

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

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

AND

IN THE MATTER of hearing submissions and further submissions
on the Proposed Waikato District Plan.

SUBMITTER NZTE Operations Limited

Submitter [No. 823]

**EVIDENCE-IN-CHIEF OF DAVID FREDERICK SERJEANT ON BEHALF
OF NZTE OPERATIONS LIMITED**

(PLANNING)

Dated: 15 February 2021

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INTRODUCTION, QUALIFICATIONS AND EXPERIENCE

- 1 My name is David Frederick Serjeant. I am an independent planning consultant. I hold the qualifications of Bachelor of Planning from the University of Auckland and a Master in Business Studies (Economics)(Honours) from Massey University. I have 42 years of experience in planning and resource management, the last 13 of which have been as a sole practitioner. I am also a Ministry for the Environment accredited independent hearings commissioner with the chair endorsement.

CODE OF CONDUCT FOR EXPERT WITNESSES

- 2 I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2011. I have complied with it in preparing this evidence and I agree to comply with it in presenting evidence at this hearing. The evidence that I give is within my area of expertise except where I state that my evidence is given in reliance on another person's evidence. I have considered all material facts that are known to me that might alter or detract from the opinions that I express in this evidence.

BACKGROUND

- 3 I was engaged by NZTE Operations Limited (**NZTE**) in July 2018 to provide independent planning advice on the proposed Waikato District Plan (**pWDP**) process in relation to Te Kowhai Aerodrome (**Aerodrome**).
- 4 The Aerodrome is subject to the Te Kowhai Airpark Zone (**TKAZ**). The TKAZ, along with the operation of the Aerodrome, allows for the establishment of a complementary airpark consisting of commercial and residential precincts (**Airpark**).
- 5 The provisions for the TKAZ were prepared by the Council with specialist input from NZTE in relation to the noise boundaries, the TKAZ Obstacle Limitation Surfaces (**OLS**), relevant Civil Aviation rules, urban design of the airside residential developments, three waters infrastructure, and landscape and visual assessment.

- 6 Notwithstanding the involvement of NZTE, the TKAZ is part of the Waikato District Plan review and is the Council's proposed zone, not a zone promoted by submission to the process.
- 7 Following the notification of the pWDP it came to NZTE's notice that there was an inconsistency between the spatial extent of the OLS as notified in the planning maps and the detailed descriptions in Appendix 9. In particular, the OLS should have been shown as extending 2,500m from the end of the runway instead of the 2,000m shown on the notified planning maps. Related to this were the transitional side surfaces that should have been shown tapered in to the correct height contours of the approach and take-off surfaces.
- 8 This inconsistency was consequently addressed by the introduction of Variation 1 to the pWDP.
- 9 I confirm I have read the submission and further submission by NZTE in relation to the pWDP and other submissions relevant to the operations of the TKAZ.

THE ZONE AND SURROUNDING ENVIRONMENT

- 10 The site and surrounding environment have been described in the Summary Assessment of Environmental Effects (Appendix 24-13 to the Section 32 for TKAZ) and in the Section 42A report for this topic. Mr Broekhuysen's urban design and landscape evidence and Mr Readman's evidence also provide very useful descriptions of local history and context. I have visited the site and surrounds on several occasions, most recently during February 2021. I note the following key points:
- (a) An Aerodrome at Te Kowhai was established in 1965 by aviator Mr Max Clear, and recognised in the relevant district plan since 1973. The Aerodrome is located some 8km south of Ngaruawahia and 7km west of Hamilton City in the Waikato. It is situated in a rural area just east of the settlement of Te Kowhai.
 - (b) The Aerodrome is accessed off Limmer Road, to the south of the Aerodrome. Associated infrastructure with the Aerodrome currently

includes hangarage for up to 70 aircraft, an aviation gas fuelling facility, and car parking for approximately 60 vehicles. The runway is situated along the northern boundary of the overall Aerodrome.

- (c) In 2019, there were approximately 10,000 aircraft movements, fairly evenly split between visiting aircraft and Aerodrome based aircraft, with activity tending to be seasonal between November and March. I note that the Aerodrome had approximately 12,000 aircraft movements in 2007, associated with micro-light production and pilot training activities of Mr Clear (who died in 2012).
- (d) The Aerodrome's northern boundary is approximately 200m from the most southern part of the existing Te Kowhai village. Several rural dwellings are closer than this to the airfield runway.

AIRFIELD ZONING PROVISIONS: OPERATIVE AND PROPOSED

Operative Waikato District Plan

- 11 The site is zoned Rural in the Operative Waikato District Plan (**ODP**). Within the Rural Zone, any activity, other than the exemptions listed in Rule 25.10.1, is a permitted activity, providing it complies with all 'effects' and 'building' rules.
- 12 The only permitted commercial activity within the Rural Zone is home occupations, subject to associated permitted activity standards. Aerodrome activities cannot satisfy those standards. Additionally, the ODP imposes a limit of 500m² gross floor area for non-residential buildings and a maximum site coverage of 2% of the site area, or 500m², whichever is the larger. Activities within the Aerodrome site already exceed maximum site coverage and there is potential for commercial buildings (such as additional hangars) to exceed 500m². Consequently, the Aerodrome's permitted baseline has effectively been reached and almost all forms of building development would trigger a consent requirement.
- 13 Other than through the Rural Zone provisions, aviation activities at Te Kowhai are controlled in the ODP through an OLS and a Air Noise Boundary

(**ANB**). There are no specific policies or provisions which provide for the development of airparks or airpark-related commercial activity in the ODP.

