MITCHELL DAYSH

HAWKE'S BAY AIRPORT LIMITED

NOTICE OF REQUIREMENT

Airport Designation

26 July 2023

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

GLOSSARY

Activity Sensitive to Aircraft Noise: means any residential activity, visitor accommodation, rest homes and other homes for the aged, day care facility, educational facilities (including all outdoor spaces associated with such facilities), child care centres, hospitals and facilities used for overnight patient medical care. Excludes medical and educational activities (including accommodation) associated with an aviation purpose.

Aircraft Operations: means Aircraft operations include ground movements, take offs and landings, but exclude;

1. aircraft landing or taking off in an emergency
2. emergency flights required to rescue persons from life threatening situations or to transport patients, human organs or medical personnel in medical emergency
3. aircraft using the aerodrome due to unforeseen circumstances as an essential alternative to landing at the planned destination aerodrome
4. flights required to meet the needs of a national or civil defence emergency declared under the Civil Defence Act 2002;
5. flights certified by the Minister of Defence as necessary for reasons of National security in accordance with Section 4 of the Act;
6. Aircraft carrying heads of state and/or senior dignitaries acting in their official capacity or other military aircraft operations; and
7. aircraft undertaking firefighting or search and rescue duties.

Airport Ground-Based Activities: All airport activities, excluding any unplanned engine testing and Aircraft Operations

Critical Listening Environment: Means any space that is regularly used for high quality listening or communication, for example principal living areas, bedrooms and classrooms but excludes non-Critical Listening Environments.

Essential Unplanned Engine Testing: means aircraft testing in the event of unexpected equipment failure or potential failure, and does not include routine engine maintenance, normal operational aircraft engine run-ups. (i.e.: aircraft warming up prior to take-off) or any noise generated by the taxiing or towing of aircraft to or from the designated engine testing location.

Indoor Design Sound Level: Means 40 dB Ldn in all Critical Listening Environments.

Non Critical Listening Environments: Means any space that is not regularly used for high quality listening or communication including bathroom, laundry, toilet, pantry, walk-in-

wardrobe, corridor, hallway, lobby, cloth-drying room, or other space of a specialised nature occupied neither frequently nor for extended periods.

Notional Boundary: A line 20 metres from any façade of a building containing an activity sensitive to noise, or the legal boundary where this is closer to such a facade.

Outer Control Boundary: Means a boundary as shown on the Planning Maps, the location of which is based on the predicted day/night sound level of 55dB Ldn from airport operations.

REPORT INFORMATION

Report Status	Final
Our Reference	MDL000708
Author	Kirsty O'Sullivan
Review By	Stephen Daysh
Version Date	26 July 2023

PART A

Form 18

FORM 18

NOTICE OF REQUIREMENT BY REQUIRING AUTHORITY FOR DESIGNATION

Sections 168(2) Resource Management Act 1991

To **Napier City Council**

1. **Hawke's Bay Airport Limited ("HBAL") gives notice of a requirement for a designation for Airport Purposes ("NOR").**

2. **The site to which the requirement applies is as follows:**

The land is predominantly owned or leased by HBAL as shown in Figure 1 and **Appendix A** of the attached Assessment of Environmental Effects (**"AEE"**) and identified in the schedule of legal descriptions and record of titles contained in **Appendix B**.

3. **The nature of the proposed public work (or project or work) is:**

HBAL is seeking an Airport Purposes Designation ("**designation"**) to apply to the land identified in Figure 1 and **Appendix A** of the attached AEE. The activities enabled by the designation would include (subject where appropriate to conditions that form part of this NOR):

- Aircraft operations and associated activities, including all ground-based infrastructure, plant and machinery necessary to assist aircraft operations;
- Runways, taxiways, aprons and other aircraft movement areas;
- Airport terminals, hangars, control towers;
- Rescue, fire, police and medical facilities;
- Fuel storage and fueling facilities, facilities for handling and storage of hazardous substances;
- Navigation and safety aids, meteorological stations, lighting and telecommunications facilities;
- Maintenance and servicing facilities, including the testing of aircraft engines (in situ or otherwise);
- Catering facilities;

- Freight facilities;
- Quarantine and incineration facilities, border control and immigration facilities and aviation security;
- Aircraft training facilities, including associated educational and accommodation facilities;
- Roads, accessways, stormwater facilities, infrastructure and utility activities;
- Monitoring and site investigation activities;
- Vehicle parking and storage, rental vehicle activities, vehicle valet activities and public transport facilities;
- Signs, artwork or sculptures and flags and landscaping;
- Commercial, industrial and hospitality activities provided they serve the needs of passengers, crew, ground staff, airport workers and other associated workers and visitors;
- Ancillary activities, buildings and structures (including warehousing and other storage facilities) related to the above;
- Administration and offices associated with any of the foregoing activities; and
- All related construction, earthwork, vegetation control and maintenance activities and associated structures.

HBAL is seeking to establish a more efficient and flexible planning method to allow for the use of the Airport land in a way that properly reflects evolving development and infrastructure requirements at the Airport.

Refer to the AEE, including **Appendices A and C**, which set out the proposed form and nature of the NOR, including the conditions proposed to attach to the designation.

4. **The nature of the proposed conditions that would apply are:**

The NOR includes a comprehensive suite of proposed conditions designed to effectively manage any actual or potential effects on the surrounding environment. The conditions are set out in full in **Appendix C** of this NOR and in summary:

- Identify conditions for when an outline plan of works is not required;
- Provide building setback and height limitations;
- Set out minimum outdoor storage requirements;
- Set noise limits for land based activities;
- Impose a new aircraft noise management regime for aircraft operations;

- Address matters regarding lightspill;
- Consider the potential for an Area of Maori Significance to be disrupted by activities occurring on-site and how to work through any outstanding concerns;
- Consider and appropriately manage any potential effects arising on identified Significant Natural Areas; and,
- Impose a new requirement for development guidelines to be in place at all times.

In terms of an overall approach of the conditions as part of the designation, where an activity is currently permitted by the City of Napier District Plan (**"Operative District Plan"**) provisions, or is considered to have effects which are minor or less than minor, no outline plan is required to be submitted in terms of section 176A of the Resource Management Act 1991 (**"RMA"** or **"the Act"**). Where an activity exceeds the Operative District Plan performance standards or limitations, an outline plan will be required.

The proposed form and conditions of the designation is attached as **Appendix C.**

5. **The effects that the public work (or project or work) will have on the environment, and the ways in which any adverse effects will be mitigated, are:**

Refer to the AEE attached, including Sections 5 and 6.

6. **Alternative sites, routes, and methods have been considered to the following extent:**

HBAL owns the majority, or has an interest in the land subject to the designation, and the adverse effects have not been identified as being significant, therefore alternative sites, routes and methods are not required to be considered in accordance with section (171(1)(b) of the Act insofar as the land based activities are enabled by the designation.

The proposed introduction of aircraft noise management obligations on HBAL via the designation and the inclusion by reference to the aircraft noise boundaries contained within the planning maps draws into consideration the properties contained within the revised aircraft noise boundaries. The alternative sites, routes and methods with respect to this matter are set out in detail in Section 8.

7. **The designation is reasonably necessary for achieving the objectives of the requiring authority because:**

Refer to the AEE, including Section 9.

8. **The following consultation (or no consultation) has been undertaken with parties that are likely to be affected:**

The purpose of the proposed designation is to set in place a more efficient and flexible planning method to allow for the use of the Airport land in a way that properly reflects evolving development and infrastructure requirements. In doing so, however, HBAL is essentially seeking to transfer the permitted activity provisions that currently sit within Chapter 51 of the Operative District Plan. On this basis, it is considered that there are no parties who will be affected by the proposed designation.

Notwithstanding this, since early 2019, engagement has occurred with various key stakeholders at various points along the Airport Master Plan's development journey. This has included the following stakeholders:

- **Shareholders**: Napier City Council (**"NCC"**), Hastings District Council (**"HDC"**) and Treasury;
- **Regulators**: NCC and Hawke's Bay Regional Council (**"HBRC"**);
- **Government Agencies**: Waka Kotahi NZ Transport Agency (**"Waka Kotahi"**), the Department of Conservation (**"DoC"**), the Ministry of Business, Innovation and Employment (**"MBIE"**) and Landcorp Holdings Limited (PAMU Farms of New Zealand);
- **Mana Whenua**: Mana Ahuriri Trust;
- **Stakeholders**: Airways, Civil Aviation Authority, NZ Airports Association, Hawke's Bay Tourism, Port of Napier, Westshore Residents and Development Association, Biodiversity Hawke's Bay, and the Art Deco Trust.
- **Airlines**: Air New Zealand, Jetstar, Air Napier, and Skyline Aviation;
- **General Aviation – recreation based at or use Hawke's Bay Airport:** Napier Aero Club;
- **General Aviation – commercial operators based at Hawke's Bay Airport:** Air Hawke's Bay, Aerospread, Flight Care, Red Airworx, and Primary Avionics; and
- Hawke's Bay Airport tenants, proposed tenants and staff.

During the promulgation of aeronautical forecasts, detailed engagement was also undertaken with airlines and the general aviation community (recreation and commercial operators). This forecasting underpins the outputs of the Master Plan.

HBAL has also been regularly liaising with NCC policy staff during the promulgation of this NOR.

In April and May 2021, HBAL also held a number of public information sessions to share with the community its long term vision for the Airport. Refer to section 11 for further information regarding these sessions and key themes arising from the feedback received.

9. HBAL attaches the following information required to be included in this notice by the Operative District Plan, Regional Plan or any regulations made under the Resource Management Act 1991.

Form 18

Assessment of Environmental Effects

Appendix A: Designation Map

Appendix B: Record of Titles

Appendix C: Designation Conditions

Appendix D: Gazette Notice

Appendix E: Hawke's Bay Airport Summary Master Plan 2020

Appendix F: Forecasting Report

Appendix G: Acoustic Assessment

Signature:

Rob Stratford – CEO, Hawke's Bay Airport Limited

Date: 26 July 2023

Electronic address for Service: kirsty.osullivan@mitchelldaysh.co.nz / ellen.robotham@mitchelldaysh.co.nz

Telephone: 021 242 5453 / 021 457 322

Postal address (or alternative method of service under section 352 of the Act):

Mitchell Daysh Limited
PO Box 149
Napier 4140

Contact person: Kirsty O'Sullivan / Ellen Robotham

Note to person giving notice

If the notice relates to a requirement for a designation, or an alteration to a designation, under section 168A of the Resource Management Act 1991, you must use— this form if the requirement is lodged with the Environmental Protection Authority; or form 20 if the requirement is not lodged with the Environmental Protection Authority.

If the requirement is lodged with the Environmental Protection Authority, you must also lodge a form in form 16A at the same time.

You must pay any charge payable to the territorial authority for the requirement or alteration to the requirement under the Resource Management Act 1991.

If this notice is to the Environmental Protection Authority, you may be required to pay actual and reasonable costs incurred in dealing with this matter (see section 149ZD of the Resource Management Act 1991).

Schedule 1 form 18: amended, on 1 November 2010, by regulation 19(1) of the Resource Management (Forms, Fees, and Procedure) Amendment Regulations 2010 (SR 2010/279).

B

PART B

Assessment of Environmental Effects

1. INTRODUCTION

1.1 INTRODUCTION

Hawke's Bay Airport Limited (**"HBAL"**) is the owner and operator of Hawke's Bay Airport (**"the Airport"**). HBAL gives notice of a requirement ("**NOR"**) for a designation under section 168 of the Resource Management Act 1991 (**"RMA"** or **"the Act"**) to designate its current land holdings and leased areas of land for Airport Purposes. The extent of the proposed designation is shown in Figure 1 and is attached as **Appendix A**.

The Schedule of legal descriptions attached as **Appendix B** to this NOR outlines the land to which the designation will apply. This also includes relevant Records of Title.

The purpose of the proposed designation is to set in place a more efficient and flexible planning method to allow for the use of the Airport land in a way that properly reflects evolving development and infrastructure requirements. A copy of the proposed form and the proposed conditions of the designation is attached as **Appendix C**.

Prior to the Covid-19 global pandemic ("**Covid-19"**), airports across Australasia, including Hawke's Bay, were continuing to experience sustained visitor growth. Providing the necessary infrastructure to meet growth requires airport operators to be highly responsive and adaptive, and to undertake long-term planning through master planning programmes. While Covid-19 has had, and will continue to have, impact on the aviation sector over the coming years, Air New Zealand forecasts their Hawke's Bay schedule will return to pre-pandemic levels during FY2024 – within four to five years of the impacts of the pandemic first being felt.

Prior to Covid-19, HBAL undertook a detailed review of its passenger forecasts and Master Plan to guide the development and growth of the Airport over the next 20 plus years. The forecasting at that time anticipated that the Airport could expect to accommodate up to 1.86 million passengers per annum by approximately 2045. These passenger forecasts have been updated following New Zealand's initial Covid-19 lockdown, with modelling suggesting that the forecasts (and thus the Master Plan) will still be realised, albeit within a slightly longer timeframe of between 2 to 13 years depending on the growth scenario applied.

Figure 1: **Extent of proposed Airport Purposes Designation Boundary.**

As noted above, HBAL has recently developed an updated Master Plan to guide the way the airport is developed in the future to meet the increased demands on airport infrastructure arising from forecast growth in passenger and aircraft movements. The forecasting and master planning also considered whether there was demand for a potential future freight facility to be established at the Airport. The Master Plan is discussed further in Section 2.3 and the freight facility in Section 2.4.2.

HBAL has also reviewed the planning mechanisms that are in place to provide for the ongoing growth, development and protection of the Airport. The most common planning methods for airports throughout New Zealand is to have in place a designation complemented by underlying zone provisions. For example, this approach is used at Dunedin, Nelson and Invercargill Airports.

A designation is a type of approval mechanism for infrastructure works and utility operations where these are undertaken by a requiring authority. A designation is a well-established and robust planning tool for public infrastructure and lifeline facilities, because land subject to a designation is, in effect, given its own land use planning regime within the District Plan. Any adverse effects arising can be managed through conditions and the Outline Plan of Works ("**Outline Plan**") process. This is an appropriate approach for the Airport sector where long-term planning is required, and sufficient flexibility and efficiency to provide for the changing demands of a modern airport is needed.

The underlying zone provisions would apply to third party operators who cannot rely on the provisions of the designation to undertake their activities, or for activities that a requiring authority seeks to undertake that are not within the parameters of the designation.

In tandem with this NOR, the Napier City Council (**"NCC"**) is proposing to make changes to the planning maps which depict the aircraft noise boundaries for the Airport as well as the land use management framework that applies for activities sensitive to aircraft noise (**"ASAN"**) located within the revised noise boundaries. These changes will form part of the City of Napier District Plan (**"Proposed Plan"**) Review. These changes will complement the aircraft noise management obligations imposed on HBAL as part of this NOR.

1.2 REQUIRING AUTHORITY – HAWKE'S BAY AIRPORT LIMITED

The airport is a requiring authority under section 166(g) of the RMA, as approved by the Resource Management (Approval of Hawke's Bay Airport Limited as a Requiring Authority) Notice 2010. The notice provides general approval for the operation, maintenance and expansion of the airport known as Hawke's Bay Airport. For the purposes of the notice, "airport" has the meaning given to that term by section 2 of the Airport Authorities Act 1991. A copy of the notice is attached as **Appendix D**.

In light of this status, HBAL can seek to designate land as a requiring authority pursuant to section 167 of the RMA. This NOR is in accordance with HBAL's statutory functions as a requiring authority.

HBAL is currently the requiring authority for two designations in the operative City of Napier District Plan (**"the Operative District Plan"**):

- Hawke's Bay Airport Height Control Designation;[1] and
- Airport Purposes Designation.[2]

The Hawke's Bay Airport Height Control Designation applies to the Airport's airspace and establishes the obstacle limitation surfaces (**"OLS"**) in the vicinity of Hawke's Bay Airport. Any activity which conflicts or enters into the Airport Height Control Designation requires the approval of the HBAL. While not expressly stated, the purpose of the designation is to ensure that objects and structures do not enter into airspace that is critical to safe operation of aircraft on approach and departure from Hawke's Bay Airport. This designation is proposed to be "rolled over" into the Proposed Plan without modification.[3]

The Operative District Plan also includes an Airport Purposes Designation. There is no record within the Operative District Plan regarding what this designation relates to or where it is located. HBAL is working with NCC to understand what this designation relates to, however in the meantime, the designation is proposed to be "rolled over" in the Proposed Plan without modification. If the designation is superseded by an existing designation or is no longer necessary, the designation will be uplifted.

This NOR generally emulates the permitted activity standards and thresholds in the Operative District Plan, albeit with amendments where such controls are not considered necessary or relevant in the context of an airport environ or in response to feedback provided to HBAL on the draft NOR. This NOR includes all of the land currently owned or leased by HBAL and currently zoned Airport under the Operative District Plan. Importantly, this NOR also seeks to impose new aircraft noise management obligations on HBAL which otherwise would be difficult to enforce under the Operative District Plan framework (refer to Section 2.5 for more detail).

2. HAWKE'S BAY AIRPORT LIMITED – AN OVERVIEW

Hawke's Bay Airport is an important strategic asset for the Hawke's Bay region. It is the third busiest airport in the North Island and provides an essential role in connecting the Hawke's Bay region's people and produce with the wider national and international

---

1 Designation 173, applies to "all maps" in the Operative District Plan.

2 Designation 173, applies to planning map E5 / 01 in the Operative District Plan.

3 As confirmed by HBAL via letter to NCC dated 28 August 2019.

economy. The Airport therefore comprises a fundamental part of the social and economic wellbeing of the community.

Prior to the Covid-19 pandemic, the Airport had been experiencing significant growth in the use of its facilities and infrastructure. In the 2018/2019 financial year, the Airport accommodated over 750,000 passengers – approximately three times the number of passengers received at the turn of the millennium. Forecasting work undertaken by Christchurch International Airport Limited (**"CIAL"**) in July 2019 showed that this growth was set to continue, reaching approximately 1.86 million passengers per annum over the following 25 year period. While Covid-19 has had, and will continue to have, impact on the aviation sector over the coming years, forecasts are that the industry will recover within the next four to five years (i.e. within the lifetime of the second generation District Plan).

The Airport is located upon a former tidal lagoon which was uplifted during the 3 February 1931 earthquake. The earthquake, which measured approximately 7.9 on the Richter Scale, raised the seabed by approximately 2m, generating many additional hectares of dry and flat land within Napier City and the surrounds.

Approximately four years after the earthquake, an aerodrome was established on a portion of the uplifted Ahuriri Lagoon Reserve. The first service between Napier and Gisborne commenced in 1935 and transferred to the adjacent "Beacons" airfield and the current airport site, soon after. The Airport was officially opened in its current location on 15 February 1964.

HBAL was incorporated in 2009. HBAL is a council controlled-trading organisation under the Local Government Act 2002. It is 50% owned by the Crown, 26% owned by the NCC and 24% owned by the HDC. HBAL's core business is to provide appropriate facilities for all users of the Airport and the travelling public.

The Airport is located adjacent to the residential suburb of Westshore, within the wider Ahuriri area. The Airport is bound by Ahuriri Estuary to the south, and Windsock and Turfrey Roads to the west and north. State Highway 2, Watchman Road and the Westshore Wildlife Reserve collectively form the eastern boundary of the site (refer to Figure 2).

Beyond the immediate environs of the Airport are the communities of Parklands and Bayview, with the NCC owned farm known as "Lagoon Farm" located to the south of the Airport, between the Ahuriri Estuary and Parklands. To the west and north of the Airport are large areas of rural land, including the approximate 1320 hectare Landcorp farm located to the immediate west of the Airport.

Figure 2: **Environmental setting of the Airport (not to scale).**

2.1 HBAL'S CURRENT CONFIGURATION AND LAND HOLDINGS

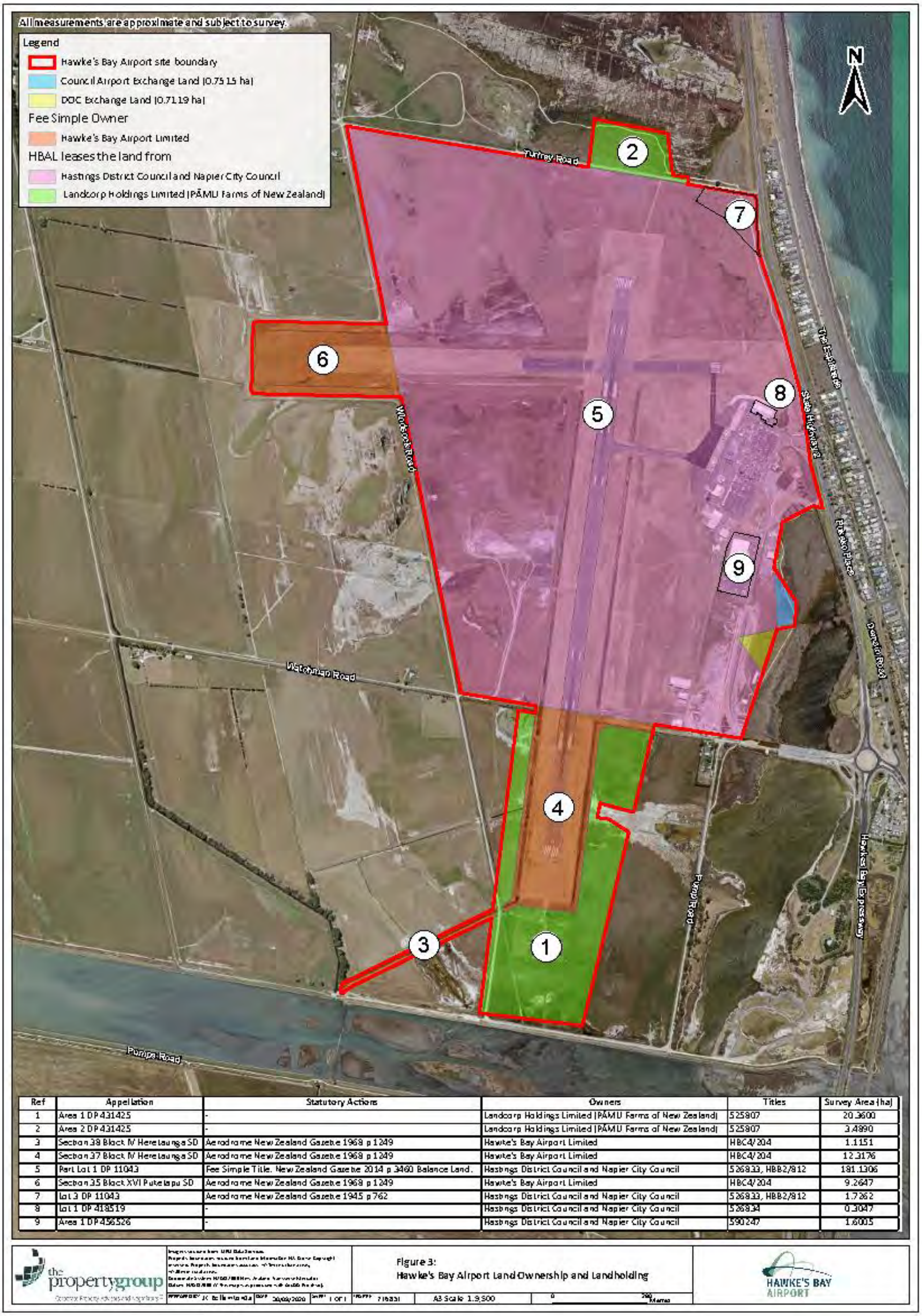
The Airport has a single 1750m long runway (16/34), with full 240m Runway End Safety Areas ("**RESA**") at each end. Two general aviation runways are also provided on-site, comprising of a 766m grass runway strip running parallel to the main runway, and the partially sealed cross wind runway running perpendicular to the main runway. The cross-wind runway (07/25) is approximately 1200m in length and comprises of an approximately 600m sealed and 599m grass runway.

Under its existing configuration, the Airport can accommodate up to seven turboprop aircraft on the apron at any given time. The Airport can also accommodate larger Code C aircraft, such as Boeing 737s and Airbus A320s under charter. The Airport is also a hub for general aviation activity which makes up almost a third of all aircraft movements through the airport. General aviation activities generally comprise of flights associated with the existing Aero club, commercial helicopters and private charters.

The Airport is currently situated on land which is owned or leased by HBAL. As shown in Figure 3 (and appended as **Appendix A**), this includes:

- Approximately 22.6974 18 hectares of land owned by HBAL;
- Over 184.762 hectares of land leased from NCC and HDC. These leases are all for a 21-year term and are renewable in perpetuity;
- Approximately 23.849 hectares of land leased from Landcorp Holdings Limited; and,
- Approximately 0.6271 hectares of land subject to an exchange with the Department of Conservation.

While HBAL does not own all of the land described above, given that the current and foreseeable use of this land is for airport related purposes, it is considered appropriate to include this area within the proposed designation.



Ref	Appellation	Statutory Actions	Owners	Titles	Survey Area (ha)
1	Area 1 DP 431425	-	Landcorp Holdings Limited (PÄMU Farms of New Zealand)	525907	20.3600
2	Area 2 DP 431425	-	Landcorp Holdings Limited (PÄMU Farms of New Zealand)	525907	3.4890
3	Section 38 Block IV Heretaunga SD	Aerodrome New Zealand Gazette 1968 p 1249	Hawke's Bay Airport Limited	HBC4/204	1.1151
4	Section 37 Block IV Heretaunga SD	Aerodrome New Zealand Gazette 1968 p 1249	Hawke's Bay Airport Limited	HBC4/204	12.3176
5	Part Lot 1 DP 11043	Fee Simple Title. New Zealand Gazette 2014 p 3460 Balance Land.	Hastings District Council and Napier City Council	526933, HBB2/812	181.1306
6	Section 35 Block XVI Putetapu SD	Aerodrome New Zealand Gazette 1968 p 1249	Hawke's Bay Airport Limited	HBC4/204	9.2647
7	Lot 3 DP 11043	Aerodrome New Zealand Gazette 1945 p 762	Hastings District Council and Napier City Council	526933, HBB2/812	1.7262
8	Lot 1 DP 418519	-	Hastings District Council and Napier City Council	526934	0.3047
9	Area 1 DP 456526	-	Hastings District Council and Napier City Council	590247	1.6005

the propertygroup

Figure 3:
Hawke's Bay Airport Land Ownership and Landholding

A3 Scale 1:9,500

HAWKE'S BAY AIRPORT

Figure 3: **Land ownership and landholding at Hawke's Bay Airport.**

2.2 HBAL STRATEGIC VISION AND GOALS

The HBAL Statement of Intent 2023/24 sets out the vision, mission and values of the Airport for the next financial year and beyond. More specifically, the following purpose and vision statements have been developed to guide HBAL over the coming years:

> *Purpose: We connect people, business and regions in meaningful ways.*
>
> *Visions: We provide a safe, secure and intuitive transport hub for everyone, with sustainability at the heart of what we do.*

HBAL's work toward this vision is guided by five strategic pou (pillars), its values, and its sustainability framework.[4]

The Strategic Pou are illustrated in Table 1 below.

Table 1: HBAL Strategic Pou.

The sustainability framework provides the medium to long-term strategic imperatives for HBAL. While during the Covid-19 recovery period the priority will be focused on restoring the Airport's financial sustainability, there will be an ongoing focus to ensure decision making continues to balance the four pillars of the sustainability framework. The framework is set out in Figure 4 below and has been developed and benchmarked against the United Nations Sustainable Development Goals.

[4] Hawke's Bay Airport Statement of Intent 2023/2024.

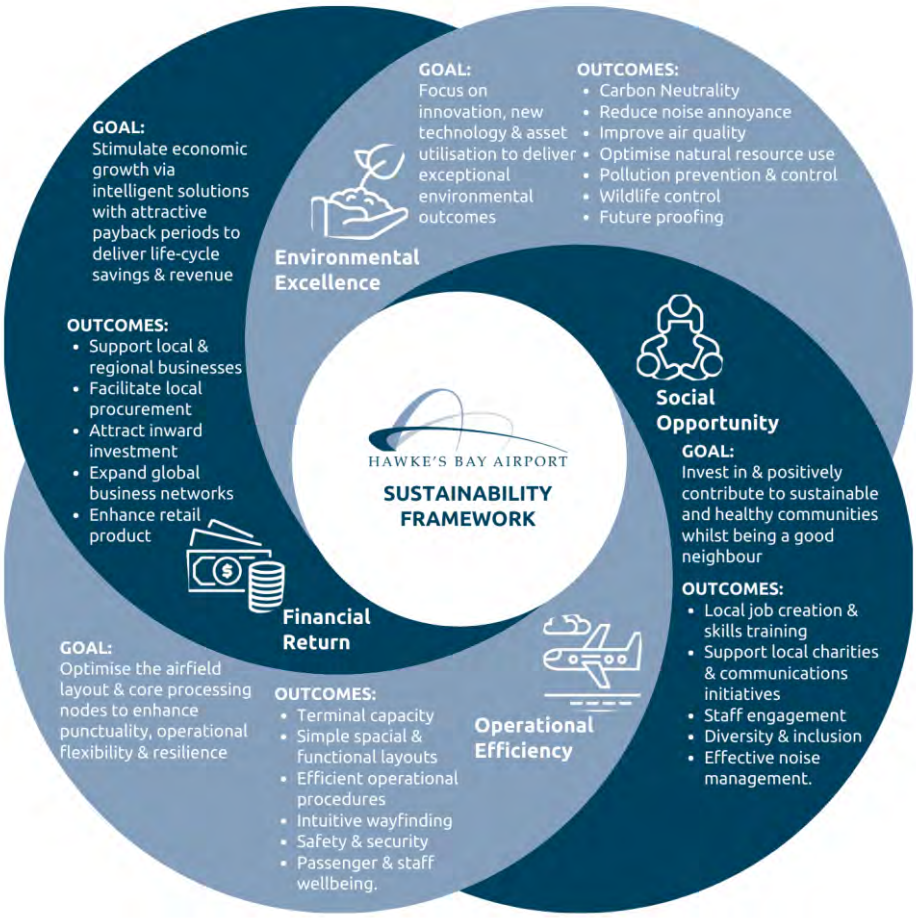


Figure 4: HBAL's Sustainability Framework.

HBAL is part of the Airports Council International Airport Carbon Accreditation Programme. The programme is independently operated and internationally recognised for assessing an airport's reduction in carbon emissions through a four-level certification programme: mapping, reducing, optimisation and neutrality.

In January 2020, HBAL was successfully awarded Level 1 Mapping accreditation and was successfully awarded Level 2 Reduction accreditation in January 2021. As part of this work, HBAL is investigating the feasibility of an on-airport commercial solar project. This project aligns with HBAL's carbon neutral aspirations as well as many industry, national and local goals to transition to a more renewable energy economy.

2.3 HBAL COMMUNITY INVOLVEMENT

HBAL is an active member on a number of national, regional and local groups that contribute to the social, economic and environmental resilience of both the community and the business sector. These groups include:

- New Zealand Airports Association: HBAL is a member of the industry association for airports and related businesses in New Zealand.
- Airways Air Traffic Services Review: HBAL is one of four regional airports that have formed a collective to work with Airways New Zealand and Civil Aviation New Zealand on their air traffic services review. This review will inform how air traffic services will be provided throughout regional New Zealand airports moving forward.
- Export New Zealand Hawke's Bay: HBAL is a member organisation and the key objectives of Export New Zealand are to provide effective advocacy and lobbying on behalf of exporters, inspire firms to engage in exporting and grow internationally and provide a practical support programme and networking events to help firms achieve these goals.
- Art Deco Trust: HBAL is a financial supporter of the Art Deco Trust. The key mission of the trust is to preserve, restore, promote and celebrate Napier's Art Deco era heritage.
- Biodiversity Hawke's Bay: HBAL is the platinum supporter of Biodiversity Hawke's Bay. HBAL also works with the nearby Westshore Residents Association to enhance the area known as "The Gap". HBAL staff also hold roles as elected members of the Guardians Committee, a related incorporated society.
- Business Hawke's Bay: HBAL works collaboratively with Business Hawke's Bay and Tourism Hawke's Bay on a number of regional economic development initiatives. Business Hawke's Bay is an independent business led economic development agency which is responsible for administering the Hawke's Bay Regional Development Strategy. The Strategy identifies five key actions, with HBAL being actively involved in the delivery of two of these actions relating to "Pou 4 Economic Growth" and Pou 5 Promoting our Place". More specifically, HBAL has been working with Business Hawke's Bay on an airfreight initiative and has developed a regional aviation strategy working group with Business Hawke's Bay and Hawke's By Tourism.
- Hawke's Bay Chamber of Commerce: HBAL is a member of the local Hawke's Bay Chamber of Commerce, an entity established to connect, represent, and support business in the region and to drive business growth and vitality.
- Ahuriri Business Association: HBAL is a member of the Ahuriri Business Association. The Association's mission is to proactivity promote the Ahuriri for the business of local businesses.
- Hawke's Bay Regional Sustainability Forum: HBAL is an active participant of the informal Hawke's Bay Regional Sustainability Forum. The Forum is in its early formation stage, with terms of reference and membership requirements currently being developed. It is intended that the forum will be an industry led group, including active participation of the Port of Napier and the Pan Pac.

2.4 HAWKE'S BAY AIRPORT MASTER PLAN

A major aspect of successfully maintaining and operating an airport resource is having a robust and appropriate development strategy. Such a strategy generally will include a plan for the Airport, strategies for the protection of land for existing and future airport development and operations, and where land availability enables, the provision of an aircraft noise buffer for the surrounding community.

Aviation is a long-term growth industry. In the short-term this can be high volatility, marked by the introduction (and occasional withdrawal) of new services, airlines, and aircraft types. It is susceptible to fluctuations in the price of fuel as well as other macro-economic movements, however, over longer periods, the growth in air travel is generally consistently upward. Therefore, and acknowledging the short-term potential volatility, airport planning remains a dynamic and flexible discipline, all the while with a mind to ongoing long-term growth.

Accordingly, airport planning requires a long-term view and a commitment to put resources towards planning and protecting for the future.

While not a requirement in the New Zealand legislative context, well managed airports such as Hawke's Bay Airport recognise the importance of having a forward-looking Master Plan in place. A Master Plan is an indicative road map of potential future development plans at an airport, based on projected airport growth and other needs at the time it was prepared.

2.4.1 2012 Master Plan

In 2012, Hawke's Bay Airport published a Master Plan which set out the vision for development and growth for a 19 year period, to 2030. It provided a framework for the Airport's future and sought to provide a vision for both airside and non-airside development of the airport. An overview of the 2012 Master Plan is provided in Figure 5.

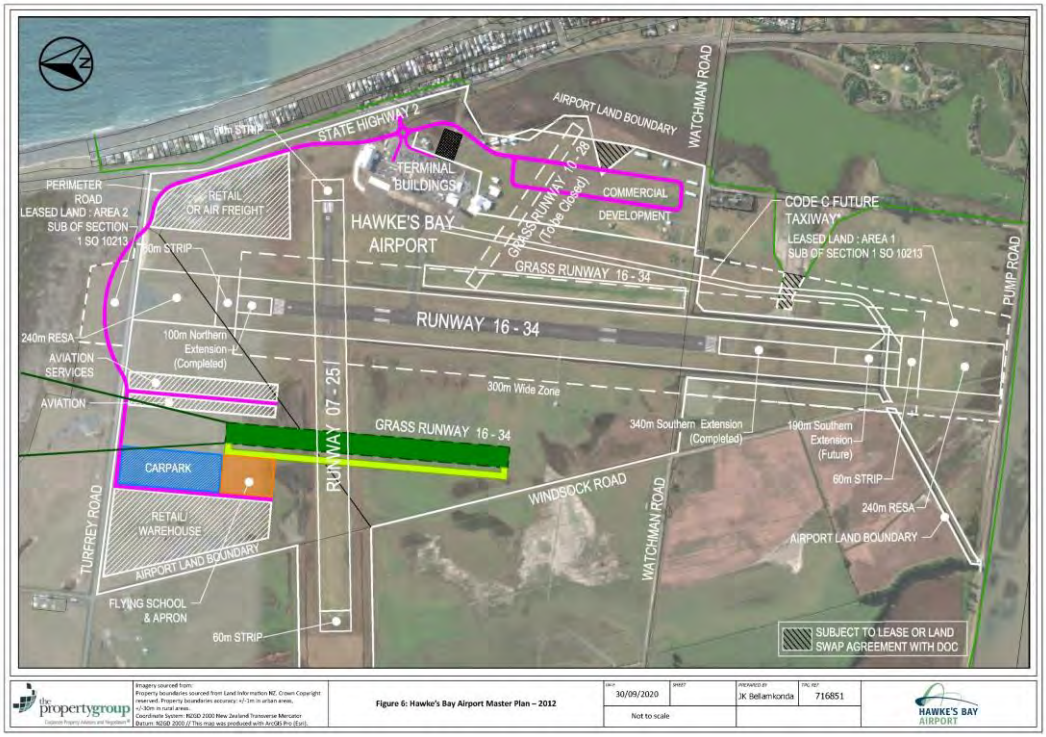


Figure 5: Hawke's Bay Airport Master Plan – 2012.

2.4.2 2040 Master Plan

Since the 2012 Master Plan was developed, HBAL has further refined the future growth scenarios used for airport and how these are provided for by the Master Plan. This detailed review resulted in a timely reassessment of the Master Plan and the future direction of the Airport. The review demonstrated that the terminal building upgrades being undertaken at the time were likely to reach capacity before the terminal building was finished and formally opened.

The new Master Plan (Figure 6 and appended as **Appendix A**) seeks to ensure that the configuration of the Airport is capable of accommodating a full 2430m runway, with full 240m RESA at each end of the runway. This runway length provides the opportunity for Code C aircraft with capacity to reach Australian and Pacific Island destinations. The Master Plan also seeks to protect the land area required to accommodate a Code C taxiway with full wingtip clearance. Note this has an ultimate constraining effect on the land area available for future aeronautical development.

To the west of the runway, the Master Plan seeks to establish a buffer area comprising of the land owned and leased by HBAL. This buffer will protect the Airport from future incompatible land use activities. This area has also been earmarked as a potential site to establish an on airport solar farm, designed to assist HBAL in reaching its carbon accreditation targets, as discussed in Section 2.2.

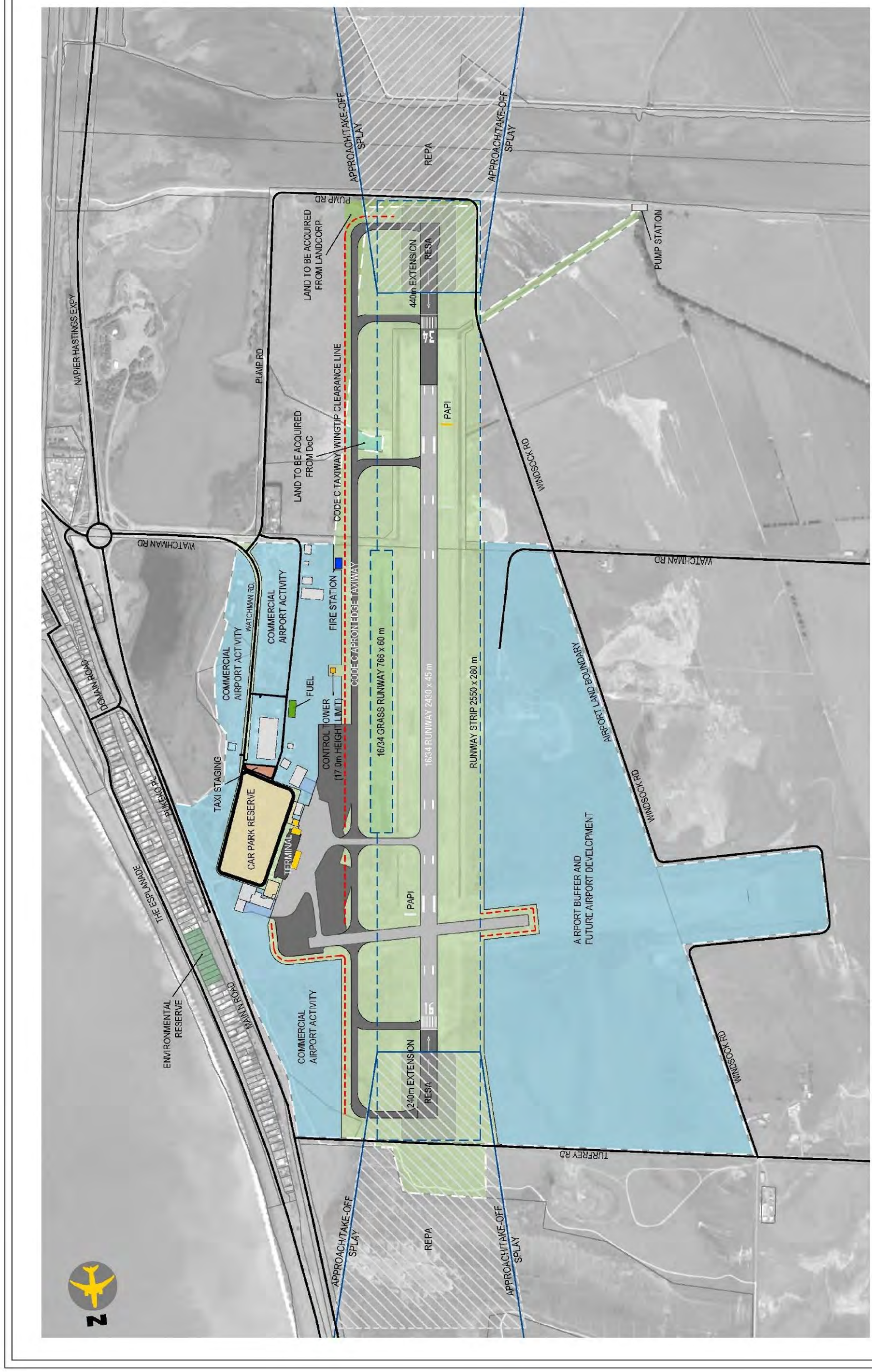


Figure 7: Hawke's Bay Airport Master Plan – 2040

Figure 6: 2040 Hawke's Bay Airport Master Plan.

A copy of the Master Plan Summary Report is attached as **Appendix E.**

It is important to note that a Master Plan is a reasonably high-level document that covers a wide range of spatial scales and timeframes. This type of plan is not intended to be viewed as a rigid blueprint and land uses at an airport inevitably evolve over time. Whilst the master planning exercise is intended to set out indicative development plans or goals, the detail regarding individual buildings, spaces and infrastructure requirements are not prescribed, and as such it is not considered appropriate, nor is it requested by HBAL, to include the master planning outcomes shown in **Appendix E** into the designation. The Master Plan does demonstrate however, why it is appropriate to include all of the land shown in Figure 1 within the designation.

As a separate Aeropark master plan is currently being development by HBAL to guide the future development of the landside area east of the terminal building. With the exception of areas that have a landside/airside interface, the Aeropark master plan relates to the potential future development of non-aviation related activities. This designation does not provide for non-aviation related activities.

2.5 FORECASTING

Over the course of preparing the Airport Master Plan, three iterations of the annual passenger forecasts were prepared, each under different prevailing market conditions:

1. July 2019 "Original" – Air New Zealand and Jetstar operating at Hawke's Bay Airport;
2. January 2020 "Revised" – Air New Zealand operating alone, after Jetstar withdrawal from regional New Zealand in November 2019. The revised forecast has been adopted for planning purposes and preparation of aircraft noise contours; and
3. June 2020 "Post-Covid" – Prepared as the Master Plan was being finalised.

An overview of each is provided in the following sections, with the full reports attached as **Appendix F**.

Short-term volatility in the aviation market is common. There have been numerous events that have reduced passenger demand for a period of time. Recent global examples include the Asian Financial Crisis (1997), 9/11 (2001), SARS (2003), the Global Financial Crisis (2008) and COVID-19. In each previous case, passenger demand returned and long-term growth rates in global passenger numbers were restored.

While there is short-term uncertainty arising from COVID-19, there is confidence that it is appropriate to provide protection for the Airport to be able to service long-term growth in passengers. The forecasting reinforces this confidence. Under all three market conditions, the Airport was forecast in the highest growth scenario to reach 1.5 million annual passengers between FY2040 and FY2045.

2.5.1 Scheduled Aircraft Movements

The modelling scenarios produced by CIAL resulted in three long-term passenger scenarios.[5] The low scenario is the most pessimistic and is underpinned by low population and traffic growth assumptions. The medium scenario uses base case growth rates from the Ministry of Transport forecasts, with the high growth scenario applying "@Home in Town and Country"[6] growth rates. A comparison of the three scenarios is shown in Table 2 below.

Table 2: Original Low, Medium and High Passenger Scenarios at Hawke's Bay Airport, to approximately 2045 (July 2019). Source: CIAL.

Scenario	Passengers per annum at 2045 (million)
Low	1.145M
Medium	1.325M
High	1.867M

Based on historic growth at the Airport, the annual low and high growth rates of between 1.2 and 3.7% are within a reasonable range of what might be expected at the Airport. Compared with current passenger volumes (750,357 in the 2019 financial year), Hawke's Bay Airport is anticipated to reach 150% (or approximately 1.08 million passengers per annum) between FY31 and 41. It is at this volume that HBAL will need to consider and manage terminal and airspace capacity.

Following the departure of Jetstar from Hawke's Bay Airport (and regional New Zealand) in November 2019, reforecasting of three scenarios was undertaken as follows:

- Low Growth – Short-term forecast plus low long-term growth rate (single airline);
- High Growth – Short-term forecast plus high long-term growth rate (single airline); and
- High Growth with Second Airline – Short-term forecast plus high long-term growth rate, plus additional growth due to a competitor entering the market.

---

[5] Note this work was originally completed in July 2019, was revisited in January 2020 following the departure of JetStar from the Hawke's Bay, and was reviewed again in June 2020 as part of the Covid-19 Recovery Review.

[6] A projected increase in domestic travel which assumes fast economic and population growth within New Zealand and more travel as work colleagues interact online across New Zealand, but periodically visit headquarters. The scenario is based on a Ministry of Transport report "Transport Outlook Future Overview, Future State 2017".

Table 3: Revised forecast following Jetstar departure from Hawke's Bay Airport (January 2020). Source: CIAL.

Scenario	Passengers per annum at 2045 (million)
Low	1.178M
High Growth Scenario 1	1.325M
High Growth Scenario 2	1.7M

Under a high growth scenario, it is a possible for Hawke's Bay Airport to secure a 1.9 million passenger per annum throughput by 2045. This scenario does require the market to support a second airline.

2.5.2 General Aviation

During 2018, the Airport accommodated 9,000 general aviation (**"GA"**) movements. This makes up approximately one third of the total aircraft movements at the Airport. Over the next approximately 25 years, this number is forecast to increase to almost 12,000 movements per annum.

For the purposes of GA forecasting, the GA sector has been separated into seven categories including medical movements, passenger charter flights, training flights, private flying, agricultural flights, military and governmental flying and commercial operations. The forecast changes in GA movements (by sector) include:

- Medical movements make up the largest proportion of fixed wing GA movements at the Airport. These movements arise from inter-hospital transfers across the North Island as well as aircraft maintenance for medical aircraft based in other regions. Based on population growth statistics, future fixed wing medical flights are forecast to increase 1.3% over the next 25 years, with helicopter medical flights forecast to decrease by almost 11%.
- Fixed wing charter flights are forecast to increase by approximately 2.6% over the next 25 years, with helicopter charters forecast to remain at a low, but consistent growth rate of 1%.
- There are currently no flight training schools located at the Airport, however with growth at the nearby Hastings Aerodrome (Bridge Pa, Hastings) constrained by Civil Aviation regulations (specifically, limitations on movements due to the airfield being non-certified), an opportunity has arisen for the Airport to accommodate further training facilities. Forecast growth in this area is predicted to be between 3 to 7.4% for fixed wing operators and 3 to 5.8% for helicopter operations.

- A low number of private aircraft movements are accommodated at the Airport, with existing numbers reducing likely due to the costs of owning and operating aircraft. While the Napier Aero Club's annual fly in of heritage, military and other special aircraft event that coincides with the Hawke's Bay Art Deco Festival, which generates approximately 200 movements each year, the growth rate of private aircraft numbers is forecast to remain flat over the next 25 years.
- Recent growth in the agricultural sector is likely to result in a short-term (5 year) increase in this sector, before being forecast to decline as agricultural land moves more towards forestry. Overall, growth of 0.2% is forecast over the next 25 years.
- While the Airport experiences occasional Police and Royal New Zealand Air Force related aircraft movements, growth in the general military and government sector aircraft activity is not anticipated to grow over the next 25 year period.
- Other commercial operators, such as skydive, or aerial photography providers, also operate from the Airport. Due to the diversity of this category, it is difficult to determine a definitive trend or prediction of future growth. Overall, the forecast has assumed both a 3% increase in both the commercial fixed wing and helicopter sections.

Overall, the forecast GA projections (shown as annual change in movements and compound annual growth rate by approximately 2045) are shown in Table 4.

Table 4: Forecast movement and compound annual growth rates by GA segment at the Airport (Source: CIAL).

	Fixed Wing 2019 - 2045		**Helicopter 2019 - 2045**	
	Forecast Movements 2019	**Forecast Movements 2045**	**Forecast Movements 2019**	**Forecast Movements 2045**
Medical	2,022	2,801	166	8
Passenger Charter	1,424	2,755	68	88
Training	1,462	3,153	130	203
Private	776	598	10	10
Agricultural	718	752	554	580
Military / Government	154	154	58	58
Commercial	112	112	64	138
TOTAL	6,668	10,325	1,050	1,085

Note that the discrepancy in figures (i.e. total 2019 forecast movements and reference to 9,000 general aviation movements) arises from "touch and go" movements, being additional movements, not landings, that HBAL are unable to charge the operator for.

2.5.3 Freight

Business and Economic Research Limited (**"BERL"**), on behalf of HBAL, has also undertaken a freight feasibility study[7] to determine future demand for freight facilities at the Airport. At present, freight capacity is generally constrained by the belly hold capacity of the aircraft using the airport.

Freight generally presents a commercial property proposition for airports. Airports that have large availability of land can accommodate warehousing, freight forwarding and logistics firms who place value on having airside access or who can offer mode transfers of their products.

Any future freight facilities at the Airport would need to be developed in partnership with HBAL, local government and key exporters and logistic firms. In order to develop a successful service, bi-directional demand (i.e. a balance between freight arriving to and coming from the region) would be required to maximise the opportunity for a successful service.

Another opportunity in this sector arises from high value exporters with a time sensitive product that would ideally fly directly to the East Coast of Australia and from there directly to long haul international destinations. The key barrier to entry for this sector is securing the airlines willing to offer this service and making the costs associated with freighting such goods via air, competitive with alternatives that currently experience longer journey time (i.e. by road and sea), for the reduced cost.

2.5.4 Covid-19 Reforecast

In light of the unprecedented disruption to the aviation sector caused by Covid-19, HBAL has undertaken a reforecasting exercise to determine the extent to which the global pandemic will affect its long-term passenger numbers and thus revenue forecast for the Airport.

As a result of Covid-19, New Zealand saw an almost 90% decline in domestic seat and a 90.5% reduction in international capacity for the month of April. While the domestic market was forecast to rebound to approximately 60% of the pre Covid-19 levels by July 2020, there was no certainty around when the international borders would re-open.

---

[7] Titled "Hawke's Bay Airport Airfreight feasibility study", consisting of three phases, Phase One, May 2019; Phase Two, September 2019; and Phase Three, December 2019.

To forecast the short-term effect of Covid-19, CIAL established three potential scenarios:

- Base Case: based on the Treasury's Main Budget 2020, this scenario assumes a recovery with no second wave of Covid-19 within New Zealand. It also assumes a government stimulus package of around $35 billion.
- High Growth: based on Treasury's Full Covid-19 Response and Recovery Fund forecast, this scenario assumes a recovery with no second wave of Covid-19 within New Zealand, and assumes approximately $62 billion of fiscal support, with full utilisation of the Covid-19 Response and Recovery Fund.
- Low Growth: assumes a slow recovery with a possible second wave or waves within New Zealand. It assumes a persistent economic shock and that tourism recovery will be especially slow. The scenario also assumes the full Covid-19 Response and Recovery Fund is used in the initial response phase and then during the recovery phase.

Under the Base Case and High Growth scenarios, the forecasts indicate that passenger traffic recovery will exceed pre-Covid-19 levels by June 2024 (within four years). The Low Case scenario sees the Airport only reaching 86% of its pre-Covid-19 traffic levels over the same period. Indications from Air New Zealand are that their Hawke's Bay schedule will return to pre-pandemic levels during FY2024, which aligns with the base and high growth scenarios.

2.6 AIRCRAFT NOISE

Aircraft noise at Hawke's Bay Airport is currently managed by Rule 51.18.2 of the Operative District Plan, which permits aircraft operations, provided that aircraft noise does not exceed 55dBA L_{dn} at any point beyond the Airport Noise Boundary. The Airport Noise Boundary is shown on the planning maps and is a composite of the 55dB L_{dn} and 95 L_{AE} aircraft noise contours. The contours and aircraft noise management regime is broadly consistent with the requirements set out in the New Zealand Standard 6805: 1992 *Airport Noise Management and Land Use Planning* (**"Standard"**).

The Standard was published in 1992 with a view to providing a consistent approach to noise planning around New Zealand airports. Since publication, the principles of the Standard have been applied to more than 15 New Zealand airports.

The Standard seeks to "implement practical land use planning controls and airport management techniques to protect and conserve the health of people living near airports without unduly restricting the operation of airports."

The Standard uses the "Noise Boundary" concept as a mechanism for local authorities to:

- "establish compatible land use planning" around an airport; and

- "set noise limits for the management of aircraft noise at airports".

Usually, the approach to setting out noise boundaries involves fixing an Outer Control Boundary (**"OCB"**) and a smaller Air Noise Boundary (**"ANB"**) around an airport. An OCB is based on a day/night noise exposure level of 55 dB L_{dn} and an ANB is based on 65 dB L_{dn}.

Typically, noise from aircraft operations (arrivals, departures, and taxiing) is considered when setting aircraft noise boundaries; and other airport activities such as maintenance and engine testing are controlled in other ways.

The Standard recommends that noise from aircraft operations be restricted to 65 dB L_{dn} at the ANB, and land use restrictions apply to ASAN inside the ANB and/or the OCB (whichever is applicable).

Generally, airport noise boundaries are based on the day-night sound exposure level (L_{dn}). L_{dn} is the day/night weighted average noise exposure level which is the sum of the sound energy from all aircraft noise events averaged over 24 hours with a weighting applied to night-time events. For airport noise boundaries, the Standard recommends using the average L_{dn} over a three month period.[8] The L_{dn} night weighting means that aircraft noise events between 10pm and 7am are weighted by an additional 10 decibels to account for the heightened sensitivity to noise at night. International research has found that the L_{dn} metric correlates well with community annoyance to aircraft and other transportation noise. The Standard does not recommend a noise limit for individual aircraft events, however, it does recommend that night-time single event noise levels are considered when setting the location of an ANB and OCB.

Whether or not compliance with the aircraft noise boundaries is achieved at the Airport is based on the total number of aircraft movements. The conventional approach for airports around New Zealand is for aircraft noise compliance limits to be imposed via designation conditions. This means the requiring authority is responsible for ensuring that aircraft operations achieve the prescribed noise limits at the boundaries identified on the relevant planning maps. Without a designation in place at the Airport, it becomes unclear as to who is responsible for compliance with the Operative District Plan rules (i.e. is it the individual aircraft operator or is it HBAL?). It is also questionable whether compliance with the rules can be enforced on any one entity given the way noise compliance is measured in terms of the Standard as required by the rules. This Operative District Plan approach has the potential to create considerable uncertainty for the surrounding community and the regulator, being the NCC.

[8] NZS 6805 recommends averaging over a three month period or agreed alternative period. L_{dn} can be averaged over any period of 24 hour blocks.

This NOR proposes to impose conditions on HBAL, as the requiring authority for the Airport, to ensure that aircraft operations are managed to achieve compliance with the prescribed noise limit set by the aircraft noise boundaries contained in the Proposed Plan.

3. EXISTING PLANNING CONTROLS

3.1 OVERVIEW OF LAND USE ZONING

The majority of this land subject to this NOR is currently zoned for Airport or Deferred Airport purposes under the Operative District Plan, with two exceptions:

- A 3.489 hectare area of land located to the north of Turfrey Road is currently zoned Rural Conservation and is leased by HBAL from Landcorp Holdings Limited; and
- A 0.6271 hectare area of land located to the east of the Airport is currently zoned Estuary. This land is subject to a land swap with the Department of Conservation.

The NOR also overlies part of the privately owned Turfrey Road and part of Designation 19, a designation held by NCC for stormwater detention purposes.

The location of the various land use zones is shown in Figure 7 below.

Figure 7: Operative District Plan land use zoning (not to scale).

3.2 THE EXISTING AIRPORT PROVISIONS

The Airport is primarily located within two land use zones, the Airport and Deferred Airport Zone. The terminal building, apron and runway are all currently located within the Airport Zone.

The Operative District Plan permits a large range of activities within the Airport Zone, provided the activities are related to the primary function of the Airport. This recognises that certain complementary activities can add to the attractiveness and vitality of the Airport as a destination and departure point, as well as providing for land uses which benefit nearby local communities.

Of particular note, the zone provides for the following operational activities:

- Aircraft operations, runway, aprons, fire rescue, fuelling facilities; and all ancillary and associated activities;
- Terminal area activities including café and beverage outlets, offices, car parking and roading, landscaping, signage and other activities;
- Aviation support;
- Rental car and taxi services;
- Aircraft hangars; and,
- Runway End Safety Areas.

Land use activities within the Operative District Plan must achieve (as relevant) a number of conditions in order to retain their permitted activity status. These conditions address a broad array of matters, including:

- Height and location (yard and recession plane) of buildings, trees and structures;
- Outdoor and refuse storage requirements;
- Noise, both land and aircraft based;
- Light spill;
- Vibration;
- Safety;
- Odour and dust;
- Fencing;
- Aerials, lines and support structures;
- Roof surfaces;
- Heritage;
- Signs;
- Trees;
- Transport;
- Natural hazards;

- Hazardous substances;
- Contaminated sites;
- Activities on surface water;
- Financial contributions; and,
- The Code of Practice for Subdivision and Land Development.

The Operative District Plan also contains provisions to manage non-airport activities and developments (for example, commercial or industrial activities not related to the primary function of the Airport or ASAN) and activities within close proximity to the Estuary Zone.

Controls are also imposed on heritage areas, including Areas of Significance to Maori. Land use activities within these areas typically require resource consent as a restricted discretionary activity. A mapped Area of Significance to Maori[9] is partially located within the proposed designation, necessitating resource consent for works within this area.

Two Meteorological Service of New Zealand (**"MetService"**) designations[10] are also located within the proposed designated area. Both of these are held by MetService for meteorological purposes.

3.3 PROPOSED PLAN REVIEW

It is understood that the Operative District Plan provisions will be reviewed by NCC as part of the pending Proposed Plan review. NCC have indicated that formal notification of the Proposed Plan will occur on the 21 September 2023. This NOR has been prepared for inclusion in the notified Proposed Plan.

While the proposed Airport Purposes designation will provide more efficient and effective land use planning outcomes for HBAL when seeking to implement its Master Plan, the designation can only be relied upon by HBAL as the requiring authority. As part of the Proposed Plan review, amendments will be required to the Airport Zone to ensure that third parties wishing to establish at the Airport and/or provide services on behalf of the Airport can establish on-site. HBAL is working alongside NCC on revision of the Airport Zone.

As part of the Proposed Plan review, amendments are also required to the aircraft noise contours depicted on the Operative District Planning maps to provide for the future forecast growth described in Section 2.4. In association with these changes, amendments will be required to the land use planning framework set out in the Proposed Plan that applies to ASAN located within the revised aircraft noise contours. HBAL is also working

[9] Site Reference M11, Matawhero Island – burial ground.

[10] Designations 24 and 25.

with NCC to ensure appropriate alignment between HBAL's aircraft noise management obligations (i.e. via this NOR) and the community obligations with respect to the management of reverse sensitivity effects (i.e. via the zone rules in the Proposed Plan).

4. PROPOSED DESIGNATION

Designations are a common planning tool used for infrastructure, including airports, in New Zealand. Designations serve two separate but related purposes:

- It *protects the opportunity* to use the designated land for a public work, project or work, in that no one can undertake an activity that would prevent or hinder the designated work, without the prior written approval of the requiring authority that holds the designation; and
- It *provides district planning authorisation* for a public work or project or work in place of any rules in the district plan and removes the need for land use consents under the district plan for activities and developments anticipated or provided for by the designation.

Case law has established that designations can be quite specific, identifying particular works on a particular site and containing detailed conditions, whereas others may be more general, simply identifying a site as being used for a certain purpose (i.e. an airport), and subject to some conditions, with more specific details where necessary left to be addressed by an 'outline plan' submitted to the Council prior to construction in accordance with section 176A of the RMA.

An outline plan that a requiring authority submits to the Council must show the bulk and location of the proposed work, the finished contours of the site, access, landscaping, and any other matters to avoid, remedy or mitigate any adverse effects on the environment arising from the work or project.

As set out in section 176(1)(a) of the RMA, section 9(3) of the RMA does not apply to a public work, project or work undertaken by a requiring authority under the designation. This means, the designation only serves to benefit the requiring authority when undertaking works expressly enabled by the designation. Other activities undertaken by the requiring authority, or activities undertaken by persons other than the requiring authority, will continue to have to comply with the underlying zone rules.

It is noted that any requirements with National Environmental Standards and Regional Plans must still be met by the requiring authority.

4.1 OBJECTIVES OF THE REQUIRING AUTHORITY

When considering this NOR, one of the matters the consent authority is required to consider is the effects of allowing the NOR, having particular regard to whether it is reasonably necessary for achieving the objectives of the requiring authority.

The objectives of HBAL as the requiring authority for this NOR have been developed in unison with the overall mission statement and sustainability framework described in Section 2.2 and the Master Plan, described in Section 2.4. The objectives reflect that in order to achieve the mission statement and meet the ambitious targets set out in the sustainability framework, an appropriate planning framework is required that allows HBAL the flexibility to develop the airport in line with its vision, while managing its effects on the surrounding environment.

The objectives of HBAL as the requiring authority for this NOR are:

- To establish a suitable planning regime that properly recognises the local and regional significance of Hawke's Bay Airport, while also ensuring the impact of aircraft noise on the surrounding community is appropriately managed.
- To operate, maintain, upgrade and expand the facilities at Hawke's Bay Airport to meet both the current and likely foreseeable demand for aviation activity in a sustainable manner.
- To enable an efficient and flexible approach to developing the Airport, while also managing the actual or potential effects of future development, particularly at its interface with sensitive land use activities.

4.2 PROPOSED FORM OF THE DESIGNATION

As noted above, designations can be wide and flexible in scope, or narrowly defined. It is proposed that this designation will more generally provide for 'Airport Purposes' but includes a comprehensive suite of conditions to effectively manage the actual or potential effects on the surrounding environment. The activities enabled by the proposed designation, subject to conditions, include:

- Aircraft operations and associated activities, including all ground-based infrastructure, plant and machinery necessary to assist aircraft operations;
- Runways, taxiways, aprons and other aircraft movement areas;
- Airport terminals, hangars, control towers;
- Rescue, fire, police and medical facilities;
- Fuel storage and fuelling facilities, facilities for handling and storage of hazardous substances;

- Navigation and safety aids, meteorological stations, lighting and telecommunications facilities;
- Maintenance and servicing facilities, including the testing of aircraft engines (in situ or otherwise);
- Catering facilities;
- Freight facilities;
- Quarantine and incineration facilities, border control and immigration facilities and aviation security;
- Aircraft training facilities, including associated educational and accommodation facilities;
- Roads, accessways, stormwater facilities, infrastructure and utility activities;
- Monitoring and site investigation activities;
- Vehicle parking and storage, rental vehicle activities, vehicle valet activities and public transport facilities;
- Signs, artwork or sculptures and flags and landscaping;
- Commercial, industrial and hospitality activities, provided they serve the needs of passengers, crew, ground staff, airport works and other associated workers and visitors;
- Ancillary activities, buildings and structures (including warehousing and other storage facilities) related to the above;
- Administration and offices associated with any of the foregoing activities; and
- All related construction, earthwork and vegetation clearance and maintenance activities and associated structures.

The proposed conditions to be attached to the designation are included in **Appendix C**.

It is considered a broad range of activities is appropriate given the evolving nature of airports, and a desire of HBAL to continue to provide for and enhance the operational capacity, efficiency and safety, as well as the value of the Airport to its shareholders and the surrounding community, particularly as it enters into the Covid-19 economic recovery. For the most part, the proposed activities are also consistent with what would generally be enabled and readily anticipated under the operative Airport Zone.[11]

[11] Note that two small areas of the designation are located within the Estuary and Rural Conservation Zone.

4.3 PROPOSED DEVELOPMENT CRITERIA AND CONDITIONS

In terms of an overall approach to the conditions of the designation, where an activity is currently permitted by the Operative District Plan provisions or is considered to have effects which are minor or less than minor, no outline plan will be required to be submitted in terms of section 176A of the Act. Where an activity exceeds the existing Operative District Plan performance standards or limitations, an outline plan will need to be submitted. The proposed conditions are set out in **Appendix C**.

In some instances, the permitted activity conditions within the Airport Zone have not been carried forward as proposed designation conditions. This is because it has been identified that some provisions are outdated (i.e. aircraft noise management conditions), are provided for by other legislation (i.e. hazardous substance or contaminated land management), are not considered to be suitable as can be managed via the outline plan of works process (i.e. earthworks), or are not relevant in the context of the Airport Zone (i.e. notable trees).

5. ASSESSMENT OF ENVIRONMENTAL EFFECTS

The following is an assessment of the actual or potential environmental effects that are likely to arise from the requirement to designate the land identified in Figure 1 (and attached as **Appendix A**) for Airport Purposes. These are identified as including:

- Economic Effects;
- Aircraft Noise;
- Land Based Noise Effects;
- Significant Natural Areas;
- Urban Design / Landscape;
- Construction Effects;
- Cultural Effects;
- Transportation;
- Services and Utilities; and
- Other Effects.

5.1 ECONOMIC EFFECTS

Modern and effective airports are essential to a region's economy. They enable a link to the world for people and for trade; provide an important hub for business investment and economic development; and increase business competitiveness and attractiveness. They are also important for quality of life, enabling people to travel and visit family and friends.

New Zealand's geography makes this role even more crucial. Air transport is the most efficient passenger transport mode between most domestic destinations and all international destinations.

Airports are widely recognised as having significant strategic implications for the cities and regions they serve. Airports provide inter-modal facilities for the arrival and departure of international and domestic passengers and cargo from road, and, in some cases, rail and other surface transport modes.

Other advantages an airport brings to a community include improved communication links with other communities and regions within the country and overseas, the provision of medical flight services, and focal points for civil defence activities.

Hawke's Bay Airport is a strategic asset for the Hawke's Bay Region and its people. It is an integral component of the transport system and enables opportunities for economic growth and improved connectivity for Hawke's Bay businesses, tourists, regional leadership and community members. The Airport will therefore be a key contributor to the region's Covid-19 recovery as the country looks to return to the level of economic activity prior to the pandemic.

A 2017 economic evaluation undertaken by Market Economics identified that the total value of economic activity within the Hawke's Bay Airport environs was in the order of $37.5M (gross output). At a combined level, summing all passenger movements and associated effects, the connections enabled by the airport were identified as having an initial impact of local GDP of some $214.5M. The primary contributors to these numbers were business connections ($97.1M) and tourism spending ($71.8M). On a per passenger basis, this equates to approximately $332 of spend per passenger movement.[12]

The Airport Purposes designation will assist HBAL with the long-term implementation of the Master Plan, and delivery of the forecast passenger growth provides for future growth and development of the airport from an aeronautical and non-aeronautical perspective, serving only to increase these contributions over the life of the Master Plan.

The ongoing operation and development of the Airport via the designation will contribute to continued growth and economic wellbeing from increased economic activity. Enabling the ongoing operation of the Airport, as well as appropriately providing for its future operational requirements will facilitate continued growth of scheduled services and will contribute to the Covid-19 economic recovery.

As a result of the proposed designation, HBAL will no longer incur unnecessary costs and delays associated with resource consent processes for activities that are entirely

[12] 2020/2021 Statement of Intent Hawke's Bay Airport Limited.

anticipated and expected within modern airport environments. It will enable HBAL to plan ahead with more certainty, also reducing planning and development costs overall.

5.2 AIRCRAFT NOISE

The conventional approach for the major New Zealand airports is for air noise compliance limits to be imposed via conditions on a designation. This means the requiring authority is responsible for ensuring that aircraft operations achieve the prescribed noise limits.

This NOR proposes to impose new conditions on HBAL, as the requiring authority, to ensure that it manages aircraft operations to achieve compliance with the Operative District Plan aircraft noise boundaries. These conditions would replace those contained within the operative Airport Zone. In a separate, but related processes, the Proposed Plan will amend the aircraft noise boundaries shown on the planning maps to provide for the forecast passenger growth at the Airport, while also ensuring that an appropriate land use planning framework remains in place for activities sensitive to aircraft noise located within the proposed new aircraft noise boundaries. These changes will be made via the Proposed Plan review process.

Marshall Day Acoustics have prepared revised aircraft noise boundaries utilising the forecasting work undertaken by CIAL and the master planning inputs provided by AirBiz. A copy of their modelling results and associated report is attached as **Appendix G.** Based on the modelling results, changes are required to the Operative District Planning maps to expand the aircraft noise boundaries contained in the Operative District Plan to provide for future forecast growth at the Airport. Noise management obligations should also be imposed upon HBAL. In tandem, Marshall Day Acoustics have also recommended changes to the land use planning framework for activities sensitive to aircraft noise located within the revised aircraft noise boundaries. The changes to this framework will be via the separate, but related, Proposed Plan process.

In summary, the effects of updating the aircraft noise boundaries on the noise sensitive receivers surrounding the Airport include:

- A predicted change in noise level from 4 to 11 decibels from 2018 to 2045. When compared to the noise levels permitted by the Operative District Plan contours, this represents between a two decibel reduction and a five decibel increase in the level of noise currently permitted. As these changes are likely to occur slowly over a 20 plus year period, they are likely to be less noticeable.
- Current aircraft movements at the Airport are dominated by ATR-72 aircraft which are approximately 10 to 15 dB quieter on departure than A320 jet aircraft. Residents would therefore experience a significant change in individual aircraft event noise if jet services commence at the Airport. The introduction of jet aircraft is already anticipated in the Operative District Plan contours.

- For aircraft noise environments of 55dB L_{dn}, 11% of the population are likely to be highly annoyed by the noise. Beyond the 55dB L_{dn}, aircraft noise effects will still be audible.
- The number of people likely to be highly annoyed by the increase in aircraft noise beyond the 55dB L_{dn} is approximately 381. This represents a moderate increase in the number of people likely to be highly annoyed compared to the Operative District Plan aircraft noise boundaries. When considered against the positive effects of the airport and the small change in permitted noise exposure when compared to the Operative District Plan, overall annoyance effects are not considered to change significantly.
- The current loudest aircraft movement that occurs at night at the Airport is 75-80dB LAE at the assessment locations. These levels are reasonably low and would be the same or less than a truck on the State Highway, 20m away from the receiver. The proposed new contours could result in a handful of dwellings along The Esplanade experiencing up to 94dB LAE from the loudest aircraft movement at night, which Marshall Day Limited have identified is just below the threshold of what is an acceptable level of aircraft noise. Furthermore, a similar level of aircraft noise is already permitted under the Operative District Plan Aircraft Noise Contours. The level of noise arising along this area, as a result of the expanded aircraft noise boundaries, is therefore already expected and forms part of the "permitted baseline" of environmental effects.

Based on the above, Marshall Day Acoustics recommend that for this NOR:

- The airport be managed so noise from aircraft operations does not exceed 65dB Ldn outside of the proposed OCB;
- Compliance with the above requirement is modelled within 24 months of the proposed boundaries being adopted, and then every three years thereafter;
- Noise monitoring (as opposed to noise modelling) is undertaken to verify compliance with the noise contours when the modelled contours (above) reach 64dB at any point on the OCB;
- That all helicopter operators be made aware of the "fly neighbourly" programme and should avoid, where possible, flying over or close to residential areas; and
- All measurements and assessments be undertaken in accordance with NZS 6805.

These measures are proposed as conditions on the designation.

In addition to the above, Marshall Day Acoustics has made recommendations around engine testing. The aviation industry has strict requirements in place regarding the need to run engine testing after maintenance and before an aircraft can be used by passengers.

Routine engine testing is currently controlled by the standard Airport Zone rules in the Operative District Plan. However, unforeseen testing (for example, in the event of an unexpected equipment failure or unplanned work), cannot pragmatically meet these requirements.

Overall, the proposed aircraft noise management response is in line with best practice throughout New Zealand. When coupled with changes to the land use planning framework for ASAN within the aircraft noise boundaries, the effects of enabling expansion of the aircraft noise contours and the associated HBAL management responses is appropriate and reasonable.

5.3 LAND BASED NOISE EFFECTS

The Operative District Plan provisions include rules which provide for the management of land based noise emissions arising from activities undertaken at the Airport. The proposed designation conditions seek to emulate the Operative District Plan land based noise requirements.

The key difference between the Operative District Plan land based noise provisions and the proposed designation conditions is the proposed requirement for noise from scheduled engine testing and other airport land based activities (such as the use of ground power and auxiliary power units) to comply with the land based noise limits of the Operative District Plan. Such activities have a distinct noise profile which is different to aircraft operations, and therefore is not considered by Marshall Day Acoustics as being appropriate to include within the aircraft noise contours.

As this proposed change in approach will still require that noise be managed to appropriate limits when measured at the boundary of any residentially zoned land, the overall effect of this change is not anticipated to generate any significant adverse effects on the surrounding community beyond what is already permitted by the Operative District Plan.

It should be noted that in accordance with section 16 of the RMA, every occupier of land and every person carrying out an activity has a duty to avoid unreasonable noise. By definition, noise includes vibration. HBAL has not sought to emulate the relevant Operative District Plan requirement[13] relating to the management of unreasonable vibration effects as it does not impose any additional requirements that are not already inherent under section 16 of the RMA.

[13] Condition 51.20, City of Napier District Plan.

5.4 SIGNIFICANT NATURAL AREAS

NCC has recently engaged the Environmental Research Institute at the University of Waikato to undertake an assessment of the Significant Natural Areas ("**SNAs**") of the Napier City District.[14] As part of this work, the Ahuriri Plain Wetland located to the north of Turfrey Road, and the Westshore Reserve Pond located to the east of Watchman Road, have been identified as SNAs. As shown in Figure 8, the edge of these areas is located within the Airport Purposes designation boundary.

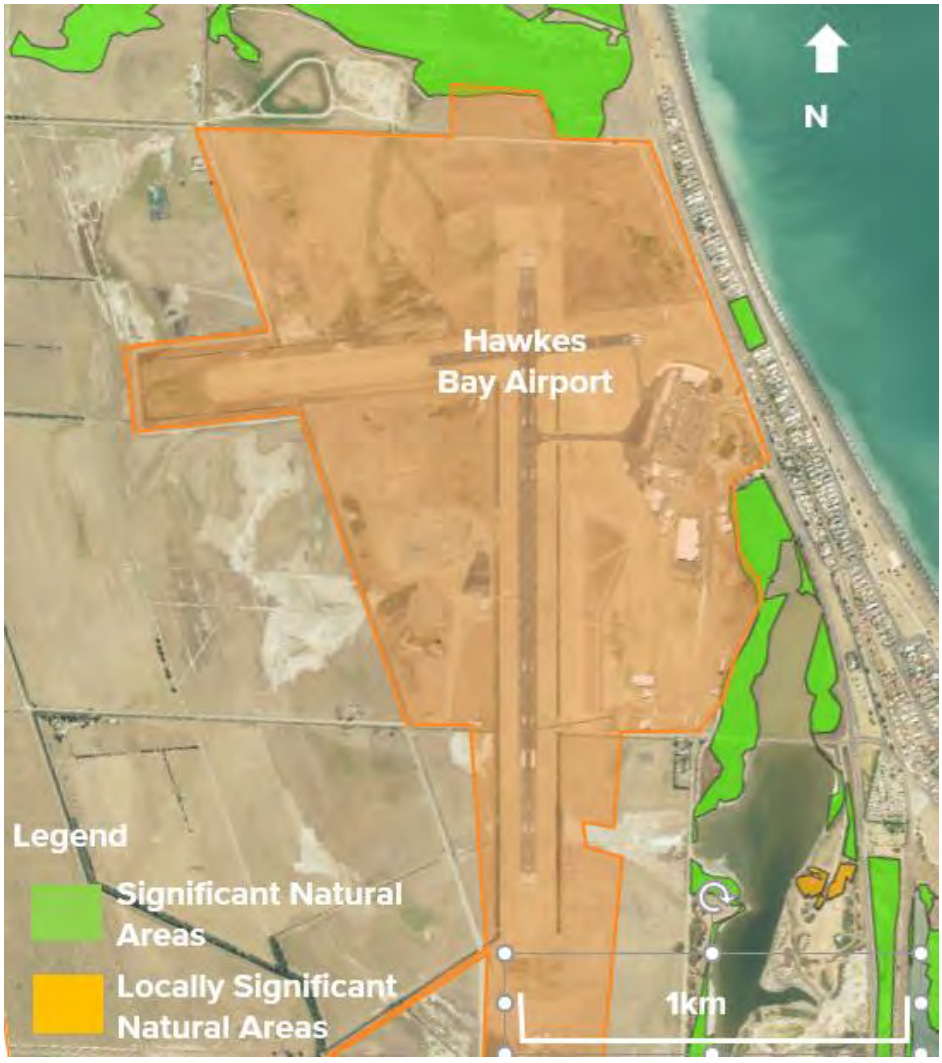


Figure 8: Areas of the Airport Purposes Designation located within the Significant Natural Areas, as mapped by Environmental Research Institute at the University of Waikato.

