that the "aircraft operation" designation over it is retained to protect the helicopter training area and arrivals/departures, and it continues to be used for stock grazing or other agricultural purposes. This can be reviewed should an alternative strategic use become apparent.

[55] The New Zealand Airspace Register lists the organisation responsible as Frontier Helicopters Ltd which we understand is associated with Kahu Helicopters.

10 Implementation and business plan

Table 1-1 in the executive summary lists the major items recommended in this master plan and suggested timings. Table 1-2 presents a list of the major recommendation in the master plan with cross references to the body of the report for more information.

The master plan must be supported by an updated and effective business plan. In particular we believe it is crucial that the foundation for recovery in passenger numbers and attracting new aviation businesses and substantial private hangar owners to the Airport is achieved over the next three years.

Appendix A: Regulatory requirements relevant to aerodromes

Airports throughout New Zealand are subject to a number of regulatory rules. Their relevance to the Airport is described below:

Civil Aviation Act 1990

The Civil Aviation Act provides for the CAA and Civil Aviation Rules (CAR) as well as ancillary aviation regulation functions.

Airport Authorities Act

The Airport Authorities Act 1966 provides a process by which an airport can become an Airport Authority. An Airport Authority is empowered to:

a. Establish, improve, maintain, operate or manage an airport on any land, whether or not the land is wholly or partly owned by the Airport Authority;
b. Establish bylaws;
c. Have leasing powers including the ability to terminate a lease if an affected property is required for airport purposes.

Operational areas of an Airport Authority aerodrome are non-rateable under the Local Government (Rating) Act 2002.

National Airports Safeguarding Framework

Currently, New Zealand does not have an equivalent to the 'Australia's National Airports Safeguarding Framework'. However, this framework is routinely used as guidance for NZ airports and local authorities to manage the impacts of aircraft noise, turbulence, bird strike, lighting and intrusions within and surrounding airports. [56]

The other relevant standard is NZS 6805:1992 Airport Noise Management and Land Use Planning. This is used for managing airport noise and the interface with other land uses.

[56] The framework guidelines can be accessed at https://www.infrastructure.gov.au/aviation/environmental/airport_safeguarding/nasf/nasf_principles_guidelines.aspx

Local Authority Planning

The Resource Management Act 1991 (RMA) is the central piece of environmental legislation. Many aspects of RMA legislation will be given effect to via the ODP. Airport authorities, as defined in the Airport Authorities Act 1966, are 'network utility operators' for the purposes of the resource management act (s166) and may be approved (s167) as a 'requiring authority' with the power to give notices of requirement for designations in the district plan.

Health and Safety at Work Act 2015 (HSWA)

Two government agencies are involved with HSWA in relation to the Airport.

a) WorkSafe is overall responsible for investigations in relation to accidents, injuries and deaths occurring on the airport site.

b) Under the HSWA, the CAA is a *relevant designated agency* of Work Safe, responsible for investigation in relation to aviation accidents, injuries and deaths. An event is deemed to be "aviation" if it involves an aircraft under power i.e., with its engine(s) started.

Under the HSWA, there is a strong duty of care required of a "PCBU", which includes Whakatane District Council (WDC) as the owner of the facility, to ensure the facility is safe for use. Recent independent legal advice is that aerodrome owners and operators are regarded as a PCBU for, among other things, ensuring risks arising from operations in the aerodrome's airspace are appropriately managed. This would, for example, require Council to ensure a risk study is done prior to allowing the establishment of a new type of operation such as a large flight training school at the aerodrome.

Hazardous substances legislation

The Environmental Protection Agency (EPA) and WorkSafe are responsible for hazardous substances laws, regulation, and enforcement. Individual businesses on the airport are responsible for their compliance with legislation. The Airport is responsible for monitoring the compliance of facilities it provides. (i.e., by example fuel storage).

CAA Rules and Advisory Circulars

The CAA is responsible for setting Rules and Standards relating, *inter alia*, to the operation of aerodromes and aircraft.[57] Most Civil Aviation Rules (CAR) and Standards in New Zealand are based on international standards and recommended practices set by the International Civil Aviation Organisation

[57] "Aerodromes" is the generic CAA term for facilities for take-off and landing of fixed wing aircraft, irrespective of the size of the facility i.e., an aerodrome can be anything from a simple grass airstrip to a full international airport.