Proposed Waikato District Plan

- 14 The introduction of the TKAZ provides for development of the site for airpark purposes. The proposed provisions have been tailored to enable the operation and development of Te Kowhai Airpark now and into the future. In particular, the proposed provisions will ensure that the Aerodrome can continue to operate as urban intensification occurs around it, given it is a valuable and unique resource within the Waikato District.
- 15 Concurrent with the rezoning, provisions have been included to ensure that the airfield can operate on both a Visual Flight Rule (**VFR**) and an Instrument Flight Rule (**IFR**) basis, as explained in the evidence of Mr Park at paragraph 34 – 48. In order to operate under IFR, the Aerodrome is required to comply with Civil Aviation Circular AC139-7 Aerodrome Standards and Requirements, which necessitates changes to the OLS and transitional side surfaces being reflected in the pWDP. There are two principal differences between the OLS in the ODP and that shown in the pWDP (Variation 1):
- (a) the OLS has been lowered from a 1:20 slope to a 1:40 slope, and extended from 1200m to 2500m from each end of the runway, with associated transitional side surfaces (extending out to 80m from the runway centreline); and
 - (b) an inner horizontal surface has been introduced, which lies at a height of 45m above the runway (71.6m Moturiki datum) and extends outwards to a distance of 2,500m from the runway centreline and strip ends.
- 16 I note that in practice OLS's are intended to increase safety by protecting aircraft from flight path obstructions such as trees and tall buildings in the event that an aircraft inadvertently becomes low in its flightpath. During normal operations aircraft fly well above the OLS slope heights. This appears to be misunderstood in the Section 42A report, as referenced at paragraph 309 which states:

Also, I have serious doubts that the proposed OLS would be safe for aircraft even if there is no vegetation. This OLS design would provide for aircraft at the horizontal surface within to 10m of the ground in several places.

The Section 42A report also raises the spectre of the OLS allowing for aircraft to damage fences and farm animals.¹

- 17 Mr Park explains that the OLS is not a lower limit that aircraft work 'down to' but is an additional limit that obstructions must not be above.
- 18 As noted above, an inconsistency in how the OLS was described and shown in text and maps in the notified pWDP needed to be corrected by the introduction of Variation 1.
- 19 The ANB from the ODP has been maintained in the pWDP, referred to as an Airport Noise Outer Control Boundary (**OCB**). Noise sensitive activities within the OCB must incorporate acoustic insulation to levels specified in Appendix I of the pWDP. I note that apart from small areas to the north, west and east of the OCB, the OCB is contained within the TKAZ and applies to a 110m wide strip centred on the runway and extending approximately 50m from each end. The replacement of the OCB with two new air noise boundaries is sought by NZTE under its submissions on the pWDP.
- 20 An airpark is a development where aviation and related activities can co-exist with residential activities. New Zealand has a high ratio of pilots and aircraft to population, much like boats. As with boats and marina waterways, a section of the population value being able to live 'with' their aircraft. As noted, the Aerodrome is already popular with visiting aviators, who utilise it for recreational and business purposes. The Aerodrome is also close to Hamilton, other urban centres and the state highway network. Mr Readman and Mr Broekhuysen provide more information about the Airpark development. The following discussion addresses certain features of the Te Kowhai Airpark for the purposes of introducing the key new provisions under the pWDP.

¹ Section 42A report paragraph 355(o) and (p).

- 21 The Aerodrome has a runway with associated airside facilities (such as hangars, refuelling and other airside facilities). There is sufficient land for the expansion of the airside facilities and for the development of the airpark residential precincts. Airparks need to be carefully managed to ensure a balance is achieved between an appropriate level of functionality and a reasonable standard of amenity.
- 22 The ANB controls noise effects from aircraft, principally during take-off and landing activities. However, noise generated by aircraft and aircraft-related activities on the ground within the TKAZ also needs to be managed. The proposed zone provisions contain the following rules and methods through which the above balance is achieved.
- (a) The Airpark has been structured to separate different activities on a precinct basis. This includes Precinct A (Runway and Operations), Precinct B (Commercial), Precinct C) Medium Density Residential, and Precinct D (Residential).
 - (b) The noise limits applying to activities are measured at the notional boundary of properties within the adjacent Rural Zone, not within the zone itself. The limits and time periods that apply are the same as those for activities within the Rural Zone, with exemptions for noise from taxiways recorded in the rules (Rule 27.2.7) for properties at 98A, 98B, 202, 212 and 214 Limmer Road, in accordance with written agreements from the property owners.
 - (c) The Te Kowhai Noise Buffer (referred to as the Airpark Noise Buffer (Te Kowhai) in the Planning Maps) extends around the western, southern and eastern boundaries of the TKAZ. The relevant rule in the Rural Zone (Rule 22.3.7.3) operates as a reverse sensitivity control requiring dwellings to incorporate acoustic insulation to levels specified in Appendix 1 of the pWDP.
 - (d) Rule 27.1.1 Activity P43 provides for hangar development for individual properties within Precinct D as a permitted activity, provided that a dwelling is also present.

- (e) Rule 27.2.11 applies to hazardous substances within all precincts and is the same as those that apply within Business and Industrial zones, not Residential and Rural Zones.
 - (f) Rule 27.2.14 provides for up to three temporary events, such as airshows, every 12 months, with exclusions on other motorised activity and concerts.
 - (g) Rule 27.3.6 requires a setback of 25m for all buildings from the TKAZ boundary, the same as for habitable buildings in the Rural Zone.
- 23 An important element of the TKAZ from both an environmental and three waters servicing point of view is the provision for wastewater treatment. Wastewater treatment options were subject to specific investigation as part of the Section 32 analysis. The conclusions from the investigation were that on-site treatment and disposal of wastewater was an appropriate and feasible solution. Consequently, rules have been included in the plan that indicate development is subject to the provision of a reticulated wastewater network within the TKAZ. The minimum lot size defaults to 2,500m² where a lot is not connected to the network; this lot size being the minimum lot size under the Waikato Regional Plan for a lot providing its own treatment and disposal field.

RELEVANT PLANNING INSTRUMENTS

Waikato Regional Policy Statement

- 24 The pWDP must “give effect to” the Waikato Regional Policy Statement (**WRPS**) which became operative on 20 May 2016.
- 25 The Aerodrome is not included in the definition of Regionally Significant Infrastructure in the WRPS. The WRPS is also silent on the matter of airparks. This is not surprising, given their unusual nature. I note in this regard that the Auckland Unitary Plan gives no specific strategic mention to the existing “residential aero park” at Dairy Flat, other than recognising it by way of the Dairy Flat Precinct. In other words, airparks or aero parks are special purpose land uses and they are not typically included in the accounting for urban residential development capacity.