[14] University of Waikato (2019) Napier Significant Natural Areas Assessment, downloaded 4 August (https://www.napier.govt.nz/assets/Uploads/combinded-files-COMPRESSED.pdf).

NCC released the draft assessment undertaken by the Environmental Research Institute for public review and feedback in early 2020. As part of this review and feedback process, HBAL sought that a finer grained mapping analysis be undertaken for the SNAs, noting that the boundaries of Ahuriri Plain Wetland and the Westshore Reserve Pond do not appear to follow natural geological features or legal boundary lines. HBAL also sought that the specific values of these areas be clearly defined to ensure that should any works be required in these areas into the future, an appropriate management response can be applied to the works commensurate with the values of the area.

Notwithstanding the above, the designated area contained with the mapped Ahuriri Plain Wetland is currently owned by Landcorp Holdings Limited and is leased by HBAL (Figure 3). Located immediately beneath the northern approach and departure path of the main runway, the designation will afford HBAL with an additional degree of protection against new buildings, structures or land use activities establishing that could compromise the safety of this key operational area. For this reason, it is likely that HBAL will maintain this area for operational safety purposes, and as such, future land use activities within the SNA are unlikely. Notwithstanding, a condition is proposed on the designation that requires an ecological assessment to be undertaken for any activities occurring within this area that do not comply with the permitted activity requirements set out in the Ecosystems and Indigenous Biodiversity chapter of the Proposed Plan.

The adjacent Ahuriri Estuary also holds significant cultural, ecological and landscape values. As part of Plan Change 7 to the Hawke's Bay Regional Resource Plan, the estuary has been identified as an Outstanding Water Body. No part of the proposed designation extends into the Ahuriri Estuary and therefore the designation is not anticipated to give rise to any adverse effects on this waterbody.

5.5 LANDSCAPE

Isthmus Group Ltd has prepared a draft Napier Landscape Study (**"the Study"**) to assist NCC with the Proposed Plan review. This study has identified the entire Airport site as being located within the Te Whanganui-ā-Orotu Special Character Landscape. The small area of leased farmland located to the north of Turfrey Road is also partially located within the Keteketerau Special Character Feature.

The Te Whanganui-ā-Orotu Special Character Landscape makes up a significant 3800 hectares of Napier's non-urban landscape and is largely comprised of the uplifted and reclaimed (drained) land. While the Study describes the features that form part of the Te Whanganui-ā-Orotu landscape, it primarily focuses on the Ahuriri Estuary, with limited consideration given to the values ascribed to the wider landscape, including the uplifted lagoon within which the Airport is located.

As part of the Proposed Plan review process, HBAL provided feedback to NCC regarding the Study.[15] More specifically, HBAL sought that a finer grained mapping analysis be undertaken of the character areas and features, and that the specific values of each be defined. HBAL also sought recognition of the Airport, as a significant piece of existing infrastructure, being located within these areas.

5.6 URBAN DESIGN

From an urban design perspective, this NOR adopts the permitted planning controls that currently apply to the Operative District Plan Airport Zone. The NOR is therefore generally consistent with the permitted baseline established by the Airport Zone for bulk, scale and location of activities on-site. The key points of difference include:

- Relocatable buildings: Such buildings are currently a controlled activity within the operative Airport Zone. This NOR does not propose to impose conditions on relocatable buildings, as such structures will be captured by the conditions relating to buildings more generally.
- Yards: The Operative District Plan imposes setback distances ranging between 5 to 30m for buildings, structures and paved areas from the Estuary Zone, and 5m from any other zone. As operational requirements of the Airport may dictate where such structures need to be located, the shorter 5m setback distance has been applied for the purposes of the NOR.
- Height: The Operative Airport Zone imposes height limits relating to the Hawke's Bay Airport Height Control Designation. The Airport Height Control Designation is a standalone designation that is administered under section 176 of the RMA. Accordingly, it is unnecessary to repeat those controls as part of this NOR. Furthermore, HBAL is aware of the obligations imposed by Civil Aviation New Zealand regarding the need to maintain obstacle free approach and departure paths in and around the Airport, and is unlikely to establish any buildings or structures that would compromise the safety of the Airport it is responsible for managing.
- Height in relation to boundary: The Operative District Plan imposes height in relation to boundary controls. Given the unbuilt nature of the surrounding zones (Rural Conservation and Estuary Zones), it is unnecessary to retain these boundary controls as the zone setback conditions will aid in reducing shading at zone boundaries and shading is unlikely to give rise to any adverse amenity effects for adjacent receivers.

In addition to the general bulk, scale and location conditions of the Operative District Plan, HBAL has recently implemented development guidelines for new activities establishing within the Operative Airport Zone and any HBAL owned or leased landholdings. These

[15] Letter from HBAL (Stephanie Murphy) to NCC (Catherine Reaburn) dated 28 April 2020).

guidelines have been developed to encourage a consistent level of design throughout the Airport site and to ensure the built form outcomes align with HBAL's vision, mission and values (refer to Section 2.2).

The non-statutory nature of these guidelines means that they can be readily adapted and changed by HBAL in response to evolving issues or opportunities at the Airport. This is appropriate in an Airport environment which needs to be agile to changing regulations and/or markets. While HBAL does not propose for these guidelines to become a statutory document by reference, it is proposed that a condition be imposed on the designation that requires that a set of guidelines be in place at all times to ensure that cohesive and co-ordinated development approach is applied within with the Airport Purposes designation.

Overall, the effects of the designation on urban design outcomes and landscape effects will not significantly depart from the permitted baseline of the Operative District Plan and therefore, will not give rise to adverse effects that are not already anticipated in this area.

5.7 CONSTRUCTION EFFECTS

This NOR seeks to apply the Operative District Plan requirements pertaining to earthwork and construction noise. These activities are generally permitted, with resource consent required if the permitted activity conditions cannot be met.

To ensure a similar framework within the proposed designation, Condition 1 provides for construction noise in accordance with the relevant NZS 6803, and earthworks at a rate of no greater than 100m^3 per hectare of site area without the need for an outline plan of works (i.e. it expressly waivers the requirement as provided for by section 176A(3)). For activities which exceed these limits, an outline plan will be required.

As set out in Section 4, an outline plan must show "the likely finished contour of the site" (i.e. details regarding earthworks) and must also consider "any other matters to avoid, remedy or mitigate any adverse effects on the environment". Should the permitted thresholds not be met by any proposal under the designation, there is sufficient scope for such matters to be addressed and appropriately managed via the outline plan of works.

With respect to dust and odour, it is noted that the designation does not seek to carry over the Operative District Plan conditions requiring the management of these two effects through to the designation. Safety is paramount in an Airport environ, and the need to manage dust and odour (which would be an attractant for birds) has the potential to pose a significant safety risk. It is therefore likely that any site-specific dust and odour control measures imposed by the Airport on tenants and contractors will be more onerous than those required by the Operative District Plan. Such measures also typically fall within the jurisdiction of the HBRC and therefore do not require duplication under this designation.

With respect to contaminated land, in accordance with section 43D(3) of the RMA, any national environment standard that exists when a designation is made prevails over the

designation. The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (**"the NES Soil Contamination"**) therefore prevail over any provisions contained within the Airport Purposes designation. Any future development and use of the Airport Zone within an identified Hazardous Activities and Industries List area will therefore require consideration under the NES Soil Contamination, and consents obtained as necessary. For this reason, it is not necessary to replicate the contaminated land provisions contained within the Operative District Plan.

5.8 CULTURAL EFFECTS

Part of the proposed designation area is located within an Area of Significance to Maori. The area is described in the Operative District Plan as including Matawhero Island, the burial ground for Heimania.

The Operative District Plan imposes resource consent requirements for activities occurring within mapped Areas of Significance. As part of the designation, it is proposed that conditions will be imposed on any works within the mapped Area of Significance to Māori, with the conditions being similar to the relevant matters of discretion under the Operative District Plan. While HBAL has considered the need to obtain a cultural evaluation at this time, without a definitive proposal for any new activities over the mapped area, it is difficult to ascertain what the nature of the effects might be.

The proposed conditions will require that, as part of any outline plan for works within the mapped Area of Significance to Māori, a report or reports will be prepared which provides a cultural evaluation of the site, details of any engagement with relevant mana whenua and identification of methods for avoiding, remedying or mitigating the effects of the proposed works on the Area of Significance to Māori. The relevant condition can be found in **Appendix C** and will ensure that the effects of any works on these areas are appropriately managed**.**

For the remainder of the designated site, accidental discovery protocols will apply for all works in accordance with the Heritage New Zealand Pouhere Taonga Act 2014. As this Act applies independently of the RMA, it is not proposed to duplicate controls set out in that statue.

It is also important to note that the Airport, and much of the surrounding land, is subject to the Ahuriri Hapū Claims Settlement Act 2021. The commercial redress provided by this Act recognises the losses suffered by Ahuriri Hapū arising from the breaches by the Crown of its objectives to Ahuriri Hapū under the Treaty of Waitangi and its principles. As part of this, the Mana Ahuriri Trust (which represents Hapū), has up to two years after the settlement date of the Act to elect to purchase the Crown shareholding in HBAL and also

retains first right of refusal over the Crown's shareholding in HBAL.[16] While a relevant consideration in terms of sections 6, 7 and 8 of the RMA, the proposed NOR will not fetter with the ability for this redress to be provided for, nor for kaitiakitanga to be exercised over this area.

5.9 HERITAGE EFFECTS

Under the Operative District Plan, there are no notable trees or heritage sites recorded within the proposed designation extent, in the Operative District Plan.

In February 2020, a large number of new heritage places and items were identified by Heritage Services Hawke's Bay for inclusion in the Proposed Plan. No new or additional heritage sites were identified as part of this evaluation within the proposed designation extent.

As set out in section 5.8, it is HBAL's intention to implement accidental discovery protocols for all earthworks or associated ground disturbance activities in accordance with the Heritage New Zealand Pouhere Taonga Act 2014. As this Act applies independently of the RMA, it is not proposed to duplicate controls set out in that statue.

5.10 TRANSPORTATION

5.10.1 Car Parking, Access and Circulation

Car parking, access and circulation at airports is highly specialised. Car parking in and around airports involves a unique set of circumstances in that many of the visitors utilise public transport, taxis or shuttles to reach the airport. There is also a requirement to have a significant number of temporary or short-term car parks for people dropping off and picking up passengers at the Airport, as well as staff parking, to take into consideration. Similarly, access and circulation patterns are influenced by the need to provide a safe and secure separation between airside and landside activities as well as separation between vehicles and passengers.

HBAL seeks to proactively manage and provide efficient and effective car parking, access and circulation patterns through the Airport. Car parking, access and circulation which reflects forecast growth was carefully considered as part of the development of the Master Plan. Subjecting HBAL to generalised or unrelated car parking demand calculations or circulation requirements is likely to result in an under or over supply of car parking on-site or circulation routes that do not reflect the unique operational characteristics of an airport.

Accordingly, the NOR does not seek to impose minimum car parking, access or circulation requirements on the designation as this has been and will be assessed and developed as

[16] https://www.govt.nz/assets/Documents/OTS/Ahuriri-Hapu/Ahuriri-Hapu-Deed-of-Settlement-Summary.pdf

part of HBAL's ongoing management of the Airport. Furthermore, vehicular access, circulation and the provision of parking forms part of the requisite requirements for an outline plan of works under section 176(3)(d) of the Act. Such matters can therefore be addressed as part of this later process.

5.10.2 Wider Transportation Network

The Airport is well connected and served by the State Highway network. Waka Kotahi has invested over $13 million into comprehensive roading and intersection improvements adjacent to the Airport to improve the safety and efficiency of what was formerly one of New Zealand's top ten high risk rural intersections. NCC and HBAL both contributed towards the overall costs of the improvement works as part of a roading upgrades partnership.

HBAL has been engaging with the Waka Kotahi regarding its proposed Master Plan and the forecasting that underpins its development. Given the capacity of the State Highway network and HBAL's ongoing work to provide improved multi-modal transportation opportunities (for example public transport and cycle ways opportunities), Waka Kotahi has not expressed any concerns with the Master Plan or forecasting that underpins this NOR. HBAL has requested written feedback from Waka Kotahi regarding this NOR and as well as the potential for second access (roundabout) to be provided to the Airport. A copy of the correspondence received from Waka Kotahi will be provided to NCC on receipt.

It is also important to note that while the proposed aircraft noise boundaries will facilitate an increase in aircraft movements to and from the airport, such growth is in response to wider growth pressures within the region. Aircraft movements therefore facilitate rather than generate demand.

5.11 SERVICES AND UTILITIES

Hawke's Bay Airport is currently serviced by water, wastewater, electricity and telecommunication networks. HBAL and many of its tenants also hold discharge permits from the HBRC for stormwater discharges. HBAL currently draws tenants' attention to the HBRC stormwater discharge requirements via its design guidelines.

As land is developed in accordance with the designation into the future, the capacity of the utility and servicing networks will need to be discussed with the relevant utility providers, and where necessary, financial contributions made to expand any services into this area. These matters can also be resolved prior to any future outline plan process.

With respect to electricity, HBAL is currently exploring the opportunity for a solar farm on its landholdings (via a formal resource consent process) which will be designed to provide a renewable source of electricity to the Airport, its tenants and beyond.

5.12 OTHER EFFECTS

It is also noted that HBAL do not intend to carry forward the provisions relating to hazardous substances within the designation. This is to avoid unnecessary duplication of control, as it is considered that the storage, use, disposal and transportation of hazardous substances is properly and comprehensively managed via other legislation and relevant New Zealand standards. These controls ensure that any risk to public health and safety is extremely low, and it is not necessary to include duplicate provisions in the designation. It is also likely that the hazardous substance provisions will not be rolled over in the Proposed Plan review (at least in their current form) as amendments to the RMA in 2018 removed these functions from local authority plan requirements.

HBAL is also not proposing to carry over conditions relating to trees or heritage features or structures as no such features are currently identified within the proposed designation extent. Furthermore, under the Heritage New Zealand Pouhere Taonga Act 2014, it is unlawful and an offence for any person to modify or destroy, or cause to be modified or destroyed, the whole or any part of an archaeological site without the prior authority of Heritage New Zealand Pouhere Taonga. An archaeological site can generally be described as a site that is associated with human activity that occurred before 1900. If any historic artefacts are accidentally discovered on-site, these will be appropriately managed under separate legislation.

The natural hazards section of the Operative District Plan does not currently contain any methods that are directly applicable to the Airport. Notwithstanding this, Hawke's Bay Airport is a Lifeline Utility under the Civil Defence Emergency Management Act 2002, and therefore has obligations imposed on it under this Act to ensure the Airport is able to function to the fullest extent possible during and after an emergency. Such obligations are taken into consideration during the detailed design phase of works and often result in higher building specifications and/or ground levels to mitigate natural hazard effects.

As noted in Section 5.9, the Airport is not currently connected to the Council stormwater reticulation network. Stormwater is currently managed on-site in accordance with HBAL's stormwater discharge permits. For this reason, it is not necessary to carry over provisions which duplicate controls on stormwater management.

6. MANAGEMENT OF EFFECTS

For the most part, the proposed designation is not anticipated to give rise to any adverse effects that are significantly greater than what can occur under the permitted Operative District Plan provisions, given that proposed conditions effectively emulate the majority[17] of

[17] Some of the provisions have not been replicated on the basis that they are out of date or irrelevant to managing effects at the Airport site.

performance standards within the existing zone. Significant areas of the Airport are dedicated to enabling existing aviation activities (i.e. the runway, taxiway areas) and are likely to remain relatively fixed with supporting activities developed and redeveloped around these (i.e. terminals, car parking, aircraft hangars).

To manage potential zone boundary effects, building setback, height, storage and lighting standards (set via the proposed conditions) are proposed. Potential cultural effects arising from an identified site of cultural significance are also proposed to be managed by way of conditions. These all emulate the permitted activity standards of the Operative District Plan.

As outlined in Section 5.2, the management of land and aircraft noise will be imposed by a range of new conditions that seek to impose noise management obligations on the Airport as the requiring authority responsible for the Airport Designation. These have been prepared in accordance with the recommendations provided by Marshall Day Acoustics and are in line with best practice management, as set out in NZS 6805.

As set out in Section 5.5, to ensure that development at the Airport continues to occur in a comprehensive and co-ordinated manner, it is proposed that the designation impose a requirement for development guidelines to be developed. In order to ensure that HBAL retains the flexibility to amend these guidelines in light of changing regulations and also in recognition that these guidelines go beyond the current controls in the Operative District plan, it is not proposed that the guidelines be embedded within the designation conditions.

These measures, in conjunction with the outline plan process set out in section 176A of the Act, will ensure that any adverse effects arising from future development at the Airport can be appropriately avoided, remedied or mitigated.

While the Council cannot decline/approve an outline plan, it can request that HBAL makes changes and/or seek additional controls *"that will give effect to the purpose of the Act"* (section 176A(6) of the RMA). If HBAL does not make the changes requested, the Council can appeal HBAL's decision to the Environment Court.

Collectively, the designation conditions and outline plan process will ensure that any adverse effects arising from future development at the Airport are appropriately avoided, remedied or mitigated.

7. STATUTORY FRAMEWORK AND PLANNING / STRATEGY DOCUMENTS

Section 171(1)(a) of the Act requires that when considering the Airport's requirement and any submissions received (where relevant), and subject to Part 2, and consideration of the

effects on the environment, 'particular regard' must be had to the relevant provisions of applicable planning documents. For this NOR they are the:

- Hawke's Bay Regional Resource Management Plan; and
- Operative District Plan.

The relevant provisions contained in these documents are assessed below in the context of the NOR.

7.1 HAWKE'S BAY REGIONAL RESOURCE MANAGEMENT PLAN

The Regional Resource Management Plan sets out the policy and rule framework for the management of resource use activities in Hawke's Bay and includes an operative Regional Policy Statement (**"RPS"**).

7.1.1 Strategic Objectives and Infrastructure

The RPS contains three overarching strategic objectives. These objectives seek to:

- achieve the integrated sustainable management of the natural and physical resources of the Hawke's Bay, while recognising the importance of resource use and activity in the region and its contribution to its development and prosperity;[18]
- maximum certainty by providing clear environmental direction;[19] and
- avoid the imposition of unnecessary costs of regulation on resource users and other people.[20]

Objective OBJ 32 seeks to support the ongoing operation, maintenance and development of physical infrastructure which provides for the economic, social and/or cultural wellbeing of the region's people and communities and provides for their health and safety. Objective OBJ 33 recognises that some infrastructure, which is regionally significant, has specific locational requirements.

As identified in Section 5.1, HBAL contributes to the prosperity of the local and regional economy by providing air connectivity throughout New Zealand and beyond. The NOR will allow HBAL to continue to fulfil this function in an efficient and effective manner through the streamlined outline plan approval process under section 176(3) of the RMA, rather than the more time consuming, more costly, and less certain resource consent process.

---

[18] OBJ 1, Hawke's Bay Resource Management Plan.

[19] OBJ 2, Hawke's Bay Resource Management Plan.

[20] OBJ 3, Hawke's Bay Resource Management Plan.

The NOR also provides certainty for long-term planning and investment at the Airport, as the designation has been designed to enable the delivery of the Airport's Master Plan, while managing the environmental effects in line with the environmental outcomes currently sought for the area.

With respect to aircraft noise, the NOR provides the community and airport users with greater direction and clarity around responsibility for aircraft noise management and compliance. Overall, the NOR is consistent with, and gives effect to these provisions.

Through long-term planning for land use change, Objective UD5 seeks to ensure that the rate and location of development is integrated with the provision of strategic and other infrastructure, the provision of services, and associated funding mechanisms.

7.1.2 Urban Development and Infrastructure

Objective UD6 directs that planning and provision of transport infrastructure is integrated with development and settlement patterns and facilitates the movement of goods and people and provision of services throughout the Region. It also seeks to limit network congestion, reducing dependency on private motor vehicles, reducing emission of contaminants to air and energy use, and promoting the use of active transport modes.

This NOR will enable HBAL to respond to future growth and demand for aviation services to and from the region. Such growth will not occur instantaneously, rather it will occur gradually over the next 25 years as demand for aviation services (and associated supporting activities) increases. Future use and development of the Airport can therefore be staged and developed to ensure it integrates with other surrounding strategic infrastructure and remains at pace with the provision of services to the area.

Policy UD13 directs territorial authorities to ensure that development is appropriately and efficiently serviced for the collection, treatment, disposal or re-use of sewage and stormwater, and the provision of potable water by:

- Avoiding development which will not be serviced in a timely manner to avoid or mitigate adverse effects on the environment and human health; and
- Requiring these services to be designed, built, managed or upgraded to maximise their ongoing effectiveness.

The Airport is currently serviced by existing wastewater and potable water supplies. Stormwater is managed on-site by site specific stormwater discharge permits from the Hawke's Bay Regional Council held by HBAL or individual tenants. Over the life of the designation and Master Plan, HBAL anticipates that future upgrades to servicing requirements will be required on-site. This will likely comprise of upgrades to the HBAL and Council owned and operated services. In either case, HBAL anticipates that the costs of such upgrades will be borne by the developer. As the requiring authority for the site and

primary leaseholder and landowner, HBAL also has an ability to impose management obligations on its tenants to ensure that service use is monitored and used effectively and efficiently. As the Airport develops over time, HBAL will seek further consents from the HBRC to provide for ongoing discharge (and associated treatment) of stormwater into the Ahuriri Estuary.

7.1.3 Indigenous Vegetation and Wetlands

Preserving and enhancing remaining areas of significant indigenous vegetation, significant habitats of indigenous fauna and ecologically significant wetlands is the primary focus of Objective OBJ 15 and associated policies. As previously noted in Section 5.4, the proposed designation marginally extends into the mapped Significant Natural Areas described as the Ahuriri Plain Wetland and the Westshore Reserve Pond. While HBAL has sought that the mapping of these areas be further refined, the actual use of these areas for development purposes by HBAL is likely to be limited. In particular, the portion of the Ahuriri Plain Wetland contained within the designation is located at the northern end of the take off and approach path for aircraft. While HBAL currently leases this area (refer to Figure 3), it is primarily for the purpose of ensuring that the land remains undeveloped for any activities that may compromise the safety of aircraft and passengers on departure or approach. Accordingly, these areas are primarily included in the designation for safety reasons and to create a buffer of vacant land around the key operational areas of the Airport, as opposed to their future potential use for development purposes.

Reverse sensitivity considerations are the main focus of Objectives OBJ16 to 18 and the associated policies. Objectives OBJ16 and OBJ17 seek to avoid, remedy, or mitigate off-site impacts or nuisance effects of future and existing activities arising from the location of conflicting land use activities. For the expansion of existing activities which are tied operationally to a specific location, Objective OBJ18 seeks to mitigate the off-site impacts or nuisance effects arising from the location of conflicting land activities adjacent to, or in the vicinity of, areas required for current or future operational needs. Objectives OB33A and 33B also seek to address reverse sensitivity concerns.

As set out in Section 5.2, the current structure of the noise management obligations at the Airport (insofar as they relate to aircraft noise) gives rise to potential issues around compliance and enforcement. This creates the potential for considerable uncertainty for the surrounding community and the Council. The introduction of the new noise management obligations under the designation will set clear parameters around where these roles and responsibilities lie, and will ensure that the Airport effectively manages adverse effects on surrounding ASAN.

Recognition of tikanga Maori, protecting areas of cultural significance, and ensuring genuine consultation with tangata whenua is the key focus of Objectives OBJ34 to 37. HBAL has been engaging with Mana Ahuriri as part of the strategic master planning work

that is underway. To date, Mana Ahuriri have shown an interest in how HBAL's master planning work could integrate with and complement their own development aspirations for the land surrounding the Airport, should they obtain it through the Treaty Settlement process.

With respect to the designation itself, the site is within an area identified as being of significance to Maori. As no works are currently proposed in this area, there is little merit undertaking a detailed cultural impact assessment of the effects of the designation on this area. It is proposed that the designation include conditions that require a cultural impact assessment in the future should activities be proposed within this area. This will serve to ensure that tangata whenua can continue to exercise kaitiaki over the area and address more specifically the effects of a given proposal on the areas of significance to Maori.

7.2 CITY OF NAPIER DISTRICT PLAN

NCC is currently reviewing the Operative District Plan and intend to publicly notify the Proposed Plan in September 2023. The Operative District Plan will therefore continue to have legal effect for some time into the future until the submission and hearing process progresses for the Proposed Plan.

7.2.1 Mana Whenua

Objective 3.6 seeks to facilitate and enable the exercise of tino rangatiratanga and kaitiakitanga by tangata whenua and by hapu holding manawhenua. Through an integrated regime, Policy 3.6.1 seeks to implement efficient and robust processes with tangata whenua, Council and other parties as required. As noted, the land subject to the NOR is also part of a Treaty Settlement Claim. HBAL has been engaging with Mana Ahuriri Trust regarding its Master Plan and associated planning proposals in its capacity as a potential future neighbour and shareholder and will continue to do so through the Proposed Plan process. The NOR will not fetter the ability for the Treaty Settlement to proceed.

The imposition of conditions regarding the future use and development of the mapped Area of Significance of Maori will also ensure that the tangata whenua values of the area are appropriately accounted for as part of any future development of the Airport. The NOR is therefore consistent with these provisions.

7.2.2 Airport Zone

Objective 51.2 enables the ongoing operation, maintenance and development of the Hawke's Bay Airport, while avoiding, remedying or mitigating any adverse effects on the environment. Associated policies seek to:

- Recognise the importance of the Hawke's Bay Airport for the social, economic and cultural wellbeing of the region;[21]
- Recognise and provide for the operation, maintenance and development of the Hawke's Bay Airport as a regional physical resource; [22]
- Ensure that any adverse effects of airport-related activities are avoided, remedied or mitigated;[23]
- Identify an Airport Zone and control land uses within these areas to ensure any adverse effects on public safety and aircraft flight paths are avoided, remedied or mitigated;[24]
- Ensure that noise associated with the operation of the Airport does not exceed nationally accepted standards and that any new ASAN provide adequate acoustic insulation; and,[25]
- Avoid the location of ASAN close to the Airport which have the potential to result in reverse sensitivity effects.[26]

As previously noted in Section 5.1, the economic value of the Airport environs (based on 2017 reporting) is in the order of $37.5M, with passengers all contributing approximately $332 per passenger to the local economy. Overall, the connections enabled by the Airport have been estimated to be in the order of $214.5M. This economic activity provides both direct and indirect employment opportunities at the Airport and beyond and contributes to both the economic and social wellbeing of the community. Enabling the continued development and growth of the Airport through this NOR will ensure that these benefits continue to be realised in an efficient and effective manner which will be important for the Covid-19 economic recovery. The NOR will also provide certainty of investment for HBAL, knowing that it has a clear approval pathway for future development activities at the Airport in line with the Master Plan.

To ensure an appropriate balance between enabling airport development and managing effects on the environment, a series of conditions have been imposed on the designation. These conditions generally seek to achieve similar environmental outcomes to those currently enabled by the Operative District Plan. Where the environmental effects of an activity or work are not managed by a condition, the outline plan process will capture

---

21 Policy 5.2.1.

22 Policy 5.2.2.

23 Policy 5.2.3.

24 Policy 5.2.4.

25 Policy 5.2.5.

26 Policy 5.2.6.

these effects through the specified evaluation measures set out in section 176A(3) and the general requirement to consider matters to avoid, remedy or mitigate adverse effects.

To ensure that operational safety of the Airport is maintained, the NOR includes areas of land that form a safety and operational buffer around the Airport. These areas are currently leased and/or owned by HBAL, and while they appear vacant and unused, by maintaining control over these areas, HBAL can ensure that incompatible land use activities do not establish within close proximity to the Airport and in areas of key operational safety, particularly at each end of the runways.

The introduction of noise management obligations on HBAL also creates a clear line of accountability for aircraft noise management at the Airport. The management of ASAN will be addressed separately via the Proposed Plan review process, as will the proposed expansion of the aircraft noise contours to account for future passenger growth. Between these two processes, the land use management approach for ASAN within the aircraft noise boundaries at the Airport will be in line with national best practice and the relevant New Zealand standards.

The NOR is therefore entirely consistent with the objectives and policies described above.

7.2.3 Rural Environments

Objective 33.2 and associated policies set out to protect the City's outstanding natural features, significant landscapes, and its rural land from the adverse effects of inappropriate subdivision, use and development of land. Objective 33.3 aims to maintain and enhance the character and amenity values of the rural environment.

Only a small area of land located to the north of Turfrey Road is contained within the Rural Conservation Zone and is located within the designation (Figure 7). This area has been included due to its location directly beneath the take off and approach path for the Airport and the need to ensure that it remains as an operational buffer, free from structures and objectives. As part of the Proposed Plan, HBAL also intends to work with NCC to establish Runway End Protection Areas ("**REPA**") at both ends of the runway which will serve a similar purpose. As this area is unlikely to be developed into the future (though it will be used for buffer purposes), it is unlikely to have a material impact on significant landscapes and the conservation values of the Rural Conservation Zone.

7.2.4 Earthworks

Objective 52A.3 seeks to enable earthworks while ensuring that the life-supporting capacity of soils and eco-systems are safeguarded and adverse effects on outstanding natural features and significant landscapes, historic heritage values and human health and safety are avoided, remedied or mitigated. Associated Policy 52A.3.2 seeks to avoid duplication of regulation by District Plan rules and standards where earthworks activities are already subject to regulatory assessment.

Earthworks, or “the likely finished contour of the land” is a direct consideration of an outline plan. Earthworks being undertaken by HBAL can therefore be managed and controlled via a separate statutory process (i.e. an outline plan) without relying on the District Plan rules (refer to Section 5.7). Similarly, the NES Soil Contamination puts in place a framework for managing any areas of potentially contaminated soil. Due to the hierarchy of planning documents under the RMA, any resource consent requirement under the NES Soil Contamination applies for contaminated land, irrespective of the designation conditions.

It is critical to the safety and operation of the Airport that earthworks are appropriately managed. This is due to the potential for earthworks to give rise to dust effects, which can reduce visibility for pilots, and can also be drawn into the engines causing gradual damage. Poorly managed earthworks can also act as a bird attractant which can increase the potential for bird strike. Earthworks undertaken by HBAL within the designation are therefore likely to be subject to a higher degree of management than earthworks undertaken elsewhere in the District and under the controls of the relevant zone rules.

The NOR is therefore considered to be consistent with the above provisions.

7.2.5 Noise

Objective 57.3 and associated policies aim to manage the emission and mitigate the effects of noise so as to maintain and enhance the acoustic environment ensuring no adverse effects and no incompatibility with human activities.

Objective 57.5 and associated policies direct that ASAN be avoided where they will be located in existing high noise environments and the adverse effects of that noise cannot reasonably be mitigated.

As discussed in Section 5.2, land based noise occurring within the designation will be managed in accordance with the underlying noise requirements for the Airport Zone. This will ensure that land based noise received within the surrounding zones matches community expectations. An exception is made for unforeseen or unplanned aircraft engine testing, as these are critical component of aircraft operations that cannot reasonably be avoided.

The NOR does not provide for any ASAN as part of the designation. While the designation does provide for the expansion of aircraft operations, the subsequent land use planning framework that will apply to ASAN within the contours will be imposed via the Proposed Plan provisions. The designation conditions ensure however, that the level of noise generated by the Airport is within acceptable limits and will not have an adverse effect on human health. Accordingly, the NOR is considered to be consistent with these provisions.

7.2.6 Transport

Maintaining a safe, efficient and integrated transportation network that meets the needs of the community and the future growth of Napier is the focus of Objectives 61.3 and 61.4 and associated policies.

The Airport is well served by the State Highway network. As noted in Section 5.8, the State Highway has recently been updated, with a roundabout providing safe entry and exit to the Airport. The upgrades, undertaken through a partnership between Waka Kotahi, NCC and HBAL, provide sufficient capacity to accommodate forecast growth at the Airport. Cycleways are also available to the east of the Airport; however, these are likely to present a more favourable transportation mode for Airport workers rather than passengers. In addition to the above, HBAL is open to opportunities for alternative transportation modes, such as public transportation or shuttle services operating with routes through the Airport.

As noted in Section 5.8, car parking and circulation patterns unique to the Airport mean that it is not appropriate to impose the standard District Plan requirements on the Airport. This could result in a significant over or under supply of car parking which would be an inefficient use of a valuable land resource. Furthermore, car parking, access and circulation all form part of the outline plan process for which further evaluation of the effects of such matters can be addressed at a later date.

Overall, the NOR is consistent with the key relevant transportation provisions of the Operative District Plan.

7.3 NAPIER-HASTING FUTURE DEVELOPMENT STRATEGY JOINT COMMITTEE

NCC and HDC have recently developed a Napier Hastings Future Development Strategy. The purpose of the strategy is to provide an overview of the issues for the Napier Hastings Future Development Strategy 2023-2053 (**"FDS"**) and the strategic options available for addressing them.

The FDS recognises the economic and strategic significance of the Airport and looks to potentially accommodate some of the Napier and Hastings Districts industrial land shortfall at the Airport.

8. CONSIDERATION OF ALTERNATIVES

Section 171(1)(b) specifies that the territorial authority must have particular regard to whether:

> *"adequate consideration has been given to alternative sites, routes, or methods of undertaking the work if –*
>
> *(i) the requiring authority does not have an interest in the land sufficient for undertaking the work; or*

(ii) it is likely that the work will have a significant adverse effect on the environment"

As discussed earlier in this report, HBAL either owns or has a sufficient interest in the land to which this NOR applies. The assessment in Section 5 of this report does not identify that there will be any significant adverse effects on the environment because of the proposed designation. Accordingly, the NOR does not therefore require an assessment under section 171(1)(b) insofar as the land based activities are enabled by the designation.

The proposed introduction of aircraft noise management obligations on HBAL via the designation, and the inclusion by reference to the aircraft noise boundaries contained within the planning maps, draws into consideration the properties contained within the revised aircraft noise boundaries.

The consolidation of HBAL's noise management, monitoring and mitigation requirements within the proposed Airport Purposes Designation is considered to be the most appropriate method and entirely consistent with the objectives of that Designation. The method will also enable HBAL to establish a planning framework similar to other regional airports within New Zealand.

As noted earlier, the retention of the status quo approach to aircraft noise management creates some potential compliance challenges. Without a designation in place at the Airport, it becomes unclear as to who is responsible for compliance with the District Plan rules. It is also questionable whether compliance with the rules can be enforced on any one entity given the way noise compliance is measured in terms of the Standard as required by the rules. This current District Plan approach has the potential to create considerable uncertainty for the surrounding community and the regulator, being the NCC. Introducing noise management obligations by way of designation conditions therefore sets a clear obligation around where this responsibility ultimately rests.

Another alternative consideration is the extent to which the aircraft noise boundary extension is necessary. As set out in Section 2.4, prior to Covid-19, passenger forecasting suggested that passenger growth in the vicinity of 1.867 million passengers per annual (**"mppa"**) can be expected at the Airport. While Covid-19 will dampen the initial rate that this growth will be observed, it is only expected to extend the overall timeframe within which the 2045 passenger projections will be reached by 2 to 13 years. Not providing for an expansion to the aircraft noise contours will prevent the economic and social benefits of additional passenger growth being realised, and will slow HBAL's contribution to the Hawke's Bay Region's Covid-19 recovery.

Overall, it is considered that the proposed Airport Purposes designation is the most effective means of ensuring that noise is managed to achieve sustainable Airport growth in the community.

9. REASONABLE NECESSITY OF THE DESIGNATION FOR ACHIEVING THE OBJECTIVES OF THE REQUIRING AUTHORITY

Planning for the Airport's development requires a close understanding of the balance between the needs of aviation activities, operational and safety requirements, commercial opportunities and land side connections. The designation is reasonably necessary to recognise the unique planning nature and characteristics of an airport and in line with HBAL's objectives identified above at Section 4.1 and discussed below. The designation also provides a key mechanism in delivering long-term operations and growth at the Airport. The designation will therefore assist in reasonably achieving HBAL's objective that its facilities continue to meet current and likely foreseeable demand for aviation activity at the Airport.

The proposed designation provides an additional and alternative route for managing land use outside of the District Plan land use zoning provisions and provides a mechanism by which the HBAL can reasonably achieve its objectives. The section 176A outline plan process provides flexibility and more certainty to HBAL in meeting its objectives in comparison to reliance on District Plan land use provisions, as well as allowing it to respond efficiently in its day-to-day operational needs, as well as to growth.

Greater efficiency and flexibility will also be achieved by designating the site because HBAL will not be subsequently required to undertake resource consent processes for land use activities, when it needs, for example, to undertake earthworks on-site. Where a designation and supporting conditions are in place, the outline plan process generally takes significantly less time than similar resource consent processes and the process incurs lower costs.

There are checks and balances in terms of ensuring that a designation meets the purpose of the RMA. These include section 171 in terms of establishing the designation, section 176A(3)(f) and section 176A(4) in terms of consideration of an outline plan.

A condition on the designation will also obligate HBAL to ensure that aircraft operations are managed to ensure compliance with the OCB limit.

HBAL therefore considers that provision of the designation provides certainty to both HBAL and the public as to the use of the land into the future, and the proposed conditions will ensure that any development within the designated areas will meet Part 2 of the RMA, while enabling HBAL to evolve and grow to meet the fast-changing as well as long-term needs of air travel and passenger movement. It will also ensure greater certainty with regard to the management of aircraft noise.

The extent of the designation is also reasonably necessary to incorporate all land which is likely to be subject to development associated with airport activities, including developments in alignment with HBAL's Master Plan. The extent of the designation aligns

with the site boundaries of the airport and all land included in the proposed designation is owned or leased by HBAL. HBAL has responsibility for the management of these areas. It is both administratively simple and efficient that the whole airport site be subject to the same planning regime. The designation area also allows for a buffer area around airside operations to ensure appropriate land management, and that only safe and compatible land uses are developed.

It is also noted that section 171 relates to whether the public work is reasonably necessary, not the technique or method of using a designation (as opposed to using a resource consent process). It is therefore not open to argument that the designation is not the correct method or technique through which a project or work should be authorised because it is 'not reasonably necessary' as the resource consent option is available. It is noted that where activities are outside of the activities provided for under the proposed designation, HBAL (or another person or entity) will be required to proceed through the standard resource consent application channels and any effects will, taking into account the underlying District Plan provisions, be considered by NCC as required.

Overall, HBAL considers that it is therefore reasonably necessary and appropriate to recognise and provide for this dynamic, locally and regionally significant piece of infrastructure by way of a designation which facilitates the appropriate use of Airport land and ensures that HBAL can better respond to and accommodate all anticipated services and needs in the future within appropriate limits.

10. PART 2 CONSIDERATIONS

A key statutory matter under the RMA of relevance is the purpose and principles of the RMA (Part 2). The NOR meets the purpose of the Act (section 5) by enabling the continued operation and growth of Hawke's Bay Airport in a more efficient and sustainable way.

Hawke's Bay Airport is a significant existing physical resource that provides for the social and economic wellbeing of the community through direct and indirect employment opportunities and through its role in facilitating the movement of people and goods to Napier and Hastings, the wider region and beyond. The Airport is a significant stimulator and contributor to the local and regional economy. In this respect, the Airport should be sustainably managed and protected in accordance with Part 2.

The proposed designation will ensure that the Airport is able to meet the needs of current and future generations through providing an ability to respond quickly to changes in the aviation sector and the needs of its passengers and other users of the Airport, as well as plan for long-term growth.

The proposed designation will also provide certainty to the surrounding community that aircraft operations noise will be managed and monitored appropriately.

As an already modified site, the proposed designation will not affect the life supporting capacity of air, water or soil ecosystems, and through appropriate development controls, coupled with the requirement for an outline plan of works for certain developments, the adverse effects arising because of the designation can be appropriately avoided, remedied or mitigated.

While surrounded by wetlands, rivers and SNAs, the area of land subject to this designation generally does not extend into these section 6 landscapes. The relationship of Māori with their ancestral lands is provided for by conditions on the designation which apply to any works within the mapped Area of Significance to Māori located within the site.

As set out in Section 5.8, the Airport and much of the surrounding land is subject to the Ahuriri Hapū Claims Settlement Act. The commercial redress provided by this Act recognises the losses suffered by Ahuriri Hapū arising from the breaches by the Crown of its objectives to Ahuriri Hapū under the Treaty of Waitangi and its principles. As part of this, the Mana Ahuriri Trust (which represents Hapū), has up to two years after the settlement date of the Act to elect to purchase the Crown shareholding in HBAL, and also retains first right of refusal over the Crown's shareholding in HBAL. While a relevant consideration in terms of sections 6, 7 and 8 of the Act, the proposed NOR will not fetter the ability for this redress to be provided for, nor for kaitiakitanga to be exercised over this area.

In terms of section 7 "matters to have particular regard to", the following are considered relevant:

(b) The efficient use and development of natural and physical resources;

(c) The maintenance and enhancement of amenity values;

(f) Maintenance and enhancement of the quality of the environment;

(g) Any finite characteristics of natural and physical resources...

The Airport is recognised as strategic infrastructure in the RPS, and the designation seeks to enable the facilitation of HBAL's objectives as efficiently as possible. HBAL is a requiring authority pursuant to the RMA, and the proposed designation will be an essential component of the planning environment which recognises the special nature and characteristics of an airport, and effectively provides for the efficient use and development of the Airport as a physical resource.

Amenity values and the quality of the environment are not anticipated to be adversely affected as a result of this NOR. Aircraft noise and other noise generating activities will be managed appropriately and with certainty for the surrounding community. The built form and location requirements imposed by the designation will emulate those contained within the Operative District Plan and will therefore continue to manage effects in line with the currently anticipated and expected environmental outcomes of the area.

11. CONSULTATION

The purpose of the proposed designation is to set in place a more efficient and flexible planning method to allow for the use of the Airport land in a way that properly reflects evolving development and infrastructure requirements. In doing so, however, HBAL is essentially seeking to transfer the permitted activity provisions that currently sit within Chapter 51 of the Operative District Plan. On this basis, it is considered that there are no parties who will be affected by the proposed designation.

Notwithstanding this, since late 2018, engagement has occurred with various key stakeholders at various points along the Airport Master Plan's development journey. This has included the following stakeholders:

- **Shareholders**: NCC, HDC and Treasury;
- **Regulators**: NCC and HBRC;
- **Government Agencies**: Waka Kotahi, Department of Conservation (**"DoC"**), the Ministry of Business, Innovation and Employment (**"MBIE"**) and Landcorp Holdings Limited (PAMU Farms of New Zealand);
- **Mana Whenua**: Mana Ahuriri Trust;
- **Stakeholders**: Airways, Civil Aviation Authority, NZ Airports Association, Hawke's Bay Tourism, Port of Napier, Westshore Residents and Development Association, Biodiversity Hawke's Bay, and the Art Deco Trust.
- **Airlines**: Air New Zealand, Jetstar, Air Napier, and Skyline Aviation;
- **General Aviation – recreation based at or use Hawke's Bay Airport:** Napier Aero Club;
- **General Aviation – commercial operators based at Hawke's Bay Airport:** Air Hawke's Bay, Aerospread, Flight Care, Red Airworx and Primary Avionics; and
- Hawke's Bay Airport tenants, proposed tenants and staff.

A number of public information sessions were held on 30 April and 1 May 2021. These sessions provided information on the HBAL 2040 Master Plan, solar farm development, noise boundaries and designation and gave local residents and representatives of local interest groups an opportunity to provide feedback on each of these projects. The public were generally supportive of the proposed approach to noise boundaries and future planning.

During the promulgation of aeronautical forecasts, detailed engagement was also undertaken with airlines and the general aviation community (recreation and commercial operators). This forecasting underpins the outputs of the Master Plan.

HBAL has also been regularly liaising with NCC policy staff during the promulgation of this NOR to ensure alignment between the environmental outcomes sought from the designation and the draft Proposed Plan. Once the Proposed Plan is notified in September 2023, HBAL intends to undertake community consultation regarding the NOR and the proposed changes to the aircraft noise contours. Following this consultation and any general feedback received by the community on the draft Proposed Plan, HBAL may look to review the designation and the associated management obligations imposed on it.

12. CONCLUSION

HBAL is seeking to designate the land shown in Figure 1 (**Appendix A** attached) for 'Airport Purposes'. The statutory effect of this designation is to:

- Provide HBAL with the ability to restrict and manage land use to fulfil the over-arching purpose of the designation; and
- Provide HBAL with the ability to pursue projects or works with sufficient flexibility and efficiency.

This assessment has demonstrated that the NOR is reasonably necessary to achieve HBAL's objectives for the designation in that it will:

- Recognise the unique planning nature and characteristics of an airport environment;
- Provide flexibility and efficiency for HBAL to respond to fluctuations in aviation demand, while also providing for the day to day and long-term operations and growth of the Airport;
- Provide HBAL with a better ability to protect its existing land holdings and ensure that future land use remains compatible to the safe, effective and efficient operation of the Airport;
- Provide the community with certainty that airport related noise effects will be appropriately managed and monitored; and
- Enable the effects of future Airport related development to be managed via conditions and the outline plan process, and require particular consideration of built form in more sensitive locations or to appropriately manage any potential effects arising from future development at the interface of the designation boundary.

When assessed against the effects allowed under the Operative District Plan rules, any adverse effects arising as a result of this NOR are not anticipated to be more than minor. With regard to future development, conditions on the designation and/or the outline plan process will provide further detail around how any effects that may arise in certain locations of the Airport environment will be appropriately avoided, remedied or mitigated.

The Airport is recognised as being strategic infrastructure and a transportation asset for the Hawke's Bay Region and it is considered appropriate that ongoing airport planning is suitably recognised and provided for via a designation in the District Plan.

APPENDIX A

Designation Map

the propertygroup
Corporate Property Advisors and Negotiators®

Imagery sourced from: **LINZ Data Services**
Property boundaries sourced from Land Information NZ. Crown Copyright reserved. Property boundaries accuracy: +/-1m in urban areas, +/-30m in rural areas.
Coordinate System: NZGD 2000 New Zealand Transverse Mercator
Datum: NZGD 2000 // This map was produced with ArcGIS Pro (Esri).

Appendix A: Airport Purposes Designation Boundary

PREPARED BY	DATE	SHEET	TPG REF		
JK Bellamkonda	30/09/2020	1 OF 1	716851	A3 Scale 1:7,500	0 225 Metres

HAWKE'S BAY AIRPORT

B

APPENDIX B

Record of Titles

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
LEASEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier **525807**

Land Registration District **Hawkes Bay**

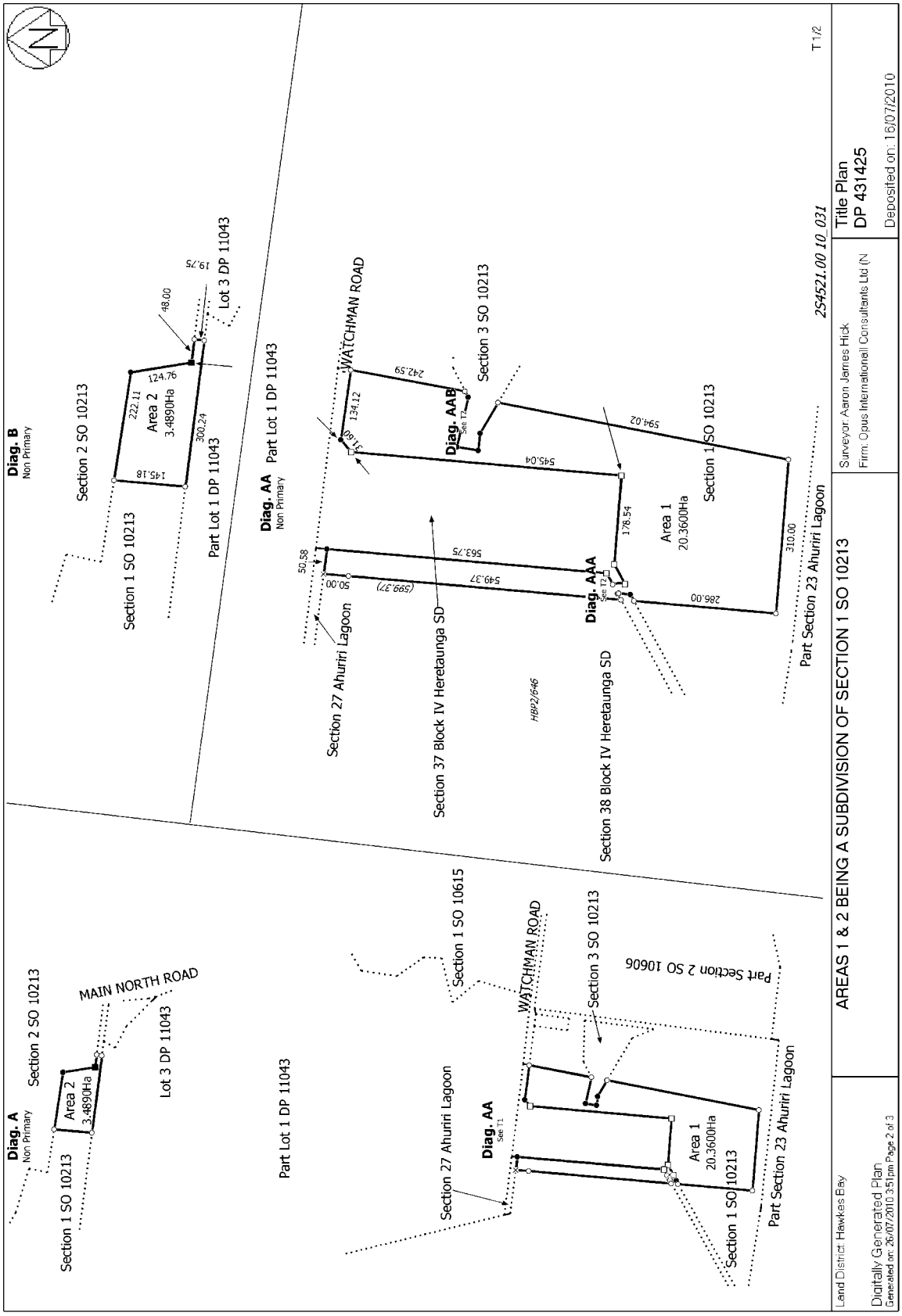
Date Registered 16 July 2010 10:53 am

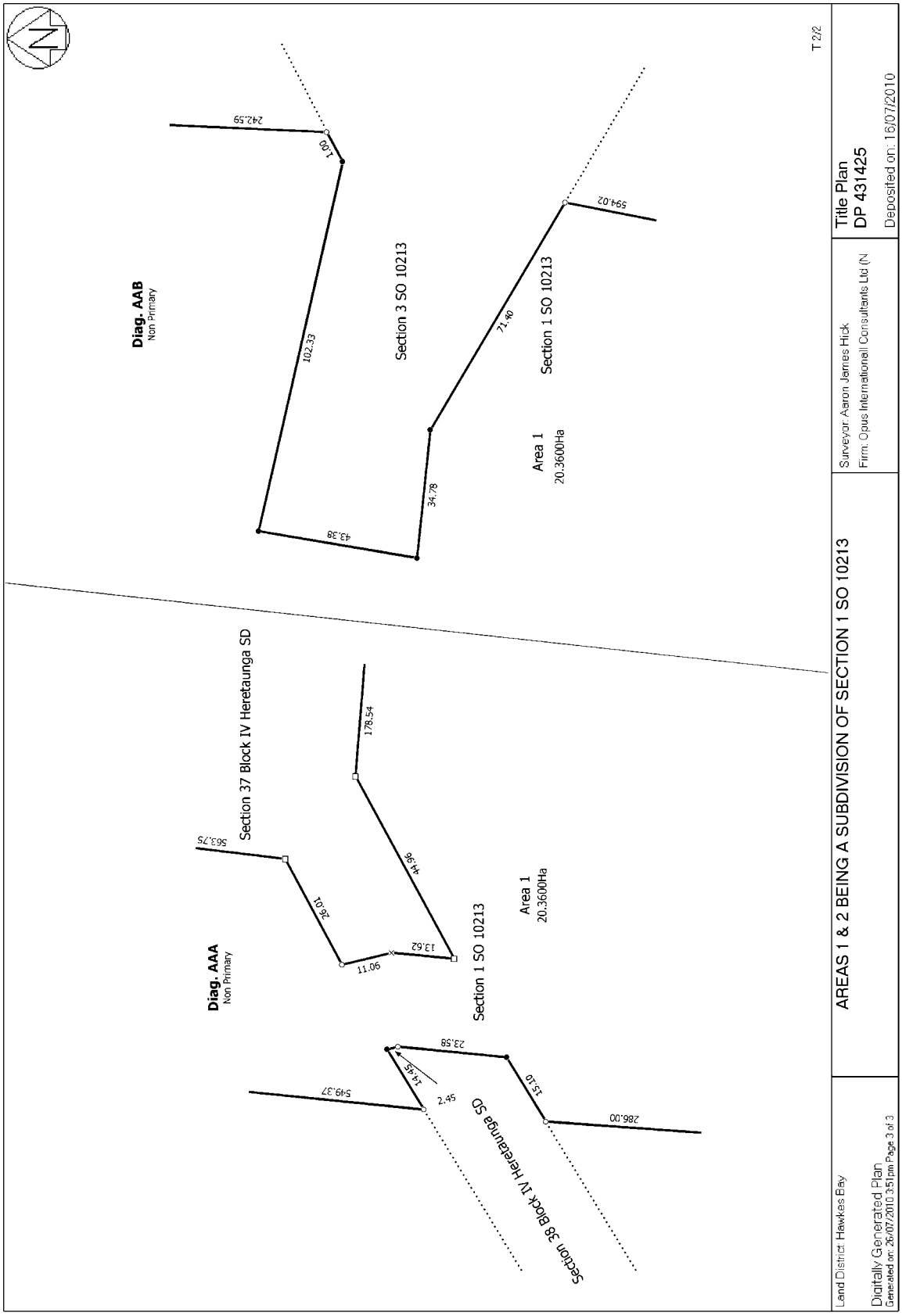
Prior References
HBP2/646

Estate	Leasehold	**Instrument**	L 8545565.1
Area	23.8490 hectares more or less	**Term**	35 years commencing 1.5.2010 (renewal clause)
Legal Description	Area 1-2 Deposited Plan 431425		

Registered Owners
Hawke's Bay Airport Limited

Interests


Diag. B
Non Primary
Section 2 SO 10213
Section 1 SO 10213
Area 2
3.4890Ha
222.11
124.76
145.18
300.24
48.00
19.75
Lot 3 DP 11043
Part Lot 1 DP 11043
Diag. AA
Non Primary
Part Lot 1 DP 11043
WATCHMAN ROAD
242.59
134.12
Diag. AAB
See T2
Section 3 SO 10213
594.02
545.04
178.54
Area 1
20.3600Ha
Section 1 SO 10213
310.00
286.00
Diag. AAA
See T2
563.75
549.37
(599.37)
50.00
50.58
Section 27 Ahuriri Lagoon
Section 37 Block IV Heretaunga SD
HBP2/646
Section 38 Block IV Heretaunga SD
Part Section 23 Ahuriri Lagoon
T1/2
2S4521.00 10_031
Diag. A
Non Primary
Section 2 SO 10213
MAIN NORTH ROAD
Area 2
3.4890Ha
Section 1 SO 10213
Lot 3 DP 11043
Part Lot 1 DP 11043
Section 1 SO 10615
WATCHMAN ROAD
Section 3 SO 10213
Part Section 2 SO 10606
Section 27 Ahuriri Lagoon
Diag. AA
See T1
Area 1
20.3600Ha
Section 1 SO 10213
Part Section 23 Ahuriri Lagoon
AREAS 1 & 2 BEING A SUBDIVISION OF SECTION 1 SO 10213
Land District Hawkes Bay
Digitally Generated Plan
Generated on: 26/07/2010 3:51pm Page 2 of 3
Surveyor Aaron James Hick
Firm: Opus International Consultants Ltd (N
Title Plan
DP 431425
Deposited on: 16/07/2010


T 2/2
Diag. AAB
Non Primary
242.59
1.00
102.33
Section 3 SO 10213
43.38
34.78
71.40
Section 1 SO 10213
594.02
Area 1
20.3600Ha
Section 37 Block IV Heretaunga SD
563.75
26.01
11.06
13.62
4.96
178.54
Diag. AAA
Non Primary
Section 1 SO 10213
Area 1
20.3600Ha
549.37
2.45
14.45
23.58
15.10
286.00
Section 38 Block IV Heretaunga SD
AREAS 1 & 2 BEING A SUBDIVISION OF SECTION 1 SO 10213
Land District Hawkes Bay
Digitally Generated Plan
Generated on: 26/07/2010 3:51pm Page 3 of 3
Surveyor Aaron James Hick
Firm: Opus International Consultants Ltd (N
Title Plan
DP 431425
Deposited on: 16/07/2010

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
LEASEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier **526833** **Part-Cancelled**

Land Registration District **Hawkes Bay**

Date Registered 01 July 2010 02:49 pm

Prior References
HBB2/812

Estate	Leasehold	**Instrument**	L 8532270.3
Area	183.3980 hectares more or less	**Term**	21 years computed from 1 July 2009 (right of renewal)
Legal Description	Part Lot 1 Deposited Plan 11043 and Lot 3 Deposited Plan 11043		

Registered Owners
Hawkes Bay Airport Limited

Interests

8532270.4 Lease of Lot 1 DP 418519 Term 21 years commencing 1 July 2009 (right of renewal) CIR 526834 issued - 1.7.2010 at 2:49 pm

9224240.1 Lease of Area 1 DP 456526 Term 18 years commencing 1.7.2012 (right of renewal) CIR 590247 issued - 23.11.2012 at 10:38 am

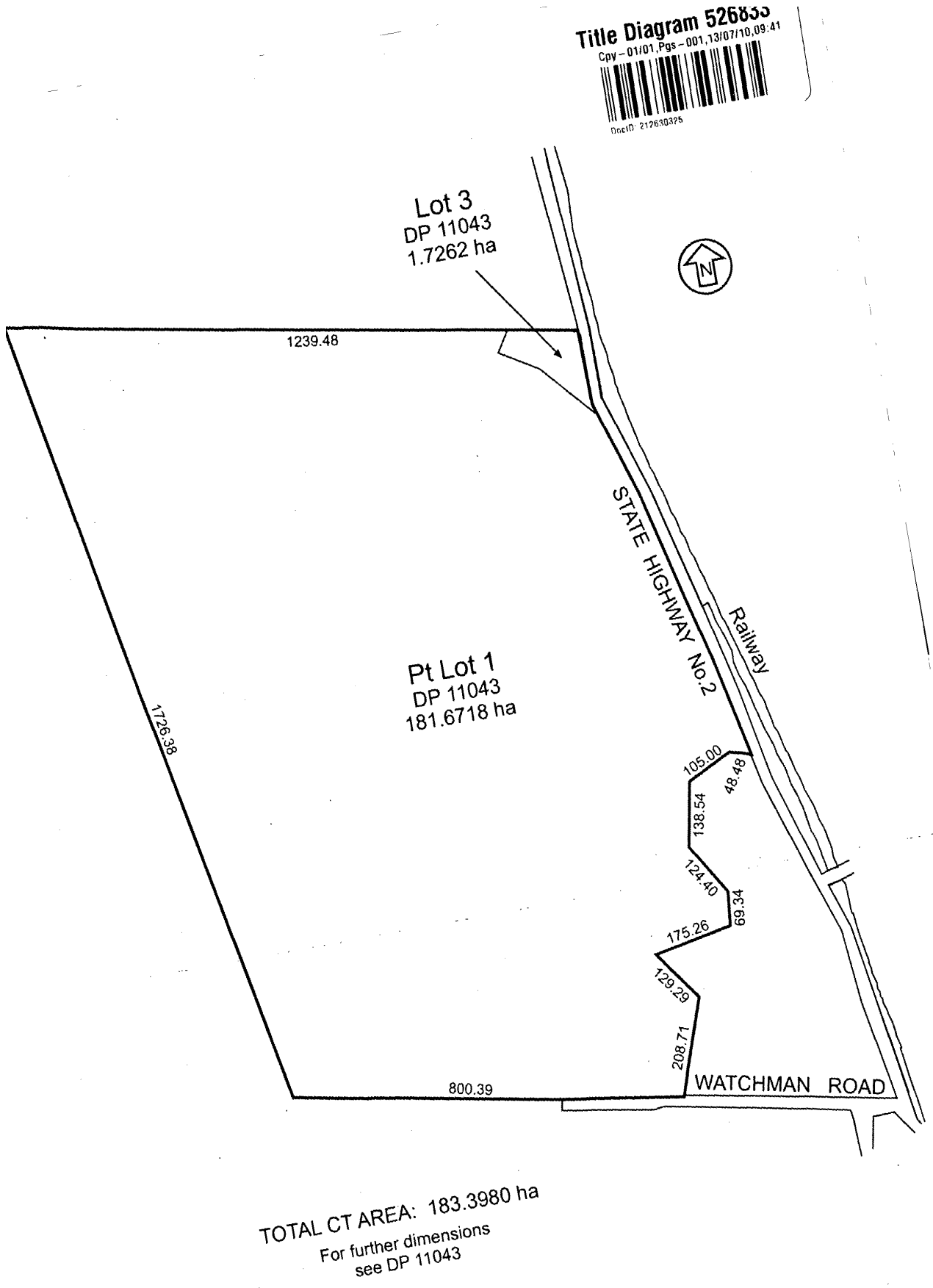
Subject to a right of way (pedestrian and cycle path) in gross over part Lot 3 DP 11043 marked A on SO 463767 and over part Lot 1 DP 11043 marked B, C, D and E on SO 463767 in favour of Hawkes Bay Regional Council created by Gazette Notice 9746058.4 - 5.6.2014 at 7:00 am

9868959.2 Gazette Notice (2014 p3460) declaring part herein shown as Section 1 SO 358738 (5412 m²) to be road and is vested in the Crown - 15.10.2014 at 3:37 pm

10150658.1 Variation of Lease 8532270.4 - 19.11.2015 at 9:26 am

12442154.8 Gazette Notice 2022-ln1603 declares part of Lot 3 DP 11043 now Section 17 SO 541581 (0.0823 ha) to be road which pursuant to Section 88 of the Government Roading Powers Act 1989 becomes road, limited access road and State Highway and vests in Her Majesty the Queen - 31.5.2022 at 3:25 pm

12442154.10 Gazette Notice 2022-ln2094 declares part of Lot 1 DP 11043 now Section 11 SO 541581 (7500 m²) to be acquired for local purpose (wildlife) reserve, subject to right of way (pedestrian and cycle path) created by Gazette Notice 9746058.4, subject to the Reserves Act 1977 and vest in Her Majesty the Queen, RT-GN 1081902 issued. Balance of Part Lot 1 DP 11043 and of Lot 3 DP 11043 now Sections 18-19 SO 541581 RT 1081897 issued - 31.5.2022 at 3:25 pm



TOTAL CT AREA: 183.3980 ha
For further dimensions
see DP 11043

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
LEASEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier **526834**

Land Registration District **Hawkes Bay**

Date Registered 01 July 2010 02:49 pm

Prior References
526833

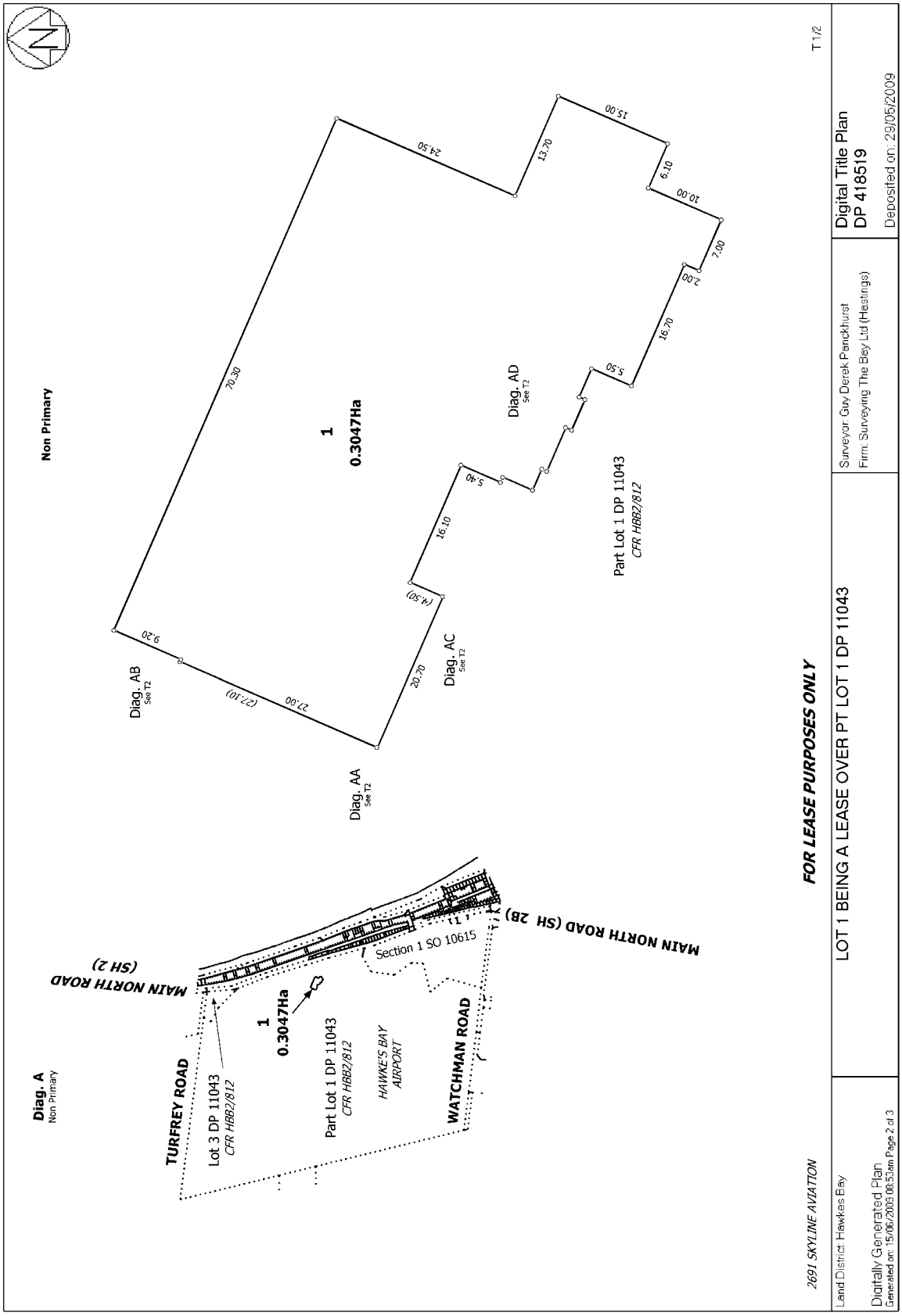
Estate	Leasehold	**Instrument**	L 8532270.4
Area	3047 square metres more or less	**Term**	Lease of Lease 8532270.3 21 years commencing 1 July 2009 (right of renewal)
Legal Description	Lot 1 Deposited Plan 418519		

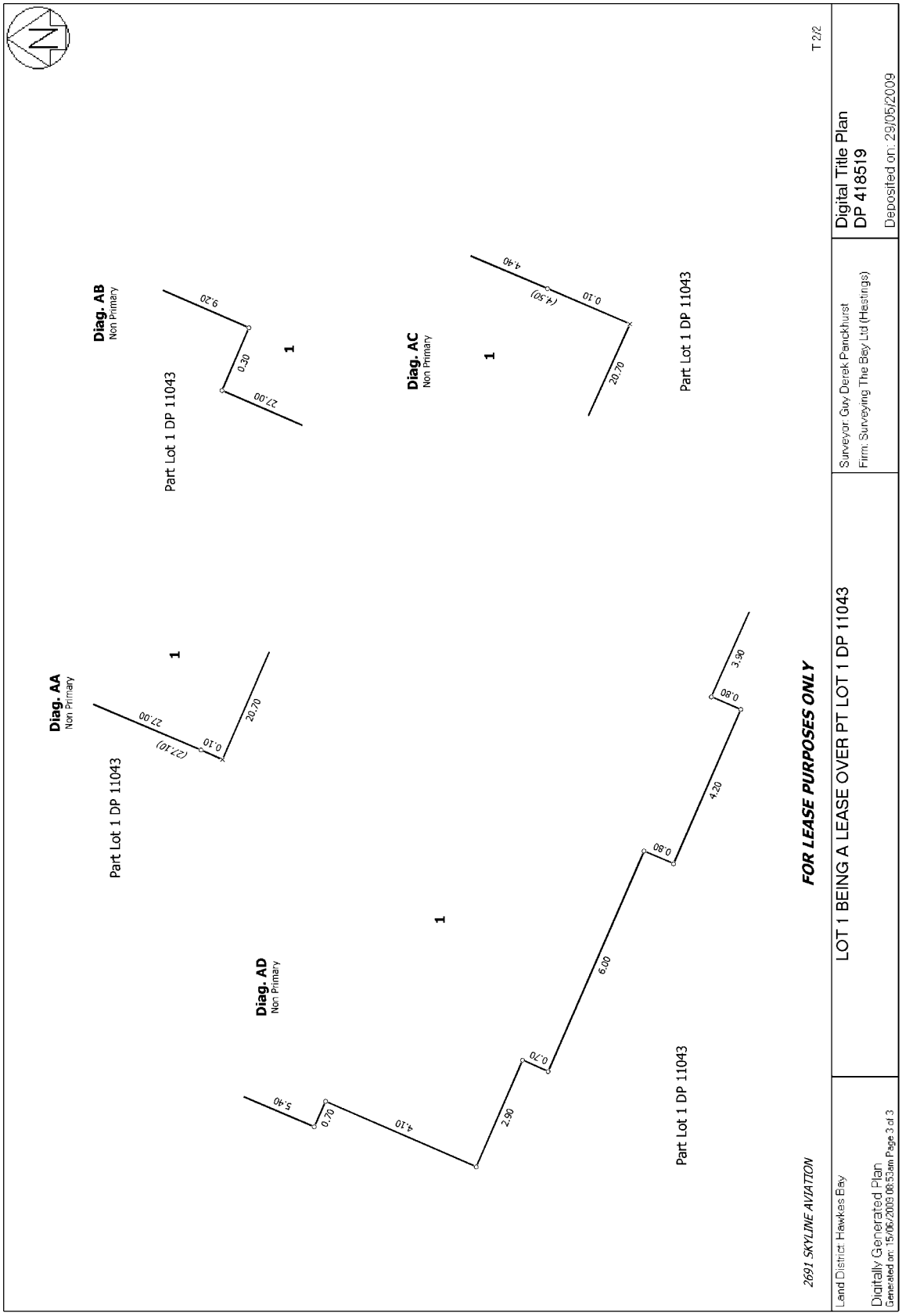
Registered Owners
Airport Holdings Limited

Interests

10150658.1 Variation of Lease 8532270.4 - 19.11.2015 at 9:26 am

10858228.3 Mortgage to ANZ Bank New Zealand Limited - 7.8.2017 at 1:18 pm


Non Primary
1
0.3047Ha
70.30
24.50
13.70
15.00
6.10
10.00
7.00
2.00
16.70
5.50
5.40
16.10
(4.50)
20.70
(27.10)
27.00
9.20
Diag. AB
See T2
Diag. AC
See T2
Diag. AD
See T2
Diag. AA
See T2
Part Lot 1 DP 11043
CFR HBB2/812
T 1/2
FOR LEASE PURPOSES ONLY
MAIN NORTH ROAD (SH 2B)
MAIN NORTH ROAD (SH 2)
Section 1 SO 10615
TURFREY ROAD
WATCHMAN ROAD
HAWKE'S BAY AIRPORT
Lot 3 DP 11043
CFR HBB2/812
Part Lot 1 DP 11043
CFR HBB2/812
1
0.3047Ha
Diag. A
Non Primary
2691 SKYLINE AVIATION
LOT 1 BEING A LEASE OVER PT LOT 1 DP 11043
Land District Hawkes Bay
Digitally Generated Plan
Generated on: 15/06/2009 08:53am Page 2 of 3
Surveyor Guy Derek Panckhurst
Firm: Surveying The Bay Ltd (Hastings)
Digital Title Plan
DP 418519
Deposited on: 29/05/2009


Diag. AA
Non Primary
Part Lot 1 DP 11043
(27.10)
27.00
0.10
20.70
1
Diag. AB
Non Primary
Part Lot 1 DP 11043
9.20
0.30
27.00
1
Diag. AC
Non Primary
1
4.40
(4.50)
0.10
20.70
Part Lot 1 DP 11043
Diag. AD
Non Primary
1
5.40
0.70
4.10
2.90
0.70
6.00
0.80
4.20
0.80
3.90
Part Lot 1 DP 11043
FOR LEASE PURPOSES ONLY
2691 SKYLINE AVIATION
T 2/2
Land District Hawkes Bay
LOT 1 BEING A LEASE OVER PT LOT 1 DP 11043
Surveyor Guy Derek Panckhurst
Firm: Surveying The Bay Ltd (Hastings)
Digital Title Plan
DP 418519
Deposited on: 29/05/2009
Digitally Generated Plan
Generated on: 15/06/2009 08:53am Page 3 of 3

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**HBC4/204**
Land Registration District	**Hawkes Bay**
Date Issued	17 January 1969

Prior References
GN 222722

Estate	Fee Simple
Area	22.6974 hectares more or less
Legal Description	Section 37-38 Block IV Heretaunga Survey District and Section 35 Block XVI Puketapu Survey District

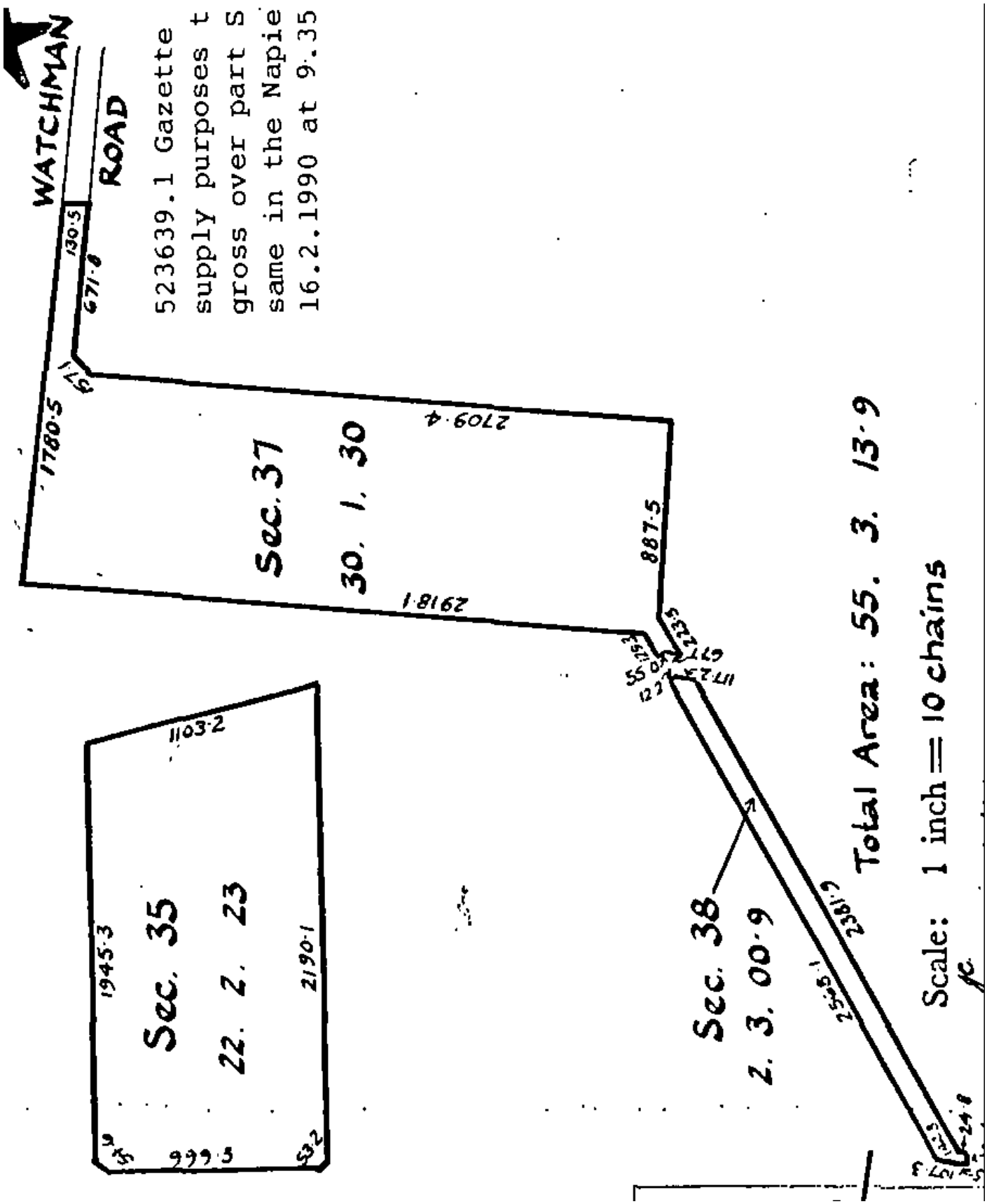
Registered Owners
Hawke's Bay Airport Limited

Interests

Appurtenant hereto are drainage and stormwater rights see HBC4/782 - 16.4.1969 at 2.10 pm

Subject to a right (in gross) to convey water over part in favour of the Napier District Council created by Gazette Notice 523639.1 - 16.2.1990 at 9.35 am (Affects part Section 37)

8140826.2 Encumbrance to Her Majesty the Queen, Napier City Council and Hastings District Council - 1.7.2009 at 3:59 pm


WATCHMAN ROAD
523639.1 Gazette
supply purposes t
gross over part S
same in the Napie
16.2.1990 at 9.35
130·5
671·0
1780·5
2709·4
Sec. 37
30. 1. 30
887·5
2918·2
1103·2
Sec. 35
22. 2. 23
1945·3
2190·1
999·5
Sec. 38
2. 3. 00·9
2381·2
Total Area: 55. 3. 13·9
Scale: 1 inch = 10 chains

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
LEASEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

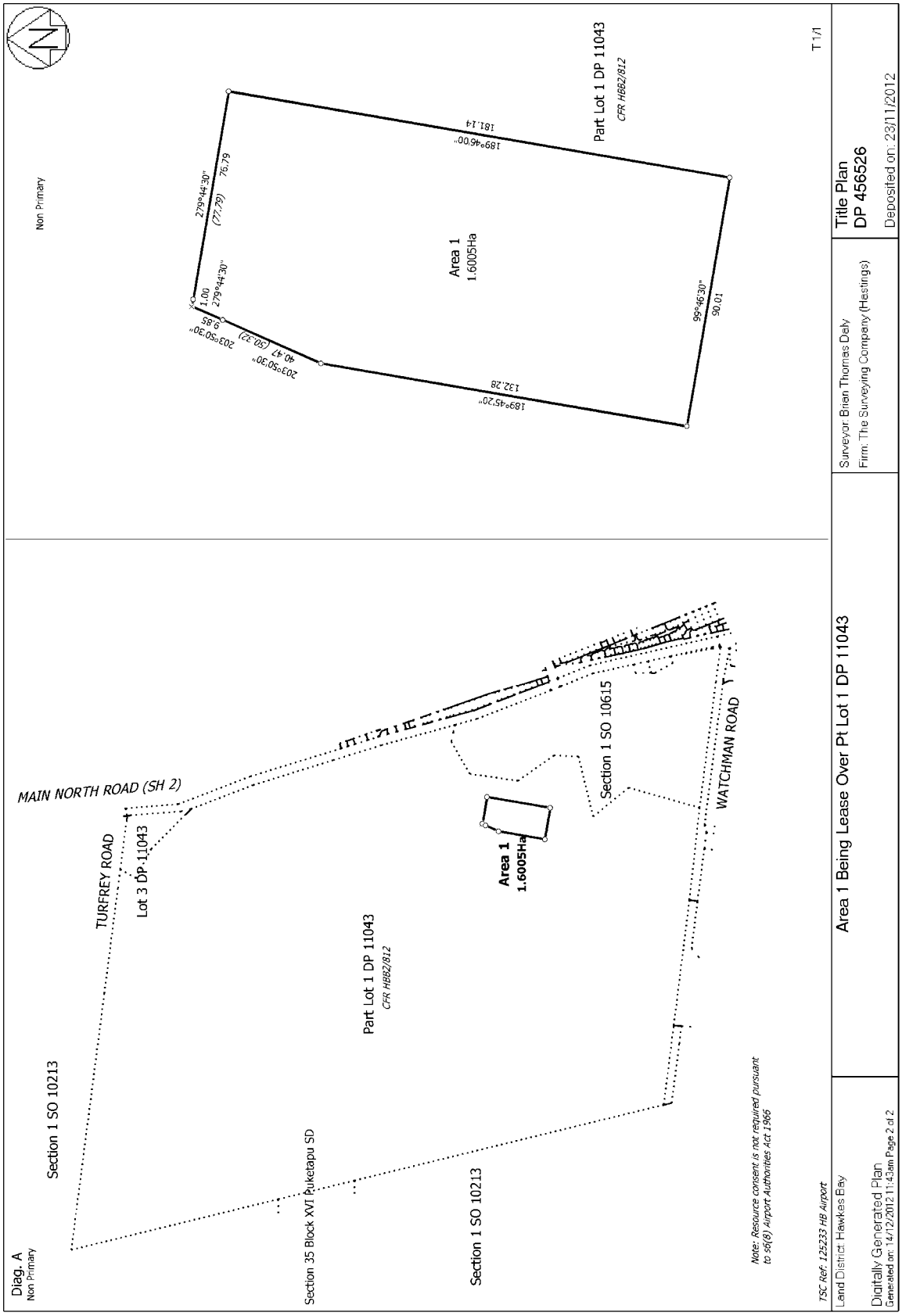
Identifier	**590247**
Land Registration District	**Hawkes Bay**
Date Registered	23 November 2012 10:38 am

Prior References
526833

Estate	Leasehold	**Instrument**	L 9224240.1
Area	1.6005 hectares more or less	**Term**	Lease of Lease 8532270.3 Term 18 years commencing 1.7.2012 (right of renewal)
Legal Description	Area 1 Deposited Plan 456526		

Registered Owners
ABB Limited

Interests


Non Primary
Part Lot 1 DP 11043
CFR HB82/812
181.14
189°46'00"
279°44'30"
76.79
(77.79)
279°44'30"
1.00
9.85
203°50'30"
40.47 (50.32)
203°50'30"
132.28
189°45'20"
99°46'30"
90.01
Area 1
1.6005Ha
T 1/1
Diag. A
Non Primary
Section 1 SO 10213
Section 35 Block XVI Puketapu SD
Section 1 SO 10213
Part Lot 1 DP 11043
CFR HB82/812
Lot 3 DP 11043
TURFREY ROAD
MAIN NORTH ROAD (SH 2)
Area 1
1.6005Ha
Section 1 SO 10615
WATCHMAN ROAD
Note: Resource consent is not required pursuant to s6(8) Airport Authorities Act 1966
TSC Ref. 125233 HB Airport
Land District Hawkes Bay
Digitally Generated Plan
Generated on: 14/12/2012 11:43am Page 2 of 2
Area 1 Being Lease Over Pt Lot 1 DP 11043
Surveyor Brian Thomas Daly
Firm: The Surveying Company (Hastings)
Title Plan
DP 456526
Deposited on: 23/11/2012

C

APPENDIX C

Designation Conditions

Hawke's Bay Airport – Airport Purposes Designation	
Designation unique identifier	HBA1
Designation purpose	Airport Purposes
Site identifier	The Airport Purposes designation is located at Hawke's Bay Airport, located at 1 Watchman Road, Napier. The area of land covered by the Airport Purposes Designation includes: › Lot 1 Deposited Plan 431425 › Lot 2 Deposited Plan 431425 › **Section 38 Block IV Heretaunga Survey District** › **Section 37 Block IV Heretaunga Survey District** › Section 35 Block XVI Puketapu Survey District › **Lot 3 Deposited Plan 11043** › Lot 1 Deposited Plan 418519 › **Area 1 Deposited Plan 456526**
Lapse Date	Designation has been given effect to.
Designation hierarchy under section 177 of the Resource Management Act	Varies
Conditions	Yes
Additional Information	N/A
Definitions used in these conditions	**Essential Unplanned Engine Testing:** means aircraft testing in the event of unexpected equipment failure or potential failure, and does not include routine engine maintenance, normal operational aircraft engine run-ups. (i.e.: aircraft warming up prior to take-off) or any noise generated by the taxiing or towing of aircraft to or from the designated engine testing location. **Aircraft Operations:** means aircraft operations include ground movements, take offs and landings, but exclude; › aircraft landing or taking off in an emergency; › emergency flights required to rescue persons from life threatening situations or to transport patients, human organs or medical personnel in medical emergency; › aircraft using the aerodrome due to unforeseen circumstances as an essential alternative to landing at the planned destination aerodrome; › flights required to meet the needs of a national or civil defence emergency declared under the Civil Defence Act 2002;

Hawke's Bay Airport – Airport Purposes Designation	
	› flights certified by the Minister of Defence as necessary for reasons of National security in accordance with Section 4 of the Act; › Aircraft carrying heads of state and/or senior dignitaries acting in their official capacity or other military aircraft operations; and, › aircraft undertaking firefighting or search and rescue duties. **Airport Ground-Based Activities:** means all airport activities, excluding any unplanned engine testing and Aircraft Operations **Notional Boundary:** means a line 20 metres from any façade of a building containing an activity sensitive to noise, or the legal boundary where this is closer to such a facade.

