Mercer Airport – Submitter #921 – Hearing Highlights Package

Chris Dawson - Planning

1.1 The correct approach under the RMA is to determine what district plan provisions (or zone) most appropriately assist Waikato District Council to carry out its functions to achieve the purpose of the Act. The critical evaluation is set out in s32 of the Act which determines determine the efficiency and effectiveness of the proposed provisions in achieving the objectives of the Proposed Waikato District Plan (PDP).

1.2 Mercer Airport requires a special zone to recognise that it is already a regionally significant aviation resource and should be formally protected in the District Plan as such. The rezoning, plus Obstacle Limitation Surfaces[1] and Air Noise Boundary[2] provisions are required to protect that facility and provide it with the operational certainty to grow over time in the future.

1.3 The most appropriate time to provide the statutory protection for the airport and the surrounding community is now before the Mercer area gets more developed than it already is. The implementation of a Special Zone for Mercer Airport is essential to ensure that the Proposed Waikato District Plan is consistent with the relevant higher order documents, specifically the Operative Waikato Regional Policy Statement Policy 6.3 and Method 6.3.1.

1.4 The policy direction of the Rural Zone is a relevant consideration under s32 of the Act, and Lens 2 of the s42A Framework report because that zone informs the existing environment and will continue to be applied over the surrounding properties. However other relevant matters are Objective 5.3.1 states (a) "Rural character and amenity are maintained." A series of policies are then listed: Policy 5.3.2: "Recognise and protect the continued operation of the rural environment as a productive working environment by: (iii) providing for lawfully established rural activities and protecting them from sensitive land uses."[3]

1.5 The PDP sets a strong policy direction that part of maintaining rural character and amenity is to recognise and protect lawfully established rural activities from reverse sensitivity. Policy 5.3.7 Reverse Sensitivity Effects states:

(b) avoid adverse effects outside the site and where those effects cannot be avoided, they are mitigated;

[1] Supplementary Evidence of Dave Park, paragraph 7.2
[2] Supplementary evidence of Rhys Hegley, paragraph 11
[3] Proposed Waikato District Plan Policy 5.3.2 (a) (iii)

(c) Mitigate the adverse effects of reverse sensitivity through the use of setbacks and the design of subdivision and development; and

(d) the scale, intensity, timing and duration of activities are managed to ensure compatibility with the amenity and character of the rural environment."

1.6 This policy provides a clear direction that a number of statutory tools should be used to ensure that activities in the rural zone are as compatible as possible with their surrounding environment. These tools include recognising that not all effects can be internalised but where they cannot, specific mitigation is required. The Mercer Airport Zone as proposed[4] contains two rules relating to neighbouring properties, with the remaining provisions applying to the airport itself.

1.7 Proposed Rule 29.3.1 (b) requires that any building, structure, tree or other vegetation must not protrude through the OLS. In reality, this rule has very little, if any impact on existing neighbours. Any existing buildings that are within the OLS would have existing use rights and as set out in the evidence of Dave Park[5], the OLS does not impact on any existing buildings outside the perimeter of the Mercer Airport site.

1.8 Proposed Section D, Section 7 Mercer Airport, Rule 7.1 conditions for permitted activities requires that any habitable buildings within the Outer Control Boundary (OCB) are required to be acoustically insulated to achieve some specific internal noise standards set out later in the Rule. Currently there are two houses located within the proposed OCB and in both cases, these requirements are not that different to the building standard for a new dwelling.

1.9 Proposed Rule 7.1 then requires that any new habitable building inside the Air Noise Boundary requires a Restricted Discretionary activity consent under Rule 29.3.5 with Council's discretion limited to acoustic insulation and the achievement of internal noise levels and the design and orientation of the building. The location of the Air Noise Boundary is relatively close to the Mercer Airport and it is therefore unlikely that any additional dwellings (apart from future accommodation above hangars on the airport itself), would be established within this Air Noise Boundary.

1.10 Ms Legarth also states that the potential effects on road users from the increase in traffic have not been assessed[6]. This is incorrect and Mercer Airport commissioned a Transport Assessment that was provided to Council on 21 August 2020[7] and is included as Attachment 3. The report concluded that with the

[4] Supplementary evidence of Chris Dawson, Attachment 1
[5] Supplementary evidence of Dave Park, para 7.1
[6] S42A rebuttal paragraph 45.
[7] Transport Assessment report prepared by BBO dated August 2020 see Attachment 3

implementation of a number of minor upgrades, the access to the Airport would be of a sufficient standard to enable 160 vehicles (320 movements) per day to safely access the site.

1.11 I have amended a number of matters in the Objectives, Policies and rules to reflect the concerns expressed in the s42A and the s42A rebuttal and these are included as Attachment 1 to this highlights package. Original amendments in my rebuttal statement are contained in Red Text while additional amendments arising from the s42A rebuttal are highlighted in Blue text in this Attachment. I have also amended the s32AA report and this is included as Attachment 2.

1.12 I also neglected to explain one of the deletions proposed in my supplementary statement which is the removal of Water, stormwater and wastewater infrastructure from the Activity Status Table 29.1.1. This was originally proposed as a Controlled Activity however I now consider it more appropriate that these matters be addressed under Proposed District Plan Rule 14.11 in Chapter 14 – Infrastructure and Energy.

1.13 In my opinion, the revised Objectives, Policies and implementation methods more clearly articulate the desired outcomes for both the airport and the surrounding rural environment and are more specific on the implementation methods to achieve those objectives and policies.

1.14 The economic benefits of the airfield fall both to the District and to the wider Waikato Region. There are effects, primarily noise, that arise from an airport operation that cannot be contained within the boundary of the site where they are generated. Those noise effects already exist to some extent under the existing resource consent provisions.

1.15 The imposition of air noise boundary provisions will provide certainty to all parties. They will ensure that future habitable dwellings located within the air noise boundaries are acoustically insulated and that future residents are informed of the higher noise levels in advance of their property purchase. Mr Hegley confirms that the proposed air noise boundary provisions are appropriate for the surrounding rural community and that the additional costs associated with insulating habitable buildings to meet the requirements of the proposed rules will be minor[8].

1.16 The aviation safety requirements of an airport operation necessitate that an OLS is put in place to ensure that the approach surfaces associated with the airport are protected from intrusions that would potentially render the airport unsafe. Mr Park confirms in his rebuttal evidence that the proposed OLS will not impact on any existing buildings or houses[9] while acknowledging that some existing trees may need to be trimmed. In my opinion the implementation of these provisions would be entirely consistent

[8] Supplementary evidence of Rhys Hegley, para 18
[9] Supplementary Evidence of Dave Park, para 7.1

with enabling the rural community to provide for its health and wellbeing while avoiding, remedying or mitigating adverse effects.

1.17 The Operative District Plan contains objectives and policies relating to reverse sensitivity. The Proposed District Plan also contains an Objective and Policy that are specifically related to reverse sensitivity:

6.1.6 Objective - Reverse Sensitivity

> Infrastructure is protected from reverse sensitivity effects, and infrastructure (including the National Grid) is not compromised.

6.1.7 Policy – Reverse Sensitivity and Infrastructure

> a) Avoid reverse sensitivity effects on infrastructure from subdivision, use and development as far as reasonably practicable, so that ongoing and efficient operation of infrastructure is not compromised.

1.18 While the Proposed District Plan is still working its way through the First Schedule process under the RMA, some weight can nevertheless be placed on the Objectives and Policies of the PDP. In concert with the very similar Objective and Policy contained in the Operative District Plan this confirms that there is an imperative on Council to ensure that reverse sensitivity effects are avoided as far as reasonably practicable.

1.19 The District Plan review is the ideal time to implement this rezoning for Mercer Airport. The density of surrounding development is still relatively low and consists primarily of large scale rural properties. However, this will not always be the case and it is important that the Council act now to implement the Mercer Airport Zone

1.20 I confirm my opinion that the most effective way for the Council to achieve the purpose of the RMA in relation to the Mercer Airport is to rezone it to Mercer Airport Zone with appropriate objectives, policies and other implementation methods.

Attachment 1

Amended Objectives, Policies and Rules for

Mercer Airport Zone – 11 May version

Mercer Airport Proposed Objectives and Policies:
12 May
Hearing Highlights version

Amendments for hearing:

- ~~Strikethrough~~ = delete
- Additional text = RED text (3 May version)
- Additional text = BLUE text (12 May version)

Amend Chapter 9 – Specific Zones to add new Chapter 9.5 – Mercer Airport Zone with the objectives and policies set out below:

Objective 1: Mercer Airport is able to operate safely and efficiently and is developed to meet the current and future needs of the aviation community.

Policy 1a: To enable the continued operation and development of Mercer Airport by providing for a diversity of aviation and other activities which support the aviation sector.

Policy 1b: To protect the operational and safety requirements of Mercer Airport by controlling development surrounding the Airport that may restrict or infringe those requirements through mechanisms such as airspace protection (Obstacle Limitation Surface) and noise control boundaries.

Policy 1c: To ensure that the adverse effects of excessive building scale ~~bulk and location~~, excessive site coverage of buildings and structures at the Airport provide for the unique operational requirements of ~~an~~ the airport whilst maintaining the amenity and character of ~~achieving appropriate levels of amenity at~~ the Mercer Airport Zone and surrounding properties.

Policy 1d: To enable a range of commercial ~~aviation~~ activities ~~opportunities at the~~ that support Mercer Airport and the aviation sector ~~any associated infrastructure and business~~ including hangars, workshops, storage buildings and refuelling facilities. ~~fixed wing aircraft helicopters, and rockets by recognizing their operational and safety requirements.~~

Objective 2: The adverse effects of airport activities are managed to maintain ~~ensure acceptable~~ amenity outcomes compatible with surrounding land uses.

Policy 2a: Mitigate adverse airport effects ~~by managing~~ through the application of general and airport specific performance standards including:

a) The scale and intensity of on-site activities;
b) Noise;
c) Glare and Lighting; ~~and~~
d) Earthworks;

e) Hazardous substances;
f) Outdoor storage;
g) Temporary events

Policy 2b: ~~To~~ Ensure that bulk and location standards provide for the unique operational requirements of an airport whilst at the same time achieving appropriate levels of amenity for surrounding properties.

Policy 2C: Ensure that any non-aviation activities on the site have a functional need to locate within the Mercer Airport Zone.

A) Rules and Provisions:

C1 Amend Section C – Rules by inserting new Chapter 29 – Mercer Airport Zone after Chapter 28 – Rangitahi Peninsula Zone as set out below:

Chapter 29 – Mercer Airport Zone

(1) The rules that apply to activities in the Mercer Airport Zone are contained in Rule 29.2 Land Use – Effects and, Rule 29.3 Land Use – Building.