- 26 In this regard, WRPS Policy 6.14 addresses urban limits and the adoption of the Future Proof land use pattern when considering new urban, residential or industrial development. The Te Kowhai Urban Limit relates mainly to Te Kowhai village. However along its southern boundary it bisects the TKAZ on a north-south axis, including only the western part of the zone within the urban limit. The Future Proof maps are indicative and neither the WRPS nor Future Proof provide any specific policy on airparks. More detailed consideration of the role of the TKAZ is given under the Waikato District Council Growth and Economic Development Strategy, as noted below (paragraph 31).
- 27 Objective 3.12 on the Built Environment and Objective 3.21 on Amenity and Policies 6.1 and 6.3 of the WRPS seek to adopt an integrated approach to land use and infrastructure planning. Its intent is to promote positive environmental, social, cultural and economic outcomes. The proposed TKAZ is informed by supporting technical assessments relating to transport, the availability of essential services, infrastructure, noise and landscape. Collectively, I consider that the documentation demonstrates an integrated approach to development in the manner envisaged by these provisions in the WRPS.
- 28 Objective 3.25 and Policy 14.1 relate to the values of the soil resource. The general approach is to safeguard the life supporting capacity of the soil resource by minimising sedimentation and erosion, maintaining or enhancing biological, chemical and physical soil properties and retaining soil versatility for a range of uses. In relation to the last matter, the development of the TKAZ will result in some impacts on the soil resource because it will enable the development of airpark facilities, including residential accommodation, in areas historically used for productive purposes. However, the uniqueness of the facility and the need for hangar accommodation to be located close to the airfield means that a degree of soil loss is unavoidable (i.e. airparks cannot be located within conventional urban or residential areas). I understand that the land is seasonally used for maize production.

Relevant National Policy Statements and Standards

National Policy Statement – Urban Development (2020)

- 29 The National Policy Statement – Urban Development (**NPS-UD**) must be considered by local authorities when making planning decisions on urban environments within their district or region. An urban environment under the NPS-UD is any area of land that is, or is intended to be, predominantly urban in character and is, or is intended to be, part of a housing and labour market of at least 10,000 people.
- 30 Te Kowhai is not currently intended to reach a housing and labour market of 10,000 people, with only 1,500 households projected by 2050 and the aerodrome area being recognised as a special (but limited) aeronautical related business precinct. Further, I do not consider the TKAZ development to be part of any response to urban residential capacity. In summary, I have concluded that the NPS-UD is not relevant.

Other strategic documents

- 31 The Waikato District Council Growth and Economic Development Strategy (**Waikato 2070**)² adopts a somewhat different approach to the provision for growth at Te Kowhai as compared to the WRPS and Future Proof. It recognises that the growth areas within Te Kowhai Central and Te Kowhai West are locations for the village's future growth and its contribution towards future residential capacity, with a development time-frame of 10 - 30 years, reflecting the availability of infrastructure. However, Waikato 2070 recognises the aerodrome area differently, as a special activity precinct, with a 3 – 10 year development timeframe (see the copy of the Waikato 2070 plan attached to this evidence as **Annexure A**). I note that the Section 42A report refers to the 'draft' plan for Te Kowhai in Waikato 2070 wherein the development timeframe was 10 – 30 years. This was amended to 3 – 10 years in the final report, accordingly Image 3 in the Section 42A report is incorrect.

² Adopted by Waikato District Council 19 May 2020.

NZTE'S SUBMISSIONS

- 32 NZTE made submissions to parts of the pWDP that are directly related to the aerodrome operations being Chapter 9 Objectives and Policies, Chapter 27 Te Kowhai Airpark Zone, Appendix 1: Acoustic Insulation, Appendix 9: Te Kowhai Airfields and the Planning Maps (Map 26a); and other chapters relating to other relevant zones and district-wide provisions being Chapters 16 Residential, Chapter 17 Business, Chapter 20 Industrial, Chapter 22 Rural, Chapter 23 Countryside Living, Chapter 24 Village and Chapter 25 Reserve.
- 33 The Section 42A report addresses matters in all of these chapters and provisions. The approach that I have taken is to address the NZTE submission points relating to each provision, commenting on the reasons and recommendations in the Section 42A report on the submission point and other related submissions where relevant, thus providing a comprehensive assessment. The order I have adopted is generally the same as in the Section 42A report.

Chapter 9 Objectives and Policies

- 34 NZTE supported the objectives and policies relating to the TKAZ in Chapter 9.2, but sought an additional objective and policy in relation to reverse sensitivity matters (823.1). This submission is actually addressed at a later point the Section 42A report (Section 11.5). However, as it relates to Chapter 9.2 I will address it now. The NZTE submission considered that a more specific objective and policy was warranted in order to protect the existing infrastructure at the aerodrome from encroaching sensitive land uses. The Section 42A report agreed with the submission and subject to minor amendments has recommended it for inclusion in the pWDP. There are no other submissions related to this matter. The recommended wording, which I agree with, is:

9.2.3 Objective – Aerodrome reverse sensitivity

(a) The operational needs of Te Kowhai Airpark are not compromised by noise-sensitive activities with the potential for reverse sensitivity conflict.

9.2.3.1 Policies – Aerodrome reverse sensitivity

Manage reverse sensitivity risk by:

(a) ensuring that noise-sensitive activities within the Te Kowhai Airpark Noise Control Boundaries are acoustically insulated to appropriate standards; and

(b) ensuring that Te Kowhai aerodrome operates within the noise limits specified by the Te Kowhai Airpark Noise Control Boundaries.

- 35 In agreeing to the submission, the Section 42A report also postulates as to whether the proposed objective and policy might not also be included within the Rural Zone and Village Zone objectives and policies, subject to scope. This is because rules related to sensitive activities in these zones respond to the objective and policy on reverse sensitivity. I understand the suggestion and do not disagree in principle. Another approach, if scope is an issue, would be to just leave the rules in the Rural Zone and Village Zone to respond to the new objective and policy under Section 9.2 for the TKAZ. After all, it is the activities within the TKAZ that have the reverse sensitivity.
- 36 Nevertheless, the Section 42A report recommends additional or consequential objectives and policies in relation to reverse sensitivity for the Residential and Village Zones and for the Rural Environment which I agree with.