Purpose

The land to which this designation applies ("the designated area") may be used for activities for the operation of Hawke's Bay Airport ("the Airport"), subject to the conditions set out below, including but not limited to:

- Aircraft operations and associated activities, including all ground-based infrastructure, plant and machinery necessary to assist aircraft operations;
- Runways, taxiways, aprons and other aircraft movement areas;
- Airport terminals, hangars, control towers;
- Rescue, fire, police and medical facilities;
- Fuel storage and fueling facilities, facilities for handling and storage of hazardous substances;
- Navigation and safety aids, meteorological stations, lighting and telecommunications facilities;
- Maintenance and servicing facilities, including the testing of aircraft engines (in situ or otherwise);
- Catering facilities;
- Freight facilities;
- Quarantine and incineration facilities, border control and immigration facilities and aviation security;
- Aircraft training facilities, including associated educational and accommodation facilities;
- Roads, accessways, stormwater facilities, infrastructure and utility activities;
- Monitoring and site investigation activities;
- Vehicle parking and storage, rental vehicle activities, vehicle valet activities and public transport facilities;
- Signs, artwork or sculptures and flags and landscaping;

- Commercial, industrial and hospitality activities provided they serve the needs of passengers, crew, ground staff, airport workers and other associated workers and visitors;
- Ancillary activities, buildings and structures (including warehousing and other storage facilities) related to the above;
- Administration and offices associated with any of the foregoing activities; and
- All related construction, earthwork, vegetation control and maintenance activities and associated structures.

Conditions

Outline Plan

1. In accordance with section 176A(2) of the Resource Management Act 1991 (**"RMA"**), an outline plan need **not** be submitted for works and activities occurring within, or associated with the following;
    a. Aircraft operations;
    b. Lighting poles and navigational instruments;
    c. Maintenance or repair of existing buildings or structures;
    d. Upgrade or maintenance of existing formed roads and public accessways;
    e. Pavement maintenance or repair;
    f. Landscape maintenance or repair;
    g. Earthworks less than $100m^3$ per hectare of site area;
    h. Placement or maintenance of street furniture or art/sculptures;
    i. Signs;
    j. Maintenance or repair of lighting, signage and other existing fixtures or structures.
    k. Vegetation clearance and maintenance activities that are permitted under ECO-R1.

Building Setback

2. The minimum building setback from any adjoining land use zone shall be 5m.
3. Condition 2 does not apply to security fencing around the perimeter of the Airport or fencing required to ensure compliance with Civil Aviation regulations.

Buildings Height

4. The maximum height of any building or structure shall be 12m.
5. Condition 4 does not apply to control towers, lighting towers, or navigation and communication masts or aerials.

Storage

6. Outdoor and refuse storage shall be screened from adjacent residential zones or public roads by a fence or landscaping at least 1.8m in height.

Servicing

7. All new buildings shall provided with access to suitable potable water, stormwater and wastewater networks, in accordance with the requirements of the Building Act and the relevant Napier City Council Bylaw. This may be via on site treatment or connection to Napier City Council networks.

Noise

8. Noise from activities which are outside of the scope of NZS 6805: 1992 must not exceed the following noise limits at any point within any residentially zoned land or at any notional boundary not owned by or under the control of the Requiring Authority:

   a. Monday to Sunday 0700 hours to 2200 hours: L_{Aeq} 55dB

   b. All other times: L_{Aeq} 45dB

   c. Monday to Sunday 2200 hours to 0700 hours the following day: L_{AFmax} 75dB

   For the purpose of this condition, noise shall be measured and assessed in accordance with the requirements of NZS6801:2008 and NZS6802:2008.

9. Essential Unplanned Engine Testing or activities involving the de-icing of scheduled passenger aircraft is not captured by Condition 8.

10. Construction activities shall be designed, managed and controlled to ensure that construction noise does not exceed the noise limits set out in NZS 6803:1999 Acoustics Construction Noise.

Aircraft Noise

11. Aircraft noise required to be measured, predicted, assessed and reported in accordance with the Conditions set out in this designation shall be undertaken by a person suitably qualified in acoustics and in accordance with NZS 6805:1992 Airport Noise Management and Land Use Planning.

12. Hawke's Bay Airport shall be managed so that noise from Aircraft Operations does not exceed 65dB L_{DN} at or beyond the Air-Noise Boundary. The Air-Noise Boundary is shown on the District Plan Maps.

13. Compliance with Condition 12 shall be determined every three years (commencing within 12 months of the designation being confirmed)) by calculating the 65dB L_{DN} noise contours using records of actual aircraft activity at the Airport. Within three months of the compliance calculations being prepared, Hawke's Bay Airport shall provide a report to Napier City Council that includes the result of the compliance modelling, the methodology used in the preparation

of the contours and confirm compliance with the Air Noise Boundary, as shown on the Planning Maps.

14. When the calculated noise level (from condition 14) reaches 64 dB L_{dn} or greater at any point on the Air Noise Boundary shown on the Planning Maps, noise level measurements of Aircraft Operations shall be carried out for a minimum of one month. The noise measurement location should be selected to identify compliance or otherwise with the 65 dB L_{dn} limit at the Air Noise Boundary.

15. A report detailing the measurement and assessment methods and the results of the monitoring required by Condition 14, including the calculated L_{DN} noise levels for Aircraft Operations, shall be forwarded to the Napier City Council within two months of the monitoring being undertaken.

16. Noise from the following aircraft operations shall be excluded from the compliance calculations:

    a. airport ground-based activities;

    b. aircraft landing in an emergency or diverted aircraft;

    c. emergency flights required to rescue people from life threatening situations or to transport patients, human vital organs, or medical personnel in a medical emergency;

    d. the operation of unscheduled flights required to meet the needs of a declared national or civil defence emergency;

    e. military aircraft owned or operated by the Defence Forces of the New Zealand Government or another sovereign state;

    f. aircraft engine testing; and,

    g. essential unplanned engine testing.

<u>Lighting</u>

17. Light spill shall be managed to meet the following limits:

    a. Between the hours of 2200 and 0700, any outdoor lighting must not cause an added illuminance in excess of 15 lux, measured horizontally or vertically as an average (at a height of 1.5 metres above ground level) at any point beyond the zone boundary.

    b. Between the hours of 2200 and 0700, any outdoor lighting must not cause an added illuminance in excess of 10 lux, measured horizontally or vertically as an average (at any window of a habitable space within a building located in a residential zone).

    c. The outdoor lighting must be so selected, located, aimed, adjusted, screened and maintained to ensure that glare resulting from the lighting does not cause significant adverse effects on the occupants of residential activities, road users or aircraft.

18. Condition 17 shall not apply to lighting for the purposes of illuminating the road or associated with aircraft operations.

Heritage and Sites of Significance to Māori

19. Where an outline plan is required under section 176A of the RMA, the outline plan shall include for any development activity, including disturbance, in, on, under or over a mapped Area of Significance to Māori, in addition to the matters required under section 176A(3) of the RMA, a report or reports covering the following matters, as relevant to the scale and location of the works proposed:

    a. An evaluation of the cultural values associated with the Site of Significance to Māori.

    b. Details of any engagement with mana whenua or any other relevant iwi with an interest in the particular Area of Significance.

    c. Identification of management responses to avoid, remedy or mitigate the effects of the proposed works on the Area of Significance.

Significant Natural Areas

20. Where an outline plan is required under section 176A of the RMA, the outline plan shall include for any development activity, including disturbance, in, on, under or over a mapped Significant Natural Area, in addition to the matters required under section 176A(3) of the RMA, a report or reports covering the following matters, as relevant to the scale and location of the works proposed:

    a. An evaluation of the ecological values associated with the Significant Natural Area.

    b. Identification of management responses to avoid, remedy or mitigate the effects of the proposed works on the Significant Natural Area.

Development Guidelines

21. A set of development guidelines shall be established, maintained and implemented at all times. The development guidelines shall take into account AIRPZ-P32 and shall record why departure from AIRPZ-P32 is appropriate and necessary in order to meet the functional and operational requirements of the airport.

D

APPENDIX D

Gazette Notice

Departmental Notices

Agriculture and Forestry

Food Act 1981

Notice Under the Food Act 1981 (Notice No. 219)

Pursuant to section 11G of the Food Act 1981, notice is given of the issue on 21 August 2010 of the New Zealand (Maximum Residue Limits of Agricultural Compounds) Food Standards 2010, Amendment No. 1 which comes into force on **23 September 2010**.

A copy of the notice may be inspected or obtained at the office of the Ministry of Agriculture and Forestry (New Zealand Food Safety), South Tower, 68 Jervois Quay (PO Box 2835), Wellington.

It can also be viewed on the NZFSA website

www.nzfsa.govt.nz

Dated this 23rd day of August 2010.

CAROLE INKSTER, Acting Deputy Director-General (Food Safety), Ministry of Agriculture and Forestry (acting pursuant to delegated authority).

go6656

Culture and Heritage

Crown Entities Act 2004

Appointment to the New Zealand Historic Places Board of Trustees

Pursuant to section 28 and clause 1, Schedule 5 of the Crown Entities Act 2004, I appoint

Shonagh Kenderdine, of Wellington

as a member and chair of the New Zealand Historic Places Board of Trustees for a term of office from 23 August 2010 to 31 July 2013.

Dated at Wellington this 17th day of August 2010.

HON CHRISTOPHER FINLAYSON, Minister for Arts, Culture and Heritage.

go6556

Education

Education (Early Childhood Services) Regulations 2008

Cancellation of Licence for an Early Childhood Centre

Pursuant to Regulation 32(1)(d)(i) of the Education (Early Childhood Services) Regulations 2008, and acting under authority delegated by the Secretary for Education, I hereby cancel the licence dated **2 November 2009**, which was granted under those Regulations to **Belinda Hocking**, in respect of **Crayons Homebased Educational Service – Canterbury** (45236), situated at **856 Thongcaster Road, Oxford, Christchurch**.

This notice shall take effect the day after the date of its notification in the *New Zealand Gazette*.

KARL LE QUESNE, Group Manager, Early Childhood Education.

go6570

Environment

Resource Management Act 1991

The Resource Management (Approval of Hawke's Bay Airport Limited as a Requiring Authority) Notice 2010

Pursuant to section 167 of the Resource Management Act 1991, the Minister for the Environment hereby gives the following notice.

Notice

1. Title and commencement—(1) This notice may be cited as the Resource Management (Approval of Hawke's Bay Airport Limited as a Requiring Authority) Notice 2010.

(2) This notice shall come into force on the 28th day after the date of its publication in the *New Zealand Gazette*.

2. Interpretation—In this notice, unless the context otherwise requires, "airport" has the meaning given to that term by section 2 of the Airport Authorities Act 1966.

3. Approval as a requiring authority—Hawke's Bay Airport Limited is hereby approved as a requiring authority under section 167 of the Resource Management Act 1991, for its operation, maintenance and expansion of the airport known as Hawke's Bay Airport.

Dated at Wellington this 19th day of August 2010.

HON DR NICK SMITH, Minister for the Environment.

go6639

The Resource Management (Approval of Independent Transmission Services Limited as a Requiring Authority) Notice 2010

Pursuant to section 167 of the Resource Management Act 1991, the Minister for the Environment hereby gives the following notice.

Notice

1. Title and commencement—(1) This notice may be cited as the Resource Management (Approval of Independent Transmission Services Limited as a Requiring Authority) Notice 2010.

(2) This notice shall come into force on the 28th day after the date of its publication in the *New Zealand Gazette*.

2. Interpretation—In this notice, unless the context otherwise requires, "line function services" has the meaning given to that term by section 2 of the Electricity Act 1992.

3. Approval as a requiring authority—Independent Transmission Services Limited is hereby approved as a

APPENDIX E

Hawke's Bay Airport Master Plan
Summary Report - 2020

2040

TWENTY YEAR
MASTER PLAN
SUMMARY

HAWKE'S BAY
AIRPORT

KIA ORA

WELCOME TO THE FUTURE OF YOUR AIRPORT!

Together with key stakeholders and consultants, your Airport team has been putting enormous energy into planning and envisioning the Hawke's Bay Airport of the future – your future.

What do we know of how air travel will look in 2040 and beyond?

Well, we know that we'll be preparing to welcome 1.4 million passengers through our gates each year – almost double the numbers we see now. We know we'll need the ability to scale up, accommodating larger aircraft, changing training requirements and enhanced security and screening measures.

And we know we'll continue to plan, operate and execute change through a sustainability lens, protecting our magnificent 230ha asset, the neighbouring estuary – and the planet – as best we can.

We're excited to share our journey with you,

Stuart Ainslie
Chief Executive
Hawke's Bay Airport Limited
March, 2021

THE KEY TO OUR SUCCESS

At Hawke's Bay Airport, we are committed to delivering outstanding service to everyone who comes in contact with us – from travellers and tourists, to the business community and our tenants, to our neighbours, stakeholders, and mana whenua.

To continue on our journey of excellence, we plan well in advance of the coming months, years and decades.

Our Master Plan is one such plan – a document spanning the next 20 years (2020-2040) that acts as our blueprint for sustainable future development.

We take a myriad of factors into account when preparing the Master Plan, evaluating space requirements and engaging experts to help us analyse statistics and forecast future trends.

Your Airport, adjacent to a unique – and uniquely historic – estuarine environment, merits careful thought and an inspired plan. Our Master Plan is just that – delivering 20 years of achievable growth so that we can continue to serve the people of Hawke's Bay in the best way possible.

In essence, the Master Plan provides direction in several areas:

Sustainability: It's at the heart of everything we do. Whatever we do in the future must be financially viable, operationally efficient, socially responsible and protect the natural environment.

Efficiency: It's vital that we make the best use of our existing infrastructure and assets.

Growth: We know that passenger numbers are increasing, and to get them here, we need bigger aircraft. Your Airport is classified as 'Code C' which means that we can continue to welcome charter jet aircraft to Hawke's Bay, but we must also prepare for commercial jetliners – such as Airbus and Boeing aircraft – that may fly here in the near future.

DID YOU KNOW

Prior to the 1931 earthquake, your Airport could not have existed at its current location – that's because the land it now sits upon was under water. The seabed was raised by around two metres during the 1931 earthquake and by 1935, an airfield was established here, with regular flights between Napier and Gisborne.

Sustainability

Hawke's Bay Airport aspires to being New Zealand's most sustainable airport by embedding sustainability at the heart of everything we do. The framework through which we will achieve this vision is identified in our Sustainability Policy and will be reviewed regularly.

Aircraft: Air New Zealand, ATR72-600.

OUR CURRENT POSITION

Hundreds of thousands of locals and travellers rely on your Airport each year, with passenger figures climbing steadily as Hawke's Bay's economy grows. We're a true regional transport hub, contributing $38m* to the regional economy each year and servicing a vast area, from Wairoa in the north to Central Hawke's Bay in the south.

IMAGE: Ahuriri Lagoon taken after the Hawke's Bay earthquake on the 3rd of February 1931. Photographer Leo Lemuel White. Donated by C Newell. Collection of Hawke's Bay Museums Trust, Ruawharo Tā-ū-rangi, 82571

*As at October 2017

PERCENTAGE OF AIR TRAFFIC COMING FROM NON-PASSENGER TRAVEL IS

33%

We've already seen significant change here over time – from our humble beginnings as a tiny airfield in the 1930s, to our official opening as an airport in 1964, and the hugely exciting $23.5m Airport expansion project. The new design extends our capacity to accommodate a million passengers a year, improves the terminal, food and retail experience and tells the story of our region and its proud history.

From Hawke's Bay Airport, passengers can fly to and from four New Zealand cities (Auckland, Wellington, Christchurch, Gisborne) on one of around 45 flights per day, and connect through to myriad domestic and international destinations.

But although passenger travel is the first thing many think of when considering an Airport's business, there is so much more to what we do than that.

We're a base for local charter services and the aero club and – vitally – support lifesaving medical flight services through Life Flight and the Air Ambulance. In fact, 33% of our air traffic comes from non-passenger travel – things like military and government aviation, agricultural aviation, and flight training are also included in this figure.

We're a maintenance hub for aircraft in the region, and the Hawke's Bay headquarters for several rental car companies. Our 230ha site hosts a range of big and small tenants, and services freight, too. Right now, we're even considering how we might integrate a dedicated air freight service into our offering as demand for moving goods by air increases.

DID YOU KNOW

Although in terms of volume, more people travel on the Napier to Auckland route than any other, our fastest growing passenger route year-on-year is Napier to Christchurch.

Aircraft: Air New Zealand, two ATR72-600 and a A320-200.

A BUSY FUTURE

Scheduled Passenger Services per day*

2019 **40**

2040 **60**

With 1.4 million people expected to travel through your Airport each year by 2040, we are planning for a busy future. And we predict that within the next two decades, more people will choose to leave the car and instead, fly with ease and speed to reach our great cities and make onward connections to other regions and to the world.

Travel will likely be possible within a wider range of aircraft too – from our twin-engine turboprop ATRs to A320 and B737 jets which will provide all of our routes with additional seats, more frequent flights and of course, a wider choice for our passengers from the 2030s onwards.

There has been a lot of change over the past year, and as such, change in forecasted aircraft movements. While, right now, passenger numbers are low, short-term volatility in the aviation market is nothing new. In the past, the world has seen numerous events reduce passenger demand for a period of time. Recent examples include the 9/11 terrorist attack (2001), SARS (2003), the Global Financial Crisis (2008 – 2012) and now Covid-19 (2020). In each previous case, passenger demand returned and long-term growth rates in global passenger numbers were restored.

In preparing this Master Plan, three iterations of annual passenger forecasts were prepared, each accounting for a very different set of circumstances:

1. July 2019 "Original" – Air New Zealand and Jetstar operating at Hawke's Bay Airport
2. January 2020 "Revised" – Air New Zealand operating alone, after Jetstar withdrawal from regional New Zealand in November 2019
3. June 2020 "Post-Covid" – Prepared as the Master Plan was being finalised

Despite the current challenges, aviation will stabilise. There is confidence in the Airport continuing to provide facilities to service sustained future growth in passenger numbers.

The Future Of Flying

With exciting technological developments on the horizon for the aviation market, including new hybrid electrical aircraft, we are making sure that we are one step ahead. We are already signaling these anticipated changes by planning and adapting our infrastructure here at the Airport to accommodate such important innovation.

Total Aircraft Movements per annum*

2019

15,000 Scheduled Passenger Services

9,000 General Aviation

Total = 24,000

2040

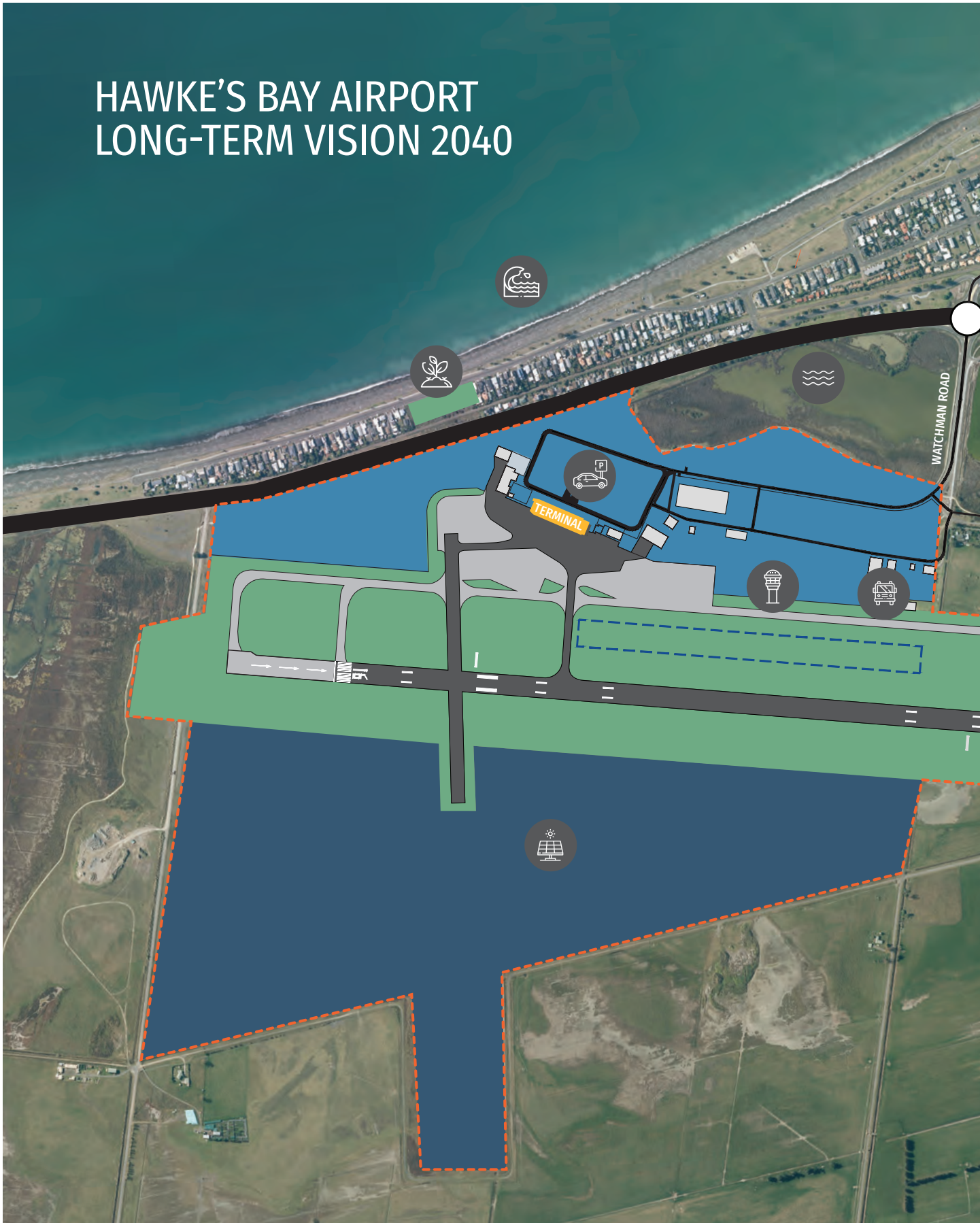
22,000 Scheduled Passenger Services

18,000 General Aviation

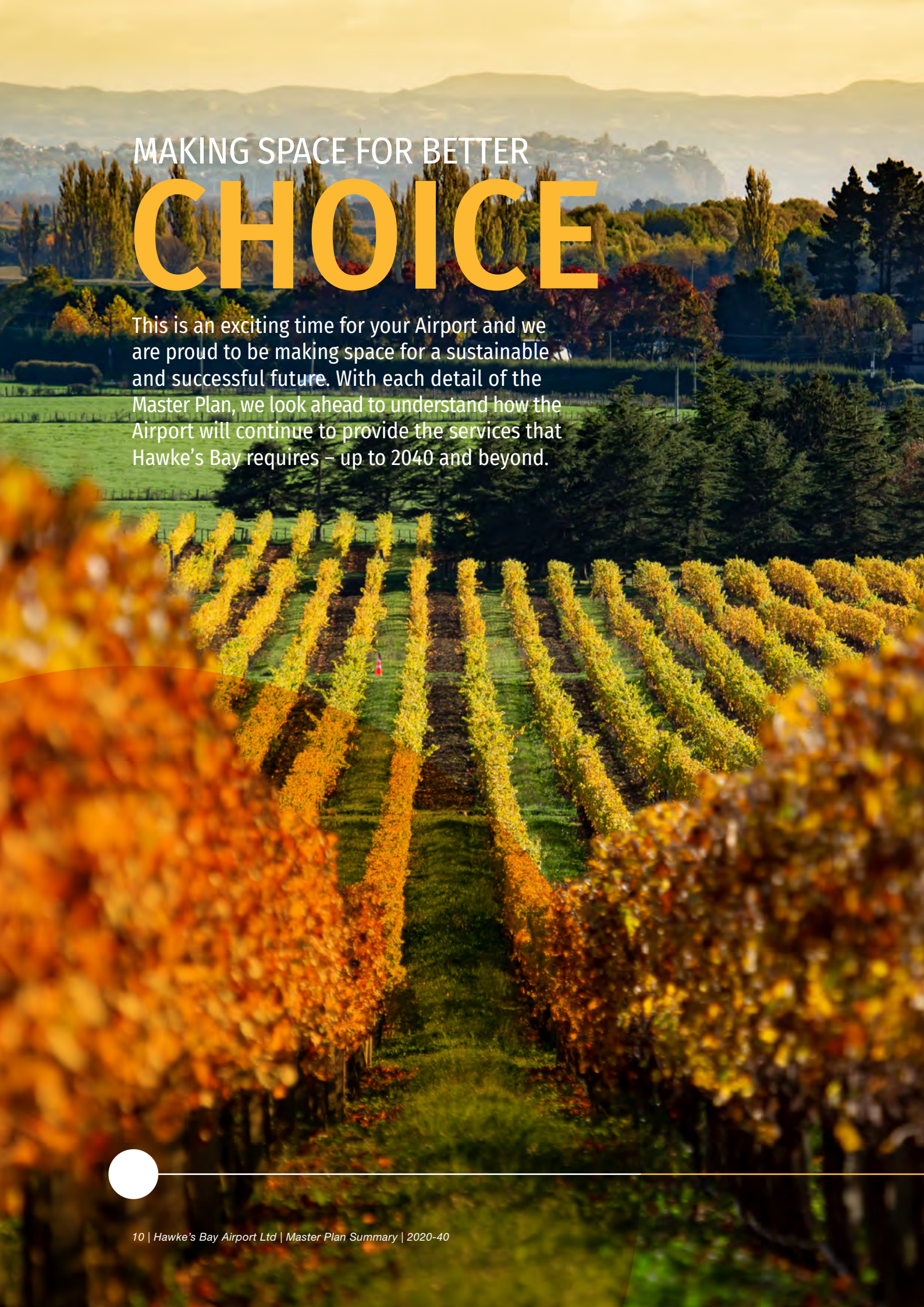
Total = 40,000

**Approximate numbers provided by Air New Zealand.*

HAWKE'S BAY AIRPORT LONG-TERM VISION 2040



- Airport Commercial
- Airport Buffer/Future Development
- Current Runway
- Runway Extension
- Grass Runway
- Property Boundary
- Environmental Reserve
- Proposed Fire Station
- Control Tower
- Car Parking
- Ahuriri Estuary
- Westshore Beach
- Scrape Lake
- Solar Farm



MAKING SPACE FOR BETTER CHOICE

This is an exciting time for your Airport and we are proud to be making space for a sustainable and successful future. With each detail of the Master Plan, we look ahead to understand how the Airport will continue to provide the services that Hawke's Bay requires – up to 2040 and beyond.

The first step in our vision for the future was realised in 2018 when construction commenced on the new passenger terminal at Hawke's Bay Airport. This is expected to open mid-2021 and will cater for 1 million passengers, being a crucial development in our plan for the future.

Main Runway

One area that will help the Airport to accommodate its growth and to increase choice for both passengers and businesses is an extension of the existing runway. Currently, it is 1,750m long, but needs an additional 680m of runway – about the same as seven rugby fields - to allow a number of commonly used passenger jet aircrafts, such as the Airbus A320, to reach destinations on the east coast of Australia fully loaded with freight. We think this is a fantastic prospect, and would give greater flexibility in the types of jets we could welcome to Hawke's Bay.

Any runway extension would, in turn, affect other Airport infrastructure. Improvements would take place on the apron, which is where the aircraft are parked, unloaded, refuelled and boarded, as well as on the taxiways. We're also considering where we would move the Airport fire station to, if any further expansion requires its relocation.

Crossing Runway

When reviewing our future requirements for the main runway and planning ultimately for its extension, we have also reviewed the crossing runway located at the northern end of the Airport. This runway is approximately 1,200m long mixed surface (grass and sealed). We have worked with Airways and the general aviation community based at the Airport on this review. The crossing runway has low usage with only being available during daylight hours and is regularly closed either due to surface conditions of the runway or for other operational reasons. As part of our future development plans, the crossing runway will ultimately be closed. The timing of closing this is yet to be confirmed. In line with our commercial strategy, closing the crossing runway will ultimately increase the land available for further commercial development, creating highest and best use of this land.

Under control

The existing control tower at the Airport was constructed in 2002. If required in the future, a new central location has been identified and protected for as part of our development plans. While preparing this Master Plan, Airways (who provides air traffic services currently in New Zealand), announced a review of these services at several airports, including Hawke's Bay. We are working collaboratively with Airways on this review. When future requirements mean it is time to relocate the control tower to its new location, the type of tower and form of operation will be known.

Getting to the Airport

It's likely we will need additional car parking spaces as we grow, but we're also committed to providing a variety of future-proofed transport options to make sure that the Airport is even more accessible for customers. Whether arriving by foot, bike, e-bike, taxi, bus or ride share, your Airport will continue to be easy to reach.

Freight expectations

Currently, the narrow-body twin propeller aircraft servicing our region have limited capacity for freight. In 2019, we commissioned a study into air freight feasibility, using a grant from the government's Provincial Growth Fund which confirmed that perishable export goods, in particular, would benefit from a dedicated site and freight handler at Hawke's Bay Airport. It is anticipated that air freight volume in Hawke's Bay could grow between 280 and 615 tonne per annum by 2042. We're interested in whether we can create a new opportunity from this growth.

DID YOU KNOW

Aviation security screening is coming – before long, our bags (and our bodies!) will be screened as we depart Hawke's Bay Airport. We've factored this into our new terminal expansion, but as passenger numbers grow towards the end of our Master Plan's 20-year window, we may need to build additional dedicated security areas – and a bigger passenger terminal.

MAKING SOUND DECISIONS

Aircraft movements create noise, and the impact of that noise depends on many factors such as wind direction, flight path and aircraft type. Most of us around the region will hear an aircraft flying overhead at some point, but it usually causes us very little disturbance. Landing and take-off are when most aircraft noise is generated, and this can affect the Airport's immediate neighbours the most.

There are a number of factors to consider regarding aircraft noise. Currently, aircraft noise is managed via 'airport noise boundaries' within the Napier City Council District Plan. However, the existing airport noise boundary was developed in 1994 using data that is now well out of date. Hawke's Bay Airport recently engaged specialist acoustic consultants Marshall Day Acoustics to take another look at aircraft noise, so we could provide clarity to our partners, councils and the community. We also aimed to incorporate the projected increases in passenger and freight traffic and the different types of aircraft fleet we expect to see operating from Hawke's Bay Airport over the coming years into the assessment.

Using the very latest aircraft movement projections, Marshall Day developed proposed new boundaries, which are referred to as the Outer Control Boundary (OCB). The OCB has been calculated using computer modelling endorsed by the New Zealand Standard NZS 6805 Airport Noise Management and Land Use Planning, which provides a recommended approach for councils dealing with airports and land affected by airport noise. This approach is considered to be best practice in New Zealand.

The OCB redefines the areas that may be affected by aircraft noise now and in the future. Primarily, this extension stretches the current noise boundary to both north and south, as outlined here.

The team involved have taken a conservative approach, including any land that is affected in even the smallest way by aircraft noise. This approach ensures future residential and commercial development in the identified land parcels can be progressed in a way that reflects the changing nature of the area and the exciting growth opportunities that lie ahead for the Airport and the region as a whole.

The OCB information will be included in the Napier City Council Draft District Plan and will be available for the consultation process that follows.

DID YOU KNOW

Typically, aircraft noise is measured from three separate points by a highly sensitive type of microphone. These microphones measure sound levels as planes take off, climb to altitude and descend to land.

Aircraft: Air New Zealand, ATR72-600.

GATEWAY TO

GROWTH

18 BUSINESSES BASED AT HAWKE'S BAY AIRPORT

DID YOU KNOW

These businesses employ approximately 235 full time and 40 part time staff. Of this 11 full time and 5 part time are employed by HBAL.

Your Airport is the gateway to the region, providing a welcoming environment for travellers whose adventures start here. But it's also a commercial hub and carefully managed asset. We set out to utilise Airport land to the very best of our abilities, maximising infrastructure and optimising returns, thereby increasing value to our shareholders.

The Airport's position – close to Napier's CBD, adjacent to the state highway and moments from Napier Port – means it's ideally situated to accommodate a range of activities within both the terminal and the Hawke's Bay Airport commercial precinct. The redevelopment of Watchman Road has further improved access and made the proposition of locating businesses within the Airport's boundaries even more appealing.

Diversification also helps the Airport remain resilient as tourism and travel conditions change. It's important that, while we plan for a strong recovery post Covid-19, we also reduce our reliance on aeronautical activity and develop a range of revenue streams.

These income streams will include car parking, retail, advertising, and air services development, with a special focus on property development and renewable energy.

Commercial development

Commercial tenancies at the Airport are likely to include freight and logistics businesses. Hawke's Bay Airport is uniquely positioned for this type of activity with great connections from the external transport networks to the commercial precinct to our runway infrastructure. We look forward to working with these businesses along with other commercial and industrial business that are an ideal fit with our future plans.

Attracting these tenancies creates jobs for local people, bringing in new brands and enterprises whilst impacting positively on the local economy.

Renewable energy

With so much Hawke's Bay sun on offer, the Airport has identified how developing its own renewable energy resource could help deliver our sustainability goals. A 'solar farm' is an effective way of leveraging the value of land to the west of the runway, which is unable to be developed in other ways, and generate energy for both the Airport, its tenants and potentially further afield. To move this exciting project forward, the Airport has entered into a joint venture agreement with Waipukurau based lines company Centralines.

Hawke's Bay Airport remains a key enabler of regional infrastructure growth. We'll continue to optimise the use of our land over the coming 20 years, working hand-in-hand with mana whenua to ensure we're protecting this shared asset, and developing new opportunities for growth that benefit everyone who lives – or visits – here.

DID YOU KNOW

During the terminal expansion project construction, 93 businesses were registered suppliers, 445 individuals / contractors were inducted, with an average of 15 - 20 working on site each day.

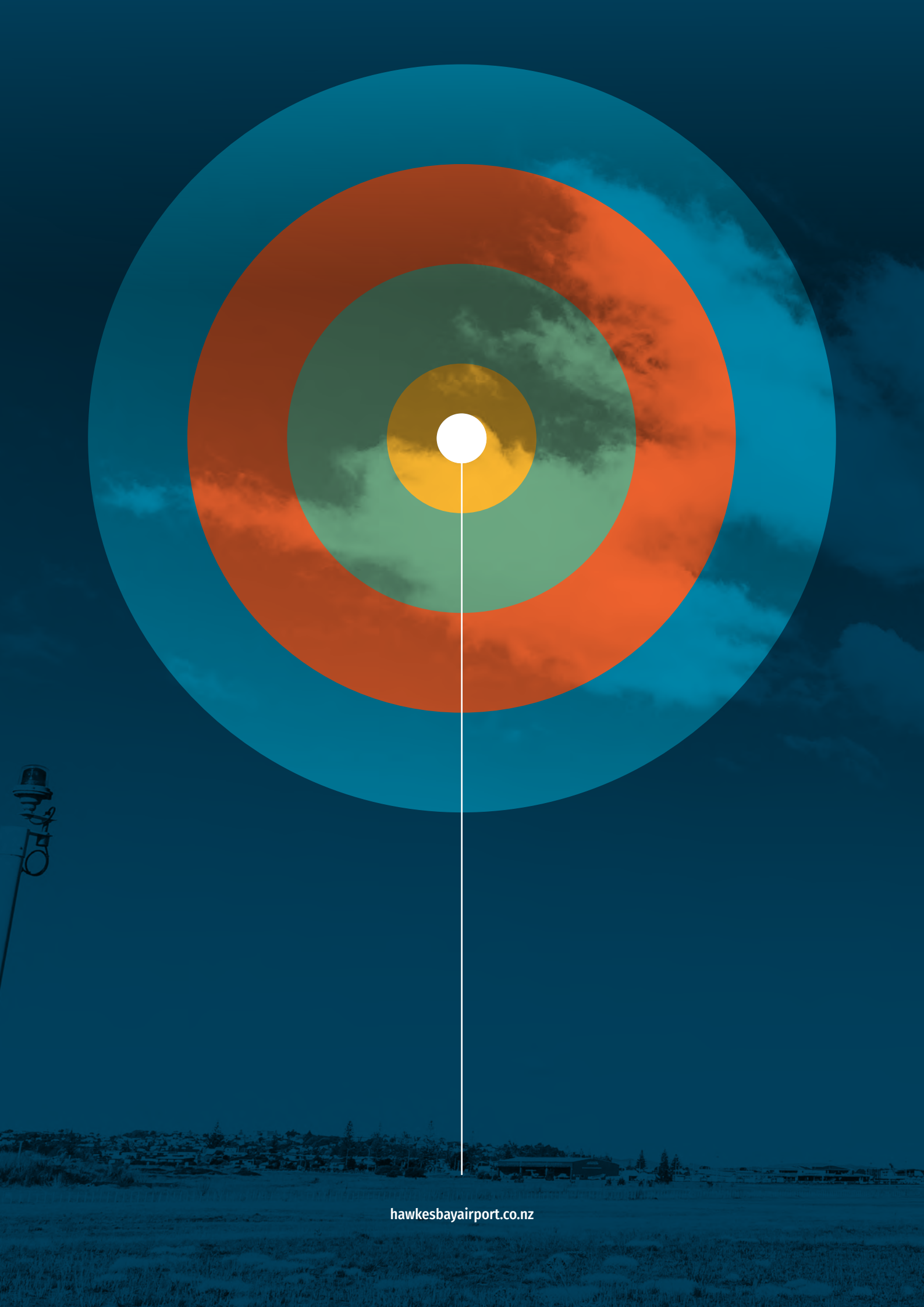
KEEN TO HEAR FROM US ON THE MASTER PLAN AND WHERE IT WILL TAKE US?

Visit **hawkesbayairport.co.nz**

Get in touch
Email **plan@hawkesbay-airport.co.nz**
Phone **06 834 0742**

Sign up for our newsletters via our website

Aircraft: Skyline Aviation, Cessna C510 Mustang


hawkesbayairport.co.nz

APPENDIX F

Forecasting Report

HAWKES BAY AIRPORT LONG-TERM TRAFFIC

JULY 2019

CHRISTCHURCH AIRPORT

Contact Details:
Christchurch International Airport Limited
PO Box 14001
Christchurch 8544
New Zealand

Phone: +64 3 358 5029
Facsimile: +64 3 353 7730
christchurchairport.co.nz

TABLE OF CONTENTS

GENERAL AVIATION FORECAST

HAWKE'S BAY AIRPORT LIMITED

DECEMBER 2019

Contact Details:
Christchurch International Airport Limited
PO Box 14001
Christchurch 8544
New Zealand

Phone: +64 3 358 5029
Facsimile: +64 3 353 7730
christchurchairport.co.nz

TABLE OF CONTENTS

LIST OF FIGURES & TABLES

1 INTRODUCTION

Christchurch Airport Ltd (CIAL) was commissioned by Hawke's Bay Airport Ltd (HBAL) to undertake a long term forecast of the general aviation (GA) market at the airport, as well as its role within the region.

The HBAL brief to CIAL was to produce a forecast to support HBAL's master planning process over both the short and long-term periods. The forecasts extend to 2045, and are a combination of operators views and feedback, supplemented by an econometric view over the long term of the study period.

The forecast has segmented the various traffic types that typically comprise general aviation in New Zealand. The forecast has identified seven segments of general aviation; medical movements, passenger charter flights, training flights, private flying, agricultural flights, military and governmental flying, and finally commercial operations.

2 BACKGROUND – HAWKE'S BAY & HASTINGS AIRPORTS

For the general aviation (GA) market, the Hawke's Bay area is primarily host to two airfields popular with the general aviation operators.

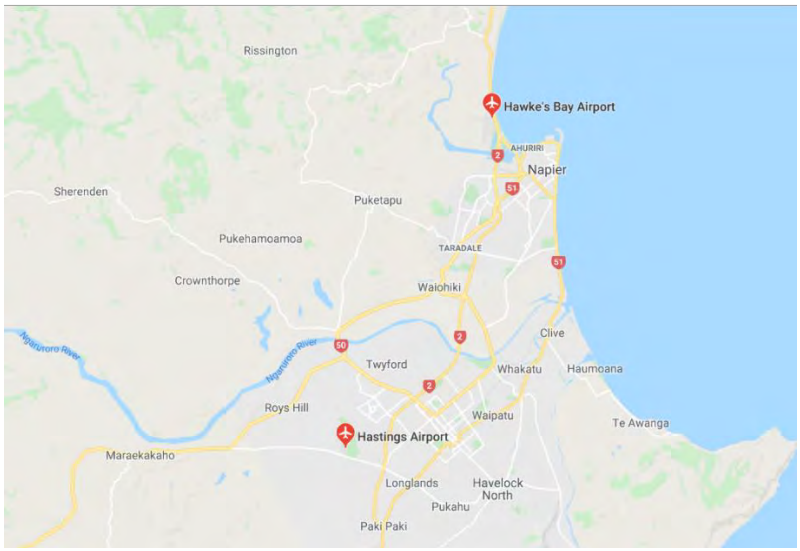
The commercial airport at Hawke's Bay is 6kms from the centre of Napier town. The longest runway is sealed and is 1,750 metres long. The second runway is grass and sealed and is 1,199 metres. A third runway (766 metres) is a grass strip.

Hastings Aerodrome (Bridge Pa Airfield) is approximately 8kms west of the town of Hastings, and around 25kms from Napier. It has three runways and the longest (at 1,075 metres) is sealed asphalt and also has night landing lighting. Of the remaining two, one is grass and the third is part-sealed for 295 metres from the threshold until the intersection with the fully sealed runway.

The airport is busy and is home for several light aircraft operators including the Hawke's Bay and East Coast Aero Club, all producing approximately 33,000 annual aircraft movements. There are a variety of micro-light, gliding, skydiving, helicopter and agricultural operations based at Hastings.

Air Hawke's Bay is a wholly owned company within the Hawke's Bay and East Coast Aero Club. It provides flight training programmes as well as air taxi services.

Figure 1: Location of Hawke's Bay and Hastings Airports



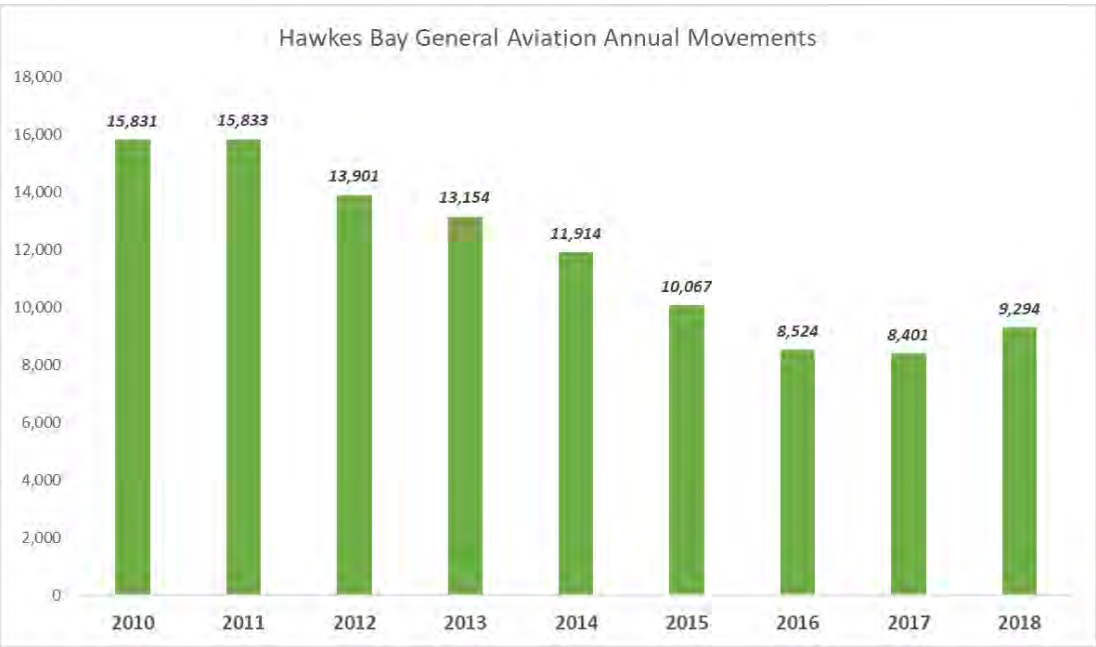
Source: Google Maps

Data indicates considerable GA activity at Hawke's Bay Airport – over 9,000 movements for 2018 as recorded by Airways (Airways Aircraft Movements). This figure of 9,000 movements represents all movements recorded and invoiced by Airways. This figure does not reconcile with the number of landing or take-off movements at Hawkes Bay Airport, as it includes touch-and-go, transit and training movements. The 1,000 fewer movements represent those as not invoiceable movements by Hawkes Bay Airport, but are by Airways.

No data is required from airports that are not registered with the CAA. Hastings Aerodrome falls within this category as a non-certified airport. There is therefore no official data to support the scale of operations at Hastings Aerodrome.

Non-scheduled aircraft movements at Hawke's Bay Airport have seen a decrease over the past eight years, although there has been some recovery since 2016. However, Hawke's Bay Airport has a significant GA aircraft presence, with GA movements making up around one third of the total aircraft movements at the airport.

Figure 2: Hawke's Bay Airport Historic GA Movements



Source: Airways NZ

The trend for GA at Hawke's Bay replicates the larger national trend experienced by the New Zealand GA market.

Declines in aircraft movements can be accounted for in changing demographics (an ageing population), rising costs of flying, and the rising costs associated with training to gain licences. Also, until relatively recently the prospects of employment for commercial pilots compared to the cost of training had made pilot training a less attractive option. However, a global shortage of pilots due to increases in low-cost air travel, as well as an increase in airline pilot retirements has reversed this trend. Demand for pilot skills is now at a premium in high growth aeronautical markets such as the Arabian Gulf states, China and the United States.

Training organisations are seeing significant demand for pilot training, from domestic, but also more markedly from international students. This can account for much of the increase in non-scheduled aircraft movements since 2016.

Figure 3: Total GA Movements in New Zealand since 2010

Source: Airways NZ

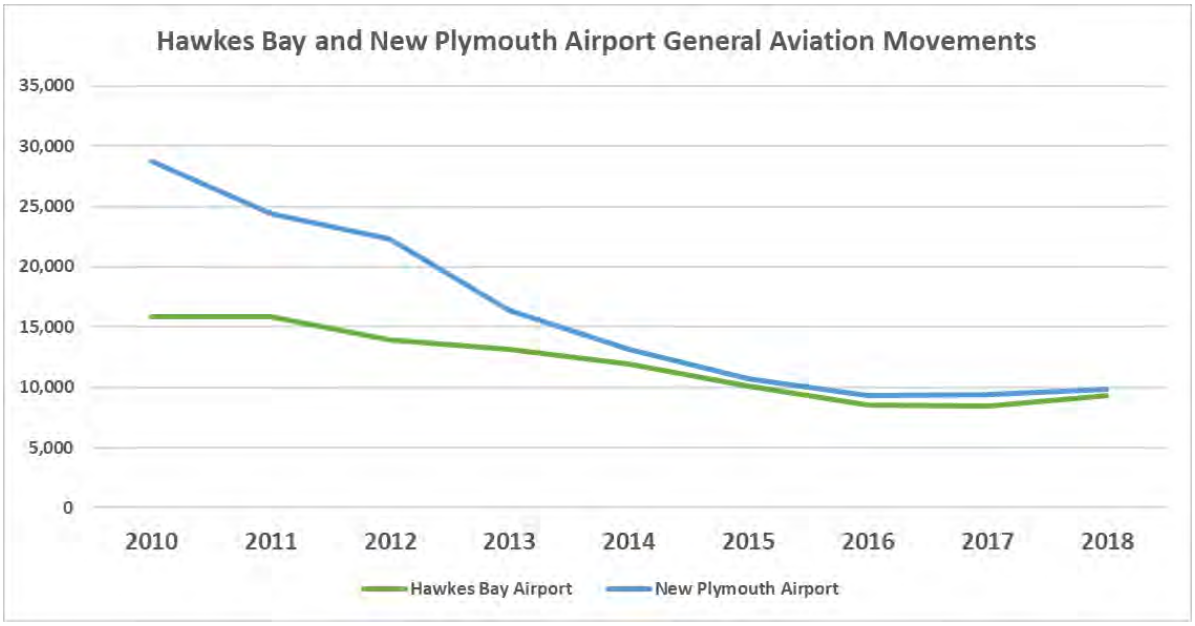
Hawke's Bay Airport has held a relatively stable share of GA movements in New Zealand. Currently the share is approximately 2.7%; the highest share of traffic since its peak back in 2011. It has fallen to a low of 2.4% but quickly rebounded again. Hawke's Bay would need to secure considerably more flying activity to reach a share of 3% so it is unlikely to reach a 3% share of GA traffic unless there were some significant changes at other airfields such as Hamilton and Ardmore. The relatively stable share of GA indicates that Hawke's Bay is largely in synch with the national GA trends.

Figure 4: Hawke's Bay Airport Share of All New Zealand GA Movements

Source: Airways NZ

Most recent data indicates that the annual movement rates at Hawke's Bay are very similar in volume terms to those using New Plymouth Airport. However, New Plymouth Airport has experienced a more precipitous decline in movement activity since 2010. The two airports have been aligned since around 2014 and have both followed very similar trends.

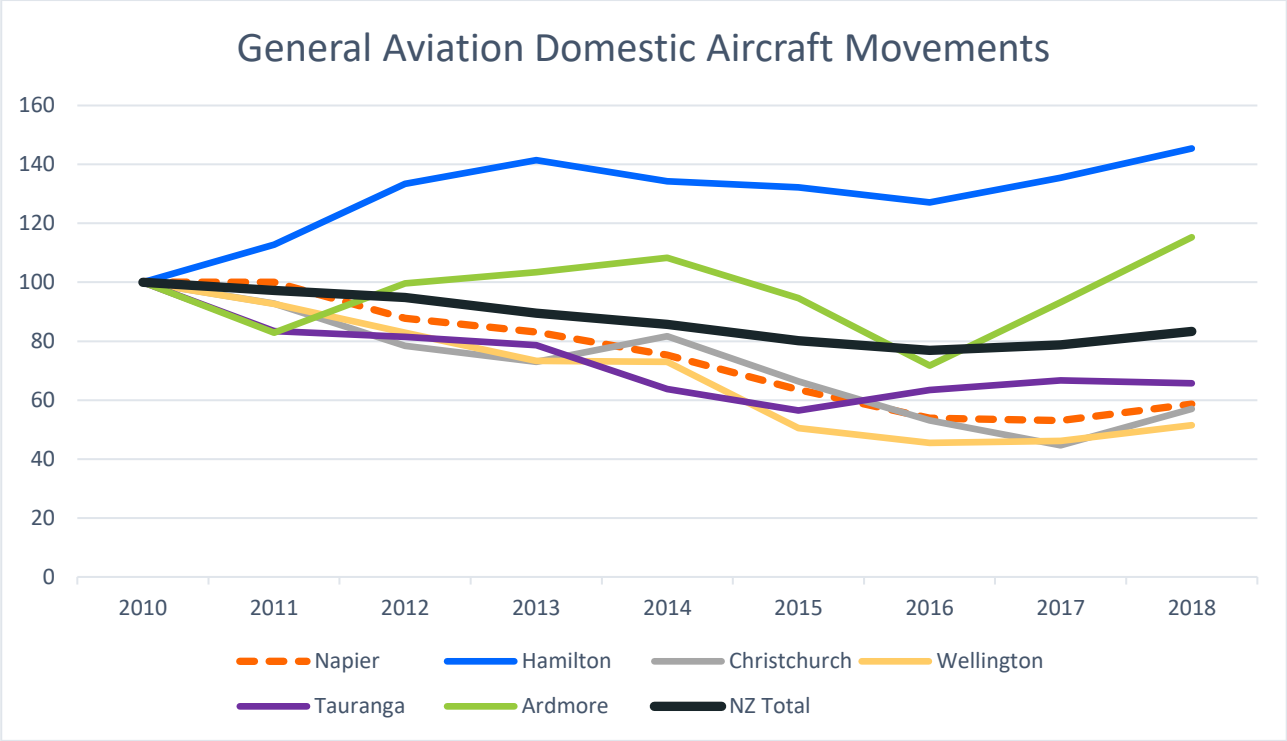
Figure 5: Comparison of GA Movements at Hawke's Bay and New Plymouth Airports



Source: Airways NZ and CIAL

On an indexed basis, Hawke's Bay has performed below the national rate. The impact of air training operations can be seen in the rapid rise in activity at Hamilton Airport, for example. Hawke's Bay trend has largely followed the indexed trend of Christchurch Airport.

Figure 6: Indexed Historical GA Trend at Selected New Zealand Airports

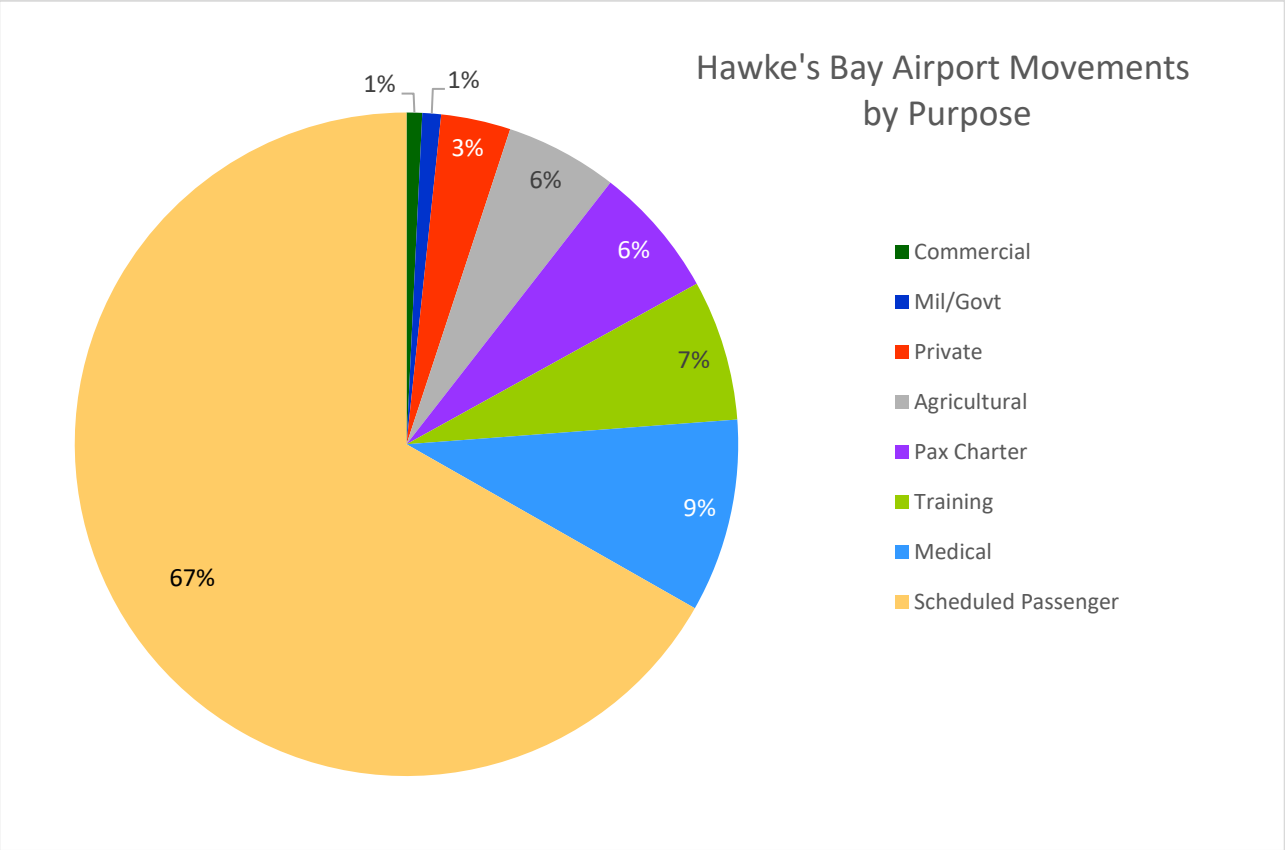


Source: Airways NZ and AirportIS (IATA)

Cross-referencing Hawke's Bay GA movements to other New Zealand airports indicates that much of the variability in movements has been in the light aircraft category (less than 3 tonnes category). As mentioned, the cost of private aviation has increased significantly since 2010, and the average age of a recreational pilot has also increased.

Commercial aviation has also seen an increase. Demand for inter-hospital transfers and rescue helicopters has increased. Industries requiring significant aerial work such as dairy, forestry, honey, etc have seen continued strong growth, which all contribute to increases in GA aircraft movements.

Figure 7: Total Movements Split by Aircraft Purpose



Source: Airways NZ

3 FORECAST

This section details the assumptions and considerations that contributed to the forecast growth rates set for each of the GA sectors. Inputs into these forecast growth rates included historic aircraft movement data that was analysed to identify recent trends, research into each market segment and available data from CAA & Airways.

Local GA operators also provided input. The base case and future impact of this feedback was consolidated when determining future aircraft movements by market segment.

3.1 MEDICAL MOVEMENTS

Medical movements make up the largest proportion of fixed wing GA movements at Hawke's Bay Airport. Skyline Aviation is headquartered at Napier and they have major contracts with district health board's (DHB's) across the North Island for inter-hospital transfers. All aircraft in their fleet maintained are maintained at Napier, even if the aircraft are based in other regions.

Skyline Aviation operates a fleet of small business jets and twin-engine turbo-prop aircraft around New Zealand. The aircraft are available for patient transfer as well as air taxi charter services.

The funding for the Skyline's medical movements operations comes from the client DHB's, who are funded using a population-based formula. It would be expected that in the longer-term, aircraft movements will increase in line with forecast population growth, with an additional allowance for maintenance movements for aircraft based outside of Hawke's Bay.

A more centralised intensive medical service is creating growing demand for patient transfer services by air on a 24-hour availability basis.

To generate a movement forecast we have employed a population growth rate for this sector of the GA segment. Statistics NZ forecast 0.9% population growth as their high-growth scenario. In this forecast for HBAL we have adopted this higher rate of population growth. The assumption for using that is to account for an ageing population potentially requiring greater healthcare transfer services within New Zealand.

There are no longer any rescue helicopters based or maintained at Hawke's Bay Airport, so we can expect movements to reduce to almost zero for the remainder of the forecast.

Forecast Summary

Aircraft Type	Short Term	Long Term	Total
Fixed Wing	1.5%	1.2%	1.3%
Helicopter	-45.1%	0.0	-10.9%

Short Term: 2019 – 2024. Long Term: 2025-2045

3.2 PASSENGER CHARTER

Air Napier operates a quasi-scheduled service between Napier and Gisborne Airports, as well as a contract to take medical staff between Napier and Wairoa. These services make up most of the GA passenger flights. There are plans to build on the demand on the existing Napier-Gisborne service, as well as researching for other regional opportunities from the Hawke's Bay region.

Over the short-term there is potential for their operation to grow to approximately 1,200 movements per year (which it previously achieved in FY16 & FY17).

Air Napier and Skyline both have fixed base operator (FBO) facilities for itinerant aircraft which currently handle approximately 60 movements per year between them. Skyline is opening upgraded facilities in early 2020 which may attract further business as it expands its capabilities at the airport.

Passenger charter helicopter movements are a small proportion of the total passenger charter market and are usually individual charters. There are no indications to suggest significant growth in this area.

Forecast Summary

Aircraft Type	Short Term	Long Term	Total
Fixed Wing	4.8%	2.0%	2.6%
Helicopter	1.0%	1.0%	1.0%

Short Term: 2019 – 2024. Long Term: 2025-2045

3.3 TRAINING

There are no training organisations based at Hawke's Bay Airport. Air Hawke's Bay is the largest training operation in the Hawke's Bay region and are based at Hastings Aerodrome. They use Hawke's Bay Airport as part of pilot training and familiarisation with controlled airfield operations, as well as cross-country flying. Their operations at Hastings are currently constrained by the number of number of movements allowed at a non-certified aerodrome (CAA Part 139.21).

A potential option to allow continued growth at Hastings Airfield would be to base aircraft at Hawke's Bay Airport. This would have a significant impact on the total number of aircraft movements at Hawke's Bay Airport.

Growth is stimulated by global demand for airline pilots, which is likely to continue for the next 15 years or more. It is accepted that there is a pilot shortage and pilot cadet schemes are being introduced in Australia and Europe to help fill the pilot backlog that is developing in China, India, Indonesia and countries with high rates of pilot retirement, such as the US and Japan.

There is a helicopter training organisation in Hawke's Bay which is not based at an airport. Most current movements are likely for maintenance. Interest has been expressed in basing a training organisation at Hawke's Bay Airport for a small number of students. Such an operation would create a sharp spike in additional movements in the short term if it goes ahead.

The number of helicopters registered in NZ has been steadily increasing by about 1.6% per annum. Flight operations are associated with emergency response, tourist charter and primary industry operations. Assuming the helicopter growth trend continues, this will likely create additional requirements for pilots in the long term and not just in New Zealand.

Forecast Summary

Scenario	Aircraft Type	Short Term	Long Term	Total
No Local Operator	Fixed Wing	3.0%	3.0%	3.0%
	Helicopter	2.0%	1.0%	3.0%
Local Operator	Fixed Wing	24.5%	3.5%	7.4%
	Helicopter	10.0%	4.8%	5.8%

Short Term: 2019 – 2024. Long Term: 2025-2045

3.4 PRIVATE FLYING

There are few private aircraft based at Hawke's Bay Airport. Aero Clubs across the country report declining membership and flying hours. The cost of owning and operating aircraft restricts private aviation to a niche part of the population, and without a significant downward change in these costs, the declining trend is unlikely to change in the foreseeable future.

Of note, the Napier Aero Club organises an annual fly-in of heritage, military and other special interest aircraft that coincides with the Hawke's Bay Art Deco Festival in February. This creates an additional 200 aircraft movements each year and has been operated for 30 years and is likely to continue across the forecast period.

We expect the rate of growth to remain flat at no growth over the long term.

Forecast Summary

Aircraft Type	Short Term	Long Term	Total
Fixed Wing	0.0%	0.0%	0.0%
Helicopter	0.0%	0.0%	0.0%

Short Term: 2019 – 2024. Long Term: 2025-2045

3.5 AGRICULTURAL FLIGHTS

There has been recent growth in the agricultural sector as additional aircraft have been based at Hawke's Bay Airport.

The operators we have canvassed don't see growth in the overall industry, but do see consolidation of operators and this may lead to a concentration of fleets at some airports. This consolidation effect may benefit Hawke's Bay Airport as there are already maintenance operators based at the airport capable of servicing these particular aircraft.

The short-term demand outlook for agricultural aviation products and services remains strong and aviation growth in the near future is likely to be maintained.

Long term there is risk of change in land use from agricultural to forestry as the value of forestry increases. Carbon offsetting requirements will increase throughout New Zealand. The forecast anticipates reduction in the amount of agricultural land requiring aerial husbandry around Hawkes Bay, resulting in a corresponding reduction in aircraft movements.

Forecast Summary

Aircraft Type	Short Term	Long Term	Total
Fixed Wing	2.8%	-0.4%	0.2%
Helicopter	2.8%	-0.4%	0.2%

Short Term: 2019 – 2024. Long Term: 2025-2045

3.6 MILITARY & GOVERNMENT

Most aircraft movements are generated by RNZAF training aircraft. The principal purpose of military flying is for cross country training, or when the weather is poor to the west of the mountain ranges. There are also occasional Police and Airways NZ movements that also contribute to this category.

The RNZAF fleet size is small and relatively constant and is expected to remain so, and as such the forecast does not anticipate any changes to the number of aircraft movements.

Anecdotal feedback indicates there is potential for a more semi-permanent training base as weather is more consistent at particular times of the year. This permits more training hours and therefore more flight practice. However, the infrastructure doesn't currently exist at Hawke's Bay Airport to base the aircraft, especially paved parking areas.

Forecast Summary

Aircraft Type	Short Term	Long Term	Total
Fixed Wing	0.0%	0.0%	0.0%
Helicopter	0.0%	0.0%	0.0%

Short Term: 2019 – 2024. Long Term: 2025-2045

3.7 COMMERCIAL MOVEMENTS

This category includes commercial aircraft operators not included in the previous categories. These include fixed and rotary wing aircraft operating ad-hoc freight, skydiving, aerial surveys, as well as aircraft arriving for the purposes of maintenance.

Due to the diversity of operations, it's difficult to determine a definite trend or predict future growth. However, local maintenance operators confirm that growth is being seen in the number of commercial aircraft, and the number of aircraft registered to commercial operators has been increasing by 1% per annum.

Forecast Summary

Aircraft Type	Short Term	Long Term	Total
Fixed Wing	3.0%	3.0%	3.0%
Helicopter	3.0%	3.0%	3.0%

Short Term: 2019 – 2024. Long Term: 2025-2045

3.8 SCHEDULED FREIGHT

At present there are no scheduled freight operations at Hawke's Bay Airport, however an airfreight feasibility study confirmed that during the period of this forecast it would be possible to attract domestic and potentially international freight services to Hawke's Bay. The aircraft movements associated with this potential service have been added to the forecast, starting from 1 weekly service in 2025, with frequency building

to daily by 2045. This ensures that these potential services are accounted for when considering future aircraft movements with respect to master planning and noise protection.

3.9 SUMMARY

In total, GA movements are expected to increase from the current 8,000 (Airport Aircraft Movements) to almost 12,000 by 2045. Fixed wing operations will continue to dominate flight operations at the airport with helicopter operations remaining relatively stable over the forecast period.