(ICAO).[58] These are adopted into New Zealand CAR and the associated CAA Advisory Circulars (AC) that contain standards and guidance material relating to compliance with CAR.

The relevant CAR for aerodromes is CAR Part 139 and applicable aerodrome standards for aerodromes used by large aircraft (over 5,700kg MCTOW) are contained in Advisory Circular AC139-6, for small aircraft in AC139-7 and for helicopters in AC139-8.

Aerodrome Certification

Requirements for an aerodrome certification are defined with CAR Part 139.5. To note is CAR 139.5(2) which states that:

> *An aerodrome serving an aeroplane having a certified seating capacity of more than 30 passengers that is engaged in regular air transport operations for the carriage of passengers.*

The Airport has historically accommodated passenger aircraft with a seating capacity of more than 30 passengers. These have included (but not limited to) the Fokker Friendship F27 (50 seats), and the Convair 580 (50 seats). Whilst current scheduled aircraft operations are undertaken by the Metroliner with 19 seat capacity, the target aircraft for future the Airport passenger and route growth has been assessed as the Saab 340 with a capacity of 34 seats. Importantly CAR Part 139 aerodrome certification will enable the opportunity for larger aircraft such as the Q300 (50 seats) and ATR 72-600 (68 seats) aircraft to operate at the Airport.

- *Whakatane Airport is CAA Part-139 Certificated Aerodrome*

[58] ICAO is a body constituted under the United Nations charged with developing and maintaining international civil aviation standards and recommended practices (SARPS). Some 193 States, including New Zealand, are members and all are obligated to align with ICAO standards under the 1944 "Convention on International Civil Aviation" (the "Chicago Convention") or file notices of difference.

Runway End Safety Areas (RESA)

It is a requirement under CAR 139 – Appendix A, that each end of a runway regularly used by aircraft with more than 30 passenger seats are to have a RESA. The specified RESA length is 240m long although the CAA Director has the power to approve a lesser length, to a minimum of 90m, if 240m is "not practicable" within a given situation.

To accommodate 240m RESA plus the standard requirement for a 60m strip end for a Code 3 runway requires a 300m long clear grassed area at each runway end.

The airport maintains CAA-compliant RESA at either end of main runway 09-27. These were installed in 2018. Additional runway extensions will require the need to maintain the continuance of compliant RESA areas at either end of the main runway.

Depicted in Figure A1 are the current RESA and clearway dimensions in place east of runway threshold 27.

Figure A1: Current RESA & Clearway East of Runway 27

ICAO Aerodrome reference code

The CAA, in line with ICAO practice, categorise aircraft in terms of their speed and size using a number-letter code; the number part (from 1 to 4) being a measure of the aircraft's speed based on its take-off runway length requirement and the letter part (from A to F) being a measure of its wing-span. The aircraft code for the most demanding aircraft type able to operate at the aerodrome becomes the aerodrome reference code used for aerodrome design purposes. The higher the number and letter, the bigger and faster the aircraft is.

Table A1 lists the aerodrome reference codes covering the smallest propeller aircraft up to the largest wide-body air transport jet aircraft:

Table A1: CAA Aerodrome reference codes

Code Element 1	
Code number (1)	**Aeroplane reference field length (2)**
1	Less than 800m
2	800m up to but not including 1200m
3	1200m up to but not including 1800m
4	1800m and over

Code Element 2		
Code letter (3)	**Wingspan (4)**	**Outer main gear wheel spans [a] (5)**
A	Up to but not including 15m	Up to but not including 4.5m
B	15m up to but not including 24m	4.5m up to but not including 6m
C	24m up to but not including 36m	6m up to but not including 9m
D	36m up to but not including 52m	9m up to but not including 14m
E	52m up to but not including 65m	9m up to but not including 14m
F	65m up to but not including 80m	14m up to but not including 16m

[a] Distance between the outside edges of the main gear wheels

The minimum design code for larger turbo-prop transport aircraft, such as the ATR72 and Bombardier Q300 is Code 3C.[59]. Jet aircraft such as the A320 and Boing 737 models are Code 4C. Widebody aircraft such as the Boeing 777 and Airbus 330/350 are Code 4E.