Rules in relation to the 65dB L_{dn} Air Noise Boundary and Outer Control Boundary

- 37 NZTE submissions 823.17 and 823.19 seek a non-complying activity rule for noise sensitive activities within the Rural and Village Zones, responding to the new objective and policy. The Section 42A report ultimately accepts this submission. However, there is some discussion in the Section 42A report that warrants further comment.
- 38 In paragraphs 490 to 493, the Section 42A report gives consideration to whether a prohibited activity status would be more appropriate. The Section

42A report observes that a number of other plans prohibit noise sensitive activities anywhere within the 65dB L_{dn} ANB. While I support the adoption of a prohibited activity status for non-airport land, as per these plans, there is no scope for this in the pWDP. I also note that in the case of Dairy Flat, where the Dairy Flat Precinct provides for the aero-park, existing subdivided lots one dwelling per site are a controlled activity subject to a no complaints covenant and confirmation of special acoustic design. Other noise sensitive activities outside the aero-park are non-complying activities.

39 Paragraph 507 of the Section 42A report describes how a new non-complying activity rule(s) would apply to and affect various properties inside and outside the TKAZ. In summary, I agree with the description for properties outside and within the TKAZ as follows:

- (a) Properties outside the TKAZ - there are no existing noise sensitive activities and new dwellings can avoid being inside the ANB. Mr Broekhuysen's analysis confirms the ability of new dwellings to avoid the ANB within new lots subject to Village Zone rules;
- (b) Precinct A (runway) not really much effect as development unlikely;
- (c) Precinct B (commercial) a range of activities including some noise sensitive activities;
- (d) Precinct C (medium density residential) unaffected by the ANB; and
- (e) Precinct D (residential) some lots affected by the ANB.

40 The TKAZ provides for residential activities within Precinct B and D as discretionary and permitted activities respectively. Precinct B also provides for teaching and conference facilities, visitor accommodation and a range of activities that would fall within the definition of 'places of assembly', as permitted activities. However, as they would be located inside the OCB (which includes the 65dB L_{dn} ANB), Appendix 1 – Acoustic insulation provisions also apply. All noise sensitive activities within the OCB are required to be acoustically insulated to achieve specified internal noise standards.

- 41 The Section 42A report confirms this approach with the addition of a new rule in Section 27.3 Land Use - Building which cross-references the rules in Appendix 1 that apply to all buildings containing a noise sensitive activity within the OCB.
- 42 I agree with this approach. However, I do not agree with the Section 42A report's proposal for noise sensitive activities within the ANB and inside the TKAZ to be non-complying activities. In my view, when considering the purpose of the Airpark, as explained by Mr Readman, it is clear that persons residing or engaging in noise sensitive activities in the Airpark have chosen to locate there due to the airside benefits the zone offers. These benefits outweigh the potential for adverse effects on community health and amenity values within the zone. The Tonkin and Taylor report also recognises this weighing up of costs and benefits when it states:

We consider it may be appropriate to provide an exception for Te Kowhai Airpark as the future residents will have an interest in aircraft, and will presumably be aware of the associated noise.³

- 43 The Section 42A report also confirms new rules for the Residential, Rural and Village Zones, requiring all buildings containing noise sensitive activities within these zones that are within the Outer Control Boundary to provide acoustic insulation to meet the Appendix 1 standard. Noise sensitive activities in the Rural and Village Zones within the 65dB L_{dn} ANB are also a non-complying activity as sought by the NZTE submission.

Noise limits for Aircraft Operations

- 44 The 'reverse side' of establishing an ANB and OCB within which noise sensitive activities need to be controlled is the setting of a noise limit for aircraft operations. As Ms Smith observes at paragraph 24 of her evidence, the pWDP has no applicable noise limits for such activities. She recommends that Rule 27.2.7 of the pWDP be replaced with recommended wording appended to her evidence. The Section 42A report similarly has an amended rule for noise generated within the TKAZ. I note that there is a

³

Section 42A report Appendix 4B1: Tonkin and Taylor "Noise submissions for Te Kowhai Airpark" report, dated 27 January 2021, Job no:1013185, page 10, section 3.3, paragraph 6.

large measure of agreement between the amended provisions, with matters outstanding being:

- (a) The Section 42A report applies the rule within the TKAZ as well as outside it, whereas Ms Smith's recommendation was to exclude the application of the rule within the TKAZ. Ms Smith, at paragraph 113 of her evidence, has reconsidered the exclusion and, noting the airpark residential activity, considers that it should apply to Precincts C and D. I agree with that approach noting that with the application of the Ldn noise rule there would have to be significant aircraft taxiway activity or a busy helicopter pad operating before a non-compliance would be caused within Precincts C and D.
- (b) The Section 42A report's approach is to separately identify "circuit training" which Ms Smith considers to be impracticable to distinguish from general aircraft operations;
- (c) The Section 42A report recommends earlier and more frequent monitoring requirements, which Ms Smith considers to be onerous and do not take into account the situation where movement numbers are substantially below the numbers allowed for by the noise boundaries; and
- (d) The Section 42A report suggests an additional rule on reporting the monitoring findings to Council. Ms Smith agrees with this additional rule subject to only reporting in years monitoring is undertaken.

45 I support Ms Smith's version of the amended Rule 27.2.7.

Annual Aircraft Movements Limited to 15,000

46 In paragraph 755 the Section 42A report recommends a new rule limiting permitted total aircraft movements per year to 15,000. This would equate to an average of 20 aircraft per day (15,000/2/365 days). Whilst the 15,000 movements was the basis of the Tonkin and Taylor noise modelling in 2031, their noise report does not recommend the adoption of any movement limit. Ms Smith opposes the imposition of such a limit and explains that there is in

fact no noise effects basis for limiting the number of aircraft movements on an annual basis.