(2) The activity status tables and standards in the following chapters also apply to activities in the Mercer Airport Zone:
14 Infrastructure and Energy as specified in Rule 29.2;
15 Natural Hazards and Climate Change (Placeholder).

(3) The following symbols are used in the tables:

(a)P Permitted activity
(b)C Controlled activity
(c)RD Restricted discretionary activity
(d)D Discretionary activity
(e)NC Non-complying activity

(4) The Mercer Airport Zone is shown on the planning maps.

(5) Rule Table 29.1.1 identifies Permitted activities (P), Controlled Activities (C), Discretionary activities (D) and Non-complying activities (NC) within the zone.

29.1 Land Use – Activities

(a) All Permitted and Controlled activities identified in Activity Status Table 29.1.1 must comply with all Land Use - Effects rules in Rule 29.2 and Land Use - Building rules in Rule 29.3.

(b) With respect to controlled activities, Council reserves control over the following matters:
(i)the proposed site design and layout in relation to:
A. the sensitivity of the surrounding natural, human and physical environment,

B. potential hazards and exposure pathways arising from the proposed facility, including cumulative risks with other facilities, and

C. interaction with natural hazards (flooding, instability), as applicable,

(ii)proposed emergency management planning (spills, fire and other relevant hazards), and

(iii)proposed procedures for monitoring and reporting of incidents.

(c) To reference the activity status, use the following format:

(i)Rule

(ii)Activity status and number

(iii)Activity

(iv)Precinct

(for example, 21.7 D11 Navigation Equipment Precinct B Commercial)

29.1.1 Activity Status Table

Activity	Mercer Airport Zone
General Aviation including helicopters ~~and light jet aircraft~~	P
Recreational flying	P
Jet flights	P
Commercial aviation	P
Commercial maintenance and servicing	P
Aviation related light industry	P
Aviation related offices	P
Aviation related storage & Warehousing	P
~~Temporary Events for Aviation~~	~~P~~
~~Non-aviation~~ Temporary events	P
Navigational equipment	P
Mercer Airport runway and taxiways	P
Clubrooms	P
Café	P
Fuel storage and refuelling	C
~~Water, stormwater and wastewater infrastructure~~	~~C~~
Accommodation above hangars	~~C~~ RD

29.2 Land Use – Effects

29.2.1 On Site Services

Any activity must comply with the requirements for service connections in Rules 14.2 and 14.11 of Chapter 14 (Infrastructure and Energy).

29.2.2 On-site parking and loading

Any activity must comply with the requirements for on-site parking and loading in Rules 14.12 of Chapter 14 (Infrastructure and Energy).

29.2.3 On-site manoeuvring

Any activity must comply with the requirements for on-site manoeuvring and queuing in Rules 14.2 of Chapter 14 (Infrastructure and Energy).

29.2.4 Noise – non-aviation related

P1	(a) Noise from any non-aviation related activity in the Mercer Airport Zone must not exceed the following noise limits when measured at the notional boundary of a site within the Rural Zone: (i) 55 dB (L_{Aeq}), 7 am to 10 pm every day; and (ii) 40 dB (L_{Aeq}) and 70 dB (L_{afmax}), 10 pm to 7 am the following day
P2	(a) Rule P1 does not apply to: (i) Construction noise; or (ii) Noise from emergency sirens. ~~(iii) Noise from rocket testing on site.~~
D1	Any activity that does not comply with rule 29.2.4 P1 or P2.

29.2.4A – Noise – Aircraft operations

P1	(a) Noise from aircraft operations in the Mercer Airport Zone shall not exceed 65 dBA Ldn outside the Air Noise Boundary and 55 dBA Ldn outside the Outer Control Boundary as shown on the Planning Maps. For the purpose of this rule aircraft noise shall be assessed in accordance with NZS6805:1992 "Airport Noise Management and Land Use Planning" and logarithmically averaged over a three month period. The following operations are excluded from the calculation of noise for compliance with noise limits: • Aircraft engine testing and maintenance • Aircraft landing or taking off in an emergency • Air Show (for one air show per year). (b) Aircraft movements shall be recorded monthly and noise contours for the purpose of assessing compliance with rule 29.2.4A P1 shall be calculated no later than 12 months from the date the rule becomes legally operative and thereafter once every two years. When the calculated noise level is within 1 decibel of the limit noise contours for the purpose of assessing compliance with Rule 29.2.4A shall be calculated annually and verified with infield monitoring once every two years. (c) A report detailing the noise contours and calculations and in-field noise levels in the years that these are monitored, shall be prepared and forwarded to the Council on an annual basis by the airport operator. (d) When the aircraft movements recorded under Rule 29.2.4A P1 (b) exceed 70 flight movements per day averaged over a 3 month period, the opportunity for acoustic insulation shall be offered to the owners of the dwelling on Lot 2 DP 407229. The acoustic insulation shall be sufficient to achieve an internal noise level of Ldn 40 dBA in habitable rooms and if accepted, shall be installed at Mercer Airport's expense. However if the offer of acoustic insulation is not accepted within 2 months of it being made in writing, then the requirements of this rule shall be considered to have been met.
D1	(a) Any activity that does not comply with Rule 29.2.4A P1.

29.2.5 Construction Noise

P1	(a) Construction noise generated from a construction site in the Mercer Airport Zone must meet the limits in NZS 6803:1999 Acoustics – Construction Noise.
D1	Any activity that does not comply with rule 29.2.5 P1.

29.2.6 Glare and Lighting

P1	(a) Illumination from glare and artificial light spill (excluding runway lighting) must not exceed 10 lux measured vertically at any other site.
RD1	(a) Illumination from glare and artificial light spill that does not comply with Rule 29.2.6 P1. (b) Councils discretion is restricted to the following matters: (i) Effects on amenity values; (ii) Light spill levels on any other site; (iii) Duration and frequency

29.2.7 Earthworks

P1	(a) Earthworks within the Mercer Airport Zone must meet all of the following conditions: (i) Earthworks must not exceed a volume of more than 1,000 m^3 in a single calendar year; (ii) Earthworks must not exceed an area of more than 1,000 m^2 in a single calendar year; (iii) The height of the resulting cut or batter face does not exceed 1.5 m with a maximum slope of 1:2 (1 metre vertical to 2 m horizontal. (iv) Areas exposed by the earthworks not covered by buildings or other impervious surfaces are revegetated to achieve 80% ground cover within 6 months of the commencement of the earthworks; (v) Sediment is retained on site through implementation and maintenance of erosion and sediment controls; (vi) Earthworks must not divert or change natural water flows or established drainage paths.
P2	(a) The importation of fill material to the site must meet all of the following conditions, in addition to the conditions in rule 29.2.7 P1 (a) (i) Earthworks do not exceed a total volume of 500 m^3 per site and a depth of 1 metre; (ii) Earthworks must be fit for compaction; (iii) The height of the resulting batter face in stable ground must not exceed 1.5 metres with a maximum slope of 1:2 (1 m vertical to 2 m horizontal) (iv) Earthworks do not restrict the ability of the land to drain; (v) The sediment from fill material is retained on the site.
RD1	(a) Earthworks that do not comply with Rule 29.2.7 P1 or P2 (b) Councils discretion is limited to the following matters: (i) Amenity values and landscape effects (ii) Volume, extent and depth of earthworks (iii) Nature of fill material (iv) Contamination of fill material (v) Location of earthworks relative to waterways

	(vi) Compaction of fill material (vii) Volume and depth of fill material (viii) Geotechnical stability of fill material (ix) Flood risk (x) Land instability, erosion and sedimentation

29.2.8 Hazardous Substances

P1	(a) The use, storage or disposal of any hazardous substance where: (i)The aggregate quantity of hazardous substance of any hazard classification on a site is less than the quantity specified for Mercer Airport Zone in Table 5.1 contained within Appendix 5 (Hazardous Substances); (ii)The storage or use of radioactive materials is in approved equipment for medical and diagnostic purposes or specified as an exempt activity or article in the Radiation Safety Act and Regulations 2017.
C1	a) Fuel storage and refuelling infrastructure, including self-automated dispensing facilities must not exceed: (i)An aggregate of 100,000 litres of petrol or aviation fuel in underground storage tanks; and (ii)An aggregate of 50,000 litres of diesel in underground storage tanks; and (iii)An aggregate of 6 tonnes of LPG (single vessel storage). (b)Council reserves its control over the following matters: (i)The proposed site design and layout in relation to: A. The sensitivity of the surrounding natural, human and physical environment; potential hazards and exposure pathways arising from the proposed facility, including cumulative risks with other facilities; B. Interaction with natural hazards such as flooding, instability; C. Proposed emergency management planning (spills, fire and other relevant hazards); D.Procedures for monitoring and reporting of incidents.
D1	The use, storage or disposal of any hazardous substance that does not comply with one or more of the conditions in Rule 29.2.8 P1 or C1.

29.2.9 Outdoor Storage

P1	(a)Outdoor storage of goods or materials must: (i)Be associated with a Permitted Activity operating from the site; and (ii)Not encroach on any required parking and manoeuvring areas.
RD1	(a)Outdoor storage of goods or materials that does not comply one or more conditions in Rule 27.2.10 P1. (b)Council's discretion is restricted to the following matters: (i)Effects on amenity; (ii)Visual impact; (iii)Nature, scale and location of screening; (iv)Proximity and height of stockpiles to road reserve or other sites; (v)Access to sunlight and daylight; (c) Safety of road users and pedestrians.

29.2.10 ~~Non-Aviation~~ Temporary Events

P1	(a) A ~~non-aviation~~ temporary event must comply with all of the following conditions: (i)The event occurs no more than 3 times per consecutive 12-month period; (ii) It does not involve motorised outdoor recreation (except flying) (iii) It does not involve outdoor musical events or concerts. (ii) It operates within the hours of: A.7.00am to 10pm Monday to Saturday; and B.7.00am to 6pm Sunday; (b) An air show event occurs only once per consecutive 12 month period. (c) Temporary structures are: (i)Erected no more than 7 days before the event occurs; and (ii)Removed no more than 7 days after the end of the event; (c)The site is returned to its original condition no more than 7 days after the end of the event;

RD1	(a)A ~~non-aviation~~ temporary ~~activity~~ event that does not comply with Rule 29.2.9 P1. (b)Council's discretion is restricted to the following matters: (i)Amenity; (ii)Noise levels; (iii)Timing and duration of the event; (iv)~~Traffic and road safety effects~~ Effects on the safe and efficient operation of the land transport network.