Table 1: CAG Rates for GA Segments by Forecast Periods

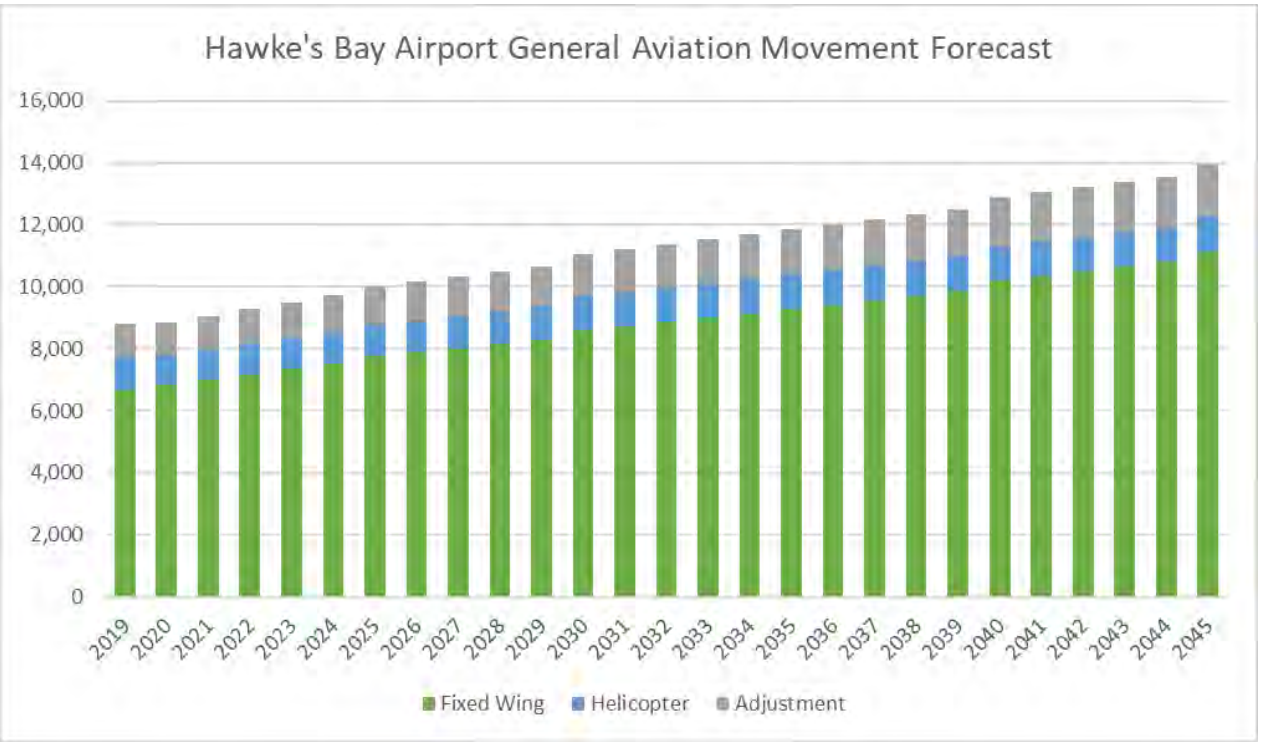
	2019-2024	2025-2045	2019-2045
Fixed Wing	**5 Years**	**21 Years**	**26 Years**
Medical	1.5%	1.2%	1.3%
Pax Charter	4.8%	2.0%	2.6%
Training	3.0%	3.0%	3.0%
Private	-1.0%	-1.0%	-1.0%
Agricultural	2.8%	-0.4%	0.2%
Military/Govt	0.0%	0.0%	0.0%
Commercial	3.0%	3.0%	3.0%
Freight	n/a	n/a	n/a
Total	*2.4%*	*1.9%*	*2.0%*
Helicopter			
Agricultural	2.8%	-0.4%	0.2%
Medical	-45.1%	0.0%	-10.9%
Training	2.0%	1.7%	1.7%
Commercial	3.0%	3.0%	3.0%
Pax Charter	1.0%	1.0%	1.0%
Military/Govt	0.0%	0.0%	0.0%
Private	0.0%	0.0%	0.0%
Total	*-0.9%*	*0.4%*	*0.1%*
Grand Total	*2.0%*	*1.7%*	*1.8%*

Source: CIAL

Total fixed wing operations will grow by around 2.0% over the study period. Helicopter movements will barely grow, with an annual growth rate of 0.1% per annum over the study period, though over the short term there is anticipated to be an almost 1% drop in movements to 2024.

An adjustment is incorporated into the total forecast aircraft movements to account for the difference between all aircraft movements recorded by Airways NZ – which includes missed approaches, overflights and circuits – and invoiced aircraft movements that was used for the detailed analysis required to produce the segmented forecast.

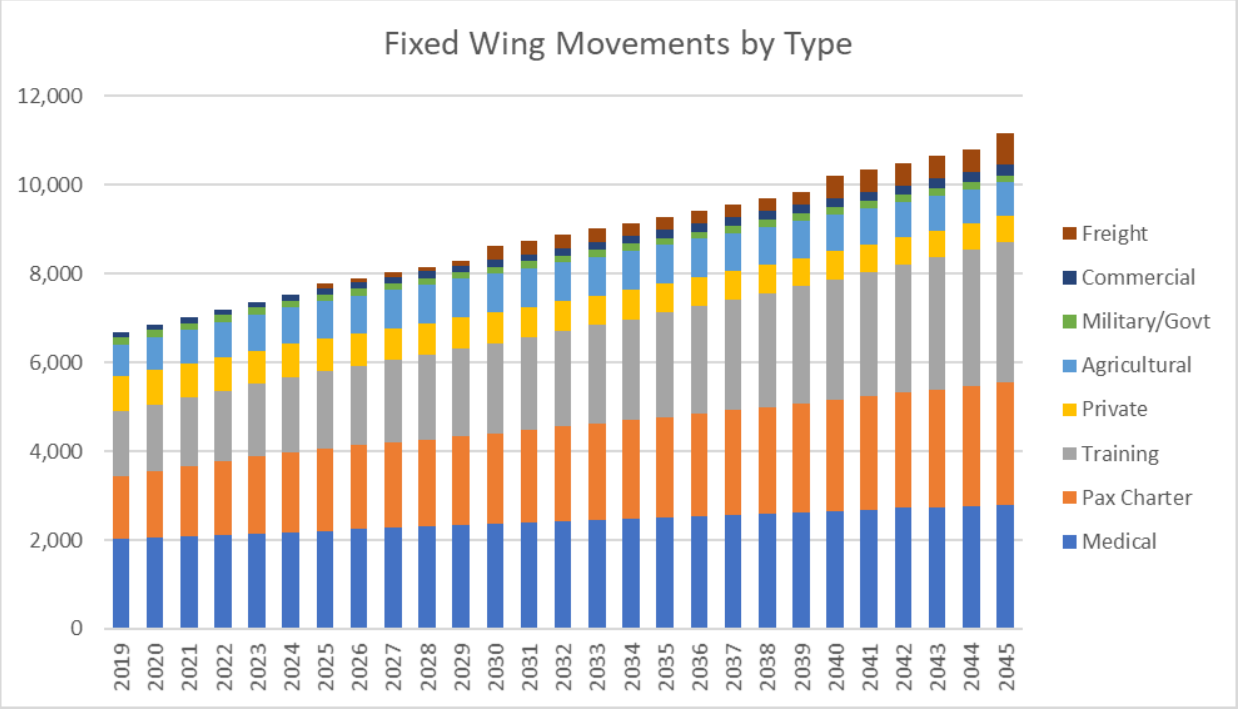
Figure 8: Hawke's Bay Airport Long Term GA Forecast



Source: CIAL

Both passenger charter and training movements have the potential to experience greatest growth at Hawke's Bay Airport. Medical operations for the DHB will experience modest growth and private flying will shrink over time.

Figure 9: Long Term Fixed Wing Forecast by Movement Purpose

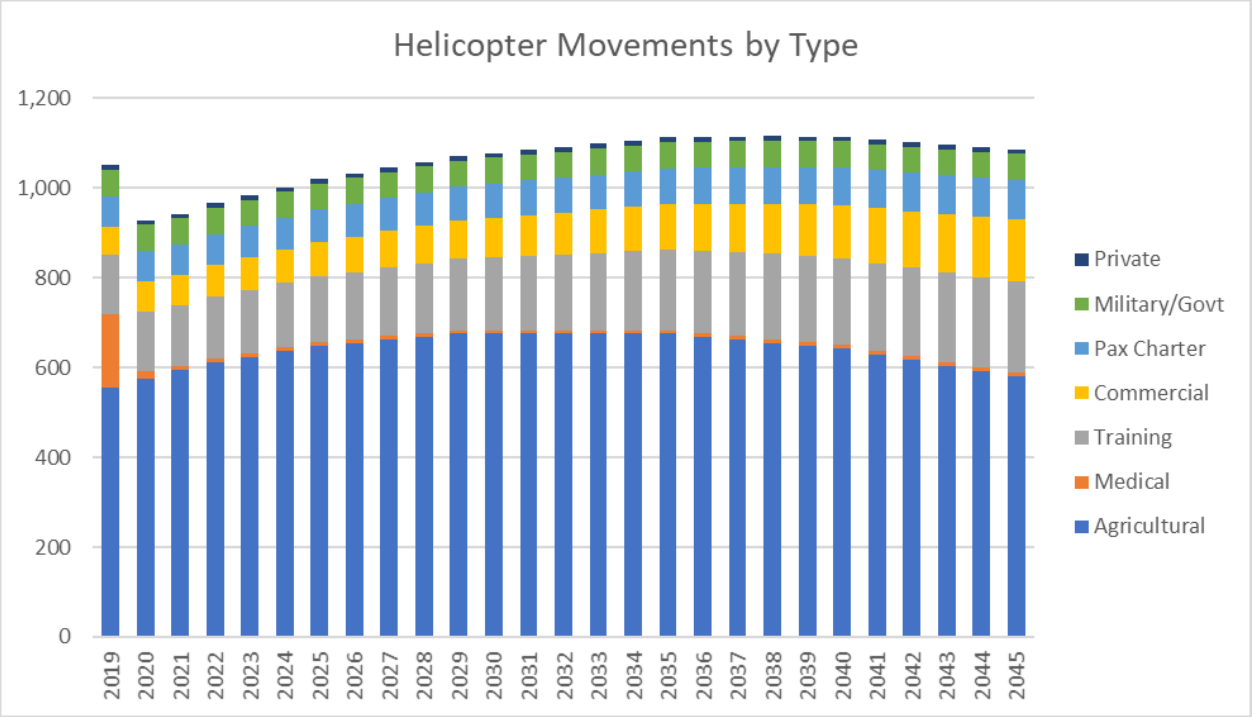


Source: CIAL. Note: This does not include the adjustment for total aircraft movements included in Figure 8.

The loss of medical helicopter operations is reflected in the first year of the traffic forecast for total projected helicopter operations. Agricultural operations provide the main growth driver in the early years of the forecast period, but this tapers off as less demand from non-forestry farming shrinks.

There is a rise in training demand at the airport as well as a rise in commercial flying by, for example cruise passengers.

Figure 10: Long Term Helicopter Forecast by Movement Purpose



Source: CIAL. Note: This does not include the adjustment for total aircraft movements included in Figure 8.

Helicopter movements, as a percentage of total traffic will fall from around 13% at the current rate (and at peak levels of operation) to less than 10% by the end of the forecast period, ending at 9.4% of total movements by 2045.

4 APPENDICES

4.1 APPENDIX 1: LONG TERM FORECAST ANNUAL MOVEMENTS

Annual Movement Forecast

		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Fixed Wing																												
	Medical		2,022	2,052	2,083	2,114	2,146	2,178	2,209	2,240	2,271	2,301	2,330	2,361	2,391	2,423	2,452	2,481	2,511	2,541	2,571	2,602	2,631	2,660	2,689	2,719	2,746	2,773	2,801
	Pax Charter		1,424	1,495	1,570	1,648	1,731	1,800	1,854	1,891	1,929	1,968	2,007	2,047	2,088	2,130	2,172	2,216	2,260	2,305	2,351	2,399	2,446	2,495	2,545	2,596	2,648	2,701	2,755
	Training		1,462	1,506	1,551	1,598	1,645	1,695	1,746	1,798	1,852	1,908	1,965	2,024	2,084	2,147	2,211	2,278	2,346	2,416	2,489	2,564	2,641	2,720	2,801	2,885	2,972	3,061	3,153
	Private		776	768	761	753	745	738	731	723	716	709	702	695	688	681	674	667	661	654	648	641	635	628	622	616	610	604	598
	Agricultural		718	747	769	792	808	824	841	849	858	866	875	875	875	875	875	875	875	866	857	849	840	832	815	799	783	767	752
	Military/Govt		154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154
	Commercial		112	115	119	122	126	130	134	138	142	146	151	155	160	164	169	174	180	185	191	196	202	208	215	221	228	235	242
	Freight		0	0	0	0	0	0	100	100	100	100	100	300	300	300	300	300	300	300	300	300	300	300	500	500	500	500	700
	Total		**6,668**	**6,838**	**7,007**	**7,182**	**7,356**	**7,519**	**7,768**	**7,893**	**8,022**	**8,151**	**8,283**	**8,610**	**8,740**	**8,874**	**9,008**	**9,145**	**9,286**	**9,422**	**9,562**	**9,705**	**9,849**	**10,198**	**10,342**	**10,490**	**10,640**	**10,795**	**11,154**
Helicopter																												
	Agricultural		554	576	593	611	623	636	649	655	662	668	675	675	675	675	675	675	675	668	662	655	648	642	629	616	604	592	580
	Medical		166	17	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
	Training		130	133	135	138	141	144	146	149	152	155	158	162	165	168	172	175	178	182	186	189	191	193	195	197	199	201	203
	Commercial		64	66	68	70	72	74	76	79	81	84	86	89	91	94	97	100	103	106	109	112	116	119	123	126	130	134	138
	Pax Charter		68	69	69	70	71	71	72	73	74	74	75	76	77	77	78	79	80	81	81	82	83	84	85	85	86	87	88
	Military/Govt		58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58
	Private		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	Total		**1,050**	**928**	**942**	**966**	**983**	**1,001**	**1,020**	**1,032**	**1,045**	**1,058**	**1,071**	**1,077**	**1,084**	**1,091**	**1,098**	**1,105**	**1,112**	**1,113**	**1,114**	**1,115**	**1,115**	**1,114**	**1,108**	**1,102**	**1,096**	**1,091**	**1,086**

4.2 APPENDIX 2: LONG TERM FORECAST ANNUAL GROWTH RATES

Annual Growth Rate

		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Fixed Wing																												
	Medical		1.5%	1.5%	1.5%	1.5%	1.5%	1.4%	1.4%	1.4%	1.3%	1.3%	1.3%	1.3%	1.3%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.1%	1.1%	1.1%	1.1%	1.0%	1.0%	1.0%
	Pax Charter		5.0%	5.0%	5.0%	5.0%	4.0%	3.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
	Training		3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
	Private		-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%
	Agricultural		4.0%	3.0%	3.0%	2.0%	2.0%	2.0%	1.0%	1.0%	1.0%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%
	Military/Govt		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Commercial		3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
	Freight		0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	200.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	66.7%	0.0%	0.0%	0.0%	0.0%	40.0%
	Total		2.5%	2.5%	2.5%	2.4%	2.2%	3.3%	1.6%	1.6%	1.6%	1.6%	3.9%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	3.5%	1.4%	1.4%	1.4%	1.5%	3.3%
Helicopter																												
	Agricultural		4.0%	3.0%	3.0%	2.0%	2.0%	2.0%	1.0%	1.0%	1.0%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%
	Medical		-90.0%	-50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Training		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
	Commercial		3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
	Pax Charter		1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
	Military/Govt		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Private		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Total		-11.6%	1.5%	2.5%	1.8%	1.8%	1.9%	1.2%	1.2%	1.2%	1.2%	0.6%	0.6%	0.6%	0.6%	0.6%	0.7%	0.1%	0.1%	0.1%	0.0%	0.0%	-0.6%	-0.6%	-0.5%	-0.5%	-0.5%

4.3 APPENDIX 3: ANNUAL CHANGE IN MOVEMENTS

Annual Movement Change

		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Fixed Wing																												
	Medical		30	31	31	32	32	30	31	31	30	30	30	31	31	29	29	30	30	30	31	29	29	29	30	27	27	28
	Pax Charter		71	75	78	82	69	54	37	38	39	39	40	41	42	43	43	44	45	46	47	48	49	50	51	52	53	54
	Training		44	45	47	48	49	51	52	54	56	57	59	61	63	64	66	68	70	72	75	77	79	82	84	87	89	92
	Private		-8	-8	-8	-8	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-6	-6	-6	-6	-6	-6	-6	-6
	Agricultural		29	22	23	16	16	16	8	8	9	9	0	0	0	0	0	0	-9	-9	-9	-8	-8	-17	-16	-16	-16	-15
	Military/Govt		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Commercial		3	3	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	6	6	6	6	6	6	6	7	7	7
	Freight		0	0	0	0	0	100	0	0	0	0	200	0	0	0	0	0	0	0	0	0	0	200	0	0	0	0	200
	Total		**170**	**169**	**175**	**174**	**163**	**248**	**125**	**129**	**129**	**132**	**327**	**130**	**133**	**134**	**138**	**141**	**136**	**139**	**143**	**144**	**348**	**144**	**148**	**150**	**155**	**359**
Helicopter																												
	Agricultural		22	17	18	12	12	13	6	7	7	7	0	0	0	0	0	0	-7	-7	-7	-7	-6	-13	-13	-12	-12	-12
	Medical		-149	-8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Training		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	2	2	2	2	2	2	2
	Commercial		2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4
	Pax Charter		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Military/Govt		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Private		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total		**-122**	**14**	**23**	**18**	**18**	**19**	**12**	**13**	**13**	**13**	**7**	**7**	**7**	**7**	**7**	**7**	**1**	**1**	**1**	**0**	**0**	**-6**	**-6**	**-6**	**-5**	**-5**

4.4 APPENDIX 4: PERCENTAGE CHANGE FROM 2019

% Variance from 2019

		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Fixed Wing																												
	Medical		1%	3%	5%	6%	8%	9%	11%	12%	14%	15%	17%	18%	20%	21%	23%	24%	26%	27%	29%	30%	32%	33%	34%	36%	37%	39%
	Pax Charter		5%	10%	16%	22%	26%	30%	33%	35%	38%	41%	44%	47%	50%	53%	56%	59%	62%	65%	68%	72%	75%	79%	82%	86%	90%	93%
	Training		3%	6%	9%	13%	16%	19%	23%	27%	30%	34%	38%	43%	47%	51%	56%	60%	65%	70%	75%	81%	86%	92%	97%	103%	109%	116%
	Private		-1%	-2%	-3%	-4%	-5%	-6%	-7%	-8%	-9%	-10%	-10%	-11%	-12%	-13%	-14%	-15%	-16%	-17%	-17%	-18%	-19%	-20%	-21%	-21%	-22%	-23%
	Agricultural		4%	7%	10%	13%	15%	17%	18%	19%	21%	22%	22%	22%	22%	22%	22%	22%	21%	19%	18%	17%	16%	14%	11%	9%	7%	5%
	Military/Govt		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Commercial		3%	6%	9%	13%	16%	19%	23%	27%	30%	34%	38%	43%	47%	51%	56%	60%	65%	70%	75%	81%	86%	92%	97%	103%	109%	116%
	Freight																											
	Total		**3%**	**5%**	**8%**	**10%**	**13%**	**16%**	**18%**	**20%**	**22%**	**24%**	**29%**	**31%**	**33%**	**35%**	**37%**	**39%**	**41%**	**43%**	**46%**	**48%**	**53%**	**55%**	**57%**	**60%**	**62%**	**67%**
Helicopter																												
	Agricultural		4%	7%	10%	13%	15%	17%	18%	19%	21%	22%	22%	22%	22%	22%	22%	22%	21%	19%	18%	17%	16%	14%	11%	9%	7%	5%
	Medical		-90%	-95%	-95%	-95%	-95%	-95%	-95%	-95%	-95%	-95%	-95%	-95%	-95%	-95%	-95%	-95%	-95%	-95%	-95%	-95%	-95%	-95%	-95%	-95%	-95%	-95%
	Training		2%	4%	6%	8%	10%	13%	15%	17%	20%	22%	24%	27%	29%	32%	35%	37%	40%	43%	46%	47%	49%	50%	52%	53%	55%	56%
	Commercial		3%	6%	9%	13%	16%	19%	23%	27%	30%	34%	38%	43%	47%	51%	56%	60%	65%	70%	75%	81%	86%	92%	97%	103%	109%	116%
	Pax Charter		1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	12%	13%	14%	15%	16%	17%	18%	20%	21%	22%	23%	24%	26%	27%	28%	30%
	Military/Govt		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Private		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Total		**-12%**	**-10%**	**-8%**	**-6%**	**-5%**	**-3%**	**-2%**	**0%**	**1%**	**2%**	**3%**	**3%**	**4%**	**5%**	**5%**	**6%**	**6%**	**6%**	**6%**	**6%**	**6%**	**6%**	**5%**	**4%**	**4%**	**3%**

5 GLOSSARY OF TERMS

GA	General Aviation
CIAL	Christchurch International Airport Limited
HBAL	Hawke's Bay Airport Limited
CAA	Civil Aviation Authority of New Zealand
FBO	Fixed Based Operator
Airways Aircraft Movements	A landing, take-off or missed approach handled and invoiced by Airways New Zealand
Airport Aircraft Movements	A landing or take-off recorded by Airways New Zealand for airport invoicing


CHRISTCHURCH
AIRPORT

LIST OF FIGURES & TABLES

EXECUTIVE SUMMARY

The New Zealand regional domestic market grew at 2% until the introduction of services by Jetstar using a fleet of Dash 8 Q300s. This addition of new capacity resulted in a 15% growth in regional New Zealand but a 26% growth of seats at Hawkes Bay Airport.

After five years of tracking the average New Zealand regional capacity growth, Hawkes Bay Airport extended its growth rate by almost 20 percentage points ahead of the national rate. This translated into an almost one percentage point increase in the share of capacity at Hawkes Bay Airport to 9.4% of all NZ regional airport airline seat capacity.

The arrival of Jetstar Regional at Hawkes Bay Airport reduced average air fares to Auckland – around a 26% fall in average fares. Now that the capacity has been fully digested by the market, air fares at Hawkes Bay Airport are starting to increase, though they remain 16% below rates before Jetstar started operations. Weakness in the domestic market in 2019 may see Air New Zealand pull back some of their response to Jetstar services.

The share of passenger flows on flights to and from Hawke's Bay Airport Airport has not changed significantly in the past eight years. In absolute numbers, international arrivals have doubled to 110,000 passengers, but their share remains at around 4% of traffic. The main beneficiaries of the increased capacity at lower fares have been Hawkes Bay residents. They have increased their share of flying particularly long haul connections principally to leisure destinations. The main destination for Hawkes Bay traffic remains the three main Australian cities, though the share of traffic to and from Australia has been in decline since 2013.

Although traffic from China has increased dramatically to New Zealand, this has not translated into much more China air traffic for the Airport Company. The flows from China are relatively small (355 annual passengers in 2018 on direct connecting itineraries) and are outnumbered by the outbound market to China (around 1,100 annual passengers).

The potential to expand operations at Hawkes Bay Airport will rely heavily on Air New Zealand. However, their regional aircraft acquisition programme is extremely conservative. This will require Hawkes Bay to continue to compete for seat capacity to deliver growth. There is a potential for mid-sized jets to enter the New Zealand domestic market. This will change the scale of regional schedules and concentrate more passengers per aircraft movement.

Jetstar Regional in New Zealand is a struggling proposition. It remains unprofitable and not a target for investment by the Qantas Group. The shift by Air New Zealand away from 50-seater aircraft will create a commercial space for third level operators to enter. This is a continuation of a process that has already started in some New Zealand airports.

Short term forecasts must acknowledge the fragility of the Jetstar financial performance in New Zealand. Two scenarios are built based upon known and published schedule construction. Maintaining the Jetstar operation at Hawke's Bay Airport generates 897,500 annual passengers by 2025. This represents a growth of 2.8% in 2025 over 2024.

The withdrawal of Jetstar operations from Hawkes Bay Airport will produce 741,600 passengers by 2025. This represents a 15% fall in traffic in 2025 over 2024 and brings traffic levels back to current levels.

The long-term forecasts are generated by blending the earlier years with bottom-up data on airline schedules, feedback and known intentions. Econometric factors influence both the market outcome and the capacity purchasing decisions of the airlines, so create a strong correlation between the supply and demand of air traffic. Included is a consideration of the population growth in the Hawkes Bay region.

Long term forecasts generate outputs of between 1.145 and 1.866 million passengers, with a mid-growth output of 1.325. Compound annual growth rates vary between 1.2% at the low end, 2.0% at the mid-range and 3.7% at the top end of the growth range.

HBAL & CIAL PROJECT BRIEF

Hawke's Bay Airport has commissioned Christchurch Airport to undertake a forecasting exercise on its behalf, to assist with Hawke's Bay Airport's master planning and development work. It was felt that Christchurch Airport's experience and business model would provide Hawke's Bay Airport with the capability and expertise to deliver a forecast that was most relevant to the requirements of Hawke's Bay Airport. There are clear local subtleties that exist in the New Zealand market that an outside consultancy may not be aware of.

Christchurch Airport has endeavoured to provide Hawke's Bay Airport with a view forward based upon Christchurch Airport's own insights, as well as those of Hawke's Bay Airport's own customer airlines; primarily Air New Zealand and Jetstar, but also tertiary airlines operating scheduled services within New Zealand.

The forecast will provide Hawke's Bay Airport with annual traffic and air transport movements (ATM's) for each year up to 2040.

Additionally, Christchurch Airport has been able to leverage its substantial relationships with airline partners to provide reliable and specific inputs into the forecasting exercise. Christchurch Airport has provided insights into the current state of the airfreight industry, as well as peer review the air freight report being undertaken by BERL.

This report has been prepared by Christchurch Airport's Aeronautical Development team:

Gordon Bevan – Head of Airline Development

Gareth Williamson – Airline Development Manager

Hsin-Yu Low – Aeronautical Development Strategist

Rohan Appleby – Financial Analyst

1 HAWKES BAY AIRPORT AND NEW ZEALAND REGIONAL TRAFFIC

1.1 NEW ZEALAND REGIONAL TRAFFIC GROWTH

Up until 2015, the New Zealand regional market grew by a relatively pedestrian 2%; this largely tracked the annual GDP for the country. This was almost entirely a function of the delivery and retirement programme of Air New Zealand's regional partners at Eagle Aviation, Air Nelson and Mount Cook Airlines, as well as the introduction of services into the regions by the Qantas Group's low cost operation at Jetstar.

Eagle Aviation's services within New Zealand were wound down from 2015 over a 20-month period. This reduction in capacity is masked by the start of turbo-prop operations by Jetstar within the New Zealand domestic market; a completely new direction and change in strategy for the airline on either side of the Tasman.

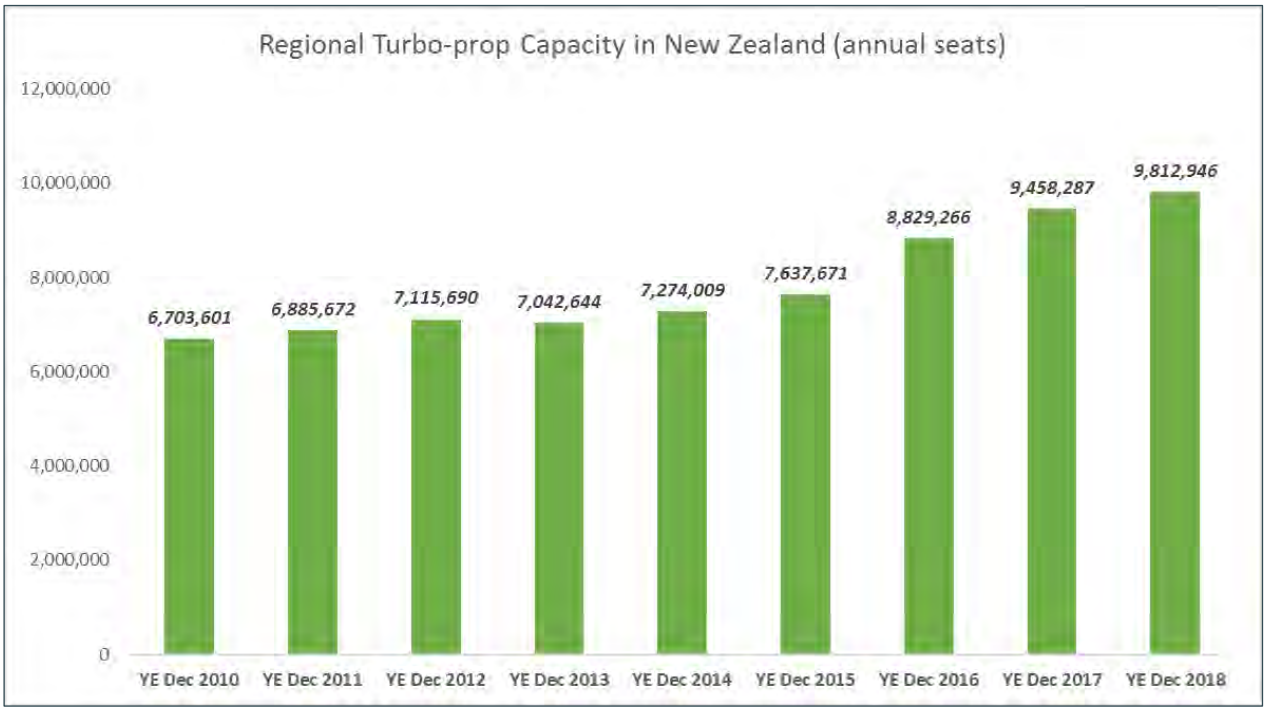


Figure 1 Regional New Zealand Capacity Trend (Source: IATA AirportIS)

Hawke's Bay Airport's growth rate on regional services has largely followed the growth in New Zealand regional operations. The exception was the introduction of operations by Jetstar. Hawke's Bay Airport experienced a one-off hike in traffic amounting to a 26% growth in capacity.

The increase in capacity offered by the Jetstar services nationally is apparent in 2016 where the Q300 fleet swelled the available capacity by nearly 16%.

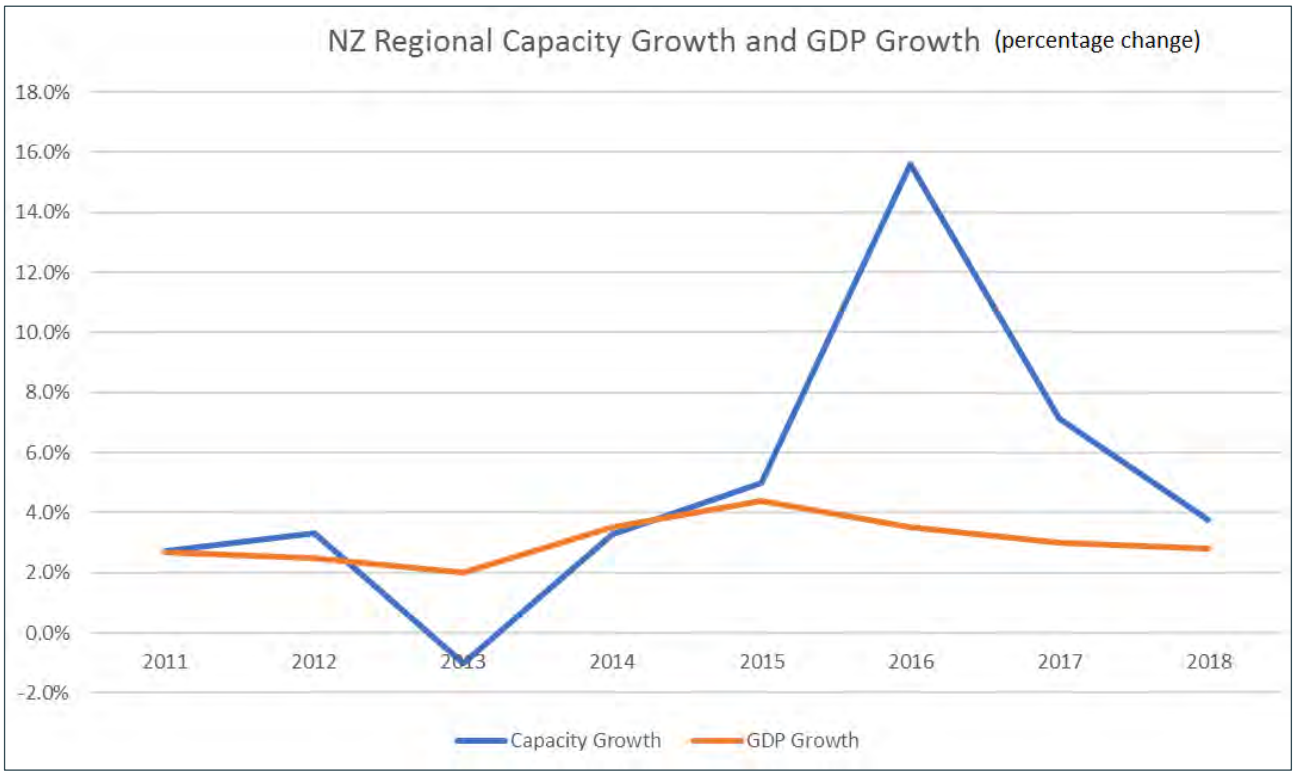


Figure 2 Regional Aircraft Capacity and New Zealand GDP Growth (Source: IATA AirportIS and World Bank)

The Jetstar introduction was countered by response from Air New Zealand in all ports Jetstar had chosen to enter. The aggressive response was inevitable given the high value Air New Zealand attached to its services in the NZ hinterland. This move by the Qantas Group provided Hawke's Bay Airport with a dual dividend for 2016 exceeding the national average; Jetstar growth by competition and price stimulation, and the counter response by Air New Zealand. This was apparent in all ports that the Jetstar Regional service was launched.

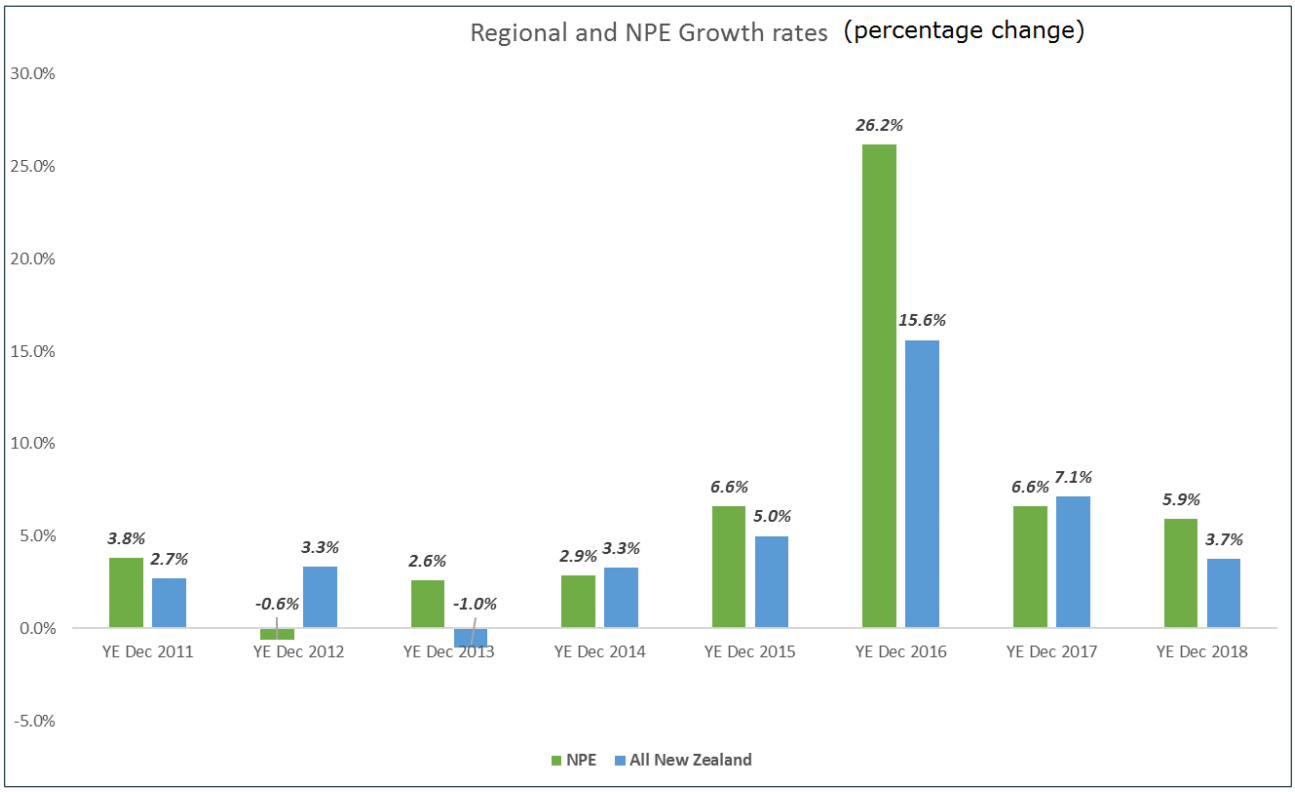


Figure 3 Comparison of Hawkes Bay Airport and National Regional Capacity Expansion (Source: IATA AirportIS)

The traffic dividend also lasted about 18 months, with the market subsiding again to rates of growth higher than pre-Jetstar entry.

The lower fares and a robust regional economy stimulated traffic growth in the New Zealand regions to rates twice what they were before the entry of Jetstar. As national growth subdued in 2018, Hawke's Bay Airport continued its growth ahead of the national average. Fewer competing options probably assisted Hawke's Bay Airport in maintaining its growth rates; neither surface leakage nor competing larger airports are a negative feature of the Hawke's Bay Airport traffic performance.

Indexed capacity growth at Hawke's Bay Airport indicates that its position in 2018 is far ahead of the national average. The delta between Hawke's Bay Airport and national capacity growth is widening after the Jetstar injection and Air New Zealand response in 2015/16.

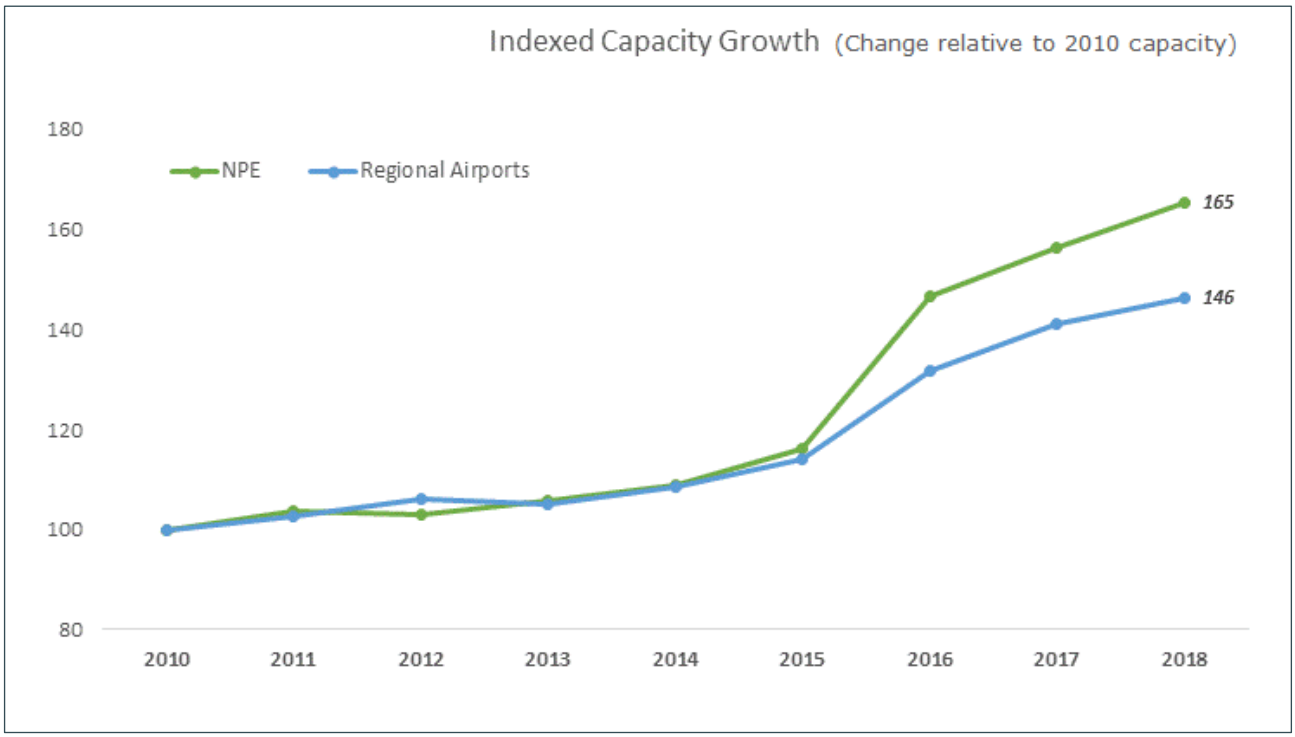


Figure 4 Growth in Regional and Hawkes Bay Seat Capacity Growth – Indexed (Source: IATA AirportIS)

Prior to the Jetstar initiative, Hawke's Bay Airport tracked the national average almost exactly. Market entry by Jetstar disrupted this equilibrium to the benefit of Hawkes Bay Airport.

The rise in Jetstar capacity has also assisted in Hawke's Bay Airport taking a greater share of the available regional capacity in New Zealand. Hawke's Bay Airport share of capacity has risen a percentage point over eight years. The major winner in New Zealand's regional market has been Queenstown. It has managed to secure 5.6% points from regional airport rivals over the same study period.

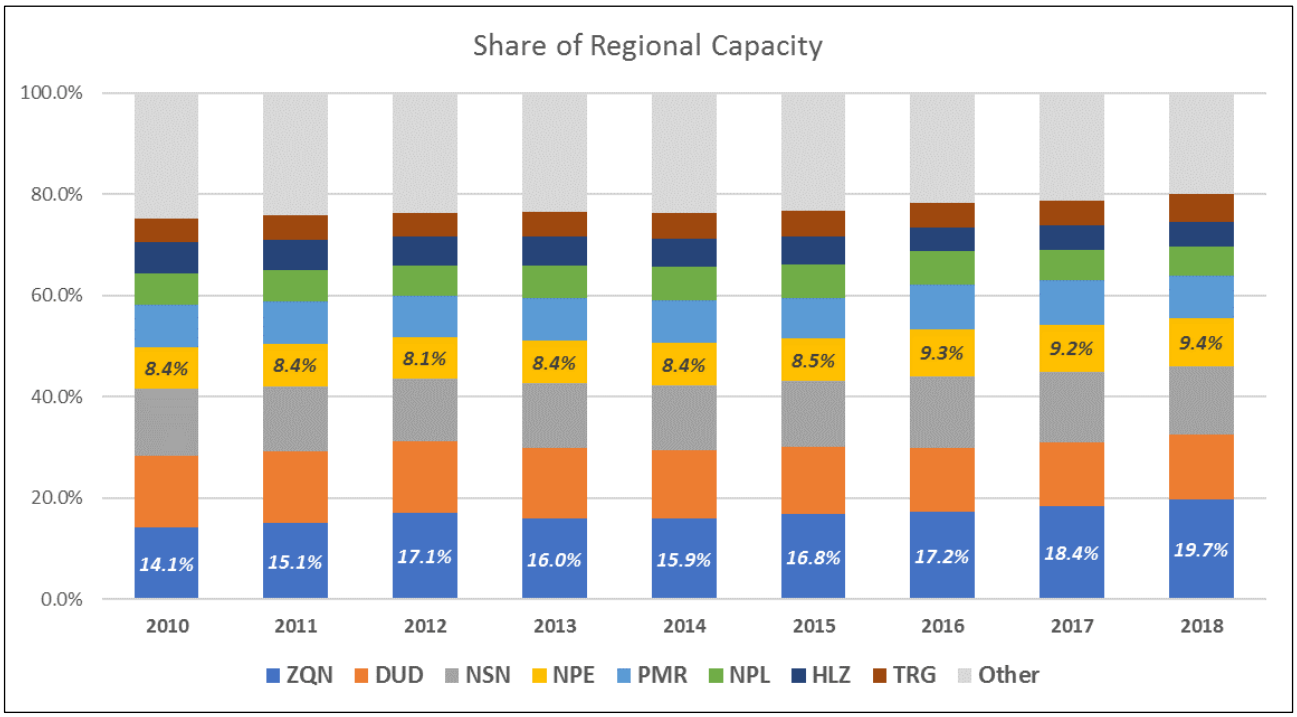


Figure 5 Hawkes Bay Share of Regional Seat Capacity in New Zealand (Source: IATA AirportIS)

The other major airport gain in share has been Tauranga Airport. It's growth in share (1.1% points) is faster than that at Hawke's Bay Airport, and it did not enjoy the benefit of introduction of Jetstar services. Tauranga Airport did start from a lower base; around half of the Hawke's Bay Airport capacity levels. It has now reached approximately 60% of the Hawke's Bay Airport levels of capacity. This is indicative of a strong regional economy, population growth and an underserved market previously considered too close to Auckland for flights. An increasingly difficult surface journey to Auckland may also have encouraged some shift of transport mode from the Tauranga market to air.

With a gain in share in the market by Hawkes Bay Airport, some airports have invariably lost share. Nelson and Palmerston North airports have managed to maintain their capacity levels (and both had a boost from Jetstar regional operations).

Dunedin, New Plymouth and Hamilton Airports have all lost share, with Hamilton losing the most share (1.4% points) but Dunedin losing 1.3% points[1]. It could be argued that all three airports are in more competitive environments with some form of surface leakage affecting local demand. However, the biggest casualty is the smaller ports around the regions. Some airports have completely lost air service whilst others have had a downgrade in seat capacity, with operations being handed over to smaller operators like Air Chathams or Sounds Air.

This reducing share presents a challenge in the future once Air New Zealand decides upon a confirmed date for withdrawing its Dash 8 fleet. The Eagle Aviation precedent is apparent in the shares, with smaller regional airports losing 4% points between 2016 and 2018. Of course, this withdrawal from smaller regional ports also represents an opportunity for tertiary carriers and may also provide Hawke's Bay Airport with potential non-Air New Zealand growth on region-to-region flying.

[1] Regional airports which in recent years have seen capacity withdrawal, or an airline swap from Air New Zealand to a third level carrier include Wanaka, Masterton, Whanganui, Whakatane, Oamaru, Westport and Kaitaia.

Compared to its GDP growth, Hawke's Bay Airport's growth in capacity has been slightly below from 2010 to 2015. However, the entry of Jetstar regional service in Hawke's Bay Airport in 2016 added resulted in capacity growth that is above the GDP growth.

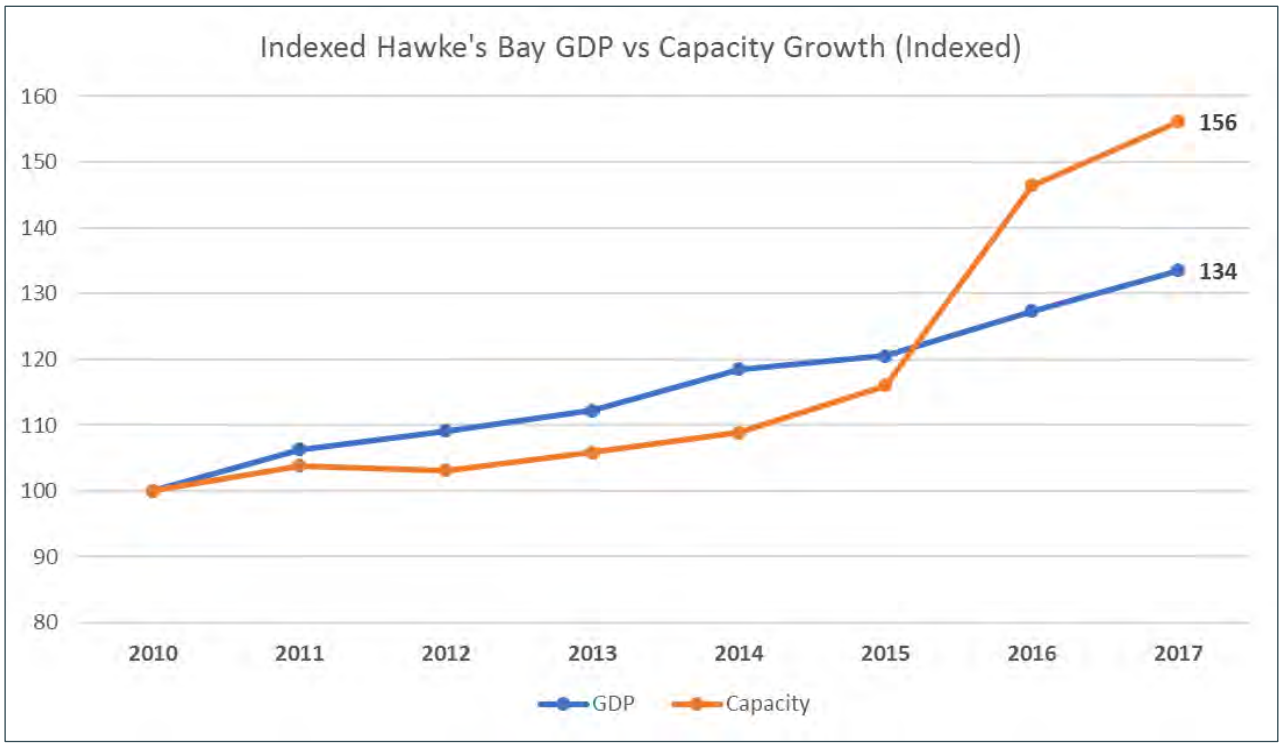


Figure 6 Hawkes Bay Seat Capacity and GDP Growth Comparison (Source: IATA AirportIS and MBIE data)

With finite aircraft seat capacity available in the NZ regional markets, it is likely that more organic growth rates will resume from 2019, with even the potential for flat growth as the market continues to absorb levels of capacity growth ahead of economic growth.

1.2 JETSTAR REGIONAL ENTERING THE NEW ZEALAND MARKET

Jetstar entering any New Zealand regional market was going to have profound impacts. The regions have had no real change in competitive pressures and was a monopoly for Air New Zealand and its regional subsidiaries. Jetstar launched regional services in New Zealand with a fleet of five Bombardier Q300 aircraft. Between December 2015 and March 2016 is progressively launched routes from Auckland to Nelson, Hawke's Bay, Palmerston North and New Plymouth, as well as between Nelson and Wellington.

However, not all routes have been equally stimulated, nor are they all sustainable at yields currently being offered. Fortunately, Hawke's Bay Airport's market response has been one of the most positive. Limited competing options by road or larger adjacent airport makes flying to and from Hawke's Bay Airport almost the sole option for the local population.

Air New Zealand was fully aware of the negative impact the service could have on the business and responded with capacity and reduced fares to corner the Jetstar appeal to a specific market segment; the more discretionary, price sensitive passenger.

It is reasonable to conclude that Air New Zealand has been successful in limiting the competitive impact of Jetstar across their regional network, not just at Hawke's Bay Airport.

1.2.1 JETSTAR REGIONAL CAPACITY DEPLOYMENT

The chart below illustrates the robustness of the Hawke's Bay Airport market. As Jetstar reduced their flying programme to sustain reliable regional services, Hawke's Bay Airport has not seen a commensurate reduction in flying from Jetstar. Both New Plymouth and Palmerston North services has been reduced to fund continued Hawke's Bay Airport and Nelson operations.

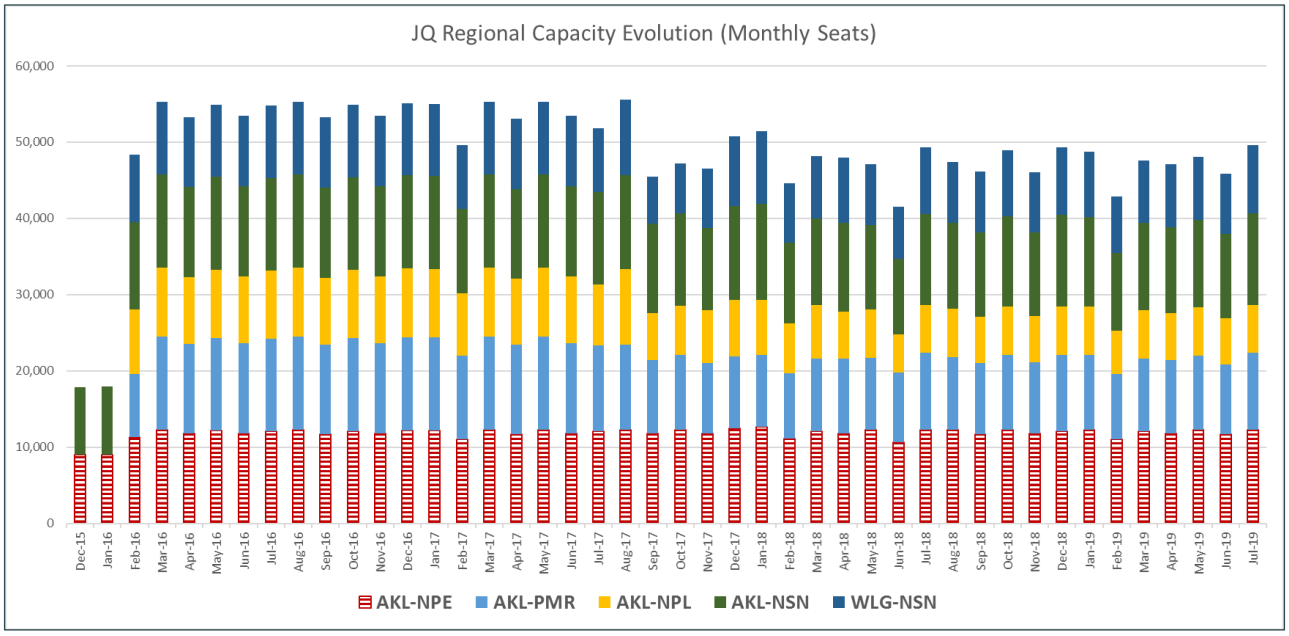


Figure 7 Changes to the Jetstar Regional Capacity Offer in New Zealand (Source: IATA AirportIS)

Introducing the turbo-prop operation into regional New Zealand was a considerable change in strategy for Jetstar, though it added only 17% more seats into the market.

The impact on Jetstar operations, particularly at Auckland Airport was more profound as it almost doubled the number of annual domestic departures the airline needed to handle whilst only adding about 15% more passenger traffic in the process.

The reduction in flying observed from September 2017 onwards was Jetstar working to improve on time performance through less intensive utilisation of their small fleet of aircraft. A spare unit was also set aside to assist in the recovery of operations in the event of technical issues.

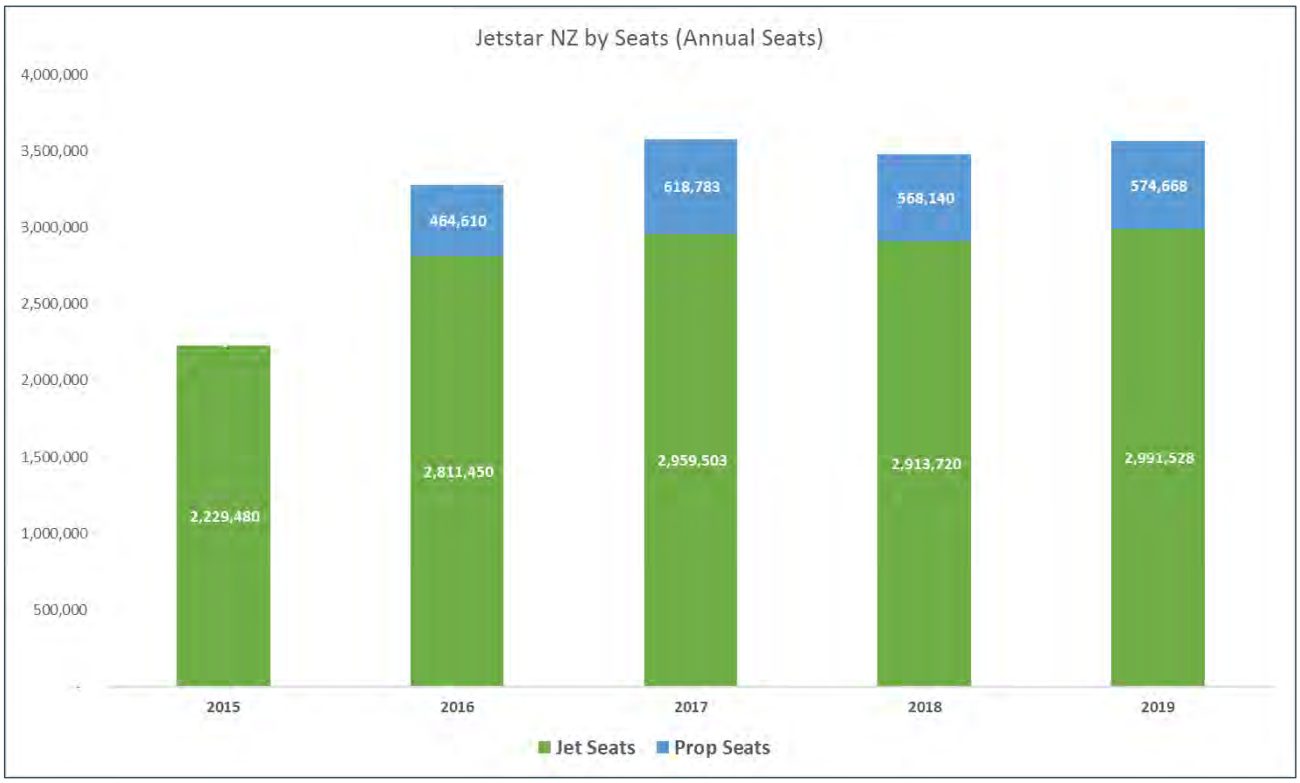


Figure 8 Jetstar Seat Capacity in New Zealand by Aircraft Type (Source: IATA AirportIS)[2]

The most obvious impact of the introduction of Jetstar operations is how quickly the market absorbs the capacity. Growth rates by the market outstripped the capacity added (including the Air New Zealand response to Jetstar flights). This will have had the positive impact of more traffic and higher load factors per movement. However, this would have been at the expense of Air New Zeeland's average yield on the route.

Once the market has consumed the new capacity, growth rates resume to 'normal' organic levels of growth. In this case, the rates of growth are somewhat subdued because of the high load factors experienced on Jetstar routes. Without new capacity, it becomes more challenging to fill the remaining empty seats.

Based upon discussions with the Qantas Group, and analysis of the current operation undertaken by Christchurch Airport, it is unlikely that Jetstar will introduce new aircraft capacity into the New Zealand market unless the underlying commercial performance of the regional operation improves. As such, Jetstar capacity growth for Hawke's Bay Airport may be achieved by incremental growth in peak periods (via higher aircraft utilisation), or through the binary effect of capacity growth resourced by reductions on other routes. Hawke's Bay Airport can realise additional capacity by demonstrating its support to Jetstar through continued commercial support, marketing initiatives and operational solutions to position the airport, and the region in the most favourable position for network consolidation.

[2] 'Jet seats' represents those operated by Airbus A320 aircraft, with 'Prop seats' representing those operated by Bombardier Q300 aircraft

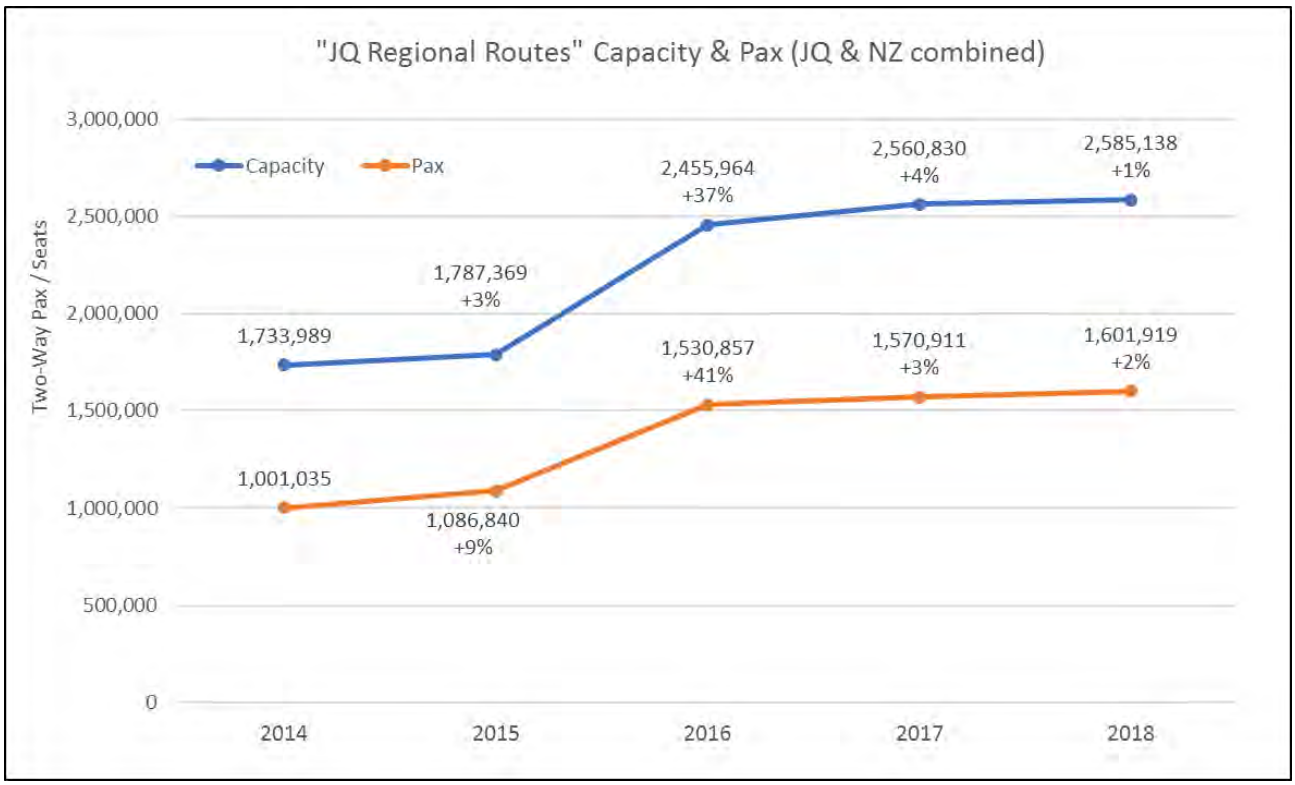


Figure 9 Regional Expansion by Air New Zealand and Jetstar (Source: IATA AirportIS)

1.2.2 **JETSTAR'S IMPACT ON** REGIONAL AIRFARES

For the Hawke's Bay Airport market, the impact on air fares was almost instant. Fares dropped 27% in January 2016 compared with the same month in 2015. This lower rate has been sustained until January 2018.

Similar falls were repeated in February though there is now an indication that fares are starting to rise. The March figures indicate a 10% increase in fares compared to March 2017. This may be a symptom of the strong regional economic growth in the Hawkes Bay region, but also the phasing out of introductory fares by Jetstar and a willingness to increase yields now that the operation is embedded.

There has been no sizeable reduction in air capacity to strip supply from the market. The rise in fares in March is repeated across the entire Auckland Jetstar/Air New Zealand competing markets. Jetstar has managed to understand the elasticity of the regional markets and has allowed the airline to increase fares marginally. It does remain unclear whether Jetstar can survive at these rates, however.

It is reasonable to conclude that air fares in the regions are too low even for Jetstar to sustain. However, this is largely because the Dash 8 is an unsuitable aircraft for low fare operations in general, especially if the airline has no legacy airline network from which to leverage better quality revenues from. This is the case for Air New Zealand, where it can cross-subsidise routes from other markets on the network.

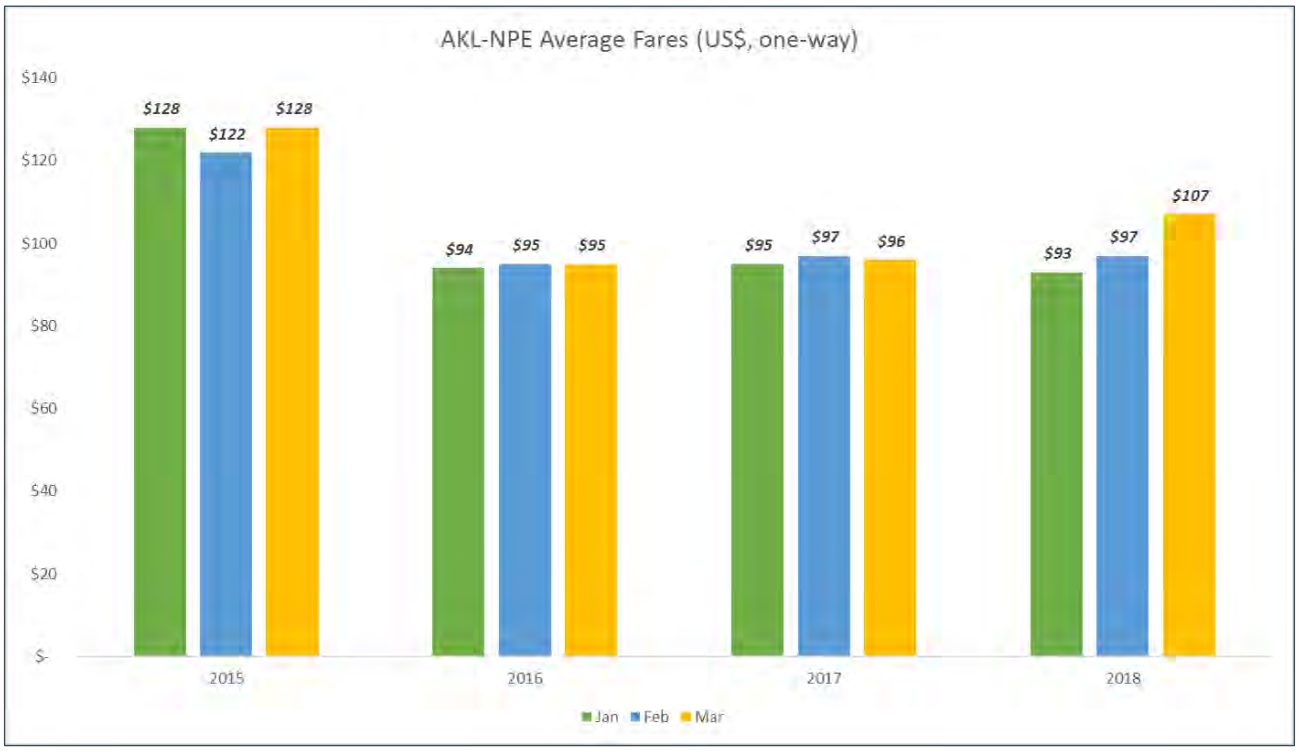


Figure 10 Changes to Air Fares on Hawkes Bay Competing Operations (Source: IATA AirportIS)

1.3 TRAFFIC GROWTH BY SEGMENT

Flights from Hawke's Bay Airport to Auckland, Wellington and Christchurch Airports are predominantly filled with point-to-point passengers (also called local passengers). These passengers have the potential to provide an airline with its most profitable revenues.

The Christchurch route relies the most for its seats to be filled by local passengers; some 15% points ahead of either Wellington or Auckland. Both Wellington and Auckland serve as hub airports but with very different functions. Wellington flights funnel passengers south onto domestic services to the South Island. The Auckland hub provides access to international markets for Air New Zealand passengers. These roles limit the volumes of local passengers that Air New Zealand can accommodate. Both hubs enable Air New Zealand to generate high revenues through offering through-fares from Hawkes Bay to the entire network.

This artificial cap on meeting local demand was the opportunity that Jetstar took, as it assumed that Air New Zealand would struggle to maintain both its international connecting traffic (and commensurate high revenues) and compete for local passengers.

Interestingly, Jetstar's share of local traffic is around 75% on their Hawke's Bay Airport-Auckland service. Jetstar appears to be funnelling a growing number of connecting passengers onto its network, mostly to Christchurch, Queenstown and Dunedin via Auckland.

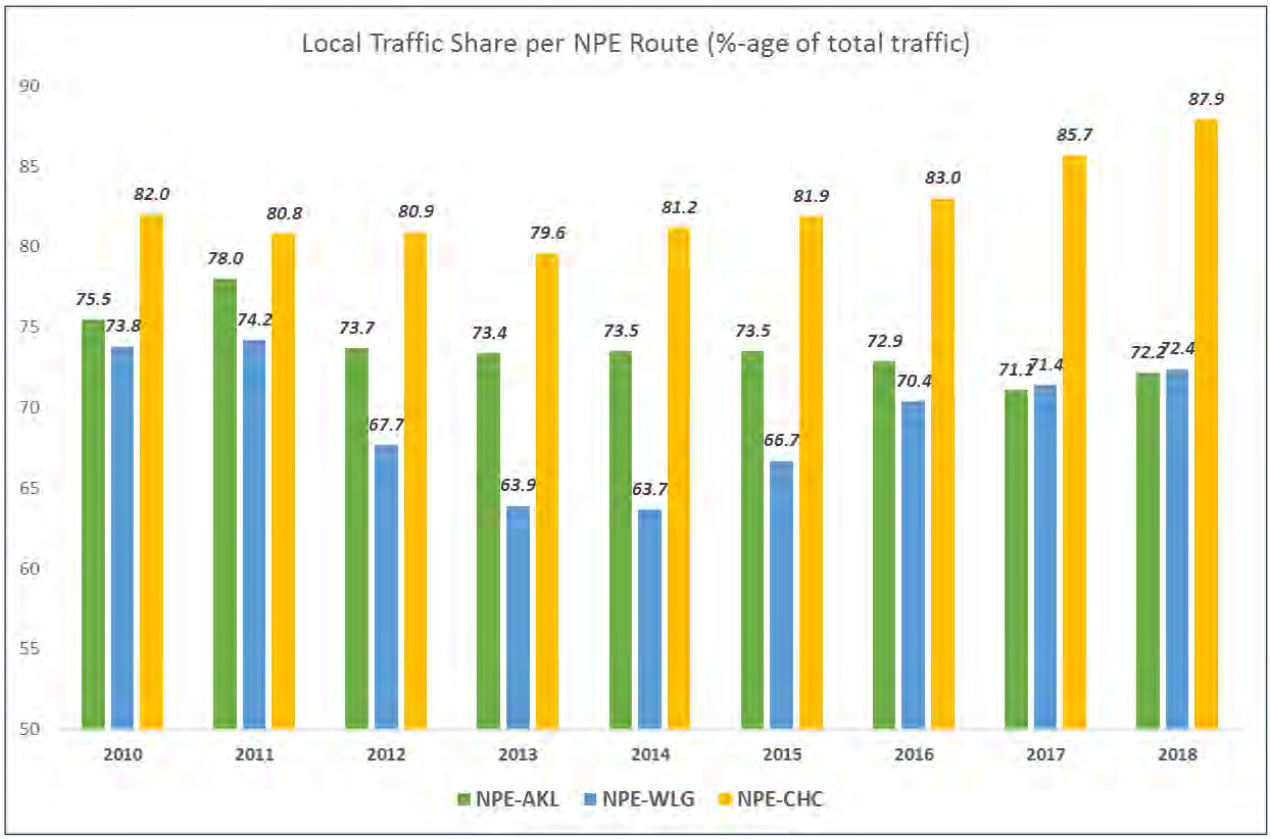


Figure 11 Local Traffic as a Share of Total Traffic on Hawke's Bay Services (Source: IATA AirportIS)

Using IATA Point of Sale data, four traffic flows on the Hawke's Bay Airport flight have been identified by CIAL; these are international outbound (mostly connecting at Auckland Airport), international inbound traffic, and both domestic out and inbound traffic.

The strong local economic performance is encouraging more Hawkes Bay residents to travel overseas. This has been largely at the expense of the inbound domestic market. This segment has gained two percentage points over eight years.

International visitors flying directly into Hawke's Bay Airport (albeit with a connection at Auckland Airport) is a small share of total traffic. In line with other leading regional destinations, our research suggests that international visitors arriving in Hawke's Bay via surface transport forms the core itinerary currently, and this passenger type is difficult to quantify outside of accommodation data captured by Statistic New Zealand and industry bodies.

International visitors that spend more than 8 hours in Auckland on an air itinerary are also lost in the data. Again, it is possible a percentage of traffic is lost due to this inability to capture passengers making an Auckland stop-over.

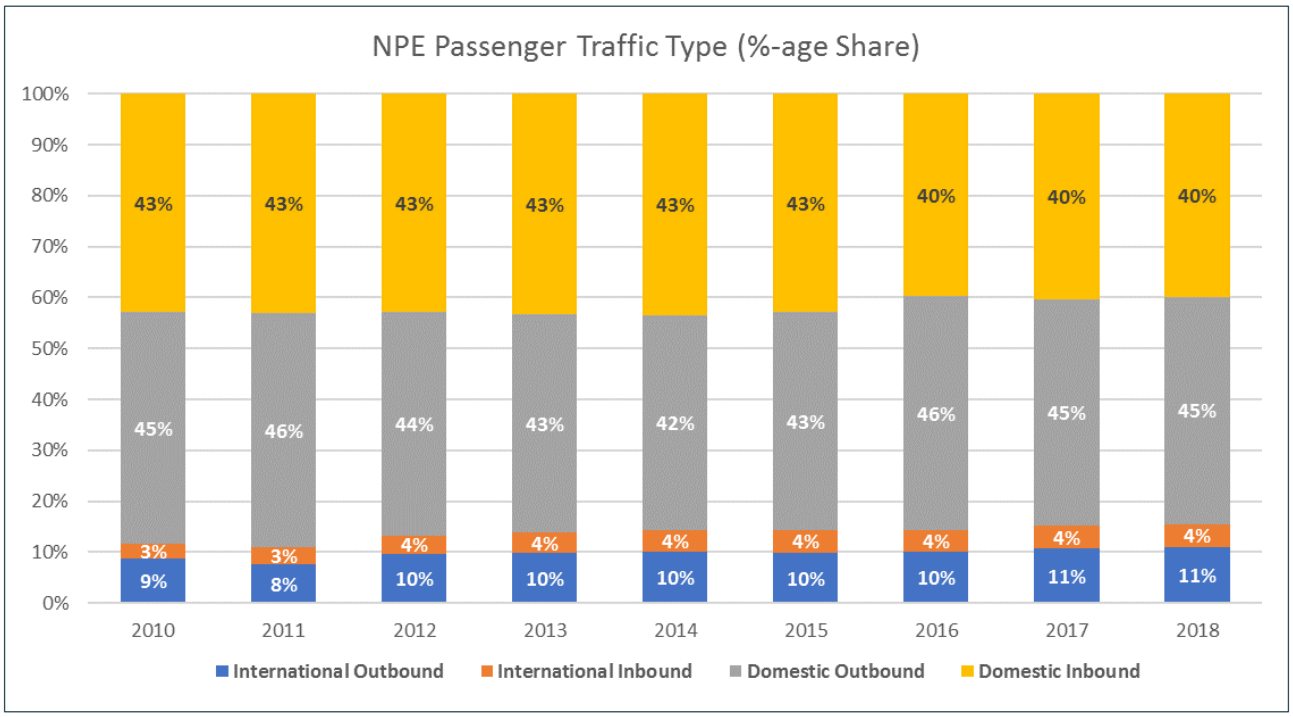


Figure 12 Traffic Type by Share Evolution (Source: IATA AirportIS)

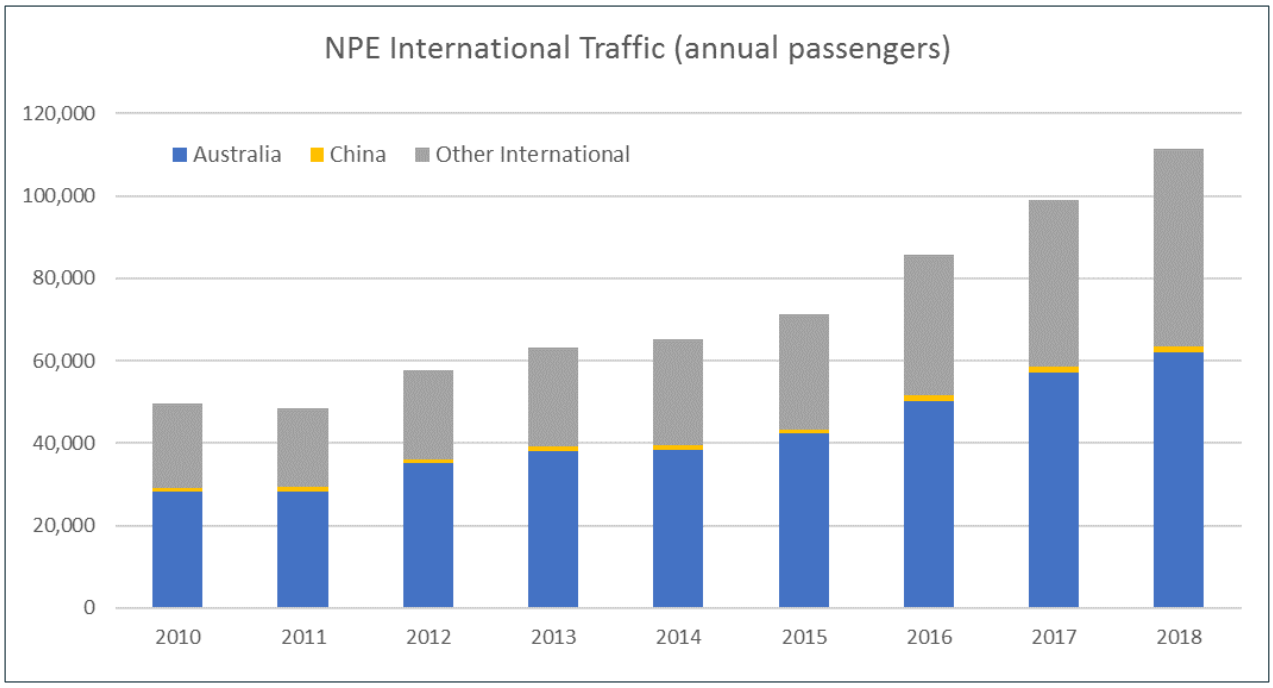


Figure 13 Hawkes Bay International Traffic by Region (Source: IATA AirportIS)

The arrival of Jetstar into the region has not significantly altered the composition of traffic or their respective market shares.