47 The sole reason for imposing the limit appears to be noise-related. Noise arguments aside, in my experience the application of 'output' limits to activities is quite varied according to whether that limit is an accurate measure of the level of environmental effects. As Ms Smith confirms the make-up of the total noise emitted by operations is a very complicated matter, and one which the aerodrome operator has a reasonable measure of control. If the total noise emitted is likened to the filling up of a bucket, then the bucket fills very quickly if noisier aircraft are allowed to operate more frequently. Similarly, if visiting aircraft, say from an outside flight school are allowed to use the airstrip, this could potentially have the effect of Airpark residents being deprived of their share of the bucket. In other words, the Aerodrome can be operated to comply with its noise limits. How it achieves this is an operational matter, with the actual number of movements not being an accurate measure of compliance. In the case of airport operations around New Zealand I am not aware of aircraft movement limits being imposed

48 The reasoning in the Section 42A report for the 15,000 limit aligns the Tonkin and Taylor modelling for 2031 to the 10 year life of the district plan. I disagree with this approach which is not effects-based and cuts across the longer term planning horizons of business and infrastructure provision. I have not experienced the preparation of a district plan which adopts an approach that is based on "how much growth in your business do you need for the next 10 years?" I support the application of the noise rule, based on the modelling of foreseeable growth and adopting assumptions about likely aircraft and noise generation, and the monitoring of noise generated over time to assess compliance.

Education Facilities and related definitions

49 The Ministry of Education Submissions 781.6 and 781.19 and Mr Metcalf's Submission 602.33 raise the matter of flight training schools in the context of noise matters and for definitional reasons respectively. The Section 42A report appears to conflate the land use activity of a flight training school with

potential noise effects from flight students operating aircraft. In my view it is a much simpler approach to consider flight training schools as being an educational facility, as the Section 42A report acknowledges at paragraph 166, and for potential noise effects to be addressed by the noise rules. If the flight training involves the use of aircraft, as it must do following classroom activities, then the effects of this must be separately assessed and comply with other rules of the TKAZ. Consequently, I do not support a separate definition for flight training schools, but do support the recommendations for teaching and conference facilities to be replaced within the TKAZ by separate listings for Conference facilities and Education facilities in the recommended 27.1.1 Activity Status Table.

50 The Ministry of Education Submission 781.19 sought amended activity status for education facilities within the TKAZ (amongst many other similar submissions in other localities), and matters of discretion responding to the restricted discretionary status. NZTE supported that submission. The report has recommended this submission be accepted, apart from keeping education facilities within Precinct A (the runway area) as a non-complying activity, which I agree with, in part because this appears very unlikely and there are many other more appropriate places from a general amenity point of view for education facilities to be located.

51 However, additional recommendations have been made on the policy and assessment of educational activities which do not appear to be supported by any submission and which I do not support either. The recommended policy wording, in response to the Ministry of Education submission is:

(e) Ensure adverse effects of educational facilities created by excessive building scale, overshadowing, building bulk, excessive site coverage, loss of privacy, noise, and adverse effects on land transport networks, are minimised to maintain amenity and character in the Te Kowhai Airpark Zone and to be in keeping with the primary use of the precincts.

52 The analysis leading to this recommendation refers to the analysis undertaken as part of Hearing 6 for the Village Zone where that report expressed concern at large scale education facilities in the zone with “potential adverse effects on the amenity and character of the Village Zone

along with the traffic environment”. The report does not give any examples of such large scale educational facilities in the Village Zone. However, if there is some risk of this then I understand the concern. The Section 42A report recommends a 200m² gross floor area limit, beyond which the activity was elevated from a restricted discretionary activity to a discretionary activity. In my view, there is no such risk of an education facility within a building of any scale in the TKAZ. By way of comparison I know that a flight school operates at North Shore Airport where 12 aircraft with 14 instructors oversee students generating 16,000 movements per annum. There are no large buildings for a flight school at North Shore Airport.

- 53 In my view, rules in a plan need to respond to some degree of probability. To make reference to “*excessive building scale, overshadowing, building bulk, excessive site coverage, loss of privacy*” establishes an expectation of design and assessment for an applicant that is unrealistic and unreasonable.
- 54 The recommended height, coverage, daylight admission, and building setback standards internally and with respect to zone boundaries, and the default to restricted discretionary status in each case for non-compliance are sufficient to address any potential adverse effects, as they are for any other building for storage purposes, hangars, visitor accommodation, residential development, community facilities, cafes and restaurants, or clubrooms, all of which are provided for as a permitted activity in one or more precinct, subject to compliance with standards.
- 55 Consequently, I oppose the additional policy. I also consider the intent of the Ministry of Education policy is well covered in other recommended policies that seek to provide for education facilities with a “functional need to locate within” the TKAZ (Policy 9.2.1.1(c)), and managing amenity outcomes (Policy 9.2.2). Perhaps the one policy that is missing is a general one about the transport network, as there is nothing on such matters to support the exercise of discretion in relation to the network, traffic safety or access in some of the rules that follow.

Commercial Activity

56 Paragraphs 135 to 149 of the Section 42A report address the submission by Hamilton City Council (535.82) to limit the amount of commercial activity within the TKAZ. NZTE opposed this submission. In my view the Hamilton City Council submission raises trade competition issues. However, the recommendation in the Section 42A report appears to clarify the notified rule, which limits commercial activity to 300m² as a permitted activity within Precinct B. The broadened definition proposed, from 'retail' to 'commercial' activity is also appropriate reflecting the albeit limited range of commercial activity that would be likely to establish within the TKAZ and which would not otherwise be provided for within the storage, commercial maintenance of aircraft, cafes and restaurants, car rentals, educational and conference facilities definitions. In summary, I agree with the Section 42A report's recommendations.

Aircraft Operations and Circuit Training

57 In response to Greig Metcalfe's Submission 602.33 the Section 42A report has recommended that a definition of 'aircraft operations' and 'circuit training' be inserted. In reliance on the evidence of Mr Park and in terms of ensuring certainty for the administration of the TKAZ I support the definition of 'Aircraft Operations' and oppose the need for any definition of 'Circuit Training'. The only purpose for specifically defining 'Circuit Training' is to distinguish it in terms of its effects from general flying, which I do not consider to be practicable. The principal effects of concern are noise, and these are addressed by the noise rules.

58 However, I agree with the suggestion of Mr Park that repeated circling of the Aerodrome during night hours should be avoided, to which I would add Sunday mornings.

Obstacle Limitation Surface

59 I have provided the details of the changes from the OLS included in the ODP to that now proposed in Variation 1. This is a very technical matter in terms of:

- (a) Understanding the three dimensional shape of the combined take/off landing surfaces, inner horizontal surface and transition slopes that join these surfaces and comprise the overall OLS; and
- (b) The purpose of an OLS in terms of aircraft safety.

