

**BEFORE INDEPENDENT HEARING COMMISSIONERS
APPOINTED BY THE WAIKATO DISTRICT COUNCIL**

IN THE MATTER of the Resource Management Act 1991
(**RMA**)

AND

IN THE MATTER of the Proposed Waikato District Plan

BETWEEN **NZTE OPERATIONS LIMITED**

Submitter [No. 823]

AND

WAIKATO DISTRICT COUNCIL

Local Authority

**EVIDENCE IN REPLY OF DAVID PARK
FOR NZTE OPERATIONS LIMITED**

(AVIATION)

Dated: 8 April 2021

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INTRODUCTION

1. My name is David Stewart Park. I am a Director of Astral Limited, a New Zealand based aviation consultancy servicing a range of airport, airline, and government clients within New Zealand and overseas.
2. I outlined my qualifications, experience, and commitment to comply with the Environment Court Expert Witness Code of Conduct in my evidence-in-chief dated 15 February 2021 (**EIC**).
3. This evidence-in-reply (**EIR**) addresses matters raised by submitters and the Waikato District Council in rebuttal to NZTE EIC, or new evidence, presented during the first day of the hearing on 8 March 2021.

OBSTACLE LIMITATION SURFACES

4. I attach as **annexure "A"** to my EIR, diagrams that show the OLS and critical areas within it more clearly.
5. As stated in my EIC, I do not agree with Ms Ensor's s.42A EIC recommendation that the Obstacle Limitation Surface (**OLS**) for the aerodrome should be continue to reflect the OLS provided for under the Operative District Plan (**ODP**).¹
6. However, I do agree with Ms Ensor's s.42A rebuttal evidence that, as an alternative to reverting to the ODP OLS, there should be flexibility to enable OLS intrusions into the inner horizontal surface.² This is because parts of the inner horizontal surface are some distance from the aerodrome, and, in many cases, will be well away from aircraft flight paths.
7. I do not agree with Ms Ensor's recommendation that the same flexibility should be provided to intrusions into the transitional side surfaces.³ This is because the transitional side surfaces are very close to the runway and aircraft flight paths.
8. I consider providing flexibility in relation to the inner horizontal surface will, due to the locations of their properties, address the concerns raised in the

¹ Section 42A report para. 267

² Section 42A report rebuttal evidence para. 18

³ *Ibid*

submissions of VHL Holdings Ltd, Ms Yapp, Ms Fowler, Ms Madgwick and Mr Barnes (to the extent that those concerns are not already addressed by my understanding of existing use rights).

9. I consider that the flexible approach taken in the Auckland District Council Plan (Rodney Section) 2011, in relation to the OLS at aerodromes in that jurisdiction is a suitable model to apply in relation to the aerodrome.⁴ I attach these references as **annexure “B”** to this statement of EIR.
10. At Section 9 – Safety, of his presentation to the Commissioners, Mr McBride quotes Ms Ensor as saying CAA’s OLS may or may not be compatible with WDC’s OLS. I confirm that the Variation 1 OLS is entirely compatible with the CAA’s OLS standard for instrument or night operations on a runway of the dimensions of Te Kowhai’s, designed under AC139-7 standards.
11. I confirm that, with regard to the “*minimum specified margin*” terminology of concern to Mr McBride, that this is incorporated into the 1:40 OLS upslope and is not an additional margin required beneath it.⁵ It is up to the pilot to ensure that his/her aircraft can achieve the 1:40 climb departure gradient, or remain above the 1:40 slope on approach, by the safety margin required under the particular CAA Rules which apply to the pilot’s aircraft.
12. At Section 11 of his presentation Mr McBride’s quotes Ms Ensor as saying:

They (CAA) may not find the Council’s OLS is fit-for-purpose; they may not allow trees to poke through; they could penalise you, by fine or sanction. I don’t know ...
13. If Ms Ensor did make this statement then she is incorrect because: (a) the CAA could not find the Council’s OLS is unfit-for-purpose as it fully complies with CAA’s own standard; and (b) in my experience, the CAA places the obligation on the aerodrome operator to ensure there is a means of achieving OLS compliance, not the landowner.

⁴ Auckland District Council Plan (Rodney Section) 2011, Section 12.8.4 Special 4(North Shore Airfield) Zone, Planning Maps 26, 27 and Map Appendix 1, page 2 “Steps for assessing a specific proposal”, paragraph 4.

⁵ The “*minimum specified margin*” reference is contained in CAA Advisory Circular AC 139-10 – *Control of Obstacles*.

VARIATION 1 TECHNICAL DESCRIPTION OF OLS

14. During day 1 of the hearing, the Commissioner's noted an apparent error in the drafting of the technical description of the OLS in Variation 1. Mr Serjeant's EIR contains corrections to the wording which I support.