International inbound traffic into Hawkes Bay has recorded the strongest rate of growth, though this is from a relatively small base and share. In 2000, international arrivals totalled slightly less than 50,000 annual passengers. This has now reached over 110,000 passengers.

However, Hawkes Bay residents heading offshore is more than double the volumes of inbound travellers. This represents a high propensity to fly.

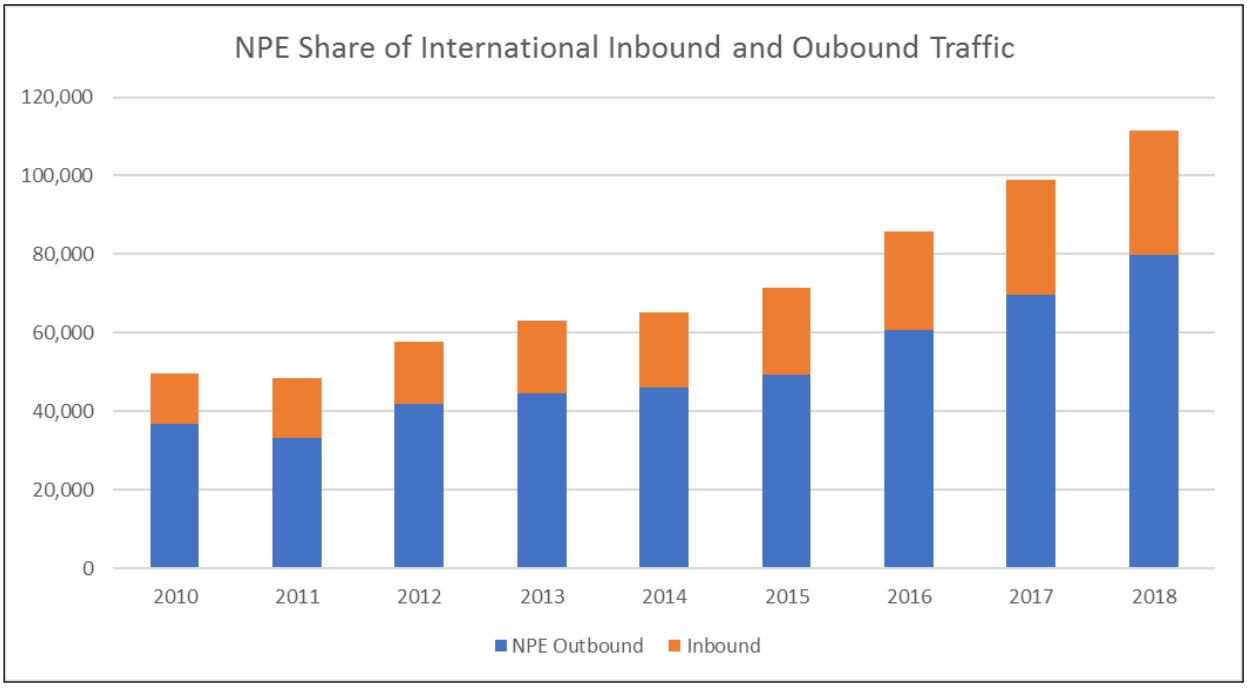


Figure 14 Split of Passenger Directionality on Hawkes Bay Services (Source: IATA AirportIS)

Both inbound and outbound traffic segments have demonstrated strong growth rates to Hawke's Bay Airport. Both markets have experienced annual average growth rates of over 10% with inbound growing by roughly 12% per annum since 2010; rates that are far higher than traffic or GDP growth rates.

As this trend pre-dates the introduction of Jetstar services to the airport, it must be assumed that a buoyant local economy is encouraging higher than average rates of international travel.

The total size of the international passenger market has grown two and a half times since 2010. All connecting traffic from Hawke's Bay Airport represents over US$51 million in annual ticket revenues for airlines. A connecting passenger can represent, on average, more than twice the revenue for an airline than a local passenger. The revenue is considerably higher if the Australian market is removed from the calculation.

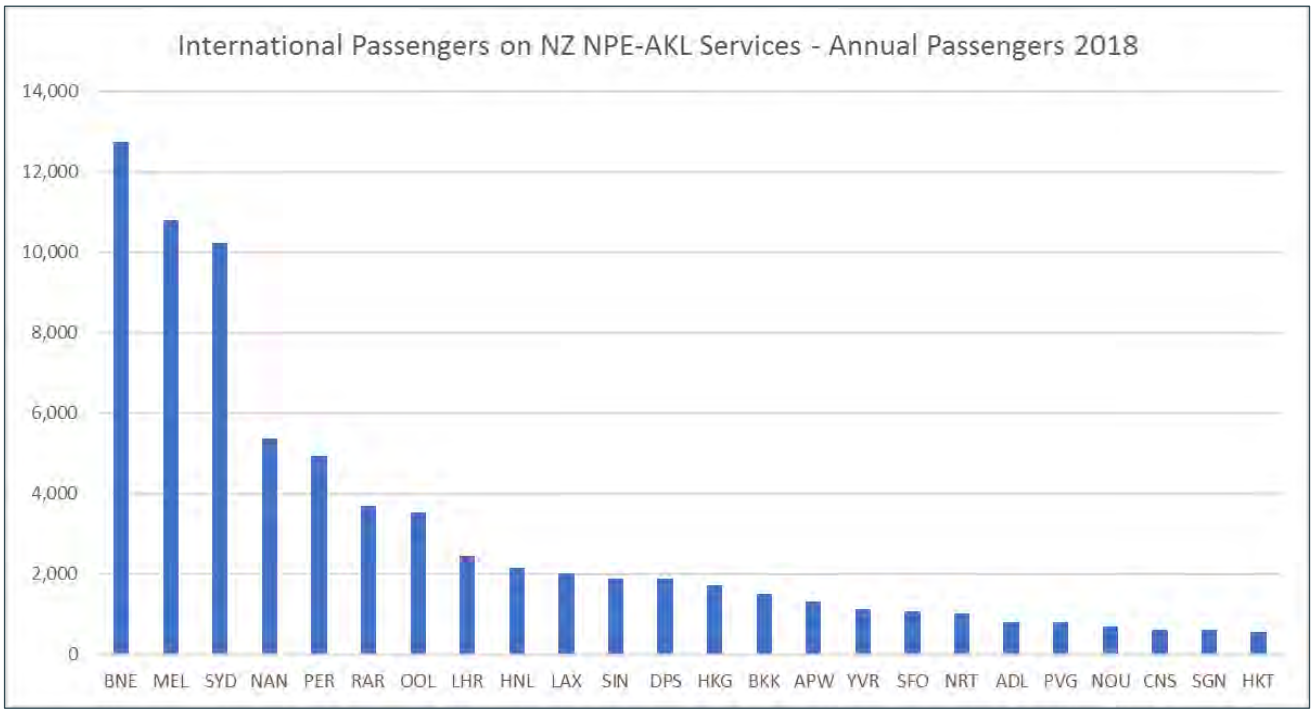


Figure 15 Destination of International Connecting Passengers on Hawkes Bay Airport Services (Source: IATA AirportIS)

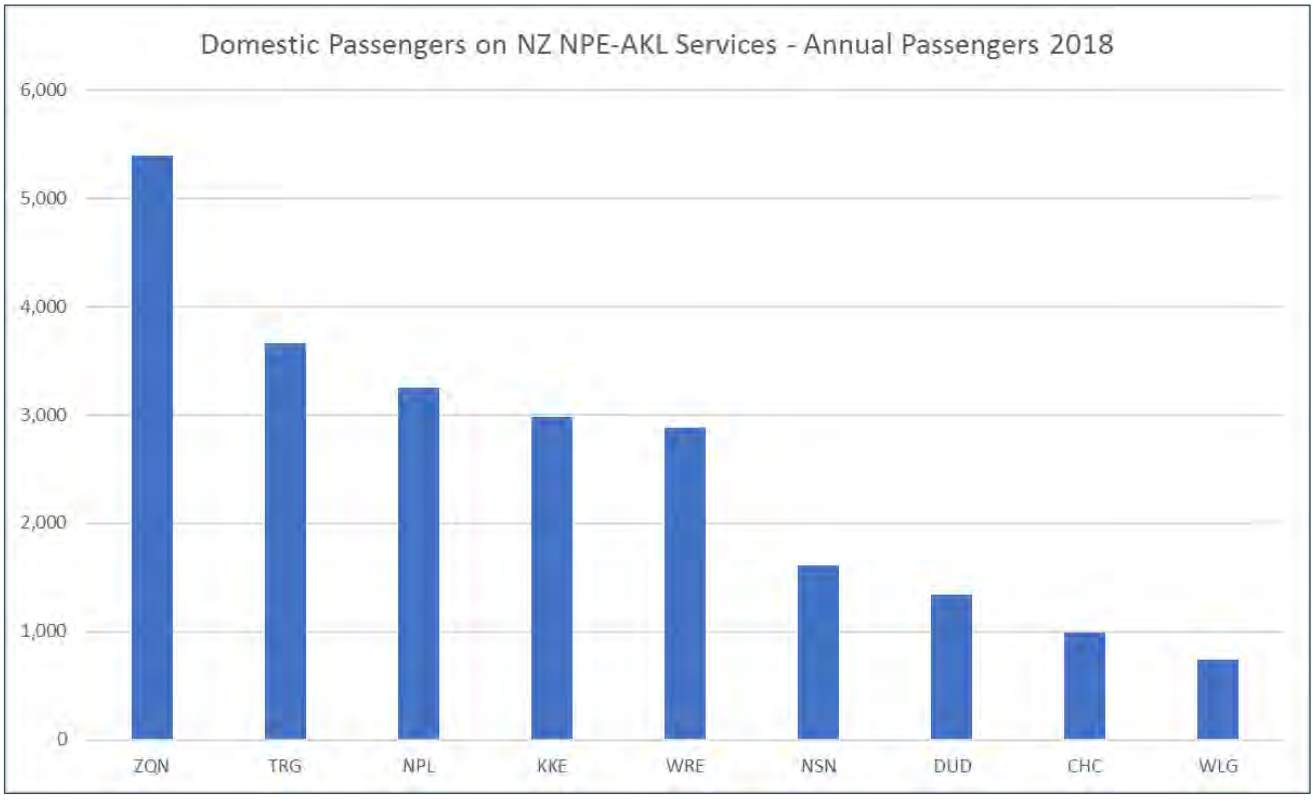


Figure 16 Destination of Domestic Connecting Passengers on Hawkes Bay Airport Services (Source: IATA AirportIS)

Not surprisingly, Australian markets dominated the international destinations on board the flight to Auckland Airport (and the figures includes Jetstar connecting passengers). The fact that Brisbane is the largest destination indicates strong family links or leisure demand to the Queensland city, surprisingly ahead of demand for Sydney.

Gold Coast adds another 4,300 passengers to the Queensland market total.

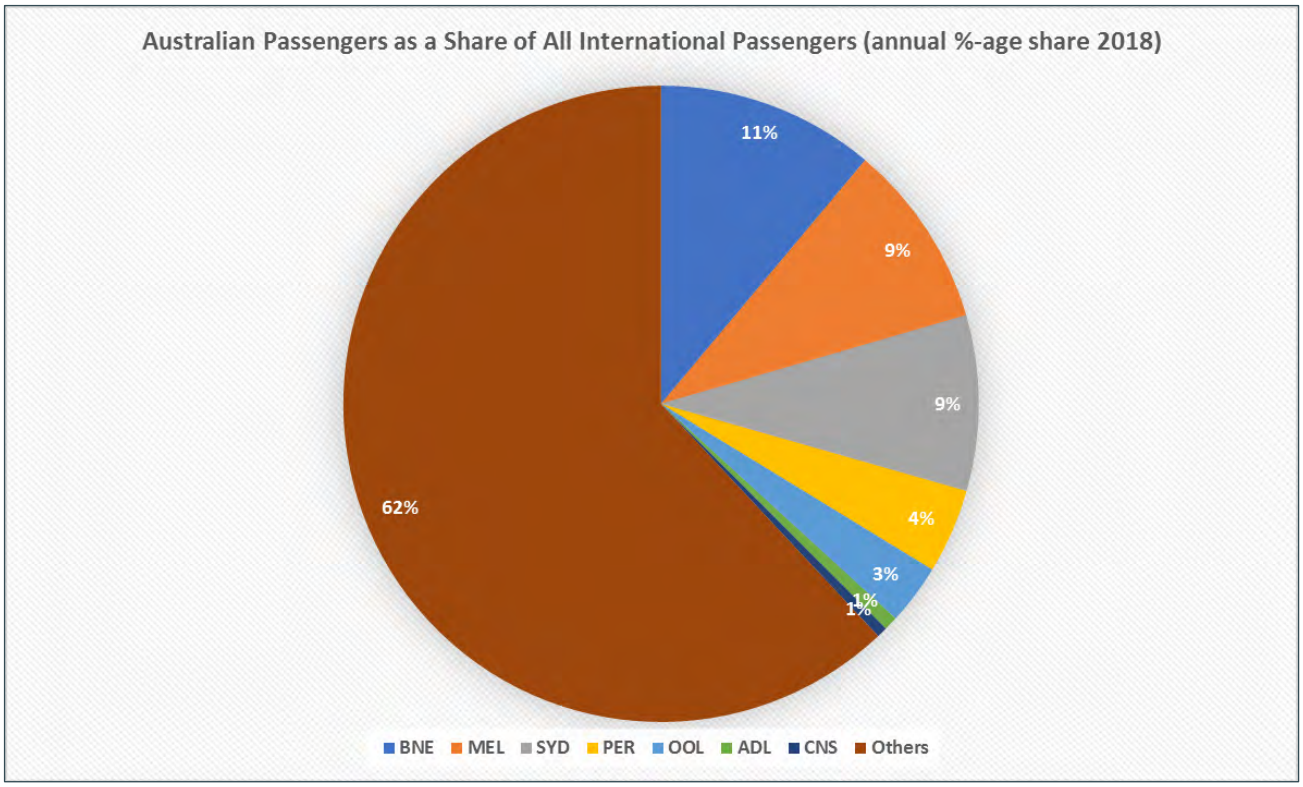


Figure 17 Australian Destinations as a Percentage of International Destinations from Hawkes Bay Airport – Calendar Year 2018 (Source: IATA AirportIS)

Australia is a declining share of the international market to and from Hawke's Bay Airport. From a peak of 61%, traffic share to Australia has declined to 56% as Hawkes Bay residents explore and other inbound markets expand. Falling ticket prices to new destinations will cannibalise some of the demand for Australia and divert the flows.

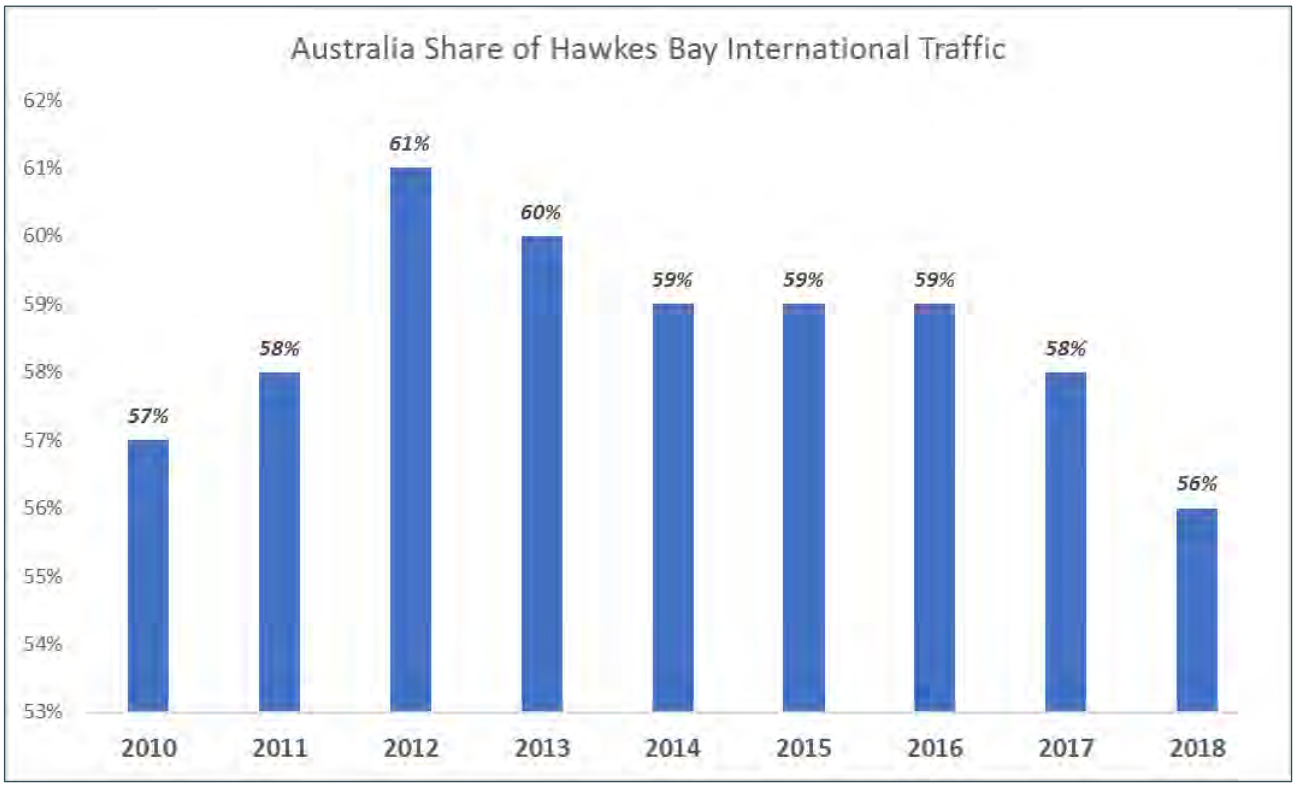


Figure 18 Australia's Share of International Traffic from Hawkes Bay Airport (Source: IATA AirportIS)

Pacific Island markets also feature, with Fiji and Rarotonga passengers totalling 11,000 annual passengers. Bali and Honolulu are both destinations that also show in the demand for connections via Auckland. These are indicative of growing prosperity in the region as well as Air New Zealand's expanding seat capacity and long haul network from Auckland Airport.

Traffic to the United States and United Kingdom feature strongly in Hawke's Bay Airport traffic flows.

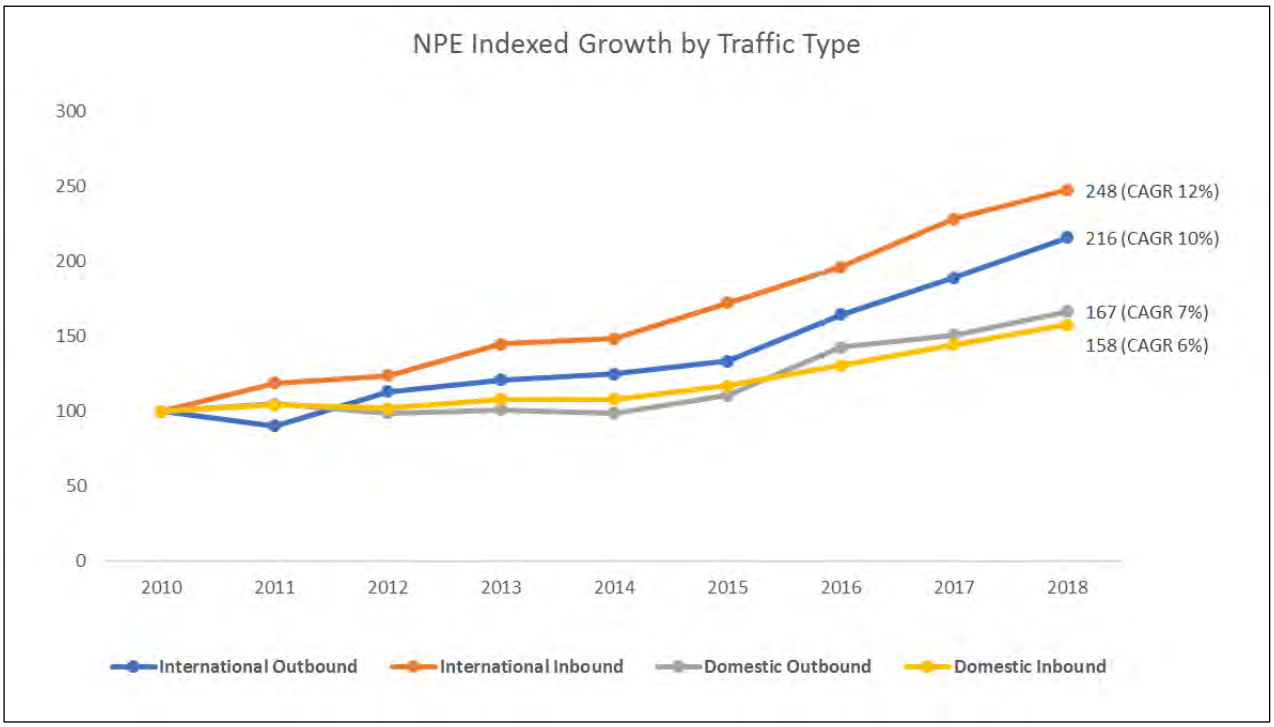


Figure 19 Traffic Flows by Type – Indexed from 2010 (Source: IATA AirportIS)

Domestic inbound traffic has shown the slowest growth of the four market segments. However, the average growth rate was 6% over eight years and only one percentage point adrift from the domestic outbound market.

Both market segments demonstrate strong growth in a domestic context, but also indicate the dependence that Hawke's Bay Airport has on local traffic; too much capacity can stress the local market's capability to fill new seats. This will manifest itself in average seat prices at unsustainable levels.

1.4 CHINA

China traffic to New Zealand has expanded exponentially since the expansion of Chinese airlines into the market, principally into Auckland Airport. A combination of relaxed visa requirements, new aircraft deliveries to Chinese airlines, and finally route subsidies made available to Chinese airlines to operate international services has stimulated the growth in China services. This is a global effect and is not confined exclusively to New Zealand.

The expansion of Chinese airline services into New Zealand started with China Southern. Guangzhou-based China Southern entered Auckland in 2009, breaking a duopoly that existed between Cathay Pacific and Air New Zealand to points in China (and that was to Hong Kong SAR only). China Southern expanded progressively until 2015, when China Eastern launched its services to Shanghai. After that service introduction, a wave of carriers offering new destinations in China ramped up annual capacity to almost 180,000 seats.

Along with the new destinations came fragmentation of New Zealand entry port. China Southern and later Cathay Pacific added Christchurch operations to supplement their Auckland services. Cathay Pacific has recently announced a 49% increase in capacity to its Christchurch operation for summer 2019/20 season.

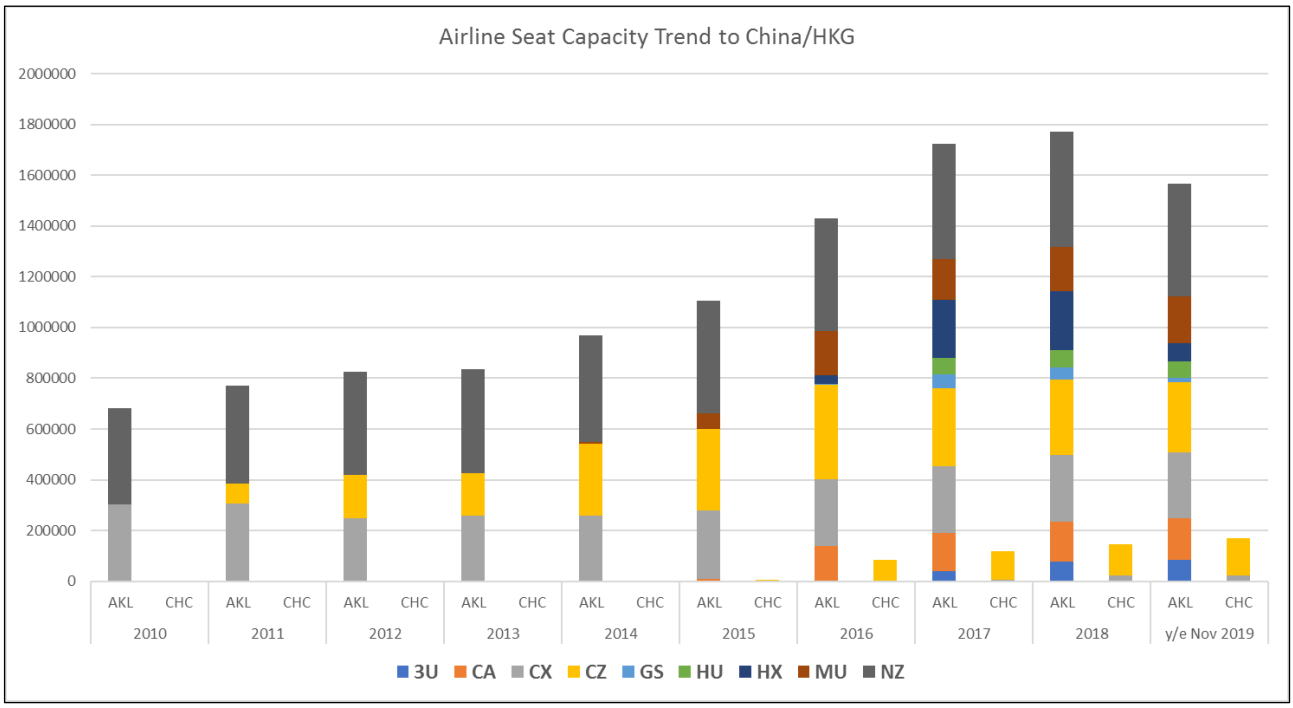


Figure 20 Annual Seat Capacity Between New Zealand and China (Source: IATA AirportIS)

The wave of new destinations in China also had a dramatic impact upon fares between China and New Zealand. Supported by provincial governments, Chinese carriers focussed on volumes rather than the quality of revenue. This encouraged Air New Zealand to secure a joint business agreement with Air China in order to access regional markets and help control some of the competitive pressures created by new entrants.

The dramatic growth in air capacity, particularly between North Asia and Auckland, is now entering a consolidation phase. Provisional scheduled show a reduction in capacity of approximately 17% in the year ended November 2019. Significant elements to this reduction include some of the Hainan Airlines subsidiaries, including Hong Kong Airlines and Tianjin Airlines exiting the Auckland market by the end of 2019.

The decline in capacity available to the China outbound market is affecting the rate of growth of the Chinese visitor to New Zealand.

The monthly rate of growth has slowed from three years ago, and the trend from October 2018 onwards appears to be negative against 2017. This is most likely a welcome trend for remaining airlines who operate in this market, as yields are likely to increase to more commercially attractive levels.

A similar trend is developing in Australia as airlines cut back on secondary port operations to Sydney and Melbourne. Brisbane Airport services have also been hit and China Southern has cancelled Cairns service entirely.

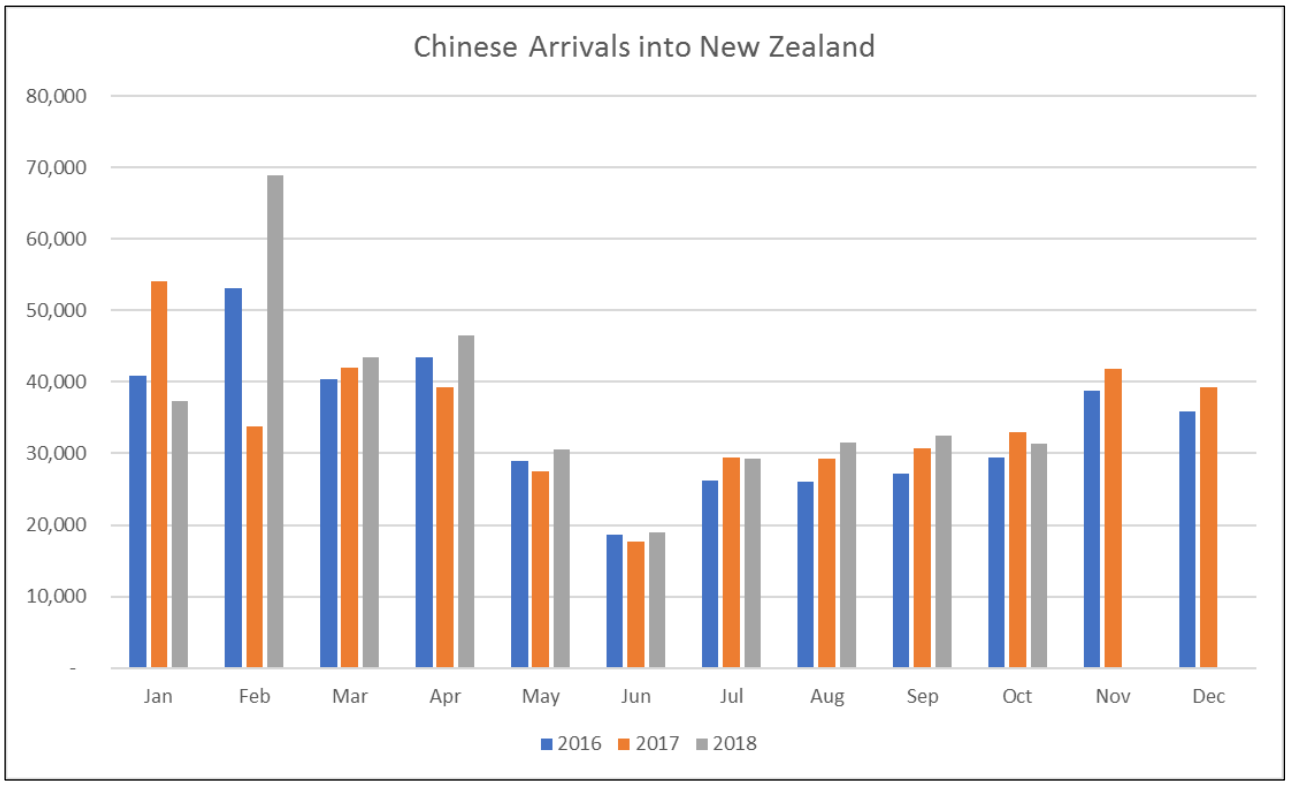


Figure 21 Chinese Resident Visitation Growth Rates into New Zealand (Source: Stats NZ)

For the time being, the market from China has peaked, and this may have consequences for regional ports and the traffic that they can expect to host. However, as has been mentioned, most Chinese visitors make regional North Island journeys by surface mode rather than connecting flights.

Chinese tourists tend not fly to regional ports, and will certainly not if their itinerary is part of a group tour. The packaged holiday costs cannot bear the additional cost of an air itinerary within New Zealand unless it includes a trip to the South Island (either Christchurch or Queenstown only), where cheap and relatively plentiful air capacity is available from the two trunk operators.

Traffic volumes between Hawke's Bay Airport and China are small. The vast majority of traffic is outbound from Hawkes Bay. This is possibly primary industry traffic heading to export market partners in China.

Without the presence of a strong tertiary education market, Hawkes Bay is reliant upon wealthier Chinese visitors able to afford the cost of flying domestically to Hawke's Bay Airport and is aware of the leisure product on offer. Chinese visitors will still arrive into the Hawkes Bay region but almost exclusively as part of a land transport package. Jetstar schedules will do little to change this trend.

Air visitors from China have crept up from around 300 to 400 annually. This rate of growth is far below the national growth rates for Chinese resident arrivals, which has grown by 26% in the past three years (equivalent to 8% year-on-year growth).

It is possible that there is a tranche of traffic that has made a stopover in Auckland and continues to Hawke's Bay Airport the following day. This broken itinerary traffic cannot be quantified with the existing data and is not reflected in the numbers below.

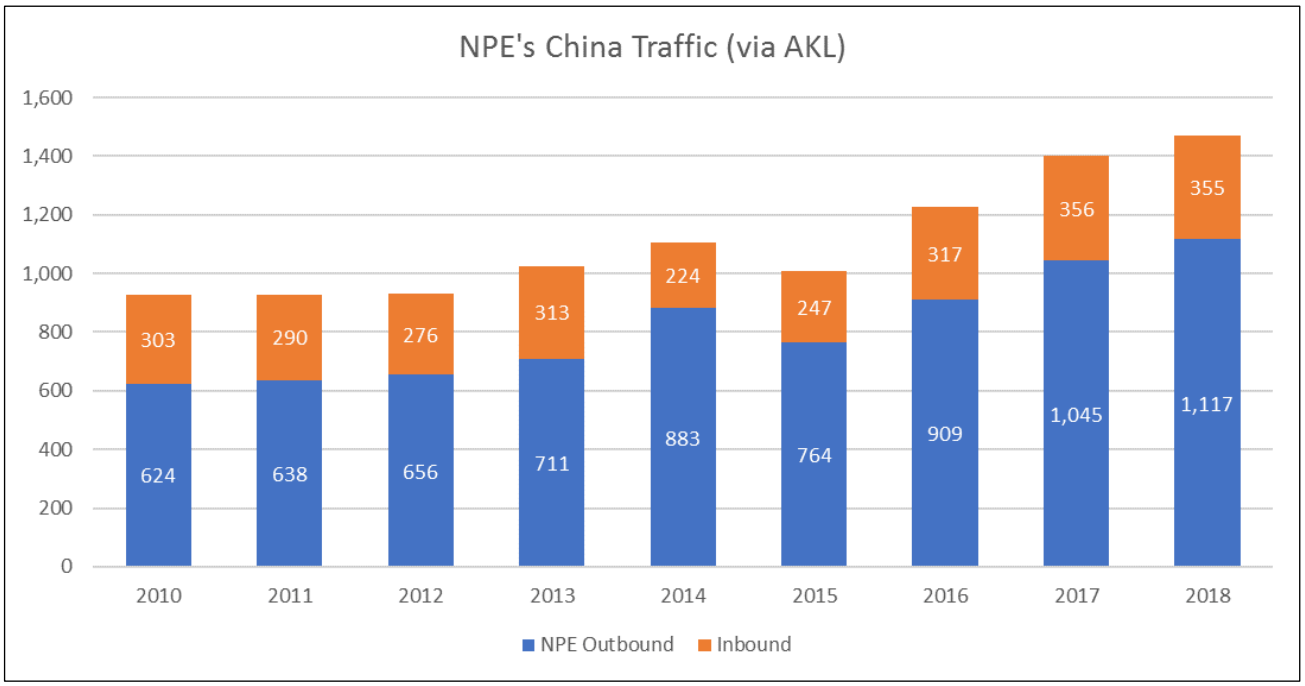


Figure 22 Traffic between Hawkes Bay Airport and China by Directionality (Source: IATA AirportIS)

2 NEW ZEALAND AVIATION DYNAMICS

2.1 AIR NEW ZEALAND

Two representatives of from Hawke's Bay Airport accompanied Christchurch Airport to meet with Air New Zealand's network planning and airport relationships team on 21 February 2019. The purpose of this meeting was to inform Hawke's Bay Airport regarding Air New Zealand's domestic fleet and network strategy, and to gain insights on any likely changes which may be considered for the traffic forecasting exercise.

Feedback from Air New Zealand was that commercial performance at Hawkes Bay Airport was pleasing, and had continued to warrant capacity investments as has been seen in recent years. For routes from Hawke's Bay Airport, the summary feedback is as follows:

For services to and from Auckland: Air New Zealand is likely to continue to add capacity with ATR72 aircraft, albeit at a slower rate as new aircraft deliveries wind down. Air New Zealand have indicated that growth is likely to come at peak morning and evening times, with a near-term opportunity (subject to factors such as improving ATC performance) to operate a later evening service than the current schedule reflects. This is due to the airline's experience of demand forecasting, which shows that elasticity of demand is greatest in the morning and evening periods, which caters to its highest yielding corporate and government passenger groups.

The Auckland-Nelson and Auckland-Palmerston North routes which both see a late evening service can be used as comparable markets with similar levels of traffic and which have experienced comparable schedule evolution in recent years.

For services to and from Christchurch: This route has seen accelerated growth, albeit off a lower base than Auckland, both by way of a schedule operated exclusively by 68-seat ATR72 aircraft, and with frequency gains. This is likely to continue as the market demand continues to grow strongly, in line with capacity additions.

For services to and from Wellington: Wellington is the most challenging route, even though it serves as a domestic hub for Air New Zealand. Scheduled services generate strong commercial returns in peak morning and evening times, but off-peak times are significantly more challenging to grow than to Christchurch and Auckland. Christchurch Airport's sense of this is that capacity growth is likely to come largely from up-gauging aircraft from Q300 to ATR72 aircraft (+36%) in the coming years, but that frequency growth is less likely. This has been reflected in the forecast exercises.

Air New Zealand confirmed that there is very little opportunity, or appetite, for non-hub flying, i.e. services which do not touch Auckland/Wellington/Christchurch Airports, and we believe this is useful feedback as it serves to consolidate Hawke's Bay Airport's aeronautical strategy of strengthening existing routes. It is also indicative of Air New Zealand's intentions not to serve Queenstown from North Island regional ports despite the high rate of growth the destination experiences from domestic tourism.

Air New Zealand acknowledged recent commentary regarding the possibility of merging Mt Cook and Air Nelson subsidiaries, and stated that such a move would allow them to realise operational benefits and cost containment. This would, however have minimal above the line impact or visibility at airport or passenger level.

A formalised Christchurch Airport's current view on the fleet composition of Air New Zealand's domestic fleet, and the opportunity to introduce a mid-sized regional jet in the mid-2020s is included as an appendix to this report.

2.2 AIR NEW ZEALAND FLEET & CAPACITY OUTLOOK

Air New Zealand offered an updated fleet and capacity growth projection in both their February 2019 interim results presentation, as well as well as their 28 March 2019 Business Review Update.

Fleet growth FY20-22 is very flat, with the deferral of several A320/A321NEO aircraft by one year. Importantly for Hawke's Bay Airport, Air New Zealand do not currently project any growth in turboprop capacity in the FY20-22 period, as demonstrated in the fleet composition chart below.

Air New Zealand Current Fleet & Orders by Aircraft Type				
	2019	2020	2021	2022
Boeing 777-300ER	7	7	7	7
Boeing 777-200ER	8	8	8	8
Boeing 787-9	13	14	14	14
Airbus A320	25	19	19	16
Airbus A320/A321NEO	10	15	15	18
AT72-600	23	29	29	29
ATR72-500	6	0	0	0
Bombardier Q300	23	23	23	23
Total Fleet	115	115	115	115

Figure 23 Air New Zealand Fleet Plans by Aircraft Type (Source: Air New Zealand Annual Report, 2018)

Currently there are no new turbo-prop aircraft on order with the airline. The six older variants of the ATR are on leases that enable Air New Zealand to return them should they not require the capacity.

It is likely that Air New Zealand would consider acquiring additional ATR72 aircraft in the FY22-25 period, however this is unlikely to occur sooner due to the airline's current focus on cost containment and enhancing operational financial performance. As such, the view of CIAL remains that the medium-term focus will be on growth in average daily utilisation of newer fleet types (such as the ATR72-600 fleet). This optimisation of aircraft utilisation will facilitate a slower rate of domestic capacity investment Air New Zealand committed to in the March business update. This is illustrated in the following chart.

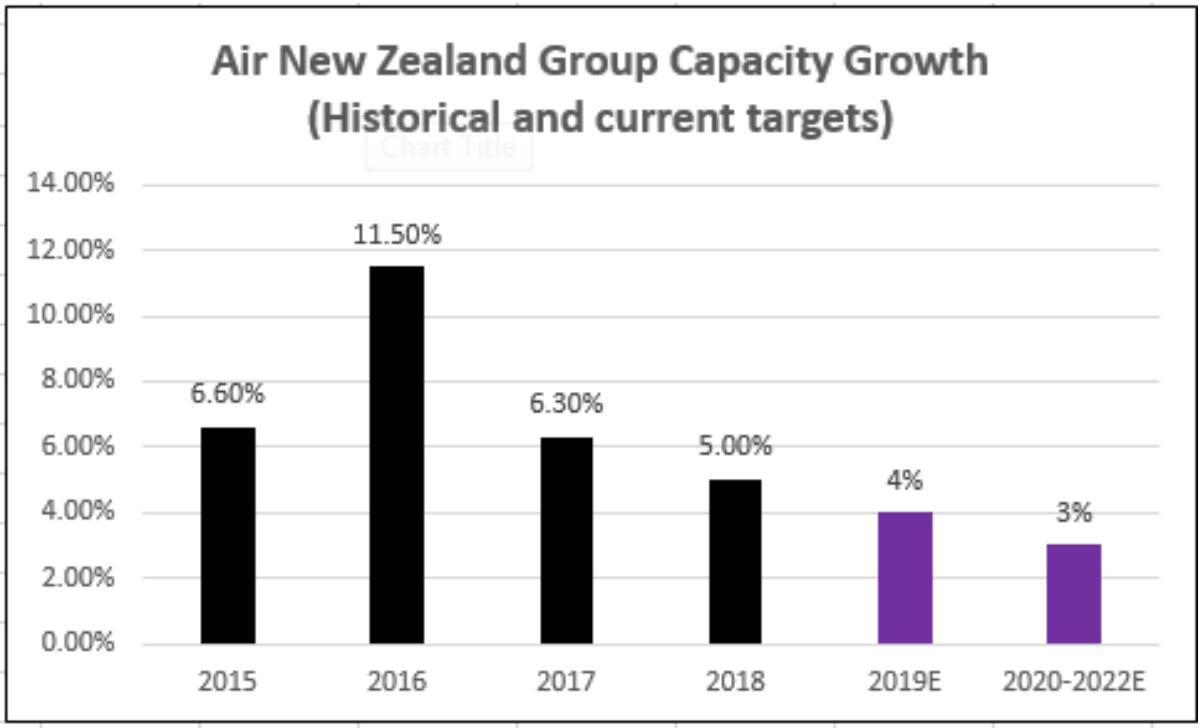


Figure 24 Air New Zealand Capacity Growth Plans (Source: Air New Zealand Annual Report, 2018)[3]

Appendix 1 formalises Christchurch Airport's current view on the fleet composition of Air New Zealand's domestic fleet, and the opportunity to introduce a mid-sized regional jet in the mid-2020s.

2.3 JETSTAR

Jetstar New Zealand remains a difficult proposition for the Qantas Group. The regional operation of five Q300 aircraft reportedly continues to lose money for the group, and is operating for strategic rather than commercial value. Feedback from the Qantas Group to CIAL certainly confirms this conclusion.

It is highly unlikely that the Jetstar regional fleet will grow in the foreseeable future, as additional Qantas aircraft must be sourced from the domestic Australian market (refer to section 3.2.1). The domestic regional market in Australia is experiencing a period of rebounding growth in yield, largely driven by a revival in the recourses sector in Queensland and Western Australia, and on routes where the regional turbo-props are most suitable to be operated.

CIAL believes that it is unlikely that Jetstar's regional operation at Hawke's Bay Airport will change appreciably in the next three years. However, changes to their wider New Zealand network are likely by 2025, when the Q300 fleet will reach a critical age for either replacement or disposal. This roughly coincides with the date for the retirement of the Air New Zealand Q300 fleet.

CIAL modelling suggests that incremental growth and shaping of the core Hawke's Bay Airport-Auckland schedule is an opportunity for Jetstar, and may result in modest short term capacity gains. Jetstar will also continue their current focus on growing the quality of revenue across their domestic New Zealand operation, as they seek to grow their current government and corporate share from the current 3%.

[3] 2019E and 2020-2022E are the estimated capacity growth projections for these fiscal years

Jetstar is also investing in the software to enable it to accommodate more connecting options with more airlines across its network. Again, this is a project to develop the quality of revenues that Jetstar can earn by leveraging the full Qantas Group network and alliances.

2.4 THIRD LEVEL OPERATORS: SOUNDS AIR, AIR CHATHAMS, ORIGIN AIR

CIAL continues to see medium term expansion opportunities for smaller airlines such as Sounds Air and Air Chathams. Expansion for these carriers will be facilitated by way of unique route opportunities, and by way of increased co-operation with Air New Zealand which can unlock further regional services.

Both airlines are relatively well funded for the general aviation sector, and have a strong reputation in the regions they operate to. A key to future third level growth will be Air New Zealand's fleet evolution, and the opportunity which an 'up-sizing' of aircraft in their fleet may provide for deeper coordination with a smaller operator. Smaller average aircraft size at this level will have the potential to unlock more region-to-region flying from Hawkes Bay Airport.

It is unlikely that a market of New Zealand's size can support more than two financially sustainable third level operators. A general split of operations by North and South Island would enable the two carriers to avoid each other's networks.

A third level component is reflected in the long-term forecasts for the Hawkes Bay Airport.

2.5 AIRPORT INFRASTRUCTURE AND CONSTRAINTS

2.5.1 AUCKLAND AIRPORT

Auckland Airport's (AIAL) ongoing objective is to strengthen their New Zealand gateway position and to grow their transit position between Australia/Asia and the Americas. They see their main competitor as Sydney, and want to marginalise other New Zealand entry points to reduce leakage. Up until recently this has largely coincided with Air New Zealand's objective, as the airline has built its international network primarily around growth in connectivity at Auckland, especially Australia to North/South America routes.

AIAL is undertaking a long-term redevelopment of the airport, terminal and apron. This will take place in three key phases. The redevelopment programme will lead to constraints in various areas on the airfield and terminal, with the current constraint being domestic gate and terminal capacity. In the 2025-30 timeframe, this will shift to runway and taxiway capacity shortfalls.

To fund the multi-billion-dollar development and continue to deliver returns to shareholders, AIAL needs to continue to drive significant volume growth. However, the variability and cyclical nature of aviation is currently challenging their growth projections, with several Asian airlines (Air Asia X, Hong Kong Airlines, and Tianjin Airlines) withdrawing in 2019 thus far and some airlines cutting back on frequency (China Southern, for example).

The below timeline chart shows the likely phasing of key projects, aligned with likely constraints at Auckland Airport.

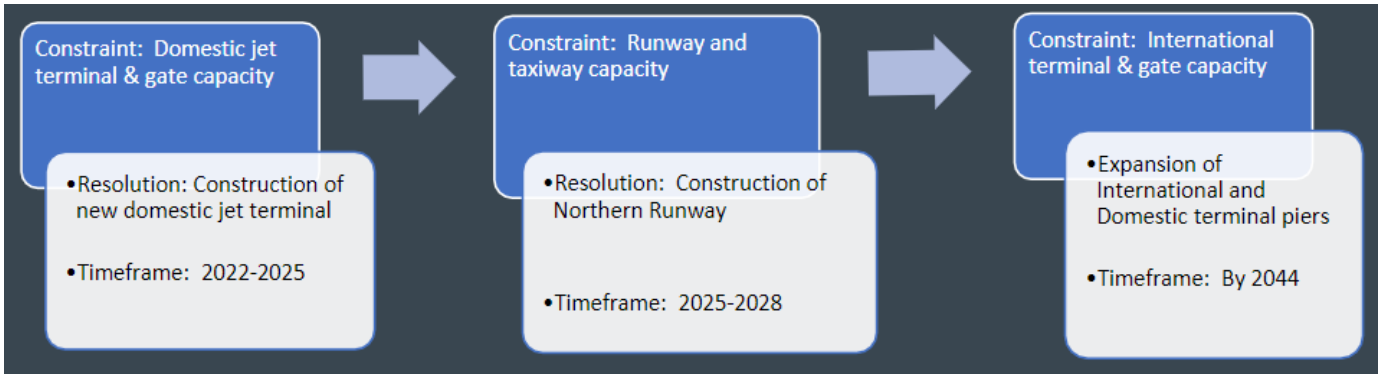


Figure 25 Auckland Airport Long-Term Infrastructure Plan (Source: CIAL)

2.5.2 WELLINGTON AIRPORT

Wellington Airport is underpinned by domestic government and corporate travel so growth is stable, however can be at slower rates of growth than competitor airports, depending upon which government is in power at a given time. The airport will continue to compete for transit and direct domestic services which overfly Christchurch Airport. This has been evident in recent years with Wellington-Queenstown and Wellington-Dunedin services growing significantly.

Whilst the airport has international network aspirations (including the ambitious plan to invest in a runway extension), they have not grown international passengers in recent years, primarily because Wellington and the lower North Island does not play a role in the long-haul visitor market. Irrespective of the runway extension programme (which is looking increasingly unlikely), existing airlines have expressed no desire to operate medium or long haul services to Wellington.

On the regional and domestic section of the airfield, ramp space limitations are significant, with the airport restricted to majority Q300 turboprop operations due to a shortage of ATR72 suitable stands. The ATR72 is not able to be pushed back from the gate under certain weather conditions, thus requiring a larger stand footprint than the Q300 and other turboprop types.

The acquisition of at least half of the Miramar Golf Course will enable Wellington Airport to accommodate growth of turbo-prop aircraft as well as the regulated mandate of upgraded baggage screening capabilities by the end of calendar year 2021. There is therefore some urgency to the plans for ramp expansion at Wellington Airport. The retirement of the Q300 fleet (projected to be in the mid 2020 timeframe) is also a cap on expansion of Wellington services unless more space can be secured for ATR operations.

2.5.3 CHRISTCHURCH AIRPORT

Of the three major domestic hub airports, Christchurch Airport is the least constrained by way of infrastructure. Air New Zealand are likely to continue to add turboprop frequency from Christchurch in line with growing market demand, and that this growth will not be constrained when measured against current fleet projections. This growth has the potential to ultimately see some larger regional routes such as Christchurch-Hawke's Bay up-gauged to jet services, however this is likely to in the post-2030 timeframe, as Air New Zealand's fleet mix and market growth continues to evolve.

The high rate of frequencies that would be required by 2030 would mitigate against the exclusive use of turbo-prop activity, and the stage length suits a regional jet operation. This change in aircraft type essentially doubles the capacity of a turboprop aircraft, and consolidates air traffic movements, while realising cost efficiencies for the airline.

2.5.4 IMPACT OF HUB AIRPORT CONSTRAINTS FOR H**AWKE'S** BAY AIRPORT

The primary impact of particularly Auckland and Wellington Airport's infrastructure constraints on Hawke's Bay Airport is how it dictates when, where and how growth may be achieved on these routes. The capacity constraints Auckland Airport will experience is likely to limit the growth of additional turboprop services until their second runway becomes available in the 2028-2030 period. The opportunity therein is for Air New Zealand to grow the Auckland-Hawke's Bay route by operating jet services, especially at peak morning and evening times, as this maintains capacity while reducing aircraft movements.

The opportunity cost for Air New Zealand may be to no offer as much connecting inventory to the Hawkes Bay market if the airline makes the most revenue per mile from carrying local passengers.

Impacts on Hawke's Bay from Wellington and Christchurch Airports' development horizons are less pronounced, and are unlikely to constrain these routes from achieving forecasted growth rates. However, high load factors will prevent much organic growth to be accommodated on existing schedules even over the short term.

3 SHORT-TERM FORECAST

3.1 SCHEDULE BASE FORECAST

In the short term (up to three years forward), capacity drives passenger performance. The short-term (FY20-25) forecast was prepared based on a bottom-up view of future planned and anticipated airline seat capacity. At the time of preparing the forecast, the schedule for airlines operating from Hawkes Bay Airport was available to December 2019 and as such the schedule for the calendar year 2019 was used as the base schedule for the forecast.

The base schedule was then modified for each route and airline to incorporate future growth and changes based on information gathered from airlines through discussions and available reports, as well as trends identified in historic traffic data available for Hawkes Bay Airport.

CIAL uses IATA schedules data as part of the AirportIS data tool offered by IATA to airports. A deeper version of the data is used by airlines to undertake their own planning and performance analysis.

3.2 SHORT TERM CAPACITY GROWTH FACTORS AND ASSUMPTIONS

The following factors and assumptions have been considered when determining growth in airline capacity over the forecast period.

3.2.1 AIRLINE FLEET SIZE

There is uncertainty as to the long-term fleet projection of Jetstar in their regional New Zealand operations. At this time, it is unlikely that they will add additional aircraft to their fleet of five Q300 aircraft, and this is unlikely to change in the three to five-year time horizon.

Jetstar sources aircraft from the Qantas Group's Australian operations, and with this, much larger and more profitable network dynamic in play, the opportunity cost for Jetstar to grow their fleet is difficult to overcome. This limits any assumed growth in Jetstar capacity, and any growth is likely to be incremental and realised through increasing aircraft utilisation, and the binary effect of one route performing better than a competing one, which can effect a change in capacity (refer to section 2.3).

The Air New Zealand regional turbo-prop fleet has grown significantly since 2012, primarily with the phasing out of smaller 19 seat aircraft, and the addition of further 68 seat ATR aircraft. This has enabled Air New Zealand to quickly expand regional routes across the same period. However, the last aircraft on order is expected to be delivered in FY20, with no other orders signalled in the short term.

The lack of orders will slow growth to a lower rate than has been experienced in recent years, however limited growth is still possible via increased aircraft utilisation and further up-gauging of other network routes from ATR72 to jet aircraft, which will free up additional ATR72 aircraft time for routes including those to Hawke's Bay Airport.

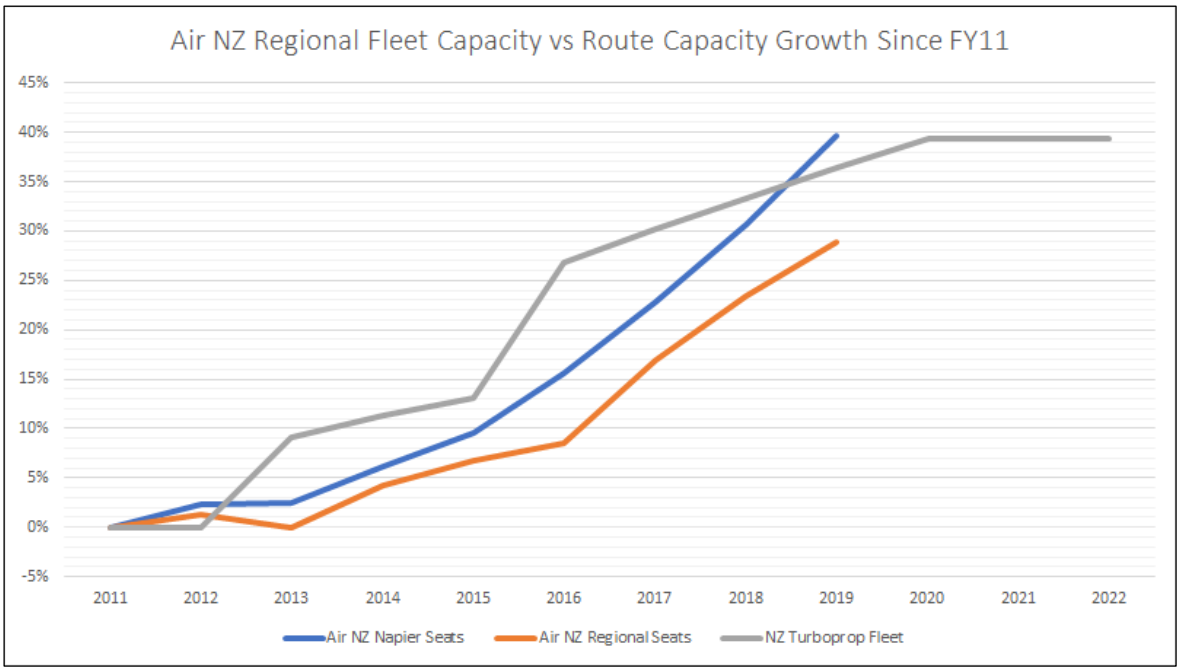


Figure 26 Hawkes Bay Airport Growth Indexed with Air NZ Fleet Expansion (Source: IATA AirportIS and Air New Zealand)[4]

3.2.2 GDP GROWTH

There is a valid long-term correlation between GDP Growth and domestic capacity growth. While events such as the introduction of Jetstar on regional routes cause exceptions to the trend, generally GDP growth can be used as a proxy for organic capacity growth. Airlines themselves use GDP forecasts to deliver capacity, so it is almost inevitable that markets, through the availability of capacity, will rise by rates close to GDP.

Consensus forecasts collated by NZ Institute of Economic Research Inc[5] as at March 2019 indicate expected growth between 2.5% and 2.9% between FY20 & FY22 as indicated in the chart below. The GDP forecast has been used to moderate total capacity growth at Hawke's Bay Airport.

[4] Air New Zealand regional seats refers to the Q300 and ATR72 aircraft types, and the NZ turboprop fleet growth is the size of Air New Zealand's turboprop fleet compared to 2011

[5] NZIER Consensus Forecasts shows lower growth outlook - Consensus Forecasts, March 2019, NZ Institute of Economic Research Inc

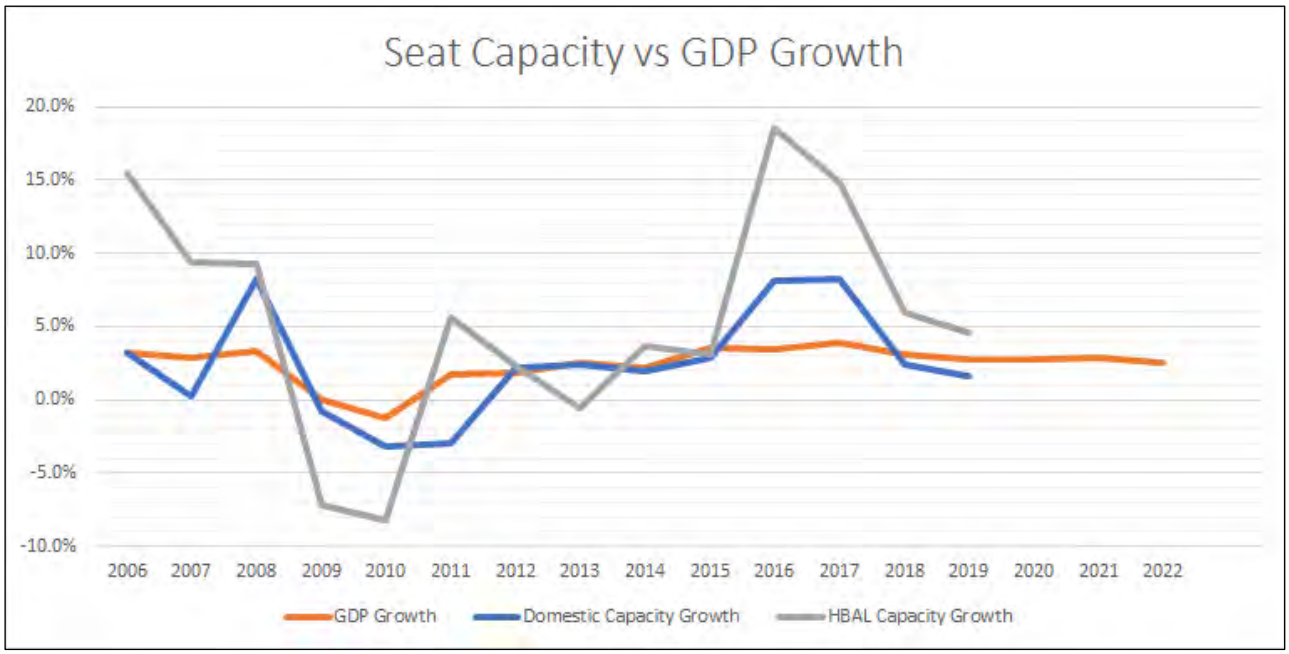


Figure 27 Percentage Change in GDP, Seat and Hawkes Bay Capacity Growth (Source: IATA AirportIS, HBAL and MBIE)

3.2.3 AIRLINE COMPETITION

Introduction of airline competition on routes almost always sees a response from the incumbent carrier in markets that are not fully mature. As discussed in the previous section, when Jetstar commenced flying on the Auckland route, Air New Zealand increased capacity by around 5%. If competition was to cease, then the reverse would be likely to occur through the increase in yields that Air New Zealand would inevitably raise.

No changes to competition on the routes from Hawke's Bay Airport have been anticipated in the forecasts, however a scenario has been modelled where Jetstar withdraw their services to demonstrate the impact of the loss in competition. CIAL feels this is a prudent.

CIAL also feels that it is unlikely that a replacement for Jetstar Regional would enter the market. No airline would have the experience, resources or strategic motivation to replicate a regional domestic network in the way that Jetstar, or even the failed attempt by Virgin Blue.

3.3 SHORT TERM PASSENGER DEMAND GROWTH FACTORS

In addition to the forecast growth in capacity, short term passenger demand must also be considered to determine the market's ability to fill available capacity. The following growth factors have been considered when determining passenger over the forecast period.

3.3.1 CORPORATE TRAVEL

The relocation or development of corporations, manufacturing, or large infrastructure projects can create additional passenger demand. The major source of demand on some regional routes comes primarily from specific industries, government departments or health boards. No significant changes in this area were noted for this forecast. Growth in primary industry travel is observed to main export markets. These are likely to represent high yield revenue opportunities for Air New Zealand, but the volumes are low.

3.3.2 AIRFARES

Airline competition stimulates the passenger demand through lower airfares as airlines attempt to attract customers. This makes air travel available to markets with lower disposable incomes. As noted previously, no significant changes to competition have been anticipated in the short term so this has not been a major factor in preparing the forecast.

This can be summarised in the figure below, showing up to 27% increase in passenger numbers in 2016, while air fare declined by 19% in the same year (2016), after JQ entered into the market.

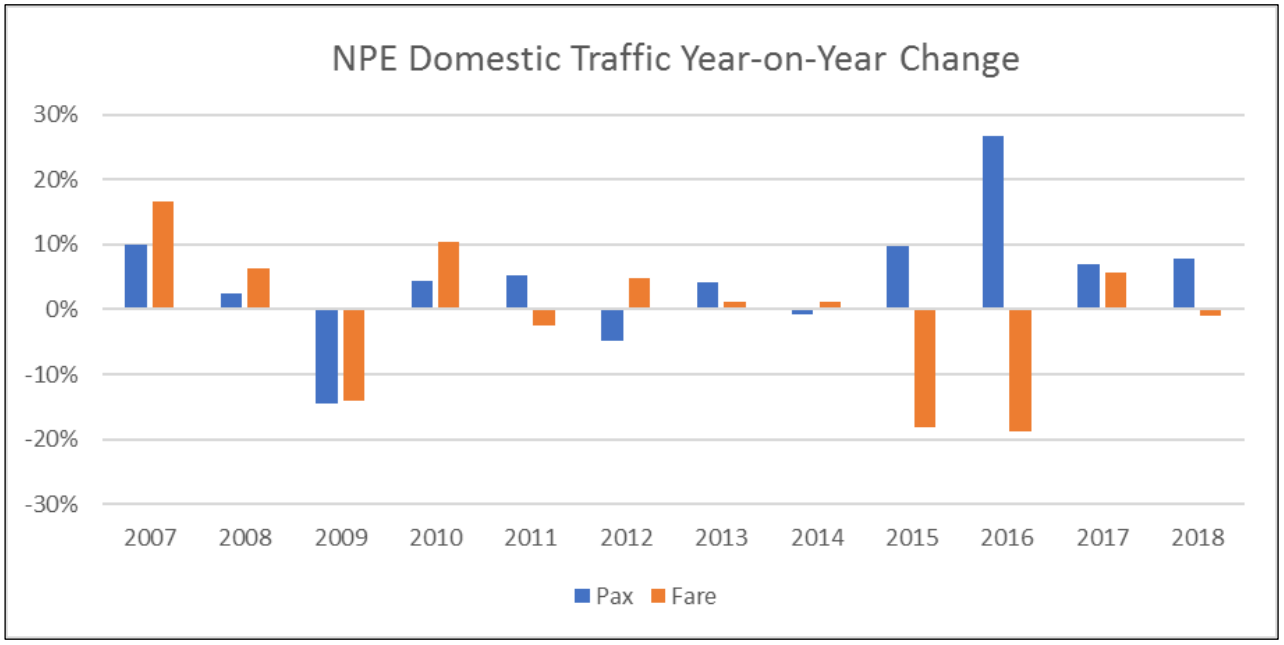


Figure 28 Total NPE Domestic Traffic Change (Source: IATA PaxIS)

However, faster and cheaper access to labour in the agricultural sector may be assisted with Jetstar pricing in the Hawkes Bay region.

What can be observed is that a new floor on domestic air fares has been created with the introduction of Jetstar service. A 26% fall in air fares now places the average yield at about $110, rather than the $150 level. It is indicative of the lack of competition that Air New Zealand was able to sustain $150+ fares in the Hawkes Bay market for so long.

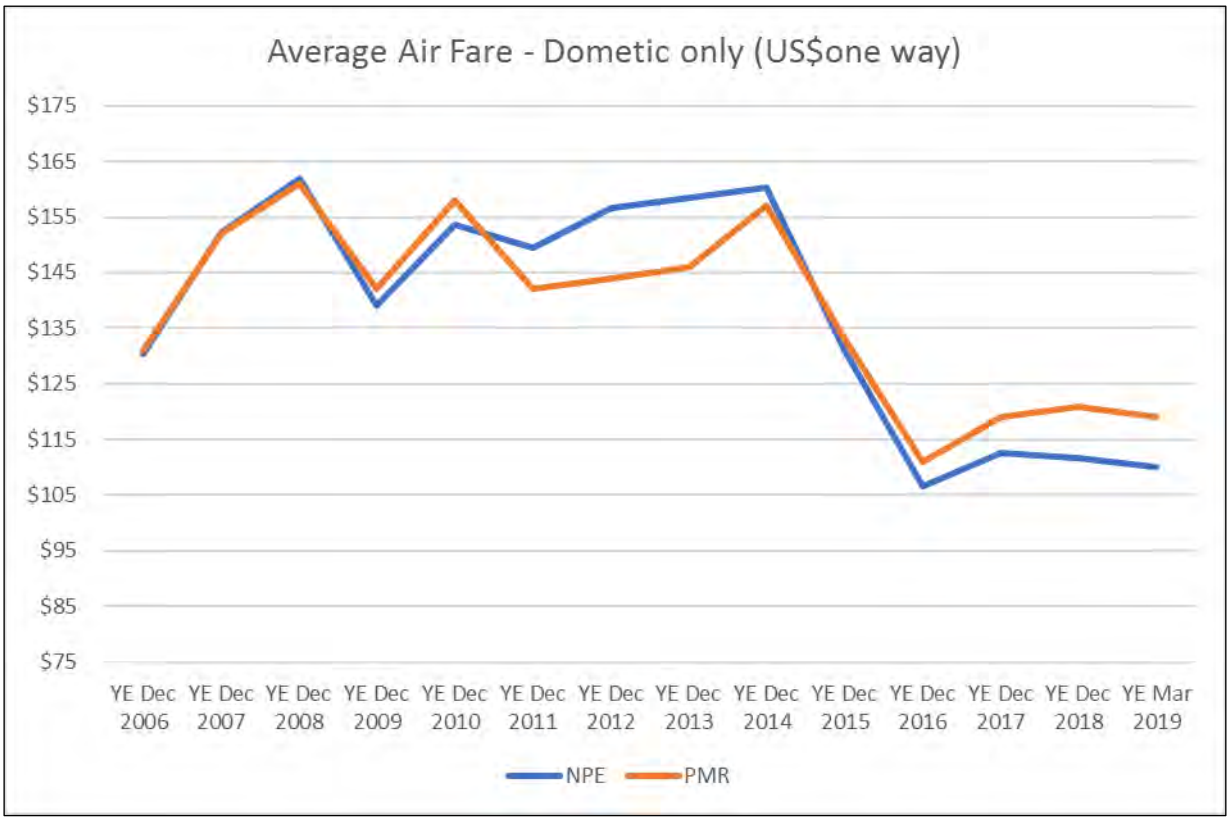


Figure 29 Average One-way Air Fares from Hawkes Bay and Palmerston North to NZ Domestic Destinations (Source: IATA AirportIS)

The second observation is how similar Hawke's Bay and Palmerston North are in the air fare behaviour in two similar markets with Jetstar regional services. The creation of a new pricing floor is observed in both Palmerston North and Hawke's Bay.

Air fares from AirportIS are shown in US Dollars and exclude fees and taxation. USD is the base currency for the AirportIS database.

3.3.3 ATTRACTIONS & EVENTS

Significant regional and national events, such as the Rugby World Cup in 2011 created a short term but noticeable increase in domestic passenger movements. Likewise, large attractions that encourage tourism can also create more permanent demand in passengers travelling to the region. For this forecast period, no major events or attractions at the scale that would create additional passenger demand were noted.

Domestically, Air New Zealand accommodates the increased demand for air capacity driven by major events by adding capacity. For example, the airline added 60 additional one-way flights around the Ed Sheeran's shows in Auckland and Dunedin (2018), to take concert goers to the events.

3.4 HISTORIC PASSENGER DATA

It is important when forecasting to understand the relationship between capacity increases/decreases and passenger demand. When there are large increases in capacity, whether the market can fill the new seats, and likewise where capacity is flat or there are reductions. High load factors can be symptomatic that there are not

enough available seats to continue to satisfy passenger demand or lack of capacity will constrain demand. High load factors may also be symptomatic of lower fares and therefore higher revenues are needed to compensate.

Hawke's Bay Airport provided 4 years of complete traffic data for analysis. This data identified correlations between capacity changes and load factors when then factored into calculations to determine likely load factors on forecast capacity.

3.5 SHORT TERM FORECAST – JETSTAR STATUS QUO

Table 1 Short Term Traffic Forecast Assuming Jetstar Continues to Operate

Seat Capacity								
Airline	Route	FY19	FY20	FY21	FY22	FY23	FY24	FY25
NZ	AKL	474,728	488,352	514,277	525,825	539,496	554,063	569,576
NZ	CHC	130,032	136,803	154,238	161,212	165,404	169,870	174,626
NZ	WLG	165,054	166,145	168,745	174,492	179,029	183,862	189,011
JQ	AKL	135,055	127,870	128,748	130,211	130,211	130,211	130,211
S8	BHE	5,544	5,508	5,472	6,390	6,390	6,390	7,285
Total		**910,412**	**924,677**	**971,479**	**998,130**	**1,020,530**	**1,044,396**	**1,070,709**

Growth Rates					
FY20	FY21	FY22	FY23	FY24	FY25
2.9%	5.3%	2.2%	2.6%	2.7%	2.8%
5.2%	12.7%	4.5%	2.6%	2.7%	2.8%
0.7%	1.6%	3.4%	2.6%	2.7%	2.8%
-5.3%	0.7%	1.1%	0.0%	0.0%	0.0%
-0.6%	-0.7%	16.8%	0.0%	0.0%	14.0%
1.6%	**5.1%**	**2.7%**	**2.2%**	**2.3%**	**2.5%**

Passengers								
Airline	Route	FY19	FY20	FY21	FY22	FY23	FY24	FY25
NZ	AKL	395,536	411,162	436,960	448,992	462,530	475,974	489,301
NZ	CHC	100,574	105,961	115,906	121,642	126,536	131,675	137,074
NZ	WLG	132,287	133,280	135,388	139,969	143,608	147,485	151,615
JQ	AKL	110,530	106,648	108,905	111,423	112,725	113,923	114,907
S8	BHE	3,117	3,185	3,271	3,840	3,968	4,091	4,664
Total		**742,044**	**760,236**	**800,430**	**825,866**	**849,368**	**873,148**	**897,562**

Growth Rates					
FY20	FY21	FY22	FY23	FY24	FY25
4.0%	6.3%	2.8%	3.0%	2.9%	2.8%
5.4%	9.4%	4.9%	4.0%	4.1%	4.1%
0.8%	1.6%	3.4%	2.6%	2.7%	2.8%
-3.5%	2.1%	2.3%	1.2%	1.1%	0.9%
2.2%	2.7%	17.4%	3.3%	3.1%	14.0%
2.5%	**5.3%**	**3.2%**	**2.8%**	**2.8%**	**2.8%**

Load Factor								
Airline	Route	FY19	FY20	FY21	FY22	FY23	FY24	FY25
NZ	AKL	83.3%	84.2%	85.0%	85.4%	85.7%	85.9%	85.9%
NZ	CHC	77.3%	77.5%	75.1%	75.5%	76.5%	77.5%	78.5%
NZ	WLG	80.1%	80.2%	80.2%	80.2%	80.2%	80.2%	80.2%
JQ	AKL	81.8%	83.4%	84.6%	85.6%	86.6%	87.5%	88.2%
S8	BHE	56.2%	57.8%	59.8%	60.1%	62.1%	64.0%	64.0%
Total		**81.5%**	**82.2%**	**82.4%**	**82.7%**	**83.2%**	**83.6%**	**83.8%**

Growth Rates					
FY20	FY21	FY22	FY23	FY24	FY25
0.9%	0.8%	0.4%	0.3%	0.2%	0.0%
0.1%	-2.3%	0.3%	1.0%	1.0%	1.0%
0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
1.6%	1.2%	1.0%	1.0%	0.9%	0.8%
1.6%	1.9%	0.3%	2.0%	1.9%	0.0%
0.7%	**0.2%**	**0.3%**	**0.5%**	**0.4%**	**0.2%**

The short-term forecast has been constructed using a bottom-up methodology, and is based on two scenarios. Firstly, a forecast which assumes that both Air New Zealand will continue to invest in capacity to meet market growth. This requires Air New Zealand to use the existing fleet of aircraft. It also takes into account the various dynamics described in the previous section, including known fleet orders and delivery timelines, recent history of capacity and passenger growth rates at Hawke's Bay Airport as well as other competing markets, and insights gained from all airline partners.

For Air New Zealand, the growth rates on Hawke's Bay to Auckland and Christchurch routes factors in high recent growth. This is particularly evidenced on Auckland, and includes Air New Zealand's insights of how growth is likely to be shaped in the period to FY25.

Historic data for each route was assessed to determine how load factors are affected by passenger demand and changes to capacity. To build the calculation rules for each route and airline, it was determined how much year-on-year capacity growth could be absorbed by passenger demand before load factors would begin to decline, as well as the underlying year-on-year organic passenger growth rates ignoring the effects of changes to airline capacity.

To prevent unrealistically high load factors, the following rules were used:

- Air New Zealand load factors capped at 85% unless those load factors had already been exceeded previously, where they were carried forward.
- Jetstar load factors capped at 90%.
- Sounds Air load factor capped at 85%.

The Auckland route will see frequency growth through peak morning and evening services. The Wellington will see a mix of aircraft up-gauges from Q300s to ATR72 aircraft types, and a smaller volume of frequency growth. Load factor growth is also factored in to all short-term forecasts. Air New Zealand's commentary suggests an eventual similarity on the Auckland to Hawke's Bay route to the current capacity profile of Christchurch to Wellington, which features almost hourly services with ATR72 aircraft between early morning and mid evening.

For the Hawke's Bay to Christchurch route, percentage growth is likely to be above organic levels for the next two to three years, as frequency is built off a lower base than Wellington and Auckland. However, in the latter part of the short-term forecast period, expansion reverts to slower growth rates in line with Air New Zealand's neutral stance on fleet growth beyond FY20.

Sounds Air are likely to maintain their core Hawke's Bay to Blenheim schedule, with some high season frequency growth, and load factor growth factored into the forecast.

With these assumptions and insights from airline partners at hand, the short-term forecast outcome at FY25 totals 897,562 passengers on total seat capacity of 1.07 million seats. The represents a growth rate of 18% capacity and 21% passenger volume when compared to the FY19 full year forecast. This rate of expansion also drives up overall market load factors (for all airlines) to 84%, which be a beneficial commercial outcome for all airlines, though is potentially an essential requirement in a rising cost, falling yield environment.