60 The Section 42A report recommends that the OLS revert to the ODP OLS. I disagree with this recommendation and consider that, on balance, the evidence supports the adoption of the Variation 1 OLS.

61 As a preliminary point, in relation to paragraph 60(a) above, I have reviewed the analysis in the Section 42A report in relation to how the OLS is expressed in the pWDP and generally agree with the reasoning and recommendation in the Section 42A report in paragraphs 407 to 409 that there is “no easy means of providing simple direction as to compliance”. The Auckland Unitary Plan provides for viewshafts from origin points to regionally significant landscape features such as the maungas. The Plan has an overlay that shows a GPS produced maximum height for a building at any point under the overlay. In reviewing the Section 42A report it appears that a similar approach has been taken to produce Images 5 to 9. I suggest that these types of maps could be used to support provisions in the pWDP that (at least for the majority of property owners under the OLS) would eliminate the need to demonstrate compliance because their property was clearly not affected by it.

62 Mr Park has responded to the Section 42A report and provided explanation of and reasons for the adoption of the Variation 1 OLS. Mr Broekhuysen also provides analysis of the likely development of the properties under the proposed Village Zone rules to north of the runway. I consider their evidence to be important in assessing the OLS provision as the recommendations in the Section 42A report appear to be based largely on the perceived adverse effects of the OLS by submitters and a lack of understanding of the need for and benefits of the OLS as notified by the Council in Variation 1. For example, refer to the Section 42A report at paragraph 279 where the question is put as to what the current use or need for IFR are? This is an important factor in the proposal to move from an OLS that was based on VFR to one based on or providing for IFR. The lack of

understanding about the OLS are in part due to the limited operational information in Variation 1 that supported the revised OLS as part of this process. However, the need for the OLS providing for IFR has now been explained by Mr Park and Mr Readman.

- 63 At paragraphs 138 and 139 of his evidence Mr Park establishes that IFR operations are becoming more commonplace and widely used by small aircraft owners. IFR operations are inherently safer in inclement weather conditions than VFR operations and should be supported as introducing best practice and 'future proofing' the operations at the aerodrome.
- 64 Mr Readman also emphasises the safety aspects of IFR operations and addresses the connection between a larger, flatter OLS and the adoption of IFR, whereby in the absence of navigation during take-off and landing being able to rely on visual recognition, CAA rules require a greater safety margin between obstacles on the ground and an aeroplane in flight.
- 65 From a planning point of view I disagree with the characterisation of the Te Kowhai aerodrome operations as some kind of 'private enterprise' as described in the Section 42A report. Furthermore, whilst the extension of the OLS from that contained in the ODP represents additional controls over adjacent land, such airport overlays and others for activities of significance to the local economy and community such as ports, electricity grids, and quarries are now common in district plans. That is not to say that they are without their problems in ensuring that property owners do not bear an undue burden, and I come back to consider this matter below.
- 66 The Section 42A report has several references to the "private" nature of the aerodrome:
- (a) Paragraph 25: the "*privately-owned runway and associated aerodrome infrastructure*".
 - (b) Paragraph 490: in reference to aerodromes in other districts "*(t)he airports associated with those district plans are likely to be more of a "public" use, compared to Te Kowhai aerodrome which is likely to be more for "private" use and is much smaller*".

(c) Paragraph 524: in addressing reverse sensitivity, *“The usual justification for reverse sensitivity controls on development is that the airport confers social and economic benefits on the wider community, and the rules are for the greater good. The argument is more difficult to sustain for a small private aerodrome such as Te Kowhai, as it confers only limited public benefit”*.

67 The private ownership of aerodromes is commonplace. In Auckland, apart from Auckland International Airport and Whenuapai (Military) Airport, all airports (Kaipara Flats, Parakai, North Shore and Ardmore) are privately owned. Whilst the social and economic benefits will be related to the scale of activity, and in terms of scale Te Kowhai sits in the middle of the range of the Auckland examples, it is not correct to say it has limited public benefit or to allege that it is for private use. Mr Readman succinctly described the public nature of Aerodrome use in his paragraph 19 and 22. As with other public recreational facilities, such as golf clubs or marinas, aerodromes are open to the public and provide public benefits. They are not private in the sense of a private residence or corporate business premises or enterprise. It is more accurate and useful to characterise the benefits and costs of the aerodrome, in terms of its effects on the environment as this term is broadly defined in the Resource Management Act 1991, as being allocated between one public group (the aerodrome users) and the residents of the surrounding area (albeit that they are all private persons).

68 The public nature of the Te Kowhai aerodrome operations extends beyond the use of the airport by local aviators and visiting aircraft operators, to the establishment of the commercial maintenance and servicing of aircraft, a range of commercial activities and flight training. The Waikato 2070 strategy document, referred to above, recognises the TKAZ as a ‘special activity precinct’ acknowledging the mixture of aerodrome, airpark residential and aviation support activity within the zone. Waikato 2070’s purpose is to provide guidance on appropriate growth and economic development that will support the wellbeing of the district and identifying opportunities such as the TKAZ will contribute to that wellbeing.

- 69 In summary, I do not think it is useful to the analysis of the environmental issues being addressed to divide benefits and costs into private and public categories.
- 70 At paragraph 355 the Section 42A report summarises the reasons for recommending a return to the ODP OLS. The majority of the 16 reasons stated for the recommendation focus on the various effects on property owners having to remove trees that currently project through the proposed OLS, including some with biodiversity benefits. Other reasons include restrictions on building development and the inequity of regulatory costs.
- 71 OLS have a propensity to dissect hillsides and sloping land and to lie under buildings, structures and trees whenever there is rising land around an aerodrome. Clearly, there is little an aerodrome operator or CAA can do about the landform except to not have the aerodrome in that location. However, once there existing obstacles must be worked around and factored into any operational restrictions.
- 72 From the property owners point of view, if the OLS is to be expanded, and this happens from time to time if an airport extends its runway or the composition of the aircraft using it changes, then a new or amended rule must be contended with. While it is a legal point, my understanding of section 10 of the Act on existing uses is that land containing existing buildings, structures and vegetation when the new rule was notified may continue to be used in that way provided that use was lawfully established and the effects of the use are similar in character, intensity and scale. While the Section 42A report (paragraph 355(h)) questions whether vegetation would meet the 'similar in character, intensity and scale' test, I do not consider that would be an issue, at least for a few years after the new rule was introduced.
- 73 However, I think Mr Readman's evidence on the guidance provided by CAA AC139-10 "Control of Obstacles" explains, in relation to obstacles, how Aerodrome Operators are to achieve such control (paragraph 40 - 41). As I understand the process, the implementation of the OLS is not a sudden need to 'get out the chainsaw' or to spend many thousands of dollars on contractors. Furthermore I note from both Mr Readman's (paragraph 39)

and Mr Park's (paragraph 60) evidence that the approach and take-off OLS surface is more critical than in the much broader inner horizontal surface, where the 9 properties referred to in paragraph 301 of the Section 42A report and depicted in Images 7 and 8 are located.