CIRCUIT TRAINING

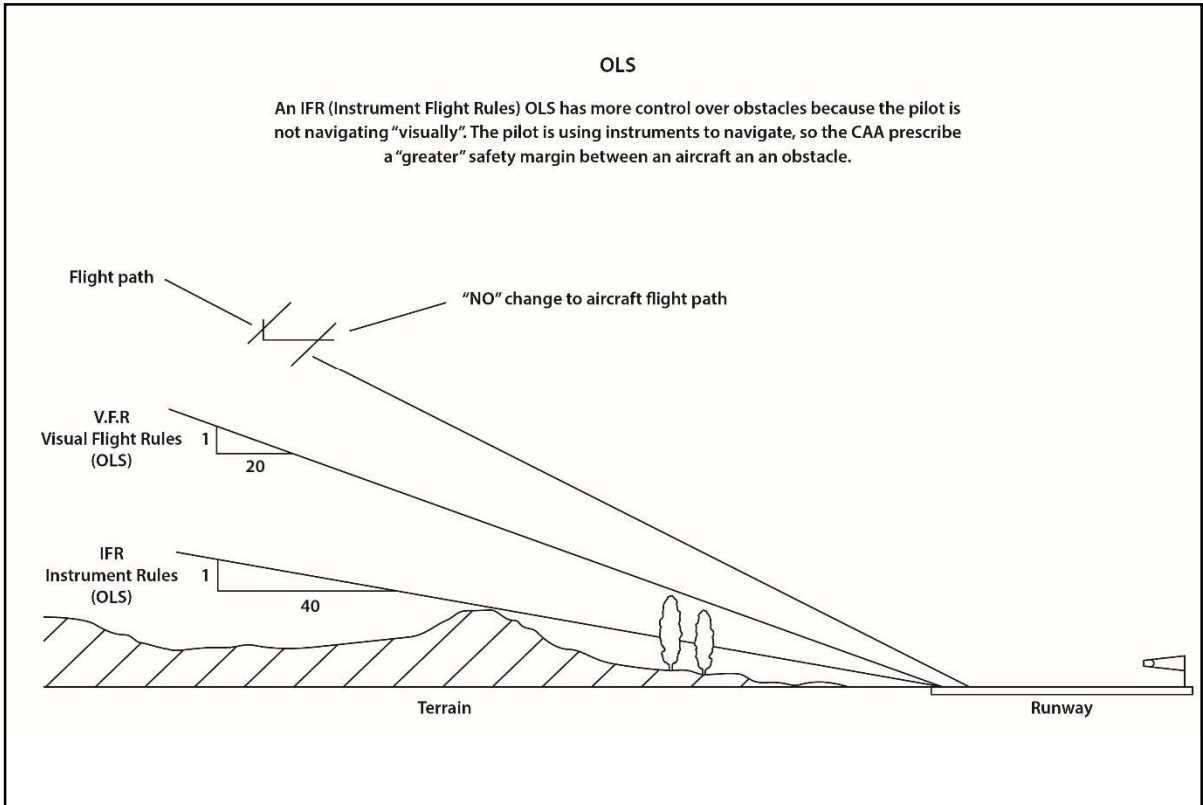
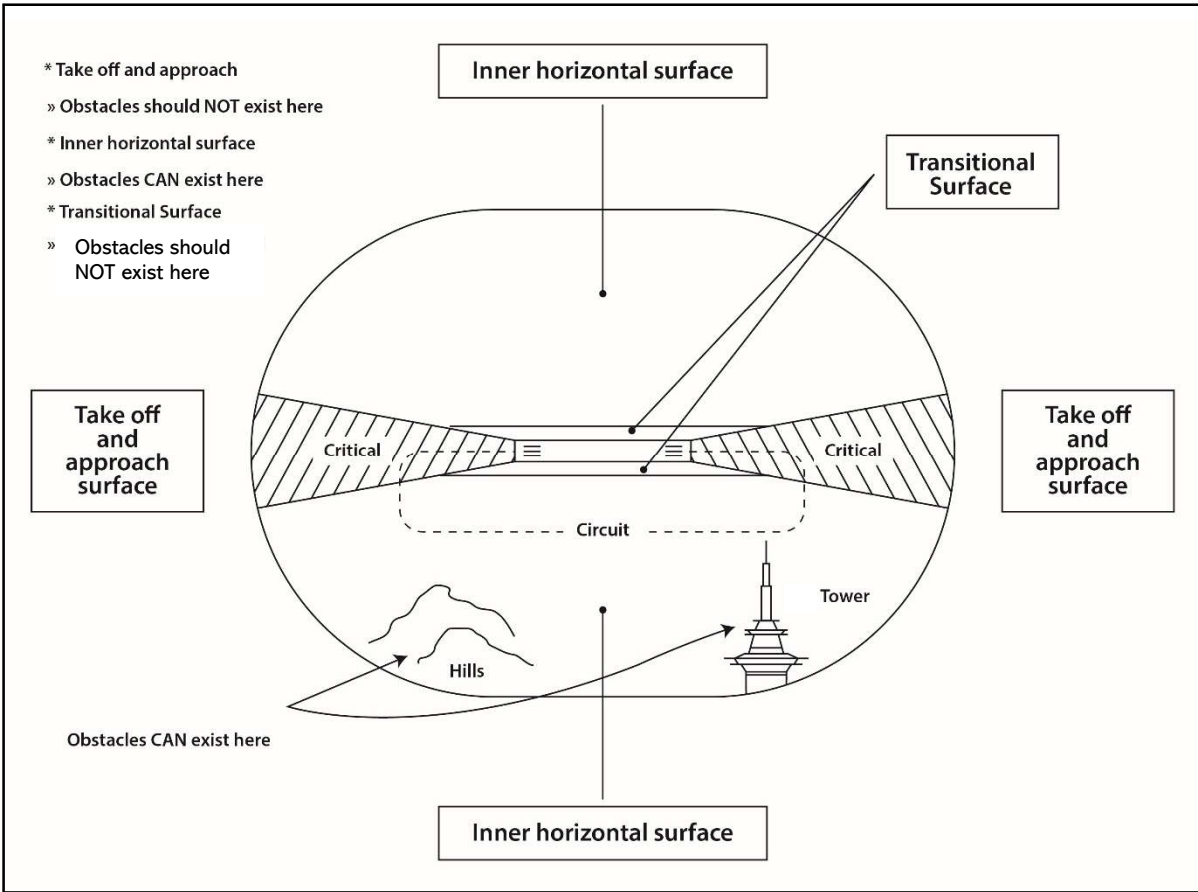
15. Ms Ensor suggests in her s.42A rebuttal evidence that, as an alternative to making circuit training a non-complying activity, circuit training hours could be a permitted activity between 7am to 10pm Monday to Saturday and 11am to 10pm on Sunday.
16. I support this recommendation as a good compromise with the exception of Sundays, during which I consider permitting circuit training between the hours of 10am to 9pm would provide a better balance between the need for circuit training and residential amenity.