29.2.11 Access and vehicles

P1	(a) The use of Mercer Airport for any permitted activity set out in Rule 29.1.1 (apart from a ~~Non-aviation~~ temporary event) provided that: (i) The number of vehicles accessing the Mercer Airport zone shall not exceed ~~200~~ **160** vehicles **(320 vehicle movements)** per day.
RD1	(a) The use of Mercer Airport for a use that does not comply with Rule 29.2.11 P1. (b) Council's discretion is restricted to the following matters: (i) Safety of access users; (ii) Intersection safety with a public road; (iii) Formation, width, drainage

29.2.12 Jet Flights

P1	(a) The use of Mercer Airport for no more than forty (40) jet movements (20 flights) per 12-month period between the hours of 7 am and 10 pm (excluding ex-military jets).
RD1	(a) Jet flights that do not comply with Rule 29.2.12 P1.

	(b) Council's discretion is restricted to the following matters: (i)Frequency and duration of flights; (ii) Noise levels (iii) Amenity

29.3 Land Use – Building

29.3.1 Height of buildings, structures, trees and other vegetation

P1	(a)The construction or alteration of any building or structure must not exceed a height of 10 m, and (b)Any building, structure, tree or other vegetation must not protrude through the Obstacle Limitation Surfaces defined in Appendix 13 (Mercer Airport Zone and Obstacle Limitation Surface).
RD1	(a)Any building, structure, tree or other vegetation that does not comply with Rule 29.3.1. P1. (b)Council's discretion is restricted to the following matters: (i)Form, bulk and location of building, structure, object, mast or tree; (ii)Effect on the safe and efficient operation of Mercer Airport; (iii)Access to daylight and sunlight.
D1	Any building, structure, tree or other vegetation that does not comply with Rule 29.3.1 RD1.

29.3.2 Daylight Admission

P1	(a)Any building or stockpiling of materials must not protrude through a height control plane rising at an angle of: (i) 37 degrees commencing at an elevation of 2.5m above ground level at every point of the Zone boundary.
RD1	(a)Any building or stockpile that does not comply with Rule 29.3.2 P1. (b)Council's discretion is restricted to the following matters: (i)Effects on amenity values; (ii)Admission of daylight and sunlight to the site and other sites; (iii)Extent of areas of non-compliance.

29.3.3 Building Coverage and Impervious Area

P1	(a)Construction or alteration of a building must comply with all of the following: (i) The total building coverage must not exceed: A. 30% of the site area, up to a maximum of 900 m^2; and B. result in more than 60% of the site having an impervious surface, up to a maximum 1800 m^2 impermeability.

RD1	(a)Construction or alteration of a building that does not comply with Rule 29.3.3 P1. (b)Council's discretion is restricted to the following matters: (i)Effects on amenity values; (ii)Building form, bulk, location, external cladding and colour; (iii)Extent of area of non-compliance; (iv)Effects on adjacent sites; (vi)Stormwater management; (vii)Onsite parking provision; (viii)Landscape planting and other visual mitigation measures

29.3.4 Building Setbacks from Zone boundary

P1	(a) Construction or alteration of a building must be set back at least 6 m from a Mercer Airport Zone boundary.
RD1	(a)Construction or alteration of a building that does not comply with Rule 29.3.4 P1. (b)Council's discretion is restricted to the following matters: (i)Effects on amenity values; (ii)Effects on adjacent sites; (iii)Effects on aircraft safety and taxiing.

29.3.5 Habitable buildings inside the 65 dBA Ldn air noise boundary contour on the planning maps

RD1	(a)Any habitable building inside the 65 dBA Ldn contour as shown on the planning maps. (b) Council's discretion is restricted to the following matters: (i) Acoustic insulation and achievement of internal noise levels; (ii) Design and orientation of habitable building; (c) Mercer Airport shall be considered an affected party for any application under Rule 29.3.5.

29.3.6 Accommodation above hangars

RD1	(a) Any accommodation in the Mercer Airport Zone when located above a hangar. (b) Council's discretion is restricted to the following matters: (iii) Acoustic insulation and achievement of internal noise levels; (iv) Design and orientation of habitable building; (v) Provision of appropriate water, wastewater and stormwater disposal services.
NC1	Any accommodation in the Mercer Airport Zone that does not comply with Rule 29.3.6 RD1.

C2 Amend Section D – Appendices and Schedules by adding a new Section 7 – Mercer Airport Zone immediately after Appendix 6 – Acoustic insultation for other areas.

Appendix 7. Mercer Airport

1. Add new item B1 Mercer Airport to 1. (a) (i) buildings for noise sensitive activities in the noise control boundaries and buffers for:

2. Add new section 7. Mercer Airport Zone

7. Mercer Airport Zone

The Mercer Airport Outer Control Boundary (OCB) identifies an area that experiences high noise levels from aircraft landing and taking off from the Mercer Airport. Habitable buildings within the Mercer Airport Outer Control boundary are required to be acoustically insulated to achieve the internal noise standards specified in sections 7.1 and 7.2 below.

7.1 Conditions for permitted activities inside the Mercer Airport Outer Control Boundary.

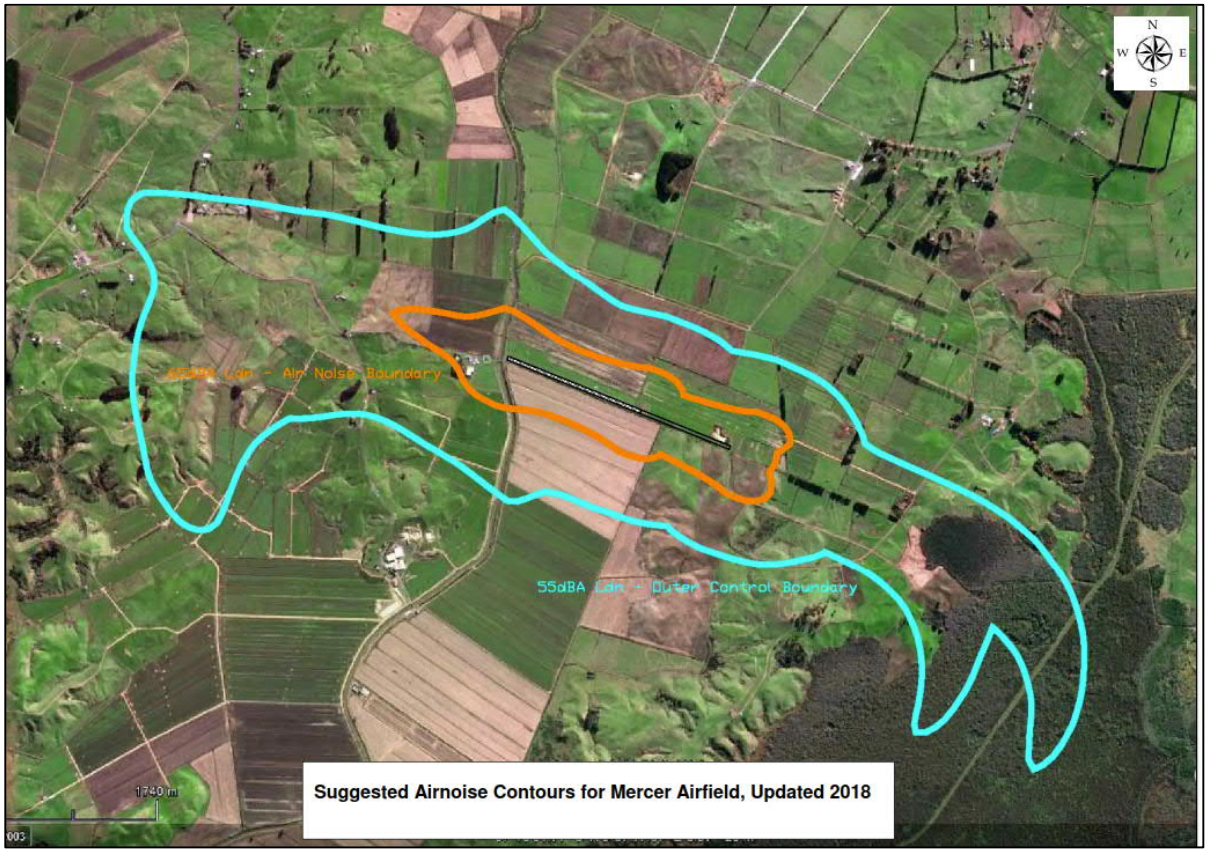
(1) Prior to the issue of a building consent for any building to which this rule applies, compliance with the requirements of the rule shall be demonstrated through the production of a design certificate from an appropriately qualified and experienced acoustic specialist certifying that an internal noise level will not exceed the level shown in Table 15 below:

Table 15: Internal noise levels

Area	Internal Noise level
Habitable rooms	Ldn 40 dBA

(2) The internal noise level shall be achieved based on the predicted external level at the subject site shown on Figure 3 below and in accordance with the adjustments to the dBA level to establish an un-weighted external source spectrum for aircraft noise outlined in Table 16 below.

Figure 3: Mercer Airport, Ldn contours



(3) Where a building is partly or wholly contained within the Mercer Airport OCB, a mechanical ventilation system or systems that will allow windows to be closed if necessary to achieve the required internal design sound level for habitable rooms is required to be installed. The mechanical system or systems are to be designed, installed and operating so that a habitable space (with windows and doors closed) is ventilated with fresh air in accordance with the New Zealand Building Code, Section G4 - Ventilation.

(4) The noise generated by the mechanical ventilation system shall not exceed the noise limits set out in **Table 16** – Noise limits for ventilation systems.

(5) Compliance with rules (4) and (5) above shall be confirmed by providing the product specifications, or a design certificate (prior to occupation) prepared by a suitably-qualified acoustics specialist, stating the design proposed is capable of meeting the activity standards.

Table 16: Noise limits for ventilation systems

Room Type	Noise level measured at least 1 m from the diffuser (Leq dBA)	
	Low setting	High setting
Habitable rooms (excluding sleeping areas)	35	40
Sleeping areas	30	35

7.2 Conditions for permitted activities inside the 65-dBA Ldn Air Noise boundary contour

(1) New habitable building inside the 65 dBA Ldn air noise boundary shall be a Restricted Discretionary Activity as set out in Rule 29.3.5.

C3 Amend Section D – Appendices and Schedules, Chapter 29 – Appendices by inserting a new Appendix 13 – Mercer Airport Zone as set out below:

Appendix 13 – Mercer Airport

1 Introduction

This appendix is referred to in the Rural Zone building rules. The safe operation of aircraft using the Mercer Airport requires that each runway should be provided with a take-off climb and approach surfaces such that aircraft taking off or landing have a clear obstacle free surface on which to carry out the initial part of the climb or the final part of the approach. The Civil Aviation Authority of New Zealand has adopted specifications defining the surfaces about and above an Aerodrome which there must be no obstacles. These surfaces are known as obstacle limitation surfaces and are defined in terms of distances from the runway and heights relative to the runways for protection of aircraft in the vicinity of the aerodrome.

The runway is on the following land: Lot 1 DP 384812 and Lot 2 DP 384812.