- 74 Proposed Rule 22.3.4.3 makes buildings, structures and vegetation in the Rural Zone that protrude through the OLS a non-complying activity, which I agree with. However, if section 10 of the Act applies then the rule needs to exempt non-complying obstacles from the rule existing at the notification date of the pWDP. NZTE will need to establish whether there are areas of the OLS where obstacles can remain and work with the land owners to achieve the safety outcomes required for CAA approval.

Temporary events

- 75 Paragraphs 892 to 902 of the Section 42A report address submissions on temporary events and the rules for such events have also been subject to consequential amendments addressed at paragraph 646. I comment on two matters in this regard.
- 76 NZTE submission 823.5 sought the deletion of Rule 27.2.14 P1 (d) which states:

There is no direct site access from a national route or regional arterial road.

- 77 Limmer Road is State Highway 39 where it passes the TKAZ. In my view, the formed and partly sealed access from the highway into the Airpark does not constitute "direct access" in the manner envisaged by the rule addressing temporary event (see **Figure 1** below). The access is not for a temporary event but for the permanent Airpark. Any temporary event simply uses this permanent access. Consequently, in my view, the rule is redundant for the zone, carried over as it has been from a similar rule for the Rural Zone in the ODP, and should be deleted.



Source: Google Maps

Figure 1: Airpark entrance from Limmer Road (SH 39) Te Kowhai.

78 If that interpretation is not accepted however, I consider that discretions afforded to the Council in the default restricted discretionary rule should be related and confined to the rule non-compliance. In other words, non-compliance with just the direct access rule should not trigger assessments for noise and amenity matters, only traffic safety.

79 The second matter is the consequential wording of Rule 27.2.14 P1 (a)(v) in relation to air show events. I propose the following amendment as tracked:

An air show event occurs only once per ~~consecutive~~ calendar 12 month period.

80 The change addresses the instance where an annual event was held a few days earlier than the previous year, thus making it non-complying with the rule, but not the intent of restriction. I note that it is hardly likely that an air show would be held in December and again in January. The same amendment could also be made to Rule 27.2.14 P1 (a)(i).

Subdivision rules

81 Section 23 of the Section 42A report addresses submissions on subdivision, in particular allotment size. My comments relate to the servicing requirements of water supply and wastewater reticulation. The key issue is

whether the allotments, and likely buildings thereon within each of the TKAZ precincts, will enable self-sufficiency for each of these servicing requirements.

82 In relation to wastewater, the recommended provisions in the Section 42A report continue to support the approach that lots less than 2500m² must connect to the private reticulated network to be provided for the Aerodrome by the subdivider. Lots greater than 2500m² have the option of providing for their own on-site treatment and disposal system. As lots within Precinct B are unlikely to be greater than 2500m² they will need to connect to the network.

83 In relation to water supply, the Section 42A report addresses submissions about the adequacy of the water supply for each lot, including water supply for fire-fighting purposes. Fire and Emergency New Zealand (**FENZ**) submission 378.76 sought that:

Proposed lots must be connected to public reticulated water supply or water supply sufficient for firefighting purposes.

84 NZTE supported this submission. Unfortunately, the underlined words have been amended in the recommended provisions to read:

Proposed lot must be connected to a private reticulated potable water supply network that is also sufficient for firefighting purposes.

85 I understand that the FENZ submission identifies that a connection must be to a public network, or to a supply that otherwise demonstrates sufficiency for firefighting purposes. A public network is not available for the TKAZ. Mr Armitage's evidence states that compliance with the relevant New Zealand Standard would include a range of options that would meet the sufficiency test sought by FENZ. Accordingly, while I support the requirement for a potable water supply and water supply for firefighting purposes as matters of discretion in the restricted discretionary activity assessment (Rules 27.4.2 RD1(b) and RD2(b)), I consider that the proposed rule wording is too prescriptive and it only needs to require that the proposed lots are provided with a potable water supply, and one that is sufficient for firefighting purposes. For smaller commercial lots this could potentially comprise a

combined system based on a larger shared roof area, for example. A network is not required, and I agree with Mr Armitage that the requirement for a centralised supply, as envisioned by a network would add significant, and unnecessary, cost to the development of the Airpark.

S32AA ASSESSMENT

- 86 The Section 42A report includes detailed section 32AA evaluations for all recommendations. I do not intend to replicate these evaluations for all of the matters addressed in this evidence. However, I will comment on the assumptions made supporting the most appropriate option in relation to the recommended OLS and noise rules.

OLS assessment

- 87 The Section 42A report's support for reverting to the ODP OLS is based on the assumed costs and benefits comparing the ODP OLS to the Variation 1 OLS as identified in paragraphs 364 to 371 as follows:

- (a) the ODP OLS will impose costs on a lesser number of properties than the Variation 1 OLS, particularly through the fewer properties requiring a LIM to be registered;
- (b) the ODP OLS will enable more trees and vegetation to be retained and so maintain amenity and biodiversity values and the benefits of forestry stands; and
- (c) the ODP OLS nevertheless provides benefits for people and the community in the form of aviation safety.

- 88 My response to each of these costs and benefits is:

- (a) I do not accept that in practice the areal extent of the OLS has more than a minor effect on most persons. As noted in the Section 42A report, at paragraph 369, for the majority of the OLS, created by the inner horizontal surface, the maximum height is over 40m. Whilst Council might have some enquiries from time to time, property owners would become aware of the implications of the OLS and for most persons, there are no implications. Council can also mitigate

concerns through using its GPS technology, as I have already commented on in paragraph 62 above. Essentially, the Council has the technology to place a layer on the district planning maps showing the maximum permissible height of new buildings, structures and vegetation on all land under the OLS, explicitly showing this information for each property.