CONCLUSION

17. Several submitters are affected by the inner horizontal OLS as proposed in Variation 1. I consider their concerns can be met via the flexibility I proposed in my EIC, and now supported as an alternative to the ODP OLS by Ms Ensor.
18. In particular, the trimming or removal of the Kahikatea trees on the Barnes' and Yapp properties now or in the future is not, in my opinion, required due to their location being well away from the aerodrome and flight paths, and the local ground level being relatively low. Mr Serjeant has addressed in his EIR the existing use rights of the Kahikatea trees, and the offer by NZTE to provide a record of those rights.
19. Variation 1 requires amending to correct several drafting errors in the technical description.
20. Instead of making circuit training a non-complying activity, the alternative of restricting circuit training hours is a good compromise.

Dave Park

8 April 2021





12.8.4

SPECIAL 4 (NORTH SHORE AIRFIELD) ZONE

12.8.4.1

Zone Issues, Objectives, Policies and Description

12.8.4.1.1

Issues

Refer to section 12.2.

12.8.4.1.2

Objectives

Objective

12.8.4.1.2.1

To enable aircraft operations and commercial and industrial activities associated with aviation to occur.

Objective

12.8.4.1.2.2

To protect the residents of habitable buildings in surrounding rural and residential areas from the effects of noise and other adverse effects generated by activities from the Airfield.

Objectives from other chapters

Readers should note that Objectives from the following Chapters are also relevant:

Chapter 5 - Natural Hazards

Chapter 17 - Cultural Heritage

Chapter 18 - Urban Land Modification and Vegetation Protection

Chapter 19 - Utilities

Chapter 20 - Hazardous Substances and Contaminated Sites

Chapter 21 - Transportation and Access

Chapter 22 - Financial Contributions and Works

Chapter 23 - Subdivision and Servicing

12.8.4.1.3

Policies

Policy

12.8.4.1.3.1

Aircraft activities and aircraft related activities within the Zone should not generate adverse noise effects on inhabitants in the surrounding area.

(This policy seeks to achieve Objective 12.8.4.1.2.2)

Policy

12.8.4.1.3.2

Aircraft activities and aircraft related activities should occur at times and levels which do not generate adverse effects on inhabitants in the surrounding area.

(This policy seeks to achieve Objective 12.8.4.1.2.2)

Policy

12.8.4.1.3.3

Activities should be limited to those associated with aviation; including aircraft (including recreational aviation) operations and associated equipment, maintenance, manufacture and assembly. [Decision Report 2219]

(This policy seeks to achieve Objective 12.8.4.1.2.1)





Policy
12.8.4.1.3.4

Policies from the following chapters are also relevant:

Chapter 5 - Natural Hazards
Chapter 17 - Cultural Heritage
Chapter 18 - Urban Land Modification and Vegetation Protection
Chapter 19 - Utilities
Chapter 20 - Hazardous Substances and Contaminated Sites
Chapter 21 - Transportation and Access
Chapter 22 - Financial Contributions and Works
Chapter 23 - Subdivision and Servicing

Explanation and Reasons

This explanation and reasons relate to Policies 12.8.4.1.3.1 to 12.8.4.1.3.3.

Given the significance of this airfield to the Rodney District and the Region, it is recognised that it is important to provide for the activities of the airfield, however, it is also important to ensure that the effects of the airfield operations do not adversely affect the surrounding environment.

12.8.4.1.4

Description

This Zone is applied to the land owned and operated by the North Shore Aero Club as the North Shore Airfield at Dairy Flat. The Zone is intended to enable aircraft operations, and some commercial and industrial activities associated with aviation, to occur, provided adverse effects from aircraft operations on inhabitants of surrounding land are avoided, remedied, or mitigated, including the use of noise contours to manage some reverse sensitivity effects.

This airfield is the main airfield in the northern part of the Auckland Region and on the basis of hours flown, is one of the busiest in New Zealand. It is becoming increasingly important for club, charter, training and agricultural flying. Accordingly, the Zone enables a range of commercial servicing and manufacturing activities associated with aircraft and flying, which derive major operational benefits from locating at an airport.

Rule 12.8.4.2

Activity Rules

Rule 12.8.4.2.1

Activities in the Special 4 (North Shore Airfield) Zone shall comply with the following:

- (a) All Permitted Activities in the Activity Table in Rule 12.8.4.2.2 shall comply with Rule 12.8.4.3 Development Controls and Performance Standards and any other relevant Rules in the Plan.
- (b) All Discretionary Activities in the Activity Table in Rule 12.8.4.2.2 will be assessed against the criteria set out in 12.8.4.6 Discretionary Activities: Assessment Criteria, any other relevant Discretionary Activity Assessment Criteria in any other chapter of this Plan, and the relevant matters set out in section 104 of the Act.