2 Runway and Associated Runway Strip

The runway and associated runway strip is defined as follows:

(a) Runway – the runway is 1190 metres long and 23 metres wide.
(b) Runway strip – the runway is contained within the runway strip. The strip is 1310 metres long and 80 metres wide.
(c) The coordinates and elevations of the four corners of the strip in terms of Mount Eden Circuit New Zealand Geodetic Datum 2000 (Horizontal) and Moturiki Datum (Vertical) are as follows:

mN	mE	Elevation
757880.434	431169.034	2.1
757806.489	431138.502	1.6
757380.478	432379.878	2.0
757306.533	432349.346	4.8

3 Obstacle Limitation Surface

The obstacle limitation surfaces associated with this runway strip are defined as follows:

3.1 Approach surfaces

There is an approach surface at both ends of the runway strip. Each approach surface is a truncated fan originating from an 80 metres wide base centred at the end of the runway

strip. The approach surfaces extend either side of the extended centre line of the runway strip for a horizontal distance of 3000 metres (3.5 kilometres). Each approach surface rises upwards and outwards at a gradient of 1 vertical to 40 horizontal (1:40). The base of the western approach surface commences at a height of 2.0 metres above Moturiki Datum and the base of the eastern approach surface commences at a height of 2.0 metres above Moturiki Datum. The sides of the approach surfaces splay outwards at a rate of 1 vertical to 10 horizontal (l:10).

3.2 Transitional side surfaces

The transitional side surfaces rise upwards and outwards from the sides of each approach surface at a gradient of 1 vertical to 5 horizontal (1:5) to a height of 47 metres above Moturiki Datum.

3.3 Horizontal Surface

The horizontal surface is above the main runway with an elevation of 47m above Moturiki Datum. The outer limits are at a locus of 2500 metres, measured from the periphery of the main strip.

3.4 Conical Surface

The conical surface slopes upwards and outwards from the periphery of the horizontal surface at a gradient of 1 vertical to 20 horizontal (1 in 20) to an elevation of 152m above Moturiki Datum.

Attachment 2

Amended s32AA assessment

11 May 2021

Table 1: Rezoning Proposal – s32AA version 12 May 2021

The specific provisions sought to be amended	Assessment of the efficiency and effectiveness of the provisions in achieving the objectives of the Proposed Waikato District Plan (PDP)
The rezoning proposal	Neale Russell Limited (Mercer Airport) seek the rezoning of their landholdings located at Koheroa Road from Rural Zone to Mercer Airport Zone.
Relevant objectives of the PDP	• Growth occurs in defined growth areas (1.5.2(a)) • Protect and enhance green open space, outstanding landscapes, and areas of cultural, ecological, historic and environmental significance (1.12.8(b)(vi)) • Infrastructure can be efficiently and economically provided (4.1.3(a)) • In the rural environment, high class soils are protected for productive rural activities, productive rural activities are supported and urban development in the rural environment is avoided (5.1.1(a)) • Rural character and amenity are maintained (5.3.1 (a)), 5.3.4 (a), (b) • Development does not compromise the predominant open space character and amenity of rural areas (5.3.8 (b)) • Subdivision, use and development ensures the effect on public infrastructure are minimised. (5.3.8 (f)) • Infrastructure is protected from reverse sensitivity effects so that its ongoing operation is not compromised. (6.1.6 (a)
Scale and significance of the rezoning proposal	The scale and significance of the proposal is limited due to the following factors: • The proposal relates to the zoning of particular landholding in a particular part of the District (Mercer) • The proposed rezoning aligns with the strategic direction of higher order documents (WRPS, NPS-UD) and growth strategies (Future Proof; Waikato 2070). Specifically, the proposal will align with WRPS Policy 6.3 and Method 6.3.1. • The proposed airport development is able to be accommodated on the site, having regard to the assessments prepared by expert consultants. It has been operating on the site under resource consent since 1996 and now needs to be recognised in the District Plan to provide protection for the airport and signal its presence to surrounding landowners. The expert consultants have confirmed that the extent of the Obstacle Limitation Surface[1] and air noise boundary[2] are essential to provide long term certainty and protection for aircraft movements and to ensure the potential for reverse sensitivity is minimised. • The Mercer Airport is located in a part of the North Waikato with relatively low population and has significant buffer distances to the closest areas of lifestyle blocks and houses on nearby Koheroa Road.

[1] Supplementary evidence of Dave Park, para 7.2
[2] Supplementary evidence of Rhys Hegley, para 18

Other reasonably practicable options to achieve the objectives (alternative options)	The following alternative options to the proposal have been identified:
	a) Do nothing / status quo and continue to operate Mercer Airport under the 1986 resource consent conditions.
	b) Seek resource consent for every specific growth proposal under the Proposed District Plan Rural Zone provisions and the existing 1996 resource consent.

Table 2: Benefits and Costs Analysis of the Airport Rezoning Proposal

Rezoning Proposal: Rezone Mercer Airport from Rural to Mercer Airport Zone including introduction of Obstacle Limitation Surface and Air noise boundary – i.e. Relief Sought		
	Benefits	Costs
General	• Mercer Airport is able to become a more integrated part of the Mercer community.	• No general costs identified
Environmental	• More comprehensive environmental controls in place through a site specific Mercer Airport Zone. Site specific controls are more appropriate versus standard Rural Zone provisions applied to an aviation facility. The proposed Objectives, Policies and Rules in Attachment 1 will ensure that Rural Character and amenity are maintained as required by Objective 5.3.1 (a), 5.3.4 (a) and (b) and that development does not compromise the predominant open space character and amenity of rural areas as required by Objective 5.3.8 (b). • The inclusion of an OLS will ensure that the required safety zones surrounding the airport as prescribed by the Civil Aviation Authority are inserted into the District Plan and protected through a set of specific District Plan rules. This	• Environmental impacts typically associated with development. • Increased demand on reticulated infrastructure such as electricity. Mercer Airport is self-contained for water and wastewater services. • There would be some minor additional costs associated with acoustic insulation for any surrounding future houses built within the 65 dbA Air Noise Boundary and within the 55 dBA Ldn Outer Control Boundary as set out in the Rebuttal evidence of Rhys Hegley[3]. • Potential for higher traffic numbers on Koheroa Road and the access right of way.

[3] Supplementary evidence of Rhys Hegley, para 18

	will ensure aviation safety standards are met and in particular Objective 6.1.6 (a) is achieved. • The inclusion of an Air Noise Boundary will ensure that appropriate acoustic insulation is included for any future habitable building located within the 65 dBA ANB. This will ensure that the potential for reverse sensitivity is minimised and Objective 6.1.6 (a) is achieved. • The inclusion of an Outer Control Boundary will ensure that appropriate acoustic insulation is provided as part of a building consent requirement. This will also ensure that the potential for reverse sensitivity is minimised.	
Social	• Rezoning provides clear information to existing and future neighbouring landowners over the nature, scale and scope of activities on the Mercer Airport site. They will also understand the acoustic implications arising from activities at Mercer Airport. This will enable neighbouring landowners to plan around these constraints. • The opportunity for Mercer Airport to be an integral part of the Mercer community through Air Shows, sky diving and other tourist related activities drawing people into the area.	• Surrounding landowners will have a greater level of restriction if they wish to locate a habitable building in a location that may protrude through an OLS. • Surrounding landowners will be required to undertake acoustic insulation as part of any building consent for a habitable building inside the Outer Control Boundary.
Economic	• There will be additional economic benefits associated with enabling the Mercer Airport to expand the nature and range of activities undertaken on site. • This will in turn potentially result in additional employment and economic flow on effects for the local economy of the North Waikato and the wider economy. • There will be economic benefits associated with introducing an OLS to protect the Mercer Airport. This will enable the airport to meet the relevant	• The financial cost of involvement in the Proposed District Plan process for Mercer Airport. • Some additional costs for neighbouring landowners seeking to build a house within the outer control boundary in terms of requiring some additional acoustic insulation and the professional fees associated with confirming compliance with permitted activity Rule D 7.1 (1).

	CAA standards and provide certainty for all airport users that they are utilising a facility that is up to the required standard.	• No additional costs on existing dwellings under the OLS.[4] • Some costs associated with trimming tall trees encroaching into the OLS with these costs borne by the Airport.
Economic Growth	• Having a site specific zone will provide the airport operators with sufficient certainty to invest in the future development of the facility. • Enabling aviation related commercial activities such as aviation related light industry, aviation related offices, storage and warehousing will bring economic activity to the North Waikato and provide additional employment.	• Surrounding landowners unable to develop habitable buildings in close proximity to the Mercer Airport boundary without seeking a Restricted Discretionary Resource consent under Rule D 7.2 (1). • Surrounding landowners may be limited in the location of habitable buildings in close proximity to the Mercer Airport boundaries due to the requirements for a resource consent.
Employment	• Promotes growth of economy and employment opportunities, in terms of increased construction and aviation activity.	• No economic employment costs identified
Cultural	• No cultural benefits identified.	• No cultural costs identified
Mercer Airport Rezoning Proposal: Alternative option 1 – do nothing (status quo – rely on existing resource consent)		
	Benefits	Costs
General	• No general benefits identified	• The status quo will not provide proactive protection for the approach surfaces and raises the potential for a house, structure or vegetation to protrude into these surfaces and compromise the safe operation of the airport. • The status quo will not ensure that existing and future landowners for the land surrounding the airport are alerted of the potential for higher noise levels. This could compromise the operation of the airport over time and lead to

[4] Supplementary evidence of Dave Park, para 7.2

		constraints on its operation through reverse sensitivity complaints.
Environmental	• No environmental benefits identified - maintains status quo in terms of environmental effects consented to occur on the Site.	• No environmental costs identified.
Social	• Existing environment is retained, which may be preference to some in the wider community.	• Existing issue of inflexible consent and lack of protection for airport operations remains. • Gradual erosion of operating regime likely due to increased development of houses and reverse sensitivity complaints.
Economic	• Surrounding landowners unimpeded in the location of habitable buildings or the requirements for acoustic insulation. • Standard requirements for buildings consents for habitable buildings in any location permitted by the District Plan.	• Loss of opportunity to rezone Mercer Airport while low density of surrounding development is still present. • Likely reduction in viability of the airport over time as its operation is unable to make use of new technology such as IFR for more flexible operating conditions.
Economic Growth	• No additional economic benefits identified, current situation remains.	• Will not provide for future economic growth of the site and the aviation industry in the North Waikato. • The ability of Mercer Airport to continue to act as a back up airport for Ardmore likely to be eroded over time due to the lack of certainty over approach path safety and air noise boundaries.
Employment	• No change to status quo, limited employment opportunities associated with existing operations.	• Will not provide for potential aviation employment opportunities associated with airport development.
Cultural	• No cultural benefits identified	• No cultural costs identified

Attachment 3

BBO Transport report

August 2020

Neale Russell Limited

Mercer Airport

Transport Assessment

14 August 2020

BLOXAM BURNETT & OLLIVER

Document control

Project identification		
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V1	Draft		13/07/2020
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V3	Final V1		06/08/2020
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Table of contents

1. Introduction

1.1 Report Purpose

This Transport Assessment (TA) supports the application by Neale Russell Limited (the Applicant) to Waikato District Council (the Council) to include a special zone in the Waikato Proposed District Plan (PDP) for Mercer Airport. The application seeks the rezoning of the land owned or used under a License to Occupy, by Mercer Airport from 'Rural' to 'Mercer Airport Zone'. The zone is intended to recognize the activities of Mercer Airport and the issues, objectives, environmental effects and community within which Mercer Airport operates; now and in the future.