The Airport has a runway length of 1280m long. The largest commercial passenger aircraft types to use the Airport are the Saab 340(WS 21.44m), Q300 (WS 27.43m), and ATR (WS 27.17m). These all have wingspan widths (WS) between 24m up to but not including 36m. All are able to operate from the runway. Using the physical characteristic of the aerodrome and dimensions of the largest aircraft type cable of operating from a runway of that length, results in the Airport having an **Aerodrome Reference - Code 3C**

Most of the GA aircraft using the Airport are reference Code 1A aircraft, meaning that they require less than 800m for take-off and have a wingspan of less than 15m. Aircraft in this range of aircraft are predominantly single-engine piston aircraft and some twin-engine aircraft.

[59] Some versions of the Q300 are Code 2C, the models operated by Air New Zealand are 3C.

Runway Approach Type

The CAA define three types of runway approach types depending on the get navigational aids provided to assist approach and landing operations

a) Non-instrument approach - only visual aids provided (APAPI)
b) Non-precision instrument approach - Provides lateral guidance only such is an RNAV (GNSS) approach
c) Precision instrument approach - use a full instrument landing system to provide vertical in lateral guidance (ILS) typically this would be at larger international airports
    - The runway is currently classified as a non-precision-instrument approach runway

Aerodrome Design Requirements

Various sections within CAR Part 139. outline aerodrome design requirements. These are primarily sections CAR 139.51, 139.53 and inclusive of CAR Part 139 Appendices, A to H.

In addition to the CAA Rules, AC139-6 contains specifications for the "physical characteristics" required for aerodromes used by larger aircraft. "Physical characteristics" includes the dimensions of runways, the clear areas required around runways (runway strip), the dimensions of taxiways and their separation from runways, and, importantly, the requirements for flight path protection at runway edges and ends, and around an aerodrome.

Generally, it is best to design an airport to the highest practicable code, consistent with the maximum runway length permitted by the site, as that provides the ability to accommodate larger aircraft should that need arise.

As the main runway is capable of accommodating aircraft of more than 5,700kg MCTOW, the design standards applicable to it are contained within AC139-6. The grass runways cannot accommodate aircraft above 5700kgs and as such, the designed standards for this runway are contained within AC139-7.

Appendix B – Terminal size calculations

B.1 Existing Terminal Busy Hour Capacity

To assess the busy hour capacity of the terminal, a busy hour total number of passengers (and accompanying friends) together with arriving passengers and their meeters and greeters (M&G) using the terminal, is divided against existing designated purpose area allocation. Table B1 shows the theoretical peak hour activity figures, using the Air Chatham's Fairchild Metroliner (19 passenger seats) with an average load factor of 75%, and with no differentiation for either weekday public holidays and a conservative passenger to M&G ratio of 1:1,

Table B1: Theoretical Busy Hour Peak Activity

Aircraft Movements					**Total Passenger**		**Total Passengers + M&G**		
Type	Arrivals	Departures	Seats	Load Factor	Arrivals	Departures	Passengers	Friends	Total
Air Chathams Metro	1		19	75%	14.25		14.25	14.25	28.5
Air Chathams Metro		1	19	75%		14.25	14.25	14.25	28.5
Total	1	1	38		14.25	14.25	28.5	28.5	57

To convert busy hour passenger total passenger and M&G numbers within the terminal area allocation requirements, standard industry practice is to apply the International Air Transport Association (IATA) optimum airport "levels of service" (LoS) guidance framework. [60] The recommended IATA area allocations and recommendations for the Airport using the IATA area ranges are shown **in Table B2.**

[60] International Air Transport Association Airport – https://www.iata.org/en/services/consulting/airport-pax-security/level-of-service/

Table B2: IATA Area Allocations for Optimum LoS

Terminal Area	Recommended IATA Optimum Space allocation per passenger
Check-in area	1.3 - 1.8m2
Terminal Lounge (50-70% Seated)	1.8 -2.2m2

Using the recommended allocations in Table B2 and applying the theoretical busy hour figures from Table B1, a comparison of the current terminal passenger check-in and lounge areas available, relative to IATA optimum LoS area requirements, is summarised in Table B3.