Rule 12.8.4.2.2
Activity Table

Activity Table

In the following table:

- P = Permitted Activity**
- D = Discretionary Activity**
- NC = Non-complying Activity**

Note: Words in Capitals are defined in *Chapter 3 - Definitions*

ACTIVITY	ACTIVITY STATUS
Any activity not listed in this Activity Table	NC
Any Permitted Activity in this Table that does not comply with the Development Controls and Performance Criteria in Rule 12.8.4.3	D
The ERECTION, addition to or alteration of BUILDINGS and ACCESSORY BUILDINGS for Permitted Activities	P
The ERECTION, addition to or alteration of BUILDINGS and ACCESSORY BUILDINGS for Discretionary Activities	D
The DEMOLITION or removal of BUILDINGS, except those protected by a Rule in this Plan	P
Aircraft Movements and facilities for AIRCRAFT arrivals and departures including control towers, waiting rooms, booking facilities and RESTAURANTS	P
Clubrooms and recreational facilities for groups directly associated with aviation	P
Housing, maintenance and restoration of AIRCRAFT	P
Manufacture and assembly of AIRCRAFT or AIRCRAFT components	D
Manufacture, maintenance and testing of electronic equipment used in the AIRCRAFT industry or for AIRCRAFT safety	D





OFFICES, plant and storage for business directly involved in aviation	P
Storage and sale of AIRCRAFT fuel and lubricants for AIRCRAFT using the SITE	P
District Wide Activities	See Chapter 16 - General Rules
EARTHWORKS and Vegetation and WETLAND MODIFICATION Activities	See Chapter 18 - Urban Land Modification and Vegetation Protection
Transport Activities	See Chapter 21 - Transportation and Access
Use and Storage of HAZARDOUS SUBSTANCES	See Chapter 20 - Hazardous Substances and Contaminated Sites
UTILITIES	See Chapter 19 - Utilities
Winning and/or processing of minerals, rocks, sand, gravel or clay occurring naturally in the vicinity	PRO

Rule 12.8.4.3

**Rule 12.8.4.3.1
Maximum Height**

**Rule 12.8.4.3.2
Height in relation to boundary**

Development Controls and Performance Standards

Maximum Height

No part of any building or any tree shall exceed the height limits specified on Planning Maps 26 and 27 and Map Appendix 1.

Height in relation to boundary

No part of any building shall exceed a height equal to 3 metres plus the shortest horizontal distance between that part of the building and any site boundary.



Rule 12.8.4.3.3
Yards

Yards

The following minimum yards shall apply:

- (a) All yards : 10 metres

Rule 12.8.4.3.4
Use of Yards

Use of Yards

- (a) Yards are to be unoccupied and unobstructed by any buildings, parts of buildings, decks, terraces or steps, **except** that eaves may overhang any yard by not more than 0.3 of a metre.

Rule 12.8.4.3.5
**Landscaping and
Appearance of the Site**

Landscaping and Appearance of the Site

- (a) A planting strip not less than 2.0 metres wide shall be provided along the boundary of any site which adjoins any Countryside Living Zone, such planting strip to be planted and maintained to provide an effective visual screen between the land and buildings in the Zone and the adjoining land.
- (b) The landscaping required by Rule 12.8.4.3.5(a) shall comply with Rules 9.10.4.1(b), (c), (d) and Rule 9.10.4.2 in *Chapter 9 - Business*.
- (c) No material may be stored on any front yard.
- (d) Refuse may be stored within any building or part of a site, excluding a yard, and shall be contained within a purpose made container with a secure cover, which shall be screened from any adjoining Residential Zone, Open Space Zone, Reserve or other public place.

Explanation and Reasons

These explanations and reasons relate to Rules 12.8.4.3.1 to 12.8.4.3.5.

These Rules are intended to ensure that activities in the Zone do not have an adverse effect on adjoining sites, particularly those used for Countryside Living purposes.

The height limit is to ensure that buildings do not prevent the airfield from operating at its capacity. The height in relation to boundary controls are an attempt to reduce overbearing of buildings on neighbouring sites, and to ensure admission of sunlight and daylight to neighbouring sites.

Yards help to maintain the amenity value of adjoining sites by providing a degree of separation between buildings and neighbouring sites. The 10 metre yard recognises the need to provide a reasonable degree of separation for the sites in the surrounding Countryside Living Policy Area, while enabling efficient use of the land resource.

The landscaping Rules are intended to minimise the adverse visual effects of airfield activities on neighbouring sites.





Rule 12.8.4.3.6
Noise

Noise

The North Shore Airfield shall be operated so that the noise from aircraft operations does not exceed a Day Night Sound Level (L_{dn}) of:

- Ldn 65dBA outside the Air-noise Boundary, and
- Ldn 55 dBA outside the outer Control Boundary

as shown in Appendix 2 of the Planning Maps.

For the purpose of this control, aircraft noise should be assessed in accordance with the NZS6805:1995, except that noise levels shall be calculated using the FAA Integrated Noise Model (INM), modified for local conditions if necessary, and records of actual aircraft operations. The noise level shall be calculated as a 90 day rolling average.

Explanations and Reasons

The Rule ensures that noise generated on the airfield is kept to a level acceptable in the rural environment, and protects the amenity values of the sites surrounding the airfield.

Rule 12.8.4.3.7
Hours of operation

Hours of operation

In accordance with the standing order inserted into the New Zealand Aeronautical Information Publication - Visual Flight Guide, dated September 2000, flight operators using the North Shore Airfield shall not take off from the Airfield from 10.30 p.m. local time until Morning Civil Twilight Time, except in the case of emergency or compelling circumstances.

Morning Civil Twilight Time can be defined as the beginning of morning civil twilight, which is when the centre of the rising sun's disc is 6 degrees below the horizon.

Note: (Not part of District Plan)

Flight operators using the North Shore Airfield shall abide by this standing rule in the New Zealand Aeronautical Information Publication (NZAIP) "Visual Flight Guide (VFG)" dated 16 June 1999, as advised by change notice to the VFG and subsequently included in the VFG for the North Shore Airfield.