3.6 SHORT TERM FORECAST – JETSTAR EXIT

Table 2 Short Term Traffic Forecast assuming a Jetstar Exit Scenario

Seat Capacity								
Airline	Route	FY19	FY20	FY21	FY22	FY23	FY24	FY25
NZ	AKL	474,728	488,352	514,277	525,825	539,496	554,063	554,063
NZ	CHC	130,032	136,803	154,238	161,212	165,404	169,870	174,626
NZ	WLG	165,054	166,145	168,745	174,492	179,029	183,862	189,011
JQ	AKL	135,055	127,870	128,748	130,211	130,211	130,211	0
S8	BHE	5,544	5,508	5,472	6,390	6,390	6,390	7,285
Total		**910,412**	**924,677**	**971,479**	**998,130**	**1,020,530**	**1,044,396**	**924,984**

Growth Rates						
FY20	FY21	FY22	FY23	FY24	FY25
2.9%	5.3%	2.2%	2.6%	2.7%	0.0%
5.2%	12.7%	4.5%	2.6%	2.7%	2.8%
0.7%	1.6%	3.4%	2.6%	2.7%	2.8%
-5.3%	0.7%	1.1%	0.0%	0.0%	-100.0%
-0.6%	-0.7%	16.8%	0.0%	0.0%	14.0%
1.6%	**5.1%**	**2.7%**	**2.2%**	**2.3%**	**-11.4%**

Passengers								
Airline	Route	FY19	FY20	FY21	FY22	FY23	FY24	FY25
NZ	AKL	395,536	411,162	436,960	448,992	462,530	475,974	448,271
NZ	CHC	100,574	105,961	115,906	121,642	126,536	131,675	137,074
NZ	WLG	132,287	133,280	135,388	139,969	143,608	147,485	151,615
JQ	AKL	110,530	106,648	108,905	111,423	112,725	113,923	0
S8	BHE	3,117	3,185	3,271	3,840	3,968	4,091	4,664
Total		**742,044**	**760,236**	**800,430**	**825,866**	**849,368**	**873,148**	**741,624**

Growth Rates						
FY20	FY21	FY22	FY23	FY24	FY25
4.0%	6.3%	2.8%	3.0%	2.9%	-5.8%
5.4%	9.4%	4.9%	4.0%	4.1%	4.1%
0.8%	1.6%	3.4%	2.6%	2.7%	2.8%
-3.5%	2.1%	2.3%	1.2%	1.1%	-100.0%
2.2%	2.7%	17.4%	3.3%	3.1%	14.0%
2.5%	**5.3%**	**3.2%**	**2.8%**	**2.8%**	**-15.1%**

Load Factor								
Airline	Route	FY19	FY20	FY21	FY22	FY23	FY24	FY25
NZ	AKL	83.3%	84.2%	85.0%	85.4%	85.7%	85.9%	80.9%
NZ	CHC	77.3%	77.5%	75.1%	75.5%	76.5%	77.5%	78.5%
NZ	WLG	80.1%	80.2%	80.2%	80.2%	80.2%	80.2%	80.2%
JQ	AKL	81.8%	83.4%	84.6%	85.6%	86.6%	87.5%	
S8	BHE	56.2%	57.8%	59.8%	60.1%	62.1%	64.0%	64.0%
Total		**81.5%**	**82.2%**	**82.4%**	**82.7%**	**83.2%**	**83.6%**	**80.2%**

Growth Rates						
FY20	FY21	FY22	FY23	FY24	FY25
0.9%	0.8%	0.4%	0.3%	0.2%	-5.0%
0.1%	-2.3%	0.3%	1.0%	1.0%	1.0%
0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
1.6%	1.2%	1.0%	1.0%	0.9%	
1.6%	1.9%	0.3%	2.0%	1.9%	0.0%
0.7%	**0.2%**	**0.3%**	**0.5%**	**0.4%**	**-3.4%**

The significant variable in the second version of the short-term forecast is to illustrate the impact of Jetstar's withdrawal from their regional New Zealand network. Whilst airline insights at this time do identify this as a short-term possibility, it has been acknowledged by the Qantas Group that the Jetstar domestic network in New Zealand operates for strategic value, and is not profitable at this time.

This lack of commercial performance is coupled with the existing Q300 aircraft fleet being 20 years old by 2024-25 and likely nearing the end of their economic lives. Unless a replacement strategy is identified (currently not known) then the retirement of the fleet would appear probable.

The impact of not retaining Jetstar service is significant, as the immediate impact for Hawke's Bay Airport is the loss of 130k annual seats, and nearly 114k annual passengers. The ongoing impact also needs to consider how many of those seats are replaced by Air New Zealand if they were to become once again the sole operator on the route. The following examples illustrate two contrary scenarios; in the first instance seat capacity is reduced with the loss of competition, while in the second example the opposite has occurred. This suggests that there is no fixed rule to how Air New Zealand could respond as it all depends on conditions such as market demand, aircraft availability, route profitability, as well as the profitability of other routes competing for the same fleet within an airline.

In the first instance when Jetstar entered the Wellington-Dunedin route in October 2015, Air NZ gradually expanded its capacity on the route over the following two years by roughly the same number of seats as the Jetstar service. This included transferring the route from a turboprop/jet mix, to primarily a jet service to match the aircraft operated by Jetstar. The slow response suggests that accessing more jet capacity required more forward planning by the Air New Zealand team.

Table 3 Annual Seats on DUD/WLG by Airline

Annual Seats - DUD/WLG			
	JQ	NZ	Air NZ Change Since JQ Entry
Pre-JQ	0	284,000	0
JQ First Year	62,000	315,000	+31,000
JQ Second Year	62,000	345,000	+61,000
JQ Exit	0	285,000	+1,000

(Source: IATA AirportIS)

With the announcement of JQ's withdrawal from the route from June 2019, Air New Zealand reduced its scheduled capacity to almost the same level as pre-Jetstar. This counter response highlights both the additional stimulation competition can add to a route, and the potential risk of a route being over-supplied with capacity and losing the competition and stimulated capacity that it created.

The benefits of a competitive response can be limited in time and last only as long as the perceived competitive threat exists. However, it also shows the willingness to contain Jetstar competition to a rate of less than 30% of total capacity in the market.

In the second instance, Jetstar has reduced capacity in the Auckland-New Plymouth sector during the third and fourth years of operations. However, Air New Zealand has continued to add capacity in the affected years.

Table 4 Annual Seats on AKL/NPL by Airlines

Annual Seats AKL/NPL			
	JQ	NZ	NZ Change vs Pre-JQ
Pre-JQ		295,860	
JQ First Year	97,720	305,990	10,130
JQ Second Year	97,450	298,210	2,350
JQ Third Year	75,680	308,760	12,900
JQ Fourth Year	66,010	314,010	18,150

(Source: IATA AirportIS)

For Jetstar to become 'investment grade' for the Qantas Group and worthy of investment in new fleet to replace the Q300s, Jetstar in New Zealand will need to ensure they increase the quality of their revenue. This can only come about largely by growing corporate and government market share, as well as testing the price elasticity of leisure-based market segments.

This revenue growth, coupled with continuing to maintain operational savings and cost efficiencies in the coming years is the key to Jetstar becoming a sustainable competitor airline to Air New Zealand for the long term. The airline is expert at aggressive cost-savings; the solution for Jetstar viability has to come from increased yields on a fleet of aircraft that cannot operate at low cost airline yields.

4 LONG-TERM FORECAST

4.1 THE LONG-TERM FORECAST

The long-term traffic forecast is blended and extended from the short-term forecast from FY25 and ends at FY2045. It is a top-down, demand-based forecast, which assumes no supply-side (capacity) constraint.

It has been confirmed with Hawke's Bay Airport management that there is no evidence of air and land space constraint at the airport within the forecast horizon. It is also assumed that in the long run, airlines would continue to provide sufficient capacity to meet market demand.

This forecast therefore is only dependent on future demand for air transportation in the Hawke's Bay area.

4.2 FACTORS AFFECTING LONG-TERM AIR TRAFFIC DEMAND

Over the long run, it has been observed that air traffic growth correlates closely with GDP growth[6]. Therefore, GDP growth projections form the basis of Hawke's Bay Airport's long-term traffic forecast.

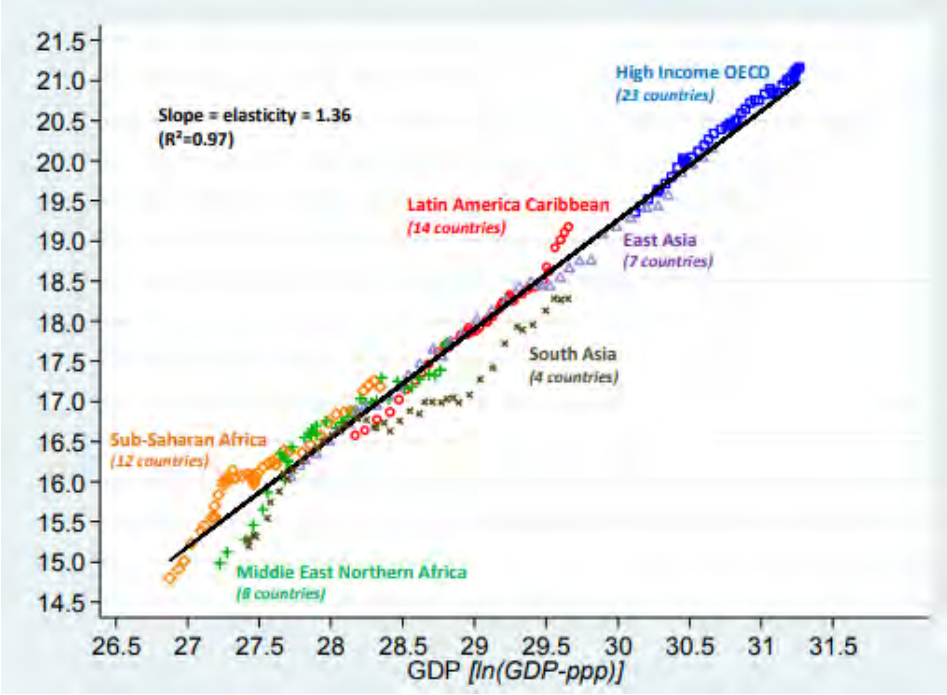


Figure 30 Relationship between Capacity Provision and Economic GDP Growth (1970 – 2013) *(Source: Air traffic and economic growth: the case of developing countries)*

GDP in turn is a function of population and economic activity growth, which then determine the demand for travels.

Apart from GDP growth, factors such as the stimulation of direct flights, choice of carriers and fare stimulation impact 20%-40% of demand for air travel[7]. A example of this is Jetstar's entry into the New Zealand regional

[6] Air traffic and economic growth: the case of developing countries. PSE Working Papers, 2016-09, François Bourguignon, Pierre-Emmanuel Darpeix
[7] Boeing Current Market Outlook 2013-2032

market, which stimulated air travels by direct service and lower air fare – around a 26% increase in the affected markets and a corresponding 21% decrease in average domestic air fares.

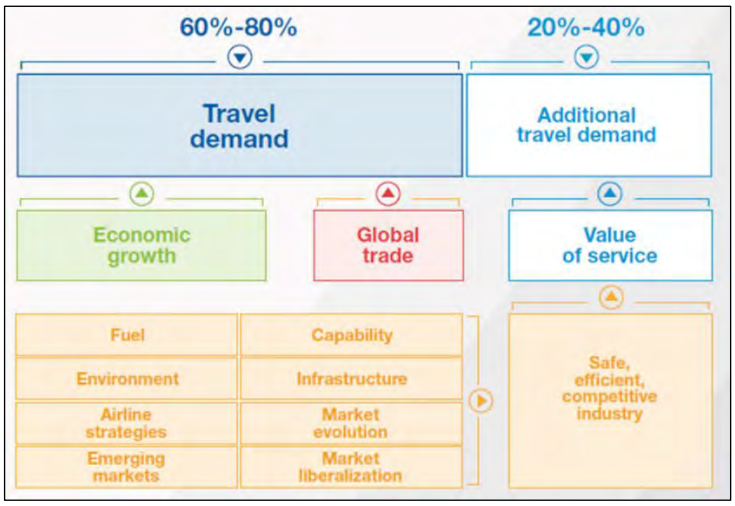


Figure 31 Components for Air Traffic Demand (Source: Boeing Current Market Outlook 2013-2032)

4.3 NEW ZEALAND IN 2045

The Ministry of Transport[8] identified key elements that affect the future in the transport sector. Below are those that relate to air transportation:

- Population is growing, but unevenly with most growth in the 'golden triangle' (Auckland, Waikato, Bay of Plenty)
- Our population is ageing and older New Zealanders remain active in the workforce
- Household incomes are increasing and this may mean more travel, but mostly by car
- New technologies such as electric vehicles are emerging
- At the same time, other technologies such as online networking and shopping are becoming a substitute for transport
- Our trade with the world is growing, which means that our ports and airports are getting busier
- More international tourists are visiting New Zealand and New Zealanders are making more overseas trips

[8] MoT, Transport Outlook Future Overview, Future State, Nov 2017

Based on these macro trends, the report outlined five scenarios:

Five scenarios modelled in the Ministry of Transport traffic forecast:

Base Case	- Slow, non-disruptive technological changes - Medium economic and population growth, focused on the Golder Triangle areas
Staying Close to the Action	- Medium economic and population growth - People prefer to line in the central city and inner suburbs
Golden Triangle	- Fast population and economic growth - Sprawling suburbs emerge and suburban lifestyles are popular
Metro-Connected	- With improvements in information and communication technologies, employers can distribute their operations across the country - Medium population and economic growth in all large towns and cities - Domestic air travel increases as colleagues working remotely occasionally visit the head office
@Home in Town and Country	- Fast population and economic growth - Many people can work almost anywhere including in small towns and rural areas - With a more dispersed population, there are more flights to regional centres

Source: MoT, Transport Outlook Future Overview, Future State, Nov 2017

These economic and demographic changes result in domestic origin-to-destination departure growth ranging from 92% to 324%, between 2015 and 2043, and is shown in table 30.

Note the large difference in the resulting growth in the scenarios, which is directly due to population and economic expansion. There is also an assumption that there will be more of a willingness by New Zealanders to live in the country and occasionally travel by air to visit the office (if working away from office).

In the high growth cases, technological changes will generate air traffic flows, as well as demand for air service as part of a new supply chain.

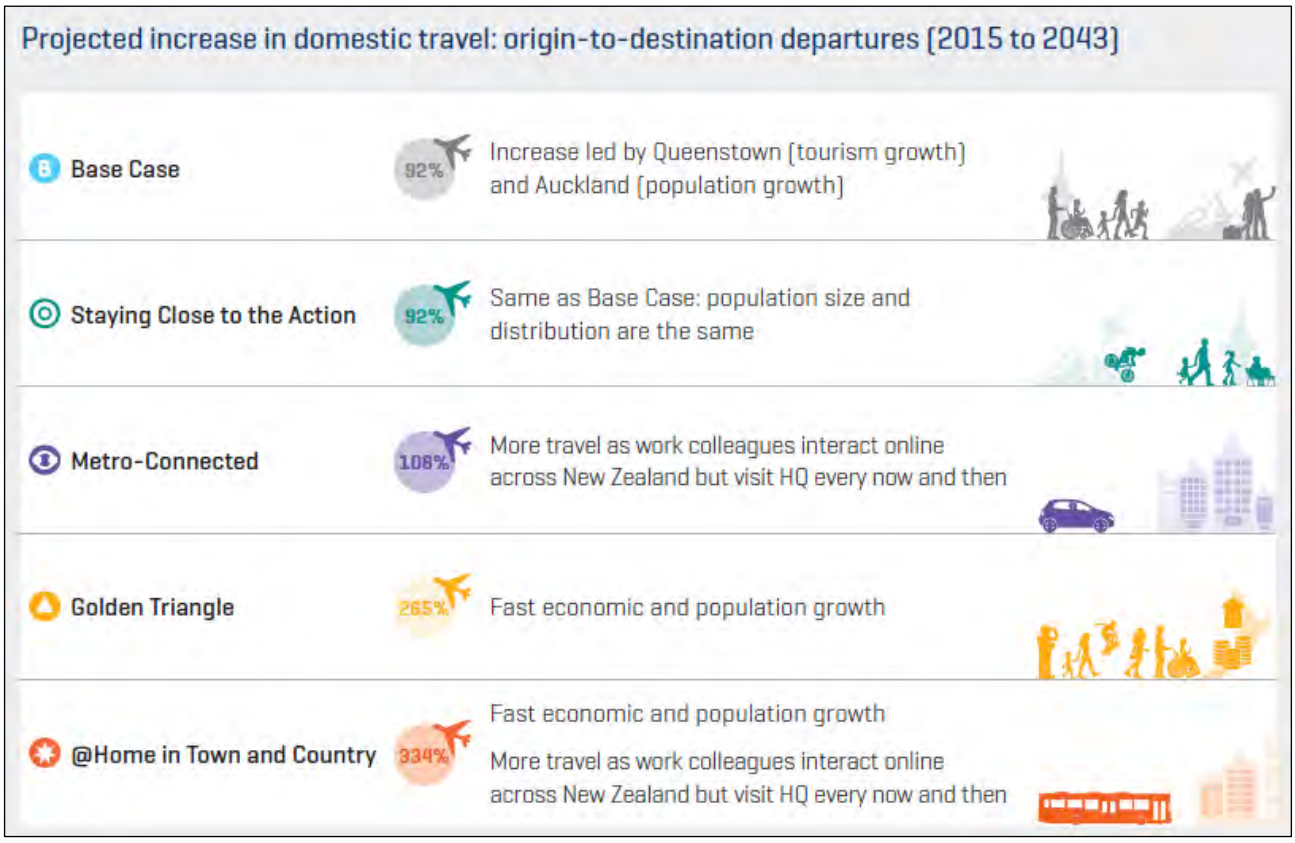


Figure 32 Projected Increases in Domestic Travel by Scenario (Source: MoT, Transport Outlook Future Overview, Future State, Nov 2017)

4.4 HAWKE'S BAY TRAFFIC FORECAST

According to Statistics New Zealand's medium-term projections, total New Zealand population is forecast to grow by 33.3% from FY2013 to FY2043, rising to a total population of 5.9 million people.

This total corresponds to a 0.96% change per annum. Hawke's Bay population is expected to grow by 8.1%, equivalent to 0.26% annual population growth rate. This grow rate is on par with other similar regions in New Zealand.

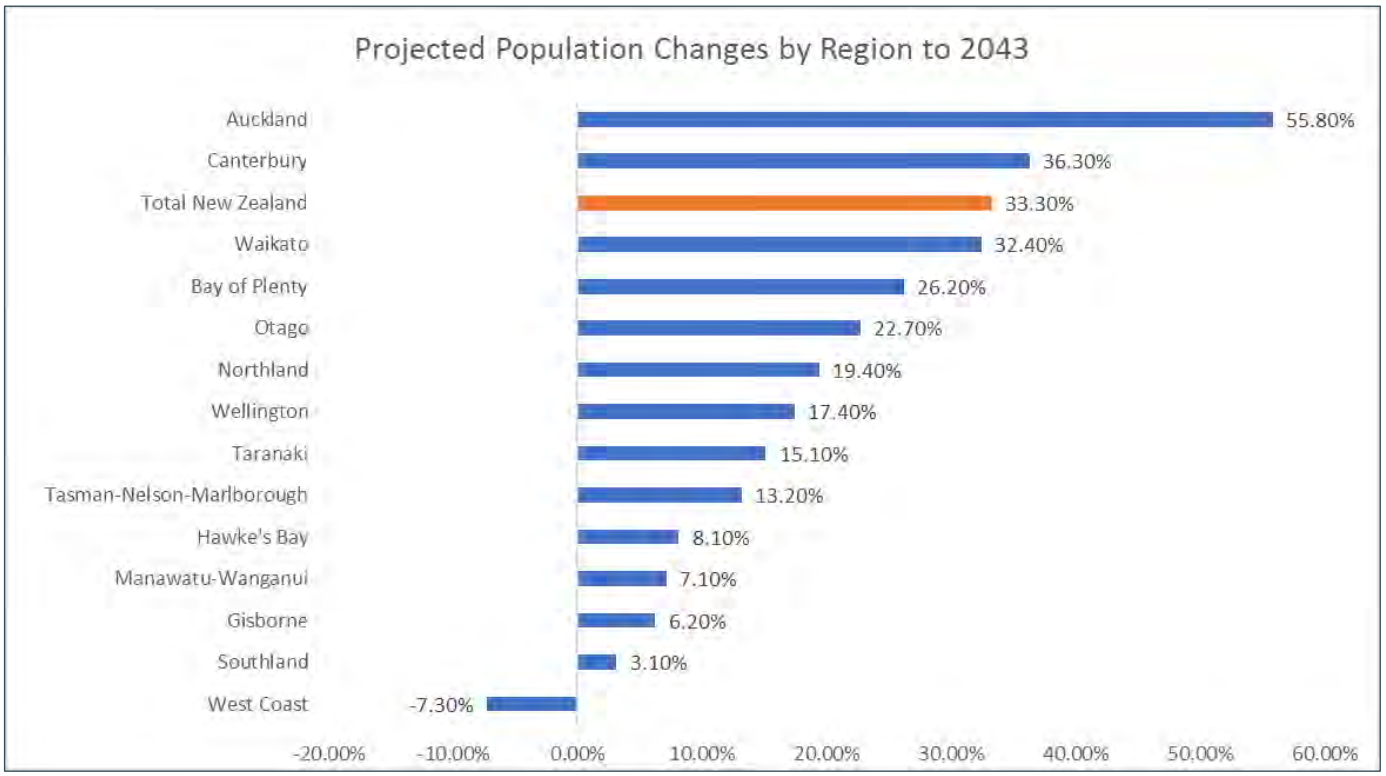


Figure 33 Population Forecast by Region between FY13 and FY43 (Source: Statistics NZ population forecast)

With this population forecast, coupled with other economic growth and lifestyle preferences, the Ministry of Transport has projected domestic departure growth for the Hawke's Bay region of between 75% (Base Case) and 313% (@Home in Town and Country) from 2015 to 2043. This corresponds to annual growth rates of between 1.9% and 4.8%.

	Base Case Staying Close to the Action	Metro-Connected	Golden Triangle	@Home in Town and Country
Northland	91%	103%	264%	339%
Auckland	105%	111%	301%	344%
Waikato	81%	99%	288%	323%
BoP (Tauranga)	81%	93%	314%	322%
BoP (Rotorua)	87%	99%	3262%	335%
Gisborne	71%	77%	217%	310%
Hawke's Bay	75%	97%	221%	313%
Taranaki	78%	102%	226%	316%
Manawatu-Wanganui	76%	89%	227%	317%
Wellington	83%	104%	239%	322%
Tasman-Nelson	77%	89%	218%	331%
Marlborough	69%	77%	211%	276%
West Coast	51%	65%	165%	289%
Canterbury	94%	113%	258%	337%
Otago (Queenstown)	111%	140%	297%	385%
Otago (Dunedin)	85%	112%	241%	323%
Southland	60%	75%	178%	303%
New Zealand	**92%**	**108%**	**265%**	**334%**

Figure 34 Projected Growth in Domestic Passenger Departures by Region (2015-2043) (Source: MoT, Transport Outlook Future Overview, Future State, Nov 2017)

Note that these are origin-to-destination departures (ie. number of departing trips), and therefore represent one-way travel only.

	Current (2015)	Projected (2043)			
		Base Case Staying Close to the Action	Metro-Connected	Golden Triangle	@Home in Town and Country
Northland	14	35	36	41	45
Auckland	3,087	8,349	8,133	10,614	10,159
Waikato	9	23	23	32	29
BoP (Tauranga)	20	52	52	74	66
BoP (Rotorua)	15	34	34	47	45
Gisborne	11	26	27	31	35
Hawke's Bay	38	90	96	106	119
Taranaki	35	85	91	100	111
Manawatu-Wanganui	40	93	97	109	124
Wellington	513	1,238	1,320	1,454	1,611
Tasman-Nelson	44	105	107	124	137
Marlborough	15	36	36	42	48
West Coast	1	2	2	2	3
Canterbury	738	1,843	1,929	2,160	2,344
Otago (Queenstown)	272	814	820	969	1,001
Otago (Dunedin)	63	143	163	168	189
Southland	13	29	30	34	39
New Zealand	**4.9 million**	**13 million**	**13 million**	**16 million**	**16 million**

Figure 35 Projected International Departures by Region ('000s per year 2015-2043) (Source: MoT, Transport Outlook Future Overview, Future State, Nov 2017)

In terms of international departures, Hawke's Bay growth is projected to be between 3.1% (Base Case) and 4.2% (@Home in Town and Country) per annum.

From a Hawke's Bay Airport's perspective, international departures translate into additional demand for domestic air services serving domestic air hubs, generally to Auckland Airport, to facilitate connecting to international flights.

In comparison with Hawke's Bay's past GDP growth and capacity growth (shown below), the growth rates of the Base Case and @Home in Town and Country are moderate. They are appropriate to be applied over the long-term.

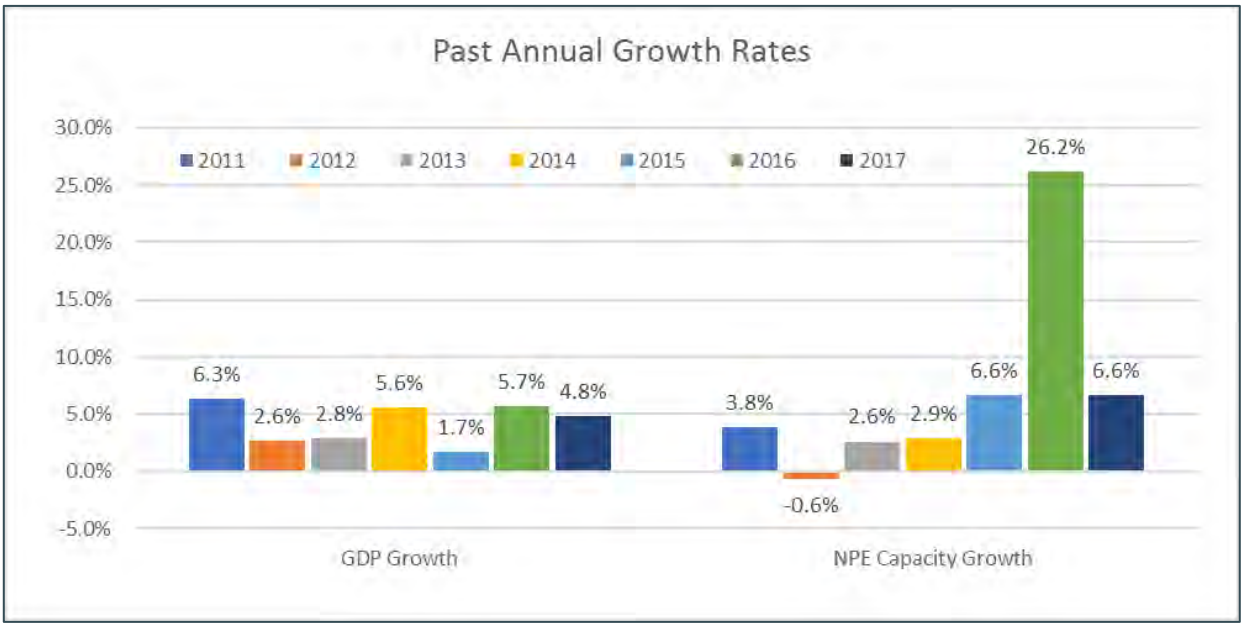


Figure 36 Historic GDP and Seat Capacity Growth Rates at Hawke's Bay Airport (Source: AirportIS and MBIE)

Hawke's Bay Airport long term traffic forecast is modelled from FY2025. Extended forecasts from the short-term forecast, three scenarios (Low, Medium and High) were modelled. The resulting forecast passenger numbers and their respective growth rates for every five-year period are shown below. Detailed annual passenger numbers are provided in the Appendix 1.

Table 5 Passenger and Growth Rates for Various Scenarios

Passenger Number

Scenarios	FY30	FY35	FY40	FY45
Low	953,972	1,013,928	1,077,653	1,145,382
Medium	982,015	1,080,672	1,195,197	1,325,148
High	1,071,498	1,285,469	1,546,928	1,866,749

Growth Rates

Scenarios	FY30	FY35	FY40	FY45	CAGR
Low	6.3%	6.3%	6.3%	6.3%	1.2%
Medium	9.4%	10.0%	10.6%	10.9%	2.0%
High	19.4%	20.0%	20.3%	20.7%	3.7%

The 'Low' scenario is the most pessimistic. It extends from the low short-term forecast at FY2025, and assumes that JQ would leave the NZ regional domestic market. Thus, it adopts a low population and traffic growth series of assumptions. This results in total passenger traffic at Hawke's Bay Airport of 1.1 million by FY2045. A total traffic volume of 1.1 million passengers represents is a 58% growth over FY2018 traffic.

A total of 1.1 million passenger movements produces a compounded annual growth rate (CAGR) of 1.2% between FY2025 and FY2045.

The 'Medium' scenario assumes Jetstar's operations at Hawke's Bay Airport remain largely unchanged, and uses the Base Case growth rates from MoT's forecast; approximately 2%. The forecast passenger traffic for Hawke's Bay at FY45 is 1.3 million, 83% higher than passenger numbers in FY18. This is the equivalent of a growth of 2.0% pa.

The 'High' forecast also assumes that Jetstar's operations at Hawke's Bay Airport remain, and applies the higher '@Home in Town and Country' growth rates. This generates a FY2045 forecast of 1.9 million; a 158% growth

over FY2018 traffic. This is the most positive and aggressive scenario with the highest rate of growth of 3.7% pa.

The resulting forecast are illustrated in Figure 35 below.

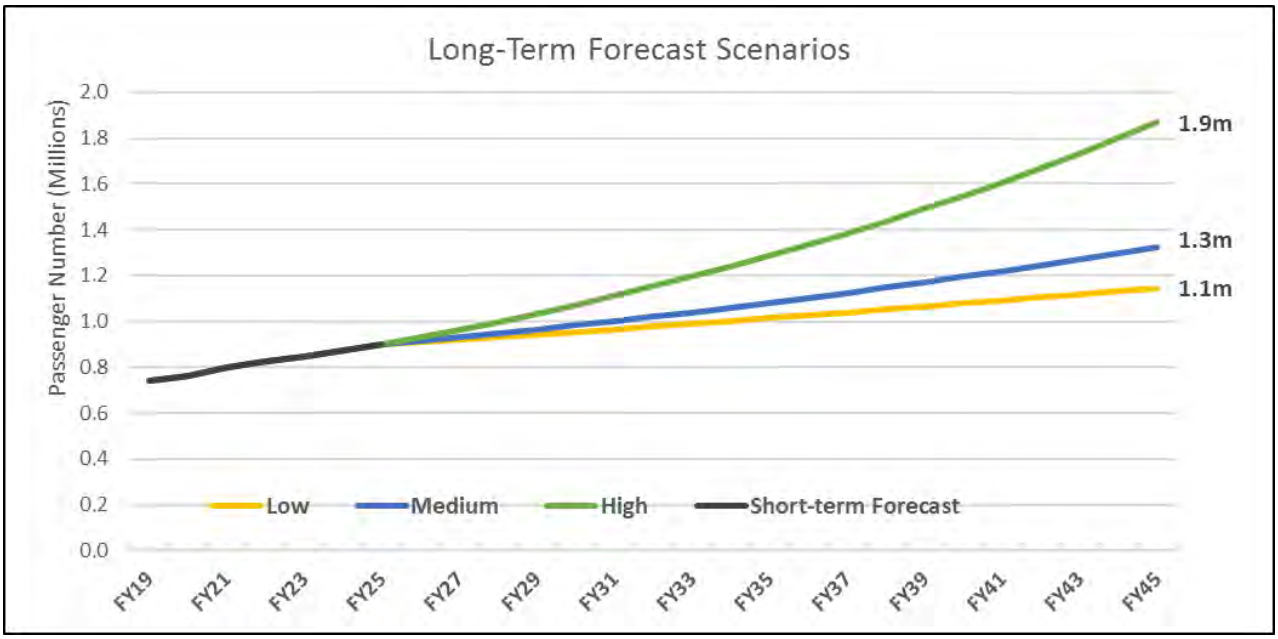


Figure 37 Long-Term Forecast Scenarios for Hawke's Bay Airport

The annual low and high growth rates of between 1.2% and 3.7% are within a reasonable range based on past traffic growth rates in Hawke's Bay Airport (see Figure 34). Historic growth rates have ranged from -0.6% to 6.6% in the past seven years (excluding the exceptional 26.2% growth in 2016 coinciding with Jetstar's entry into the regional NZ market).

Based on this historical growth trends, the 'Medium' scenario with 2.0% CAGR appears to be achievable. The 'Low' scenario covers the possibility of a downturn if economic or population growth were to experience an unexpected slow growth period. Any loss of Jetstar regional services without mitigating capacity expansion would certainly force a lower rate of growth at the Airport.

Compared with current passenger volume of 723,400 in FY18, passenger numbers at the Hawke's Bay Airport is to reach 150% (1.08 million) between FY31 and FY41. This is first of the two benchmark passenger numbers for the airport, at which point terminal and probably airspace capacity required to be checked.

The second benchmark is the point when passenger number doubles that of FY18, which is when it reaches 1.44 million. Based on the scenarios modelled, this is only going to happen within the long-term planning period if the 'High' scenario materialised. If that is the case, the airport would see passenger numbers surpassing the 1.44 million (200% above FY18 volume) in FY39.

5 FREIGHT INSIGHTS

5.1 HAWKES BAY FREIGHT ASSESSMENT

Christchurch Airport has peer reviewed the Phase One of the freight study undertaken by BERL, however we are also pleased to provide some additional commentary around the freight capacity offered by existing airline operators, and what we perceive the opportunity, and limitations to be, both on the demand and supply sides.

Freight revenue represents a sizeable revenue opportunity to both airline and airport operators, and for network airlines, with freight revenue averaging 12-15% of total operating revenue. Some airlines in our region sit slightly below this, with Air New Zealand reporting 9% of operating revenue that was contributed by freight (Air New Zealand FY18 annual result investor presentation).

Conversely, some are significantly higher on either a route or network basis, such as those from large manufacturing centres or with large Ecommerce platforms. Freight provides high quality revenue for airlines, and belly hold capacity in passenger airlines provides the backbone of global air freight supply.

However, freight is a seasonal service and is generally directionally imbalanced, in that the New Zealand market tends to export greater volumes than it imports, due to our agricultural production. Inversely, the current air freight balance at Hawke's Bay Airport is likely to favour imports by both volume and value, as Ecommerce consignments and express parcel deliveries are likely to form the core of the current usage.

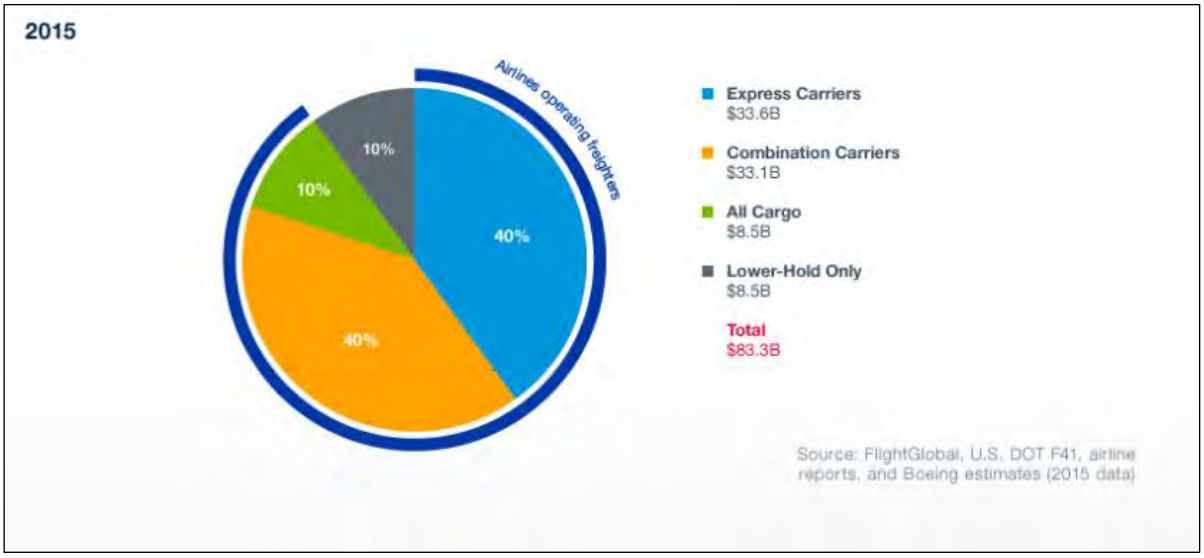


Figure 38 IATA Air Freight Composition Analysis (Source: IATA Air Cargo)

For airports, freight is generally a commercial property opportunity, as airport pricing generally does not monetise freight carried as belly hold, but only for dedicated freight aircraft movements. Airports that have large parcels of developable land on campus may be well-placed to attract warehousing, freight forwarding and logistics firms who place value on having airside access, or who can offer mode transfers of their products such as between air and road, through a single location.

The product types New Zealand freights is highly seasonal, with exports dominated by perishable products such as dairy, meat and seafood exports. Imports represent a significantly smaller share of freight volume, with this segment dominated by E-commerce, manufactured goods such as pharmaceuticals, and perishable foods in New Zealand's winter season.

These trends are highlighted by a report PWC commissioned by Christchurch Airport, which assessed the mix of imports and exports by season and product type. While this was drawn from South Island data, the characteristics are similar nationwide.

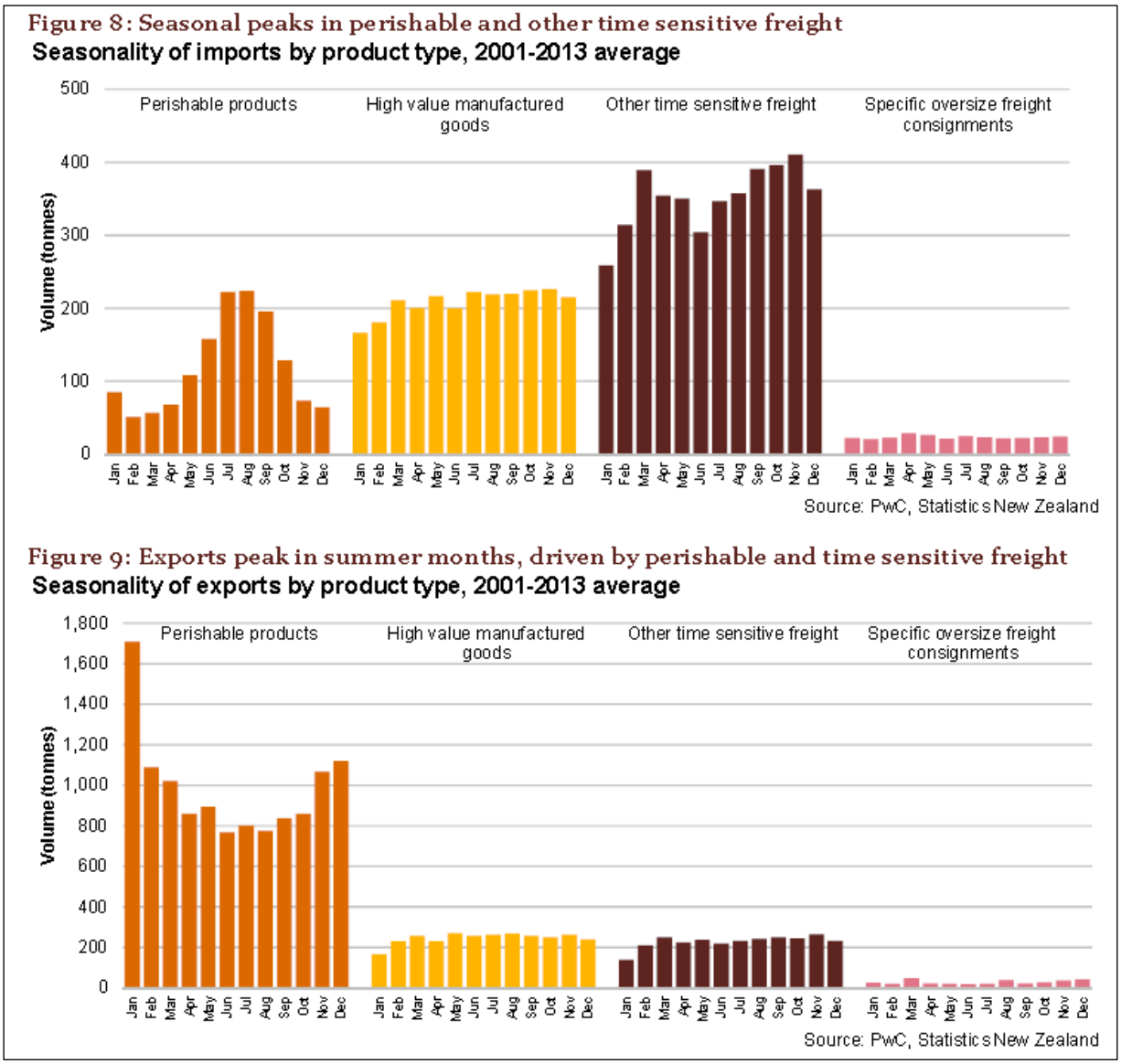


Figure 39 Seasonality of Imports & Exports by Product Type 2001-13 (Source: PWC report commissioned for CIAL)

The counter-seasonality of exports and imports is also highlighted on the below chart which charts the monthly variations of import and export movements through Christchurch. This demonstrates the opportunity which exists for freight operators to supplement their services with freight year-round:

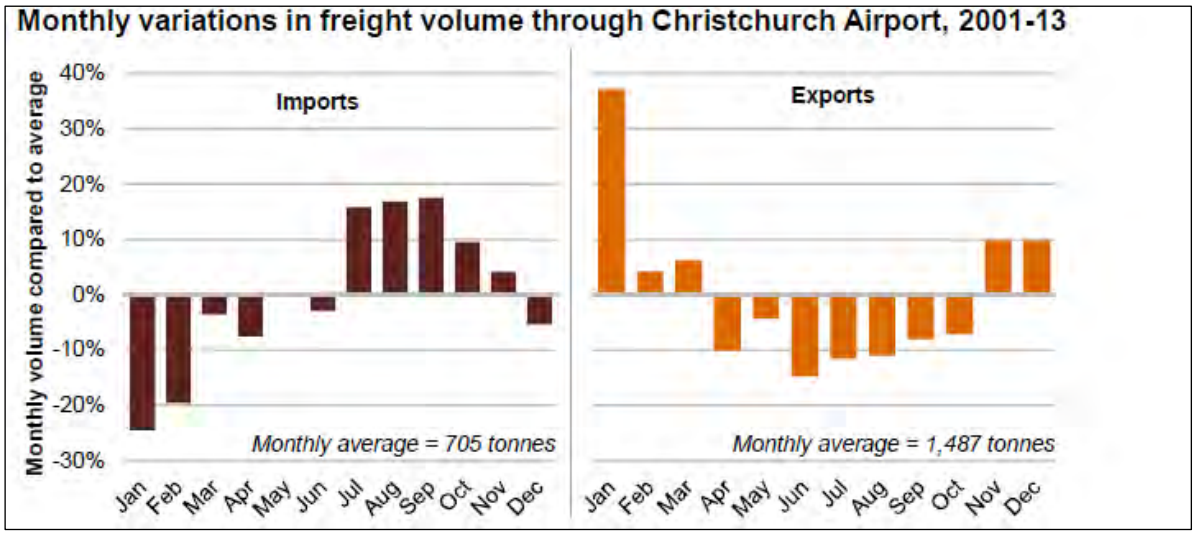


Figure 40 Seasonal variations in freight volume at Christchurch Airport (Source: PWC report commissioned for CIAL)

5.1.1 EXISTING FREIGHT CAPACITY

Hawke's Bay Airport's current airline partners take a slightly different approach to freight, and this can be summarised as a key difference between network and low cost carriers.

Air New Zealand offers an active presence in the national and global freight market, offering belly hold capacity in their regional ATR & Q300 aircraft, right up to their widebody fleet of Boeing 787s and 777s. Capacity on turboprop services is limited however, to loose-loaded boxes, crates and mail bags, and total capacity per flight is generally less than 1 tonne, depending on other factors such as aircraft operating weights & passenger baggage volume.

Jetstar also offers a small capacity of hold capacity for freight, however with that comes the natural limitations of being a low-cost carrier. Christchurch Airport's understanding at this time is that they carry very little freight on existing services, with the exception being via the Qantas Courier business (express delivery movements), which uses Jetstar capacity on their New Zealand domestic network.

While freight revenue is extremely valuable and important to the wider Qantas Group, freight has been a lower priority for Jetstar here in New Zealand. That said, there is an opportunity here for Jetstar to supplement its revenue stream to enhance profitability across its domestic services. Ground handling for air cargo on Jetstar flights must not jeopardise the integrity of the fast turnaround.

5.1.2 AREAS OF OPPORTUNITY

Christchurch Airport assesses that any dedicated freight services would need to be a partnership based approach between airport, local government, key exporters and logistics firms. Any new service would need to solve the ever-present hurdle of directional imbalance, and look to develop bi-directional demand to maximise the opportunity for a successful service.

An opportunity may be to work with local high-value exporters to provide a time sensitive option to the Auckland and Christchurch hubs, where product can then be transferred to long haul services to key markets in Asia, North America and Europe. Imports would likely need to be developed via the growth in E-commerce and other express delivery services. The import market simply flows from the availability of the channels created by the export trade.

As always, the large delta in cost of supply between a surface transport service (road or rail) and an air service is the greatest barrier to entry, and Christchurch Airport's experience suggests that at this time there are few export industries willing to pay the premium for such an air service, instead accepting the longer journey of getting product to major hubs.

Our view would be in the short and medium term to consider the commercial property development area of Hawke's Bay Airport's portfolio closely, and look to develop opportunities with like-minded exporters and logistics firms who may be able to feed both existing capacity, and show interest in a longer-term view for dedicated freight aircraft. Any incremental support for Air New Zealand and JetStar's existing capacity would be highly valued by both airlines, and could support ongoing discussions for growth in frequency of services to and from Hawke's Bay Airport.

5.2 REVIEW OF BERL 'PHASE ONE' AIRFREIGHT FEASIBILITY STUDY

The Airfreight feasibility study produced by BERL offers an analysis of the current and future potential of the airfreight industry as it related to Hawke's Bay Airport. The authors of the report have conducted a thorough investigation by contacting Air New Zealand as well as key current and potential future users of air freight, and summarise the opportunities available to Hawke's Bay Airport as the subsequent phases of the investigation are commissioned.

In assessing the current volume and product type of airfreight, BERL have highlighted that Air New Zealand carry the majority of airfreight, with a small volume of freight using Jetstar services. All airfreight travelling to the major ports of Auckland, Wellington and Christchurch utilise existing passenger services, with a small selection of general aviation flights for overnight mail services to/from Gisborne. Of these destinations, Auckland is the key pathway, as Auckland Airport offers connections to not just Air New Zealand's growing international network, but to over twenty international airlines flying to a multitude of global cities, and more importantly, freight hubs such as Sydney, Hong Kong, Singapore and Los Angeles.

BERL correctly draw on insights from Christchurch Airport and Airbiz forecasts provided to Hawkes Bay Airport which illustrate that growth in the 2025 timeframe is likely to come from incremental growth in Air New Zealand and Jetstar's scheduled services, and that aircraft types offering increased freight capacity are not likely to arrive at Hawke's Bay Airport until post-2025. We also note that a current limitation to freight capacity using existing passenger turboprop services is access to capacity, given that airlines often require maximum available volume for passenger baggage (which is variable until very near to departure), and that current freight items have an imposed limit of 30kg due to being manually loaded onto the aircraft. If growth in capacity and freight demand is demonstrated to the airline group, they may be interested in investing in additional ground support equipment such as belt loaders which would facilitate heavier items, and larger aircraft servicing the region would also precipitate this requirement.

Christchurch Airport concurs with BERL's assessment of current and projected airfreight directionality, as the opportunity to grow the segment via the surge in Ecommerce is an industry factor which we believe will continue for the foreseeable future. Christchurch Airport also shares BERL and the respondent's view that the perishables export sector is an opportunity market, it will take time, capacity, economies of scale and supportive airport facilities to convert existing perishables from road to air, simply due to the large cost delta between the two modes.

In Section 5, BERL model the potential changes in annual air freight volume based on an extrapolation of Statistics New Zealand population estimates for the 2013-2043 period. The low, medium and high scenarios are then multiplied against existing air freight volumes per capita, which offers a forecast of potential inbound freight volumes to 2043. In Christchurch Airport's view, the potential volumes err on the side of conservatism, as the recent years of growth in Ecommerce and other express delivery services has grown at double-digit rates. From discussions with various freight forwarders and multi modal logistics firms at Christchurch Airport, we suggest that this rate of growth will continue and that this would reflect in sharper growth rates particularly for imports of air freight at Hawke's Bay Airport.

Christchurch Airport agrees with BERL's Section 6, which offers commentary on what Hawke's bay Airport can do to encourage more air freight. In particular, that in the 2025 period, growth opportunity for freight will feature as by-product of consistent growth in passenger demand. This in turn will generate incremental capacity growth from both Air New Zealand and other carriers, and put simply, growing passenger revenue is the best opportunity to maintain and expand a healthy second domestic carrier.

It is important to consider the role which regional security screening may play in changing the aircraft type mix operating to Hawke's Bay Airport. Post-2025, we suggest that there is an opportunity for Air New Zealand to deploy jet aircraft into additional regional destinations on domestic services, with either existing fleet, or a new type of aircraft being introduced (see Regional Jet information paper, Appendix 2). We encourage Hawke's Bay Airport to do all possible to be in a position to accommodate these aircraft, as they will offer a significant passenger experience upgrade, as well as increase capacity for air freight by a magnitude of five (based on Christchurch Airports modelling). Air New Zealand have indicated that any additional domestic jet routes are unlikely until security screening at regional airport has been implemented.

Any increase in dedicated freight aircraft is likely to be a longer-term proposition, as expanding beyond the cost delta between sending freight by road and as air freight on passenger services, there is another step change in operating costs when servicing freight via dedicated freight aircraft. In keeping with this theme, BERL's discussion with the Freightways/New Zealand Post joint venture which operates a domestic air freight network, was useful, and concludes that the relative distances to existing hubs such as Palmerston North and Auckland deems it unlikely that Hawke's Bay Airport would feature on their air freight network.

BERL draw conclusions that there is a commercial property opportunity, and a need to continue dialogue with potential freight and export partners to progress Hawke's Bay Airport's freight ambitions. Christchurch Airport concurs with this view, and we would encourage Hawke's Bay Airport to consider the type of facilities which might aid a growth in freight being transacted across the Hawke's Bay Airport campus. It may be an opportune time to investigate a multi-modal freight facility with airside access, which could be a shared facility used by different sectors and operators depending on season. Such a facility may have a cool storage element, and be appealing to short duration exports such as cherry and honey exporters, who would likely export via a mix of road and smaller volumes by air. It may be that such a facility is then used by existing freight forwarders at peak retail times such as the Black Friday period in November, and near Christmas, to expand on their existing facilities elsewhere. Such a facility is likely to be a useful attribute to Hawke's Bay Airport by focusing the airport campus as a freight hub, and while most of the initial volume would continue to travel by road and sea, airlines and freight forwarders alike would benefit from the proximity and accessibility to aircraft. Such a facility may be developed in an expandable way, in that it would cater for containerisation of air freight post 2025 when larger aircraft servicing Hawke's Bay Airport may occur.

In conclusion, we encourage Hawke's Bay Airport to continue to be ambitious in this area, to be a leader across the local export and freight sector, and engage with organisations working across this spectrum. We encourage Hawke's Bay Airport to use the master planning exercise and subsequent phases of the freight study to plan what facilities would be most useful to the industry and which operators may pay a premium for airside accessibility. We encourage Hawke's Bay Airport to focus largely on expanding air access on the three existing routes, and to do all possible to ensure that both existing domestic carriers are in good commercial health on the routes they fly to Hawke's Bay Airport, as this will be the best advocacy for continued growth in schedules, capacity, and the growth in air freight capacity which comes with it.

APPENDIX 1. Passenger Forecast

Short-term Traffic Forecast Assuming Jetstar Services are Maintained

Seat Capacity								
Airline	Route	FY19	FY20	FY21	FY22	FY23	FY24	FY25
NZ	AKL	474,728	488,352	514,277	525,825	539,496	554,063	569,576
NZ	CHC	130,032	136,803	154,238	161,212	165,404	169,870	174,626
NZ	WLG	165,054	166,145	168,745	174,492	179,029	183,862	189,011
JQ	AKL	135,055	127,870	128,748	130,211	130,211	130,211	130,211
S8	BHE	5,544	5,508	5,472	6,390	6,390	6,390	7,285
Total		910,412	924,677	971,479	998,130	1,020,530	1,044,396	1,070,709

Growth Rates					
FY20	FY21	FY22	FY23	FY24	FY25
2.9%	5.3%	2.2%	2.6%	2.7%	2.8%
5.2%	12.7%	4.5%	2.6%	2.7%	2.8%
0.7%	1.6%	3.4%	2.6%	2.7%	2.8%
-5.3%	0.7%	1.1%	0.0%	0.0%	0.0%
-0.6%	-0.7%	16.8%	0.0%	0.0%	14.0%
1.6%	5.1%	2.7%	2.2%	2.3%	2.5%

Passengers								
Airline	Route	FY19	FY20	FY21	FY22	FY23	FY24	FY25
NZ	AKL	395,536	411,162	436,960	448,992	462,530	475,974	489,301
NZ	CHC	100,574	105,961	115,906	121,642	126,536	131,675	137,074
NZ	WLG	132,287	133,280	135,388	139,969	143,608	147,485	151,615
JQ	AKL	110,530	106,648	108,905	111,423	112,725	113,923	114,907
S8	BHE	3,117	3,185	3,271	3,840	3,968	4,091	4,664
Total		742,044	760,236	800,430	825,866	849,368	873,148	897,562

Growth Rates					
FY20	FY21	FY22	FY23	FY24	FY25
4.0%	6.3%	2.8%	3.0%	2.9%	2.8%
5.4%	9.4%	4.9%	4.0%	4.1%	4.1%
0.8%	1.6%	3.4%	2.6%	2.7%	2.8%
-3.5%	2.1%	2.3%	1.2%	1.1%	0.9%
2.2%	2.7%	17.4%	3.3%	3.1%	14.0%
2.5%	5.3%	3.2%	2.8%	2.8%	2.8%

Short-term Traffic Forecast Assuming a Jetstar Exit Scenario

Seat Capacity								
Airline	Route	FY19	FY20	FY21	FY22	FY23	FY24	FY25
NZ	AKL	474,728	488,352	514,277	525,825	539,496	554,063	554,063
NZ	CHC	130,032	136,803	154,238	161,212	165,404	169,870	174,626
NZ	WLG	165,054	166,145	168,745	174,492	179,029	183,862	189,011
JQ	AKL	135,055	127,870	128,748	130,211	130,211	130,211	0
S8	BHE	5,544	5,508	5,472	6,390	6,390	6,390	7,285
Total		910,412	924,677	971,479	998,130	1,020,530	1,044,396	924,984

Growth Rates					
FY20	FY21	FY22	FY23	FY24	FY25
2.9%	5.3%	2.2%	2.6%	2.7%	0.0%
5.2%	12.7%	4.5%	2.6%	2.7%	2.8%
0.7%	1.6%	3.4%	2.6%	2.7%	2.8%
-5.3%	0.7%	1.1%	0.0%	0.0%	-100.0%
-0.6%	-0.7%	16.8%	0.0%	0.0%	14.0%
1.6%	5.1%	2.7%	2.2%	2.3%	-11.4%

Passengers								
Airline	Route	FY19	FY20	FY21	FY22	FY23	FY24	FY25
NZ	AKL	395,536	411,162	436,960	448,992	462,530	475,974	448,271
NZ	CHC	100,574	105,961	115,906	121,642	126,536	131,675	137,074
NZ	WLG	132,287	133,280	135,388	139,969	143,608	147,485	151,615
JQ	AKL	110,530	106,648	108,905	111,423	112,725	113,923	0
S8	BHE	3,117	3,185	3,271	3,840	3,968	4,091	4,664
Total		742,044	760,236	800,430	825,866	849,368	873,148	741,624

Growth Rates					
FY20	FY21	FY22	FY23	FY24	FY25
4.0%	6.3%	2.8%	3.0%	2.9%	-5.8%
5.4%	9.4%	4.9%	4.0%	4.1%	4.1%
0.8%	1.6%	3.4%	2.6%	2.7%	2.8%
-3.5%	2.1%	2.3%	1.2%	1.1%	-100.0%
2.2%	2.7%	17.4%	3.3%	3.1%	14.0%
2.5%	5.3%	3.2%	2.8%	2.8%	-15.1%

Long-term Traffic Forecast with Low, Medium and High Scenarios

Total Passengers											
	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
Low	897,562	908,570	919,714	930,995	942,413	953,972	965,673	977,517	989,507	1,001,643	1,013,928
Medium	897,562	913,448	929,820	946,693	964,085	982,015	1,000,518	1,019,614	1,039,326	1,059,676	1,080,672
High	897,562	929,421	962,678	997,396	1,033,645	1,071,498	1,110,910	1,151,946	1,194,674	1,239,164	1,285,469

Total Passengers											Growth
	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45	CAGR
Low	1,026,364	1,038,953	1,051,696	1,064,595	1,077,653	1,090,870	1,104,250	1,117,794	1,131,504	1,145,382	1.2%
Medium	1,102,276	1,124,509	1,147,392	1,170,947	1,195,197	1,220,009	1,245,397	1,271,373	1,297,952	1,325,148	2.0%
High	1,333,663	1,383,824	1,436,033	1,490,372	1,546,928	1,605,821	1,667,146	1,731,005	1,797,503	1,866,749	3.7%

APPENDIX 2. Analysis of new to market regional jets and possible entry into the New Zealand aviation landscape

Over the past decade, Air New Zealand (NZ) has undertaken a fleet simplification strategy, which has seen a significant reduction in the number of both domestic and international aircraft types and seat capacities. Whilst being able to offer a variety of seat counts allows an airline to 'right size' many of the markets which is serves, having many different types of aircraft and seat counts adds significant cost, and complexity to any airline's operation, especially a medium sized carrier like Air New Zealand.

In 2014, Air New Zealand had in its fleet various aircraft types with seating configurations totalling 19, 33, 50, 68, 133, 168, 171, 234, 302, 312, 342. The rapid withdrawal of the Beech 1900D, Boeing 737-300, Boeing 767-300 fleets have allowed Air New Zealand to both simplify its fleet strategy, as well as to significantly modernise its fleet with a consolidated group of fuel efficient aircraft types which will underscore its fleet development strategy through the 2020s and into the 2030s.

Air New Zealand currently operates two turboprop aircraft, the Bombardier Q300 (delivered 2005-07), ATR72-500/600 (1999-present), Airbus A320CEO/320NEO/321NEO (2004-present), the Boeing 787-9 (2014-present) and the Boeing 777 family (both 200ER and 300ER).

The downside to this consolidation has been the associated exit from various regional centres (Kaitaia, Whakatane, Kapiti Coast, Westport, Wanaka) due to the withdrawal of the B1900 fleet and its replacement, the 50-seat Q300 being too large to efficiently serve these small markets. Secondly, after the withdrawal of the 133 seat B737-300 from Air New Zealand's fleet, the wide delta between the 68 seat ATR72 and the 171 seat A320 has reduced Air New Zealand's flexibility on certain domestic routes, and the loss of a smaller jet aircraft has limited Air New Zealand's growth on secondary Tasman and Pacific routes where the A320 capacity is unneeded.

In recent years' aircraft manufacturers have launched new regional jet programmes which promise significantly improved operating economics in the 90-150 seat jet categories, and significantly, Airbus' acquisition of the former Bombardier C-Series regional jet programme signals a new era in the attractiveness which these new aircraft types offer potential airline customers. The purpose of this report is to summarise why the author believes that the Airbus A220 (formerly the C-Series) may be under consideration by Air New Zealand, as it looks to its future order book and identifies that a smaller capacity jet aircraft may be required for both domestic and short haul international operations.

Airbus A220 & Embraer E2 series

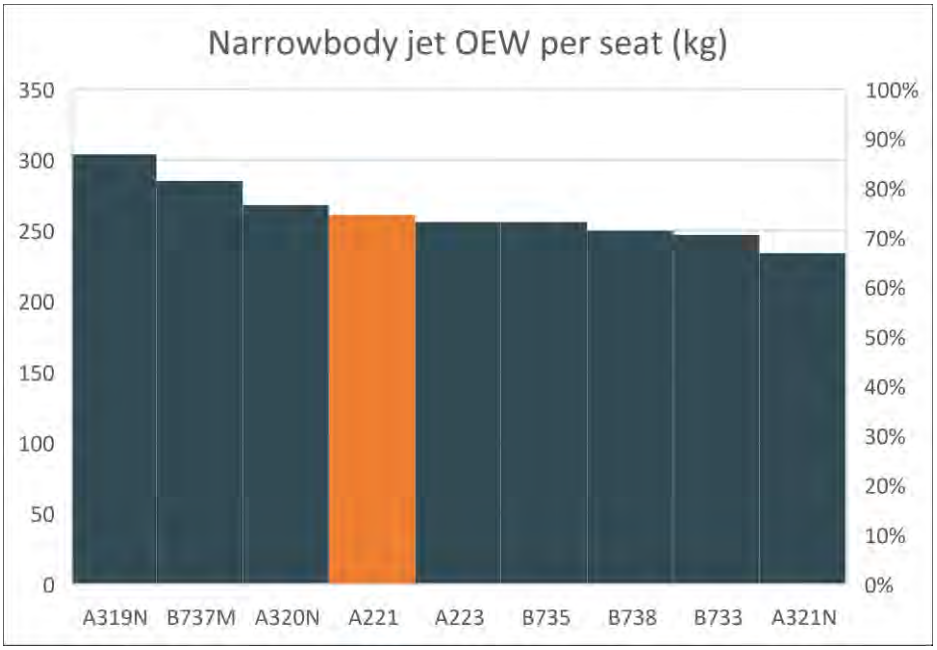
The two manufacturers have used different philosophies when bringing to the market their respective regional jet products. Brazilian manufacturer Embraer have modernised and re-engined their E170/190/195 series regional jets, re-naming them the E2. By using geared turbofan technology and use of composite materials, they have brought to the market and aircraft which is an evolution, rather than a revolution, and which is optimised for the 80-110 seat category.

The Airbus A220 on the other hand is a clean sheet design, with Airbus taking a majority stake in the programme in 2017, with a view toward increasing commonality with the existing range of Airbus aircraft, as well as using Airbus' scale to drive down the cost of production through economies of scale. The A220 is offered in two sizes, the -100 model which is optimised for the 110-130 seat category, and the larger -300 which seats up to 160 depending on airline configuration.

The operating economics & heightened maintenance costs of regional jets (versus their mainline counterparts) has historically been difficult for many network carriers, however these new models offer something quite different to their forebears, as new engine technology and extensive use of composite materials has led to significant weight reductions, aiding operating unit costs as well as extending the payload/range envelope. Airbus indicates that the A220 family offers a 20% lower fuel burn than previous generation comparable aircraft (such as the B737-300/500 and A319CEO), and this, combined with the Operating Empty Weight (OEW) reductions, indicates that unit costs on a CASK basis will be significantly lower than the A319NEO and 737-Max7 aircraft, and will in fact sit in between larger the A320NEO and A321NEO on per-seat metrics.

It is also important to note that the A220 family is exclusively powered by the Pratt & Whitney PW1500G turbofan, which shares over 90% component commonality with the PW1100G turbofans which power the Air New Zealand fleet of A320Neo & A321NEO aircraft.

To understand the weight savings, a useful measure is to compare the comparable narrowbody aircraft as a measure of OEW per seat, based on average seat densities.

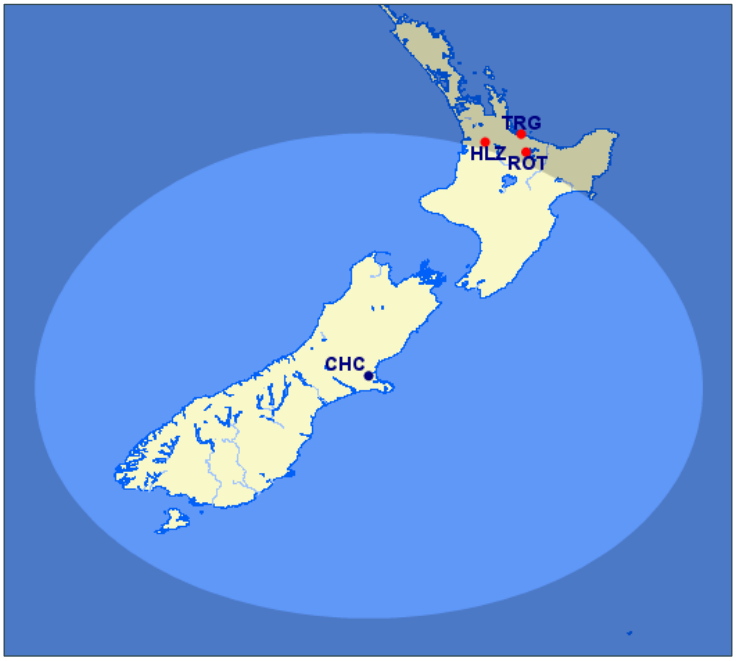


The chart demonstrates how the A220 family offer a sizeable weight saving compared to aircraft of comparable size (A319 and B737), offering per seat weights much closer to the range of larger narrowbody aircraft. When the fuel burn savings are factored in, the operating economics of aircraft is promising, and with a 3% performance improvement package promised by Airbus in 2020, the aircraft looks even more compelling to prospective operators.

How might a regional be used by Air New Zealand?

Industry sources and general economic principles generally agree on a 'sweet spot' of sector lengths of approximately 350nm where the economic begin to support jet operations over that of a turboprop. Factored in to this operating matrix is the speed advantage of jets (which is not realised on shorter sectors), and the gains achieved by the jet when fuel consumption at cruise altitude is realised. This reduces overall trip costs substantially, and again, cannot be realised on shorter sectors.

The below chart illustrates a 350nm radius at Christchurch, and highlights that key central North Island cities (Hamilton/Rotorua/Tauranga) are all beyond the nominal 350nm, and given their ability to take jet services, could be early candidates for regional jet service by Air New Zealand. It is also likely that a regional jet would allow Air New Zealand to 'right size' markets such as Christchurch-Queenstown and Christchurch-Wellington where the economics of an A320 are suboptimal, yet require a higher gauge operation at certain times than the ATR72 can offer.



The below chart illustrates the same 350nm radius at Auckland. With all of Auckland's largest regional centres inside the effective minimum range (Hawke's Bay Airport/Palmerston North/Nelson), use of a regional jet to these centres from Auckland would likely be restricted to peak morning and evening services, as a type of 'intelligent misuse' of the aircraft. This type of operation increases utilisation, effectively doubles seat capacity at peak times compared to an ATR72 movement, and can be paired with longer international sectors to balance out cycles and engine time.

From Auckland a regional jet operation would be useful for servicing thinner routes such as Auckland-Invercargill (which is unproven with the larger A320), and for maintaining frequency at off peak times for markets such as Dunedin and Queenstown.

Case Study: Air Baltic

Latvia's state airline, Air Baltic, was the launch operator of the A220-300, and uses a fleet of both the 100 and 300 models on its extensive network throughout Europe and Middle East. From its Riga hub, Air Baltic uses the A220 flexibly throughout its network, on very short sectors from around 150nm (35mins) to well over five hours' flight time and >2000nm (AUH). Air Baltic have reported greater dispatch reliability than their existing B737 fleet, and are reporting CASK (Cost per associated seat kilometre) of 1-2% better than the manufacturers claims.

The flexibility of deployment across both short and mid-range services, is likely to be of significant interest to Air New Zealand. Additionally, the A220 family shares similar width and pavement loading to the A320 family, and Airbus performance data suggests that the -100 model would be able to operate at, or near Maximum Take Off Weight from existing runway infrastructure at Hawke's Bay Airport/Tauranga/Hamilton/Rotorua/Palmerston North.

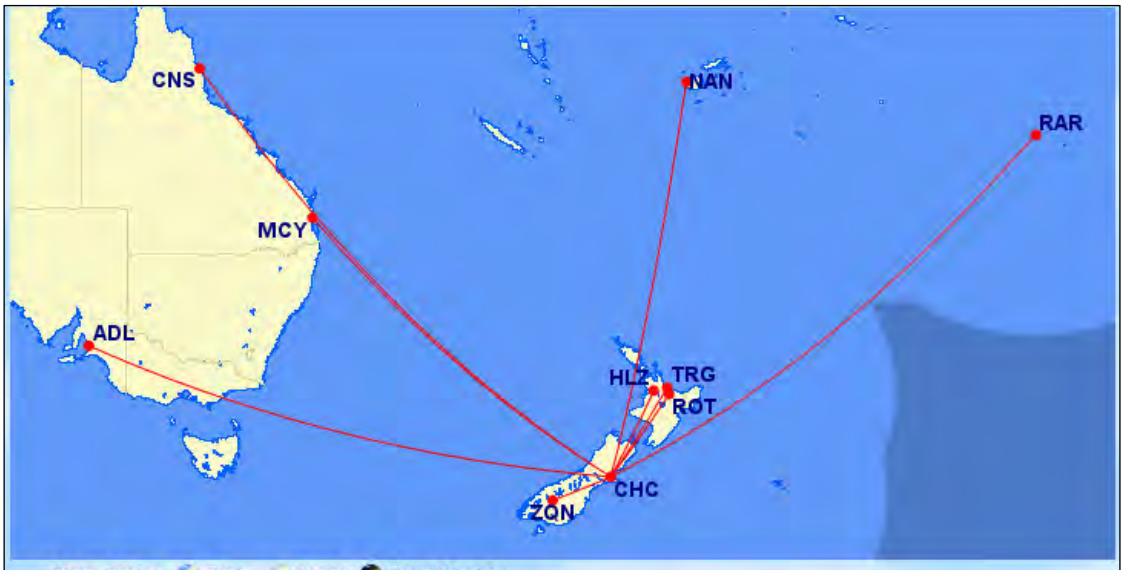
A sample of Air Baltic's network is illustrated below:

Map Style: Plain Light Blue Marble

Distances

From	To	Initial Heading	Magnetic Heading	Distance
RIX	LED	046° (NE)	038° (NE)	263 nm
RIX	ARN	313° (NW)	305° (NW)	252 nm
RIX	TLL	010° (N)	002° (N)	152 nm
RIX	CPH	263° (W)	255° (W)	386 nm
RIX	HAM	253° (W)	245° (SW)	518 nm
RIX	TLV	158° (S)	151° (SE)	1,562 nm
RIX	AUH	133° (SE)	125° (SE)	2,359 nm

Potential A220 deployment at Christchurch

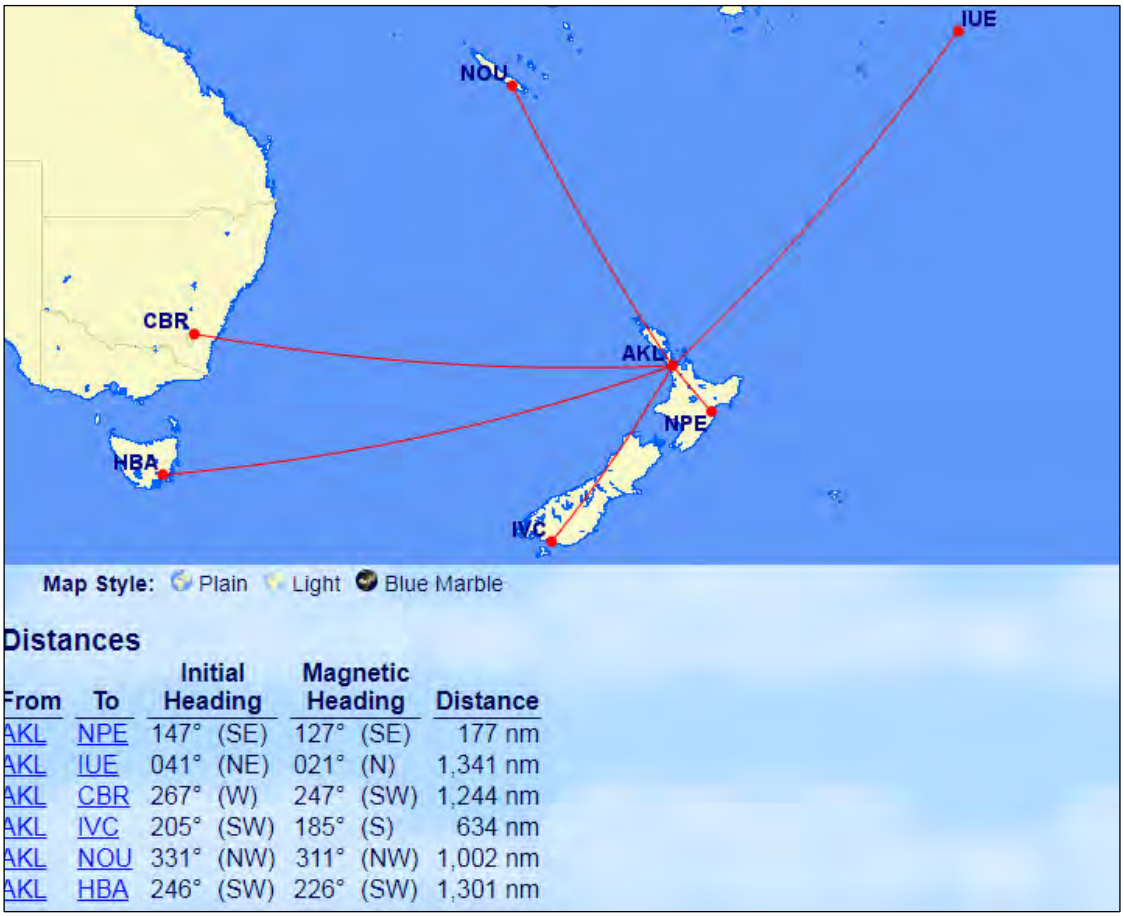


Distances

From	To	Initial Heading	Magnetic Heading	Distance
CHC	HLZ	022° (N)	358° (N)	361 nm
CHC	TRG	027° (NE)	003° (N)	387 nm
CHC	ZQN	239° (SW)	215° (SW)	188 nm
CHC	CNS	311° (NW)	287° (W)	2,096 nm
CHC	RAR	055° (NE)	031° (NE)	1,921 nm
CHC	NAN	011° (N)	347° (N)	1,561 nm
CHC	ADL	276° (W)	252° (W)	1,653 nm
CHC	ROT	029° (NE)	005° (N)	366 nm
CHC	MCY	311° (NW)	287° (W)	1,386 nm

Based on the Air Baltic experience, and what is known about the A220's range/payload profile as well as CASK unit cost information, it is likely that an A220-100 in Air New Zealand service would be configured to seat up to 135 pax in a five-abreast, all economy configuration. In addition to the regional North Island routes, the A220 would provide an opportunity to serve new short haul destinations, as well as increase frequency on existing ones. Destinations like Rarotonga/Sunshine Coast/Cairns and Adelaide are all within range of the aircraft from Christchurch.

A220 possible routes at Auckland



Distances

From	To	Initial Heading	Magnetic Heading	Distance
AKL	NPE	147° (SE)	127° (SE)	177 nm
AKL	IUE	041° (NE)	021° (N)	1,341 nm
AKL	CBR	267° (W)	247° (SW)	1,244 nm
AKL	IVC	205° (SW)	185° (S)	634 nm
AKL	NOU	331° (NW)	311° (NW)	1,002 nm
AKL	HBA	246° (SW)	226° (SW)	1,301 nm

From Auckland, it is likely that an A220 would allow Air New Zealand to open additional Tasman routes to thinner markets such as Hobart and Canberra, as well as to replace A320s on existing services to smaller Pacific destinations which operate with low frequency. It must be acknowledged that the opportunity for this aircraft at Auckland is less revolutionary than what it offers at Christchurch, simply due to Auckland's proximity to larger North Island centres, which will mean that turboprop services remain prominent in these markets.

Timeframe and likely considerations for Air New Zealand

It is likely that due to existing fleet age, Air New Zealand has the requirements in the FY23-FY25 timeframe to commit to a programme of replacing some or all of the Q300 aircraft in its fleet. These aircraft were delivered in the 2005-07 period, and by time of retirement would be nearing 20 years of age. While it is likely that Air New Zealand will acquire several additional ATR72 aircraft which are not currently on order, our view is that a top down approach to the regional network is looking increasingly likely.

We suggest that Air New Zealand may look to replace most Q300 routes in the mid-2020s with ATR72 aircraft, and where airfield or market size limitations deem this impracticable, Air New Zealand would withdraw from these routes and support a regional carrier to enter such as Sounds Air or Air Chathams.

Much of this ATR72 flying capacity can be gained by introducing a regional jet such as the A220-100, which can be deployed on selected existing ATR72 served regional routes (at peak times) in addition to Tasman and Pacific Island duties.

Air New Zealand have advised that if Aviation Security screening is introduced at regional airports, they may then be inclined to add jet services to some regions. Several of these key destinations such as Palmerston North and Hawke's Bay Airport (from Auckland) are already nearing peak frequency with ATR72 services in peak times, and the opportunity to consolidate two turboprop services with one regional jet is compelling. From a crew perspective, Air New Zealand is also able to more effectively manage its pilot demands, as the 135 seats offered by the potential A220 service (and minimum 3 cabin crew) generates a higher seat capacity per crew member return than growing the turboprop fleet.