This TA aims to identify any significant transportation issues that could be generated as a result of the change in zoning, on the existing road network surrounding the subject site. The TA has been undertaken primarily from capacity and safety viewpoints and also includes a safety assessment of the existing Koheroa Road / Murray Christensen Road intersection.

1.2 Site Locality

Mercer Airport site is currently located in the Rural Zone of the Waikato District and the surrounding properties are predominantly used for agriculture-based activities.

Mercer Airport is located approximately 6 km east of Mercer Village and State Highway 1 (SH1). The primary access route to the airport is via the rural local road of Koheroa Road. The site is accessed via a multiple use Right-of-Way (ROW), Murray Christensen Road, before becoming a private ROW which connects to the airport. The Mercer Airport operational base consists of several buildings including the former Mercer Tavern (now refurbished as a backpackers' accommodation hostel), an operational hangar for the repair and maintenance of aircrafts, skydiving training and a pilot base.

Access to the airport runway is obtained via a bridge which spans the Kopuera Stream. The airport has a single runway running in an east to west direction. There are several residential dwellings that gain access off Murray Christensen Road and several farm gates with access off the private ROW. The general locality of the subject site is shown in Figure 1.

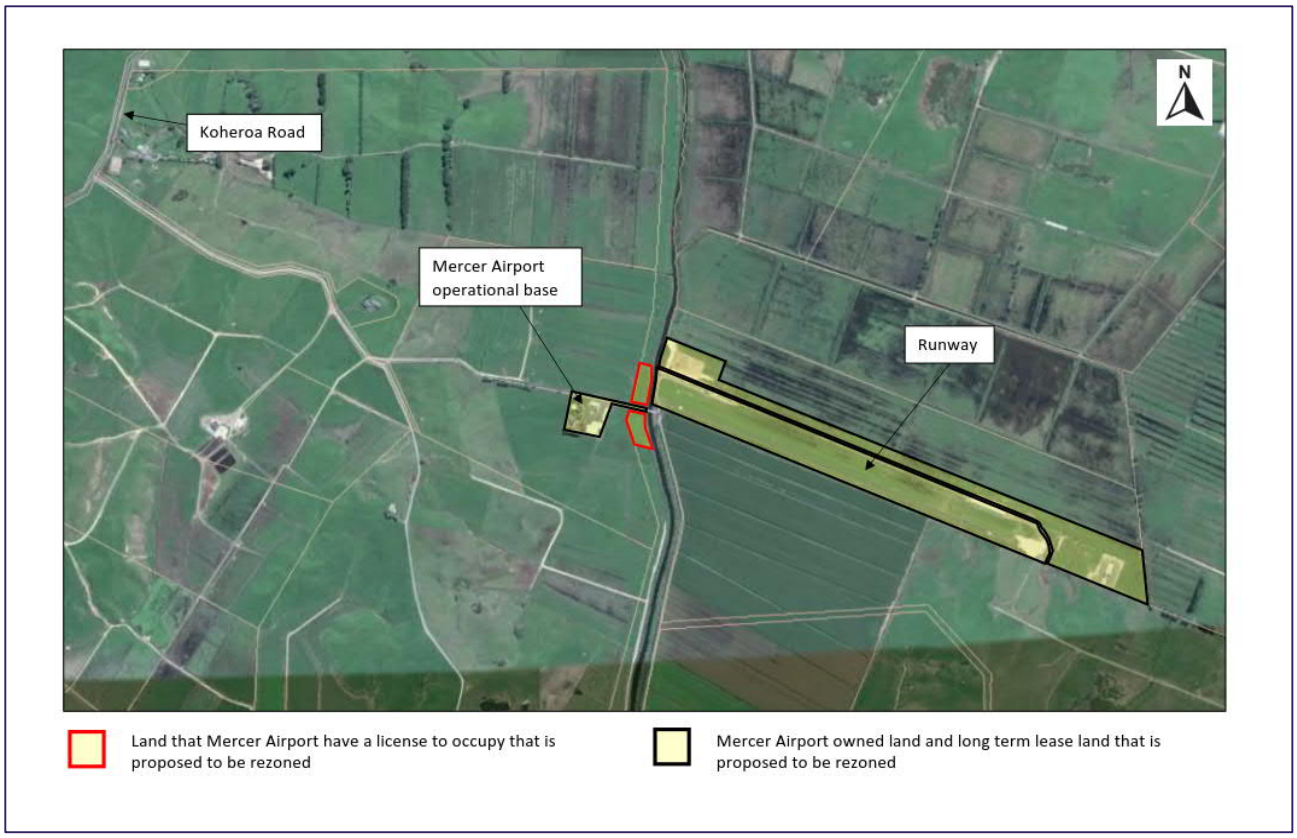

Figure 1: Subject Site General Locality

2. Existing Transportation Environment

2.1 Existing Road Network

The existing road network is illustrated in Figure 2.

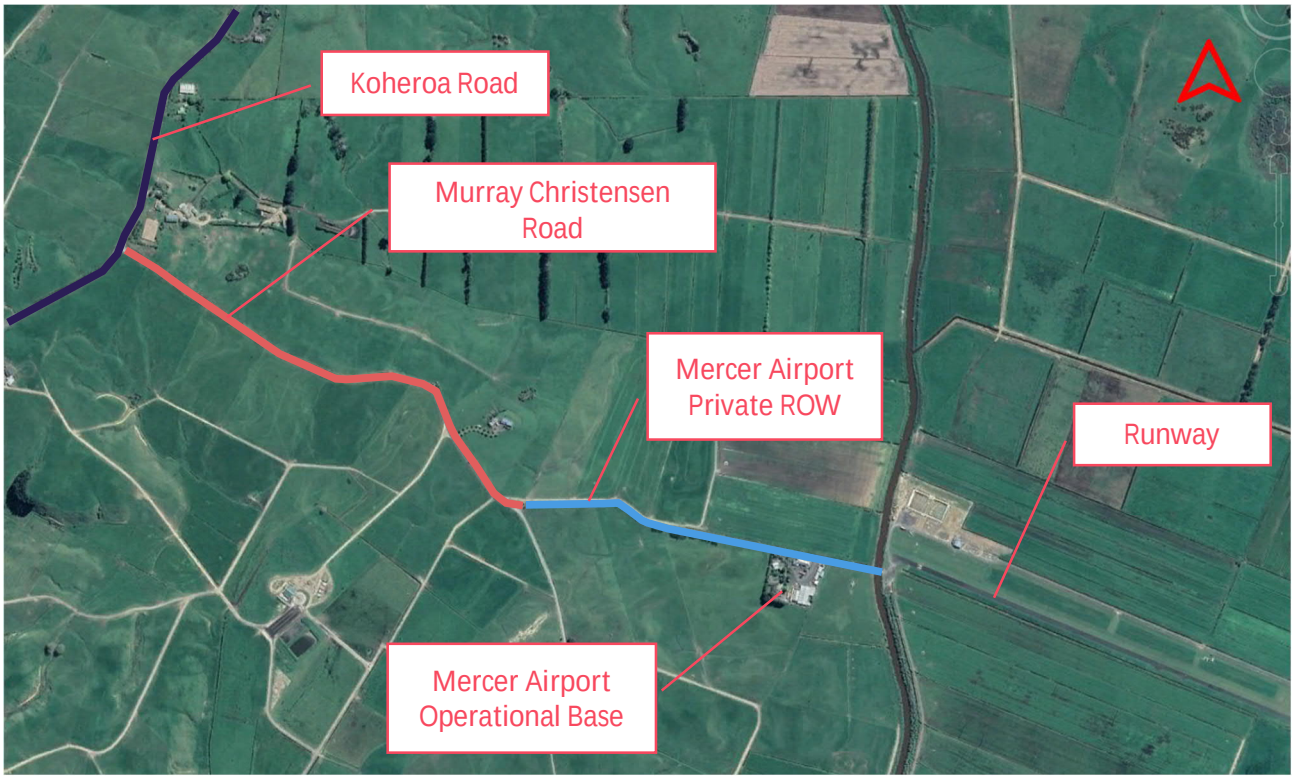

Figure 2: Existing Road Network

Koheroa Road is a two-way two-lane road and is identified as a local transport corridor in the PDP. It has a 6.3 m wide sealed carriageway and an estimated Annual Average Daily Traffic (AADT) volume of 420 vehicles per day (vpd) based on information provided on "Mobile Road" website. It has a posted speed limit of 100 km/h.

Mercer Airport is accessed via a multiple use ROW, Murray Christensen Road. This ROW intersects off Koheroa Road at a Give Way controlled intersection with a slight uphill approach. Sight lines to the south are restricted by the existing horizontal and vertical curves on Koheroa Road. The general layout of the Koheroa Road / Murray Christensen Road intersection is shown in Figure 3.

Figure 3: Koheroa Road / Murray Christensen Road Intersection

Murray Christensen Road is approximately 1.13 km long to Mercer Airport's site access with a 7 m semi-sealed carriageway and a road reserve that is approximately 25 m wide as shown in Figure 4 below. The carriageway was being sealed by Mercer Airport during the time of site inspection in July 2020 as shown in Figure 5. The road slopes up to the east with the peak of the crest located approximately 350 m from the intersection with Koheroa Road and then slopes back down towards the airport access.

Murray Christensen Road (the multiple use ROW) currently services several dwellings and a farm apart from the airport. One of the dwellings, 590A Koheroa Road, is owned by the Applicant and the farm located south of this road is owned by Kopuera Land Company Limited.

Figure 4: Murray Christensen Road as of March 2020

Figure 5: Murray Christensen Road as of July 2020 (sealing of carriageway)

2.2 Existing Site Access

The existing site access to Mercer Airport is via a private ROW as illustrated in Figure 6. On-site measurements indicate that much of this ROW has a 7 m to 9.5 m wide road reserve. The road carriageway width is typically 4.2 m wide.

The private ROW is approximately 575 m long up to Mercer Airport operational base and 30 km/h speed limit signs have been installed along this road section. This private ROW currently serves the Airport and a residential property (separately titled) owned by the Applicant located adjacent to the Mercer Airport operational base.