The Visual Flight Guide is a part of the New Zealand Aeronautical Information Publication. This was issued under section 8 of the Civil Aviation Act 1953 and the Civil Aviation Amendment Act 1991. If the standing rules in the Visual Flight Guide are not complied with, then the person responsible can be prosecuted by the Civil Aviation Authority under the Civil Aviation Act.

Explanation and Reasons

This Rule provides certainty to surrounding residents about the times of day and night when a level of noise can be expected from the airfield and restricts the airfield's activities to times which reflect the airfield's scale of operations.



Rule 12.8.4.3.8
Rules in Other Chapters of the Plan

Rules in Other Chapters of the Plan

Relevant rules in other chapters of the Plan shall also be complied with.

Chapter 16 - General Rules, except that in relation to Rule 16.9 shall apply as if the Special 4 Zone was an Industrial Zone.

Chapter 17 - Cultural Heritage

Chapter 18 - Urban Land Modification and Vegetation Protection

Chapter 19 - Utilities

Chapter 20 - Hazardous Substances and Contaminated Sites

Chapter 21 - Transportation and Access

Chapter 22 - Financial Contributions and Works

Chapter 23 - Subdivision and Servicing

Rule 12.8.4.4

Controlled Activities: Matters for Control and Assessment Criteria

There are no Controlled Activities in this Zone.

Rule 12.8.4.5

Restricted Discretionary Activities: Matters for Discretion and Assessment Criteria

There are no Restricted Discretionary Activities in this Zone.

12.8.4.6

Discretionary Activities : Assessment Criteria

Without limiting the exercise of its discretion, for all Discretionary Activity resource consent applications in the Special 4 Zone, the Council will have regard to the following assessment criteria and any relevant Discretionary Activity Assessment Criteria in any other chapter of this Plan, and the relevant matters set out in section 104 of the Act:

Refer to the relevant Assessment Criteria in Section 12.9. and the following Assessment Criteria for specific activities.

12.8.4.6.1
Activities Not Complying With Development Controls and Performance Standards

Activities Not Complying With Development Controls and Performance Standards

Height of buildings and trees

(a) Whether the proposed height of the building or tree will have an adverse effect on the safety and efficiency of the airfield or on the ability of the airfield to function at present levels

Height and scale of buildings

(b) Whether the proposed height and the scale and design of buildings or structures will adversely affect the amenity values and visual character of neighbouring sites.

Sunlight and daylight

(c) Whether the reduced yard will have an adverse effect on the access of direct sunlight and daylight to adjoining sites.

Rural character

(d) Whether the reduced yard will have an adverse effect on the rural character of adjoining Countryside Living sites.





Noise	(e) Whether any noise exceeding the specified limits adversely affects the amenity value of sites in the vicinity of the airfield or adversely affects the health and safety of residents in the vicinity of the airfield.
Noise and animals	(f) Whether any noise exceeding the specified limits adversely affects the ability of sites in their vicinity of the airfield to be used for farming animals.
Amenity values	(g) Whether operations outside the specified hours adversely affect amenity values and the health and safety of residents in the vicinity of the airfield.
12.8.4.6.2 Buildings for Discretionary Activities	The Erection, Addition to or Alteration of Buildings and Accessory Buildings for Discretionary Activities; Manufacture and Assembly of Aircraft or Aircraft Components; Manufacture, Maintenance and Testing of Electronic Equipment Used in the Aircraft Industry or for Aircraft Safety
Development Controls	(a) Whether the activity complies with the Development Controls and Performance Standards in Rule 12.8.4.3. As a general guide the activity should comply with those controls and standards, unless it is not appropriate to do so because of inherent site characteristics, particular site development considerations, aviation requirements or unusual environmental factors.
Amenity values adjoining zones	(b) Whether the activity will have an adverse effect on the amenity values of adjoining Rural zones, in particular whether noise will be generated at levels which will detract from the amenity values of the area.
Water quality	(c) Whether the activity will have an adverse effect on water quality.
Ecosystems	(d) Whether the activity will have an adverse effect on significant areas of vegetation or ecosystems.
Air quality	(e) Whether the proposal will generate dust, smoke, fumes or other discharges to the air which potentially would detract from the amenity values of the area.
Odour	(f) Whether the proposal will create odours which are potentially either objectionable or offensive, and likely to be detected at any Countryside Living Zone boundary, and detract from the amenity values of the area.
Health and Safety	(g) Whether the proposal will expose people to unnecessary risk to health or safety.
Traffic	(h) Whether the road traffic generated will adversely affect the safe and efficient operation of the road network. Decision Report 2210]
Parking	(i) Whether sufficient on-site parking is provided to meet the needs of the proposed activity.
Screening	(j) Whether the activity is screened or the buildings designed and located in such a way that the amenity values of neighbouring sites, including those in adjacent Countryside Living Zones, are not diminished by effects such as glare from vehicle lights or noise from machinery or vehicles, or the visual appearance of buildings.

Rule 12.8.4.7

Subdivision

The subdivision of land in this Zone is a Non-complying Activity.

PROCEDURES FOR ASSESSING PROPOSED BUILDINGS AND SUBDIVISIONS, AND TREES, AFFECTED BY AIRFIELD HEIGHT RESTRICTIONS

1. The height restrictions affect a considerable number of properties within 5.5 km of North Shore (Dairy Flat) Airfield, and within 1.2 km of Kaipara Flats and Parakai Airfields. IT IS ESSENTIAL THAT REFERENCE BE MADE TO THE PLANNING MAPS FOR ALL PROPERTIES WITHIN THESE DISTANCES TO SEE IF THEY ARE SUBJECT TO THE HEIGHT RESTRICTIONS.