What is more difficult to measure without further research, is whether the revenue potential of this aircraft would justify the exploration of previously unserved markets, however that notwithstanding, we believe that the opportunity for Air New Zealand to introduce an aircraft with capacity which bridges the gap between the turboprop and jet fleets has never been so compelling.

APPENDIX 3. Glossary of terms

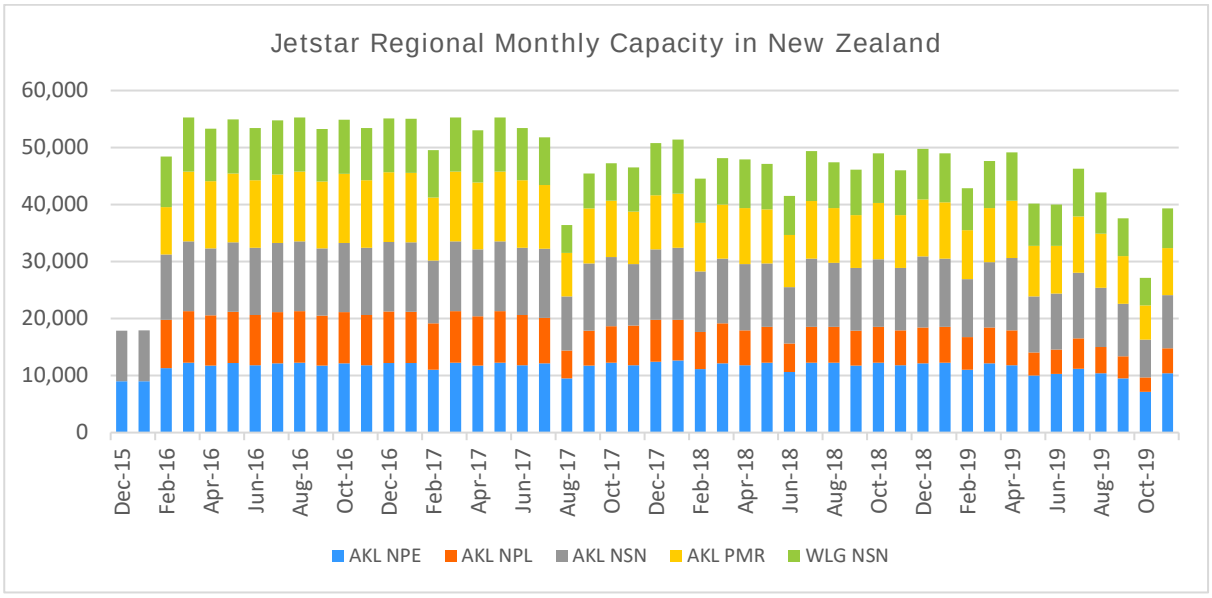
ADL	Adelaide Airport
AKL	Auckland Airport
ARN	Stockholm Arlanda Airport
AUH	Abu Dhabi Airport
CA	Air China
CAGR	Compound Annual Growth Rate
CASK	Cost per associated seat kilometre
CBR	Canberra Airport
CHC	Christchurch Airport
CIAL	Christchurch International Airport Limited
CNS	Cairns Airport
CPH	Copenhagen Kastrup Airport
CX	Cathay Pacific Airways
CZ	China Southern Airlines
DUD	Dunedin Airport
GDP	Gross Domestic Product
GS	Tianjin Airlines
HAM	Hamburg Airport
HBA	Hobart Airport
HBAL	Hawke's Bay Airport Limited
HLZ	Hamilton Airport
HU	Hainan Airlines
HX	Hong Kong Airlines
IATA	International Air Transport Association
IVC	Invercargill
JQ	Jetstar

LED	St Petersburg Airport (Russia)
MCY	Sunshine Coast Airport
MTOW	Maximum Take Off Weight
MU	China Eastern Airlines
NAN	Nadi Airport (Fiji)
NPE	Hawke's Bay Airport
NPL	New Plymouth Airport
NSN	Nelson Airport
NZ	Air New Zealand
NZIER	New Zealand Institute of Economic Research
PMR	Palmerston North Airport
ROT	Rotorua Airport
TLL	Tallinn Airport (Estonia)
TLV	Tel Aviv Airport (Israel)
TRG	Tauranga Airport
WLG	Wellington Airport
ZQN	Queenstown Airport
3U	Sichuan Airlines (China)

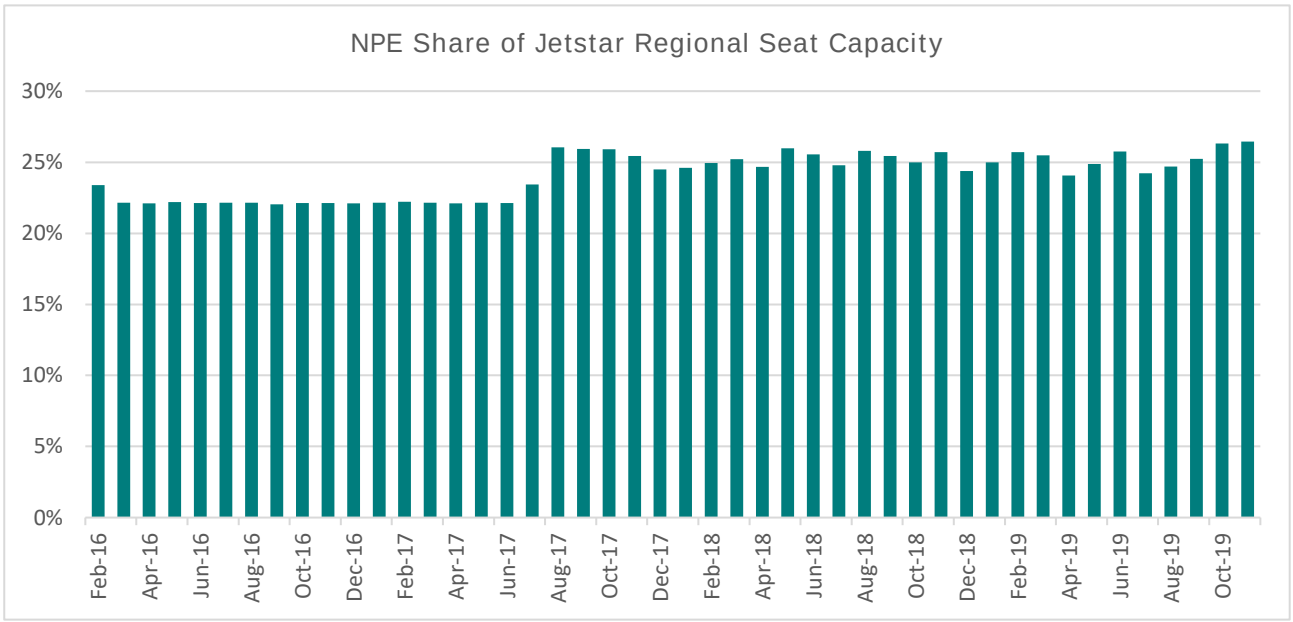
ADDENDUM 1. Jetstar Regional in New Zealand

Operating under the AOC of Eastern Australian Airlines Pty Ltd, Jetstar regional services were announced in June 2015 with operations starting in November of the same year.

The network was Auckland centred with an off-peak operation between Wellington and Nelson operating as a filler schedule to complement the peak services from Auckland. Five routes were operated with varying schedule changes as Jetstar developed its understanding of regional New Zealand markets.



Initial operations were optimistic with aircraft based in regional ports overnight. High utilisation and away-based services compromised reliability and punctuality. Utilisation was reduced, and some frequencies cut on weaker routes such as New Plymouth.



Hawke's Bay Airport represented one of the strongest routes on the short-lived network with its share rising. It started at a 22% share of seat capacity and was 26% by the end. Capacity was shifted from the underperforming New Plymouth operation to Hawke's Bay. The strength of the Hawke's Bay route was insufficient to sustain the network.

Services finally ended in November 2019. The fixed fleet of Bombardier Q300 aircraft returning to Australia.

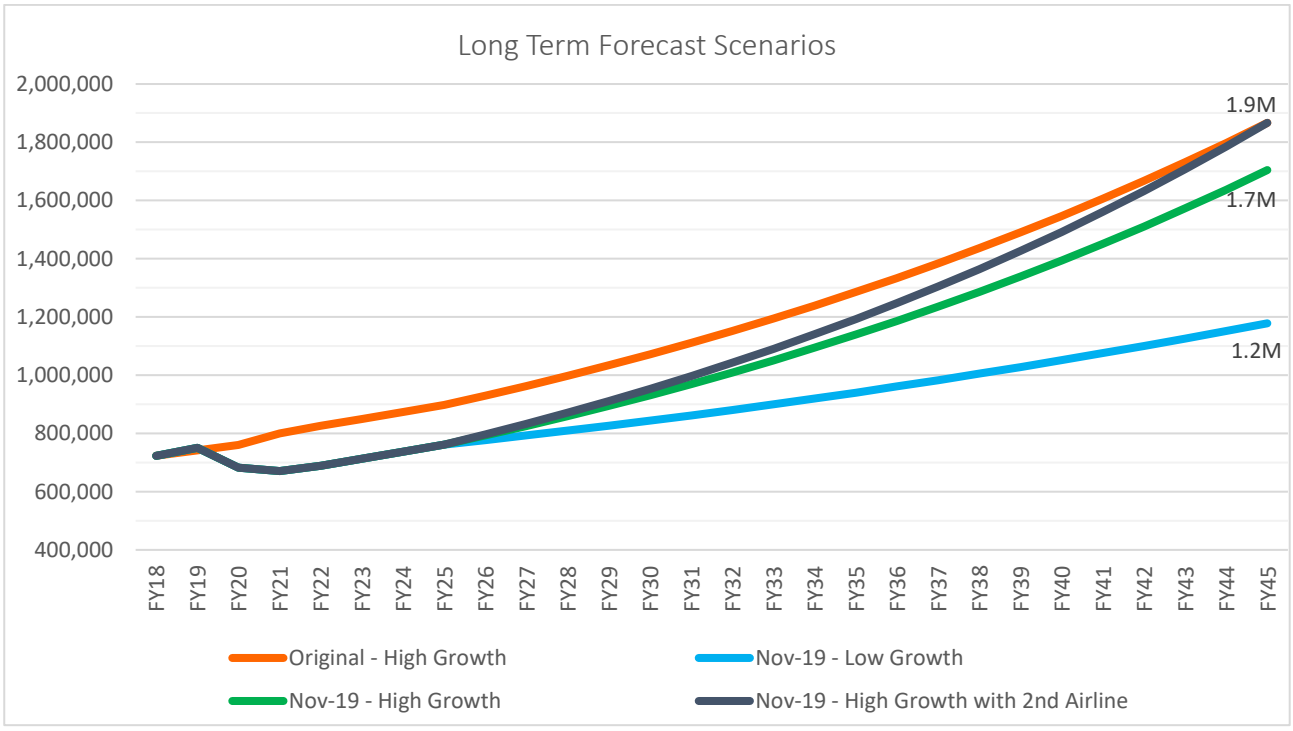
Hawke's Bay Airport Reforecast

The cancellation of Jetstar Regional operations has had a significant impact on the performance of domestic services at all New Zealand ports on the Jetstar Regional network except Wellington Airport. Wellington Airport will be impacted by only 1.3%, whereas Nelson Airport is impacted by a loss of almost 17%. Hawke's Bay Airport will be impacted by a 14% annual seat reduction.

Following the withdrawal of services, CIAL has updated three scenarios as follows:

- Low Growth – Short term forecast + low long-term growth rate. Single airline
- High Growth – Short term forecast + high long-term growth rate. Single airline
- High Growth with 2nd Airline – Short term forecast plus high long-term growth rate, plus additional growth due to a competitor to Air NZ entering the market.

All economic assumptions remain unchanged in the re-forecasting. The loss of Jetstar regional services was not a function of a weakness of either the Hawke's Bay local economy weaknesses, nor was it any reflection of the weakness of the New Zealand economy in general. The weakness of the business model of a five aircraft fleet at odds with the pure low-cost business model at Jetstar had more of an impact on the operation's sustainability.



Under a high growth scenario, it is possible for Hawke's Bay Airport to secure a 1.9 million throughput by 2045. This scenario does require the market to support a second airline competing with Air New Zealand.

Whilst it may appear optimistic to assume a second carrier so soon after the loss of Jetstar Regional, over the period of the forecast, the development of the market will encourage new players. The Auckland route alone will account for over 1 million passengers. Airline and aircraft developments will also create the space for a second carrier.

In the short term, the lack of a second carrier at Hawke's Bay drags down the airport's throughput down by 115,000 passengers.

The full reforecasts are detailed below. A more detailed breakdown of forecasts is also included, containing load factor growth and seat assumptions.

Low Growth Scenario

Traffic

Passenger Demand Forecast																														
Route	Airline	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45
AKL	NZ	384,424	400,294	403,471	425,271	434,174	449,408	465,111	480,911	490,882	501,208	511,901	522,976	534,447	546,331	558,642	571,399	584,618	598,318	612,460	627,058	642,129	657,691	673,761	690,225	707,090	724,368	742,068	760,200
AKL	JQ	114,945	111,088	38,909	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WLG	NZ	129,681	133,452	135,909	138,264	142,105	145,800	149,737	153,929	156,844	159,798	162,792	165,826	168,899	172,030	175,218	178,466	181,774	185,143	188,574	192,070	195,630	199,256	202,949	206,710	210,542	214,444	218,419	222,467
CHC	NZ	91,506	102,257	102,409	107,206	113,074	117,498	122,146	127,034	129,611	132,266	135,002	137,822	140,728	143,723	146,811	149,994	153,277	156,647	160,106	163,658	167,305	171,051	174,897	178,829	182,850	186,961	191,165	195,464
BHE	S8	2,813	3,108	1,577	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total		723,369	750,199	682,275	670,740	689,353	712,707	736,995	761,874	777,338	793,272	809,695	826,623	844,074	862,083	880,671	899,859	919,669	940,108	961,140	982,786	1,005,064	1,027,997	1,051,607	1,075,764	1,100,482	1,125,773	1,151,652	1,178,131

Growth Rates

Passenger Growth Rate																													
Route	Airline	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45
AKL	NZ		4.1%	0.8%	5.4%	2.1%	3.5%	3.5%	3.4%	2.1%	2.1%	2.1%	2.2%	2.2%	2.2%	2.3%	2.3%	2.3%	2.3%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%
AKL	JQ		-3.4%	-65.0%	-100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
WLG	NZ		2.9%	1.8%	1.7%	2.8%	2.6%	2.7%	2.8%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%
CHC	NZ		11.7%	0.1%	4.7%	5.5%	3.9%	4.0%	4.0%	2.0%	2.0%	2.1%	2.1%	2.1%	2.1%	2.1%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
BHE	S8		10.5%	-49.2%	-100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total			3.7%	-9.1%	-1.7%	2.8%	3.4%	3.4%	3.4%	2.0%	2.0%	2.1%	2.1%	2.1%	2.1%	2.2%	2.2%	2.2%	2.2%	2.2%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%

High Growth, No Competition Scenario

Traffic

Passenger Demand Forecast																														
Route	Airline	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45
AKL	NZ	384,424	400,294	403,471	425,271	434,174	449,408	465,111	480,911	500,822	521,657	543,464	566,291	590,190	615,097	641,056	668,111	696,307	725,693	756,319	788,238	821,503	856,173	892,306	929,964	969,211	1,010,114	1,052,744	1,097,172
AKL	JQ	114,945	111,088	38,909	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WLG	NZ	129,681	133,452	135,909	138,264	142,105	145,800	149,737	153,929	159,810	165,883	172,154	178,627	185,309	192,203	199,315	206,650	214,214	222,012	230,049	238,332	246,865	255,654	264,705	274,076	283,779	293,825	304,228	314,998
CHC	NZ	91,506	102,257	102,409	107,206	113,074	117,498	122,146	127,034	132,249	137,705	143,413	149,387	155,639	162,184	169,037	176,213	183,729	191,584	199,794	208,375	217,347	226,726	236,532	246,763	257,436	268,571	280,187	292,306
BHE	S8	2,813	3,108	1,577	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total		723,369	750,199	682,275	670,740	689,353	712,707	736,995	761,874	792,881	825,245	859,031	894,305	931,138	969,484	1,009,408	1,050,974	1,094,250	1,139,288	1,186,162	1,234,945	1,285,715	1,338,552	1,393,543	1,450,802	1,510,426	1,572,510	1,637,158	1,704,476

Growth Rates

Passenger Growth Rate																													
Route	Airline	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45
AKL	NZ		4.1%	0.8%	5.4%	2.1%	3.5%	3.5%	3.4%	4.1%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%
AKL	JQ		-3.4%	-65.0%	-100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
WLG	NZ		2.9%	1.8%	1.7%	2.8%	2.6%	2.7%	2.8%	3.8%	3.8%	3.8%	3.8%	3.7%	3.7%	3.7%	3.7%	3.7%	3.6%	3.6%	3.6%	3.6%	3.6%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
CHC	NZ		11.7%	0.1%	4.7%	5.5%	3.9%	4.0%	4.0%	4.1%	4.1%	4.1%	4.2%	4.2%	4.2%	4.2%	4.2%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%
BHE	S8		10.5%	-49.2%	-100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total			3.7%	-9.1%	-1.7%	2.8%	3.4%	3.4%	3.4%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%

High Growth, Competition Scenario

Traffic

Passenger Demand Forecast																														
Route	Airline	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45
AKL	NZ	384,424	400,294	403,471	425,271	434,174	449,408	465,111	480,911	501,880	523,864	546,915	571,091	596,449	622,933	650,593	679,481	709,652	741,163	774,073	808,444	844,341	881,833	920,989	961,884	1,004,594	1,049,201	1,095,789	1,144,445
AKL	JQ	114,945	111,088	38,909	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AKL	XX	0	0	0	0	0	0	0	0	2,850	5,852	9,010	12,326	15,804	19,563	23,623	28,002	32,719	37,813	43,309	49,231	55,607	62,463	69,831	77,712	86,136	95,136	104,746	115,000
WLG	NZ	129,681	133,452	135,909	138,264	142,105	145,800	149,737	153,929	159,810	165,883	172,154	178,627	185,309	192,203	199,315	206,650	214,214	222,012	230,049	238,332	246,865	255,654	264,705	274,076	283,779	293,825	304,228	314,998
CHC	NZ	91,506	102,257	102,409	107,206	113,074	117,498	122,146	127,034	132,249	137,705	143,413	149,387	155,639	162,184	169,037	176,213	183,729	191,584	199,794	208,375	217,347	226,726	236,532	246,763	257,436	268,571	280,187	292,306
BHE	S8	2,813	3,108	1,577	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total		723,369	750,199	682,275	670,740	689,353	712,707	736,995	761,874	796,789	833,304	871,493	911,431	953,200	996,883	1,042,568	1,090,346	1,140,314	1,192,572	1,247,225	1,304,382	1,364,159	1,426,676	1,492,057	1,560,434	1,631,945	1,706,734	1,784,949	1,866,749

Growth Rates

Passenger Growth Rate																													
Route	Airline	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45
AKL	NZ		4.1%	0.8%	5.4%	2.1%	3.5%	3.5%	3.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%
AKL	JQ		-3.4%	-65.0%	-100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AKL	XX		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	105.3%	54.0%	36.8%	28.2%	23.8%	20.8%	18.5%	16.8%	15.6%	14.5%	13.7%	12.9%	12.3%	11.8%	11.3%	10.8%	10.4%	10.1%	9.8%
WLG	NZ		2.9%	1.8%	1.7%	2.8%	2.6%	2.7%	2.8%	3.8%	3.8%	3.8%	3.8%	3.7%	3.7%	3.7%	3.7%	3.7%	3.6%	3.6%	3.6%	3.6%	3.6%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
CHC	NZ		11.7%	0.1%	4.7%	5.5%	3.9%	4.0%	4.0%	4.1%	4.1%	4.1%	4.2%	4.2%	4.2%	4.2%	4.2%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%
BHE	S8		10.5%	-49.2%	-100.0%	0.0%	0.0%	0.0%	0.0%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%
Total			3.7%	-9.1%	-1.7%	2.8%	3.4%	3.4%	3.4%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%

High Growth, Competition Scenario Detail

Load Factor

Projected Load Factor

Route	Airline	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45
AKL	NZ	83.3%	84.2%	86.8%	86.6%	87.0%	87.8%	88.5%	89.0%	89.0%	89.0%	89.0%	89.0%	89.0%	89.0%	89.0%	89.0%	89.0%	89.0%	89.0%	89.0%	89.0%	89.0%	89.0%	89.0%	89.0%	89.0%	89.0%	89.0%
AKL	JQ	81.8%	81.8%	83.4%	84.6%	85.6%	86.6%	87.5%	88.2%	88.3%	88.4%	88.5%	88.6%	88.7%	88.8%	88.9%	89.0%	89.1%	89.2%	89.3%	89.4%	89.5%	89.6%	89.7%	89.8%	89.9%	90.0%	90.1%	90.2%
AKL	XX	81.8%	81.8%	83.4%	84.6%	85.6%	86.6%	87.5%	88.2%	88.3%	88.4%	88.5%	88.6%	88.7%	88.8%	88.9%	89.0%	89.1%	89.2%	89.3%	89.4%	89.5%	89.6%	89.7%	89.8%	89.9%	90.0%	90.1%	90.2%
WLG	NZ	80.1%	80.9%	81.2%	81.3%	81.3%	81.3%	81.3%	81.3%	81.4%	81.5%	81.6%	81.7%	81.8%	81.9%	82.0%	82.1%	82.2%	82.3%	82.4%	82.5%	82.6%	82.7%	82.8%	82.9%	83.0%	83.1%	83.2%	83.3%
CHC	NZ	77.3%	78.5%	81.3%	81.8%	81.8%	82.9%	83.9%	84.9%	85.0%	85.1%	85.2%	85.3%	85.4%	85.5%	85.6%	85.7%	85.8%	85.9%	86.0%	86.1%	86.2%	86.3%	86.4%	86.5%	86.6%	86.7%	86.8%	86.9%
BHE	S8	56.2%	56.2%	57.8%	59.8%	60.1%	62.1%	64.0%	64.0%	64.1%	64.2%	64.3%	64.4%	64.5%	64.6%	64.7%	64.8%	64.9%	65.0%	65.1%	65.2%	65.3%	65.4%	65.5%	65.6%	65.7%	65.8%	65.9%	66.0%

Seat Capacity

Seat Forecast

Route	Airline	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45
AKL	NZ	461,390	475,642	464,741	490,975	498,869	511,840	525,659	540,378	563,940	588,642	614,544	641,709	670,203	699,962	731,042	763,503	797,405	832,812	869,791	908,413	948,749	990,876	1,034,874	1,080,826	1,128,818	1,178,941	1,231,289	1,285,962
AKL	JQ	140,450	135,737	46,652	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AKL	XX	0	0	0	0	0	0	0	0	3,226	6,617	10,176	13,905	17,807	22,019	26,559	31,446	36,702	42,369	48,473	55,039	62,098	69,677	77,809	86,494	95,763	105,652	116,194	127,428
WLG	NZ	161,802	164,992	167,274	170,068	174,833	179,379	184,222	189,381	196,374	203,586	211,024	218,690	226,593	234,736	243,124	251,765	260,663	269,823	279,252	288,955	298,938	309,207	319,767	330,688	341,983	353,663	365,744	378,238
CHC	NZ	118,308	130,320	125,898	131,089	138,172	141,764	145,592	149,668	155,629	161,859	168,370	175,178	182,296	189,739	197,525	205,671	214,193	223,090	232,380	242,079	252,209	262,787	273,836	285,350	297,348	309,851	322,881	336,458
BHE	S8	5,004	5,528	2,727	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total		886,954	912,218	807,292	792,133	811,874	832,983	855,473	879,427	919,169	960,704	1,004,114	1,049,482	1,096,899	1,146,456	1,198,251	1,252,385	1,308,963	1,368,095	1,429,896	1,494,487	1,561,993	1,632,547	1,706,286	1,783,357	1,863,912	1,948,107	2,036,108	2,128,086

Average Seats per Movement

Average Seats

Route	Airline	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45
AKL	NZ	68	67	67	67	67	67	67	67	68	68	68	68	72	72	75	75	82	81	88	87	90	89	88	87	93	96	101	104
AKL	JQ	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
AKL	XX	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
WLG	NZ	54	54	55	55	56	56	56	56	55	56	59	59	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68
CHC	NZ	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	77	76	76	84	84	83	82	81	81
BHE	S8	9	9	9	9	9	9	9	9	14	14	14	14	14	14	14	14	14	14	14	14	14	19	19	19	19	19	19	19

Aircraft Movements

Aircraft Movements

Route	Airline	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45
AKL	NZ	6,821	7,146	6,963	7,357	7,455	7,649	7,855	8,075	8,293	8,657	9,037	9,437	9,350	9,781	9,731	10,220	9,777	10,312	9,884	10,463	10,521	11,140	11,781	12,445	12,188	12,340	12,213	12,396
AKL	JQ	2,809	2,715	933	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AKL	XX	0	0	0	0	0	0	0	0	65	132	204	278	356	440	531	629	734	847	969	1,101	1,242	1,394	1,556	1,730	1,915	2,113	2,324	2,549
WLG	NZ	3,009	3,047	3,059	3,110	3,146	3,217	3,293	3,364	3,576	3,635	3,577	3,707	3,332	3,452	3,575	3,702	3,833	3,968	4,107	4,249	4,396	4,547	4,702	4,863	5,029	5,201	5,379	5,562
CHC	NZ	1,740	1,916	1,851	1,928	2,032	2,085	2,141	2,201	2,289	2,380	2,476	2,576	2,681	2,790	2,905	3,025	3,150	3,281	3,417	3,153	3,312	3,476	3,249	3,386	3,574	3,767	3,966	4,133
BHE	S8	556	614	303	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total		14,935	15,439	13,110	12,395	12,632	12,950	13,289	13,640	14,223	14,805	15,294	15,998	15,719	16,464	16,742	17,576	17,494	18,408	18,377	18,966	19,471	20,557	21,289	22,423	22,707	23,421	23,881	24,639


CHRISTCHURCH
AIRPORT

HAWKE'S BAY AIRPORT
RE-FORECAST POST COVID-19

June 2020

Contact Details:
Christchurch International Airport Limited
PO Box 14001
Christchurch 8544
New Zealand

Phone: +64 3 358 5029
Facsimile: +64 3 353 7730
christchurchairport.co.nz

TABLE OF CONTENTS

1 LONG TERM FORECAST EXERCISE BRIEF

Hawkes Bay Airport Limited (HBAL) has commissioned Christchurch International Airport Limited (CIAL) to undertake a re-forecasting exercise on its behalf from June 2020 for each year up to 2045. It was felt that CIAL's experience during its network and traffic rebuild would provide HBAL with insight into the material effect that Covid-19 has had on its aviation market.

CIAL will endeavour to provide HBAL with a view forward based upon CIAL's own insights, as well as those of HBAL's own customer airline; primarily Air New Zealand (Air NZ), but also tertiary airlines operating scheduled services within New Zealand. With no effective air competition in the regions, the business strategy of the single operator effectively provides HBAL with a comprehensive view as to how the domestic air market will rebuild over the short term. CIAL is undertaking precisely the same exercise to determine the financial strategies for the airport business, and CIAL is applying this insight into the projections for HBAL.

The report and outputs are to be made available to HBAL by 29th June 2020.

2 BACKGROUND

2.1 DOMESTIC

The actions by governments to restrict the spread of Covid-19 are the most unprecedented ever to impact economies and aviation, with travel and leisure industries impacted in particular. The impact on Air New Zealand and its domestic network operations was swift and severe.

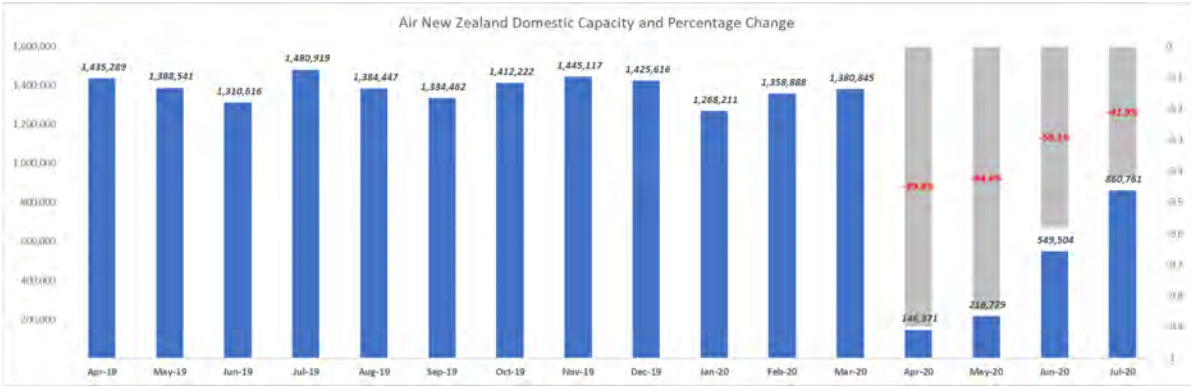


Figure 1 – Air NZ domestic network capacity change, for April 2019 through July 2020

As can be seen from the monthly schedules in Figure 1, Air NZ had to respond to a general softening of demand from Asia from January 2020. This required the airline to tweak their schedules to reflect declining volumes of international connecting passengers principally onto trunk routes within New Zealand. This initial response affected schedules during the peak New Zealand summer season.

As the need for action to cope with the effects of the virus became rapidly clearer, the urgency of action by the NZ Government is apparent. There was an almost instant collapse of services in April: an almost 90% decline in domestic seat capacity within New Zealand.

The relaxation of travel restrictions is encouraging more domestic travel, particularly during June and July, when social distancing rules were lifted. By July, Air New Zealand's total domestic capacity is expected to be at 58% of July 2019 levels. This level of capacity is a response to high demand by New Zealanders to travel. There remains no international connecting travel in the mix of passengers flying domestically. Air NZ has been the sole provider of large-scale scheduled air services in New Zealand and will remain so until Jetstar resumes domestic flying from 1st July. Additionally, there has been no competitive response from Air NZ to Jetstar's schedule.

The July school holidays, the re-start of Jetstar trunk operations, and the huge bank of Air NZ refund vouchers needed to be spent are tailwinds that will propel the recovery rolling forward.

2.2 INTERNATIONAL

The impact was even more pronounced on international services. International, particularly long-haul demand effectively evaporated as borders closed to visiting foreigners.

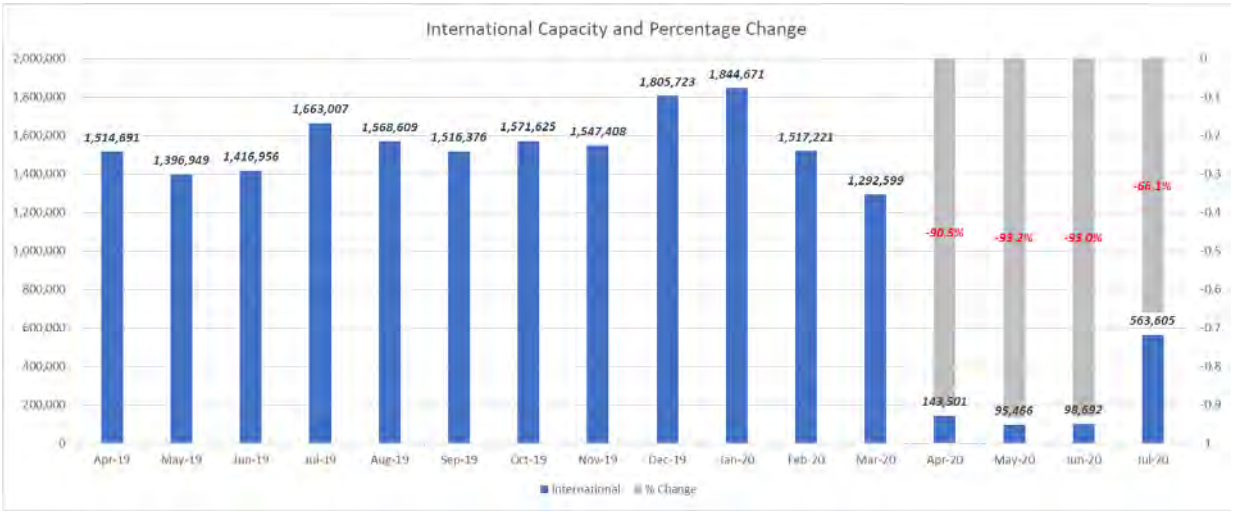


Figure 2 – Air NZ international network capacity change, for April 2019 through July 2020

The offshore impact started earlier than on domestic schedules, with cancellations appearing in February and March. A border closure effectively closed the market for any international service to New Zealand and capacity fell by over 90% for three months. Air NZ added flights to Shanghai and Tokyo incrementally for a July start. Some services have operated largely for the air freight business and government-funded repatriation of New Zealand and foreign nationals.

With no clarity on the likely opening of New Zealand's international borders, these levels of capacity are unlikely to change materially for the foreseeable future. There may be some movement on opening up Tasman flights, but airlines are taking a cautious view on risk and are averse to operating flights that do not meet variable costs. CIAL anticipates a rush by carriers on those routes with historically large passenger volumes simply to generate revenues for their business as the Tasman opens. More marginal routes, and possibly those routes operated seasonally may be less attractive for re-start.

2.3 IMPACT ON HBAL INTERNATIONAL TRAFFIC

The effect on HBAL of the loss of international connecting passengers is slightly under 118,000 annual passengers in 2019. This volume of traffic may be slightly conservative as it only captures passengers on single ticket itineraries. Two-ticket itineraries cannot be captured by the data. However, any through-ticketed itinerary will be counted irrespective of the airline involved.

The volumes are highly seasonal and comprise mostly of outbound passengers seeking winter breaks. The profile is relatively seasonal though only February is the real off-peak month. September is the month with the highest levels of traffic, representing a school holiday.

Figure 3 – HBAL traffic connecting at AKL to international services, for 2019 calendar year

Historically, international connecting passengers have been rising steadily with the lowering of fares and rising prosperity in the Hawkes Bay region. Australian ports dominate the main destinations for NPE connecting traffic. Additionally, leisure destinations (Gold Coast, Cook Islands, Fiji and Honolulu) are indicators that the market is predominantly an outbound market. This is confirmed by the analysis of point-of-sale data.

Origin	AKL	WLG	CHC	Total
Dom Itinerary				
NPE	*48%*	*52%*	*49%*	*49%*
Other NZ	*44%*	*44%*	*47%*	*45%*
Int Itinerary				
NPE	*70%*	*63%*	*63%*	*70%*
Aus	*19%*	*34%*	*32%*	*20%*
Int	*9%*	*2%*	*3%*	*8%*
Other	*2%*	*2%*	*2%*	*2%*

Figure 4 – HBAL traffic by origin and gateway, for 2019 calendar year

Hawkes Bay generates slightly under half of the bookings on its domestic routes, and slightly over half on the Wellington route. On international itineraries, Hawkes Bay generates 70% of the passengers, with 20% being generated in Australia either by Australian citizens or New Zealand citizens residing in Australia. Only 8% of traffic is generated offshore and not in Australia. The health of the local economy is therefore critical to the generation of traffic on Hawkes Bay routes.

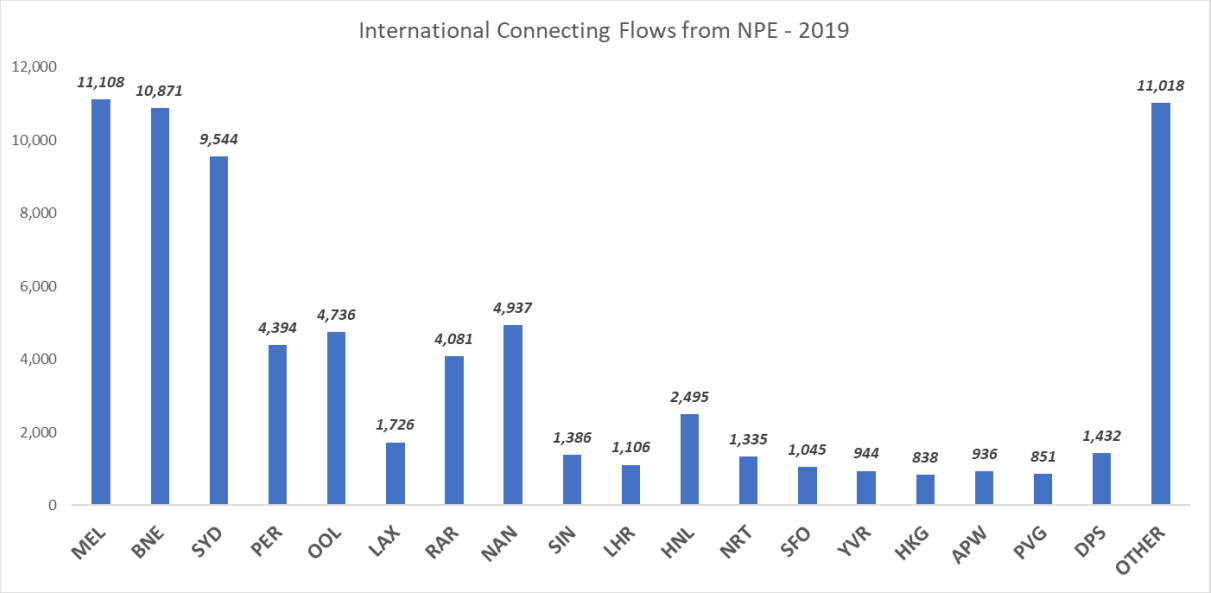


Figure 5 – HBAL traffic connecting to international destinations, for 2019 calendar year

Connecting traffic volumes are almost double where they were only five years ago. The rate of growth may have slowed with the loss of Jetstar Regional, but their connecting passenger loads were marginal.

Figure 6 – Growth of HBAL traffic that connects to international services, for calendar years 2010 to 2019

Connecting flows are comprising a larger proportion of passengers using the AKL services from Hawkes Bay. These flows of connecting passengers on Air NZ Auckland services now represent 30% of all passengers. This share has risen from slightly over 23% in 2010. Worth noting that this is a rising share of an increasing market.

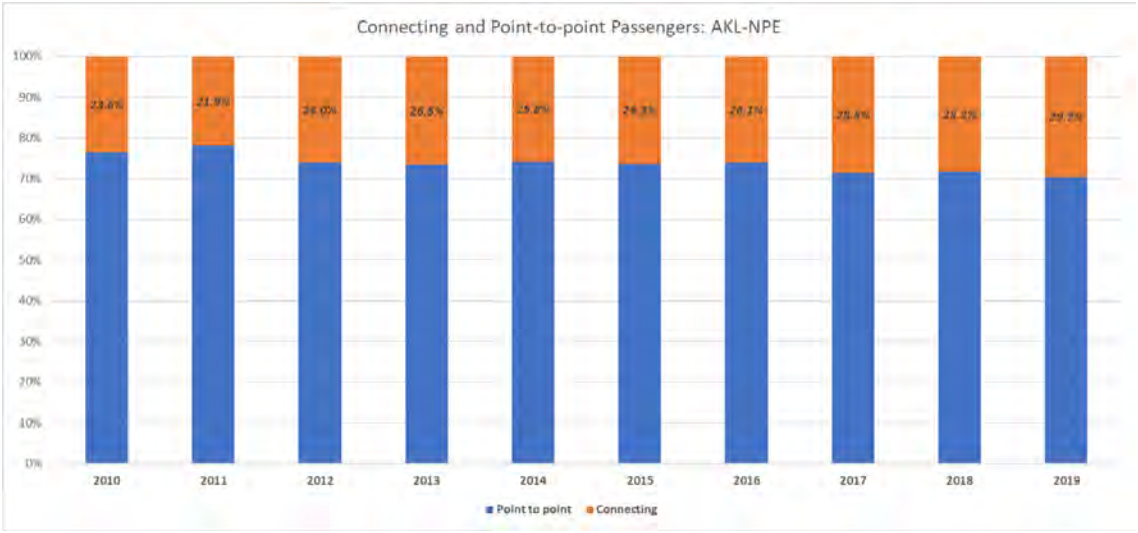


Figure 7 – Share of HBAL Domestic and International Traffic, for calendar years 2010 to 2019

2.4 SHORT TERM RECOVERY

Air New Zealand's NPE operations equated to an average of 16,000 seats at the start of 2020. Within two weeks, from the 25th March the schedule was reduced to zero by the 22nd April, then gradually to 400 weekly seats. The current core operation into NPE appears to be around 8,000 weekly two-way seats. This equates to approximately half of the capacity NPE operating at the start of the year.

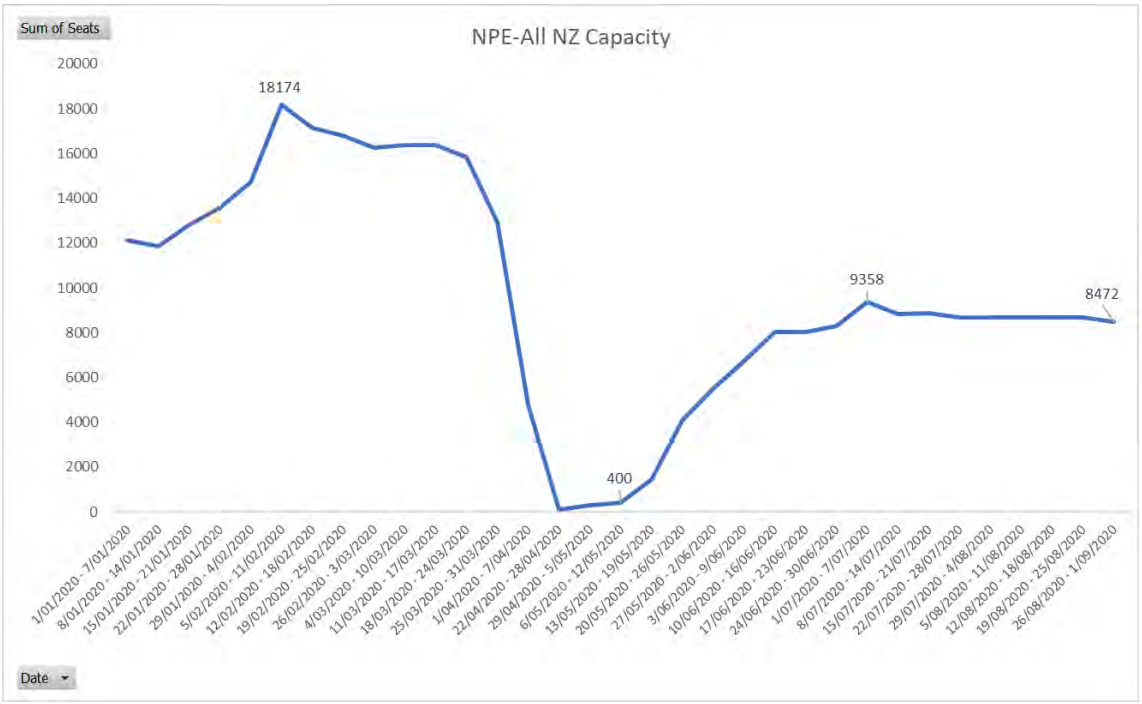


Figure 8 – Weekly Air NZ scheduled seat capacity at HBAL, for January to August 2020

Air New Zealand is taking a conservative view to schedule planning. They are rebuilding the domestic schedules a month at a time, and currently there is a filed schedule up until August. However, Air New Zealand has been surprised at the uptake of demand for seats. Load factors remain high across the network.

3 COVID-19 RECOVERY FORECASTS

For the purposes of this forecasting exercise, the short-term phase is assumed to run from July 2020 until the end of June 2024. The long-term forecast runs from July 2014 to June 2045. There are three forecasting scenarios for the short-term phase of the forecasting project: a low, a base case and a high growth scenario. For the sake of completeness, we have also included a comparison with the HBAL initial short term forecast of traffic recovery.

3.1 SHORT-TERM FORECAST ASSUMPTIONS

There is a strong linear relationship between New Zealand's GDP and growth in domestic travel demand. As New Zealand's economy increases, so does the size of the domestic market. There is a causal relationship between the planned capacity that Air New Zealand (or most airlines) will add to market conditions, and GDP. It is therefore not surprising that the relationship between GDP and domestic travel is close; the airline capacity planning process is largely based upon GDP assessments.

In the last significant global event, GFC (2007/2008), New Zealand's GDP growth was brought down from 8.6% to 1.5%. Domestic air travel also decreased by 1.2%. However, the GFC's impact on New Zealand was not severe, domestic travel quickly rebounded by 9% the following year, subsequently followed by years of gradual growth between 1% - 2%.

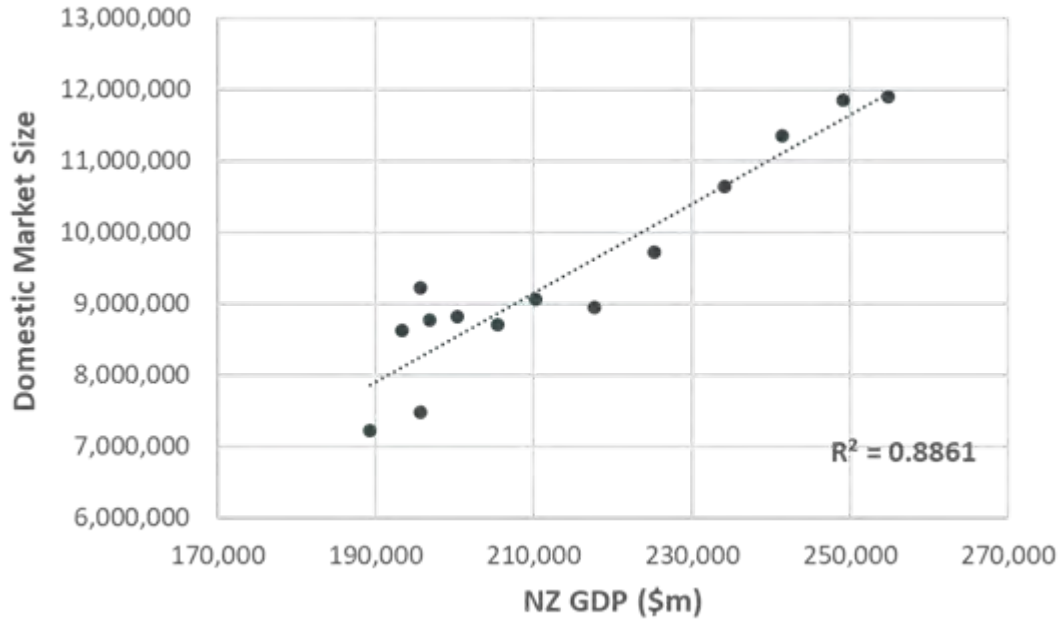


Figure 9 –NZ GDP vs nationwide domestic passengers, for calendar years 2006 to 2019

In addition to GDP forecasts, there is also a strong relationship between average income and the propensity to fly. What is clear is that small nations (like New Zealand and Iceland), and city states like Singapore, Bahamas or Maldives, all have a higher propensity

to travel relative to the average income. There are explanatory factors such as high levels of inbound visitation and small population sizes. Generally, the aviation capacity hosted by the country vastly outnumbers the demand from the country visited.

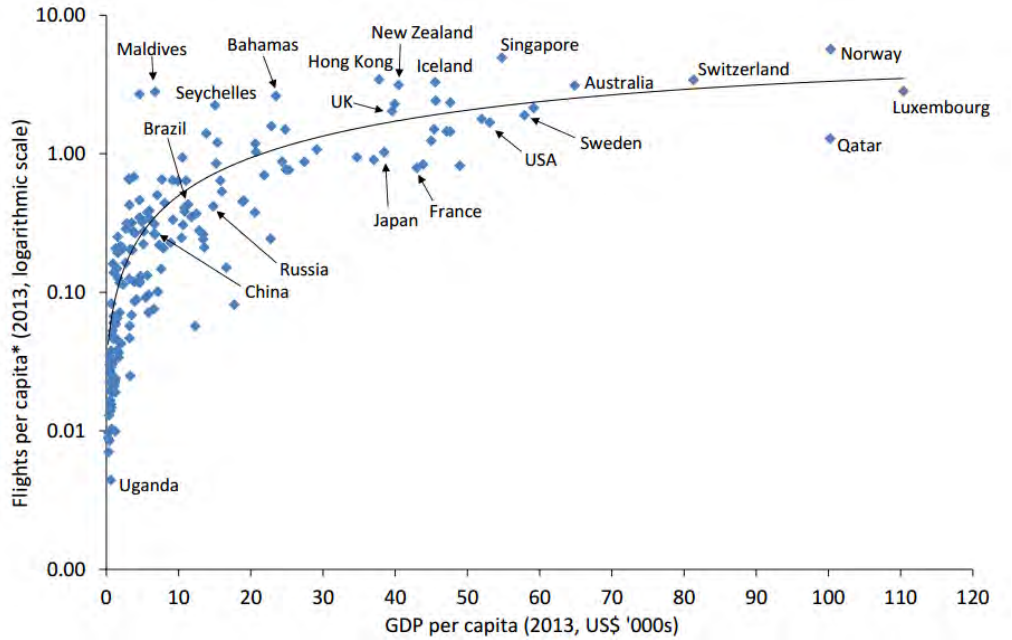


Figure 10 – Flights per capita vs GDP per capita, for calendar year 2013

New Zealand features at the higher end of the propensity to travel scale. It has a middle to higher per capita income which propels the demand for air travel. Only Singapore and Norway have higher per capita propensity to fly rates. Whilst this indicates that New Zealanders will continue to travel, it also signifies that there is little aviation product within the market to sustainably accelerate demand. Once again, the relationship with GDP growth remains the most reliable indicator of domestic and outbound feeder traffic growth. Unlike previous forecasts, where a short-term capacity schedule drove the expansion of traffic, in current conditions Air NZ is taking a cautious and tactical approach to the reintroduction of schedules. The airline is extremely risk-averse, and flights need to be cash-positive to be retained. This can only be secured through strong economic fundamentals.

3.2 SHORT-TERM FORECAST RESULTS

Three scenarios were used as the basis of the short-term passenger recovery forecasts, and a comparison is made with the forecast HBAL undertaken by the HBAL team up to FY23. The three scenarios are based on assumptions created by the Treasury[1].

- Base Case (Treasury's Main Budget 2020 forecast): Assumes a recovery with no second wave of Covid-19 within NZ. It also includes government economic stimulus of approximately $35 billion.

[1] https://budget.govt.nz/budget/forecasts/befu2020.htm

- High Growth (Treasury's Full CRRF forecast): Assumes a recovery with no second wave of Covid-19 within NZ. It assumes approximately $62 billion of fiscal support, with the full utilisation of the COVID-19 Response and Recovery Fund (CRRF).

- Low Growth: Assumes a slow recovery with a possible second wave or waves of Covid-19 within NZ. It assumes a more persistent economic shock due to Covid-19 restrictions. Tourism recovery will be especially slow. The scenario assumes the full CRRF fund is used to support the economy in the initial response phase and then during the recovery phase.

Under the base case and high growth scenarios, the forecasts indicate that passenger traffic recovery will exceed pre-virus levels by June 2024.

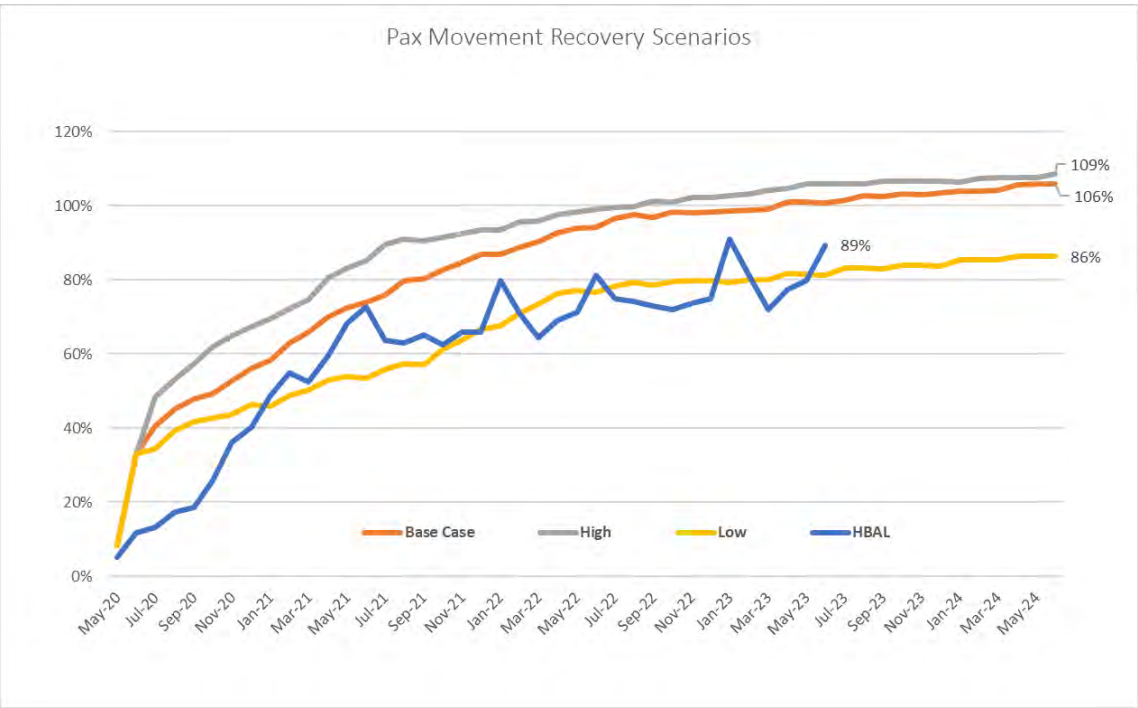


Figure 11 – Short term recovery scenarios, passenger volume percentage

The Low Case scenario will envisage Hawkes Bay Airport achieving only 86% of pre-virus traffic levels. It is worth noting that the low growth scenario consistently tracks the development of traffic with HBAL's own early projections of schedule rebuild at NPE.

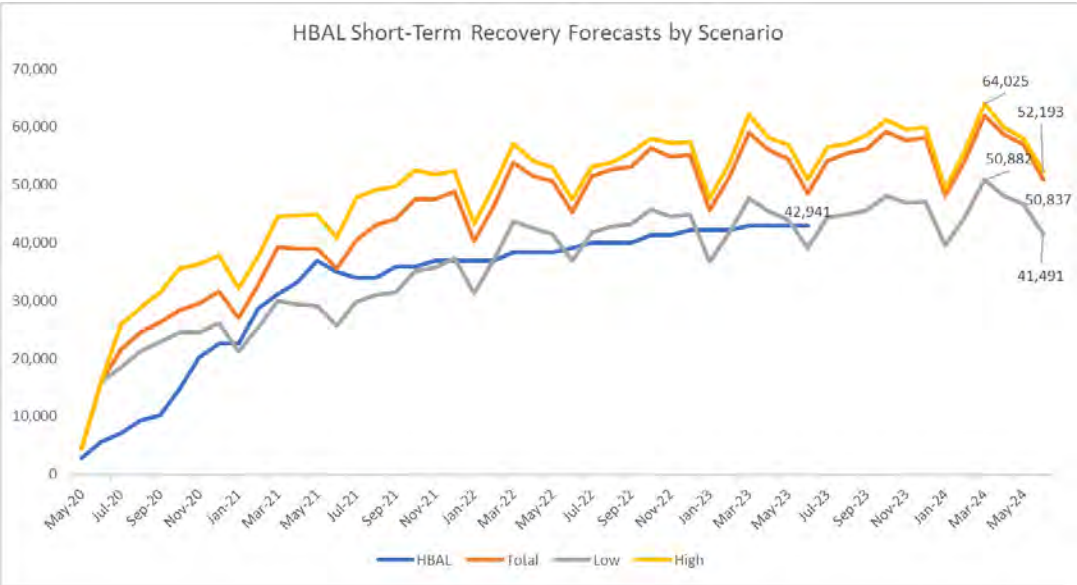


Figure 12 – Short term recovery scenarios, passenger volume numbers

It is anticipated that traffic levels in high and base growth scenarios will almost merge by FY23/24. The financial injection into the economy will have short-term benefits that accelerate growth in the high growth scenario, but that this injection is not continued and therefore its impact is felt over the very short term.

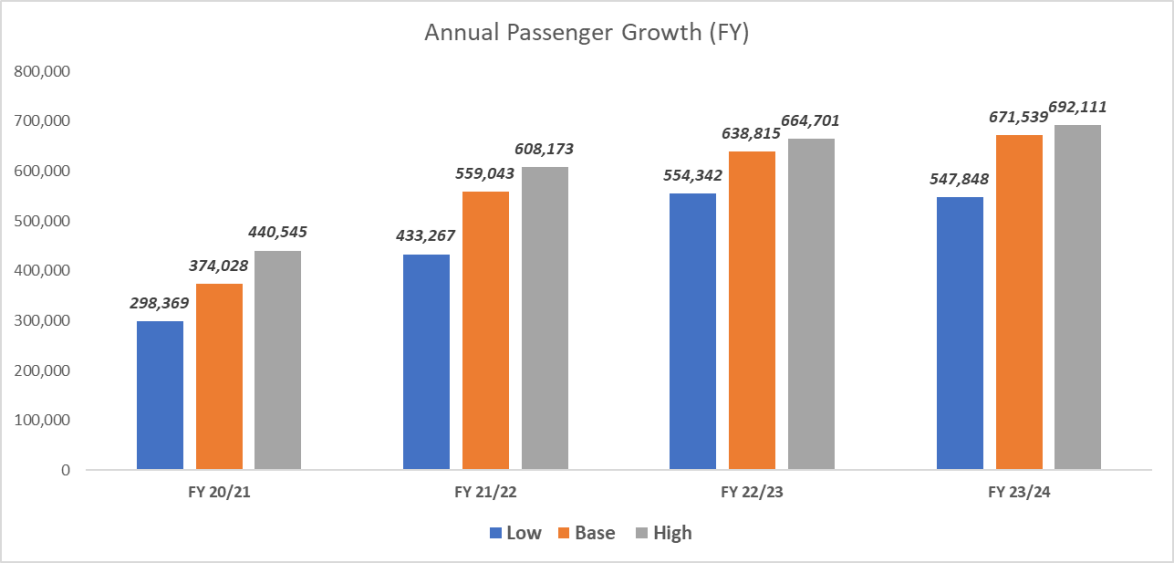


Figure 13 – Short term passenger volume recovery scenarios, by annual passenger number growth

3.3 LONG-TERM FORECAST ASSUMPTIONS

Whilst the effects of Covid-19 are deep and profound to the economy and aviation in particular, it remains our view that the longer-term fundamental assumptions of the previous forecasts remain sound. The long-term traffic forecasts remain a top-down, demand-based forecast, which assumes no supply (capacity) constraint either by airline operators or the airport's own infrastructure.

The impacts of the virus have effectively served to reduce the platform from which these longer-term effects can be projected. In some instances, the changes in economic behaviour have reinforced the view that some of the assumptions remain valid.

The long-term forecast is based on two main socio-economic drivers in the Hawke's Bay region:

- Long-term population growth
- Long-term GDP growth

Possible lifestyle choices also have an impact on the level of demand for domestic travel. A small country such as New Zealand, with a shallow skills pool needs to be mobile so that the skills can be offered country-wide. These services apply to the functions of government, healthcare, education as well as commercial enterprises.

The potential socio-demographic landscapes for New Zealand by 2045 have been scoped by the Government. The Ministry of Transport in its infrastructure planning process identified some key elements that affect the future of the transport sector.

We have outlined those that relate to air transportation in particular:

- Our population is growing, but unevenly with most growth in the 'golden triangle' (Auckland, Waikato, Bay of Plenty).
- Our population is ageing, and older New Zealanders remain active for longer in the workforce.
- Household incomes are increasing, and this may mean more travel, but mostly by car.
- New technologies such as electric vehicles are emerging.
- At the same time, other technologies such as online networking and shopping are becoming a substitute for some transport purposes.
- Our trade with the world is growing, which means that our ports and airports are getting busier. The virus has demonstrated the need for primary industries in particular to remain close to their markets and customers.
- More international tourists are visiting New Zealand and New Zealanders are making more overseas trips.

Base Case	- Slow, non-disruptive technological changes - Medium economic and population growth, focused on the Golden Triangle areas
Staying Close to the Action	- Medium economic and population growth - People prefer to live in the central city and inner suburbs
Golden Triangle	- Fast population and economic growth - Sprawling suburbs emerge and suburban lifestyles are popular
Metro-Connected	- With improvements in information and communication technologies, employers can distribute their operations across the country - Medium population and economic growth in all large towns and cities

	- Domestic air travel increases as colleagues working remotely occasionally visit the head office
@Home in Town and Country	- Fast population and economic growth - Many people can work almost anywhere including in small towns and rural areas - With a more dispersed population, there are more flights to regional centres

Figure 14 – MoT, Transport Outlook Future Overview, Future State, Nov 2017

Therefore, Covid-19 has not changed the long-term views on Hawke's Bay population and GDP growth projections. However, it might accelerate or encourage the fifth lifestyle scenario mentioned above (@Home in Town and Country). This makes the high-growth scenario more probable.

According to Statistics New Zealand's projections, the total New Zealand population is expected to grow by 33.3% from FY2013 to FY2043, rising to 5.9 million. This corresponds to a 0.96% change per annum. The Hawke's Bay region population is expected to grow by 8.1%, equivalent to 0.26% pa. Although this growth rate is below the national average, but it is comparable to similar regions in the North Island.

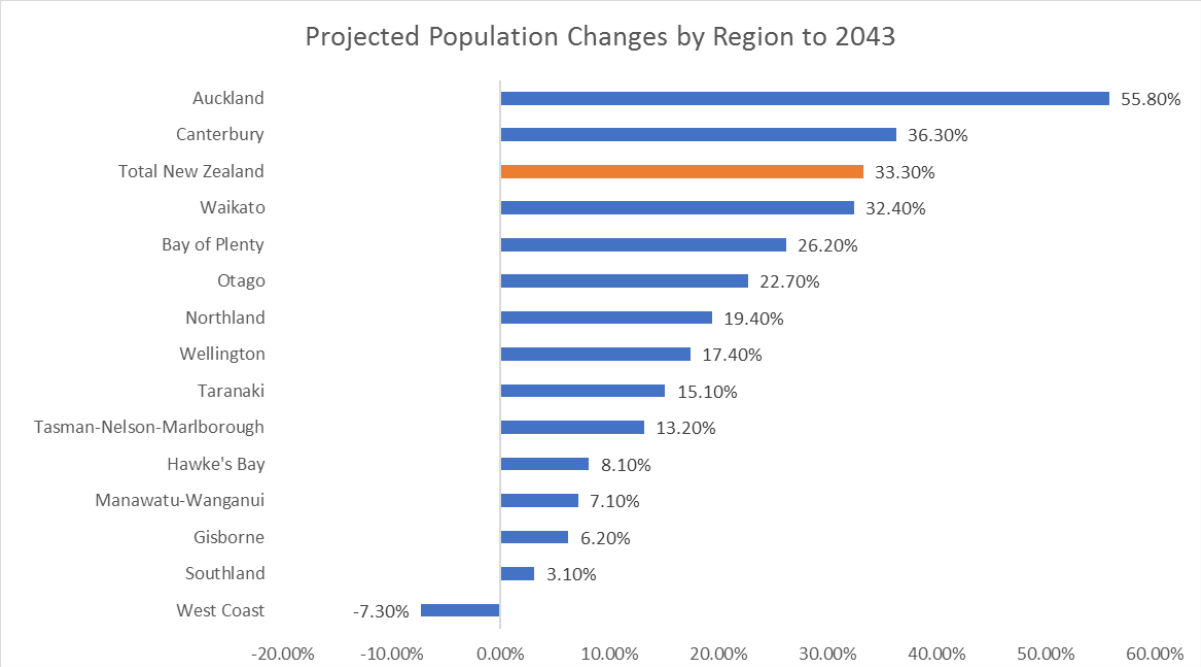


Figure 15 – Population Growth Forecast by Region between FY13 and FY43 (Source: Statistics NZ population forecast)

With this population forecast, coupled with economic growth outlined earlier and lifestyle preferences, the Ministry of Transport has projected domestic departure growth for Hawke's Bay of between 75% (Base Case) and 313% (@Home in Town and Country) from 2015 to 2043. This corresponds to annual growth rates of 1.9% and 4.8%.

	Base Case Staying Close to the Action	Metro-Connected	Golden Triangle	@Home in Town and Country
Northland	91%	103%	264%	339%
Auckland	105%	111%	301%	344%
Waikato	81%	99%	288%	323%
BoP (Tauranga)	81%	93%	314%	322%
BoP (Rotorua)	87%	99%	3262%	335%
Gisborne	71%	77%	217%	310%
Hawke's Bay	75%	97%	221%	313%
Taranaki	78%	102%	226%	316%
Manawatu-Wanganui	76%	89%	227%	317%
Wellington	83%	104%	239%	322%
Tasman-Nelson	77%	89%	218%	331%
Marlborough	69%	77%	211%	276%
West Coast	51%	65%	165%	289%
Canterbury	94%	113%	258%	337%
Otago (Queenstown)	111%	140%	297%	385%
Otago (Dunedin)	85%	112%	241%	323%
Southland	60%	75%	178%	303%
New Zealand	**92%**	**108%**	**265%**	**334%**

Figure 16 – Projected Growth in Domestic Passenger Departures by Region (2015-2043) (Source: MoT)

	Current (2015)	Projected (2043)			
		Base Case Staying Close to the Action	Metro-Connected	Golden Triangle	@Home in Town and Country
Northland	14	35	36	41	45
Auckland	3,087	8,349	8,133	10,614	10,159
Waikato	9	23	23	32	29
BoP (Tauranga)	20	52	52	74	66
BoP (Rotorua)	15	34	34	47	45
Gisborne	11	26	27	31	35
Hawke's Bay	38	90	96	106	119
Taranaki	35	85	91	100	111
Manawatu-Wanganui	40	93	97	109	124
Wellington	513	1,238	1,320	1,454	1,611
Tasman-Nelson	44	105	107	124	137
Marlborough	15	36	36	42	48
West Coast	1	2	2	2	3
Canterbury	738	1,843	1,929	2,160	2,344
Otago (Queenstown)	272	814	820	969	1,001
Otago (Dunedin)	63	143	163	168	189
Southland	13	29	30	34	39
New Zealand	**4.9 million**	**13 million**	**13 million**	**16 million**	**16 million**

Figure 17 – Projected International Departures by Region ('000s per year 2015-2043) (Source: MoT)

In terms of international departures, Hawke's Bay growth is projected to be between 3.1% (Base Case) and 4.2% (@Home in Town and Country) per annum. In comparison with Hawke's Bay's past GDP growth and capacity growth (shown below), the growth rates of the Base Case and @Home in Town the Country are moderate and could be applied over the long-term.

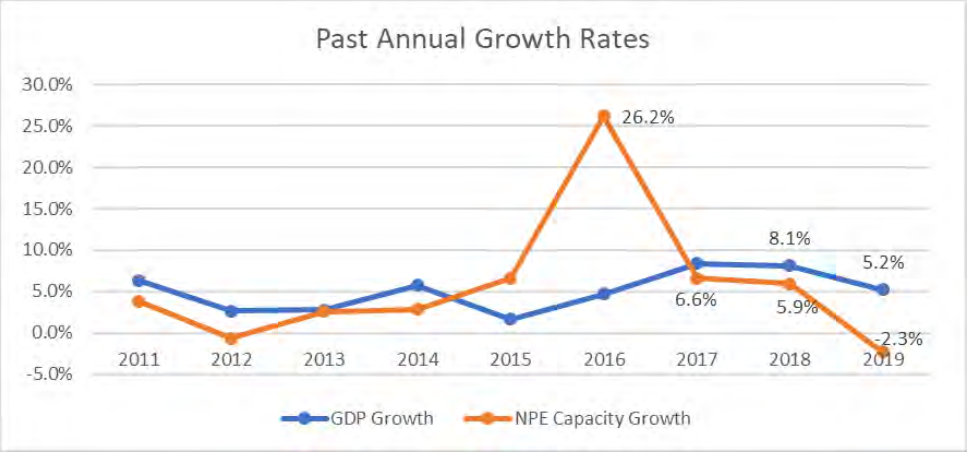


Figure 18 – Historic GDP and capacity growth at Hawke's Bay

Airline capacity growth and GDP growth are fairly closely aligned, as can be seen in Figure 18. The spike in capacity is related to the introduction of Jetstar Regional operations and the response by Air New Zealand to this expansion of competition.

3.4 LONG-TERM FORECAST RESULTS

The long-term traffic forecasts extended to 2045 takes the Hawke's Bay traffic levels to a range of outcomes, subject to the economic scenarios outlined in section 3.3. They also incorporate the likelihood of airline competition at some point over the long term. There will be sufficient traffic to justify a second carrier on Auckland routes in particular.

The long-term Low scenario is an extension of the Low scenario in the short-term forecast beyond FY24. Both the long-term High and High with 2nd Airline scenarios are extended from the High scenario in the short-term forecast.

Traffic is projected to lie between 1.7 million passengers in a high growth situation with the arrival of regional competition in the New Zealand domestic regional market, to 876,000 passengers in a monopolistic, low economic growth scenario.

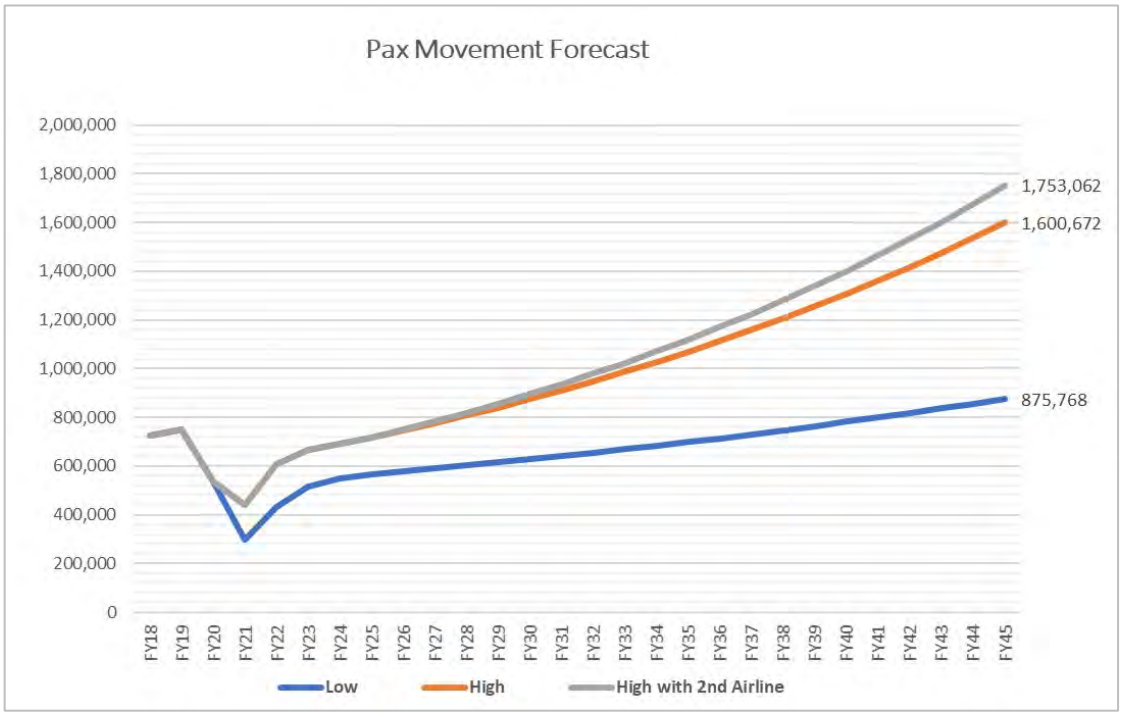


Figure 19 – Hawke's Bay long-term passenger forecast

The low forecast at FY45 is reduced from 1.2 million to 0.9 million (-26%). Due to the fact that a lower traffic growth rate is compounded over the period, it would take Hawke's Bay an additional 13 years to reach 1.2 million passengers in this scenario.

However, this is unlikely as passenger numbers would only have to grow at 2.3 per annum throughout the period.

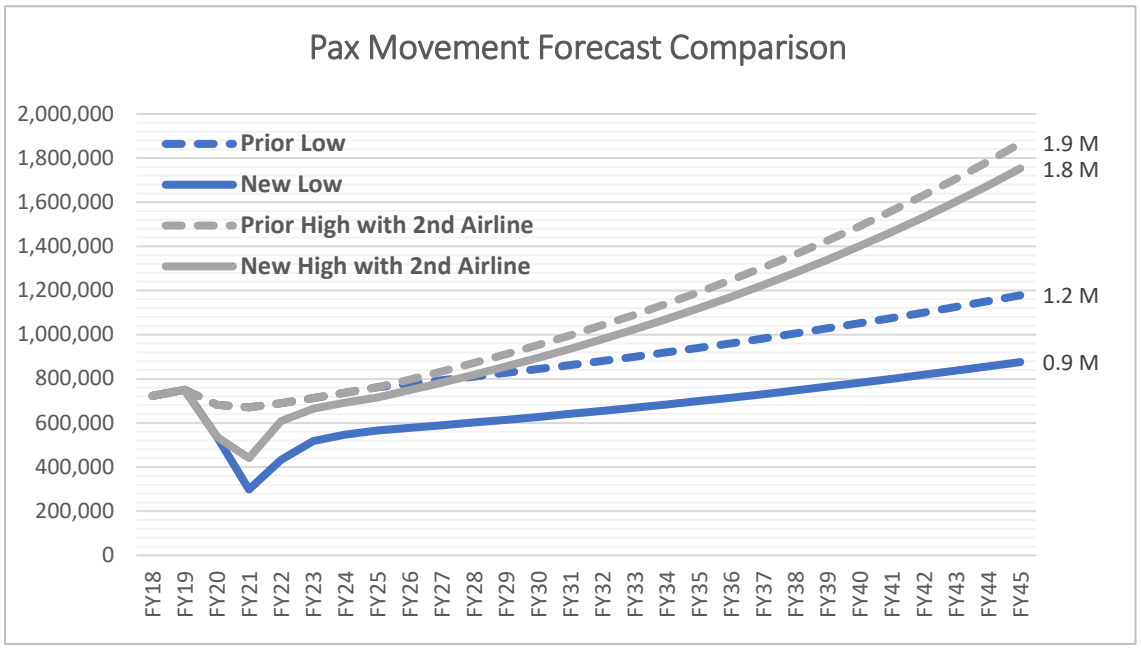


Figure 19 – Comparison with prior forecast

With the most optimistic forecast assuming the market would attract a second airline at some point beyond FY24, Covid-19 reduces the forecast at FY45 from 1.9M to 1.8M (-6%). Under this scenario, the virus impact has cost the airport approximately two years of growth.