Figure 6: Mercer Airport Site Access (Private ROW)

2.3 Existing Transport Modes

2.3.1 Public Transport

There are no bus stops on Koheroa Road, and there are no regular bus services to or from the subject site. This is due to the rural nature of this area.

The nearest bus stop is located at Mercer Service Centre which is serviced by the regional bus route 21 – Northern Connector.

2.3.2 Pedestrian and Cyclist Facilities

The subject site is located in a rural area with no existing pedestrian and cyclist facilities.

2.4 Crash History

Crash data was sourced from the Waka Kotahi NZ Transport Agency's (NZTA) Crash Analysis System (CAS). The crash record described below indicates that there are no apparent road safety concerns with the way the environment currently operates.

2.4.1 Koheroa Road / Murray Christensen Road Intersection

There has been one reported crash within a 100 m radius of the intersection since 2015. The non-injury crash involved a driver evading the police and colliding with a police vehicle.

2.4.2 Murray Christensen Road

No crashes have been reported along Murray Christensen Road.

2.4.3 Mercer Airport Private ROW

No crashes have been reported along this private ROW.

3. Proposal

3.1 Existing Operational Issues

Mercer Airport is currently not recognized or protected in the Operative Waikato District Plan (Franklin Section), however it operates under an existing resource consent. This means that Mercer Airport does not have sufficient flexibility to undertake additional aviation related activities or to grow without varying their existing resource consent. The need for ongoing variation(s) provides no certainty for the aerodrome operators.

If the aerodrome is unable to capitalise on aviation-related opportunities, the facility is unlikely to meet the long-term needs of the aviation community both locally and regionally. Aerodromes require income for infrastructure maintenance and development and that in turn is dependent upon flexibility to meet the needs of the aviation sector. Without that income, the facility risks becoming unsustainable.

The consent under which the airport currently operates imposes a number of operational constraints which are no longer appropriate for the ongoing use of the site. Constraints such as limiting vehicle movements is no longer considered appropriate relative to the aviation-related activities which the Applicant is seeking to enable on-site. Rezoning of the Airport site provides opportunity to enable more flexible operational standards which would negate the need for this historic consent condition.

3.2 Proposal Overview

Mercer Airport Zone seeks the following:

- Rezone land owned, occupied or leased by Mercer Airport from 'Rural' to 'Mercer Airport' Zone and provide associated zone specific rules as necessary.
- Provide objectives and policies to support existing and proposed activities within the Mercer Airport Zone, as appropriate.
- Amend the PDP to include an Air Noise Boundary (65 dBA Ldn contour) and Outer Control Noise Boundary (55dBA Ldn contour) for Mercer Airport.
- Amend the PDP to include an Obstacle Limitation Surface (OLS) for Mercer Airport, together with consequential rules regarding height control for buildings, structures and trees.
- Include aerodome design characteristics (runway and runway strip dimensions) as an Appendix to the Mercer Airport Zone.

3.3 Proposed Traffic Related Rules / Objectives for Mercer Airport Zone

3.3.1 Traffic Generation

The PDP states that within the Rural Zone, there is a maximum of 200 vehicle movements per day limit and no more than 15% of these vehicle movements are heavy vehicle movements.

This submission would like to propose that the number of vehicles assessing the Mercer Airport Zone shall not exceed 320 vehicle movements per day. Reasons behind this proposed limit have been discussed in Section 4.2.

3.3.2 Road Formation

The existing private ROW access to Mercer Airport is a single lane carriageway with a 4.2 m sealed width. This road has not been constructed to handle two-way traffic safely. Therefore, to accommodate any increase in traffic volume expected from Mercer Airport, the Applicant is proposing to introduce six passing bays along the ROW at strategically placed locations and at intervals not more than 100 m separation (with the exception of passing bay 6). The width of the carriageway at a passing bay will not be less than 5.5 m for a minimum 5 m length with a further minimum 3 m taper at each end.

The passing bays will be finished with the same surface as the existing ROW surface. The surface crossfall from the passing bay shall be continuous of the crossfall on the private ROW surface.

The conceptual General Arrangement Plan is shown in Figure 7 and the typical cross-section of each passing bay have been attached in Appendix A.

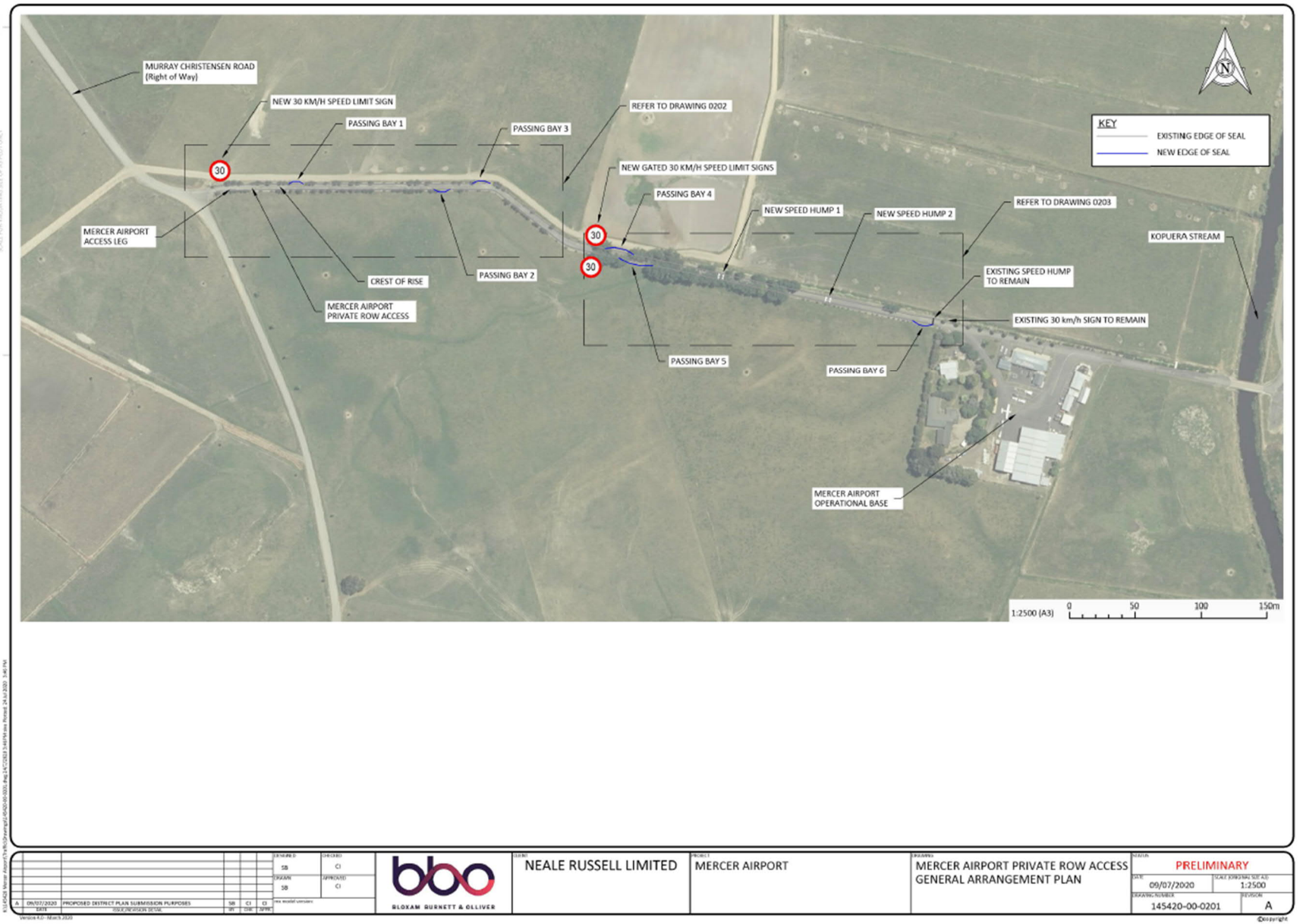

Figure 7: General Arrangement Plan

4. Predicted Travel Data

4.1 Existing Trip Generation

Mercer Airport plays an important role in the aviation industry in the South Auckland / North Waikato area. Currently the airport operates as a backup airport to the Ardmore aerodrome in South Auckland. Aircraft that take off from Ardmore will often utilise the Aviation Airspace above the Mercer Airport for flight training as the Mercer area offers a relatively quiet airspace for flight training, sky diving and other general aviation activities.

Consented activities that can currently operate on site are:

- Skydiving;
- Flight training;
- Light commercial Airwork;
- Hangars for the garaging and maintenance of light aircraft;
- Backpackers with accommodation, licensed café and light meals; and
- Engine testing facility for Rocketlab

Mercer Airport is currently operating under the original consent issued in 1996 by the then Franklin District Council, as amended by the Environment Court consent order of 3rd March 2014.

The March 2014 consent order imposes the operational limits on Mercer Airport, including, amongst others:

- Traffic numbers limited to 120 vehicle movements per day (60 movements in and 60 movements out).

4.2 Predicted Trip Generation

The proposed rezoning arises from the need to make more sustainable use of the Mercer Airport and to undertake additional activities in the future that are not currently authorised by the existing resource consent or permitted in the Rural Zone.

There is no readily available trip generation data in New Zealand and Australia publications upon which to base trip generation calculations. Although, the proposed rezoning is consistent with the approach adopted elsewhere in the PDP for the Te Kowhai Airfield, the number of trips generated by Mercer Airport will have to be restricted due to the single lane carriageway width of the private ROW access to Mercer Airport.

The trip generation limit of Mercer Airport is therefore based on first principles as shown below.

- Length of private ROW access = 0.575 km
- Speed limit along private ROW = 30 km/h
- Time taken for one vehicle to travel the length of ROW = 0.575 km / 30 km/h = 0.019 hr (1 minute 8 seconds)
- Time taken for 2 vehicles (in and out) without stopping along this ROW = 0.019 hr x 2 = 0.038 hr (2 minutes and 17 seconds)
- In one hour, it can be expected = 1 / 0.038 = 26 trips per hour (in) & 26 trips per hour (out) = 52 trips per hour

The Waikato Regional Transportation Model (WRTM) indicates that the peak hour traffic volume on Koheroa Road is approximately 20% of the daily traffic volume. Adopting this peak hour percentage will result in the

conclusion that the private ROW could accommodate approximately 260 daily vehicle movements with the assumption that there is a free flow of movement between incoming and outgoing vehicles.