2. The Planning Maps which indicate the land affected are:

North Shore (Dairy Flat)	Kaipara Flats	Parakai
Maps 26, 27, 84-86, 92, 93 and 98	Maps 13 and 14	Map 24

A 1:30,000 plan indicating the overall effect of the height controls in respect of North Shore (Dairy Flat) Airfield is included at the end of this Appendix.

3. The height restrictions consist of three separate height controls around North Shore Airfield and two around Kaipara Flats and Parakai Airfields. (Refer specification and diagram.)

(a) **Take Off/Landing Fans**
 These fans extend for 5.5km (North Shore) and 1.2 km (Kaipara Flats and Parakai) from each end of each runway. The height limit begins at ground level and rises at a slope of 1 in 40 (North Shore) and 1 in 20 (Kaipara Flats and Parakai).

(b) **Transitional Side Surfaces**
 This height restriction runs at right angles to the runway strip and the centre line of the fans. The height limit begins at ground level at the edge of the runway strip and rises at a slope of 1 in 7 (North Shore) and 1 in 4 (Kaipara Flats and Parakai) to a maximum height of 45 metres (North Shore) and 2 metres (Kaipara Flats and Parakai) above the runway ground level. This height limit also applies from the outside edge of each fan, the side surface rising at the same slopes to a maximum height of 45 metres (North Shore) and 2 metres (Kaipara Flats and Parakai).

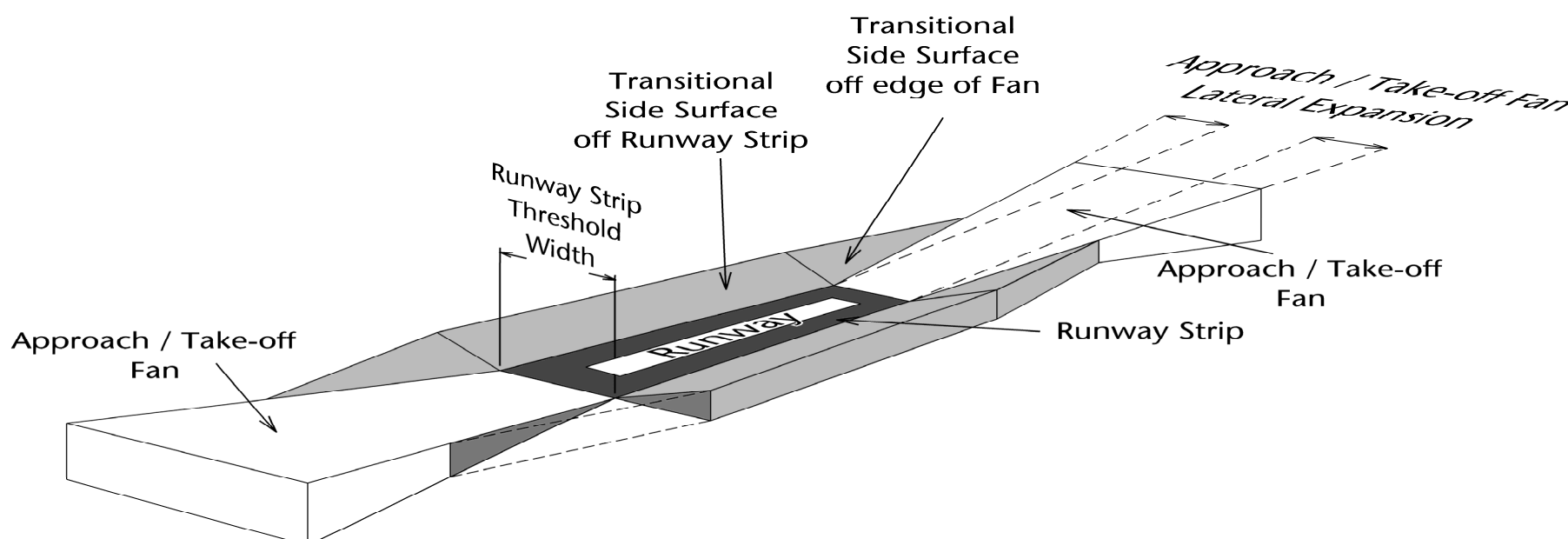
(c) **Horizontal Surface**
 All properties within 2.6 km of North Shore Airfield are subject to a horizontal height control which is 45 metres above the average runway ground level ie. 107 metres above mean sea level. There is no horizontal surface control for either Kaipara Flats or Parakai Airfields.

4. All height restrictions are affected by the elevation of the property, and height limits must be assessed in terms of elevation relative to the runway itself.

5. The following table below gives the specifications for the three airfields.

FEATURE	NORTH SHORE	KAIPARA FLATS	PARAKAI
Runway Threshold Ground Level Above Mean Sea Level	<u>Main Runway:</u> East End 65m West End 63m <u>Crosswind Runway:</u> East End 63m West End 60m	East End 33m West End 33m	East End 5m West End 6m
Runway Strip Width	90m	100m	65m
Approach/Take-Off Fan Length (from runway threshold) Slope (rate of rise) Lateral expansion	5,500m 1 in 40 1 in 10	1,200m 1 in 20 1 in 20	1,200m 1 in 20 1 in 20
Transitional Side Surface Slope (rate of rise) Maximum height above runway	1 in 7 45m	1 in 4 2m	1 in 4 2m
Horizontal Surface Height Lateral extent	107m above sea level 2.6km from edge of runway strip	N/A N/A	N/A N/A

6. The diagram below explains the terms used.



STEPS FOR ASSESSING A SPECIFIC PROPOSAL

1. Identify the property on the planning maps and determine whether it is affected by the height restrictions.
2. Assuming all or part of the property is affected, identify which of the three controls applies: (a) fan; (b) transitional side surface; (c) horizontal surface.
3. The following examples illustrate the restrictions as they apply to North Shore Airfield. The same method should be used at Kaipara Flats and Parakai using the gradients and heights specified for those airfields in the table on the previous page.