APPENDIX

Short-term Passenger Forecast

Passengers FY21	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	FY21	Recovery Level
Low	18,415	21,203	22,901	24,522	24,474	26,063	21,263	25,441	29,892	29,402	29,078	25,716	298,369	54%
Base Case	21,569	24,424	26,214	28,326	29,512	31,551	26,964	32,782	39,194	38,968	38,997	35,529	374,028	74%
High	25,831	28,743	31,427	35,607	36,359	37,807	32,207	37,610	44,492	44,716	44,856	40,889	440,545	85%
HBAL	7,056	9,314	10,161	14,818	20,231	22,579	22,579	28,627	31,208	33,158	36,842	35,000	271,573	73%

Passengers FY22	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	FY22	Recovery Level
Low	29,861	30,928	31,399	35,145	35,728	37,372	31,297	37,031	43,732	42,438	41,507	36,831	433,267	77%
Base Case	40,495	43,051	44,065	47,474	47,454	48,834	40,262	46,294	53,792	51,514	50,541	45,267	559,043	94%
High	47,810	49,067	49,673	52,577	51,786	52,415	43,228	49,767	57,169	54,184	52,924	47,571	608,173	99%
HBAL	33,929	33,929	35,814	35,814	36,945	36,945	36,945	36,945	38,328	38,328	38,328	39,110	441,360	81%

Passengers FY23	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	FY23	Recovery Level
Low	41,818	42,834	43,191	45,733	44,622	44,826	36,702	41,731	47,729	45,374	43,925	39,027	517,512	81%
Base Case	51,478	52,641	53,157	56,412	54,924	55,167	45,661	51,417	58,958	56,099	54,416	48,486	638,815	101%
High	53,108	53,862	55,625	58,043	57,230	57,460	47,595	53,746	62,105	58,114	56,970	50,842	664,701	106%
HBAL	40,028	40,028	40,028	41,292	41,292	42,134	42,134	42,134	42,941	42,941	42,941	42,941	500,834	89%

Passengers FY24	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	FY24	Recovery Level
Low	44,356	44,891	45,536	48,131	46,975	47,031	39,502	44,457	50,882	48,043	46,552	41,491	547,848	86%
Base Case	54,114	55,433	56,203	59,225	57,694	58,078	48,113	54,141	62,023	58,675	57,005	50,837	671,539	106%
High	56,477	57,149	58,530	61,204	59,659	59,856	49,268	55,931	64,025	59,830	57,989	52,193	692,111	109%
HBAL														

Passengers (Low)					
Route	FY20	FY21	FY22	FY23	FY24
AKL	351,088	176,296	264,858	320,721	341,239
WLG	105,098	70,076	96,961	112,919	118,408
CHC	80,360	51,997	71,448	83,872	88,201
Total	**537,580**	**298,369**	**433,267**	**517,512**	**547,848**

Growth Rates (Low)				
FY21	FY22	FY23	FY24
-50%	50%	21%	6%
-33%	38%	16%	5%
-35%	37%	17%	5%
-44%	**45%**	**19%**	**6%**

Passengers (Base Case)					
Route	FY20	FY21	FY22	FY23	FY24
AKL	351,088	225,055	344,921	397,649	418,877
WLG	105,098	85,764	123,097	138,403	144,865
CHC	80,360	63,209	91,025	102,763	107,797
Total	**537,580**	**374,028**	**559,043**	**638,815**	**671,539**

Growth Rates (Low)				
FY21	FY22	FY23	FY24
-36%	53%	15%	5%
-18%	44%	12%	5%
-21%	44%	13%	5%
-30%	**49%**	**14%**	**5%**

Passengers (High)					
Route	FY20	FY21	FY22	FY23	FY24
AKL	351,088	266,244	376,166	415,060	432,249
WLG	105,098	100,428	133,244	143,104	148,889
CHC	80,360	73,872	98,763	106,537	110,973
Total	**537,580**	**440,545**	**608,173**	**664,701**	**692,111**

Growth Rates (Low)				
FY21	FY22	FY23	FY24
-24%	41%	10%	4%
-4%	33%	7%	4%
-8%	34%	8%	4%
-18%	**38%**	**9%**	**4%**

Long-term Passenger Forecast

Passengers											
	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
Low	566,342	577,837	589,682	601,890	614,474	627,446	640,833	654,650	668,914	683,639	698,833
High	715,475	744,594	774,987	806,715	839,841	874,430	910,442	947,934	986,968	1,027,609	1,069,905
High with 2nd Airline	715,475	748,264	782,555	818,418	855,924	895,149	936,172	979,074	1,023,943	1,070,868	1,119,943

Passengers											
	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45	***CAGR***
Low	714,467	730,557	747,118	764,165	781,716	799,673	818,047	836,848	856,085	875,768	*2.3%*
High	1,113,923	1,159,735	1,207,413	1,257,033	1,308,674	1,362,447	1,418,439	1,476,743	1,537,454	1,600,672	*4.1%*
High with 2nd Airline	1,171,268	1,224,944	1,281,080	1,339,789	1,401,189	1,465,402	1,532,558	1,602,792	1,676,244	1,753,062	*4.6%*

Seats Forecast (High with 2nd Airline)

Seat Forecast																
Route	Airline	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
AKL	NZ	307,379	432,218	472,719	488,519	502,095	512,613	524,280	537,151	551,278	566,719	583,580	601,929	621,837	643,377	666,636
AKL	JQ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AKL	XX	0	0	0	0	0	14,144	28,256	42,337	56,385	70,402	84,388	98,341	112,264	126,155	140,016
WLG	NZ	123,530	163,931	176,062	183,179	189,363	196,827	204,610	212,726	221,190	230,018	239,198	248,745	258,672	268,996	279,727
CHC	NZ	90,329	120,684	128,540	132,274	135,159	140,494	146,057	151,858	157,908	164,219	170,782	177,607	184,705	192,087	199,760
BHE	S8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total		**521,238**	**716,833**	**777,321**	**803,972**	**826,617**	**864,078**	**903,204**	**944,071**	**986,761**	**1,031,359**	**1,077,949**	**1,126,623**	**1,177,478**	**1,230,615**	**1,286,138**

Seat Forecast											
Route	Airline	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45
AKL	NZ	691,694	718,639	747,561	778,555	811,718	847,144	884,941	925,220	968,101	1,013,706
AKL	JQ	0	0	0	0	0	0	0	0	0	0
AKL	XX	153,845	167,643	181,410	195,147	208,853	222,529	236,174	249,789	263,374	276,928
WLG	NZ	290,882	302,478	314,532	327,062	340,087	353,634	367,723	382,377	397,619	413,471
CHC	NZ	207,737	216,029	224,649	233,610	242,926	252,615	262,693	273,175	284,078	295,419
BHE	S8	0	0	0	0	0	0	0	0	0	0
Total		**1,344,158**	**1,404,789**	**1,468,153**	**1,534,374**	**1,603,584**	**1,675,922**	**1,751,531**	**1,830,561**	**1,913,171**	**1,999,524**

Average Seats (High with 2nd Airline)

Average Seats																
Route	Airline	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
AKL	NZ	67	67	67	67	67	68	68	68	68	72	72	75	75	82	81
AKL	JQ	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
AKL	XX	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
WLG	NZ	55	56	56	56	56	55	56	59	59	68	68	68	68	68	68
CHC	NZ	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68
BHE	S8	9	9	9	9	9	14	14	14	14	14	14	14	14	14	14

Average Seats											
Route	Airline	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45
AKL	NZ	88	87	90	89	88	87	93	96	101	104
AKL	JQ	50	50	50	50	50	50	50	50	50	50
AKL	XX	50	50	50	50	50	50	50	50	50	50
WLG	NZ	68	68	68	68	68	68	68	68	68	68
CHC	NZ	68	77	76	76	84	84	83	82	81	81
BHE	S8	14	14	14	19	19	19	19	19	19	19

Aircraft Movements (High with 2nd Airline)

Aircraft Movements															
Route	Airline	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
AKL	NZ	4,606	6,459	7,064	7,300	7,503	7,538	7,710	7,899	8,107	7,907	8,155	8,012	8,324	7,888	8,254
AKL	JQ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AKL	XX	0	0	0	0	0	283	565	847	1,128	1,408	1,688	1,967	2,245	2,523	2,800
WLG	NZ	2,259	2,949	3,158	3,275	3,363	3,585	3,654	3,606	3,749	3,383	3,518	3,658	3,804	3,956	4,114
CHC	NZ	1,328	1,775	1,890	1,945	1,988	2,066	2,148	2,233	2,322	2,415	2,512	2,612	2,716	2,825	2,938
BHE	S8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total		**8,193**	**11,183**	**12,112**	**12,520**	**12,854**	**13,472**	**14,077**	**14,585**	**15,306**	**15,112**	**15,872**	**16,249**	**17,089**	**17,192**	**18,106**

Aircraft Movements										
Route	Airline	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45
AKL	NZ	7,860	8,277	8,290	8,753	9,241	9,754	9,555	9,684	9,602	9,771
AKL	JQ	0	0	0	0	0	0	0	0	0	0
AKL	XX	3,077	3,353	3,628	3,903	4,177	4,451	4,723	4,996	5,267	5,539
WLG	NZ	4,278	4,448	4,625	4,810	5,001	5,200	5,408	5,623	5,847	6,080
CHC	NZ	3,055	2,814	2,950	3,090	2,882	2,997	3,157	3,321	3,489	3,629
BHE	S8	0	0	0	0	0	0	0	0	0	0
Total		**18,270**	**18,892**	**19,494**	**20,556**	**21,301**	**22,402**	**22,844**	**23,625**	**24,206**	**25,019**

G

APPENDIX G

Acoustic Assessment

MARSHALL DAY Acoustics

HAWKE'S BAY AIRPORT NOISE BOUNDARIES ASSESSMENT OF NOISE EFFECTS

Report No. 002 | 24 July 2023

84 Symonds Street
PO Box 5811 Wellesley Street
Auckland 1141 New Zealand
T: +64 9 379 7822 F: +64 9 309 3540
www.marshallday.com

Project: **HAWKE'S BAY AIRPORT NOISE BOUNDARY UPDATES**

Prepared for: **Hawke's Bay Airport Limited**
PO Box 721
Napier 4140

Attention: **Rob Stratford**

Report No.: **Rp002 20190068 sjpncb**

Document Control

Status:	Rev:	Comments	Date:	Author:	Reviewer:
Client Draft	-		17 July 2020	Steve Peakall	
	R01	Client Review	5 August 2020	Steve Peakall	Laurel Smith
	R02	Final	18 August 2020	Steve Peakall	
	R03	Minor text updates	19 August 2020	Steve Peakall	
	R04	Refined ET section	24 July 2023	Steve Peakall	

TABLE OF CONTENTS

1.0 INTRODUCTION

Marshall Day Acoustics (MDA) has been engaged by Hawke's Bay Airport Limited (HBAL) to prepare future airport noise contours for Hawke's Bay Airport, Napier. Airport noise contours provide the basis for the implementation of the New Zealand Standard NZS 6805:1992 *"Airport Noise Management and Land Use Planning"* (NZS 6805) concepts in the District Plan. The current noise boundary contained within the operative Napier City Council District Plan was developed in 1994, with data representing the predicted airport operations for the year 2010.

The purpose of this report is to prepare future airport noise contours and to identify, based on the effects of the contours, potential land use controls and airport management measures that could potentially be implemented in the District Plan via the District Plan Review process. We refer throughout to NZS 6805 and provide recommendations for appropriate noise boundaries and land use controls based on this Standard. We also refer to the provisions of New Zealand Standard NZS 6807:1994 *"Noise Management and Land Use Planning for Helicopter Landing Areas"* (NZS 6807).

A glossary of technical terms is provided in Appendix A.

2.0 PROJECT BACKGROUND

2.1 Hawke's Bay Airport

Hawke's Bay Airport is located in Ahuriri on the outskirts of Napier alongside State Highway 2, which runs north of the city towards Wairoa and Gisborne.

The airport is bounded immediately to the north and for some distance by rural land. To the south the airport is bounded by the Ahuriri River Estuary and beyond that by rural land. To the west lies the floodplains of the estuary and further rural land. To the east and beyond the immediately adjacent State highway 2 is the residential community of Westshore, primarily located along the Esplanade. These are the closest residences to the airport.

Other nearby communities include the southern extents of Bayview to the north, and the new residential developments at Poraiti, to the south. There is also one existing dwelling very close to the airport on Watchman Road.

The Terminal is accessed off of State highway 2 via Watchman Road. The main sealed runway is to the west of the Terminal and runs on a general north south orientation. There is also a partially sealed crossing runway to the north of the terminal running n an east west orientation.

2.2 Historic Airport Noise Management Regime

HBAL is the entity that is responsible for the safe and efficient operation of Hawke's Bay Airport. It is also responsible for all noise management responsibilities associated with the airport.

The noise management regime developed for Hawke's Bay Airport in 1994 derives from the regulatory requirements of the Resource Management Act (The Act). Through the provisions of the Act, Napier City Council (NCC) (a territorial authority) was required to implement a "District Plan". This is the main document that specifies how the District's resources and land uses are managed and it contains relevant rules for the control of environmental impacts. The District Plan that is active and relevant today is known as the "Operative District Plan" (ODP) and became operative in 2011.

Approximately every ten years the NCC is required to review its District Plan and the rules within, and this review is occurring at present. The ODP contains general noise rules relevant to all the District's activities, as well as specific noise rules for certain types of activities, such as aircraft noise. These aircraft noise rules are the subject of this report.

Specific aircraft noise rules are required because it is generally accepted that aircraft noise emissions cannot pragmatically be controlled by the general noise rules normally applied to other activities. This is because aircraft noise is infrequent yet has high noise emissions associated with individual

aircraft flight activity. To this end, a specific approach to assessing and controlling aircraft noise emissions is needed, as discussed in the next chapter.

3.0 NOISE PERFORMANCE STANDARDS

3.1 New Zealand Standard NZS 6805

NZS 6805 provides a recommended approach for territorial authorities dealing with airports and land affected by airport noise. The Standard aims to manage the adverse effects of airport noise by

(i) establishing compatible land use planning around an airport; and

(ii) setting noise limits for the management of aircraft noise at airports.

NZS 6805 is used for all the major international and regional airports throughout New Zealand (as well as for a number of smaller airports and airfields) to manage airport noise emissions, through the implementation of its provisions in the various District Plans. NCC also based its existing rules in the ODP on the provisions of NZS 6805, with some minor variations.

The Standard recommends two boundaries, the Airnoise Boundary (ANB) set at 65 dB L_{dn}[1] and the Outer Control Boundary (OCB) set at 55 dB L_{dn}. These boundaries represent noise limits which the airport must not exceed, as well as guidelines for land use planning. The ANB is also generally nominated as the location for future noise monitoring of compliance with a 65 dB L_{dn} limit.

When establishing the location of noise boundaries, an allowance for the expected growth of the airport is made. NZS 6805 recommends a minimum 10 year projection of future aircraft operations. In terms of NZS 6805, aircraft operations include both fixed wing and helicopter flight operations.

NZS 6805 also recommends that, where appropriate, night-time single event noise levels should be considered when locating the ANB. The Standard recognises that individual aircraft noise events at night may result in sleep disturbance effects that are not adequately managed using the night weighted sound exposure metric L_{dn}. However, the Standard falls short of specifying a suitable metric or limit of acceptability. At a number of airports in New Zealand, including Hawke's Bay, the 95 dB L_{AE} contour has been adopted as the limit which defines the onset of significant sleep disturbance and in some cases specific land use controls apply inside an airport's 95 dB L_{AE} contour.

It is important at this stage to distinguish between calculated airport noise contours and airport noise boundaries in this report. These can be defined as:

Airport noise contours: "*A set of predicted noise contours represented by isolines of equal noise level that are directly generated by noise calculation software*".[2]

Airport noise boundaries: "*A set of polygon shapes, based on the predicted airport noise contours, but that are included on District Plan maps and that may have been adjusted for other reasons, such as following parcel boundary lines, land features or airport property boundaries*".

The associated land use controls recommended in NZS 6805 are:

Inside the ANB

(i) *New* noise sensitive uses (including residential) should be prohibited;

(ii) *Existing* residential buildings and subsequent alterations should have appropriate sound insulation.

[1] The L_{dn} noise metric is explained in the Glossary in Appendix A.

[2] We note that some Councils have simply incorporated these into their District Plan maps and provided associated rules, and some Councils have adjusted the shapes for various reasons. As well as this, some Councils have retained the term 'noise contours' in the definitions.

Between ANB and OCB

(i) New noise sensitive uses (including residential) should be prohibited unless a District Plan permits such use subject to appropriate sound insulation.

(ii) Alterations or additions to existing noise sensitive uses (including residential) should include appropriate sound insulation.

Overall, we agree with the approach outlined in NZS 6805 and consider it an appropriate standard to manage the noise effects from airports. Regarding land use controls between the OCB and ANB, from an acoustical effects point of view our interpretation of NZS 6805 is that new noise sensitive use should be prohibited. We recognise however that this approach is not always pragmatic, and that other considerations need to be taken account of (for example, regional development pressures, existing expectations of residential development, amongst others).

It is also important to establish what noise sensitive use includes. As such we have provided a new definition of "Activities Sensitive to Aircraft Noise" (ASAN). We recommend this term be used as a new definition in the District Plan, and is shown in the Glossary in Appendix A.

It is not uncommon for airports around New Zealand to use 20 to 30 years as the future growth scenario. In this case the proposed new aircraft noise boundary is based on an approximately 25 year timeframe (2045), which is broadly in line with the forecasting in the current Airport Masterplan. This complimentary approach is often adopted because it allows the airport to align two separate, but related, long term planning processes; master planning and airport noise management planning.

It is intended to once again use the provisions of NZS 6805 and generally adopt the same approach for the recommended land use controls and airport noise management as part of this Plan Review process.

Further details on NZS 6805 are provided in Appendix B.

3.2 Operative District Plan Noise Controls

For Hawke's Bay Airport, a single '*Airport Noise Boundary*' (ANB) based on a composite 55 dB L_{dn} and 95 dB L_{AE} contour has been implemented in the ODP. The ODP noise boundary is shown in Figure 1, Appendix E.

The ODP noise rules associated with the ANB are presented in Appendix C. These provide rules for what the airport is obligated to do, and also stipulate what must occur for anyone constructing noise sensitive buildings inside the ANB.

The rules are summarised as:

- The airport must be operated to not exceed 55 dB L_{dn} outside the Airport Noise Boundary shown on the planning maps; and
- Anyone building a new house or adding an alteration or addition to an existing house must adequately sound insulate their house from aircraft noise intrusion.

These rules are broadly in line with the provisions of NZS 6805.

3.3 New Zealand Standard NZS 6807

Due to the distinctive character of helicopter noise, and the nature of helicopter operations, NZS 6807 was developed specifically to deal with noise from helicopter landing areas.

NZS 6807 is similar to NZS 6805 in that it recommends controlling noise and the use of land around helicopter landing areas by establishing a 'helinoise boundary', defining an area of land within which, no new incompatible land uses are recommended unless adverse effects are mitigated.

The helinoise boundary is generally defined at 50 dB L_{dn} which is 5 dB more stringent than the L_{dn} 55 contour used for the combined fixed wing and helicopter OCB, recommended in NZS 6805. A night-time 70 dB L_{AFmax} limit is also defined in NZS 6807 for the management of sleep disturbance effects in residential and rural areas.

The land use planning measures recommended inside the helinoise boundary are similar to those recommended in NZS 6805 for areas within the OCB, i.e. new noise sensitive activities should be prohibited unless a District Plan permits such uses subject to appropriate sound insulation.

NZS 6807 recommends that where an area is subject to planning measures in accordance with NZS 6805 as well as in accordance with NZS 6807, the position of the OCB should take into account the position of the helinoise boundary.

Therefore, for completeness, the L_{dn} 50 contour for helicopter movements has been calculated in accordance with NZS 6807. This is shown for comparison with the total fixed wing *and* helicopter movement contours calculated in accordance with NZS 6805.

4.0 NOISE MODELLING

Several computer-based models have been developed to predict aircraft noise in the vicinity of an airport. The most widely used of the models (and the model referenced in NZS 6805) is the Integrated Noise Model (INM) developed by the US Federal Aviation Authority.

The INM has been used to generate the vast majority (if not all) of the airport noise contours used as the basis of District Plan controls in New Zealand. However, the FAA is no longer updating or supporting the INM and has developed new software, the AEDT, that calculates noise contours and air emissions. We have identified several problems with the AEDT software which means it remains necessary to use the INM. These are:

- The AEDT does not allow modification to individual aircraft characteristics in order to calibrate the model to local conditions;
- The AEDT does not adequately deal with taxiing operations which are important at Hawke's Bay Airport due to the close proximity of residential areas; and
- Use of the AEDT software version revealed a number of bugs, instability and crashes, sufficient to render the software inefficient and at times unusable.

The FAA state that the AEDT should give similar results as the INM, and we have checked this at Hawke's Bay Airport. Our comparison shows that for Hawke's Bay Airport the INM and AEDT give similar results. Because of this (and because of the other issues with AEDT) the INM was considered to be the best modelling option for the preparation of the proposed aircraft noise contours.

We understand that to date no other airport noise contours in New Zealand (and therefore subsequently implemented noise boundaries) are based on AEDT calculations.

Further details on the noise modelling methodology and inputs are given in Appendix D.

5.0 CALCULATED NOISE CONTOURS

5.1 2018 Noise Contours

Noise contours representing the 'current' situation (as of 2018) have been predicted in computer noise modelling software to inform an assessment of current noise exposure in the community and also to enable a comparison to be made between that current noise exposure and that which would be allowed under the proposed noise boundaries.

The predicted 2018 noise contours are shown on Figure 2, Appendix E. As can be seen, the predicted 55 and 65 dB L_{dn} noise contours fall within the current *'Airport Noise Boundary'*. This shows that the Airport is currently compliant with the ODP noise rule relating to aircraft noise emissions (District

Plan rule 51.18). Although there is compliance with the noise rules, 2018 noise emissions are close to the limit with only small room for further growth to the north. This confirms that the implementation of revised airport noise boundaries and associated planning rules is warranted in the District Plan review.

The 2018 predicted noise contours have been verified as accurate using results from a noise measurement survey conducted at the airport. The results of the measurements and verification are contained in a separate MDA report (dated July 2019), and discussed briefly in section 6.1.

5.2 2045 Future Noise Contours

The predicted future noise contours are shown on Figure 3, Appendix E.

The noise contours normally used to prepare the airport noise boundaries (the ANB and OCB) under NZS 6805 are the 65 dB L_{dn} and 55 dB L_{dn} contours respectively. These contours are referred to throughout this report as the L_{dn} 55 contour and the L_{dn} 65 contour.

The L_{dn} 50 and L_{dn} 60 contours, the L_{AE} 95 contour, and the L_{dn} 50 contour (for helicopter movements only) are also shown on Figure 3, Appendix E.

The L_{dn} 50 combined fixed wing and helicopter contour is included as it is used as the population sample area considered for the effects assessment in section 6. The L_{AE} 95 contour is shown as it assists with assessing potential night-time noise effects.

As can be seen from Figure 3, Appendix E the predicted L_{dn} 65 noise contour falls within the current *'Airport Noise Boundary'*. However, the predicted L_{dn} 55 noise contour is more extensive to the north and south, and to a minor extent in locations to the east, notably along the undeveloped sections of 'the Esplanade' and by the existing dwelling on Watchman's Road.

The predicted L_{AE} 95 contour falls within the current *'Airport Noise Boundary'* and the predicted L_{dn} 55 contour. The L_{AE} 95 contour has been predicted using the worst-case combination of arrival and departure noise from an Airbus A320.

The following section outlines which of the above predicted airport noise contours should now be adjusted and adopted as boundaries at Hawke's Bay Airport.

6.0 RECOMMENDED NOISE BOUNDARIES

There are some differences between the ODP noise controls and those usually implemented through the use of NZS 6805. These are discussed in the following sections.

As discussed in section 1.2.1, NZS 6805 normally recommends two noise boundaries to achieve its aims. This involves fixing an OCB and a smaller, much closer ANB around the airport. These boundaries represent noise limits which the airport must not exceed, as well as guidelines for land use planning.

The location of the ANB is generally based upon the projected L_{dn} 65 contour and the OCB on the projected L_{dn} 55 contour. NZS 6805 also recommends that, where appropriate, night-time single event noise levels should be considered when locating the ANB.

6.1 Operative District Plan Boundary

Current noise controls for Hawke's Bay Airport in the ODP are detailed in the Airport Zone rules and are based upon the *'Airport Noise Boundary'* (which is a composite of the L_{dn} 55 and the L_{AE} 95 contours).

The rationale for this approach was that the normal establishment of the ANB at the L_{dn} 65 /L_{AE} 95 contour would have negated the need for an OCB, due to the overall area of the two boundaries being almost identical. This is because the L_{AE} 95 contour which was based on a Boeing 737-300 jet

covered almost the same area as the L_{dn} 55 contour. Therefore, the single '*Airport Noise Boundary*' was a composite of the L_{AE} 95 and L_{dn} 55 contours.

However, the land use controls that apply inside this boundary are largely based on what would normally apply inside an OCB. We do not consider these rules to be stringent enough, so therefore updates to the extent and type of noise boundary to be introduced are proposed, as discussed below.

6.2 Recommended Revised Boundaries

The recommended noise boundary is presented in Figure 4, Appendix E. In summary, this is:

- An airport noise boundary, based on the 55 dB L_{dn} noise contour with several adjustments to account for cadastral boundary extents (residentially zoned property and airport zone boundary). In keeping with the nomenclature of NZS 6805, we recommend this be defined as the OCB rather than the operative Airport Noise Boundary

It is anticipated that the land use planning controls associated with the noise boundary would also be strengthened as part of the District Plan review. Recommended land use planning and airport noise controls associated with the proposed OCB are detailed in Section 7 and 8.

In order to strictly ensure consistency between the application of NZS 6805 and NZS 6807, the proposed OCB should encompass the largest area defined by the fixed wing aircraft L_{dn} 55 contour and the helicopter only L_{dn} 50 contour.

Figure 3, Appendix E shows that the helicopter L_{dn} 50 contour lies largely within the total fixed wing *and* helicopter movements L_{dn} 55 contour. The one exception is where proposed helicopter training activity occurs to the west end of runway 07-25. This is located at some considerable distance from any activity sensitive to aircraft noise. As such, MDA recommends that the L_{dn} 55 contour from fixed wing and helicopter operations (Figure 3, Appendix E) be used as the basis for the proposed OCB, as shown on Figure 4, Appendix E.

We recommend that the OCB be 'cadastralised' around individual residential parcel boundaries to avoid confusion as to where associated rules apply. The general method would be that if a parcel is covered even to a small extent by the noise contour, it is subsequently included inside the resultant noise boundary.

It is also appropriate to adjust the OCB to follow airport owned and leased land to allow the airport operational flexibility and to utilise its land in any manner that is required (subject to not exceeding appropriate noise limits). The applicable noise management rules discussed in section 8.1 allow for this flexibility, whilst ensuring noise effects greater than those assessed in this report are not allowed to occur.

In keeping with the provisions of NZS 6805, we recommend that new ASANs inside the OCB be prohibited where practicable to do so. This is further discussed in Section 7 below.

We note the use of a single OCB has been successfully implemented elsewhere, for example at Wanaka Airport.

It is understood that a potential future demand for a small number of night-time aircraft movements may occur. As discussed in Section 3.1, NZS 6805 requires that night-time operations be considered when establishing the ANB. The ODP noise boundary takes account of the 95 dB L_{AE} contour for the loudest forecast night-time aircraft event which was the B733 at the time the boundary was first developed in 1994.

Figure 3, Appendix E shows the revised worst case 95 dB L_{AE} contour for Hawke's Bay Airport, calculated based on the noise emissions from an Airbus A320 on a domestic stage length. This is the noisiest aircraft that could typically use the airport at night. The extent of the contour is not greater than the proposed OCB in any location and does not cover any existing residential activity. All the

land inside the contour is zoned rural and because we are recommending all new noise sensitive activity inside the rural zone in the OCB is prohibited, there would be no need for this additional night-time protection.

7.0 ASSESSMENT OF NOISE EFFECTS

NZS 6805 recognises the need to operate an airport efficiently and with future certainty by adopting a minimum 10 year planning period which typically envisages some degree of growth in operations and therefore noise emissions. Further, the Standard advocates the implementation of practical land use and airport management techniques to promote and conserve the health of people living near airports.

As a result, there is a requirement to determine what level of airport growth is reasonable, when considered in conjunction with the requirement to ensure a satisfactory living environment for existing and future residents. To facilitate this, and in terms of the RMA, an effects assessment is necessary, as detailed below.

The effects of the proposed noise boundary on the surrounding community have been assessed by considering the change in noise level resulting from growth, the predicted level of annoyance and potential sleep disturbance effects.

Based on a desktop assessment, there are at the time of writing 337 dwellings located inside the proposed OCB. In our calculations we have also included an estimate of the number of dwellings in the future subdivision shown in the Parklands West Structure Plan (Appendix 27A of the District Plan) that has yet to be developed, but we understand is permitted to do so as of right.

7.1 Existing Noise Environment

Noise level measurements of both the existing noise environment without aircraft and the airport's noise emissions were carried out between 4 April 2019 and 6 May 2019. The measurements involved automated noise data logging on the airfield for a month, at two locations, shown as Receivers R10 and R11, Figure 1, Appendix E.

The measured noise levels at night, when no aircraft were operating, show that the area is typical of a rural environment, with background noise levels of approximately 30 - 35 dB L_{A90}. At night the area is quiet with minimal local noise sources, mainly comprising of natural sounds in the vicinity (wind in trees, water noise etc.), but with some contribution from the nearby roading network (State Highway 2).

During the day, (when aircraft are not operating), background noise levels are typically 35 - 40 dB L_{A90}. This confirms that the local environment is typical of a rural area but is impacted by airport noise when aircraft are operating. There are currently times during the day when no aircraft are operating or audible.

For Receiver R10, the measured daily noise level from aircraft operations ranged from 46 - 53 dB L_{dn}. The average measured noise level was 50 dB L_{dn} which shows good agreement with the predicted noise level of 51 dB L_{dn} at this location (derived from the 2018 AANC[3] (Figure 2, Appendix E)).

For Receiver R11, the measured daily noise level from aircraft operations ranged from 46 - 55 dB L_{dn}. The average noise level was 51 dB L_{dn} which shows good agreement with the predicted noise level of 49 dB L_{dn} at this location (shown on the 2018 AANC (Figure 2, Appendix E)).

These results also therefore give confidence to the modelling process.

[3] Actual aircraft movements from 2018 and from the 2019 measurement period have been analysed and compared and an adjustment factor has been derived to predict the 2019 noise levels at the receivers, based on the 2018 AANC.

7.2 Change in Noise Level

The proposed airport noise boundary would represent a change in aircraft noise levels compared with the current noise exposure. The effect of this change on the surrounding areas has been assessed.

Three airport operating scenarios have been examined:

- **'Current'** - The level of actual activity in 2018 (This scenario is based on the predicted noise contours shown on Figure 2, Appendix E)
- **'Operative District Plan' -** The level of airport activity anticipated by the ODP (Figure 1, Appendix E)
- **'Proposed'** - The proposed future noise contours (Figure 3, Appendix E)

The future growth of air traffic would result in a change in average noise exposure as described by the L_{dn} noise metric. The change in aircraft that are expected to operate between the current and future scenarios would also result in a change in the noise level (L_{AE}) from an individual event at a particular receiver. These are both considered below.

In both cases, the change in noise level varies depending on the location around the airport, so representative receivers have been used as assessment positions, as described in Table 7-1. The locations of these dwellings are also shown in Figure 1, Appendix E. Noise sensitive receivers are described in this assessment as ASAN, and are defined in Appendix A.

Table 7-1: Assessment Positions

Assessment ID	Assessment Location[4]
R1	Dwelling on Watchman Road, Section 1, HBP 2/646
R2	55 Watchman Road
R3	Dwelling corner of Windsock and Turfrey Road
R4	410 Main Road North
R5	66 Ferguson Street (South)
R6	74 The Esplanade
R7	94 The Esplanade
R8	Orutu Drive Extension (no. 82)
R9	1 Aoraki Road
(R10)	(Noise Monitoring Terminal 1 (North))
(R11)	(Noise Monitoring Terminal 2 (South))

The subjective response to a change in noise level is widely variable from individual to individual and is also different for a change that occurs immediately, compared with a change that occurs slowly over many years.

[4] These assessment locations have been chosen to represent multiple communities around the airport and to spatially cover all areas that may potentially be affected by aircraft noise. These are not locations where physical measurements have occurred (except R10 and R11).

However, to give an indication of the meaning of the changes in noise level presented in the following sections, the following general response to an immediate change in noise is typical;

- An increase in noise level of 10 dB sounds subjectively about 'twice as loud';
- A change in noise level of 5 to 8 dB is regarded as noticeable;
- A change in noise level of 3 to 4 dB is just detectable; and
- A change in noise level of 1 to 2 dB is not discernible.

7.2.1 Daily Noise Level (L_{dn})

The change in average noise exposure level, described by the L_{dn} noise metric, has been predicted using the INM at the assessment locations surrounding the airport for three operational scenarios listed above, and as shown in Table 7-2 below.

Table 7-2: Predicted Change in Noise Level at Assessment Positions

Assessment Location	Operative District Plan Level* (L_{dn} dB)	'Current' (2018) Noise Level (L_{dn} dB)	'Proposed' (2045) Noise Level (L_{dn} dB)	Increase in Noise Level (dB) (2018 to 2045)
R1	53	46	52	6
R2	54	48	59	11
R3	48	41	46	5
R4	52	52	56	4
R5	54	51	58	7
R6	54	47	53	6
R7	54	46	54	8
R8	54	51	57	6
R9	53	50	56	6

* Estimated from L_{dn} contours that form the basis of the Operative District Plan Maps

The predicted change in noise level of four to eleven decibels from 2018 to 2045 would be perceived as noticeable to significant for these dwellings if it occurred overnight. However, as this increase is predicted to occur slowly over 20 or more years, it is likely to be less noticeable.

It is also noted that the predicted future noise levels range from two decibels lower to five decibels higher than what is allowed as of right in the ODP. The largest increases compared to the ODP are on extended runway centerline.

7.2.2 Individual aircraft event noise level

The Master Plan provides for a proposed runway extension. This extension would result in a shift in location of the landing threshold and the start of roll for take-off, compared to that allowed for in the ODP. This could result in a change in noise from individual aircraft events at given locations.

Although domestic jet aircraft movements are provided for in the ODP noise boundaries, jet passenger services do not currently operate from the airport. The revised boundaries also allow for domestic jet services. In this case, the domestic jet services are assumed to be Airbus A320s in the future.

In terms of current activity, the loudest passenger aircraft types operating at the airport are the ATR-72. These are approximately 10 – 15 decibels quieter on departure than an Airbus A320 jet aircraft. Therefore, residents would experience a significant change in individual aircraft event noise levels if

jet services commenced at Hawke's Bay Airport. As mentioned previously, the introduction of jet services is already anticipated in the ODP contours.

Noise Levels of 90 – 100 dB L_{AE} are not uncommon for dwellings surrounding airports. Nevertheless, MDA considers that although this single event noise level would be acceptable during the day, during night-time hours however, levels in excess of 95 dB L_{AE} are not. This matter is addressed further in section 6.4.

7.3 Annoyance Effects

Individual responses to a certain level of aircraft noise vary greatly. A large number of studies have been carried out overseas in an attempt to determine the overall relationship of a given community's annoyance with reference to varying noise levels they receive (known as a dose response relationship – refer Appendix A for a definition). Much of this was taken into account when NZS 6805 was developed.

A dose response relationship specific to aircraft noise has been developed by Miedema and Oudshoorn[5], as shown in Figure 6.1 below. This relationship is similar to other relationships developed by Bradley[6] and another study by Miedema and Vos[7]. The Miedema and Oudshoorn relationship has been adopted by the European Commission position paper in 2002[8] and is generally regarded as the latest research in this area.

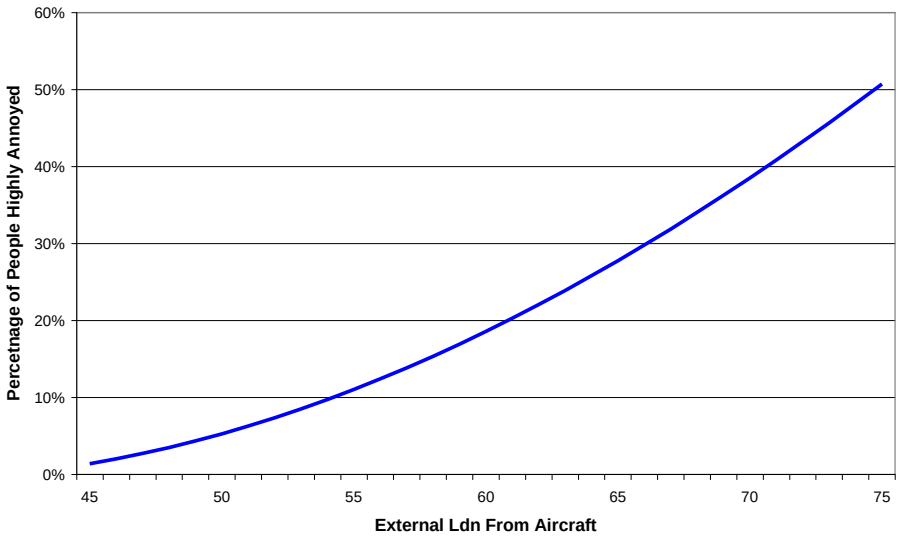


Figure 7.1 Miedema & Ouldshoorn Dose-Response Relationship

The above dose response relationship indicates that for aircraft noise environments of 65 dB L_{dn} 28% of the population are likely to be highly annoyed. This is one of the reasons that NZS 6805 recommends prohibition of noise sensitive activity inside the ANB. For aircraft noise environments of 55 dB L_{dn} 11% of the population are likely to be highly annoyed by the noise.

---

[5] Miedema, H M E and Oudshoorn, G M (2001) *"Annoyance from transportation noise: relationships with exposure metrics DNL and DENL and their confidence intervals."* Environmental Health Perspectives 109 (4) 409 – 416.

[6] Bradley, J S (1996). *"Determining acceptable limits for aviation noise"*. Proceedings of Internoise 1996.

[7] Miedema, H M E and Vos, H (1998). *"Exposure-response relationships for transportation noise"*. J. Acoust. Soc. Am. 104 (6) 3432 – 3445.

[8] European Commission Working Group on Dose-Effect Relations, 2002, "*Position Paper on dose response relationships between transportation noise and annoyance*" Luxembourg: Office for Official Publications of European Communities.

It is noted that annoyance effects are not confined to noise levels in excess of 55 dB L_{dn}. Although the L_{dn} 55 contour forms the basis of the OCB, and the outer extent to which land use planning and airport noise controls are proposed, there may be some annoyance effects for a small percentage of people in areas outside the OCB. This is because aircraft movements outside of the OCB would still be audible. This is why the L_{dn} 50 dB contour is used for the annoyance effects calculations and is shown on Figure 3, Appendix E.

Taking the above into consideration, an analysis has been carried out to predict the change in the number of people likely to be highly annoyed by aircraft noise in the three scenarios detailed in section 6.2. To maintain a common population sample for this study, all dwellings located within the predicted 50 dB L_{dn} contour for the proposed future scenario (refer Figure 3, Appendix E) have been considered[9].

Results for each of the three scenarios are summarised in Table 7-3 below.

Table 7-3: People Highly Annoyed (Miedema & Ouldshoorn)

Activity Scenario	Number of houses per 5 dB L_{dn} band for each scenario[10] [11]						Number of People Highly Annoyed (% of population sample)
	40-45[12]	45-50	50–55	55–60	60–65	> 65	
Current (2018)	591	589	266	0	0	0	94 (2.1%)
District Plan	0	743	1044	0	0	0	271(6.0%)
Proposed	0	0	1450	337	0	0	381 (8.6%)

The proposed noise boundaries represent an increase in the number of people likely to be highly annoyed compared with the current situation. However, it is also noted that the majority of these people (273 out of 381) likely to be highly annoyed live *outside* the proposed OCB and *all* of them live outside the ODP noise boundary.

The reasons for this level of annoyance is because some residential land use close to the airport has established (outside of the ODP noise boundary) and that a significant number of people live in these areas and are exposed to moderate aircraft noise already. This is also the cause of why the number of people highly annoyed would increase as the airport expands.

[9] The 50 dB L_{dn} contour relating to the future contours is used as this results in the largest potential coverage of the three scenarios.

[10] The 5 dB band presented above is collated from calculations based on houses contained within each 1 dB contour band for each scenario, and contained within the 50 dB L_{dn} contour for the future scenario as shown on Figure 3, Appendix E.

[11] Total sample size is 1787 houses with a total of 4450 people. Number of persons per house = 2.49 (Source: 2006 Occupancy Rate for Usually Resident Households for Napier District, Occupancy Rate Tables from excel file 'occupancy rate tables.xls' found at: http://www.stats.govt.nz/browse_for_stats/people_and_communities/housing/housing-indicators.aspx)

[12] The Miedema and Ouldshoorn study states that annoyance data for noise levels of 40 to 45 dB L_{dn} can be considered unreliable – it is included here as a full comparative assessment is required In the case of the Current (2018) scenario, the houses that are below a noise level of 40 dB L_{dn} have not been included and this means the total number of houses in that scenario is less than 1787.

The above analysis supports the rationale for recommending prohibiting noise sensitive development inside the OCB, to reduce future noise exposure and hence annoyance. It also shows that despite the presence of noise boundaries, which delineate the onset of moderate to significant noise effects, there are still lesser effects outside these boundaries.

The proposed revised airport activity envisaged by the noise boundaries represent a moderate increase in the number of people likely to be highly annoyed compared with the ODP noise boundary, but a more significant increase in the number of people likely to be highly annoyed compared with the existing situation.

Nevertheless, considering the number of existing dwellings inside the proposed OCB, the importance of the airport as a regional and national resource, and the small change in noise exposure between that proposed and that currently allowed, it is considered that overall annoyance effects would not alter significantly.

7.4 Sleep Disturbance Effects

7.4.1 Introduction

As stated in NZS 6805, clause 1.4.3.6 "*For smaller airports or airports with infrequent or irregular daily usage patterns…sound exposure contours* [L_{dn}] *may not provide an adequate protection around the airport to avoid sleep disturbance*".

In other words, for airports with a small number of movements (refer Appendix D table D1), the L_{dn} 55 and L_{dn} 65 contours (and thus the boundaries) could be located very close to the airport. If residential development is allowed to establish just outside, then residents may be exposed to relatively high single event noise levels. During the day this is usually tolerable, however night-time flights may result in sleep disturbance effects for residents.

There have been many studies on the effects of noise on sleep carried out both in the laboratory and in the field. The term sleep disturbance itself has various connotations and can include a range of aspects from awakening to affecting the depth of sleep in various stages and creating difficulty with falling asleep.

Many of the studies acknowledge that continuous noise and intermittent noise events have differing effects on sleep. The effects from intermittent noise events are the most relevant to aircraft noise.

The findings of relevant studies relate sleep disturbance effects to either the L_{AE} or L_{AFmax} noise level in the bedroom. L_{AFmax} is the maximum noise level occurring during the aircraft noise event. The Sound Exposure Level, (L_{AE}), is the noise level of one second duration that has the same total sound energy as the aircraft noise event.

Historically, MDA has used the L_{AE} metric and has recommended an upper limit of acceptability of 95 dB L_{AE} outdoors for night time events in residential areas. The sleep disturbance effects at this recommended threshold level are likely to vary depending on the number of night time events and the timing of the events.

There are a number of recognised relationships for estimating sleep disturbance in relation to noise events which have been developed from various research studies.

The effects can be quantified in general terms by applying a dose-response relationship. The relationship developed in 1997 by FICAN[13] (shown in Figure 6.2) predicts the maximum percentage of an exposed population[14] expected to be behaviourally awakened for a given indoor L_{AE}.

[13] Federal Inter-agency Committee on Aviation Noise (1997). *"Effects of Aviation Noise on Awakenings from Sleep"*.

[14] The study recommends that this relationship applies to adults residing in aircraft noise affected areas.

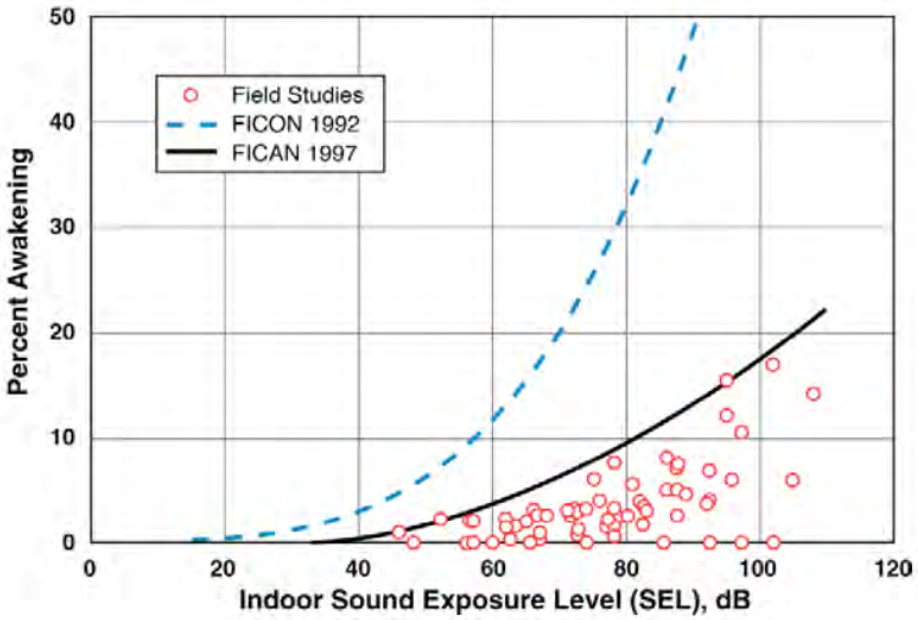


Figure 6.2: FICAN Sleep Disturbance Dose-Response Relationship

The FICAN Dose Response Relationship is a curve for predicting the maximum likelihood of behavioural awakening from a *single* aircraft noise event. This relationship predicts a maximum of six percent of the population being awakened by events of 70 dB L_{AE} (indoors) and ten percent awakened by events of 80 dB L_{AE} received in the bedroom. With windows ajar for ventilation, 80 dB L_{AE} indoors is approximately equivalent to 95 dB L_{AE} outdoors.

The current loudest movement that occurs at night at the airport is 75 – 80 dB L_{AE} at the assessment locations. These levels are considered to be reasonably low, and would be the same or less than noise levels from a truck on the State Highway 20m away from a receiver.

For the proposed scenario a few dwellings on The Esplanade could experience up to 94 dB L_{AE} from the loudest aircraft movement at night which is just below our threshold of acceptability. Compared with current aircraft events at night, the change in noise level would be a significant increase for residents and would be perceived as being more than twice as loud. However, as discussed in Section 6.2, similar noise levels at night are already allowed as of right under the ODP.

MDA notes that there are other factors that should be considered when determining likely effects, such as alternative causes of awakenings. A field study by Horne *et al* [15] assessed the effects of night-time aircraft noise on actimetrically[16] measured sleep in 400 people living at eight sites next to four U.K. airports, with different levels of night flying. Each site was close to aircraft flight paths but away from other major sources of night-time noise such as motorways or rail.

Figure 6.3 (reproduced from Horne *et al* 1994) gives the relative number of awakenings from the study, ranked for the main categories of awakening. Aircraft noise events were a comparatively minor cause of awakening at around 5% (around 7% if excluding the 'Don't know' data).

[15] Horne, J, A; Pankhurst, F, L; Reyner, L, A; Hume, K; Diamond, I, D; (1994) *A Field Study of Sleep Disturbance: Effects of Aircraft Noise and Other Factors on 5,742 Nights of Actimetrically Monitored Sleep in a Large Subject Sample.* In: Sleep 17 (2), 1994, pp 146-195

[16] Use of wrist-worn actimeters by subjects taking part in the study while sleeping. An actimeter is a device that measures and records body movement

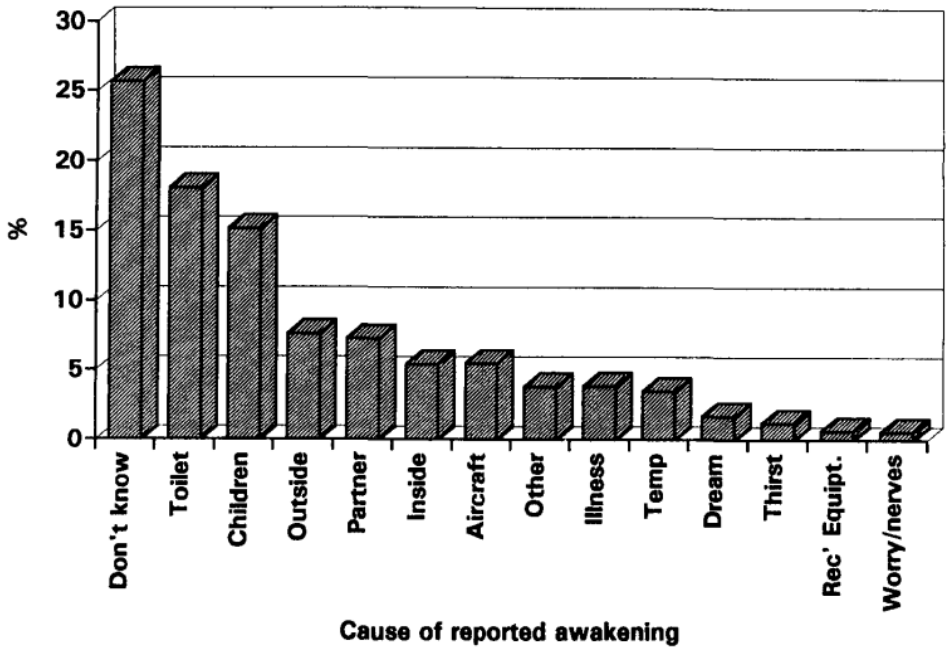


Figure 6.3 Causes and Prevalence of Awakenings (Horne, *et al* 1994)

The study noted that at the four airports considered there was a large variation in the number of aircraft noise events, but little variation in overall sleep disturbance.

The study concluded that:

- By actimetry and self report, the sleep of most subjects was largely unaffected by aircraft noise events.
- For the majority of the subjects, the most disturbing influences on sleep were not aircraft noise events but more idiosyncratic factors such as young children, illness, a need to visit the bathroom and the bed partner.

7.4.2 Health Effects - World Health Organisation L_{night}

L_{night} is a 'health' noise indicator developed by the World Health Organisation (WHO) as part of the Night Noise Guidelines (NNG) for Europe. It is the A-weighted long-term average sound level outside at the building façade, determined over all the night periods in a year in which the night period is eight hours.

Based on exposure-effects relationships presented in the Night Noise Guidelines for Europe, the WHO recommends 40 dB L_{night} is desirable for the protection of public health from night noise with an interim target of 55 dB L_{night}.

In the opinion of MDA, it is considered that a one year average (as used for L_{night}) is an inappropriate criterion and that the NNG of 40 dB L_{night} is not a realistic criterion in relation to noise effects from night-time aircraft activity where such activity may vary in frequency on different nights.

We consider that NZS 6805 is a more appropriate method to ensure adverse effects are adequately managed.

7.4.3 Conclusion

In our opinion, the potential sleep disturbance effects on existing residents is considered reasonable based on the predicted noise levels and the number of proposed movements that could occur at night.

We reach this conclusion based on the following factors:

- Small number of events (approximately 5 at night);
- The predicted levels for the loudest forecast aircraft at night are below the 95 dB L_{AE} threshold of acceptability for sleep disturbance at existing dwellings; and
- In terms of all causes of night awakenings, awakenings from aircraft noise events would only account for a small percentage of people's overall sleep disturbance.

We do not recommend a Night Noise Boundary defined by the L_{AE} 95 contour be implemented at Hawke's Bay Airport for the purposes of managing sleep disturbance effects. This is because all the land that would be inside such a boundary is also in the proposed OCB and zoned rural and we are already recommending all new noise sensitive activity inside the proposed OCB be prohibited. Therefore, there would be no need for this additional night-time protection.

7.5 Mitigation of Effects

NZS 6805 recommends that the mitigation of aircraft noise effects be achieved through a combination of:

- Aircraft noise management measures;
- Restriction on development of noise sensitive activities;
- Sound insulation treatment measures.

NZS 6805 recommends that **new** housing (or new alterations/additions) should not be built between the OCB and the ANB unless the District Plan permits it, subject to acoustic insulation. In practice the cost of acoustic insulation for new houses and additions/alterations is borne by the developer/homeowner.

This is the standard approach to reverse sensitivity protection measures for major public infrastructure in New Zealand including roads, ports and airports. Where a sensitive activity is introduced to an area affected by established public infrastructure, the effects are required to be mitigated by the new activity.

In the situation where an airport increases its noise effects, consideration is given to retrofitting acoustic insulation to existing houses depending on the noise levels. NZS 6805 does not recommend retrofit acoustic insulation to existing houses between the OCB and ANB. However, inside the ANB (65 dB L_{dn} and greater), NZS 6805 states that "*Steps shall be taken to provide existing residential properties with appropriate acoustic insulation*". This has been implemented at most airports in New Zealand (where applicable) by the Airport funding sound insulation to existing houses exposed to noise levels of 65 dB L_{dn} or more.

However in accordance with NZS 6805, most airports *do not* fund sound insulation for existing houses between the OCB and the ANB. Auckland, Queenstown and Rotorua are some of the exceptions where partial funding is provided, but only inside the 60dB L_{dn} contour. *No* airport provides retrofit sound insulation to houses between 55 and 60 dB L_{dn}.

This approach to acoustic insulation is considered appropriate for Hawke's Bay Airport. Sections 7 and 8 outline recommended provisions where appropriate.

8.0 LAND USE PLANNING RECOMMENDATIONS

8.1 Land Use Controls

In keeping with the provisions of NZS 6805, MDA recommends that new ASANs inside the proposed OCB be prohibited where practicable to do so.

NZS 6805 also recommends that noise sensitive activity is prohibited between the OCB and the ANB unless a district plan permits it subject to appropriate sound insulation requirements. This approach recognises that not all of the effects of aircraft noise can be mitigated by insulating buildings, particularly for residential activity.

People generally have a desire for exposure to the outdoors and an expectation to be able to spend time in the garden, entertain guests outdoors and leave doors and windows open. In these situations, the level of aircraft noise exposure cannot be practicably mitigated. If new residential activity is to be permitted inside the proposed OCB it can be expected that some residents would be annoyed by aircraft noise outdoors (refer to section 7.3).

MDA supports the NZS 6805 approach to prohibit new noise sensitive activity inside the OCB as a desirable starting point but acknowledges that other factors such as historical land use development, landowners' expectations of property rights and regional pressures on developable land can result in relaxed land use restrictions rather than the ideal restrictions being imposed.

For Hawke's Bay Airport, the OCB covers an area including several different land use zones. It is understood that there is an existing expectation for residential development in the Main Residential zone to the south of the airport and the Rural Settlement zone to the north of the airport which are both between the future 55 and 60 dB L_{dn} contours.

Although not desirable from an acoustic point of view, this expectation may be accommodated provided appropriate acoustic insulation is installed for ASAN in these zones.

This existing expectation for residential development does not apply to the general rural zone areas inside the OCB.

As a result, it is recommended that new ASAN inside the OCB should be prohibited in all other zones, ie the rural and airport zones.

This would also ensure there was no possibility of ASANs being constructed at higher noise levels inside the OCB, and therefore because of this (and because there are no existing ASANs exposed to future noise levels of this magnitude), there is no need to apply an ANB to ensure such protection. This same conclusion is drawn regarding a specific night-time single event noise boundary.

If new ASANs are not prohibited in the Main Residential zone they should be subject to sound insulation measures to ensure an acceptable internal noise environment. Sound insulation requirements should also apply to new alterations or additions to *existing* ASANs in all zones. The cost of acoustic insulation for new ASAN and additions/alterations to existing ASAN would be borne by the developer or homeowner.

8.2 General Sound Insulation Requirements

In most cases sound insulation standards for noise sensitive uses around airports have been specified as an internal noise criterion. Buildings must be built to achieve the target internal noise level based on the future external noise exposure defined by the airport noise contours. If this approach is implemented, then the following design criterion is recommended:

- Internal noise level of 40 dB L_{dn} in all habitable rooms

To facilitate appropriate designs, a noise contour map showing 1 decibel L_{dn} contours and an aircraft noise design spectrum would need to be provided in the District Plan.

An alternative approach is to specify a sound insulation performance criterion for the building envelope itself, in terms of either a required noise reduction or specified construction details.

Neither of these approaches are actually required at Hawke's Bay Airport, as discussed in the following section.

8.3 Recommended Approach at Hawke's Bay Airport

For Hawke's Bay Airport, the residential zones where new or altered ASAN may be built under the proposal, lie exclusively between 55 and 60 dB L_{dn}. For this moderate level of noise exposure, we predict that standard house constructions that are compliant with the Building Code would achieve 40 dB L_{dn} indoors *with windows closed*.

Based on our land use planning recommendations of Section 8.1, there are no other areas where houses could be built at higher noise exposures, and so more robust sound insulation measures are not actually required. This means that:

No specific additional acoustic treatment to the building envelope is needed.

However, as almost all houses in New Zealand rely on open windows to provide ventilation, alternative methods such as mechanical systems would be necessary to achieve the noise criterion (to ensure windows could remain closed) and acceptable air quality simultaneously. Alternative ventilation can typically be achieved using moderately inexpensive ducted fan systems in ceiling spaces, which bring air from the outside into habitable rooms.

To simplify the performance standards in the Proposed District Plan, we recommend that alternative ventilation is a specified requirement for new and altered ASANs located inside the proposed OCB. We recommend that appropriate ventilation and thermal comfort criteria, provided by a mechanical engineer, are included in the ventilation requirements. Ventilation systems should also be designed to comply with an acceptable noise level inside the dwelling. Typical limits are 30 - 35 dB L_{Aeq} in bedrooms, and 35 - 40 dB L_{Aeq} inside other habitable rooms.

8.4 Summary of Recommendations

MDA recommends that:

- *New* ASAN located within the OCB should be prohibited, in all zones where practicable to do so. If there is an existing expectation of development in the Main Residential and Rural Settlement zone, this can be accommodated subject to there being a requirement for mechanical ventilation to be fitted
- Alterations and additions to *existing* ASAN's located within the OCB in all zones should be fitted with mechanical ventilation (refer Section 8.3)

9.0 AIRPORT NOISE CONTROL RECOMMENDATIONS

9.1 Airport Noise Management

MDA recommends that:

- The Airport should be managed so that the noise from aircraft operations does not exceed a Day/Night Level of:
    - 55 dB $L_{dn\ (3mth)}$ outside the proposed Outer Control Boundary (OCB).
- To ensure compliance with the above, calculation of Aircraft Noise Contours using the Integrated Noise Model (INM) program and records of actual aircraft activity at the Airport is recommended, initially within 24 months of the proposed boundaries becoming adopted, and thereafter every 3 years.
- Noise monitoring should be undertaken to verify that noise levels are not exceeding the requirements set out above. It is recommended that when the calculated noise level exceeds 54 dB at any point on the OCB, then infield monitoring is required for a minimum of one month (at one measurement location) to demonstrate compliance with the OCB, as shown on Figure 4, Appendix E.

- It is also recommended that all helicopter operators be made aware of the Helicopter Association International's "Fly Neighbourly" program and should avoid, where possible flying over or close to residential areas.
- Measurement and Assessment should be undertaken in accordance with NZS 6805.

9.2 Engine Testing

The aviation industry has strict requirements regarding the need to run an engine after maintenance before it can be used for passengers. Routine or unplanned work on an engine will often require a period of idling or a short full power run of the engine. Therefore, the testing of aircraft engines is another noise generating activity that is vital to the operational viability of a commercial airport with scheduled flights.

Routine engine maintenance on passenger aircraft is not proposed at Hawke's Bay Airport. However, in the event of unexpected equipment failure, unplanned work may be carried out requiring engines to be run up before returning the aircraft to service. Because of the relative size and power of these aircraft this can be a very noisy activity. Despite the potential for such a significant high noise event, this occurs so infrequently that the noise effects are considered reasonable.

It is noted that at present planned engine testing is controlled by the standard noise rules for the airport area in the ODP. Because this ground based activity is not particularly noisy, is relatively frequent this remains an acceptable method for controlling general aviation engine testing.

10.0 CONCLUSIONS

Marshall Day Acoustics has prepared revised noise contours for future aircraft operations for Hawke's Bay Airport. The revised noise boundaries are generally larger than those contained in the operative District Plan.

In order to provide for the airport's future growth, it is recommended that the District Plan noise boundaries be updated. It is recommended that an OCB be implemented in place of the existing single 'Airport Noise Boundary'.

It is recommended that the operative District Plan noise rules relating to noise associated with the Airport be revised to reflect the change in noise boundaries and to incorporate the recommendations of NZS 6805.

With the implementation of the proposed noise boundary and associated land use planning controls, the noise effects as a result of the proposed expansion of the aircraft noise contours are considered reasonable.

APPENDIX A: GLOSSARY OF TERMINOLOGY

dB	Decibel – A measurement of sound level expressed as a logarithmic ratio of sound pressure P relative to a reference pressure of Pr=20 μPa i.e. dB = 20 x log(P/Pr)
ASAN	Activity Sensitive to Aircraft Noise Means any residential activity, long term visitor accommodation, rest homes and other homes for the aged, day care facility, pre/school/educational facilities (including all outdoor spaces associated with such an educational facility), child care centres, hospitals, and facilities used for overnight patient medical care.
A-weighting	The process by which noise levels are corrected to account for the non-linear frequency response of the human ear. All noise levels are quoted relative to a sound pressure of $2x10^{-5}$Pa
Aircraft Operation	Aircraft operations include ground movements, take offs and landings, but exclude; 1. aircraft landing or taking off in an emergency 2. emergency flights required to rescue persons from life threatening situations or to transport patients, human organs or medical personnel in medical emergency 3. aircraft using the aerodrome due to unforeseen circumstances as an essential alternative to landing at the planned destination aerodrome 4. flights required to meet the needs of a national or civil defence emergency declared under the Civil Defence Act 1983; 5. flights certified by the Minister of Defence as necessary for reasons of National security in accordance with Section 4 of the Act; and 6. aircraft undertaking firefighting or search and rescue duties.
Dose-response relationship	The dose–response relationship, or exposure–response relationship, describes the magnitude of the response of an individual or community, as a function of exposure to noise after a certain exposure time. Dose–response relationships can be described by dose–response curves
$L_{Aeq\,(t)}$	The equivalent continuous (time-averaged) A-weighted sound level. This is commonly referred to as the average noise level. The suffix "t" represents the time period to which the noise level relates
$L_{A90\,(t)}$	The A-weighted noise level equalled or exceeded for 90% of the measurement period. This is commonly referred to as the background noise level. The suffix "t" represents the time period to which the noise level relates, e.g. (8 h) would represent a period of 8 hours, (15 min) would represent a period of 15 minutes and (2200-0700) would represent a measurement time between 10 pm and 7 am.
L_{AFmax}	The A-weighted maximum noise level. The highest noise level which occurs during the measurement period.
L_{dn}	The day night noise level which is calculated from the 24 hour L_{Aeq} with a 10 dB penalty applied to the night-time (2200-0700 hours) L_{Aeq}.
SEL or L_{AE}	Sound Exposure Level The sound level of one second duration which has the same amount of energy as the actual noise event measured. Usually used to measure the sound energy of a particular event, such as a train pass-by or an aircraft flyover

NZS 6801:2008	New Zealand Standard NZS 6801:2008 *"Acoustics – Measurement of environmental sound"*
NZS 6802:2008	New Zealand Standard NZS 6802:2008 *"Acoustics – Environmental Noise"*
NZS 6805:1992	New Zealand Standard NZS 6805:1992 *"Airport Noise Management and Land Use Planning"*
NZS 6807:1994	New Zealand Standard NZS 6807:1994 *"Noise Management and Land Use Planning for Helicopter Landing Areas*"

APPENDIX B: SUMMARY OF NZS 6805:1992

In 1991 the Standards Association of New Zealand published New Zealand Standards NZS 6805:1992 *"Airport Noise Management and Land Use Planning"* with a view to providing a consistent approach to noise planning around New Zealand Airports. The Standard has two majors aims:

(i) to establish compatible land use planning around an airport and

(ii) to set noise limits for the management of aircraft noise at airports.

B1 - Noise Boundaries

The Standard recommends two noise boundaries to achieve its aims. This involves fixing an Outer Control Boundary (OCB) and a smaller, much closer Airnoise Boundary (ANB) around the airport.

The Standard recommends that inside the ANB, new noise sensitive uses (including residential) should be prohibited. Between the ANB and the OCB new noise sensitive uses should also be prohibited unless provided with sound insulation. The ANB is also nominated as the location for future noise monitoring of compliance with an 65 dB L_{dn} limit.

The Standard is based on the Day/Night Sound Level (L_{dn}) which uses the cumulative 'noise energy' that is produced by all flights during a typical day with a 10 dB penalty applied to night flights (see Appendix A for an explanation of terminology). L_{dn} is used extensively overseas for airport noise assessment and it has been found to correlate well with community response to aircraft noise.

When establishing the location of the Noise Boundaries, an allowance for the expected growth of the airport can be made and NZS 6805 recommends a minimum 10 year projection should be made of future aircraft operations.

The location of the ANB is then based upon the projected 65 dB L_{dn} contour and the OCB on the projected 55 dB L_{dn}. NZS 6805 also recommends that, where appropriate, night time single event noise levels should be considered in the location of the ANB.

B2 - Land Use Planning

Land Use Planning can be an effective way to minimise population exposure to noise around airports. Aircraft technology and flight management, although an important component in abating noise, will not be sufficient alone to eliminate or adequately control aircraft noise. Uncontrolled development of noise sensitive uses around an airport can unnecessarily expose additional people to high levels of noise and can constrict, by public pressure as a response to noise, the operation of the airport.

NZS 6805 lays out recommended criteria for Land Use Planning around airports. In summary, Tables 1 and 2 of the Standard recommend the following:

Inside the ANB

(iii) *New* noise sensitive uses (including residential) should be prohibited;

(iv) *Existing* residential buildings and subsequent alterations should have appropriate sound insulation.

Between ANB and OCB

(iii) New noise sensitive uses (including residential) should be prohibited unless a District Plan permits such use subject to appropriate sound insulation.

(iv) Alterations or additions to existing noise sensitive uses (including residential) should include appropriate sound insulation.

B3 - Airport Noise Management

In addition to land use controls, noise controls can be used to manage the level of noise impact around airports. These controls can take the form of preferential runway usage, noise abatement flight tracks, curfews, noise emission limits and others. NZS 6805 proposes maximum noise emission limits for the airport. This procedure is consistent with the general approach to noise control in New Zealand, in that it is left to the operator to best decide how to manage its activities to comply with an agreed level of noise.

The Standard proposes that the Day/Night Sound Level (L_{dn}) produced by the Airport should not exceed 65 dB L_{dn} at or outside the ANB (or L_{dn} 65 dB contour). Measurement would involve monitoring the hourly noise levels over a period of typically 3 months and obtaining the L_{dn} by averaging the daytime and weighted night-time noise levels.

The location of the 65 and 55 dB L_{dn} contours determines the extent of the noise emission from the airport and thus the extent to which the airports future operations are constrained. Therefore when calculating the contours and locating the ANB and OCB it is vital that the future expansion of the airport be taken into account.

APPENDIX C: OPERATIVE DISTRICT PLAN NOISE RULES

51.18 **Noise**

1. The following noise conditions shall apply to all land uses other than aircraft operations and those exempted in Rule 57.5:

   a) Land uses within the zone must be conducted so as to ensure the following noise limits are not exceeded at any point within any residentially zoned land:

Monday to Saturday inclusive		
0700 hours to 2200 hours	L_{10}	55 dBA
Sunday and all other times	L_{10}	45 dBA
Monday to Sunday inclusive		
2200 hours to 0700 hours the following day	L_{max}	75 dBA

   For the purposes of this rule, land uses include airport ground based activities and aircraft engine testing, but excludes essential unscheduled aircraft testing (refer to rule 57.5).

   b) All land uses must comply in all respects with the relevant conditions in Chapter 57 (Noise) of this Plan.

2. The following noise conditions shall apply to aircraft operations:

   a) The Hawke's Bay Airport must be operated so that noise produced by aircraft operations does not exceed 55 dBA L_{dn} at any point beyond the Airport Noise Boundary, as shown on the planning maps.

   b) The daily L_{dn} must be measured in accordance with New Zealand Standard 6805:1992 "Airport Noise Management and Land Use Planning" and must be averaged logarithmically over a three month period.

   c) For the purpose of this Rule, aircraft operations include aircraft operating during take-offs, landings and taxiing, but does not include:

      i) airport ground-based activities.
      ii) aircraft landing in an emergency or diverted aircraft.
      iii) emergency flights required to rescue people from life threatening situations or to transport patients, human vital organs or medical personnel in a medical emergency.
      iv) the operation of unscheduled flights required to meet the needs of a declared national or civil defence emergency.
      v) military aircraft owned or operated by the Defence Forces of the New Zealand Government or another sovereign state.
      vii) aircraft engine testing.
      vii) essential unscheduled aircraft engine testing.

3. The following acoustic insulation conditions shall apply to the addition of a habitable space to an existing building used for a noise sensitive activity located within the Airport Noise Boundary:

   a) The habitable space must be adequately insulated from aircraft operations associated with the Hawke's Bay Airport.

   b) Adequate sound insulation must be achieved by constructing the habitable space to achieve a spatial average indoor design sound level of 40dBA L_{eq} in any room used for sleeping or 45 dBA L_{eq} in any other habitable space. The indoor design level must be achieved with windows and doors open unless adequate alternative ventilation means is provided, used and maintained in operating order.

   c) The owner must produce to the Council an acoustic design report prior to the commencement of the use. The acoustic design report must be prepared by a person qualified and experienced in acoustics. The report must indicate the means by which the sound levels specified in this rule will be complied with and must contain a certificate by its author that the means given therein will be adequate to ensure compliance with the sound levels specified in this rule.

   d) Prior to any person requesting a Certificate of Compliance, an acoustic design certificate prepared by a person qualified and experienced in acoustics must be provided to the Council, verifying compliance with this rule as outlined above.

   e) For the purposes of this rule, addition of a habitable space includes the addition of a whole, entire habitable space. It does not include the extension of an existing habitable space where that extension is not entirely self-contained.

4. Where any new noise sensitive activity is established within the airport noise boundary as shown on the planning maps:

   a) All habitable spaces within buildings used for the noise sensitive activity must be adequately insulated from noise arising from aircraft operations associated with the Hawke's Bay Airport.

   b) Adequate sound insulation must be achieved by constructing any building to achieve a spatial average indoor design sound level of 40 dBA L_{eq} in any room used for sleeping and 45 dBA L_{eq} in all other habitable spaces. The indoor design level must be achieved with windows and doors open unless adequate alternative ventilation means is provided, used and maintained in operating order.

   c) An acoustic design report must be provided to the Council prior to any building consent being granted, or where no building consent is required, prior to the commencement of the use. The acoustic design report must be prepared by a person qualified and experienced in acoustics. The report is to indicate the means by which the noise limits specified in this rule will be complied with and is to contain a certificate by its author that the means given therein will be adequate to ensure compliance with the noise limits specified in this rule.

d) Prior to any person requesting a Certificate of Compliance, an acoustic design certificate prepared by a person qualified and experienced in acoustics must be supplied, verifying compliance with Rule 51.18.3 above.

e) It will be a condition of subdivision of land (as defined in the Act) that a consent notice issued under Section 221 of the Act must be entered into before the issue of a Section 224 Certificate, with such a consent notice to be registered on the Certificate(s) of Title of the relevant lot(s). The consent notice is required to ensure that compliance with the acoustic insulation requirements in 4 above are achieved.

APPENDIX D: NOISE MODELLING METHODOLOGY

The INM calculation procedures use an energy averaging technique to calculate the noise exposure in terms of L_{dn}.

The INM calculates the noise level at a large number of grid points by summing the 'noise energy' from each aircraft movement during a 'typical' day's operation. The 'noise energy' is calculated using the hourly L_{Aeq} value, night-weighted by +10 dB and then averaged over 24 hours to give the daily L_{dn} value at each grid point. The grid points with equal noise level are then joined graphically to give a plot of L_{dn} noise contours.

The original airport noise contours used to develop the operative District Plan airport noise boundary were generated in 1994 using INM version 4.11. Since this time there have been a number of updates to the INM program which produce slightly different results. The current version used for this updated set of contours is INM v7d.

D1 - Runways

The revised contours include the recently constructed extension of the main runway 16/34 in both directions to an overall length of 1940m. Runway endpoints have been provided by HBAL for input into the noise model.

It is understood that current operations on runway 10/28 consist of general aviation, but this is likely to be closed sometime in the future. Therefore, for the purposes of noise modeling these operations have been transferred to runway 07/25.

It is noted that the runway extension differs in extents to that assumed in the noise contours that form the basis of the current District Plan Airport Noise Boundary.

D2 - Flight tracks

The flight tracks used are similar to those in the original (1994) modelling, and are based on the destination/origin of aircraft. Tracks for circuits and helicopter operations have been supplied by AirBiz and we have used these for our modelling. The flight tracks supplied are for all aircraft types and vary by aircraft category. Performance Based Navigation (PBN) tracks and procedures are also to be implemented at Hawke's Bay Airport for some aircraft types.

The tracks used in the modelling can be seen in AirBiz report (Hawke's Bay Airport Assumptions Pack – Flight Tracks, dated 27th November 2019).

D3 - Aircraft Taxi-ing

The INM does not specifically include calculations for aircraft taxi operations. However, there is provision to calculate noise from taxi-ing in the model. In situations where airport noise boundaries are located close to an airport, aircraft taxi-ing may contribute to the size and shape of the boundaries. Therefore, in these cases it is considered appropriate to include taxi-ing operations when calculating the airport noise contours. For Hawke's Bay Airport it is considered appropriate to include the noise from all aircraft taxi-ing to and from the Apron.

Modelled taxi-ing operations are based on information provided by HBAL and AirBiz, and utilise the proposed future Code C taxiway to access runway 34 and the existing stub taxiway to and from the Apron to the sealed runway.

D4 - Projected Aircraft activity

Future aircraft activity has been projected for the year 2045 by Christchurch International Airport (CIAL) on behalf of HBAL. Movement data has been provided for each different aircraft type for different periods of the day. This movement data has been assigned to the differing flight tracks as a percentage of the overall movements. Each discrete aircraft movement is then effectively defined as one aircraft operation. This term is defined in Appendix A.

For each aircraft movement, including departures, arrivals and training circuits, the following information was provided for input in the model:

- Aircraft type
- Time of day (day 0700-2200 or night 2200-0700)
- Runway usage
- Departure, arrival or training circuits
- Stage length (i.e. distance to destination)

Table D1 presents a summary of the projected aircraft operations data provided by HBAL for the year 2045.

Table D1: Summary of Aircraft operations

	Arrivals	Departures	% at Night	Total
Scheduled				
Airbus A320 / A220	10	10	7%	20
ATR 72	23	23	7%	45
Q300	4	4	7%	8
General Aviation				
Business Jets	2	2	0%	4
Turboprop	5	5	0%	10
Piston twin	19	19	0%	38
Helicopters	2	2	0%	5
Training				
Training Circuits	-	15	0%	15
			Daily Movements	144
			Annual Movements	52521

D5 - Peak Load

A seasonal loading, or 'Peak Load' has been applied to the future movement projections to account for the potential busiest three month period within a year, as recommended by NZS 6805. This peak load has been derived from detailed movement data and seasonal peak day loading on the stands provided by HBAL

Table D2: Peak Load Factor

Aircraft Type	Applied Peak Load Factor
Scheduled TurboProp	5%
Scheduled Jet	5%
Non-scheduled (includes General Aviation, corporate and helicopters)	none

APPENDIX E: FIGURES

R4
R5
R10N
R3
R7
R6
R1
R2
R11S
R8
R9

Map Legend

Runways

Existing NCC DP Airport Noise Boundary

Assessment Locations

- R1 - Watchmand Road Dwelling
- R2 - 55 Watchmand Road
- R3 - Dwelling Turfrey Road
- R4 - 410 Main Road N
- R5 - 66 Ferguson Street
- R6 - 74 The Esplanade
- R7 - 94 The Esplanade
- R8 - Orutu Drive Ext (82)
- R9 - 1 Aorkai Road
- R10 - NMT 1 (N)
- R11 - NMT 2 (S)

Path: I:\JOBS\2019\20190068\06 Drawings\Internal\GIS 001 20190068 HBAL.aprx

MARSHALL DAY Acoustics

Figure 1 - Current District Plan Boundary

Prepared By:
Date: 4/08/2020
Time: 1:11 PM

Scale @ A3: 1:24,000

0 250 500 1,000 m

N

Map Legend

- Runways
- 2018 Annual Aircraft Noise Contours
  - 55 dB Ldn
  - 60 dB Ldn
  - 65 dB Ldn
- Existing NCC DP Airport Noise Boundary

Path: I:\JOBS\2019\20190068\06 Drawings\Internal\GIS 001 20190068 HBAL.aprx

MARSHALL DAY Acoustics

Figure 2 - Predicted Noise Contours 2018

Prepared By:
Date: 4/08/2020
Time: 1:13 PM

Scale @ A3: 1:24,000

0 250 500 1,000 m

N

Map Legend

- Runways
- Existing NCC DP Airport Noise Boundary

Future Noise Contours (with taxi and training)

- 50 dB Ldn
- 55 dB Ldn
- 60 dB Ldn
- 65 dB Ldn
- A320 SEL 95

6807 Helicopter noise contour

- 50 dB Ldn

Path: I:\JOBS\2019\20190068\06 Drawings\Internal\GIS 001 20190068 HBAL.aprx

MARSHALL DAY Acoustics

Figure 3 - Predicted Noise Contours 2045

Prepared By:
Date: 4/08/2020
Time: 1:56 PM

Scale @ A3: 1:24,000

0 250 500 1,000 m

N

Map Legend

- Runways
- Proposed Outer Control Boundary (OCB)
- Existing NCC DP Airport Noise Boundary

Path: I:\JOBS\2019\20190068\06 Drawings\Internal\GIS 001 20190068 HBAL.aprx

MARSHALL DAY Acoustics

Figure 4 - Proposed Noise Boundary

Prepared By:
Date: 5/08/2020
Time: 8:05 PM

Scale @ A3: 1:24,000

0 250 500 1,000 m

N