However, the introduction of passing bays will allow one vehicle to wait where width permits passing along the private ROW to allow another vehicle to pass through. The passing bays would therefore increase the capacity of the single lane carriageway. It is difficult to determine the extent of which a passing bay increases the carriageway's capacity. However, Austroads Guide to Pavement Technology Part 4K: Selection and Design of Sprayed Seals Table 5.1 states that the estimated design traffic for an overtaking lane (in one direction) is approximately 60% to 80% of half the AADT. Since, in this case, only passing bays are considered and not passing / overtaking lanes, this assessment considers that the introduction of passing bays along the private ROW could accommodate approximately an additional of 50% of half the AADT (i.e. 260 vehicle movements based on free flow of movement). This would mean that the private ROW could accommodate approximately:

- 260 + (0.5 x 0.5 x 260) = 325 vehicle movements daily

Therefore, this assessment recommends that the current trip generation limit of 120 vehicle movements as per the March 2014 consent order be increased to 320 vehicle movements. This trip generation is 120 vehicle movements more than the 200 vehicle movements per day limit imposed by the PDP for Rural Zones.

4.3 Predicted Parking Generation

It is noted that there are currently no parking requirements in the PDP for an airport related activity. However proposed Rule 29.2.2 On Site Parking and Loading in the Mercer Airport submission sets out that "Any activity must comply with the requirements for on-site parking and loading in Rule 14.12 of Chapter 14 (Infrastructure and Energy)". Given the uncertainty around the exact nature and timing of future activities associated with the airport, it is considered more appropriate to address future parking requirements at the time each stage of the development is considered. However for the purposes of this traffic report, the site has adequate parking available for its current uses.

5. Appraisal of Transportation Effects

5.1 Koheroa Road / Murray Christensen Road Intersection

5.1.1 Sight Distance

The expected operating speed approaching the intersection on Koheroa Road is expected to be approximately 85 km/h due to the road geometry which has a combination of both steep gradients and horizontal curves. According to the PDP Table 14.12.5.3, a minimum safe intersection sight distance of 193 m (extrapolated) is required for this operating speed. This sight distance is not achieved from the intersection and from the opposite side of Koheroa Road in both directions as presented in Table 1.

Table No. 1

Sight Distances			
Direction	Side of Road	Sight Distance (Measured on-site)	Required Sight Distance
To the South	Intersection	87 m	193 m
	Opposite	57 m	193 m
To the North	Intersection	175 m	193 m
	Opposite	150 m	193 m

The sight distance to the south is restricted by vegetation on the inside of the curve as shown in Figure 8. Removing this vegetation could increase sight distance to the south to approximately 150 m from the intersection and 140 m from the opposite side of Koheroa Road. This would be the maximum achievable sight distance due to the presence of the vertical curve as well as vegetation along the straight section of Koheroa Road before the bend. The vegetation inside of the curve is within the road reserve as well as some within private property as shown in Figure 9. This report recommends vegetation removal be undertaken within the road reserve and vegetation within private property be trimmed in consultation with the landowner on the opposite side of the road, considering the increase in trips that the Airport is expected to generate.

Figure 8: Sight Distance Looking South

Figure 9: Vegetation within Road Reserve and within Private Property

The sight distance to the north is restricted by the vertical curve as shown in Figure 10 and is therefore the maximum achievable sight distance. The existing road geometry restricts the sight lines available on-site and no mitigating measures will improve these sight lines significantly. Moreover, the shortfall in sight distances is not considered critical as site crash record indicates that the intersection has been performing safely.


Figure 10: Sight Distance Looking North

Furthermore, Austroads Guide to Road Design – Part 3: Geometric Design Table 5.5, specifies 139 m minimum stopping sight distance for a 90 km/h design speed. This requirement is met by sight lines to the north and will be met by sight lines to the south if vegetation removal or trimming is undertaken as described above.

5.1.2 Formation

Murray Christensen Road is currently semi-sealed with loose gravel present at the intersection. Surface ponding and potholes were also observed at the intersection as shown in Figure 8, which indicates a possible drainage issue at this intersection. Surface ponding can contribute to vehicles aquaplaning and the uneven road surface condition also poses stability issues for all road users especially for motorcyclists and cyclists.

It was observed during the site visit in July 2020 that Murray Christensen Road is currently being sealed. However, the new seal starts approximately 55 m east of the intersection with Koheroa Road. It is therefore recommended that carriageway sealing is undertaken at the Koheroa Road / Murray Christensen Road intersection to ensure the remaining section (55 m) of Murray Christensen Road is sealed and regraded such that stormwater is drained appropriately.

5.2 Mercer Airport Site Access (Private ROW)

5.2.1 Recommended Design Standard

The PDP specifies that a private ROW in the Rural Zone should have a minimum road reserve width of 6 m and a minimum trafficable carriageway of 3 m. However, the ROW is to only service two to three allotments which equates to approximately 20 to 30 vehicles movements per day.

With a traffic generation limit of 320 vehicle movements per day proposed for Mercer Airport, the ROW should have a minimum road reserve width of 20 m and a minimum trafficable carriageway of 6 m as per the Operative Waikato District Plan (Waikato Section).

The private ROW access presently has a carriageway width of 4.2 m and a road reserve width that varies between 7 m and 9.5 m. The existing carriageway width therefore does not comply with the required standards for the proposed trip generation limit of 320 vehicle movements per day. However, the private ROW access cannot be widened beyond the fence lines (boundary) as the land on either side of the carriageway is owned by Kopuera Land Company Limited and not the Applicant.

5.2.2 Passing Opportunities

A single-lane width can be adopted in constrained situations as long as there is clear sight distance sufficient for opposing vehicles to see each other and stop. One can wait where width permits passing to let the other vehicle through.

Austroads Guide to Road Design Part 3: Geometric Design Table 5.5 recommends that a minimum stopping sight distance of approximately 34 m (via linear extrapolation for a 35 km/h road which is 15% above posted speed limit) be provided along the private ROW. The minimum stopping sight distance is the distance to enable a driver, travelling at the design speed on wet pavement, to perceive, react and brake to a stop before reaching an obstruction on the road ahead.

This assessment therefore recommends that passing opportunities be provided along the private ROW at intervals of no more than 100 m with the exception of passing bay 6. Passing bay 6 has been positioned approximately 200 m from passing bay 5 and this is due to the fact that there is insufficient width within the road reserve between these two bays for an adequate passing bay to be constructed. Figure 11 to Figure 15 illustrate the proposed locations of the six passing bays. The locations are defined as a station point in metres from the entrance gate of the private ROW. Approximate dimension of each passing bay can be obtained from the typical cross-section in Appendix A.

Passing bays have been positioned to achieve a clear line of sight of either 34 m or from the first passing bay to the next passing bay. The width of the carriageway at a passing bay will not be less than 5.5 m for a minimum 5 m length with a further minimum 3 m taper at each end. The proposed passing bays will generate safety benefits by reducing the likelihood of frustrated drivers taking unnecessary risks to pass on-coming vehicles with little manoeuvring width available.

Figure 11: Proposed Location of Passing Bay 1 at Distance 57 m from Entrance (Looking West Away from Mercer Airport Operational Base)

Figure 12: Proposed Location of Passing Bay 2 at Distance 168 m from Entrance (Looking West Away from Mercer Airport Operational Base)

Figure 13: Proposed Location of Passing Bay 3 at Distance 196 m from Entrance (Looking West Away from Mercer Airport Operational Base)

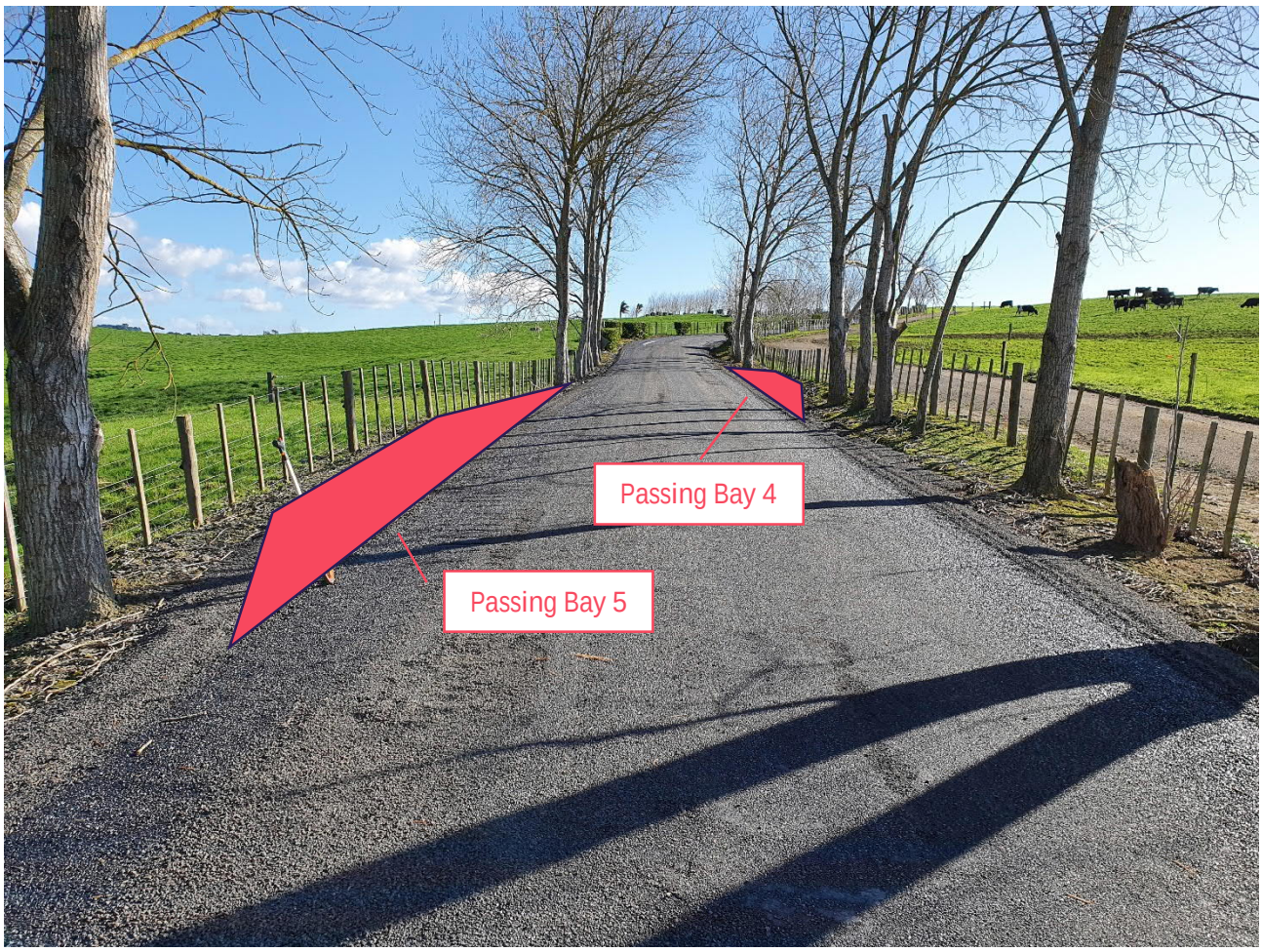

Figure 14: Proposed Location of Passing Bays 4 and 5 at Distances 312 m and 324 m from Entrance respectively (Looking West Away from Mercer Airport Operational Base)