(a) **Land Affected by a Fan**

Determine the distance from the beginning of the fan at the runway threshold to the proposed building site or area to be planted with trees.

Calculate the permitted height ie. divide distance by 40 (1 in 40 slope)

eg. For distance of 325 metres

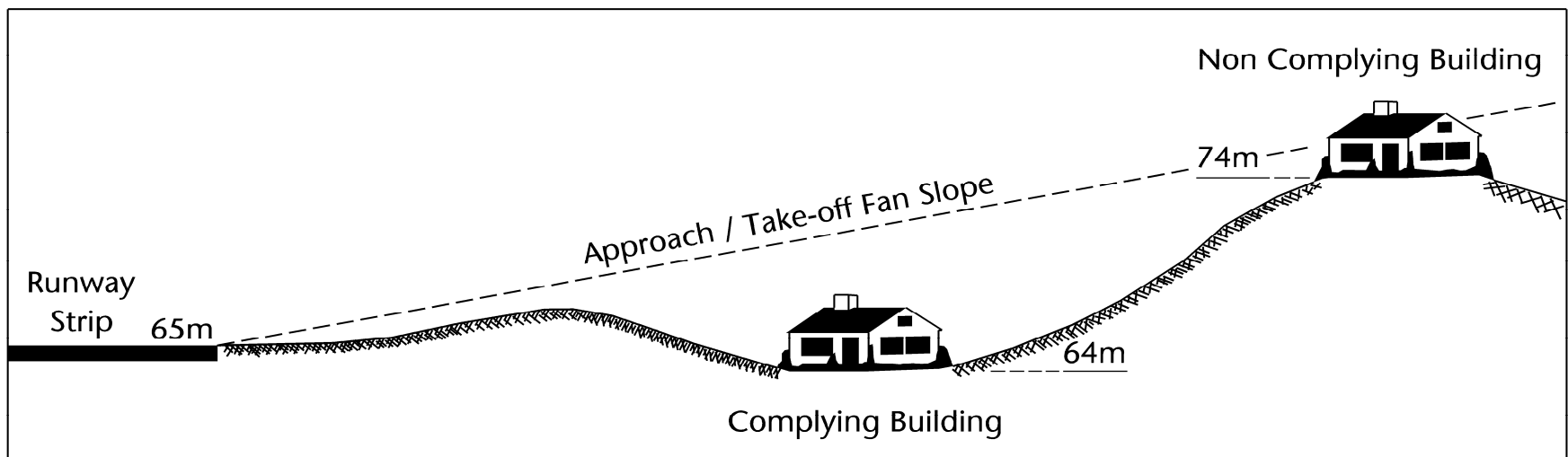
$$\text{Height is } \frac{325}{40} = 8.125 \text{ metres.}$$

Then determine the difference in ground level between the threshold of the fan and the site in question. The four threshold ground levels are shown on the 1:30,000 plan at the end of this Appendix. For the fan which passes over Wilks Road the threshold ground level is 65 metres above mean sea level.

If the ground level on a proposed site is higher than 65 metres above MSL (Mean Sea Level) the actual height limit will be 8.125 metres LESS the difference in ground level, say 3 metres, resulting in a maximum permissible height for buildings of 5.125 metres.

If the ground level on site is lower than at the threshold the difference from the fan level must be ADDED to the original calculation.

The applicant will need to confirm the ground level in terms of MSL in order to accurately determine compliance.



(b) **Land Affected by Transitional Side Surface**

(i) Beside the Runway Itself

Determine the distance from the edge of the runway strip from Map 26.

eg. For a distance of 150 metres at the slope of 1 in 7.

$$\text{Height is } \frac{150}{7} = 21.428 \text{ metres.}$$

(ii) Beside a Fan

Determine the distance from the edge of the fan(s) (a), measured at right angles to the fan centre line, AND the distance from the corresponding point on the fan centre line to the runway threshold (b) (see diagram below).

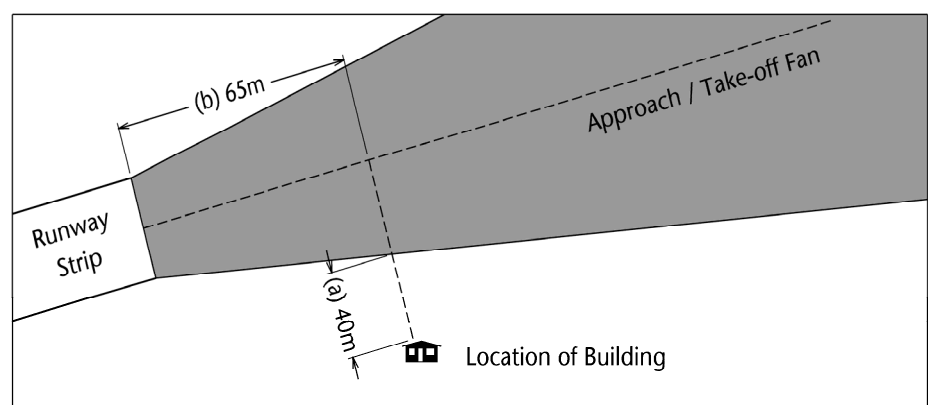
(a) = 65 metres and (b) = 40 metres

$$65 \text{ metres at 1 in 40 } \frac{65}{40} = 1.625 \text{ metres}$$

$$40 \text{ metres at 1 in 7 } \frac{40}{7} = 5.714 \text{ metres}$$

$$7.339 \text{ metres}$$

+ or - ground level difference.