- (b) The introduction of the Variation 1 OLS does not require the removal of existing buildings, structures and vegetation, so it has no immediate implications for existing trees, which a number of submissions have expressed concern about, and the Section 42A report has focussed on. Existing vegetation has existing use rights. In relation to some trees Mr Readman confirms that NZTE has been proactive in tree management on both the western and eastern edge of the runway to achieve compliance with the ODP OLS. I consider that the 'costs' referred to in the Section 42A report in relation to amenity, biodiversity and productive potential can be discounted.
- (c) As explained by both Mr Park and Mr Readman, the Variation 1 OLS provides a greater margin of safety than the ODP OLS, so community benefits from the Variation 1 OLS are also greater.

89 In summary, based largely on an assumption of widespread tree removal and associated costs, the Section 42A report reaches a conclusion that the ODP OLS is the most appropriate option. My analysis indicates that the reverse is true and that the Variation 1 OLS is the most appropriate option.

Noise rules assessment

90 The Section 42A report recommends several amendments to the pWDP airport related noise and land use controls. Ms Smith has identified these and addressed them in turn commencing at paragraph 64 of her evidence. For convenience I repeat them below:

- (a) Alternative noise boundaries based on 15,000 annual movements as modelled by Tonkin and Taylor.
- (b) A rule limiting the number of annual movements to 15,000.

- (c) A rule defining the operational hours of the Aerodrome to be 7am to 10pm.
- (d) A rule excluding engine testing between 10pm and 7am.
- (e) Non-complying status of circuit training and a flight school.
- (f) Non-complying status of activities sensitive to noise inside the ANB within the Airpark zone.
- (g) A rule requiring noise from aircraft operations to comply with the 55 and 65 dB Ldn limits at the OCB and ANB respectively within the Airpark zone.

91 I have examined the respective section 32AA assessments for the Section 42A report recommendations in section 11 to 13 of the report. Collectively, the following points have been made:

92 Items (a) and (b) both centre around a 15,000 limit on aircraft movements. I have commented above on this matter and I do not accept that there is a benefit to any party artificially limited movements until the next district plan review. The section 32AA analysis points to benefits to the community of managing effects of annual aircraft movements, which I understand refers to noise effects. Ms Smith states that she is unaware of any airport with an annual cap on movements and observes that there is no recommendation for such a cap in the Tonkin and Taylor advice. More importantly, in terms of costs and benefits, Ms Smith states (paragraph 83) that there is no noise effects basis for limiting the number of aircraft movements. Accordingly, I see no benefit in the 15,000 limit.

93 The Section 42A report recommends three new rules that address overall noise through land use controls on top of the requirement for noise compliance in Rule 27.2.7. These are a rule defining the operational hours of the Aerodrome to be 7am to 10pm, a rule excluding engine testing between 10pm and 7am and non-complying status of circuit training and a flight school.

- 94 Each of the recommendations is based on the premise that there will be benefits to the local community from managing noise effects associated with circuits being flown by trainee pilots and others, and noise during night time. Ms Smith has provided specific analysis which discounts these benefits. Her evidence is that noise from flying in circuits is part and parcel of general aviation and after accounting for circuits in her noise modelling the 55dB Ldn noise contour was barely affected. Consequently, I do not see that there are benefits from distinguishing either circuit training or flight schools with non-complying activity status.
- 95 However, I note that as a result of further analysis Ms Smith has recognised that there is the potential for “unreasonable sleep disturbance effects”. Although the level of night flying that would produce these effects is unlikely to occur in practice she has recommended limiting the number of night time departures to 40 over a 3 month period. I would support such an evidence based restriction over a blanket night time restriction.
- 96 Further, while Ms Smith accepts the general concept of a limit on noise from engine testing, she opposes a specific night time restriction, instead requiring simply that this noise meet the general requirements of the pWDP for the adjacent zones (i.e. it is classed as noise other than aircraft operations). I consider that this approach would be the most appropriate method responding to the objectives and policies of the TKAZ on noise.
- 97 In support of non-complying activity status for noise sensitive activities within the TKAZ and a rule requiring noise from aircraft operations to comply with the 55 and 65dB Ldn limits within the OCB and ANB respectively, the Section 42A report considers that there is a benefit in having clear guidance on how noise sensitive activities are to be managed and that effects on human health and amenity values are key considerations. I agree with that point in relation to the adjacent zones however within the TKAZ a different rationale operates and persons living and working in the zone have already internalised the additional noise and traded that off against the convenience of having the Aerodrome in close proximity. I am not saying that human health is not important for these people, but their definition of amenity is likely to be different to the general population.

- 98 Ms Smith has proposed a 'half-way' house in relation to noise generated within the TKAZ, with limits being required to be met within the two residential precincts but not within Precincts A and B, the runway and commercial precincts. I support this proposal.

CONCLUSION

- 99 In conclusion, the pWDP has included the TKAZ to provide for the sustainable management of the Aerodrome at Te Kowhai. The Aerodrome is an important local resource for the community, aviators and aviation related services. The pWDP (and Variation 1) contains important provisions, such as the OLS and the noise control boundaries, that are key to ensuring safe operations and managing the interface between the Aerodrome and neighbouring properties. I agree with the recommendations of the Section 42A report on many provisions and consider that these recommendations improve on Council's notified TKAZ. However, for the key provisions referred to I consider that the benefits of additional or more stringent controls have not been demonstrated and the alternative provisions sought by NZTE, as amended in this evidence and other evidence from NZTE, is more appropriate and better meets the purpose of the Act.


David Serjeant

Dated 15 February 2021

ANNEXURE A: TE KOWHAI DEVELOPMENT PLAN FROM WAIKATO 2070

04.11

TE KOWHAI DEVELOPMENT PLAN 50-YEARS



Current population and possible future population

LOCATION: TE KOWHAI IS LOCATED OFF SH39 ON HOROTIU ROAD, ABOUT 6KM SOUTHWEST OF HOROTIU, AND EAST OF THE WAIPA RIVER.