Arriving passengers have been excluded from the calculation given an expectation that they will disembark and predominately only transit directly through the terminal to outside the baggage reclaim area. However, the departing passengers and friends, including the friends of the arriving passengers have been included as unlike an international terminal, departing passengers, friends of departing passengers and M&G of arriving passengers share the same terminal area.

Table B3: **Current Terminal Area Comparison to IATA Optimum LoS Guidelines**

*19 Seat Aircraft (Metro) *1 Arrival / 1 Departure *75% load Factor *1 to 1 Pax / M&G	Busy Hour Terminal Numbers	Optimum IATA Area Allocation per person m2		Whakatane terminal optimum IATA Space Allocation per person (m2)		Current Terminal area Allocation m2	Additional Area Required m2		Average + / - area (m2)	Average + / - % increase to existing area
		Low	High	Low	High		Low	High		
Check-in (Passengers)	14.25	1.3	1.8	18.53	25.65	17.30	1.23	8.35	4.78	27.63%
Lounge *Passengers + Friends *Arriving Passenger M&G Only	42.75	1.3	1.8	55.58	76.95	81.00	-25.43	-4.05	-14.73	-18.19%

***19 Seat Aircraft (Metro)** ***1 Arrival / 1 Departure** *75% load Factor *1 to 1 Pax / M&G	Busy Hour Terminal Numbers	IATA Median Area Allocation per m2	**Optimum** IATA Space Allocation per person (m2)	**Current** Terminal area Allocation m2	Additional area (m2) required	% of +/- optimum area
Checkin	14.25	1.55	22.09	17.30	4.79	27.67
Lounge *Passengers + M&G *Arriving Passenger M&G Only	42.75	2	85.50	81.00	-4.5	-5.56

Table B3 indicates that the terminal lounge is adequately sized for current busy hour volumes. (i.e., 19 seat aircraft – 75% load factor – one arrival and departure within one hour) The check-in area is on average approximately 27% less than that required under IATA optimum LoS for busy hour capacity recommendations.

B.2 Future Terminal

The current terminal has been assessed as suitably sized for current Metroliner operations involving one arrival and departure in a theoretical busy hour scenario. The following busy hour scenarios identify the likely future terminal space requirements applying the following scenarios.

- Two arrivals and two departures over a one-hour period with the current 19 seat Metroliner aircraft – refer **to Table B5**
- One arrival and one departure over a one-hour period with a Saab 340 aircraft – refer to **Table B6**
- Two arrivals and two departures over a one-hour period with a Saab 340 aircraft – refer to **Table B7**

  Note: The passenger capacity of two Saab 340 aircraft at 75% load factor equates to a seating capacity of a Q300 - 102% and ATR - 75%

Table B5: **Two arrivals and two departures of 19-seat Metroliner aircraft**

***19 Seat Aircraft (Metro)** ***2 Arrival / 2 Departure** *75% load Factor *1 to 1 Pax / M&G	Busy Hour Terminal Numbers	**Optimum IATA Area** Allocation per person m2		**Whakatane terminal optimum** IATA Space Allocation per person (m2)		**Current** Terminal area Allocation m2	**Additional** Area Required m2		Average + / - area m2	Average + / - % increase to existing area
		Low	High	Low	High		Low	High		
Check-in (Passengers)	28.5	1.3	1.8	37.05	51.30	17.30	19.75	34.00	26.87	155%
Lounge *Passengers + Friends *Arriving Passenger M&G Only	85.5	1.3	1.8	111.15	153.90	81.00	30.15	72.90	51.52	64%

Table B6: One arrival and one departure of 34-seat Saab 340 aircraft

***34 Seat Aircraft (Saab 340)** ***1 Arrival / 1 Departure** *75% load Factor *1 to 1 Pax / Friend Ratio	Busy Hour Terminal Numbers	**Optimum IATA Area** Allocation per person m2		**Whakatane terminal optimum** IATA Space Allocation per person (m2)		**Current** Terminal area Allocation m2	**Additional** Area Required m2		Average + / - area m2	Average + / - % increase to existing area
		Low	High	Low	High		Low	High		
Check-in (Passengers)	25.5	1.3	1.8	33.15	45.90	17.30	15.85	28.60	22.25	129%
Lounge *Passengers + Friends *Arriving Passenger M&G Only	76.5	1.3	1.8	99.45	137.70	81.00	18.45	56.70	37.57	46%