(c) **Horizontal Surface**

This surface is located at 107 metres above MSL. Determine the ground level of the site and assess the difference between it and 107 metres to determine the maximum permitted height.

4. Relaxation of the maximum height limits may be sought by way of a resource consent for a Restricted Discretionary Activity (see Rules 7.9.2 (Activity Table 1) and 7.12.1).

In order for the Council to determine if the operation of the airfield would be adversely affected, it will consult with the North Shore Aero Club, the Rodney Aero Club, or the Parakai Parachute Centre, as relevant. Proposers of developments that might require a relaxation of a height limit are therefore advised to discuss their proposals with the relevant club before lodging an application for a resource consent.



**HEIGHT RESTRICTIONS:
NORTH SHORE AIRFIELD**
Scale 1: 30 000

130.00 Approach / Takeoff Path Height Levels
60.0* End Of Runway Height Above Datum

- Runway Strip
- Runway
- Approach / Takeoff Path
- Runway / Strip Transition Side Surface
- Airfield Height Restriction Area

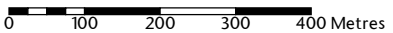


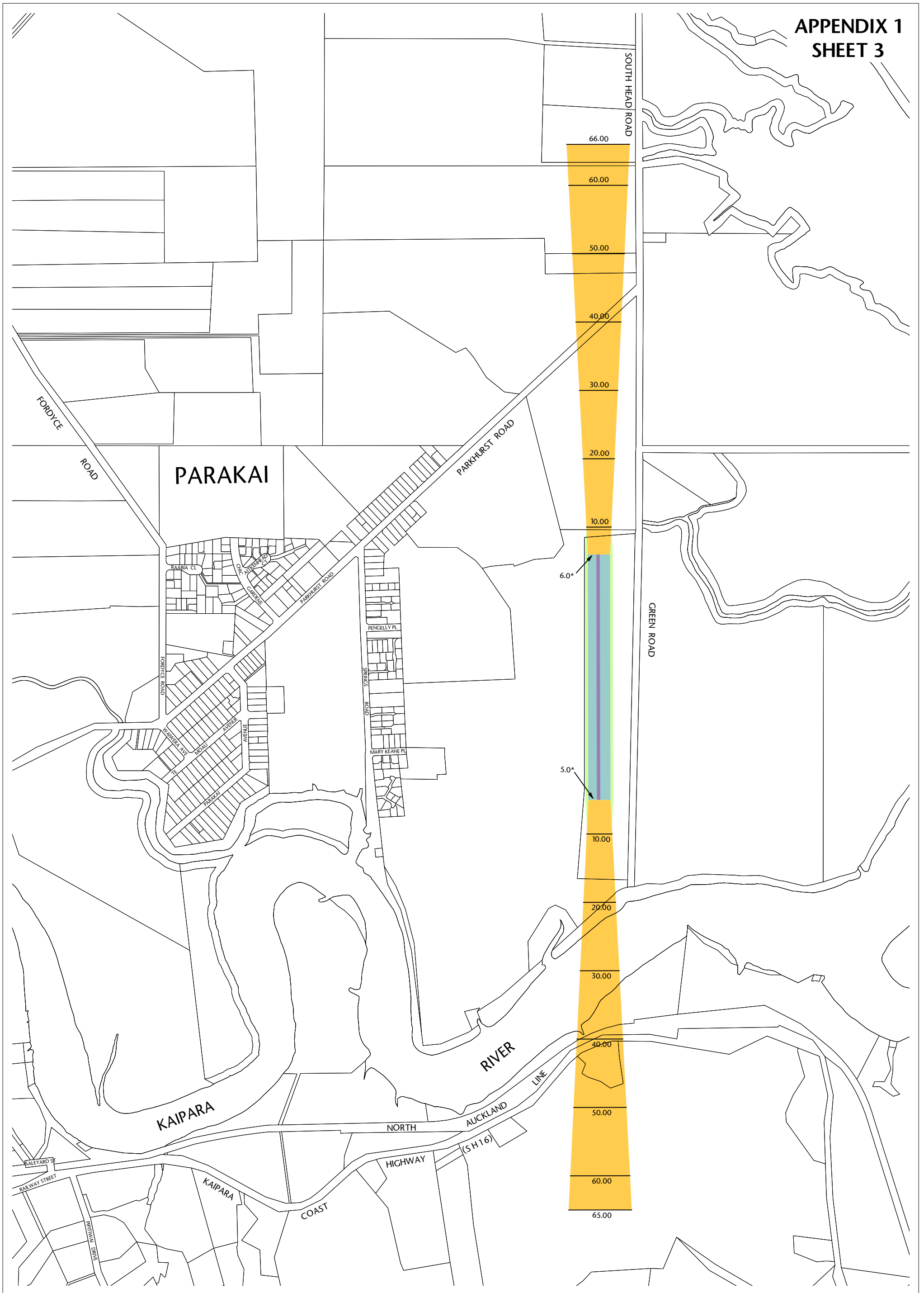


HEIGHT RESTRICTIONS:
KAIPARA FLATS AIRFIELD
Scale 1: 10 000

40.00 Approach / Takeoff Path Height Levels
33.0* End Of Runway Height Above Datum

- Runway Strip
- Runway
- Approach / Takeoff Path
- Runway / Strip Transition Side Surface





HEIGHT RESTRICTIONS:
PARAKAI AIRFIELD
Scale 1: 10 000

40.00 Approach / Takeoff Path Height Levels
33.0* End Of Runway Height Above Datum

- Runway Strip
- Runway
- Approach / Takeoff Path
- Runway / Strip Transition Side Surface