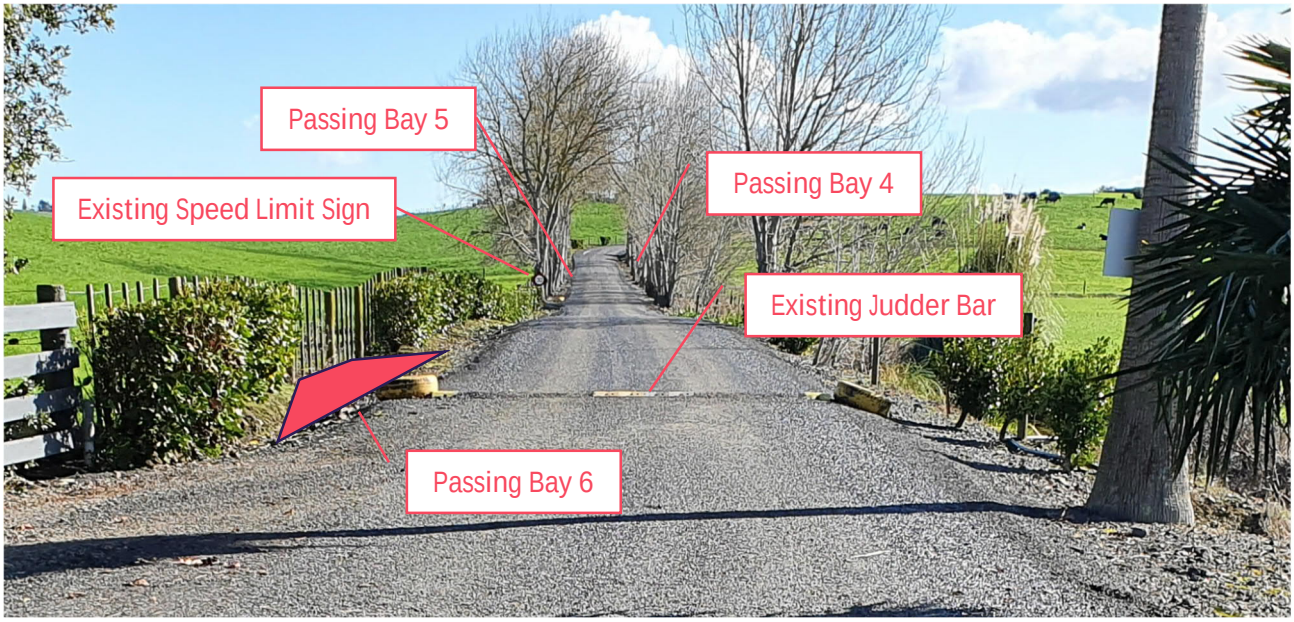

Figure 15: Proposed Location of Passing Bay 6 at Distance 554 m from Entrance (Looking West Away from Mercer Airport Operational Base)

5.2.3 Speed Humps and Speed Limit Signs

An existing judder bar is currently located at the end of the private ROW access, just before the gate to Mercer Airport Operational Base as shown in Figure 15. This suggests that the operating speed of vehicles along this straight section of road is usually greater than the posted 30 km/h speed limit.

Given that the existing carriageway width is approximately 4.2 m, it is important to manage the speed along this section of the road such that it does not lead to insufficient time to observe and react to an on-coming vehicle, by safely stopping or pulling into one of the six passing bays. This assessment therefore recommends speed humps be introduced along the straight section at distances 402 m and 485 m from the entrance as illustrated in Figure 7 or in the plans attached in Appendix A.

Speed humps are defined as short, elevated portions of roadway used as means of reducing the speed of vehicles travelling on the road. Speed humps must be clearly visible to approaching motorists and should be spaced fit for purpose. This report therefore recommends that the speed humps be spaced approximately 80 m apart from each other and be appropriately marked such that they are easily identifiable by approaching drivers so that they know they are entering a controlled environment.

Furthermore, additional 30 km/h speed limit signs are recommended to be installed to reinforce the speed environment to the drivers. The signs should be located at either end of the private ROW and two other signs evenly spaced in between (i.e. approximately at distance 300 m from the entrance).

5.2.4 Access Sight Distances

The PDP requires that minimum safe intersection sight distance at a property access be provided in accordance with the speed environment. The PDP requires a minimum sight distance 70 m for a 40 km/h road. The speed limit on the private ROW is 30 km/h but the PDP does not indicate a requirement for 30 km/h. However, via linear extrapolation, a 35 km/h (15% above posted speed limit) operating speed requires a minimum sight distance of approximately 60 m.

Table No. 2

Sight Distances			
Direction	Vehicle Operating Speed	Sight Distance (Measured on-site)	Required Sight Distance
To the South	35 km/h	60 m	60 m
To the North	35 km/h	> 200 m	60 m

The sight lines to the south and the north are demonstrated in Figure 16 and Figure 17. Table 2 shows that the available sight distances at the site access to Mercer Airport comply with the requirements in the PDP.

Figure 16: Sight Distance Looking South from Mercer Airport Private ROW Access

Figure 17: Sight Distance Looking North from Mercer Airport Private ROW Access

5.2.5 Summary

In summary, the traffic generation limit of 320 vehicle movements per day has been calculated based on first principles and the existing private ROW access is considered to be able to accommodate this number of trips daily with less than minor to negligible effects on the safety of all road users, provided the recommendations and measures mentioned in the previous sections are adopted.

6. Transportation Strategies and Policy

6.1 Government Policy Statement on Land Transport 2018/19 – 2027/28

The Government Policy Statement (GPS2018) outlines this Government's priorities for expenditure from the National Land Transport Fund over the next 10 years. It also provides guidance to decision-makers about where the Government will focus resources, consistent with the purpose of the Land Transport Management Act, which is:

"To contribute to an effective, efficient, and safe land transport system in the public interest".

The land transport GPS2018 identifies new strategic priorities and amended objectives to the previous GPS, with themes focussed on:

- Mode-neutral approach to transport planning and investment decisions

- Incorporating technology and innovation into the design and delivery of land transport investment
- Integrating land use and transport planning and delivery

Accordingly, the key strategic priorities of the GPS2018 are defined as Safety and Access, with supporting strategic priorities of Value for Money and Environment protection. These are defined further as follows:

- Safety: A safe system, free of death and serious injury;
- Access: Provides increased access to economic and social opportunities, enables transport choice and is resilient;
- Value for Money: Delivers the right infrastructure and services to the right level, at the best cost; and
- Environment: Reduces the adverse effects on the climate, local environment and public health;

Further explanation of the Themes in the GPS2018 to assist with delivering the strategic priorities are:

- Address current and future demand for access to economic and social opportunities;
- Provide appropriate transport choices;
- Is resilient;
- Is a safe system, increasingly free of death and serious injury;
- Mitigates the effects of land transport on the environment; and
- Delivers the right infrastructure and services to the right level at the best cost.

6.2 2018 Update to the Waikato Regional Land Transport Plan 2015 – 2045

The 2018 update to the 2015 Regional Land Transport Plan has been developed to the region, which sets out the strategic direction for land transport in the Waikato region over the next thirty years. The Plan is built around the region's three key transport problems, namely:

- Protecting the function of our strategic corridors in the context of growth pressures in and around Hamilton, the North Waikato and in the upper North Island.
- Tackling our complex road safety problem and the disproportionate number of death and serious injuries in the region.
- Providing for the access and mobility needs of our communities in a changing social, demographic, economic and technological landscape.

The Plan sets out nine priorities for land transport in the Waikato region. The priorities relevant in this instance are as follows.

- Optimising and growing public transport within Hamilton and between Hamilton and satellite towns.
- Improving safety, particularly reducing risk and addressing speed management.
- Maximising efficiencies and optimisation across the transport system.
- Ensuring route security and resilience.

6.3 Policy Alignment of Mercer Airport Zone

The assessment finds the proposed Mercer Airport Zone is consistent with the new GPS and directions set out in the Waikato Regional Land Transport Plan because:

- Improvements to Mercer Airport private ROW ensure road safety effects are mitigated. The potential crash risk along the ROW is reduced with the introduction of the proposed passing bays and the implementation of speed humps also address speed management issues.

7. Conclusion

The following conclusions are made on the basis of this TA report:

- The trip generation limit of Mercer Airport, based on first principles, is expected to be approximately 320 trips per day.
- Parking requirements should be met in the detailed design stage using relevant industry knowledge and experience once the exact use and size of the future activities are known.
- The existing road geometry of Koheroa Road restricts the sight lines available from Murray Christensen Road, however, the sight distances achievable do meet the minimum stopping sight distance requirement specified in Austroads Guide to Road Design – Part 3: Geometric Design Table 5.5. Moreover, the shortfall in sight distances is not considered critical as site crash record indicates that the intersection has been performing safely.
- Sight distances along the private ROW access to Mercer Airport are sufficient to ensure the safe operation of the ROW with the assessed 320 vpd traffic generation provided the recommendations of this report are implemented on-site.

8. Recommendations

On the basis of the conclusions of this report, Bloxam Burnett & Olliver Limited consider that there are no traffic or transportation effects related reasons why a special zone for Mercer Airport should not be included in the PDP, provided the following recommended mitigation measures are reflected as consent conditions.

- The number of vehicles assessing the Mercer Airport Zone shall not exceed 320 vehicle movements per day.
- Six passing bays should be constructed with an all-weather surface along the private ROW at locations in accordance with the plans attached in Appendix A. The width of the carriageway at a passing bay will not be less than 5.5 m for a minimum 5 m length with a further minimum 3 m taper at each end.
- Two speed humps should be introduced along the private ROW at the straight road section approaching Mercer Airport Operational Base as illustrated in the plans attached in Appendix A. They are to be spaced approximately 80 m apart from each other and be appropriately marked such that they are easily identifiable by approaching drivers.
- Additional 30 km/h speed limit signs should be installed to reinforce the speed environment to the drivers.
- Vegetation removal be undertaken within the road reserve of Koheroa Road (south of Murray Christensen Road) and vegetation within private property be trimmed in consultation with the landowner on the opposite side of Murray Christensen Road.
- Carriageway sealing to be undertaken at the Koheroa Road / Murray Christensen Road intersection to ensure the remaining section (55 m) of Murray Christensen Road is sealed and regraded such that stormwater is drained appropriately and the road surface is made safer for all road users.

Appendix A – Mercer Airport Private ROW General Arrangement Plan and Typical Cross-sections