Table B7: Two arrivals and two departures of 34-seat Saab 340 aircraft

***34 Seat Aircraft (Saab 340)** ***2 Arrival / 2 Departure** *75% load Factor *1 to 1 Pax / Friend Ratio	Busy Hour Terminal Numbers	**Optimum IATA Area** Allocation per person m2		**Whakatane terminal optimum** IATA Space Allocation per person (m2)		**Current Terminal area** Allocation m2	**Additional** Area Required m2		Average + / - area m2	Average + / - % increase to existing area
		Low	High	Low	High		Low	High		
Check-in (Passengers)	51	1.3	1.8	66.30	91.80	17.30	49.00	74.50	61.75	357%
Lounge *Passengers + Friends *Arriving Passenger M&G Only	153	1.3	1.8	198.90	275.40	81.00	117.90	194.40	156.15	193%

The space requirements to accommodate the passenger processing and lounge requirements for either a double arrival and departure operating Metroliners or single arrival and departure of a Saab 340, are similar in area requirements requiring the current check-in area to be increased by an additional 22-26 m2 (an increase of 125% -150%) The existing lounge would need to increase in size by an additional 40-50m2. (Increase of 50% - 60%). No area allowances have been factored in should additional space be required for the domestic screening of passengers.

Appendix C – Parties consulted

Attendees - Group Consultation on the 18th May 2022 at Whakatane Airport
Whakatāne District Council Representatives
Ngāi Taiwhakaea Representatives
East Bay Aviation
Kahu NZ
Aerohire
Air Chathams
Whakatane Aeroclub
Kumeu Helicopters
JNP Aviation
Various private hangar and aircraft owners
Various interested persons

Individual consultation meetings via Zoom/Teams	Date
Air Chathams	14th June 2022
Whakatane Aeroclub	16th June 2022
Aerohire	16th June 2022
JNP Aviation	17th June 2022
Kahu NZ	25th June 2022
Eastland Group	1st July 2022
Whakatāne District Council Planning Team	5th July 2022
East Bay Aviation	7th July 2022
Toi Economic Development Agency	7th July 2022
Trust Horizons	8th July 2022
Whakatāne District Council Resource Consent Manager	8th July 2022
Whakatāne District Tourism Manager	11th July 2022
Bay of Plenty Regional Council	14th July 2022
Whakatōhea Mussels	14th July 2022
Eagle Flight Training	15th July 2022
Kumeu Helicopters	19th July 2022
Horizon Networks	22nd July 2022

Appendix D – Indicative apron layouts

The layouts provided in this Appendix are indicative. CAD layout plans can be provided if required. In summary:

Existing apron

- Refer Figure D1. 2 x Saab340 can fit on the existing apron but wingtip clearance to the western fuel pump from stands 1A and 1B is marginal and the pump can't be used from its east side with a Saab moving on or off the stand.
- Refer Figure D2. 2 x ATR72 can fit on the existing apron but wingtip clearance to the western fuel pump from stands 1A and 1B is unacceptable unless a wing – walker is in attendance. The pump can't be used from its east side with an ATR moving on or off the stand.
- Combinations of Saab340 and ATR72 also possible.
- Itinerant aircraft requiring apron parking such as a corporate jet can occupy Stand 2 with stand 1 still able to be used.
- Superair topdressing aircraft has a dedicated stand on south-east corner of apron
- Apron would need remarking, in particular stand 1A and 1B moved further out from terminal
- Locating a new terminal west of existing doesn't make much difference to apron access geometry
- Not ideal to have the stand 2 remote but is done elsewhere e.g., at Nelson Airport
- Aircraft can be parked into wind on all stands
- In general, the apron is not an ideal dimensional shape with the longest axis at right angles to the terminal

Expanded apron

- Refer Figure D3. Not likely to be required for scheduled flights in the life of the master plan
- Would provide substantial parking for itinerant aircraft, in particular corporate aircraft or military
- South-east extension would be ideal for FW scenic flight operator or FBO, or possibly a flight school.
- Super Air would require relocating, possible west of the ex-Kahu hangar, close to a relocated JetA1 fuel facility.

Figure D1: Apron layout for Saab340

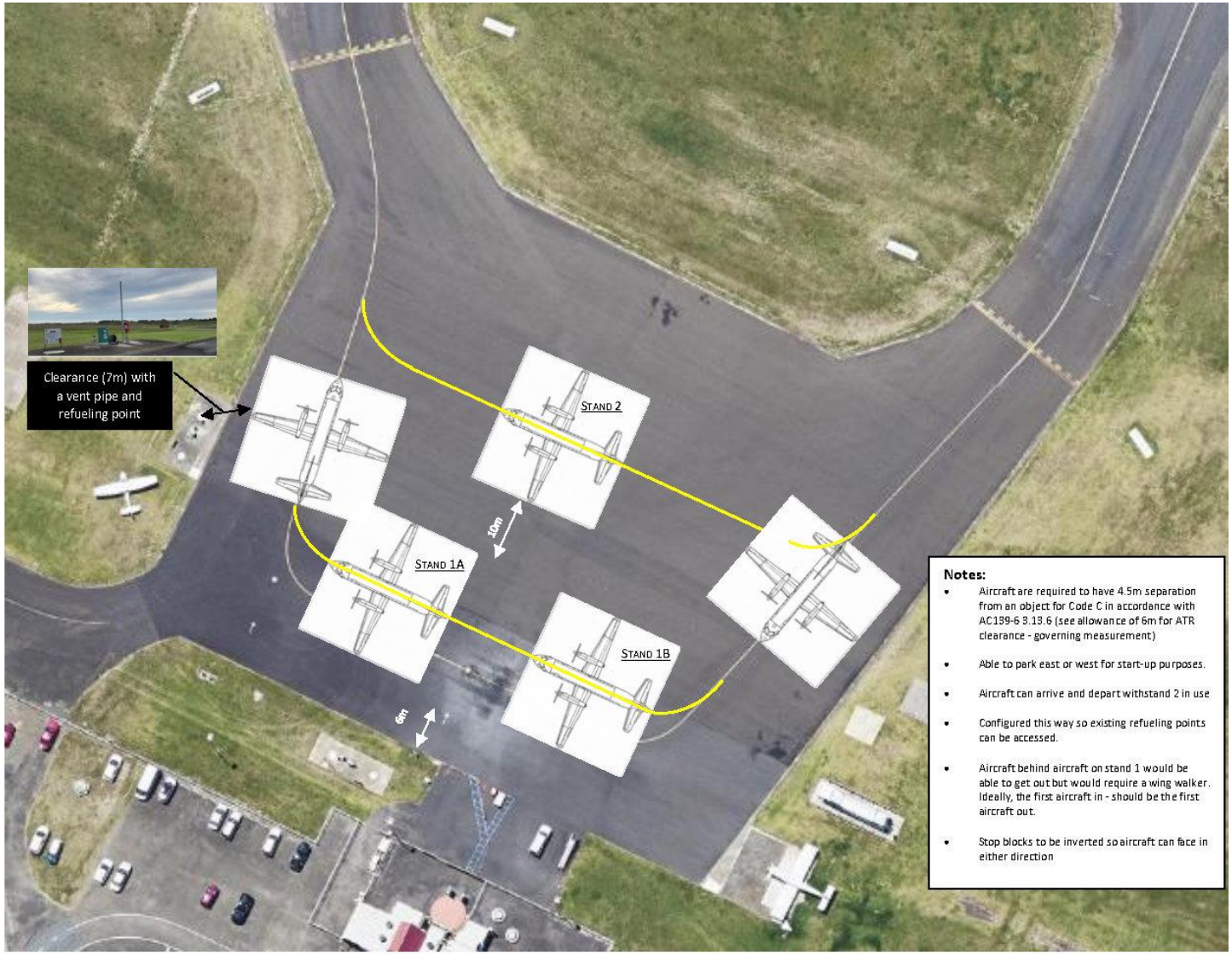


Figure D2: Apron layout for ATR72

Figure D3: Future apron expansion